

Delassus-Kern House

STE. GENEVIEVE NATIONAL HISTORICAL PARK
STE. GENEVIEVE, MO

Historic Structure Report

PMIS 311634
OCTOBER 2024



The Delassus-Kern House from the northeast. (Source: RRJ)

Prepared for:

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Omaha, Nebraska

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Delassus-Kern House

Historic Structure Report

Ste. Genevieve National Historical Park
Ste. Genevieve, MO

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Administrative Summary and Data

Resource Information

The Resource is located at 19071 US-61 in Ste. Genevieve, Missouri. The Delassus-Kern House was built in c. 1836 and is a one and a half-story vertical log and lumber frame building over a partial stone masonry basement. The house is located on the west side of US-61, at the foot of a bluff, overlooking the Common Field to the east. The house is currently vacant and mothballed, pending future rehabilitation.

Name: Delassus-Kern House

Location: Ste. Genevieve National Historical Park
19071 US-61, Ste. Genevieve, MO 63670
Rural parcel approximately one quarter mile south of Bourbon Road

National Register Status: Not located within the boundary of the Ste. Genevieve National Historic District or the Ste. Genevieve National Historic Landmark District; not individually listed on the National Register for Historic Places but eligible for individual listing under Criteria A (national level), C (national level), and D (local level).

Dates of Construction and Major Alterations: c. 1793, earliest dendrochronology date for logs
c. 1836, likely original construction of the existing house
1903, second story constructed
c. 1996, east porch removed

Current Use: Vacant.

Overall Dimensions: 53'-4" by 37'-6" and 30'-10" at roof ridge

Net Areas:	Basement	1,060 square feet
	First Floor	1,961 square feet
	Second Floor	1,060 square feet

Project Purpose and Need

The Delassus-Kern House is located on US Highway 61 in the City of Ste. Genevieve, Missouri, which was founded c. 1750 on the west bank of the Mississippi River, about 64 miles south of St. Louis. Settled by French Canadians, Ste. Genevieve possesses the largest extant collection of French colonial vertical log houses in North America and is also significant due to the early settlement organization of the community with shared common agricultural fields.

The original portion of the home was built from materials dated from c. 1793 and is among only a few surviving French-Canadian vernacular dwellings of their period in the United States.

The goal of the Delassus-Kern House project, as defined by the NPS, is to develop critical planning and design documents preparatory to the eventual ultimate treatment of the house and its reuse. This historic structure report (HSR) is the second phase in this planning and design effort. A condition assessment report containing information on the current state of the house and maintenance recommendations was developed in 2023.

Park Planning

Ste. Genevieve NHP was authorized by the Consolidated Appropriations Act of 2018 on March 23, 2018. The act incorporates by reference Section 7134 of Senate Bill 1460, which authorizes the establishment of Ste. Genevieve NHP as a unit of the National Park System “to preserve, protect, and interpret for the benefit of present and future generations the themes of French settlement, vernacular architecture, and community form and farming on the frontier associated with Ste. Genevieve.”

This document is part of Ste. Genevieve NHP planning portfolio. A park planning portfolio is the collection of planning documents that guides decision making and satisfies law and policy. Ste. Genevieve NHP’s planning portfolio creates a logical, trackable guide for park management actions. Along with the Ste. Genevieve

Special Resource Survey (2016) and the Foundation Document (2020), this HSR addresses resource preservation for the Delassus-Kern House.

The HSR was prepared in advance of a Long-Range Interpretive Plan, Cultural Landscape Report, and other documents for the park’s planning portfolio not yet developed. At present, the anticipated future use for the Delassus-Kern House for flexible interpretive functions is based on past and current uses and guidance from park staff.

Methodology

The purpose of the HSR is to provide a compilation of the findings of research, investigation, analysis, and evaluation of the historic structure. The report serves as a basis for decision-making and direction for preservation of the building. The report also serves as a record of existing conditions and as a basis for planning future preservation and maintenance.

The HSR for the Delassus-Kern House addresses key issues specific to this structure, including a thorough level of research and physical investigation to determine construction chronology of the house, investigation of existing physical conditions, evaluation of the surrounding landscape, and evaluation of the existing systems to identify needed upgrades.

History Methodology

Archival research was performed to identify documentation of the history and construction of the building. The purpose of this research and review of documents was to gather information about the original construction and past repair and modifications of the building for use in assessing existing conditions and developing treatment recommendations.

These tasks included:

- Review of research and documentation performed by others on the context and background of the founding and growth of Ste. Genevieve, changes in social history over time, and architectural practices

that influenced the Delassus-Kern House.

- Research and review of archival documentation to develop the historical background of the Delassus-Kern House.
- Research and review of archival documentation to assist in determining the chronology of the evolution of the architecture and landscape.
- Consultation with local historians and community stakeholders knowledgeable about Ste. Genevieve and the Delassus-Kern House.

Review, transcription, and translation of the earliest Ste. Genevieve historical documents which are in French; research for this report relied heavily on translated excerpts, summaries, and indexes previously prepared by others. These documents are primarily located in the following collections, but other collections not noted below may also have significant holdings:

- Ste. Genevieve County Court (original documents)
- State Historical Society of Missouri, Ste. Genevieve Archives, 1756-1930 (microfilm)
- University of Missouri, Western Historical Manuscripts Collection
- Missouri Historical Society/ Missouri History Museum and Library

Resources Consulted

As part of the research into developing the historical background and context, the HSR also consulted and/or researched collections at the following:

- Mercantile Library at St. Louis University-Ernst Connelly Collection
- Ste. Genevieve Archive in the Missouri State Historical Society
- Ste. Genevieve County Courthouse
- Felix Vallé House State Historic Site
- National Park Service (NPS) site files
- Charles E. Peterson papers, in the collection of Ste. Genevieve NHP.
- Various Family Records and collections

Condition Assessment Methodology

From October 3 to 7, 2022, and August 20 - 23, 2023, representatives from the HSR team were on site to perform an investigation into the existing conditions and

construction of the Delassus-Kern House.

The condition assessment included:

- Visual inspection and condition assessment of the site, context, and landscape features.
- Visual inspection and condition assessment of the architectural features and building materials.
- Visual inspection and condition assessment of the enclosure and structural systems.
- Non-destructive evaluation of wood framing members.
- Visual inspection and condition assessment of the mechanical, electrical, and plumbing systems.
- Sampling and identification of wood species for structural members.
- Identification and assessment of integrity of significant character-defining features and elements.

The condition assessment and physical investigation were limited to areas and features that were readily visible; no finishes were removed to expose concealed conditions. Isolated sampling and testing of wood building components to identify constituent materials and/or determine dates of construction were performed as part of the HSR scope

Project Team

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Related Studies and Drawings

- 1933/1939 HABS photographs and measured drawings
- 1959, 1970 Ste. Genevieve, National Survey of Historic Sites and Buildings
- 1985/1986 HABS photographs
- Undated/c. 1986 Tree Ring Dating of French Colonial Vertical Log Houses in St. Genevieve, MO
- 2001 Ste. Genevieve Historic District, National Register of Historic Places Registration Form
- 2016 Ste. Genevieve Special Resource Study
- 2016 – 2018 Documents related to the proposed National Historical Park
- 2019 Ste. Genevieve Boundary Adjustment Public Law No. 116
- 2021 Archeological Overview and Assessment of Ste. Genevieve National Historical Park
- 2023 Ste. Genevieve NHP Foundation Document
- 2025 Cultural Landscape Report (in progress)

Glossary

Terms referencing French vernacular construction are adapted in part from the glossary provided by Jack Richard Luer and Jesse W. Frances in *Vanishing French*

Heritage: A Complete Study of the Vertical Log Homes of the Illinois Country.

Arpent	(French) A French measurement of land area, roughly equivalent to 0.84 of an English acre; also, a unit of measure of distance (approximately 192 English feet).		
Bousillage	(French) A mixture composed of mud or clay with straw, or hair, for infill between posts in the construction of vertical log buildings.	Galerie	with aligned doorways. (French) Gallery or veranda; a porch extending the full length of either one, two or four sides of a building.
Caveau	(French) A crawl space or cellar.	Grenier	(French) Attic; the loft of a house.
Collar Tie	The horizontal member of a Norman truss, located at the approximate midpoint of the diagonal top chord members.	Habitant(s)	(French) French settlers, especially those of French-Canadian descent, used to denote a person engaged in agriculture.
Colombage	(French) Half-timbered construction.	King Post	The central vertical member of the Norman truss which connects the diagonal top chord members to the collar tie.
Coyau(x)	(French (pl.)) A short timber used to extend the rafter, creating a slightly flared appearance, which assists with shedding water away from the building walls.	Nogging	Brick masonry infill between wood framing members.
Enfilade	(French) An interior layout that is a single room wide with successive rooms being interconnected, often	Norman Truss	A French vernacular variation on the “king post truss,” characterized by a steep pitch, through purlins, and the elevated position of the collar beam.
		Pan-de-bois	(French) Also called "half timbered," a type of construction which uses timber posts and beams as the framework for

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	the walls and floors. The framing is often left exposed for aesthetics, and the space between timbers is infilled with stone, brick, or clay and straw.		
Pierrotage	(French) Infill of stone and clay daub or lime mortar; packed between the posts of a heavy timber frame.	Rafter	A diagonal roof framing member: “primary rafters” are those of the main roof structure, and “secondary rafters” are those of the galerie roof structures.
Poteau(x)	(French (pl.)) Timber post or vertical log member	Ridge Beam	A longitudinal, horizontal member at the apex of the roof framing which supports the top ends of the rafters.
Poteaux-en-terre	(French) “Posts in the ground”; a construction type where the vertical logs are set into the ground.	Top Chord	The diagonal members of the Norman truss that form the distinctive “A-frame” shape, with the crossbar formed by the collar tie.
Poteaux-sur-sole	(French) “Posts on a sill”; a construction type where the vertical logs sit on a horizontal sill plate, and the foundation is typically constructed of stone masonry.	Top Plate	A horizontal wood member that bears on the tops of the vertical log walls.
Puncheon	A rough log timber flattened on the top side, sometimes used for flooring or seating.	Trenail	A tapered wood pin used in traditional heavy timber construction.
Purlin	A longitudinal, horizontal member		

Date Conventions

The dates as presented in this HSR are drawn from the information available at the time of writing. In a few cases, the dates are supported by direct historical documentation, but in the majority of cases, the dates proposed are the project team’s best determination based

on factors such as physical evidence, circumstantial documentation, research by others, professional experience, or those dates adopted by general consensus. Further research, investigation, and analysis may refine or refute the dates proposed herein.

No Notation	Direct attribution of the date or date range given is supported by historical documentation or physical evidence; ex: 1910 or 1919–1923.	Slash (/)	Indicates that two or more specific dates are referenced without being inclusive of the years between; ex: c.1940/c.1952 or 1940/1988.
Circa (c.)	Attribution to within one or two years of the date or date range given is supported by historical documentation or physical evidence, but the precise dates are not known; ex. c. 1955 or c. 1933 – c. 1935.	Decade Span	Indicates a ten-year span, but the date or date range given are approximate and may be refuted by further study; ex: 1920s or 1960s – 1970s.
Dash (–)	Indicates that the range given is inclusive of the years between the start and end dates, such as an ongoing event or period of ownership, ex: 1923–1963.		

Part 1: Developmental History

Introduction

INTRODUCTORY COMMENTS

Native American Habitation and Land Use

The following narrative spans a broad historical context that documents the interaction of peoples across thousands of years of time and place. Missouri's archeological record is vast and diverse, with studies that reflect over 13,000 years of human adaptations to the landscape and environment. This introduction is meant to provide a broad context of the people who occupied and developed this area prior to the arrival of European explorers, fur traders, and miners and has attempted to incorporate the best scholarship available at the time of its preparation.

Harmful Language

Terminology relating to and recognition the of indigenous peoples that were removed from the region to make way for European and American settlers and enslaved individuals is important in the recordation and documentation of the House. This document is generated from both primary and secondary sources and is meant to contribute to the understanding of the enslaved community in Ste. Genevieve, as well as the formerly enslaved individuals and free people of African descent who lived there and contributed to its history. These individuals are identified in the historic record and referenced with deference to language appropriate for developing this context. Historic documents often contain language and terminology that is widely considered offensive and racially discriminatory in the United States today. Where used in this report, these terms represent direct quotations from historic sources,

with full acknowledgment of their harmful history of use.

Resources from community-sourced guidance, meant to be shared with those documenting slavery in the United States and the Americas, have been applied here. One helpful resource from the Culpeper Branch of the NAACP presents useful considerations in documenting slavery. As aptly noted in their guidance: "...all words we know to talk about enslaved people of African descent in these Americas prove insufficient, both for the brutality against them, and for their remarkable overcoming."¹

Historical Background and Context

SETTLEMENT AND LAND USE PRE-1700

Southeast Missouri

Ste. Genevieve is in the central or middle Mississippi Valley, a region that was first settled during the Paleo-Indian period and was continuously occupied through the Woodland Period and into the Mississippian Period.²

By the Woodland Period (1000 BCE – 1000 CE), ornately decorated pottery styles were found, and permanent village sites became more common. Tools and weapons were refined, and the bow-and-arrow was introduced, while agricultural practices and plant cultivation continued to grow.

During the Mississippian Period (800 – 1600 BCE), complex social, political, and economic structures were developed, and Cahokia on the east side of the Mississippi River near modern-day St. Louis became one

1 P. Gabrielle Foreman, et al. "Writing about Slavery/Teaching About Slavery: This Might Help" community sourced document, 26 July 2023, at <http://www.naacpculpeper.org/resources/writing-about-slavery-this-might-help>.

2 Paleo-Indian references the period associated with the oldest sites and artifacts. These sites and artifacts date between 11,000-8,000BCE and some Archaic period sites and artifacts dating between 8,000 and 1,000 BCE.



Figure 1. Illustration of the dress of a member of the Kaskaskia nation, from a 1796 map illustration by Georges Collot. (Source: Bibliothèque nationale de France, <https://gallica.bnf.fr/ark:/2148/btv1b55013299j#>)

of the greatest cultural centers in North America.³

The Mississippians are recognized for their earthwork structures where pottery, projectile points, and agricultural practices were evident. Existing mounds associated with this period are present near Ste. Genevieve. The Common Field Archeological Site (23SG100) is listed in the National Register of Historic Places and is located within the Common Field area south of town near where Cotton Woods Road intersects with U.S. Route 61.⁴

The largest Mississippian urban center was established at Cahokia, Illinois, near St. Louis, where people lived in large, planned, permanent towns with ceremonial centers. Cahokia is named after the Cahokia Nation, now recognized as part of the Peoria

Nation. At the height of its populace, the urban center grew to 20,000 people. They were part of an extensive cultural and religious tradition throughout most of the Midwest. Villages were located along both sides of the Mississippi River with features like farmsteads, sacred rock art, ceremonial centers, and transportation systems. Long distance trade and travel routes were established throughout the area and were influenced by natural features, adapting to changing terrain and following the waterways. The population at the Cahokia site declined significantly by the early 1400s. The descendants of the Mississippians are most likely the historically known Dhegian Sioux speaking tribes of the mid-continent area. When and how the Mississippians became the Osage, Omaha, Ponca, Quapaw, and Kaw nations is a topic of lively scholarly debate.⁵

With the decline of Cahokia, people moved away from the region. Some moved west and south while others stayed in the central Missouri area and used the elaborate trail network that connected the broader region. Tribes were established on both sides of the Mississippi River and included the Cahokia, Kaskaskia, Michigamea, Peoria, and Tamaroa, with other Algonquian speakers moving into the area from the east. These lands, rich in natural resources, also attracted Europeans expanding west in the seventeenth century. Tribes that interacted with these early Europeans included the Osage, Peoria, Illinois, Shawnee, and Delaware nations. European diseases, along with power struggles over rights to the land and enslavement, devastated the Native American people in this area and across the country.⁶

The historic period represented in Missouri's archeological sites, included river settlements, like those near Ste. Genevieve, St. Louis, and St. Charles. Tribes that lived in or passed through Missouri included the Osage, Otoe-Missouria, Iowa, Delaware, Shawnee, Kickapoo, Sac-Fox, Potawatomi, Peoria, and Cherokee nations.

3 "Archaeology in Missouri." *Missouri Archeological Society*. Accessed at <https://missouriarchaeologicalsociety.org/archaeology-in-missouri/>.

4 National Register of Historic Places, "Common Field Archeological Site," Ste. Genevieve, Ste. Genevieve County, MO, National Register #69000306.

5 "Before the French." Ste. Genevieve National Historical Park Foundation Document, 2023.

6 Ibid.

EARLY EUROPEAN EXPLORATION AND SETTLEMENT

American colonial history often emphasizes the colonies on the East Coast, but the first Europeans to colonize the Mississippi Valley were French fur-trappers and Catholic priests. This line of colonization ran from Canada to modern-day Louisiana, largely along the Mississippi River. Historian Robert Michael Morrissey noted that scholars of the Illinois Country have “revealed a history characterized by diversity and dynamism.” Morrissey creates a context around the main French-Native settlements of Cahokia and Kaskaskia, both communities with centuries of pre-contact history. This area, called *le pays des Illinois* or the Illinois Country, was remote from both Canada and New Orleans, with little governmental oversight. By necessity, the communities grew into a network of Native and French villages.⁷

Intermarriage, intercultural connections, and racial identity are part of the early history of Illinois Country. While there were frequent marriages and close ties between the French settlers and the local Indigenous tribes, this was not an area where diverse cultures and races interacted without bias or tension. Community, cultural, and racial identities were “drawn in complex and often idiosyncratic ways, often by local people themselves as much as by imperial authorities.”⁸

During this time, the population of the Illinois Country was diverse and multinational, with members of the 12 nations of the Illinewek (the Illinois Confederacy) in the area, as well as other nations including the Potawatomi, Sauk, Fox, Kickapoo, Osage, and others seeking asylum from warring factions in the East.⁹ In Missouri near the confluence of the Missouri and Grand Rivers about 250 miles north and west of Ste. Genevieve, the Indigenous groups that lived in the area also included the Otoe-Missouria and Ioway.

Earliest accounts of French Europeans in the Illinois



Figure 2. 1721 Map of French Louisiana, from Bibliothèque Nationale de France. (Source: Bibliothèque nationale de France, <https://gallica.bnf.fr/ark:/12148/btv1b530092504>)

Country are from the explorations of fur trader Louis Joliet and Jesuit missionary Father Jacques Marquette in 1673. Traversing the Mississippi River and utilizing trails established by Native Americans, they sought a route to connect the Great Lakes to the Gulf of Mexico, largely by water. Their expedition turned back near the mouth of the Arkansas River but traveled far enough south to confirm that the through water route they sought did exist.

European exploration, occupancy, and eventual colonization of the Illinois County had long-ranging impacts on both the ecology and people of the region, decimating fur-bearing animal populations, appropriating significant lands for agriculture, introducing new diseases, and enslaving and displacing Native American communities.¹⁰

La Louisiane

Equipped with Joliet and Marquette’s information, Robert Cavalier de La Salle, a seventeenth century French explorer, charted a route from Fort Frontenac in

7 Robert Michael Morrissey. “Le Pays des Illinois Finds its Context: The Early History of Illinois in a Continental Perspective.” *Journal of the Illinois State Historical Society* (1998-), Vol. 111, No. 1-2, *Illinois History-A Bicentennial Appraisal* (Spring/Summer 2017), pp 9-30. Accessed at <https://www.jstor.org/stable/10.5406/jillisthisthstoc.111.1-2.0009>

8 Ibid. 19.

9 “Before Euro-American Settlement.” United States Forest Service. Summary of excavations and research of Mark Schurr & Dr. Madeline McLeester at the Midewin National Tallgrass Prairie and article: Madelein McLeester & Mark R. Schurr. “Uncovering Huber Lifeways: An Overview of Findings from Four Years of Excavations at the Huber Phase Middle Grant Creek Site (11W12739) in Northern Illinois,” *Mid-continental Journal of Archaeology*, 45:2, 102-129. Accessed at <https://www.fs.usda.gov/detail/midewin/learning/history-culture/?cid=stel-prdb5155177>

10 Louise Phelps Kellogg, (ed.). *Early Narratives of the Northwest, 1634-1699*. (New York: Charles Scribner’s Sons, 1917). 223-230. From the journals of The Mississippi Voyage of Joliet and Marquette, 1673. Accessed at www.americanjourneys.org/aj-051/



Figure 3. The first map illustrating the village of Ste. Genevieve, 1755. (Source: *Partie occidentale de la Nouvelle France ou Canada*, Library of Congress, <https://www.loc.gov/re-source/g3400.ar077400/>)

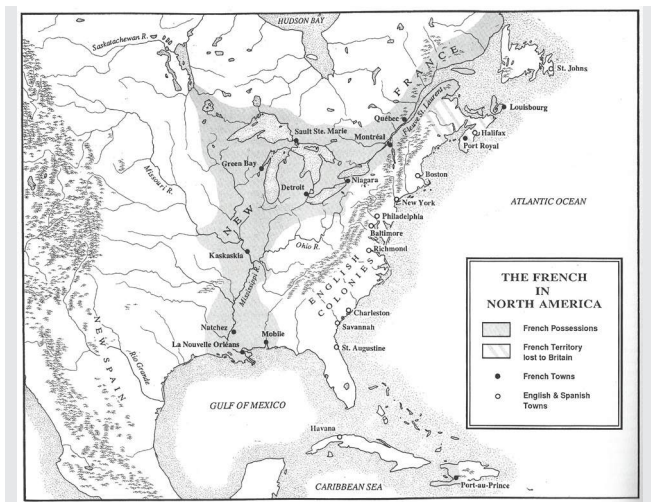


Figure 4. Map showing the location of French territory during the 18th century. (Source: Luer and Francis, *Vanishing French Heritage*, 12)

Ontario, Canada, across the Great Lakes to the Illinois River, then down the Mississippi River to the Gulf of Mexico during his 1682 expedition conducted on behalf of the French government.

La Salle named the lands *la Louisane* (Louisiana, after the French king Louis XIV) and claimed them “by virtue

of His Majesty’s commission” for France.¹¹ LaSalle established military forts along his route, including Fort St. Louis at Starved Rock, Illinois, and Fort Crevecoeur near Peoria, Illinois. Following LaSalle’s explorations, a European townsite and Catholic mission was established at Cahokia in 1699 and another at Kaskaskia in 1703 by French Canadians who sought to benefit from the fertile natural resources that had supported Native Americans for thousands of years before.¹²

The French occupancy of Upper Louisiana was part of broader pattern of European exploration and colonization worldwide. France, Spain, and Great Britain fought multiple wars in the 17th and 18th centuries over power and control of their colonial territories. The British victory in the Seven Years’ War (also called the French and Indian War) ultimately culminated in the total loss of French territory in continental North America to both Great Britain and Spain in 1763.

Shifting governance of the Illinois Country in the 1760s brought Ste. Genevieve under Spanish control and lead to an influx of settlers into the formerly French-controlled lands. Ste. Genevieve seems to have prospered during this time, with significant population growth to 691 residents, including enslaved persons, in 1772 Spanish census.¹³

EARLY EUROPEAN SETTLEMENT OF STE. GENEVIEVE

Antecedents of Ste. Genevieve began across the Mississippi River in the Illinois Country, where French and French-descended settlers migrated to a mission established at Cahokia on the east bank of the river as early as 1699. The mission at Kaskaskia was founded four years later in 1703, and following that, small-scale and subsistence economies such as mining lead and salt making began on the west side of the Mississippi River.

French land grants west of the Mississippi River occurred in the last half of the 1740s, spurring more permanent migration across the river. Settlers from Kaskaskia and Fort de Chartres established the first Ste. Genevieve townsite along the west bank of the Mississippi River,

11 "The Explorers: Rene-Robert Cavalier de La Salle 1670-1687." Virtual Museum of New France, Canadian Museum of History accessed at <https://www.historymuseum.ca/virtual-museum-of-new-france/the-explorers/rene-robert-cavalier-de-la-salle-1670-1687/>

12 "The Creation of Ste Genevieve and a Unique Culture," Ste. Genevieve National Historical Park Foundation Document, 2023.

13 Ekberg, *Colonial Ste. Genevieve*, 43; and *Padron y Lista de los Milicianos y Habitantes de... Santa Genoveva...* (Spanish Territorial Census), 1772. Accessed at <https://www.sos.mo.gov/default.aspx?PageID=9621>.

about three miles southeast of its present location.¹⁴

By about 1758, the region supported about 2,000 inhabitants associated with European settlements, as compared to the whole of the territory of Louisiana, whose population was estimated at 7,000. Most settlements were largely agrarian, in which small clusters of families, typically from French Canada, settled to take advantage of the rich and fertile soil of the Mississippi River Valley. Forts and outposts were populated with transient traders, soldiers, missionaries, and Native Americans.¹⁵

The earliest reference in the extant historic record to identify Ste. Genevieve is in a land survey conducted by notary and surveyor, Jean Baptiste Bertlot *dit* Barrois in 1751. Antoine Heneaux commissioned Barrois to survey his land on the west side of the Mississippi River, and Barrois's 1751 description documented his property and described Heneaux as residing in Ste Genevieve.¹⁶ In 1752, a census of the Illinois Country was completed, and Ste. Genevieve was listed as one of the communities with 23 residents.¹⁷ Finally in 1755, Jacques-Nicholas Bellin, a French hydrographer and member of the *Académie de Marine* and the Royal Society of London, published a map of la Louisiane that identified the town of Ste. Genevieve and other settlements along the Mississippi River.¹⁸

The town of Ste. Genevieve was named after one of the three patron saints of Paris, France. Born "Genovefa" (in the Frankish spelling) around 422 in Nanterre, France,

and officially canonized as a saint in the twelfth century, Saint Genevieve and was known for her generosity to the poor. Saint Genevieve's symbolic attributes include a lit candle, which she is often depicted as holding in church iconography.. She was a recognized leader among Parisian women during the tumultuous threat of invasion by Attila the Hun's armies in the mid-fourth century.¹⁹ Many of the earliest settlers of Ste. Genevieve were devout Catholics and looked to the church for naming the community.²⁰

The first townsite was in the lowlands and routinely suffered from flooding. Although an important waterway for trade and a major source of support for the community, the river had been a significant threat to the settlement for years.

A major river flood in 1785 caused serious damage to the original townsite. The year became known as "*l'année des grandes eaux* (the year of the big waters)," and contemporary reports document that:

*"the waters have risen so greatly from their source that they have entirely submerged the village of Santa Genoveva. All its inhabitants having been obliged to retire with great haste to the mountains...they abandoned their houses which were inundated and their furniture and other possessions which they had in them. Although the waters have now fallen, those inhabitants remain along the said coast without yet knowing the place where they can settle."*²¹

14 Robert Michael Morrissey. "Le Pays des Illinois Finds its Context: The Early History of Illinois in a Continental Perspective." *Journal of the Illinois State Historical Society* (1998-), Vol. 111, No. 1-2, Illinois History-A Bicentennial Appraisal (Spring/Summer 2017). The NPS Foundation Document for Ste. Genevieve National Historical Park identifies the term "Creole" as being of Spanish descent and referencing those individuals of French, Spanish, Black, or mixed-race that were born in North America.

15 National Park Service, "French Exploration and Settlement: The National Survey of Historic Sites and Buildings," revised 1960, 24.; Louis Houck. *A History of Missouri*. (Chicago, IL: R.R. Donnelley and Sons Company, 1908), 245-250.

16 Carl J. Ekberg. *Colonial Ste. Genevieve: An Adventure on the Mississippi Frontier*. (Carbondale, Illinois: Southern Illinois University Press, 1996) 22.

17 *Recensement General du pays de Illinois de 1752*, Huntington Museum, Loudon Section, Vaudreuil subsection, call No. L0426. Partial transcription available via the Missouri Secretary of State Archives website at <https://s1.sos.mo.gov/records/archives/census/pages/territorial>. Note that the online transcription contains an error compared to the original document, which also includes family names and other information not included in the transcription. For a full English transcription see Berardinis, Robert de. "The 1752 French Census of Illinois." *Illinois State Genealogical Society Quarterly* (Winter 2000).

18 Charles E. Peterson. "Early Ste. Genevieve and Its Architecture." (Columbia, MO: *The Missouri Historical Review*, volume XXXV, No. 2. January 1941) 208; Ekberg. *Colonial Ste. Genevieve*, xxi and 22; and Jacques Nicolas Bellin, *Carte de la Louisiane et des pays voisins...*, 1755, Library of Congress (G3300 1755 .B4), <http://hdl.loc.gov/loc/gmd/g3300.ar001800>.

19 McNamara, Jo Ann (ed.), et al. *Sainted Women of the Dark Ages*. (Gordon, England: Duke University Press, 1992). 17-37.

20 Houck, *History of Missouri*, 277.

21 Report of Governor Estevan Miro to Conde de Galvez. (Seville, AGI-papers from the island of Cuba, No.209) July 10, 1785. Ernst Connelly Collection, Mercantile Library, Box 2, History of Ste Genevieve File.

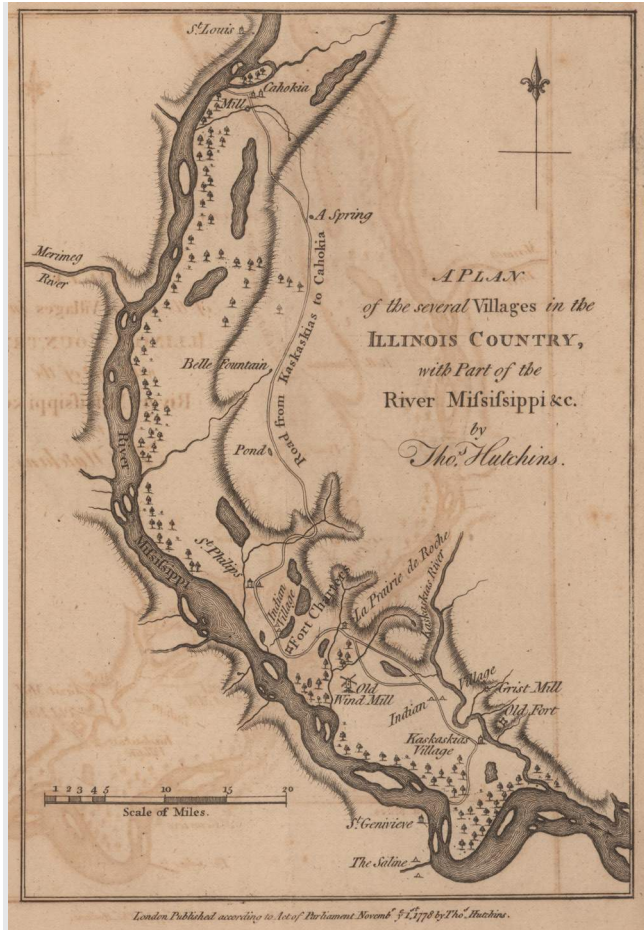


Figure 5. 1785 map of villages along the Mississippi River in Illinois Country, including Ste. Genevieve. (Source: JCB Library of Early American Images, jcb.lunaimaging.com)

A report by Zenon Trudeau, the lieutenant governor of Upper Louisiana from 1792 – 1799, stated that the residents were “warned by so many reiterated occasions, they determined at length to seek a position where they might place the houses under shelter.”

Consideration to remove Ste. Genevieve to higher and safer ground was underway, and eventually a new townsite evolved on higher ground to the north, near the North and South Gabouri Creeks. It is here at the new townsite, present-day downtown Ste. Genevieve, where several of the surviving vertical log structures were constructed by the prominent families that migrated across the river.²²

The new townsite was formed in a grid configuration,



Figure 6. Drawing of land ownership within Ste. Genevieve including the long narrow strips associated with the Big Field (Source: Luer and Francis, Vanishing French Heritage, 26, from Ste. Genevieve Museum)

similar to town planning for colonial-era St. Louis, Prairie du Rocher, and many other Illinois Country settlements. Some structures may have been disassembled and transported, moved whole, or salvaged for construction materials for the new townsite as residents slowly migrated to the new location, a process that took a number of years.

By 1787, residents in the new town petitioned to have their lots in the Common Field subdivided. Eleven residents were included on the petition, indicating New Town had at least this many residents in 1787; conflicting figures are provided in other contemporary sources that may shift the number of early residents to 13 or more, but historians are not in general agreement

²² Bonnie Stepenoff. *From French Community to Missouri Town: Ste. Genevieve in the Nineteenth Century* (Columbia, Missouri: University of Missouri Press, 2006) 16-18.; Peterson. *Early Ste. Genevieve*, 212.; Rozier, *History of the Early settlement of the Mississippi Valley*, 16.; Ernst Connelly Papers, Copy of a Report of Zenon Trudeau, January 15, 1798, concerning settlements of the Spanish Illinois Country, Mercantile Library, Box 2 Folder History of Ste. Genevieve.”

with the actual number of new town inhabitants at that time.²³

The Church did not relocate to the new townsite until 1794, when it was physically moved from the old townsite.

France lost all its North American territory after the Seven Years' War/French and Indian War in 1763, and Spain took control of the land west of the Mississippi River and the port of New Orleans on the east side of the river, with England dominating control of lands east of the river. People continued to move from Kaskaskia and Cahokia to Spanish-controlled Ste. Genevieve, and in 1766, a Spanish census was conducted. It recorded a population that included 319 free people and 228 enslaved people, with Native Americans accounting for 29 of the enslaved individuals. Between 1766 and 1800, the combined population of people of African descent, mixed-race, enslaved, and free people of African descent was recorded as 35 to 44% to the number of whites of European descent. Enslavement heavily influenced the demographics of Ste. Genevieve; the combined population of Black, mixed-race, enslaved, and free people of African descent was often near 40% of the total population on average.

Many of the agricultural pursuits in the Illinois Country required large tracts of land for their crops and were profitable because of the labor of enslaved individuals. Enslavement of Africans and African-descended people was more prominent in the Louisiana Territory, but the French also enslaved Native Americans. After coming under Spanish control in 1763, Native American enslavement in the territory was ostensibly prohibited. The Indigenous peoples of the Americas were recognized by Spanish law as "free vassals of the crown," and as such, Alejandro O'Reilly, the second governor of Louisiana, issued a degree 1769 outlawing their enslavement. However, this generally went unenforced in the formerly French territories, and Native American enslavement continued.²⁴ On the other



Figure 7. 1796 drawing of French residence on a map illustration by Georges Collot. (Source: Bibliothèque nationale de France, <https://gallica.bnf.fr/ark:/12148/btv1b55013299j#>)

side of the Mississippi River, the Northwest Ordinance was adopted by the United States in 1787, prohibiting slavery in territories located north of the Ohio River. As a result, some French moved west of the Mississippi River into Spanish territory to avoid loss of enslaved labor.

In Ste. Genevieve, the settlers mostly worked their own land in assigned long lots located in the Common Field. Wealthier families cultivated several lots and relied on enslaved labor to work these larger parcels. Census data taken at various times during the colonial period portray that a majority of households did not contain enslaved persons. In most of these years, several of the wealthier households held the majority of the enslaved persons in Ste. Genevieve, while other Ste. Genevieve families enslaved one to three African or Native American persons.²⁵ Trade also continued with the Native Americans in and near the community and included the Osage, Illinois, Peoria, and Shawnee nations who largely lived in villages on the banks of the Apple Creek

23 Ste. Genevieve Archives, Petitions, #22, December 21, 1787.

24 Gwendolyn Midlo Hall. *Africans in Colonial Louisiana: the Development of Afro-Creole Culture in the Eighteenth Century*. (Baton Rouge, LA: Louisiana State University Press, 1992) 336-337; Stephen Webre, "The Problem of Indian Slavery in Spanish Louisiana, 1769-1803." *Louisiana History: The Journal of the Louisiana Historical Association*, Vol. 25, No. 2 (Spring 1984), 117-135; and Leila K. Blackbird, "'It Has Always Been Customary to Make Slaves of Savages': The Problem of Indian Slavery in Spanish Louisiana Revisited, 1769-1803." *The William and Mary Quarterly*, Vol. 80, No. 3 (July 2023), 525-558.

25 Henry Marie Brackenridge. *Views of Louisiana Together with a Journal of a Voyage Up the Missouri River in 1811*. (Chicago, IL: Americana Classics, Quadrangle Books, Inc., 1962 from first edition published in 1814) 127; Statistics from territorial census records from 1752, 1766, 1787, 1791, and 1787, as summarized by Robert Mueller.

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and Shawnee Creek.²⁶

The early settlers of Ste. Genevieve built a typical dwelling that was unlike the log cabins seen in most of American westward expansion. Their built environment was populated largely with one story timber buildings, often of vertical logs either directly in the earth (*poteaux-en-terre*) or resting on a stone foundation or sill (*poteaux-sur-sole*). Homes typically had galleries or porches (*galeries*) that either wrapped the structure or were located on one or two sides, which sheltered exterior living and working space. Steeply pitched upper hipped roofs had a lower pitch that extended over the porch, creating the broken-pitch roof shape so characteristic to many Illinois Country homes.²⁷

*Scattered around the country however are several French villages as they are called. The inhabitants of these are all French and the French language is the only one spoke. They who are industrious cultivate a little land in small vegetables. The others live miserably by hunting and fishing, their houses are generally one story high and have curiously peaked roofs, with perhaps a little piazza in front overrun with evergreens, under that are congregated parrots, canary birds, cats, and lapdogs in the great harmony the greatest simplicity of manners prevails among them.*²⁸

The farmers cultivated plots within Common Field, where long lots that extended from the river were divided among the residents. The larger Common Field was fenced to protect crops from wandering livestock. In his recollections, Henry Marie Brackenridge described the setting of Ste. Genevieve as follows:

One fence encloses the whole village field, and this is kept up at the common expense. The river side is left open, the steepness of the bank rendering any enclosure unnecessary. The field is divided into a number of small lots, of an equal size; a certain number of arpents in front, and a certain number in depth. The more wealthy possess and cultivate several of these

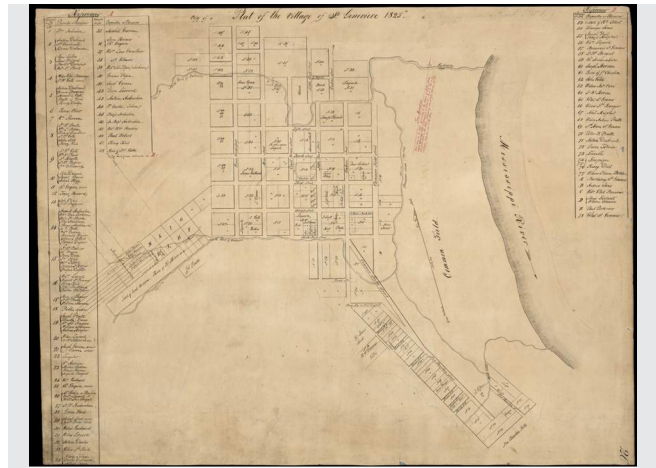


Figure 8. 1825 Map of Ste. Genevieve, showing the grid plat configuration and New Bourbon Road running southeast. (Source: State Historical Society of Missouri)

*lots, while some of the poorer class do not own one entire... Their agricultural labors commence in the month of April when the inhabitants with their slaves are seen going and returning each morning and evening, for eight or ten days with their ploughs, carts, horses., etc.*²⁹

The new townsite was laid out roughly in a grid with blocks of approximately 350 by 400 feet. Blocks were sometimes divided into two or more parts. Several residents owned an entire block. Each building site was termed an emplacement, and most were surrounded by wood fences, sometimes of palisaded logs.

By the time the William Clark of the Lewis and Clark Expedition reached the area across the Mississippi River near Ste. Genevieve in November 1803, the population was around 1,000 people, comprised of primarily French Creole families. Although this was a French community, France ceded lands west of the Mississippi River to Spain who controlled the area from late 1762-1800.³⁰

Historical events including the American Revolution (1775-1783), the Louisiana Purchase (1803), and Missouri statehood (1821) shifted Ste. Genevieve from a French village to an American town, and the population grew to include English and German residents. During this period, Native American tribes including the Osage,

26 Stepenoff, *French Community to Missouri Town*, 14.

27 National Park Service. "French Exploration and Settlement." 26.

28 "St. Louis & French Villages in 1836" Extract from the *Journal of George A. Bicknell* prepared by Esther U. McNitt, Indiana State Library, Indianapolis for Charles E. Peterson, May 12, 1939. Ernst Connelly Collection. Box 2, Folder Ste Genevieve History.

29 Brackenridge. *Views of Louisiana*, 127.

30 Stepenoff. *From French Community to Missouri Town*. 11, 28.

Illini, Peoria, Shawnee, and Delaware nations had villages in the region with established trade networks between other tribes and European settlements. Villages between Ste. Genevieve and Cape Girardeau were in place until their forced removal in the 1820s.³¹

An event of historical note took place in 1811, when a significant earthquake struck along the New Madrid Faultline in Missouri in 1811 and 1812. Though it caused severe damage in other communities, Ste. Genevieve survived with little damage.

THE DELASSUS-KERN HOUSE

The Delassus-Kern House stands within the Ste. Genevieve NHP, although its location was historically in the townsite of New Bourbon, approximately three miles south of Ste. Genevieve on U.S. Highway 61. It sits on land once owned by Pierre-Charles de Hault de Lassus de St. Vrain de Luzières, *Chevalier Grand Crois de l'Ordre Royal de St. Michel*, (1738-1806) and his wife Dame Domitille Josèphe du Mont de Beaufort (1744 - 1806). Pierre-Charles was a French aristocrat who named the small developing community of New Bourbon after the French royal family. De Lassus was born as Pierre-Charles de Hault de Lassus. De Luzières was added after he acquired an estate with the same name.³² The family name has many variations in historic documents, but Pierre-Charles, hereafter referred to as de Lassus, and his descendants, consistently used de Lassus or Delassus. His New Bourbon district consisted of New Bourbon, Bois Brulé, and the Saline.

Although a direct connection between the house in its existing form and de Lassus is currently conjectural and has not been definitively established through documentary or archeological evidence, the siting of the house on de Lassus's land grant and the proximity of the house to New Bourbon create a historical link between the house and de Lassus that should be considered as part of its significance.

PIERRE-CHARLES DE LASSUS

De Lassus was born in Bouchain, France, in 1738, son of Charles-Philippe de Hault and Anne-Marguerite-Josèphe Darlot, a family with deep heritage in the area. His grandfather, Guillaume de Hault de Lassus was mayor of Bouchain, a small city in northeastern France near the current border with Belgium. This office was later inherited by de Lassus's father and then himself, both becoming *maires héréditaires* (hereditary mayor) of the community. The de Lassus patriarchs actively promoted the economic development of the area through agriculture, commerce, mining, and river navigation - experience that would contribute to the knowledge and vision de Lassus would bring with him to the New World. He and his wife Domitille Josèphe married in 1765 and together had four sons and one daughter: Pierre-Joseph (b. 1766), Charles August (b. 1767), Jacques Marcelin Ceran (b. 1770), Jeanne Felicité Odille (b. 1773), and Philippe François Camille (b. 1778).³³ It is likely that de Lassus and his family spent much of their time in nearby Valenciennes, attending to his numerous other roles and responsibilities.

De Lassus was a staunch monarchist and dedicated to the Bourbon family and King Louis XVI. He was a knight in the royal order of St. Michel and was inducted by King Louis XVI himself at Versailles in 1786. His dedication to the monarchy, France's royalist system of government, and the Bourbon family would later wield significant influence on his position in the fledgling American republic.³⁴

De Lassus loathed the revolutionary movement in France and the violence against the monarchy. Following a period of tumultuous politics and a year of violent uprisings, including the storming of the Bastille on July 14, 1789, and the capture and forced relocation of Louis XVI and the royal family in October 1789, de Lassus recognized the downfall of the French political system and likely the inherent danger to himself and his family and began to make plans to depart France.

31 Stepenoff. *From French Community to Missouri Town*. 11, 28.

32 Carl J. Ekberg. *A French Aristocrat in the American West: The Shattered Dreams of De Lassus de Luzières*. (University of Missouri Press, Columbia, 2010), 9. De Lassus' long string of names was a *nom de terre* or a name attached to a piece of property that qualified him and his family as aristocratic. De Lassus is used as his name throughout this document. He routinely signed his name as de Lassus in official signatures, and often, but not consistently, he additionally used de Luzières. His family and descendants did not use de Luzières, and they are known today as Delassus.

33 John Francis McDermott, ed. "Diary of Charles Dehault Delassus from New Orleans to St. Louis, 1836." *Louisiana Historical Quarterly*, vol. 30, No. 2, April 1947, 2-4.

34 Ekberg, *A French Aristocrat*, 7-10.

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In June 1790, he purchased 2000 acres of land on the bank of the Ohio River from the Scioto Company. This began a long and difficult journey for de Lassus and his family, as the Scioto Company was selling rites to land they did not truly have legal standing to sell. Companies like the Scioto Company presented an overly romanticized vision of America and extolled the virtues of the western wilderness, spinning tales of an ideal “agricultural, patriarchal, benevolent, and Roman Catholic community in the Ohio wilderness.”³⁵

These plans proved to be well timed. In July 1790, the French government, now run by the National Assembly as a constitutional monarchy, officially abolished the aristocracy. Moving quickly to apply for safe passage out of France, de Lassus, his wife, two of his sons, one daughter, and a number of domestic servants received a passport to North America to accept the lands he believed he purchased from the Scioto Company. He brought an extensive collection of belongings with him including books, silverware, a harp for his daughter, and two French millstones, considered to be among the highest quality in the world, for his plans to exploit commercial agriculture and wheat production.³⁶

The family arrived in Philadelphia on October 15, 1790, and thus began the financial challenges that plagued de Lassus for the remainder of his years. He was unable to disembark from the boat until he paid an extra sum of money, likely due to the increased number of people in his entourage and the excessive possessions he carried with him. He immediately left Philadelphia for Pittsburgh to claim the 2,000 acres he believed he owned, even though Philadelphia was at the time the American capital and had a high concentration of French residents. Winter thwarted their travel efforts, and the family spent two costly months at Campus Martius, Ohio, where de Lassus suffered other setbacks, including the desertion of several of his hired laborers. They returned to

Pittsburgh in February 1791 to regroup; there de Lassus met or reconnected with Pierre Audrain, a French trader, and the Marquis de Lezay-Marnesia, who became his lifelong friends.³⁷

De Lassus purchased land in Pittsburgh with the assistance of Audrain in April 1791. He purchased two lots encompassing more than 3,000 acres on the bank of the Monongahela River north of the town. Witnessing the sale were Audrain and Henry Brackenridge.³⁸ De Lassus built a house, “at great expense using funds acquired by selling part of our silverware.” Having silverware to sell also contributes to an understanding of the amount of personal property the family brought with them on their journey from France. His friend, de Lezay-Marnesia described the house as:

A large and rich plantation, with his wife, his sons, and his daughter; charming and talented, who is married to an educated, honest, and likeable young man...He has had a house built there-not magnificent, but pleasant and agreeable, which serves the needs of a man who is wealthy but not too particular.

De Lassus’s daughter Jeane Felicité Odile married Pierre-Charles Bourguignon Derbigny in Pittsburgh in 1790. Their first child was born in Pittsburgh and baptized by de Lassus because no priest was available. The child was formerly baptized in Ste. Genevieve five years later.³⁹

During his residency in Pittsburgh, de Lassus also met Bartholémé Tardiveau, a Frenchman born in Nantes who would become another influential and lifelong companion to de Lassus, as well as a business partner associated with his ventures in New Bourbon. Tardiveau encouraged the settlement of French families living in the Ohio community of Gallipolis into Spanish controlled lands west of the Mississippi River. Baron Francisco Luis Hector de Carondelet, the Spanish governor of Louisiana in 1792, was permitting French, Germans,

35 Ekberg, *A French Aristocrat*, 15.

36 Ekberg, *A French Aristocrat*, 19. Ekberg documents that the family passport in the collections of the Missouri Historical Society notes that he was accompanied by three servants, but when they arrived to the port for departure he was accompanied by eight servants. He was able to secure passage for his entire traveling party.

37 Ekberg, *A French Aristocrat*, 20-27.

38 Brackenridge is of note because he would soon send his son Henry, Jr. to Ste. Genevieve to learn the French language and culture. Brackenridge, Jr. then wrote about his experiences in Ste. Genevieve in a resource that provides firsthand encounters with many Ste. Genevieve founders.

39 Ste Genevieve Parish Records, Baptisms 1786-1820 p. 59. Derbigny would have an illustrious career on his own, eventually becoming the sixth governor of Louisiana in 1828. He died in office having served less than one year

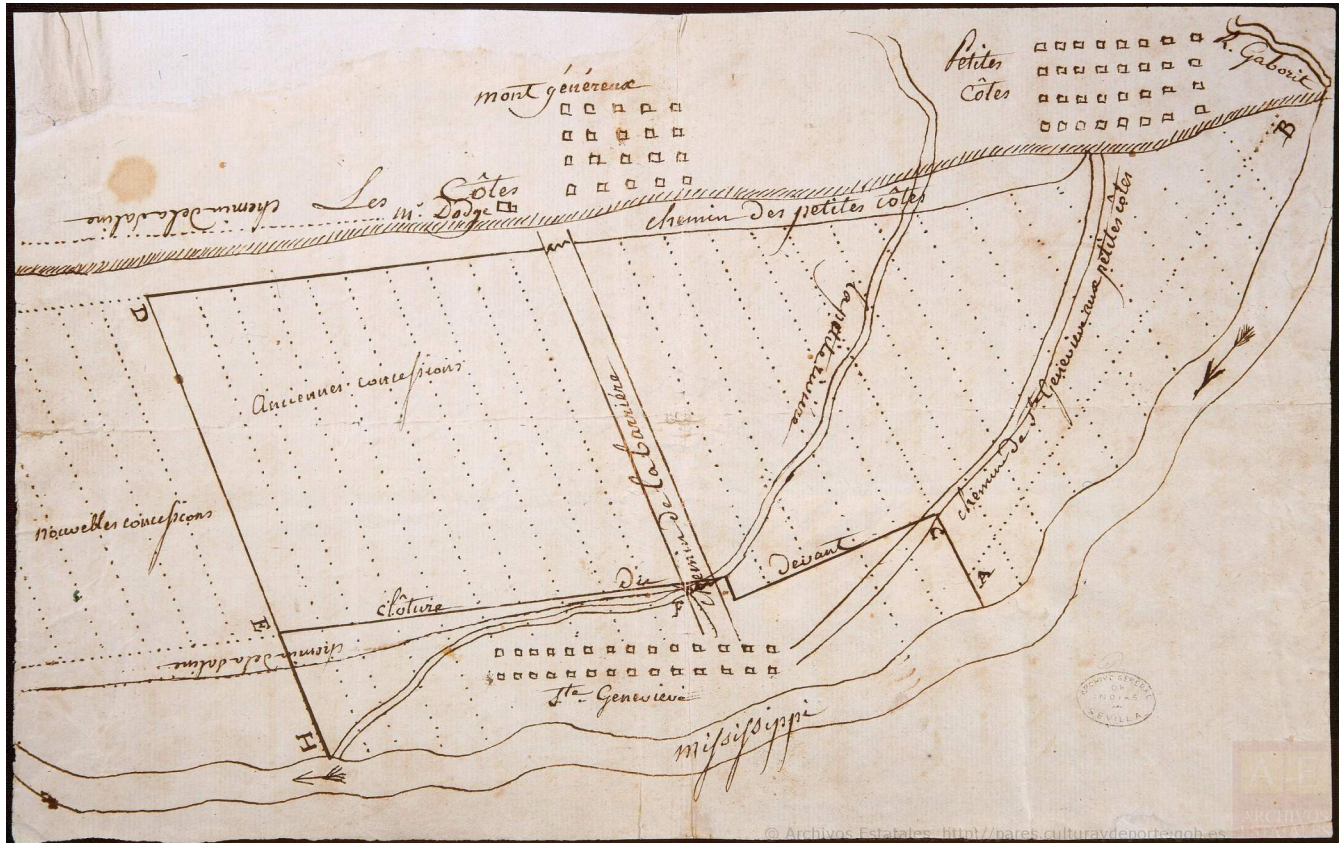


Figure 9. Excerpt from a c. 1793 map, showing old town Ste. Genevieve in the lower center and New Bourbon above labeled as "Mont Gèneveux." Curiously, the de Lassus property is not marked on this map; however, the property marked "M. Dodge" is located approximately where "Luzières" is indicated on other maps. "M. Dodge" refers to Israel Dodge, an American settler who moved to New Bourbon in the early 1790s and was granted 1,000 acres of land by de Lassus in 1799.

Dutch, and Flemings into the area in an effort to protect Spanish lands against American settlement.

With Carondelet's French homeland in turmoil because of the revolution, he had no desire to see Americans influencing politics in his territory as the American Revolution had influenced the people of France. Carondelet and de Lassus were from the same area in France, with Carondelet having been born and raised in Noyelle, which is approximately ten miles from de Lassus's hometown of Bouchain.

The connections between Carondelet, Tardiveau, and Audrain and the vision of a grand plan for Spanish lands west of the Mississippi River, lead to de Lassus leaving his residence near Pittsburgh with Audrain in 1792. They meet with Tardiveau who was living in Kaskaskia, and the three strategized for several months prior to meeting Carondelet in New Orleans.

While exploring both east and west of the Mississippi River, de Lassus decided he would relocate his family again and establish a new colony on the bluffs south of Ste. Genevieve, which he would eventually name New Bourbon to honor his undying loyalty to the French monarchy.⁴⁰ The three men spent several weeks in New Orleans with Carondelet selling their plans for developing the area. They foresaw state of the art industrial milling complexes to provide finely ground wheat flour up and down the Mississippi River corridor.⁴¹ They planned to mine local lead and salt, establish distilling facilities, and capitalize on agricultural production. To do this they needed money, land, and a willing and hardworking population of new residents.

De Lassus's optimism for New Bourbon reached its peak during the month he spent in New Orleans in the spring of 1793. De Lassus crafted a written plan laying-out all the needs, visions, and wants to make the permanent

40 Ekberg, *A French Aristocrat*, 41.

41 Ekberg, *A French Aristocrat*, 32-36.

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settlement a success, and Carondelet pledged 11,500 piastres (dollars) in financial support, believing it was an epic undertaking that would settle many of the French's concerns in the territory.⁴² However, the success of the settlement would rest on its residents, and they needed a surgeon and a midwife. De Lassus also wanted a chapel for New Bourbon, as residents of New Bourbon would have to travel about three miles to celebrate mass in Ste. Genevieve.⁴³

He and his companions left New Orleans and traveled back up the river to New Madrid to scout locations for one of the planned flour mills. However, he was plagued with poor health and spent several months recovering at New Madrid before being able to continue on. Tardiveau, who had returned to Kaskaskia for a time, wrote to Audrain that de Lassus struggled with his health and was living with François Vallé in Ste. Genevieve while suffering from malaria.⁴⁴

De Lassus began his permanent residency at New Bourbon in the summer of 1793. Tardiveau had returned to New Madrid to begin work on his state-of-the-art flour mill; however, the plan for the mill did not materialize due to de Lassus's continued health issues. He complained of malarial fevers and stated that, "my sad and dark ruminations are not conducive to getting better."⁴⁵ De Lassus's mood darkened further upon learning of King Louis XVI's execution - news that impacted many of the French royalists in the area.

The matter of his residence was a constant concern, and work on his vertical log home on the bluffs near New Bourbon progressed slowly. In private letters to

Tardiveau, de Lassus complained that his new residence was behind schedule and would not be completed before his family arrived from Pittsburgh. He continued to stay at length with his friend François Vallé.⁴⁶ Construction delays were experienced by many as Ste. Genevieve was in the process of moving the townsite to higher ground to avoid the regular and devastating flooding from the Mississippi River, and skilled labor was in high demand. Individuals enslaved by François Vallé and Jean Baptiste Pratte were conscripted to complete the de Lassus residence.⁴⁷

While de Lassus settled in the Illinois Country, his family remained behind in their residence near Pittsburgh. He sent for them to join him in 1793 but feared for their safety during their travels after witnessing violence among the Shawnee and Osage tribes. De Lassus was likely starkly aware of the drastic lifestyle shift his family would experience, from their aristocratic privilege in France, to a less grand but comfortable home in Pittsburgh, to a room at a borrowed residence on the frontier, without family or the wide social network they previously enjoyed. Madame de Lassus sold their belongings and the Pittsburgh residence for the funds to move the family to New Bourbon. The travel party set out in December 1793 and consisted of de Lassus's wife Domitille Josèphe, two sons Jacques-Marcellin-Léon and Philippe-François-Camille, their daughter Jeanne-Félicité-Odile who was pregnant at the time, her husband Pierre Derbigny, their small child Charles-Zenon, and Antoine Soulard, a family friend who would become known as a surveyor in St. Louis.⁴⁸ De Lassus met his family in Cape Girardeau, Missouri, in February 1794, after their three month journey.

42 De Lassus de Luzières to Carondelet. Correspondence dated April 30, 1793. Transcribed by Carl Ekberg. Letter No. 1, Section II, 116. This letter, along with many other important de Lassus documents was translated by Carl Ekberg and transcriptions of many of these documents printed in *A French Aristocrat in the American West*. Several letters that describe these milestone events are housed in archives in Cuba, Spain, and France. The transcriptions in Ekberg's book make those documents available outside of those distant archives. Transcription of letter No. 1 in Section II, No. I page 116.

43 Ekberg, *A French Aristocrat*, 45 and 119.

44 Ekberg, *A French Aristocrat*, 48-50.

45 Ekberg, *A French Aristocrat*, 50. From a letter from de Lassus to Tardiveau written September 30, 1793.

46 Ekberg, *A French Aristocrat*, 51.; François Vallé, was the son of François Vallé père who died in 1782 in Ste. Genevieve as likely the wealthiest man in Upper Louisiana. His son François, among several of his other children, remained in Ste. Genevieve. Per his estate papers, Vallé père enslaved more people than any other in Ste. Genevieve. His son François also employed the forced labor of enslaved individuals, among whom were those identified as laborers on the residence for de Lassus.

47 Ekberg, *A French Aristocrat*, 51. In this section of his book, Ekberg suggests that many of the vertical log residences built in Ste. Genevieve in the early 1790s could have been built by enslaved individuals who had been trained in the preferred French style of vertical-log construction, which is supported by the few surviving contemporary building contracts. The information regarding the enslaved people completing de Lassus's house is from correspondence with Tardiveau in his collection of papers at the Illinois State Historical Library.

48 Ekberg, *A French Aristocrat*, 54. This journey was largely lead by son-in-law Derbigny who spoke some English and had some experience traveling. Derbigny eventually became the sixth governor of the state of Louisiana. He served for less than a year and died in office in 1829 after being thrown from a horse and carriage.

Three weeks later, de Lassus was confined to his room, having fallen again into poor health, while the family was hosted by Francois Vallé at his residence and perhaps also by his brother Jean Baptiste whose vertical-log home would have been recently completed. The enslaved individuals of François Vallé and Jean Baptiste Pratte continued work on the residence, and in March, de Lassus wrote that “we’re still camped out, and God only knows when our thatched cottage will be liveable.”⁴⁹

De Lassus, along with Audrain and Tardiveau, would continue work on their grand plans to bring the French who were settled at Gallipolis in Ohio over to Spanish Illinois, to construct flour and lumber mills for New Madrid and Ste. Genevieve, and to gain control of the flour market in the Ohio and Mississippi River valleys. They believed increasing the number of French settlers would contribute to a secure Spanish territory and, hopefully, prevent Americans, who favored a representative republic, from entering and settling in the territory. These plans would secure New Bourbon as de Lassus’s base of operations and administrative center.

The ailing health of the de Lassus family emphasized the desperate need for skilled medical care in the area. Throughout 1794, de Lassus and his family suffered with malarial fevers, upper respiratory infections, and digestive problems. The entire family was at times stricken and cared for by an enslaved woman who remained healthy, possibly due to previous exposure and immunity to the many illnesses in the area.⁵⁰ Illness among the family continued for months, and any plans to build or expand commercial enterprises were again delayed with the hopes that Tardiveau’s efforts in New Madrid would bolster efforts in New Bourbon.

However, those who were working in New Madrid with Tardiveau were requisitioned and reassigned to assist with military defenses for an anticipated assault on the territory by George Rogers Clark. Clark was formerly

a brigadier general in the United States Army but was then working with an American mercenary group allied with the French revolutionary government, the French Revolutionary Legion, who sought to seize the Spanish-controlled settlements along the Mississippi River to open the river to free navigation by the United States.⁵¹

Though Clark’s assault never came to fruition, it put construction of the mill at New Madrid further behind schedule. Additionally, materials needed for mill construction were not available. Although de Lassus brought with him millstones from France, the gudgeons required for the millstones to operate were not available because the technology to forge the components was not available in the Illinois Country.⁵² De Lassus’s goals were facing mounting obstacles.

Though noteworthy and not entirely unrealistic, the vision for New Bourbon never laid the roots necessary for success. The French population whom de Lassus hoped would relocate from Gallipolis never materialized. Recruitment was initially led by Audrain, but as financial motivation dwindled, so did his commitment to the cause. He would eventually end up as a federal clerk in Detroit, Michigan in 1796, never returning to Spanish Illinois or the Louisiana Territory.⁵³ Tardiveau left the area for New Orleans to work as a provisioner for the Spanish government. Tardiveau never returned to New Bourbon and died of syphilis or the toxic mercury-based treatments for the disease in New Orleans in 1801.

De Lassus struggled financially with the failing business side of his grand plan. Instead, he shifted his priorities to focus on increasing the population in New Bourbon. Although his efforts to date had been to attract a specific, desired demographic, namely French aristocrats who fled the Revolution, he would need to welcome others to the territory, including those of differing religious and political points of view. This meant that select Americans and Protestants could be allowed, though they were still prohibited from practicing a religion other than Roman

49 Ekberg, *A French Aristocrat*, 60. In his translation of de Lassus’s use of the term *chaumière* (thatched cottage), he suggests that the house was still incomplete when they initially took up residence in March 1794, and that the living conditions were quite crude or equal to camping out. Ekberg also states that it is unlikely, though possible, that the house was actually thatched or that *chaumière* was used to liken the residence as “rude and rural.”

50 Ekberg, *A French Aristocrat*, 67.

51 Ekberg, *A French Aristocrat*, 57, 62-63.

52 Ekberg, *A French Aristocrat*, 68. A gudgeon was a key component of the mill. It was a cross shaped feature that carried power through the vertical shaft to the mill head and was made of cast iron. Problematically, the technology to forge this item did not exist in the region, and the components had to be imported from Pennsylvania.

53 Ekberg, *A French Aristocrat*, 66.

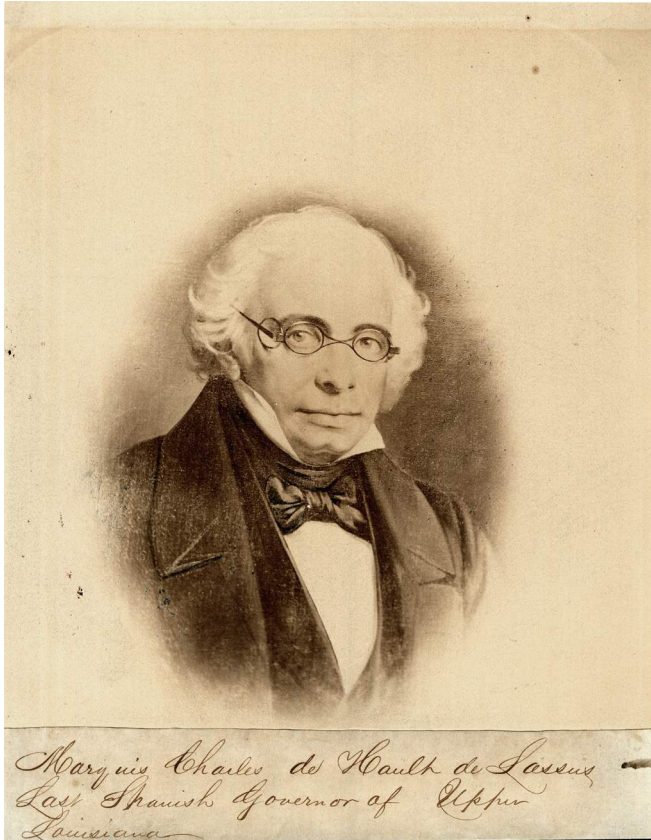


Figure 10. Charles (Carlos) de Hault de Lassus, third son of Pierre-Charles de Lassus, commandant of New Madrid, and later lieutenant governor of Upper Louisiana until 1804. (Source: Missouri Historical Society, <https://mohistory.org/collections/item/N36696>)

Catholicism. De Lassus's concerns were representative of the greater pressures felt by the Spanish leadership to bolster the territory's population. Diversifying immigration to Upper Louisiana was required to prevent atrophy from a dwindling population and lack of skilled laborers. Carondelet also had to make concessions to enhance the population numbers and professions but opposed welcoming Americans, writing in 1794 that Americans were, "a new and vigorous people, hostile to all subjection, advancing and multiplying...with prodigious rapidity." He was open to bringing in other Europeans, including Protestant Europeans, believing that the predominantly Protestant Americans posed the greatest threat to a shifting political tide and to the supremacy of the Catholic Church.⁵⁴

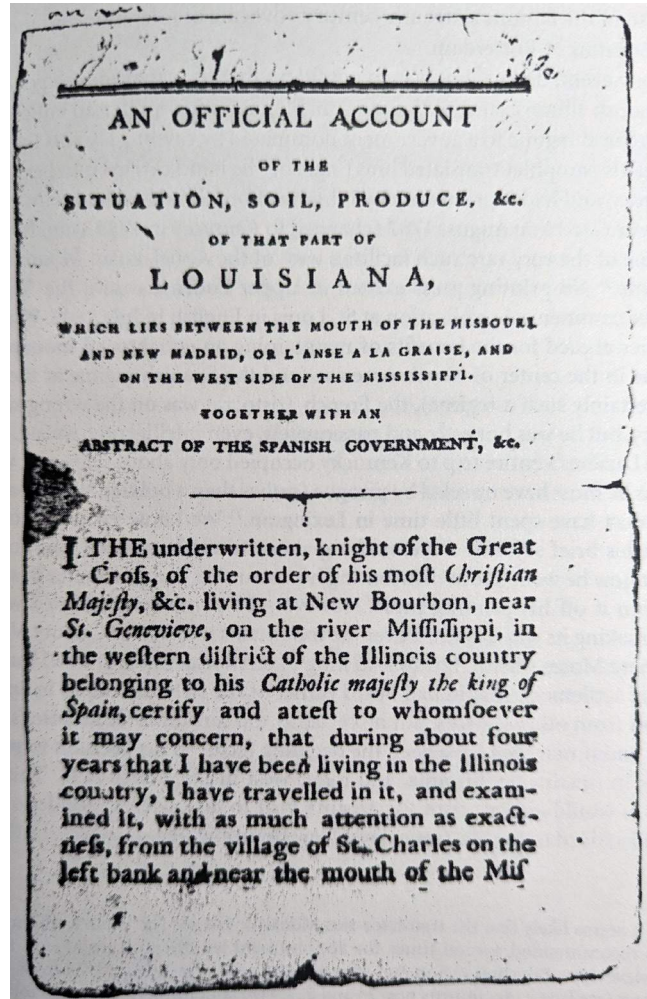


Figure 11. The 1796 recruitment pamphlet prepared by de Lassus to encourage Americans to settle in Upper Louisiana. (Source: Library of Congress, reproduced in Ekberg, *A French Aristocrat*, 79).

In short order, de Lassus's debt was so overwhelming that he deeded his land and possessions to his youngest son, Camille, in 1794, with the caveat that he and his wife could live there for the remainder of their days.⁵⁵ Their third son, Charles Auguste De Hault de Lassus (hereafter referred to as Carlos) had not relocated with the family to the New World in 1791; at the age of 15, he had joined the Spanish army and remained in Spain, serving in the Spanish Royal Guard. Upon hearing of his parents' dire financial situation and his father requesting his presence in Upper Louisiana, Carlos applied for a transfer to the territory to be closer to his family. He

⁵⁴ Ekberg, *A French Aristocrat*, 72-76.

⁵⁵ Bonnie Stepenoff and Debbie Bibb. "Ste. Genevieve Historic Preservation Field School 2000 and 2001: The Delassus-Kern House." 27; Deed 399: Mr. and Mrs. De Luzières to Their son Camille De Lassus, 1794, Ste. Genevieve Archives, Collection 3636, folder 43

was appointed civil and military Commandant of New Madrid in 1796. His influential role in the region helped arrange and connect business opportunities for his father. Carlos went on to become Lieutenant Governor of Upper Louisiana in 1799 and served until 1804 when the area became part of the United States.⁵⁶

The effort to limit Americans was not sustainable and between 1795 and 1797, the Spanish government finally allowed Americans free access to the Mississippi River. They also offered large tracts of lands to Americans willing to relocate to Upper Louisiana, in hopes of shifting American loyalties to Spain. De Lassus witnessed this population change and strove to recruit those Americans that would be loyal to the Spanish as well as the monarchy he so loved.

Carondelet appointed de Lassus as Commandant of New Bourbon on June 1, 1797, at a salary of 100 pesos per year. Though de Lassus was authorized via his position to establish laws, litigate complaints, and build public amenities, like the desired chapel, his authority within the region was somewhat limited. Other powerful and more well-established leaders such as Pierre-Louis de Lorimier⁵⁷ in Cape Girardeau and the Vallé family in Ste. Genevieve maintained the base of power in the region.⁵⁸

Though de Lassus was never a commissioned officer in the regular army, his son Carlos was commissioned in the Spanish army, and the two had politically and militarily influential friends in Upper Louisiana. De Lassus assembled a militia in New Bourbon, and one of their significant military actions was to travel to New Madrid to witness the execution of a man named Tewanayé, a member of the Mascouten Tribe. Tewanayé, along with four others, was tried for the death of David Trotter. Tewanayé was sentenced to death and executed in the presence of the militias from Ste. Genevieve, New Bourbon, New Madrid, and Cape Girardeau as a show of strength to Native American tribes.⁵⁹ He also managed land grants and ruled on financial and other legal disputes as lawyers were illegal in Upper Louisiana. This included criminal

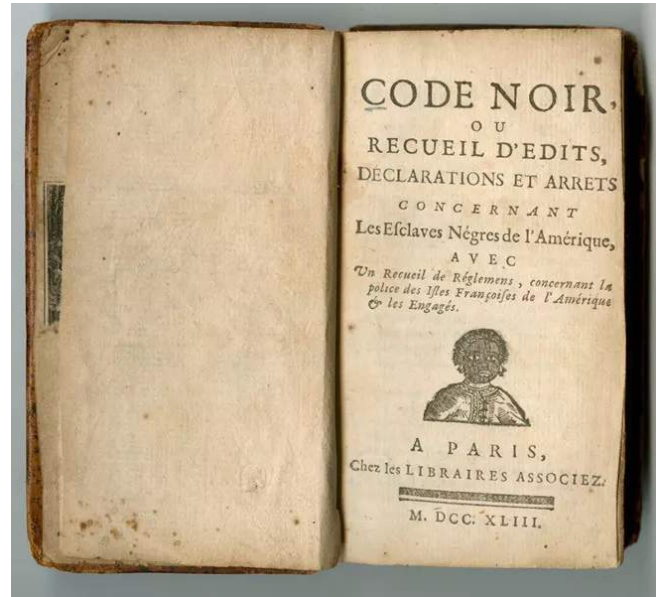


Figure 12. The cover page of a 1743 book entitled "Black Code or Collection of Edicts, Declarations, and Decrees Concerning the Negro Slaves of America." (Source: NPS, The Historic New Orleans Collection, <https://www.nps.gov/articles/000/the-code-noir-and-the-missouri-compromise.htm>)

actions from fist fights on the river, assault, and other crimes.

De Lassus was also responsible for upholding the French based tenets of the *Code Noir* (Black Code) dictating the nature of slavery in Upper Louisiana. The Black Code also became codified as Missouri territory, and later State, law. While the 60 articles noted in the Black Code offered some limited rights and protections to enslaved individuals and required a minimum level of care by enslavers, the effects of the Code rigidly controlled the ability of enslaved individuals to gather, practice religion, earn money, or carry arms, and included provisions for the severe policing and punishment of enslaved individuals, ranging from public beatings to execution.

In upholding the Code Noir, de Lassus was responsible to provide passports to people of African descent to document their ability to travel and not be punished, and he issued documents to two men to travel freely

56 Robert R. Archibald. "Honor and Family: The Career of Lt. Gov. Carlos De Hault De Lassus." *Gateway Heritage* 12, no 4 (1992) 32-41. McDermott. "Diary of Charles de Hault de Lassus From New Orleans to St. Louis, 1836" 4.

57 Pierre-Louis (often shorted to Louis) Lorimier was a French Canadian who is credited with establishing Cape Girardeau, Missouri, and was commissioned by the Spanish to establish a military post there.

58 Ekberg, *A French Aristocrat*, 84-86.

59 McDermott, "Diary of Charles Dehault Delassus," 8.

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down the river with a load of harvested apples. They would have been required to carry and present these papers to anyone upon request.⁶⁰

One of his most significant contributions to the historic record is a census he took of the residents of New Bourbon in 1797. This document remains a valuable resource for historians. There were 93 households identified in New Bourbon as part of his census. Nineteen of those households included enslaved individuals, which constituted approximately 30 percent of the population, and de Lassus himself enslaved four men and four women at the time of the census. He purchased another enslaved individual in 1799.⁶¹ He also hired the labor of free African-descended people, as illustrated by payment of eight piastres over a five-year period to a woman name Catin and twenty to Zabet.⁶² Borrowed or rented forced free labor from other enslaved people in Ste. Genevieve was also common, as was seen with Vallé and Pratte loaning out labor to complete de Lassus's house.

This was done while living in his vertical log house that was situated on a high spot on the hills over-looking the Mississippi River, with a view of the *Grand Champ* or Common Field. Nicolas de Finiels wrote in his 1803 manuscript that:

Monsieur de Luzières' house, which is located between New Bourbon and the Saline at a higher spot on the hills, enjoys the full scope of this seductive view; indeed this view is even more sweeping, for it extends off to the north. This elevation goes far toward making a visit there as healthy as it is agreeable.

Finiels noted that New Bourbon had 460 to 480 residents that included all ages of men and women, both enslaved and free people. Also, at New Bourbon were 400 to 500 head of cattle and 60 to 80 horses, with an annual harvest of 400 to 500 bushels of wheat, 3000 of maize,



Figure 13. Detail view of de Finiels's 1797 map, showing both the old and new townsites of Ste. Genevieve and New Bourbon (Nouvelle Bourbon); the "Luzières" residence is clearly noted on the top of the bluff just below New Bourbon. The original map is in the collection of the Service Historique de la Marine, Vincennes, France. (Source: Nicolas de Finiels (trans. Carl Ekberg), *An Account of Upper Louisiana*)

and 12,000 to 15,000 pounds of lead produced by its residents each year.⁶³

Madame de Lassus described their situation in New Bourbon as "strangely changed," perhaps with some melancholy for her former life. One of her prized possessions in New Bourbon was a painting brought with her throughout her travels from France and through the United States that hung in her bed chamber and illustrated a grand French festival scene where she noted she was once happy.⁶⁴ The family continued to incur

60 Kelly Buchanan. "Slavery in the French Colonies: Le Code Noir (The Black Code) of 1685. Library of Congress Blogs. Accessed at blogs.loc.gov/law/2011/01/slavery-in-the-french-colonies/ ; Missouri's Early Slave Laws: A History in Documents." Missouri State Archives, accessed at www.sos.mo.gov/archives/education/aahi/earlyslavelaws/slavelaws

61 Bill of Sale: Sale of Slave by Chas. De Luzières to His Son Chas. De Hault De Lassus, 1801, Ste. Genevieve Archive 1756-1930 collection 3636 Folder 405

62 Ekberg, *A French Aristocrat*, 109.

63 Carl Ekberg, William Foley, ed. "An Account of Upper Louisiana." Nicolas de Finiels Manuscript from 1803. University of Missouri Press (Columbia, MO) 1989, 46-47

64 John Franklin Jameson, Henry Eldridge Bourne, and Robert Livingston Schuyler editors. "A Memorandum of Moses Austin's Journey," 1796-1797. *The American Historical Review*, Volume 5, Number 1 p. October 1899, 541.



Figure 14. Excerpt from an 1826 map of the Mississippi River, prepared by Victor Collot, showing old town Ste. Genevieve, new town Ste. Genevieve labeled as "Gaborry", New Bourbon, and "Luzieres" near the bluff but without specific indication of the property's location. (Source: Victor Collot, *Voyage dans l'Amérique Septentrionale*., Library of Congress, Control No. 01021531)

significant debt that was unhindered by the purchase of lavish, expensive, and unnecessary items such as fabrics imported from Europe and Asia, alcoholic beverages, and delicacies like chocolate, olives, fruit preserves from Havana, mustard, and cheese.⁶⁵ The family's lavish spending habits were burdensome to their son Carlos, who several times was responsible for paying their indebtedness.

By 1801, de Lassus owed his son Carlos thousands of dollars and had mortgaged most of their remaining possessions in an attempt to guarantee the debt. This included all of their belongings, as well as a person who was enslaved by them.⁶⁶ Because of their excessive debt, the family lost all of their belongings, but were able to

live out their lives in their residence, on the bluff, in New Bourbon. Their son Carlos was the instrument to correct this debt, and this effort took him years to resolve.⁶⁷

The new American government took control of the former Louisiana Territory in 1804 and began to question many Spanish land grants, including the de Lassus' property. This began a long legal battle to prove ownership and to document improvements to the land. Even when originally granted to de Lassus, the ownership chain was confusing, as noted below in correspondence between de Lassus and Carondelet in April 1793 when de Lassus writes:

*I'm proposing to build my residence, and where verily the principal families of farmers from Gallipolis will also settle, will be called New Bourbon. This is part of a concession originally granted to Monsieur Francois Vallé of Ste. Genevieve, who in turn ceded it to Sieur Israel Dodge, who in turn ceded half of it to Monsieur Bartholémé Tardiveau, who in turn ceded it to me as a gift. I beg Your Excellency to approve and accept the primitive transmissions of title for this concession.*⁶⁸

Israel Dodge, a lieutenant in de Lassus' New Bourbon militia testified in support of de Lassus ownership. During legal hearings in 1806, he stated that a cabin was built on a portion of the land in 1798, and that it was occupied by a free woman of African descent that had been living there for five to six years.⁶⁹ This information is supported in de Lassus' New Bourbon 1797 census in which two free women of African descent were identified:

Two free negro women named Lisette and rose, the first 45 years old, she resides in the village of New Bourbon, the latter aged around fifty-eight to sixty years old, she resides at the Saline. They conduct themselves well, work at farming

65 Ekberg, *A French Aristocrat*, 109.

66 Bill of Sale: Salve of Slave by Chas. De Luzières to His Son Chas. De Hault De Lassus, 1801, Ste. Genevieve Archive 1756-1930 collection 3636 Folder 405; Mortgage Pierre Delassus Deluzieres to Charles Delassus 1801, Ste. Genevieve Archive 1756-1930 Collection 3636, Folder 100.

67 Robert. R. Archibald, "Honor and Family: The Career of Lt. Gov. Carlos de Hault de Lassus," *Gateway Heritage* 12 (Spring 1992)38-40.

68 Ekberg, *A French Aristocrat*, 116. Letter transcribed and presented in whole in Part II. In it de Lassus also requests land for his son and son-in-law.

69 Walter Lowrie, ed. *Early Settler of Missouri as Taken from Land Claims in the Missouri Territory* (Easley, SC: Southern Historical Press, Inc. 1986), 467, 472, 556; Charles Dehault Delassus, Appellant V. The United States, 34 U.S. 117 (1835).

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*and raise animals.*⁷⁰

The dispute over ownership would eventually take more than 30 years and multiple lawsuits. All of which were denied, until the United States Supreme Court ruled in favor of the family in 1835.

De Lassus and his wife Domitille Josèphe both died in 1806 with no resources and leaving their children, namely Carlos, an incredible amount of debt. They are both buried in an unmarked grave in the Ste. Genevieve Cemetery.

Their estate was administered by their son Camille, who died in 1812, and a family friend Marie Philippe Leduc. The estate had debts totaling over \$48,000 (approximately \$1,220,000 in current dollars)⁷¹, an incredible sum for the day, and the estate remained unsettled until 1819, when the property was sold at auction. De Lassus' son Carlos was the highest bidder paying \$11,834.75 (\$289,000). This legally reclaimed title to the property for the family, and the following day he deeded the property to his deceased brother Camille's children Odile, Ceran, Marie Louise, and Leon, who were all still minors. Though the land was purchased at the auction by Carlos, the original Spanish land grant of 7,056 arpents to de Lassus was not confirmed until a Supreme Court ruling in 1835 validated the transaction.⁷²

After De Lassus

It is during this period from 1806 (de Lassus's death) to 1834 that the condition and location of the house is largely unknown. It is unclear if the family continued to live in the vertical log house on top of the bluffs or if they were living elsewhere in the community. What is known is that in 1834, the children of Camille de Lassus and Peter Pratte, the widower of deceased daughter Marie Louise, drew lots to subdivide the property among themselves. Peter Pratte received lot number one which contained the house and the parcels where the Delassus-

Kern House currently stands, and two years later he sold the property to Martin Sweek for \$200 (\$6,600).⁷³ Sweek, in turn, sold the property to Dr. Ichabod Sargent in 1837 for \$1,200.⁷⁴

Both Sweek and Sargent were known to be active local businessmen. The increased sale price from \$200 to \$1200 in a single year suggests that a significant change may have occurred around 1836, which may have been the construction of the house currently known as the Delassus-Kern House at the foot of the bluff. No historical documentation from this era has been found to date that directly references the current house, and the estimated date of construction of c. 1836 is based in part on the transactions between Sweek and Sargent and archeological studies that have been performed at the property. Given that the logs used to construct the exterior walls have been dated to c. 1793, it is also possible that Sweek purchased the land with a house already in place and either relocated that structure or made such improvements to the property that archeological evidence of earlier periods was significantly disturbed. The discrepancy in suggested dates for the existing house between the dendrochronological and archeological studies may not be able to be definitively resolved.

Sargent owned the property until his death and his estate records indicate that he made several improvements to properties in his holdings, but it is unclear what those improvements were. He enslaved people on the property, and upon his death it is noted that among those people were:

Boy named Bat. Aged about 10 years
Woman named Melinda. Aged about 28 years
Woman named Ellin. Aged about 20 years
Woman named Sarah and Child. Aged about 15 years
Woman named Mary. Aged about 12 years

His estate also noted that he employed the services

70 Lorenzo J. Greene, Gary R. Kremer, and Antonio F. Holland, *Missouri's Black Heritage*, Revised and Updated ed. (Columbia: University of Missouri Press, 1993), 16.

71 Parenthetical currency values represent the approximate buying power in 2024 United States dollars, and are provided as general context for the reader. Estimating historical currency equivalency is complex. The values presented here are drawn from the "CPI Inflation Calculator," an online resource which incorporates the Bureau of Labor Statistics' Consumer Price Index (CPI) for dates starting in 1913 and analysis of historic inflation rates and foreign currency values for dates prior to 1913. CPI Inflation Calculator, available at www.officialdata.org.

72 Stepenoff and Bibb page 6; *Charles Dehault Delassus, Appellant V. The United States*, 34 U.S. 117 (1835); Deed Record Book E, 71 and 72.

73 Ste. Genevieve County Courthouse, Recorder of Deeds, Record Book E, p. 71.

74 Ste. Genevieve County courthouse, Recorder of Deeds, Record Book E, p. 124

of Clarisse, whom he paid a sum of \$0.50.⁷⁵ Clarisse was not an uncommon name in Ste. Genevieve during this period, and without a family name or further documentation, definitely identifying this Clarisse may not be possible. The historic record does document another woman named Clarisse who was formerly enslaved by the Nicolas Janis Family at the Green Tree Tavern (Janis-Ziegler House). No documents link the Clarisse referenced in Kern's estate records to the Clarisse associated with the Janis-Ziegler property, and it is unknown if this is the same woman. Additional research would be warranted to identify a possible link between the two references.

His estate was valued at \$2,122.50, of which the people he enslaved and named above were valued at \$1,500. Sargent's property in his estate was not extensive. He owned two horses, a colt, two cows, four hogs, six pigs, a cart with harness, medicines and empty vials, surgical instruments, books, a rifle, a pistol, tools, and sundry other minor items. The absence of any significant crops, orchards, or livestock supports the understanding that he made a living as a medical doctor in the community. It also supports an assumption, that he may not have added significant outbuildings to the property. He likely had a separate cabin to house the enslaved individuals, though that is not documented, and given the size of the residence, it is also possible they resided within the building.⁷⁶

John D. Kern

John D. Kern was born in Freudenberg, Baden, Germany in 1811, where he met and later married Anna Regina Kettinger in 1834. Together, they had eight children: Wilhelmina (1835-1912), John Edward (1839-1877), Mary (1840-1918), Charles (1844-1891), William (1847-1891), Josephine (1850-1925), August (1853-1939), and Julia (1856-1914). John, Regina, and a very young Wilhelmina emigrated to the United States, arriving in Ste. Genevieve in 1838 or 1840. The 1860 census lists the family name as "Kerns" and notes that John D. was a farmer and that Edward and Charles were farm laborers; the value of his estate and personal property were given as a combined \$6,200 (\$231,800). Also living in the house were his wife, all eight children, as well as Wilhelmina's husband Benjamin Etter and

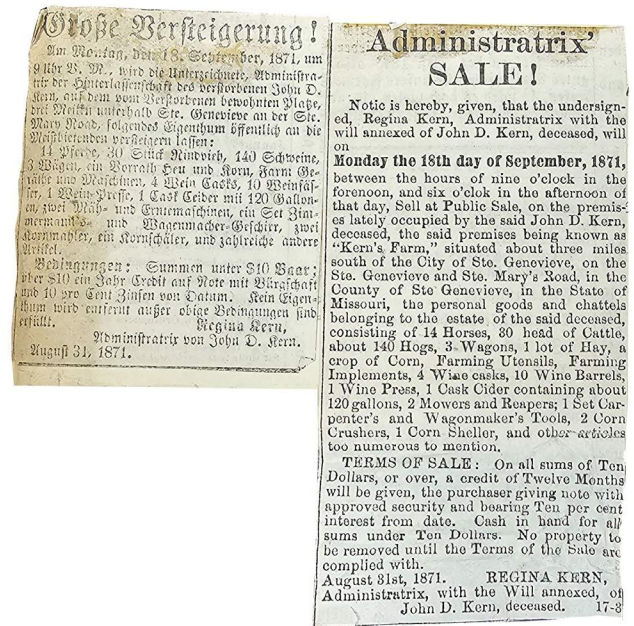


Figure 15. Notices for the sale of John D. Kern's estate, as posted in both German and English language newspapers in 1871. (Source: MoDNR Felix Vallé State Historic Site, Delasus-Kern House vertical file.)

their two small children. Benedict Serveman, a fellow German émigré from Baden, is also listed as part of the household; his occupation is given as farm laborer, and he may have been a relative or boarder.

John and Regina had relatives in Baltimore and likely stayed with them on the East Coast before continuing on to Missouri, where the family had more relatives in the St. Louis area. They purchased the house south of Ste. Genevieve in 1855 from the estate of Ichabod Sargent for \$1,000 (\$35,000),⁷⁷ and they would go on to transform the property into a productive and profitable farm. Many of the property improvements were made or begun under their period of ownership, and the property would remain in the Kern family for the next 138 years.

A 1996 heritage article in the *Ste. Genevieve Herald*, quoted an interview that was done with John D. Kern in 1866 when he was gathering the last of his grape crop on a small, three-acre experimental vineyard to determine whether it would be profitable. Kern was growing Catawba grape varieties, and his cellar was consumed with the wine making process, including a wine press for the operation. The wine was described as

75 Ichabod Sargent Estate papers page 6 of debts and notes owed.

76 Ichabod Sargent Estate. Ste. Genevieve County Courthouse Probate Office file 99:703, will #984. Filed September 18, 1848.

77 Ste. Genevieve County Courthouse, Recorder of Deeds, Deed Book I, Page 586

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peculiar but pleasant. The article goes on to describe the site as follows:

This farm was originally improved by one of the Bourbon nobility, who left France during the Revolution, and sought refuge and safety on the then distant and almost unknown banks of the Mississippi. In the midst of a fine orchard we were shown where the refugee Frenchman erected his dwelling, a beautiful spot, commanding a magnificent view of the country for many miles up and down the river; showing that he was a man of good taste. In the orchard we were shown a venerable pear tree planted by this same foreigner, which shows how great the fruit trees grow here in Missouri. Until last season, when it was struck by lightning and killed, it produced very largely, bearing in a single season as high as ten barrels of pears, a little fortune within itself.⁷⁸

After John's death in 1871, Regina administered his estate. The estate inventory taken August 28, 1871 included wine casks varying in size from 80 gallons to 300 gallons, various cooking utensils and crocks, grind stones, wagon wheels, tools, shotgun, cloth, tobacco, agricultural commodities, furniture, and animals (cattle pigs, horses, oxen), 8 cords of wood, and land - all equaling a total appraised value of \$2,589.60. Of note in his estate and under separate estate sales was 5,755 pounds of pecans at 6 ¼ cents for a total of \$359.67. His sons Edward and William were paid \$125.00 for caring for and feeding livestock and for gathering 133 bushels of pecans. The estate was advertised in both the English and German papers from the area, evidence of the shifting demographics in the region in the mid-19th century. As the estate was settled over multiple annual settlements, another \$55.00 of pecans was sold. In 1874, the estate paid property taxes on the 40 acres associated with the property (survey 2082), valued at \$560.00.

John D. Kern's estate also had a book of debts to Dr. F. J. Bernays for medical services for himself and his wife beginning in 1867. Among medicines and treatments were many purchases of wine. It seems Kern's last four years proved difficult in terms of his poor health. He was

routinely treated for sore throats, ringworm, and fever. He was also diagnosed with mentagra in December 1867, a skin ailment of the chin and face that resulted in an inflamed condition of the skin.

Date	Estate Expense
1849	2 bags nails, varnish and oil, and 200 feet featheredge plank.
1851	800 feet plank, 6 sq shingles, 200 feet weatherboarding, 780 sheeting, nails.
1853	400 feet plank and 1 cord wood.
1854	Planks, 5 sq. shingles, 300 ft plank, sundries, shingles, and hauling.
1855	1 box glass, 2 loads sand, hauling sand.
1859	Wilder for gutters. ⁷⁹
1864	200 plank at 3.25 per hundred.
1868	400 feet planks and nails.
1869	50 apple trees, 43 peach trees, one pear tree.
1869/1870	Joseph Jokerst paid to work on corn crib and cistern.
1873	Purchased 1000 boards, 800 26# nails, 250 oak boards, 875 cottonwood boards, 2 pair hinges, 4 dozen screws, and 2 door locks.
1849	600 feet plank, 1200 feet plank, 2000 feet plank, 1000 feet plank.
1852	House moving, repairing on a roof, iron to a cellar door.

The following June 1868, Dr. Bernays performed hemorrhoid surgery on Kern at his home and continued a seemingly endless treatment of fever for the children and Mr. and Mrs. Kern. He had stomach ailments, teeth pulled, and regular fevers throughout 1869. Some of the bills were paid for with bushels of pecans, turnips, wine, and geese. He was treated for what Bernays called his last sickness on August 15 and 16, 1871. Several nights during his last week, the doctor stayed over the entire night, likely to try to medicate and comfort him.⁸⁰ Receipts included with the estate papers also provide some insight on the outbuildings and other structures on the property that were part of John Kern's improvements.

78 "Reminiscing With The Herald," *Ste. Genevieve Herald*. (Ste. Genevieve, MO) March 12, 1996. From vertical files at Felix Valle State Historic Site.

79 Payment to a member of the Wilder family (also spelled Weide), who were identified as German farmers and laborers in Ste. Genevieve in the 1850 census. Cash payments made to "S. Wilder" are listed on other dates in the estate papers.

80 John D. Kern Estate Records, Ste. Genevieve County Courthouse Probate Office.



Figure 16. The earliest known photograph of the Delassus-Kern House, c. 1895, before the addition of the second story, with members of the Kern family. Note the gabled roof shape and the single gallery or porch on the front. The chimneys are brick, and the position of the chimneys in relation to the roof ridge suggests that the first floor is two rooms deep. (Source: MoDNR Felix Vallé House archives.)

Several purchases included below predate his ownership, but were included in the estate records. It seems likely that significant improvements such as a barn, stable, corn crib, and cistern were among the improvements to the property begun by John D. Kern.

In 1847, the farm produced significant 4,800 feet of wood plank. In 1852 the estate was credited \$40.00 for house moving; unfortunately, no other details are associated with that entry. In 1869, Joseph Jokerst was paid to work on the cistern and the corn crib in a mix of cash, potatoes, meat, and tobacco. Kern's account with J. B. Valle & Co identified a purchase of 400 feet of plank and nails in February of 1868. The commodities documented in his papers give a clear indication of the profitable farm and profusely producing fruit and nut trees on the property, which were used as partial payment toward his debts in a mix of cash and goods.

Receipts for C. C. Rozier's store that were settled in 1873 documented 1,000 boards, 250 oak boards, 875 cottonwood boards, nails and hangers, hinges and screws, and two door locks.

In 1875, the Kern children inherited the estate property and belongings, and land was sold for \$2,000 (\$56,400) to three of the sons, John Edward, William, and August.⁸¹ John Edward died in 1877, and his wife Philomena administered his estate. She attempted to sell the property and his one-third of the farm. William and August sued to keep the estate intact, and though the ruling was in their favor, the judge decreed that it would be sold at public auction and the money divided evenly among the two sons and the sister-in-law. In 1878, William and August brought the highest bid of \$500.⁸² William then sold it to August for \$1,000, and August became the sole owner of the farm, where he

81 Ste. Genevieve County Courthouse, Recorder of Deeds, Deed Book 26, p. 489.

82 Ste. Genevieve County Courthouse, Recorder of Deeds, Deed Book 30, p. 458.



Figure 17. Undated (possibly 1910s) photograph of the rear west side of the house, showing the shed roof over the kitchen door and the new brick masonry chimneys. (Source: MoDNR Felix Vallé House archives.)



Figure 18. Undated (possibly 1920s) of the south side of the house from the field. Note the barn or stable (no longer extant) at right of the house and the roofline of the large stable just to the left of the house. The man in the hat appears to be August Kern. (Source: MoDNR Felix Vallé House archives)



Figure 19. An undated (possibly 1910s) photograph of the Delassus-Kern House property looking northwest, possibly taken from one of the large trees in front of the house. The shadow of the house in the lower left indicates this is after the construction of the second story. The outbuilding at lower left is a shed of undetermined use, and the building at upper right is the horse stable; neither building is extant. (Source: MoDNR Felix Vallé House archives)

lived with his family until his death in 1939.⁸³

August Kern

August was active in agricultural pursuits, and he served as judge for livestock in local fairs and competitions. At the time of his ownership, the farm had vegetable and flower gardens, a small orchard, and grape vines. Livestock included chickens, mules, horses, pigs, and cows. Over the next several years, August would continue to improve the property and raise his growing family. With his wife Sarah Matilda Frary, they would raise their six surviving children on the farm: Nettie (1880-1967), Katharin (1883-und.), Rachel (1886-1968), twins Hilbert (1894-1940) and Fillmore (1894-1963), and Edna (1898-1984).

The years of 1896 and 1897 were difficult for August's family. In 1896, their seven year old son Freddie died

—August Kern has just completed a 3-room addition to his residence, which makes it one of the most commodious farm houses in this vicinity. John Baumgartner was the builder.

Figure 20. Notice in the social column of the *Ste. Genevieve Herald* in 1903 of the expansion of the Kern's house.

of “congestive chills,” and just one week later, August and his wife welcomed a new son who also died the next month. In February 1897, August was ill and confined to his room with a sickness.⁸⁴

August added a second story onto the house in 1903, bringing the house into its current form. The addition of the second floor must have been of interest in the community, as it warranted a note in one of the local

⁸³ Ste. Genevieve County Courthouse, Recorder of Deeds, Deed Book 27, p. 394.

⁸⁴ *Ste. Genevieve Fair Play*, (Ste. Genevieve, MO) October 10, 1896, 12; October 12, 1896, 3; February 6, 1897, 1.

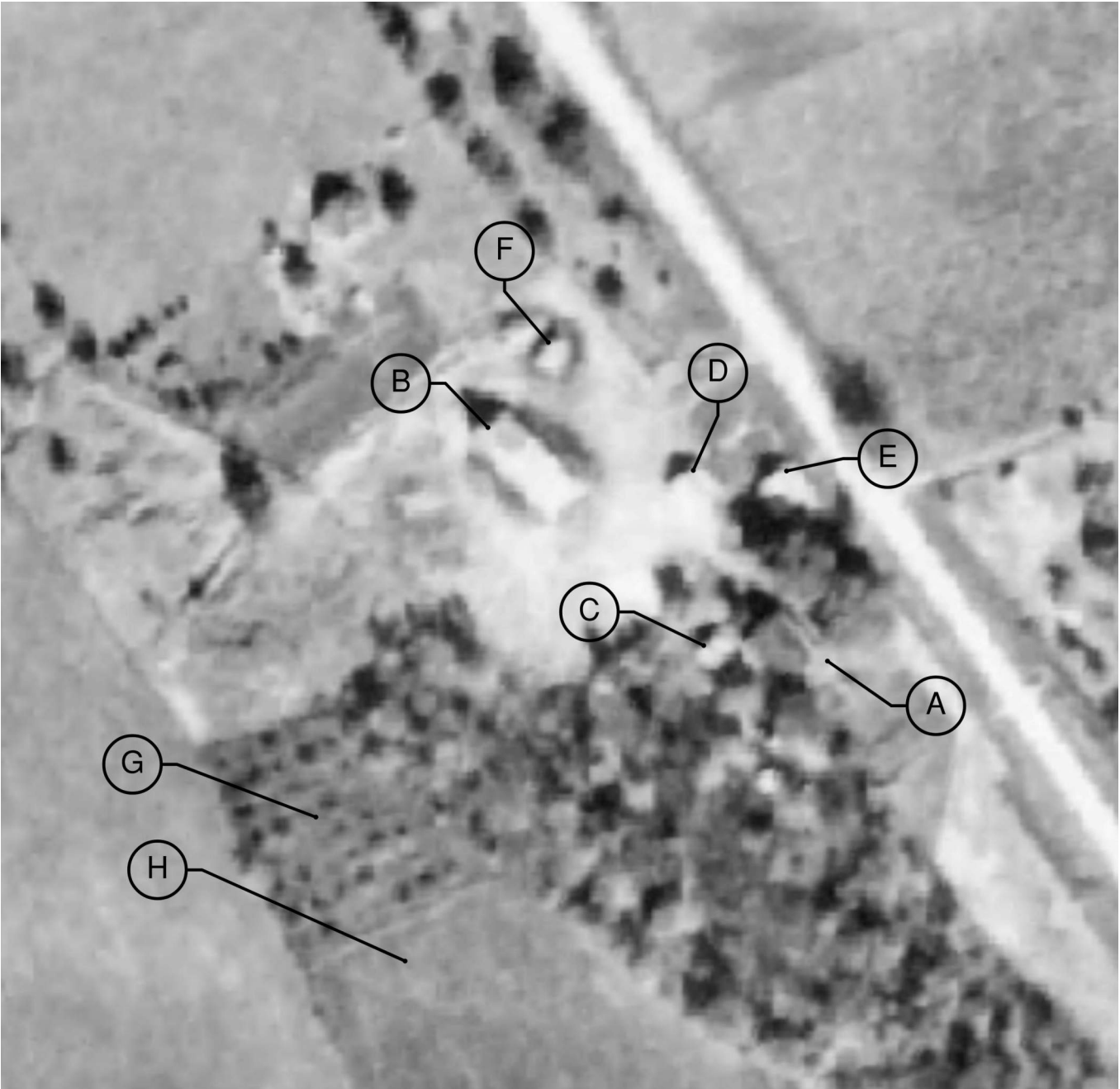


Figure 21. Aerial photograph from 1940, showing: A) Delassus-Kern House, B) large barn or stable (no longer extant), C) wood shed, D) corn crib, E) utility shed (no longer extant), F) undermined barn or shed (no longer extant), along with an G) orchard and H) cultivated fields. Other, smaller structures are present but not visible. (Source: Historic Aerials, www.historicaerials.com)

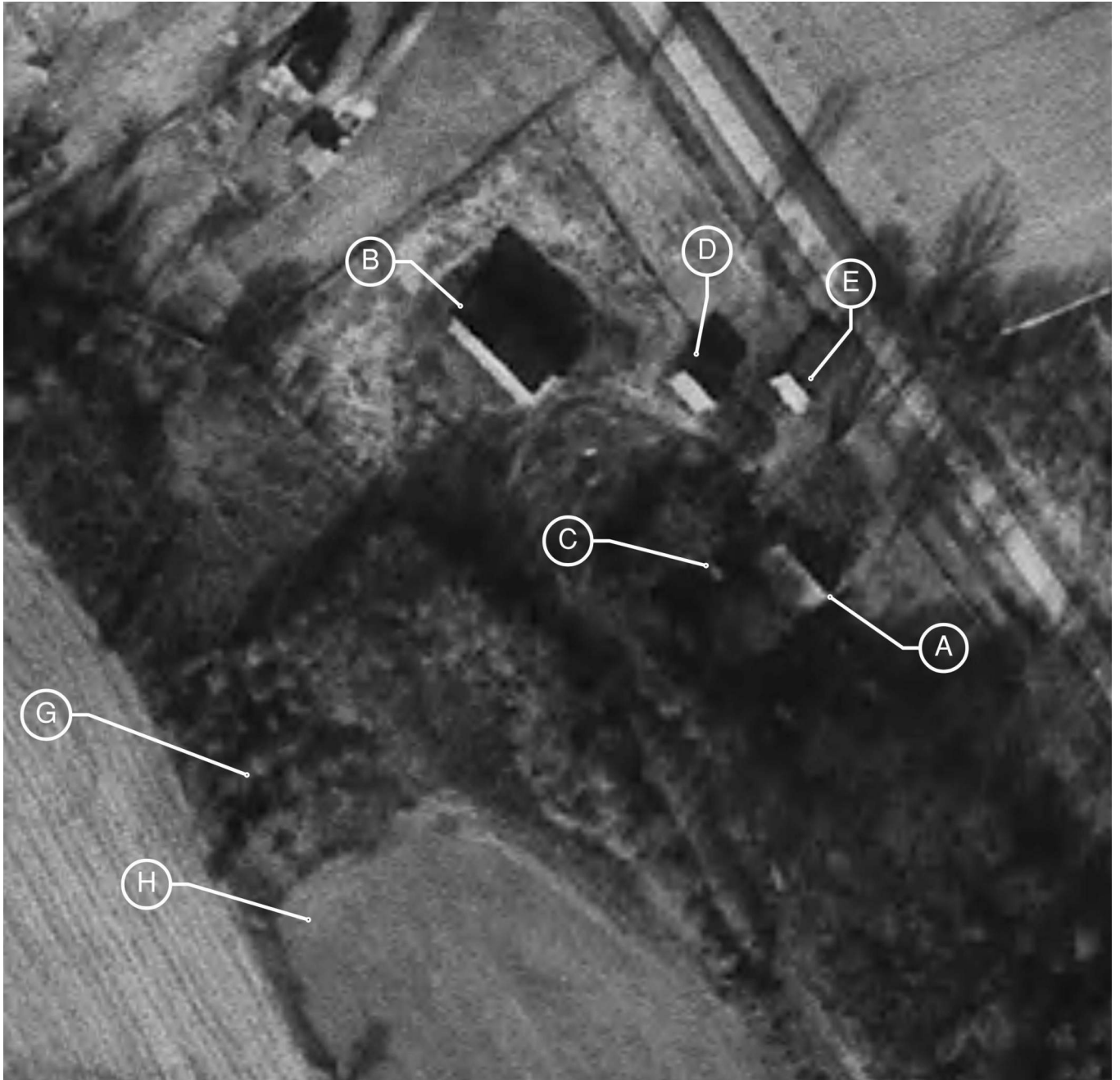


Figure 22. Aerial photograph from 1968, showing: A) Delassus-Kern House, B) large barn or stable (no longer extant), C) wood shed, D) corn crib, and E) utility shed (no longer extant), along with an G) orchard and H) cultivated fields. Other, smaller structures are present but not visible. (Source: Historic Aerials, www.historicaerials.com)



Figure 23. Aerial photograph from 1976, looking west, showing the large barn in very poor condition and a livestock pond that was not present in 1968. (Source: Vintage Aerial, Photo 4-FSTG-22, vintageaerial.com/photos/missouri/ste-genevieve/1976/FSTG/4)

newspapers, the *Ste. Genevieve Herald*:

*August Kern has just completed a 3-room addition to his residence, which makes it one of the most commodious farm houses in this vicinity. John Baumgartner was the builder.*⁸⁵

Photographs from the early decades of the 20th century show the property as a working farm, with multiple outbuildings:

- A large barn or stable was constructed to the north of the house sometime before the 1920s, in what is now open field, west of the well; this structure was torn down sometime between 1976 and 1985.
- The existing corn crib is visible in the undated, but likely 1920s, photographs in the archive of the Felix Vallé House State Historic Site. The corn crib appears to have been constructed with wire nails,

which indicates a construction date after about 1900.

- The utility shed pre-dated 1940, based on historic aerial photographs. The shed was removed after the 1993 flood.
- The existing wood shed just behind the Kern House may also be an early structure, dating to around 1900.
- Other sheds and smaller barn structures are visible in historic photographs that are no longer extant.
- Smaller structures, such as the smoke house and the various chicken houses, are not visible in these photos either due to the scale or to tree canopy cover.

When August died in 1939, he willed the property to his surviving children. His will stated that there would be no distribution of the estate for a period of 10 years and his son Nicholas would be the executor. After the 10-year period, those who were still living in the home and original homestead would inherit it.⁸⁶ His daughters

⁸⁵ *Ste. Genevieve Herald* (Ste. Genevieve, MO) September 26, 1903, 1.

⁸⁶ Ste. Genevieve County Courthouse, Recorder of Deeds, Deed Books 114, p. 251.



Figure 24. 1985 photograph, looking slightly northwest from the east side of US-61, showing the house and the utility shed. (Source: HABS)



Figure 25. 1985 photograph, looking slightly southwest, showing main facade of the house, with the double porch still in place, the chicken house in the left background, the wood shed in the right background, and the cistern in the right foreground. (Source: HABS)



Figure 26. 1985 photograph, looking east at the rear wall of the house (Source: HABS)



Figure 27. 1985 photograph, looking slightly northwest, showing the south wall of the house, with the area of screened-on porch over the kitchen door. (Source: HABS)



Figure 28. A photograph taken in 1993, looking slightly southwest from the Common Field. This photograph was taken shortly before the utility shed was removed. (Source: Ste. Genevieve NHP archives)



Figure 29. Photograph c. 1995, looking southwest, showing the poor condition of the house and the collapsing double porch. (Source: MoDNR Felix Vallé House archives)



Figure 30. Photograph taken in July 2000, looking west, after the porches have been removed. (Source: MoDNR Felix Vallé House archives)

Nettie, Rachel, and Edna continued to live together in the house until their deaths in the late 1960s.

By the 1970s, the large barn or stable was in very poor condition, and several of the smaller outbuildings had been removed. By the 1980s, the large barn was removed.

Architectural historians researched the property starting in 1985, and the vertical log poteaux-sur-sole construction was uncovered beneath the clapboard siding. It was recorded by the Historic American Buildings Survey in 1987. Dendrochronology was also done at the property in 1986 by the University of Missouri - Columbia, which determined the logs were felled in c. 1793.⁸⁷

The Great Flood of 1993 damaged the house and several of the outbuildings. Following the flood, at least one outbuilding, the shed, was removed, and a few

years later, the porches were removed. The property was donated to the Missouri Department of Natural Resources by Susan L. Flader in 1993. A series of archeological excavations and field schools took place at the property to understand the history and evolution of the building in the late 1990s and early 2000s. These were conducted through a partnership with Murray State University and Southeast Missouri State University. The State of Missouri Department of Natural Resources managed the property until it was acquired by the National Park Service in 2021 and incorporated into the Ste. Genevieve NHP.

QUESTIONS SURROUNDING THE DELASSUS-KERN HOUSE

The Home of Pierre de Lassus?

Many questions remain about the origins and history

⁸⁷ Richard Guyette. "Tree Ring Dating of French Colonial Vertical Log Houses in St. Geneviève, Missouri." University of Missouri – Columbia (1986 [n.d.]);

of the Delassus-Kern House, from the period of the felling of the logs c. 1793 until c. 1836, the likely date of the construction of the existing structure. Historians and archeologists who have studied the property in depth do not believe the house in its existing location, nor was it the vertical log house built by de Lassus in 1793. The following historical documents and archeological evidence support this position:

- Two maps that clearly illustrate the location of de Lassus's original house show it as sited on the bluff above the location of the current building.
- Archeology report from 1997 lead by Dr. Kit Wesler documents archeological artifacts that date to the early 1830s. Wesler stated that he is "99 percent certain" that the house was not sitting in its current site earlier than the 1830s. The report summarizes the lack of pottery chards from the 1790s and early 1800s. Pottery from the period after 1820 was found on the site. At the time of the excavations, Wesler stated that the owner of property on the bluff behind the house showed him pieces of pottery found at the site that date to the period de Lassus would have lived in New Bourbon.⁸⁸
- Physical details in the house including the Greek Revival trim details and the poteaux-sur-sole construction, combined with the archeological information available, gives credence to an 1830s construction date. Data from deed records showing the steep increase in value over a two-year period from \$200 to \$1,200 dollars also indicates a significant improvement was made on the property in about 1836 or 1837.

However, dendrochronology tests date the vertical timbers to trees that were felled in c. 1793, approximately 40 years before the earliest archeological evidence of a house on the present location, indicating that the house was likely constructed with materials salvaged from another structure. Whether the structure was cobbled together from multiple anonymous houses from Old Town or the remnants of de Lassus's grand residence on the bluff will likely never be known.

Three or Six Rooms?

The findings of the wood species identification are interesting and provide compelling supporting evidence that the house was originally constructed in the existing six-room floorplan. See section "Wood Species Identification" and the wood species identification report included as an appendix.

At the Delassus-Kern House, logs sampled on the exterior walls on all four sides were found to be white oak. The original roof framing for the house was also likely white oak. White oak is a decay-resistant, high density hardwood that is commonly used for timber framing; the wood grain is dense and closed-grain, making it resistant to water. In Ste. Genevieve, the wall and roof framing timbers for poteaux-sur-sole houses are typically formed of white oak.

The interior walls of the house were found to be made of cottonwood logs. In contrast to white oak, cottonwood is a porous, low density hardwood that is not typically used for structural or framing members. Cottonwood's low strength and high porosity make it vulnerable to insect attack and water damage; however, cottonwood is lighter and easier to shape than white oak, which would be attractive characteristics for labor-intensive timber framing by hand. Sycamore may have been used for the diagonal brace either due to availability or perhaps because sycamore has higher strength than cottonwood (although lower strength than white oak).

Because the logs in the north-south partition belong to the cottonwood family, along with the east-west partition walls in all rooms, this is strong evidence that the existing north-south partition wall was never an exterior wall and was always intended to be a protected interior wall.

⁸⁸ Mark Evans. "Wesler Speaks to Foundation on Historic DeLuziere-Kern House." *Ste. Genevieve Herald* (Ste. Genevieve, MO) October 22, 1997, 22.



Figure 33. Decorative pan-de-bois facade from the mid-18th century, located in Eu, Normandy, France. (Source: Lurita McIntosh Blank, 2024)

Architectural Antecedents in France and French Canada

Creole architecture... represents an amalgam of elements drawn from widely separated cultures and synthesized into something novel, but with clear attachments to its multiple forbears. Though traces of the parental building traditions survive in the newly established forms, they are now synthesized into a unique pattern which cannot be said to represent the patrimony of any single contributing culture. They are, rather, innovations that differ in both form and in social function from their antecedents.

Jay Edwards, "Long Distance Implantation of Vernacular Architecture Traditions: The Canadians in Early Louisiana"⁸⁹



Figure 31. A stable, possibly 18th century, in Saint-Georges-du-Vieuvre, Normandy, France, with close-stud pan-de-bois construction. (Source: Lurita McIntosh Blank, 2024)



Figure 32. 18th or 19th century farm structure on the grounds of the Château de Bailleul in Picardy, France, with close-stud pan-de-bois construction. (Source: Lurita McIntosh Blank, 2024)

The vertical log structures of Nouvelle France represent an unusual typology that evolved along nearly 300 years of French settlement and culture in North America. In the Illinois Country, building traditions from both Canada and Lower Louisiana were woven together, responding to the extremes of both cold, wet winters and hot, humid summers. These competing needs created the characteristic form of the houses in Ste. Genevieve: a house with a massive fireplace and a steeply sloped roof to shed snow, surrounded by open galleries to provide shade and ventilation. Multiple architectural historians have researched the genesis and evolution of vertical log

89 Edwards, "Long Distance Implantation of Vernacular Architecture Traditions: The Canadians in Early Louisiana," *Material Culture Review / Revue de la culture matérielle* 88-89 (2018): 45-78.



Figure 35. 17th century barn near Livet-sur-Authou, Normandy, France showing close-stud pan-de-bois construction technique that was the architectural antecedent to poteaux-sur-sole. (Source: Lurita McIntosh Blank, 2024)



Figure 34. Maison Lamontagne, built in 1744 in Rimouski, Quebec, one of the oldest half-timbered structures in Quebec, following pan-de-bois building tradition. (Source: Site Historique de la Maison Lamontagne, <https://maisonlamontagne.com>)

structures in much detail, highlighting how unique these buildings are to the New World.

Pan-de-Bois

The origins of vertical log structures are found in the *pan-de-bois* structures of France. Pan-de-bois is a type of post and beam construction that uses heavy timbers as the load bearing structure for the walls, floors, and roof. The voids between the timbers are infilled with colombage of straw and clay, brick, tile, or stone, depending on regional practices. The colombage is not structural, but provides insulation, weatherproofing, and pest proofing. For aesthetic purposes, the timber frame is often left exposed and the colombage may be colorfully painted.

Called “half timbering” in English and “*Fachwerk*” in German, pan-de-bois construction in Europe began in the early medieval period and continued under common use until the latter half of the 19th century, when dimension lumber and frame construction became more prevalent. Surviving examples of pan-de-bois structures in France typically date to the 15th century and later, although buildings from as early as the 13th century survive, at least in part.

Structures in France

Pan-de-bois structures vary greatly in size, ornamentation, and sophistication of the structural system, with some

buildings exhibiting multiple corbeled stories and ornate wood carving. The simplest pan-de-bois structures are single-story vernacular or agricultural buildings; these will typically be stud construction, meaning constructed with many vertical timbers, and will have steep gabled or hipped roofs covered with tile, slate, or thatch. These smaller, rural structures share many characteristics with vertical log houses and provide much insight into the knowledge and skill of the early settlers of the Illinois Country.

Straw and mud infill on lath, woven wattle, or torchis is commonly seen, as is stone or brick infill. Foundations are typically stone with later alterations made in brick. In parts of the country where clay or slate is readily available, these will be used for roofing; in other regions, thatch is still often used, especially on agricultural buildings. Many roofs have also been replaced with 20th century materials like asphalt shingles or metal panels. Similar to the houses in Ste. Genevieve, many roofs are king post trusses with an elevated collar tie member - the “Norman” truss.

Early Structures in New France

The vertical log structures of the Illinois Country were influenced by a wide variety of sources and exhibit an amalgam of building traditions. During the 17th century, residents of Normandy, Brittany, and Poitou comprised the majority of the French who immigrated to Canada, settling particularly around Quebec. It is from these



Figure 36. 18th century pan-de-bois structure under restoration in Terres-de-Caux, Normandy, France. Note the steeply pitched brace or *décharge* on the right. The brace set at a 45-degree angle was added at a later date. (Source: Lurita McIntosh Blank, 2024.)



Figure 37. The east wall of Room 106 at the Delassus-Kern House. Note the steeply pitched brace on the right. (Source: MoDNR Felix Vallé House archives.)

émigrés that the many of early settlers of Kaskaskia and Ste. Genevieve can trace their family lines. Other settlers arrived directly from France and the Caribbean. Additionally, there were significant cultural exchanges with settlers from other home countries, particularly the English, who also had a shared tradition of half-timbered construction.⁹⁰

With the earliest structures in Quebec, the influence of building types from northern and western can be readily seen. In an early description of house construction, written in 1621 by Samuel de Champlain, a French explorer and founder of Quebec City, he describes a structure to be built in Cap -Tourmente as “made of wood and earth in the manner of those built in the villages of Normandy.” Champlain spends the next several paragraphs describing the measurements, materials, and skilled labor required for the work.⁹¹

The house described by Champlain likely followed a building form seen throughout Normandy, with a simple, rectangular form, small windows, and a steeply pitched roof. A similar extant example is the Maison Lamontagne, built in 1744 in Rimouski, Quebec, today one of the oldest half-timbered structures in Quebec.⁹²

90 Edwards, "Long Distance Implantation of Vernacular Architecture Traditions," 47 and 50.

91 Robitaille, Andre. *Habiter en Nouvelle-France, 1534-1648*. Quebec: Publications MNH, Inc., 1996: 230-231; and Champlain, Samuel de. *Les voyages de la Nouvelle France occidentale, dicte Canada, faits par le sr de Champlain*. Paris, France: Chez Pierre Le Mur, 1632: 113-114.

92 Site Historique de la Maison Lamontagne, <https://maisonlamontagne.com/>. Accessed August 12, 2024.

Chronology of Development and Use

Through the historical research and assisted by the physical evidence of changes over time documented during the physical investigation, a tabular chronology has been prepared on the following pages to organize the major historical events, important people, and alterations that have influenced the Delassus-Kern House and its site as they currently exist.

HISTORICAL EVENT	DATE	HISTORICAL CONTEXT
	1750s	Ste. Genevieve is established and noted as the oldest European settlement in Missouri. The original townsite was approximately three miles south of the current location. Significant research has been conducted on the founding date of the community, and no specific evidence exists to support a precise founding date. Ekberg's Colonial Ste. Genevieve explores the likely settlement dates and suggests it was more likely a fluid settlement from Kaskaskia to the west side of the river. The first known maps to identify Ste. Genevieve are from 1755.
	1752	First census in Ste. Genevieve identifies eight heads of household and 23 individuals.
	1762	France cedes land to Spain through the Treaty of Fontainebleau, and Spain controls the territory until 1800 when it is retroceded back to France.
	1785	A severe Mississippi River flood causes the residents of Ste. Genevieve to temporarily relocate to the hills with a later, permanent relocation to the new (current) town site. The move was gradual and by 1795 was largely complete.
	1787	The Northwest Ordinance prohibits slavery in American territory north of the Ohio River. Some French slave owners move west of the Mississippi River into Spanish controlled territory to avoid losing their enslaved people. Eleven inhabitants are documented at the new Ste. Genevieve townsite, although this number is disputed and maybe somewhere closer to 13 or a few more residents.

Delassus-Kern House Historic Structure Report

HISTORICAL EVENT	DATE	HISTORICAL CONTEXT
	1788-89	Political and social unrest leads to the start of the French Revolution, including the storming of the Bastille prison on July 14, 1789.
	1789	Ste. Genevieve floods again.
De Lassus purchases 2,000 acres of land from Scioto Company on the bank of the Ohio River and departs France with his wife and daughter.	1790	
De Lassus purchases land along the Monongahela River, just north of Pittsburgh, and builds a house in which his wife and children lived for two years. De Lassus leaves his wife and children in Pittsburgh and travels to New Orleans to make a deal with Governor Francisco Luis Hector de Carondelet, Spanish governor of Louisiana, for the land grant for New Bourbon.	1791-92	
De Lassus settles permanently at New Bourbon and has his family join him there. He has a vertical log house constructed on a bluff south of the new town.	1793	
The residence remains under construction, and de Lassus deeds the property to his son Camille because of his overwhelming debt.	1794	
De Lassus receives a grant for an additional 7,056 arpents on which he plans to mine lead.	1795	
Carondelet appoints de Lassus commandant of New Bourbon. De Lassus conducts the first census of residents in New Bourbon.	1797	
Carondelet grants de Lassus three additional land concessions for 1,000, 810 and 100 arpents. De Lassus also claims ownership of a further 1,000 arpents, which included his house site from a land concession from Zenon Trudeau.	1798	
Most of de Lassus's land grants are formally surveyed, and the tract of 810 arpents is subdivided into two sections of 500 and 310 arpents.	1800	Control of the Louisiana Territory returns to France.
The United States government requires justification of Spanish land grants, tying up ownership of the de Lassus property for nearly 30 years.	1803	The United States acquires the territory as part of the Louisiana Purchase, which doubles the size of the United States. The Corps of Discovery (the Lewis and Clark Expedition) begins from St. Charles, Missouri, approximately 75 miles north of Ste. Genevieve. Clark likely passed near Ste. Genevieve during his 1803 visit to Fort Kaskaskia.

HISTORICAL EVENT	DATE	HISTORICAL CONTEXT
	1804	The original five districts of Missouri are identified as Cape Girardeau, New Madrid, St. Charles, St. Louis, and Ste. Genevieve, by proclamation from William Henry Harrison, then governor of the Indiana Territory which held administrative control over the District of Louisiana.
De Lassus and his wife both die, and the estate is tied up in court due to the extreme debt against the property. Israel Dodge is called to testify to confirm the de Lassus property claim. He states that he built a cabin on the tract in 1798 that was occupied by a free black woman, possibly Lisette.	1806	
	1811-1812	New Madrid Earthquakes, a series of three severe earthquakes from December through February, cause widespread, regional damage and are today recognized as some of the most intense seismic events experienced in North America since the time of European settlement. Ste. Genevieve experiences minor damage.
	1814	First American Missouri census is taken in October 1814.
De Lassus's lands are auctioned to pay his debts. Carlos de Hault de Lassus purchases the property at auction and deeds it Camille's children.	1819	
	1820	The "Missouri Compromise," passed by Congress on March 3, 1820, allows Maine to enter the United States as a "free state" and Missouri to enter as a "slave state." The compromise, which maintained the balance between states where slavery was legally allowed and those states where it was prohibited, was a temporary patch on the increasingly volatile issue of slavery.
The property is subdivided among the heirs, and Peter Pratt, the widow of de Lassus's daughter Marie Louise, receives the parcel on which the current Delassus-Kern House stands.	1834	
After a length series of petitions and appeals, the United States Supreme Court finally validates the de Lassus Spanish land grants, clearing the ownership and title.	1835	

Delassus-Kern House Historic Structure Report

HISTORICAL EVENT	DATE	HISTORICAL CONTEXT
Pratte sells his holding to Martin Sweek for \$200.	1836	
Sweek sells the property to Ichabod Sargent for \$1,200.	1837	
	1854	Kansas-Nebraska Act passes, repealing the Missouri Compromise of 1820 and allowing “popular sovereignty” in determining if a territory would be free or permit slavery. This spurs years of violence between pro- and anti-slavery forces along the Missouri-Kansas border.
John D. Kern purchases the property from Ichabod Sargent's estate for \$1,000	1855	
	1861	Following the secession of South Carolina and six other states, the Missouri State Convention votes against succession in a 98-1 vote on March 19. The Civil War officially begins with the Battle of Fort Sumter on April 12. By June, Union forces would occupy Jefferson City, Missouri, and the state was fully embroiled in the war. Ste. Genevieve is spared the worst of the fighting but the war is divisive among the citizens.
Joseph Jokerst paid to work on the cistern and corn crib. He received payment in a mix of cash, potatoes, meat, and tobacco.	1869	
John D. Kern dies, and the estate is inventoried. At the time of his death, John D. has significant agricultural holdings and personal possessions.	1871	
The Kern heirs sell the farm for \$2,000 to the three sons, John Edward, William, and August Kern.	1875	
John Edward dies and his wife Philomena administers his estate. She attempts to sell the personal property and his third of the farm, but is blocked by a lawsuit filed by William and August. The property is purchased at auction by William and August for \$500. William in turn sells his share to August for \$1,000, making August the sole owner.	1877-78	

HISTORICAL EVENT	DATE	HISTORICAL CONTEXT
August makes multiple improvements to the property, including adding a second story to the house. Other outbuildings, including the existing corn crib and wood shed, are also likely added at this time or shortly after. As part of the alterations to the house, the original roof framing and wood shingle roof are removed. Metal panel roofing and new brick masonry chimneys are constructed. Many of the windows are replaced with a 2-over-2 sashes.	1903	
August's twin sons Filmore and Hilbert serves in the United States Navy in 1918-1919 as a firemen on the USS Indiana.	1917	The United States enters World War I on April 4, 1917
New Bourbon Road/Missouri Route 25 is widened and straightened; the orientation of the historic unimproved road is likely reflected in the angle of the concrete retaining wall in front of the house. The new roadway is an "all weather road," meaning graded, compacted, and possibly graveled. The road is later graveled 1930 and finally paved in 1934. The road becomes US Route 61 in the early 1950s.	1926	
	1929	The stock market crash starting on October 28, 1929, triggers a severe economic downturn - the Great Depression, that lasts for over a decade. Among those most affected by the depression are farmers.
	1934-1939	A series of severe droughts and record-setting heatwaves sweep the southern and central states, called the Dust Bowl after a devastating dust storm in the Texas panhandle on "Black Sunday," April 14, 1935. The direct impact on the Kern farm is currently unknown, but Missouri's agriculture is severely affected by soil erosion and drought for several consecutive years.
August dies and wills property to his children. His daughters Nettie, Rachel, and Edna eventually inherit the property and live their until their deaths in the 1960s. August's estate settlement will not be finalized until 1961.	1939	

Delassus-Kern House Historic Structure Report

HISTORICAL EVENT	DATE	HISTORICAL CONTEXT
	1941	The United States enters World War II on December 7, 1941. Labor shortages for farm workers becomes a widespread issue. Many women entered the workforce by choice and necessity, including the agricultural trades.
August W. and Shirley Kern purchase the property from Nettie, Rachel, and Edna for \$1. They live there with their family for many years.	1955	
The house was not continually occupied, but one of the owner's may have begun but did not complete repairs to address areas of deterioration.	1980s	
Awareness of the architectural significance of the house grows, and the house is documented by HABS.	1985-86	
The house is damaged by the flood. August and Shirley Kern sell the house to Susan L. Flader. The house is donated to the Gifted to Missouri Department of Natural Resources later that same year. MoDNR performed limited repairs and mothballed the house with the hope for future restoration work.	1993	The Great Flood of 1993 inundates Ste. Genevieve and floods many of the historic buildings along the Common Field.
The house is in very poor condition. The porches are removed from the south and east walls.	c. 1996	
Southeast Missouri State University and Murray State University conduct Archeology Field Schools lead by Dr. Kit Wesler, Dr. Bonnie Stepenoff, Dr. Carol Morrow, and Renae Farris that investigate the history of the house and site.	1997-2003	
The porch and roof over the kitchen door on the south wall is removed	c. 2008	
A new standing-seam metal roof and new gutters are installed, and the brick masonry chimneys are removed.	2015	
High water levels and flooding of the Mississippi River force the closure of US-61 south of Ste. Genevieve. Due to a breach in Levee District 2, the floodwaters threaten, but do not reach, the house.	2019	
The property is acquired by NPS and incorporated into Ste. Genevieve NHP	2021	
NPS has shoring installed to stabilize the distressed east vertical log wall.	2023	

Statement of Significance

PERIOD OF SIGNIFICANCE

The National Register of Historic Places Ste. Genevieve Historic District nomination identifies the period of significance as 1790 to 1951. This period begins with the construction of the oldest extant buildings in the district and extends through the fifty-year recommended cut-off date (from the time written in 2001) as established by the National Register. The nomination incorporates discussions of all aspects of the history of the community and architectural styles including ranch houses.

Though precise dates for significance are not associated with the federal acquisition of properties, Ste. Genevieve NHP enabling legislation was authorized by the Consolidated Appropriations Act of 2018 on March 23 to “preserve, protect, and interpret for the benefit of present and future generations the themes of French settlement, vernacular architecture, and community form and farming on the frontier associated with Ste. Genevieve”⁹³ - themes that better align with the period of significance identified in the 2016 Special Resource Survey.

Delassus-Kern House: c. 1793 - 1939

This HSR is specific to the Delassus-Kern House and recommends a period of significance that begins in c. 1793, the approximate date of the felling of the logs for the house, through c. 1836, the likely construction date of the house by Martin Sweek, and extending to 1939, with the death of August Kern and the end of major alterations to the property. The Kern family, who purchased the property in 1855, made significant improvements to the house and property. Many of these alterations occurred under the ownership of August Kern between 1878 and 1939. Physical features to his credit include a new second story, new roof configuration, reconfiguring interior spaces, alternations to the galleries, new brick masonry chimneys, and numerous agricultural buildings (some extant, many now missing).

1960 / 1970 National Historic Landmark District

In 1960, the Ste. Genevieve National Historic Landmark District was recognized for the national significance of its collection of extant French vernacular vertical log architecture and was designated under the theme of “French Exploration and Settlement.” As one of the earliest NHL districts, the nomination specifically identified only eight structures believed to have 18th century construction dates but established no specific period of significance. When the NHL district nomination was revised and expanded in 1970, the district boundaries were established, and the number of contributing resources was kept at eight but slightly revised.

The Delassus-Kern House was not listed among the eight contributing resources and is outside the boundaries of the NHL district.

2002 National Register District

The 2002 designation of the Ste. Genevieve National Register District included overlap with the 1960 / 1970 NHL district but was generally broader to encompass buildings also significant at the state and local level. The National Register district was nominated under the following criteria:

Criterion A (Event) in part for association with an “ethnically diverse population including French, Anglo-Americans, African Americans, and Native Americans.”

Criterion C (Design/Construction) in part for its “French vertical log architecture” that “represents the early French and French Canadian settlement of the community.”

Criterion D (Information Potential) in part for the “potential for significant archeological deposits” related to the “French, German, Anglo-American and African American communities.”

(Note: The National Register nomination does not identify pre-European or Native American resources under this criterion as the majority of these resources

93 National Park Service. Ste. Genevieve National Historical Park Legislation and Map. <https://parkplanning.nps.gov/document.cfm?parkID=155&projectID=31496&documentID=86827> accessed 3 May 2021.

Delassus-Kern House Historic Structure Report

are located outside the district boundaries.)

The period of significance for the National Register district was given as 1790 – 1951, approximately the founding of “New Town” Ste. Genevieve to the minimum age requirement of 50 years at the time of nomination.

The Delassus-Kern House is discussed only in passing and is outside the boundaries of the national register district.

2016 Special Resource Study

Public Law 109-319, the Ste. Genevieve County National Historic Site Study Act of 2005 tasked the NPS with studying the historic resources of Ste. Genevieve for potential inclusion in the national park system. The study culminated in a 2016 report that found the Ste. Genevieve district to be nationally significant under the following criteria.

Criterion 4 (Architecture) for:

the district’s “large and rare collection of French vernacular vertical log houses.”

Criterion 1 (Broad Patterns of United States History) for French colonial settlement, which also includes reference to the vertical log structures. Included also under this criterion is a discussion of the ethnic diversity of Ste. Genevieve, stating:

The richness of the town’s cultural heritage is further amplified by the fact that several French vertical log houses had owners and occupants who were free people of African heritage in the years before the Civil War ended slavery in the United States.

The Special Resource Study identified a period of significance for the district of 1750–1846, approximately the founding of “Old Town” Ste. Genevieve to the construction date of the last French vertical log structure in New Town.

2018 Ste. Genevieve National Historical Park

In 2018, Ste. Genevieve NHP was established as the 422nd Unit of NPS. Though precise dates for significance are not associated with the federal acquisition of properties, Ste. Genevieve NHP enabling legislation was authorized by the Consolidated Appropriations Act of 2018 on March 23 to:

*preserve, protect, and interpret for the benefit of present and future generations the themes of French settlement, vernacular architecture, and community form and farming on the frontier associated with Ste. Genevieve.*⁹⁴

2021 Archeological Overview and Assessment

This report identifies a time frame of c. 1770 – 1860 as the period of significance, representing the major time of “French influence and associated cultural expressions” in Ste. Genevieve.

The report identifies the importance of the Delassus-Kern House and discusses its potential connection with the Luzieres-Hecker archeological site located on the bluff nearby. The Luzieres-Hecker site, believed to be the location of the original residence constructed by Pierre-Charles de Lassus de Luzieres, may have provided some of the salvaged building materials found in the Delassus-Kern House.⁹⁵

SIGNIFICANCE OF THE DELASSUS-KERN HOUSE

Criterion C (Design/Construction)

The Delassus-Kern House is primarily significant under National Register Criterion C, at the national level, for embodying the distinctive characteristics of a late 18th-century French vernacular vertical log structure in the poteaux-sur-sole style. Alterations made during the period of significance include construction of a partial second story, alterations to the east and south porches (or galleries), alterations to the chimneys, and construction of multiple agricultural outbuildings. With

94 National Park Service. Ste. Genevieve National Historical Park Legislation and Map. <https://parkplanning.nps.gov/document.cfm?parkID=155&projectID=31496&documentID=86827>, accessed 3 May 2021.

95 National Park Service. *Archeological Overview and Assessment of Ste. Genevieve National Historical Park*, 2021, 25-27.

these changes, the current building form from the c. 1793 time period is partially intact and is enveloped by the c. 1903 construction. The house retains a medium level of integrity of the original c. 1793 fabric including the post-on-a-sill vertical logs and remnants of extant interior finishes in the form of baseboards and window and door moulding. The early 20th- century alterations to the interior have moderate level of integrity, with some removal of finishes and alterations impacting the historic fabric.

Criterion A (Event)

The Delassus-Kern House is also significant under National Register Criterion A, at the national level, for its contribution to the patterns of French colonial settlement in Ste. Genevieve. The house contributes to the patterns of settlement for both Ste. Genevieve and New Bourbon and is the only structure related to New Bourbon that is still extant.

Criterion D (Information Potential)

The Delassus-Kern House is also significant under National Register Criterion D, at the local level, for its potential to contribute our understanding of human history. Colonial and Pre-Civil War era deposits may be present at the site. This criterion should be revisited after completion of further archaeological study.

Character-Defining Features

A “Character-Defining Feature” is an aspect of a building’s design, construction, or detail that is representative of the building’s function, type, or architectural style. Character-defining elements include the overall shape of the building, its materials, craftsmanship, decorative details, interior spaces and features, as well as the various aspects of its site and environment. Generally, character-defining features date to a property’s period of significance. For a historic resource to retain significance, its character-defining features must be retained to the greatest extent possible. An understanding of a building’s character-defining features is a crucial step in developing a rehabilitation plan that incorporates an appropriate level of restoration, rehabilitation, maintenance, and protection.

There are numerous extant features that date to within the period of significance that contribute to the historic character of the Delassus-Kern House and its surrounding environs. The property retains a high degree of integrity due to the surviving poteaux-sur-sole construction and the preservation of its rural context with the unobstructed viewshed across the Common Field.

The form and configuration of the current house are also some of the primary character defining features. The house has been changed from its original configuration with modifications made in 1903 that are also significant and important in its history.

A summary of the Delassus-Kern House's character defining features is as follows, developed from the guidance provided by Preservation Brief 17.

CHARACTER DEFINING FEATURES		
OVERALL VISUAL ASPECT		
Element	Feature or Element	Commentary
Setting and Context	Located on an agricultural parcel along US-61, with unobstructed viewsheds of the Common Field and towards the site of Old Town Ste. Genevieve. Proximity and association with the settlement of New Bourbon to the north and west.	<i>c. 1793 - 1939</i> The existing orientation of the house, with the primary facade facing east towards the Common Field, maintains the same orientation as the original construction. Encroachment of modern development has been minimal and nearby structures are mostly screened by vegetation, maintaining the 19th century rural context. The presence of several 20th century outbuildings on the property and the continued agricultural use of the Common Field are compatible with the historic use of the site and surrounding landscape. The House's contextual relationship with US-61, a transportation corridor that long predates European settlement, as well as the Common Field, Old Town Ste. Genevieve, and New Bourbon are key character defining features of the overall site. Contributing features include: • The Delassus-Kern House and its alignment with historic New Bourbon Road (now US-61) • The proximity and historical relationship of the site with the settlement of New Bourbon • The eastward orientation of the primary facade, overlooking the Common Field
Setting and Context	Partially intact American farmstead with surviving ancillary structures that date within the period of significance.	<i>1890s - 1939</i> Several of the agricultural outbuildings historically present on the site during ownership by the Kern family are still extant, including corn crib, the chicken house, and the woodshed, along with the ruins of the smoke house and evidence of another chicken house. Other outbuildings were removed at various times in the latter half of the 20th century. Sufficient historic fabric exists to convey and interpret the site as a working farm. Contributing features include: • Agricultural outbuildings on the property (no longer extant from the period of significance, but compatible outbuildings are present)

CHARACTER DEFINING FEATURES		
Shape and Massing	American side-gabled structure, with a symmetrical facade and exterior porches (now missing).	<i>1903</i> The existing massing is consistent with an American side-gabled house, similar to what is popularly referred to as an "I House" - a two-story, multi-room structure with gabled ends and porches. Although the massing of the vertical log house that existed prior to the 1903 alterations has been lost, the current massing dates to within the period of significance. The double-story porch, which was heavily damaged by the 1993 flood and removed in the later 1990s, was a key character defining feature which should be considered for reconstruction. Contributing features include: • Long, rectangular massing, with the long side forming the primary facade • Double-story house with side gabled massing • Double-story porch with upper open gallery (not extant) • East gallery stairs aligned with main entry (not extant)
Construction Methodology	Poteaux-sur-sole exterior wall framing	<i>c. 1793, with later alterations</i> The Delassus-Kern House is the largest known extant poteaux-sur-sole structure in Ste. Genevieve. The vertical log walls bearing on the limestone foundation walls, along with the pierrotage infill are key character defining features, representing a rare and valuable construction methodology with national historical significance. At the interior, large areas of vertical log construction are exposed to view due to removal of wall finishes in the 2000s, in contrast to many other poteaux-sur-sole structures, which are fully finished on the interior. The exposed log construction provides a unique interpretive opportunity at this property. Contributing features include: • Timber vertical logs forming the wall framing • Pierrotage infill between the logs • Timber framing for first floor structure

CHARACTER DEFINING FEATURES		
Openings	Exterior windows and doors	<i>c. 1793 or c. 1836 and 1903, with later alterations</i> The first floor door and window openings at the east and west walls appear to be in their original c. 1793 or c. 1836 locations. The second floor door and window openings also appear to be in their original 1903 locations. Also in 1903, two windows were added to the first floor, one each on the north and south walls, after the original stone masonry chimneys were removed during the alterations. In the single known late 19th century photograph of the House, the windows were 6-over-6, double hung sashes. The 6-over-6 windows on the west wall are consistent with these photos and may be very early window sashes. At other locations, the 2-over-2, double hung windows, where extant, appear to date to 1903 and are consistent with windows seen in early 20th century photographs of the house. Both window styles date within the period of significance. The Greek Revival doors at the east and west entries are visible in the early 20th century photographs and date within the period of significance. Other exterior doors also likely date within the period of significance but are currently of undetermined date. The painted four-panel wood door visible in the 19th century photograph may be the same door currently installed at the second floor gallery entry. Contributing features include: • Symmetrical primary facade with its rhythm of window and door openings • Alignment of window and door openings on the east-west and north-south axes • Double-hung sash windows with 2-over-2 lites on the east, north, and south walls. • Double-hung sash windows with 6-over-6 lites on the west wall. • Louvered casement shutters (not extant) • Wood panel doors with upper divided lites at the main entrances on the east and west walls • Wood batten-style doors on the basement level

CHARACTER DEFINING FEATURES		
Materials	Roofing and exterior wall covering materials	<i>1903, with later alterations and modern replacement materials</i> Wood shingles, as seen in the earliest photographs of the house before the second floor was added in 1903, were likely the original roof covering and were in place for much of the house's history. After the construction of the second story, the roofing was standing-seam metal panel, which was commonly used in Ste. Genevieve at the turn of the 20th century. Weatherboard lap siding was also a common exterior wall finish in Ste. Genevieve and has been present on the house since at least the later part of the 19th century. The existing standing-seam metal roofing and cedar lap siding are modern replacement materials that maintain a character defining appearance aligned with the character defining massing. Contributing features include: • Standing-seam metal panel roofing • Wood weatherboard siding on the exterior walls • Exposed rubble stone masonry foundation wall • Brick masonry chimneys (not extant)
VISUAL CHARACTER AT CLOSE RANGE		
Craft Details	Hewn structural members with traditional joinery	<i>c. 1794 or c. 1836</i> The structural members for the original c. 1793 construction were fabricated by hand with an axe which created a distinctive hewn surface, in contrast to later nineteenth century and twentieth century wood framing members which were sawn. Joinery between timber structural members is typically accomplished with mortise and tenon connections with wood pins. These techniques provide valuable insight into the hand-crafted and labor-intensive nature of building construction in early Ste. Genevieve. Additionally, varied structural detailing seen between the east and west rooms may provide evidence of historic alterations to the Property. •

CHARACTER DEFINING FEATURES		
		Contributing features include: • Hewn wood surfaces visible on the vertical log wall members and floor framing members in the basement • Carpentry joinery using traditional methods, including mortise-and-tenon, half lap, scarf, and dovetail joints
INTERIOR VISUAL CHARACTER		
Sequences of Spaces	Enfilade plan	c. 1793 or c. 1836 The enfilade floor plan features a sequence of interior spaced that are directly connected by aligned doorways, without the use of separate corridors or hallways. Enfilade floor plans express the importance of French influence on the design and use of houses in 19th century Ste. Genevieve, while the use of corridors would be more common in a transitional structure with English influence. At the Delassus-Kern House, all six rooms on the main floor are connected in the enfilade manner, with aligned window and door openings. The placement of the original stone masonry fireplaces (no longer extant) suggested that the eastern rooms were hierarchically more prominent than the rooms on the west end of the first floor. The second floor, added in 1903, features a transitional floor plan with French and English influence; the stairs lead to a small vestibule or corridor, which is double-loaded to the north and south with bedrooms. The two north bedrooms are interconnected like the enfilade floorplan below. Contributing features include: • Enfilade floor plan with rooms interconnected by aligned door and window openings

CHARACTER DEFINING FEATURES		
Interior Finishes	Wood trim and interior casing	<i>19th century, 20th century undetermined date(s)</i> Wood trim and casing are extant in many locations, but is missing at some windows on the first floor. The trim and casing utilized throughout the interior all contribute as character defining features of each room. There are three distinct styles of window and door casing at the house, all three of which date to within the period of significance. The flat trim seen on the first floor, with beaded edges and applied moulding, may represent the earliest era of interior finishes, possibly the first-half of the 19th century; doors and trim dating to this period appear to have been original painted with faux-graining. The Greek Revival pedimented casing may represent a second era of interior finishes, possible to the middle of the 19th century; this casing is similar to Greek Revival casing in other houses in Ste. Genevieve, such as the Jean Baptiste Vallé House, and was originally painted a solid color. On the second floor, a third era of interior finishes, feature flat trim without applied moulding likely dates to 1903. These elements appear to have been originally stained or painted a light brown. Contributing features include: • Hardwood flooring (not extant in Rooms 101, 102 and 103) • Plaster wall finishes (not extant in Rooms 101, 102, and 103) • Door and window casing (not extant in Rooms 104, 105, and 106) • Baseboards, chair rails, and wall trim (partially extant in Rooms 104, 105, and 106) • 6-panel wood panel interior woods with period hardware

CHARACTER DEFINING FEATURES		
Surface Finishes and Materials	Plaster walls and wall finishes	<i>20th century undetermined date(s)</i> Much of the interior plaster and lath on the first floor were removed in the 2000s to expose the wood log construction; some plaster remains extant in Rooms 101, 102, and 103 and remains mostly intact on the second floor. Where extant, the plaster appears to be a three-coat system with a fine lime or possibly gypsum top coat and is applied to sawn lath attached with wire nails, indicating a late 19th century or early 20th century origin, possibly the 1903 alterations and certainly within the period of significance. Remnants of wallpaper are extant in many rooms, with small remnants dating to the early 20th century. Unfortunately, insufficient quantities of the earliest wall papers survive to effectively determine the historic decorative schemes. The majority of the existing wall paper post-dates the period of significance.

Assessment of Integrity

Historic integrity is the ability of a property to convey its historic significance. Integrity involves seven aspects: location, design, setting, materials, workmanship, feeling and association. These aspects closely relate to the resource's significance and should be primarily intact for designation. Depending on the significance criterion, some aspects of integrity are more critical to conveying the building's historic significance.

A property that is significant for architectural merit must retain the historic elements that characterize the type, period, or method of construction that the property represents. Retention of design, workmanship, and materials is usually more important than location, setting, feeling, and association when determining integrity. Location and setting are important for properties whose design is a reflection of their immediate environment.

Per the National Register Bulletin 15: *How to Apply the National Register Criteria for Evaluation*, "integrity" is the ability of a property to convey its historic significance. Integrity is evaluated under seven aspects: Location, Design, Setting, Materials, Workmanship, Feeling, and Association. Depending on the significance criterion of the property, some aspects of integrity are more critical to expressing the building's historic significance than others, but the property must retain integrity to be considered significant.

The primary historical significance of the Delassus-Kern House is its use of the poteaux-sur sole construction technique. The house is likely the largest extant poteaux-sur-sole structure in the Ste. Genevieve region. Despite later alterations, including the addition of the second-floor structure in 1903, the original vertical log structure and its stone masonry foundation remain majorly intact.

INTEGRITY ASSESSMENT	
Location	
<i>The place where the historic property was constructed or the place where the historic event occurred.</i>	
High	The Delassus-Kern House retains a high degree of integrity of location in relationship to its site. Although there is some consideration that the house may be constructed of reclaimed logs that predate the current structure by as much as fifty years, the existing building location has remained unchanged since at least c. 1836. A further consideration for significance and integrity of location is the relationship of the Kern House with the historic site of New Bourbon, founded by de Lassus in 1793. The house is likely the last remaining structure associated with that settlement.
Design	
<i>The combination of elements that create the form, plan, space, structure, and style of a property.</i>	
Medium	The Delassus-Kern House has a medium degree of integrity of design. The house is believed to be the largest extant poteaux-sur-sole structure. A six-room enfilade plan above a partial, full-height basement is readily recognizable in the current building, along with the original rhythm and interior alignment of window and door penetrations. The c. 1793 or c. 1836 log partition walls are intact. Other alterations likely related to the 1903 construction of the second floor did somewhat diminish the integrity of the original design. These include the loss of the original roof framing, the loss of the exterior chimneys at the end walls, and the loss of the east gallery. Deterioration has also caused loss of altered features such as the removal of the double-story gallery on the east face in the early 2000s.
Setting	
<i>The physical environment of a historic property.</i>	
High	The Delassus-Kern House has a high level of integrity of setting, likely the highest integrity of setting of any historic structures currently managed by the Ste. Genevieve NHP. The house was originally constructed in an agricultural setting, directly across from the Common Field to the east. Unlike the other historic sites within the park, no modern development has encroached upon the immediate vicinity of the house, and the view to the Common Field remains unobstructed. Although they likely post-date the period of significance for the house, the remaining ancillary buildings also contribute to the integrity of setting by conveying the agricultural land use of the site. The placement of the house on US-61 which connects with New Bourbon Road (now St. Marys Road) reflects the use of the historic use of this highway as a transportation corridor between Ste. Genevieve, New Bourbon, and other settlements and commercial sites to the south. Truck traffic along US-61 between the house and the Common Field does impact the integrity of setting. Currently, traffic frequency does not impact the visitor experience; a significant increase in trucking traffic along US-61 may diminish the integrity of setting.

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INTEGRITY ASSESSMENT	
Materials	
<i>The physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property.</i>	
High	The Delassus-Kern House retains a high degree of integrity of materials. The primarily character-defining features, including the log walls and floor systems of the original poteaux-sur-sole structure and the stone masonry foundation, remain majorly intact. There are impacts to the integrity of materials due previous repairs, but the repairs do not represent a substantial loss of historic fabric. The house also provides a unique opportunity to convey the high integrity of materials due to the earlier removal of interior finishes which exposed the vertical logs and pierrotage infill. The current metal roofing could be replaced with a more appropriate roofing system to reduce the visual impact created by non-historic roofing materials, if the metal panels are determined to not be historically appropriate for the period of interpretation. The integrity of materials is currently threatened by the deterioration of the building.
Workmanship	
<i>The physical evidence of the crafts of a particular culture or people during any given period in history or prehistory.</i>	
High	The Delassus-Kern House has a high integrity of workmanship. As a poteaux-sur-sole structure, the house represents an excellent example of the French Colonial vernacular architecture for which Ste. Genevieve has been determined to be nationally significant. The vertical log construction at the house displays multiple periods of workmanship, demonstrating the building practices used in late 18th and early 19th century construction, interesting use of salvaged building materials (a common practice in Ste. Genevieve) at the west rooms, and early 20th century craftsmanship for the second-floor alteration (another common practice in Ste. Genevieve). The integrity of workmanship is on high display at the Kern House due to the thorough visibility of the vertical logs at the interior, showing bracing members, timber detailing, and structural alterations – features which are mostly concealed at the other historic sites managed by the Ste. Genevieve NHP. The integrity of workmanship is currently threatened by the deterioration of the building.

INTEGRITY ASSESSMENT	
Feeling	
<i>A property's expression of the aesthetic or historic sense of a particular period of time.</i>	
High	The Delassus-Kern House has a high integrity of feeling, supported by the high integrity of the setting. The site still conveys its historic and aesthetic feeling of a rural farm. The view to the Common Field remains unobstructed, and the fields are still cultivated today. The trees on north, west, and south shield the immediate viewsheds, and no modern construction intrudes upon the immediate vicinity of the property. The presence of agricultural outbuildings, such as the ruins of the corn crib, chicken sheds, and smoke house convey the historic feeling of the property when it was a working farm. At the interior, despite the loss of finishes and deterioration of the structure, a strong feeling of the historic character and what it was like to occupy the space as a rural home remain. Restoration of natural light to the interior will improve the interior integrity of feeling. Deterioration of the outbuildings and the structure threaten the integrity of feeling.
Association	
<i>The direct link between an important historic event or person and a historic property.</i>	
Low	A direct association between Pierre Charles Dehault Delassus Deluzières and the existing house has not been established and appears unlikely given the findings of the historical research and archeological studies that have been carried out to date. A construction or relocation date of c. 1830s may be early enough to associate the house during the last years of ownership of the land by the Delassus Family; however, construction could have been performed around 1836-37, when the property was sold to Martin Sweek and again shortly after to Ichabod Sargeant, when the site had increased significantly in value. Some integrity of association may be considered, given the general connection between Pierre Delassus and the settlement of New Bourbon, of which the house is the sole remaining structure.

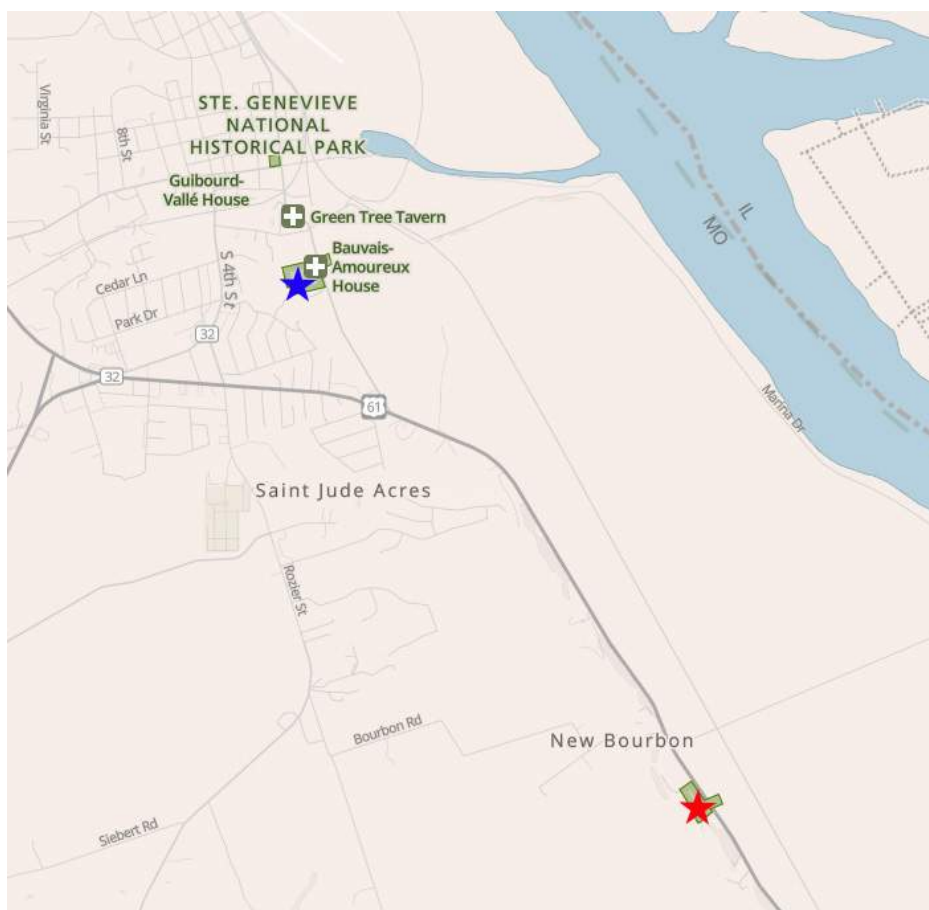


Figure 38. NPS mapping showing the locations of properties comprising Ste. Genevieve National Historical Park, with the park headquarters indicated as a blue star and the Delassus-Kern House indicated as a red star. (Source: NPS, <https://www.nps.gov/stge/playourvisit/maps.htm>)

Physical Description

SITE AND CONTEXT

The Delassus-Kern House is located along U.S. Highway 61 near the intersection with Cotton Woods Road to the east and Bourbon Road to the west in the unincorporated town of New Bourbon, approximately two miles to the southeast of Ste. Genevieve, Missouri. The property is part of Ste. Genevieve NHP, composed of several discontinuous French colonial-era properties (Figure 40 and Figure 41). The Delassus-Kern House also falls within a proposed expanded Ste. Genevieve Historic District, which is listed in the National Register of Historic Places and designated a National Historic Landmark (NHL) (Figure 42).¹ The Delassus-Kern House is considered nationally significant as a rare surviving example of

poteaux-sur-sole architecture. As such, it contributes to an understanding of vernacular construction methods associated with French colonial settlement in Illinois country along the Mississippi River. The house sits on an elevated terrace overlooking U.S. Highway 61 and the Mississippi River floodplain.

Visitors to the Delassus-Kern House arrive via U.S. Highway 61 (Figure 43), a two-lane, two-way, asphalt-paved public road that generally follows the Mississippi River for 1,400 miles between the city of Wyoming, Minnesota, to the north and New Orleans, Louisiana, to the south. U.S. Highway 61 extends to the town of Ste. Genevieve, intersecting St. Marys Road, which visitors can follow to reach other features of Ste. Genevieve NHP, including the Bauvais-Amoureux House and the Janis-Ziegler House (Green Tree Tavern). St. Marys Road also intersects Main Street, which continues into

¹ The Ste. Genevieve Historic District was administratively listed based on the National Historic Preservation Act of October 15, 1966. The property was designated a National Historic Landmark in 1960 and expanded in 1970.

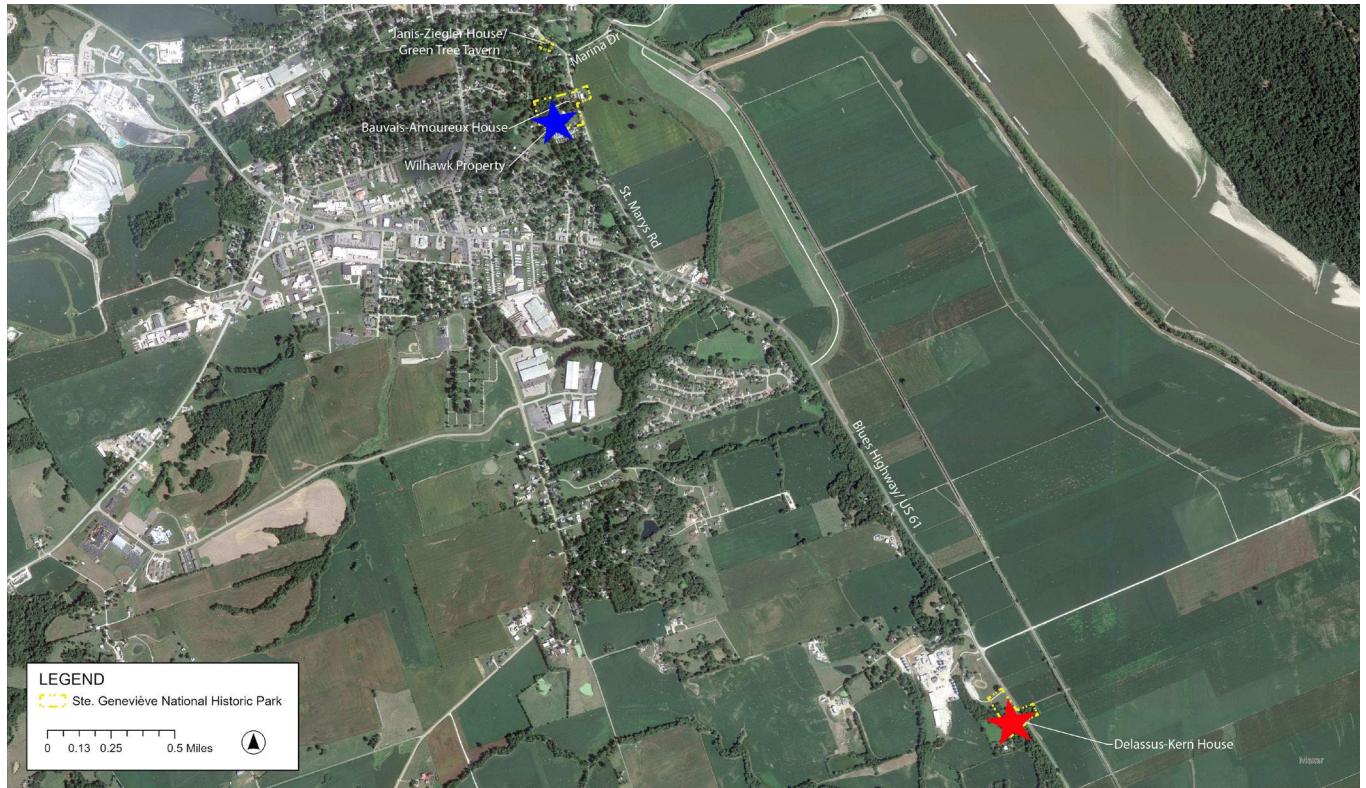


Figure 39. Aerial photograph showing the locations of properties comprising Ste. Genevieve National Historical Park, with the park headquarters indicated as a blue star and the Delassus-Kern House indicated as a red star. (Source: NPS GIS data)

Ste. Genevieve Archeology Sites

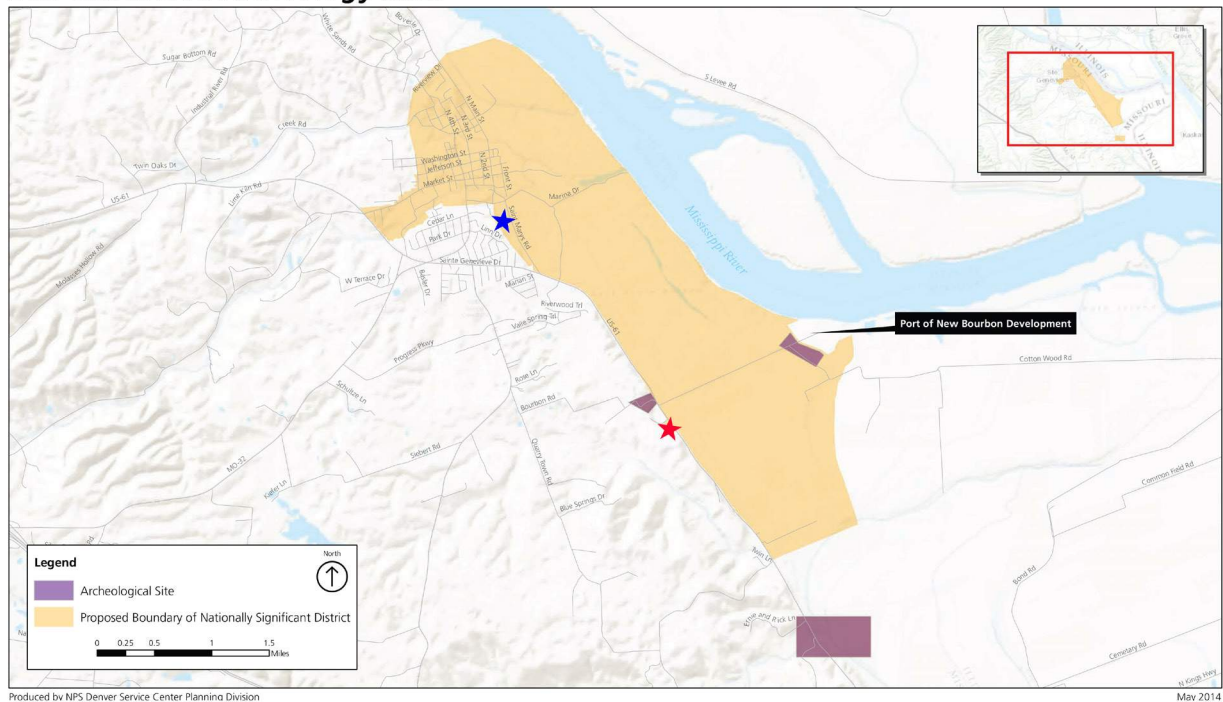


Figure 40. Map of the proposed Ste. Genevieve National Historic Landmark property with the park headquarters indicated as a blue star and the Delassus-Kern House indicated as a red star. (Source: Source: NPS, *Ste. Genevieve Special Resource Study*, 58



Figure 41. The unincorporated town of New Bourbon and the Delassus-Kern House property outlined in yellow. Adjacent features include the Ste. Genevieve Jaycees recreational field to the north and the Gateway FS industrial site to the northwest. The common field is to the east, with the Mississippi River beyond. (Source: NPS GIS data)

the town and provides access to the Ste. Genevieve Welcome Center and the Jean Baptiste Vallé House.

In addition to the properties that fall within Ste. Genevieve NHP, the city features numerous additional examples of French colonial architecture, as well as early nineteenth-century British-American and German-American buildings.² The Jean Baptiste Vallé House, for example, is part of a cluster of six historic French colonial period buildings along South Main Street near the center of town built between 1793 and 1844 that convey a sense of the character of Ste. Genevieve during the early 19th century. The buildings include the Bolduc House,³ Jean Baptiste Vallé House, Le Meilleur House, Linden House, Antoine O'Neill House, and Joseph Amoureux House. These significant buildings form a visually compelling streetscape and provide a glimpse of Ste. Genevieve as it might have looked in the early 19th century.⁴ Located outside of the city core, the Delassus-

Kern House offers an expanded view of settlement within the region, as well as a clear connection with its agricultural heritage.

THE DELASSUS-KERN HOUSE

The Delassus-Kern House is rectangular in plan, measuring 53 feet long and approximately 35 feet wide. It was originally constructed as a side-gabled, single-story poteaux-sur-sole log structure, consisting of vertical log walls keyed into timber top and bottom plates, built atop stone masonry foundation walls. Dendrochronology analysis performed by the University of Missouri indicates that vertical logs and joists comprising the first floor were harvested c. 1793, but it is unknown whether the structure as it stands today dates from this period or was assembled at a later date with salvaged logs. Several joists supporting the first floor appear to have been replaced over time.

² Douglas C. McVarish, National Register of Historic Places, Draft "Ste. Genevieve Historic District Boundary Expansion," October 2001), 7 - 3.

³ The Louis Bolduc House was individually designated a National Historic Landmark in 1970.

⁴ National Park Service, *Ste. Genevieve Special Resource Study and Environmental Assessment* (May 2016), 12.

Archaeological studies performed by the Southeast Missouri State University strongly imply that the site around the Delassus-Kern house was not occupied prior to 1830s.

Physical Description – Original Construction

The current floor plan of the first-floor poteaux-sur-sole structure within the Delassus-Kern House is three rooms wide and two rooms deep (Figure 44 through Figure 49). It is possible that the original house structure was three rooms wide and one room deep, as observed in many other vertical log structures extant in Ste. Genevieve, and the other rooms were added to the structure at a later date. The western three rooms appear to have been constructed separately, potentially from reused logs, but removal of additional plaster wall finishes would be required to better understand the construction sequence.

Both HABS documentation and the report written by B. H. Rucker state that the Delassus-Kern House originally contained 6 rooms. The existing structure and documentation performed at the site to date have not been conclusive. The lack of rafter notches or seats in the timber top plate of the north-south partition wall suggests that the house may have been assembled at this site as a six-room structure, but possibly of salvaged timbers from multiple structures.

Earlier articles and studies, including B. H. Rucker's report, have referenced a c. 1895 photograph of a house believed to be the Delassus-Kern House (Photo 8); the original photograph is in the collection of the MoDNR at the Felix Vallé State Historic Site. The house in the photograph appears to be located on a gently sloped parcel with outbuildings and trees on relatively level ground to the right background, while the Delassus-Kern House is located at the foot of an embankment with a 30-foot rise in grade. However, since the hillside

is denuded of trees in the historic photograph and given potential distortion from the camera lens, the perception of depth may be misleading. For the purposes of this report, this photograph is assumed to be of the Delassus-Kern House.

Physical Description – Later Alterations

A second floor was added in 1903 using conventional framing methods (Figure 50 through Figure 52), according to HABS documentation: "...a second floor was added above the three front rooms and the house lost its original French roof. Chimneys, closets, and a bathroom were added; the staircase was moved."

With the addition of the second story, the stone masonry chimneys at north and south were removed and infilled with dimension-lumber framing and windows. Four brick masonry chimneys with stoves were added to interior walls. In addition, a porch was added along the east and south exterior walls at the first-floor line, and a gallery was added at the second-floor line at the east facade.

Around 1996, the south and east porches were removed due to deterioration and damage from the Great Flood of 1993.

On the second floor, interior wall finishes remain in place but exhibit signs of past water infiltration at locations near the east door and near the north chimney. Fragments of historic floor cloths or linoleum are present in several rooms, including the upstairs bedrooms, the stair treads, and the kitchen. Some cabinetry, shelves, balusters from the porch, and other miscellaneous items remain within the two northern-most rooms within the second floor.

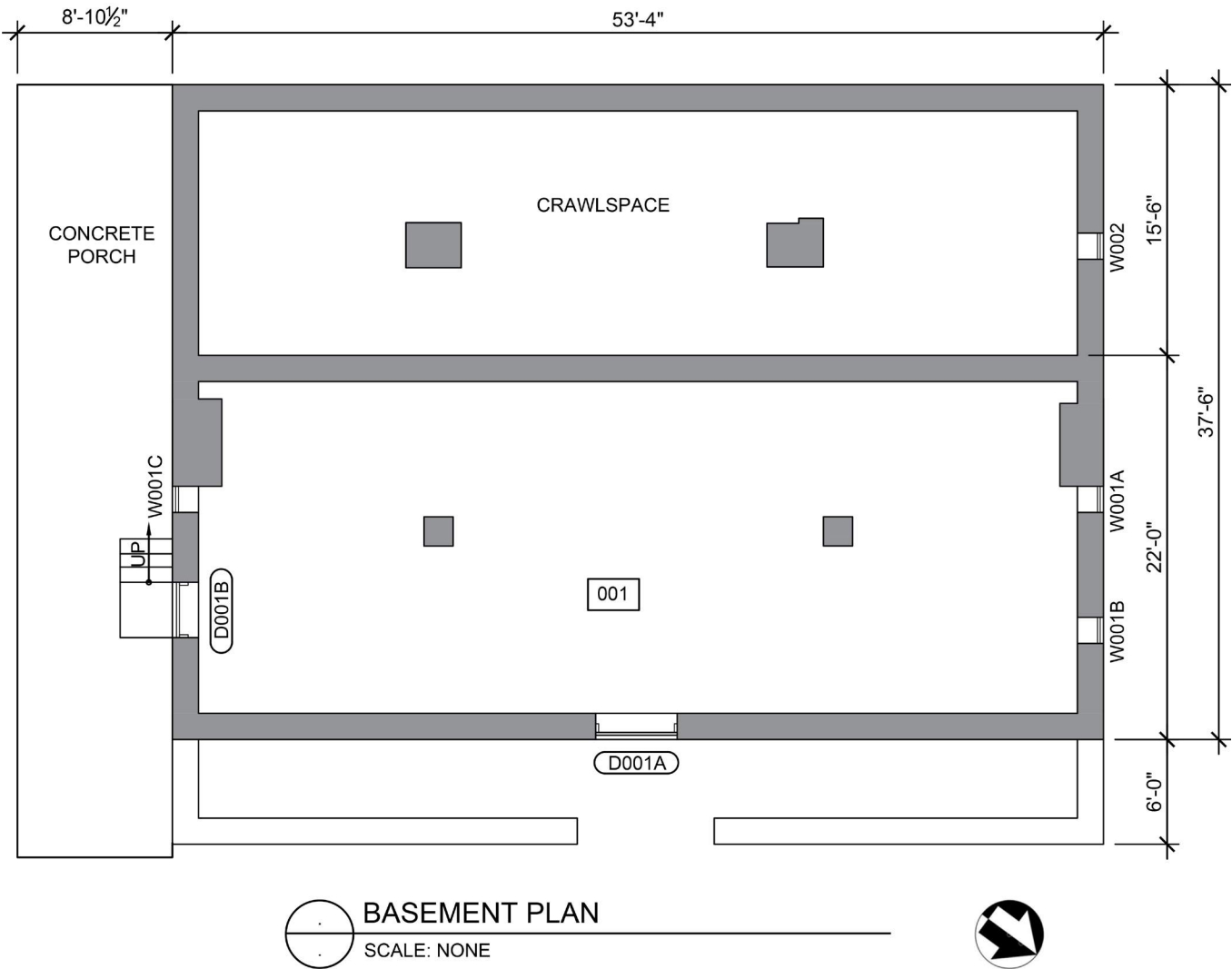


Figure 42. Basement plan.



Figure 43. Room 001, looking north. (Source: RRJ 2023)



Figure 44. Room 001, looking northeast, showing the shoring in the basement. (Source: RRJ 2023)

Figure 45. First floor plan.



Figure 46. Room 103, looking east, showing missing floor framing. (Source: RRJ 2023)



Figure 47. Room 105, looking south, showing the exposed vertical logs. (Source: RRJ 2023)

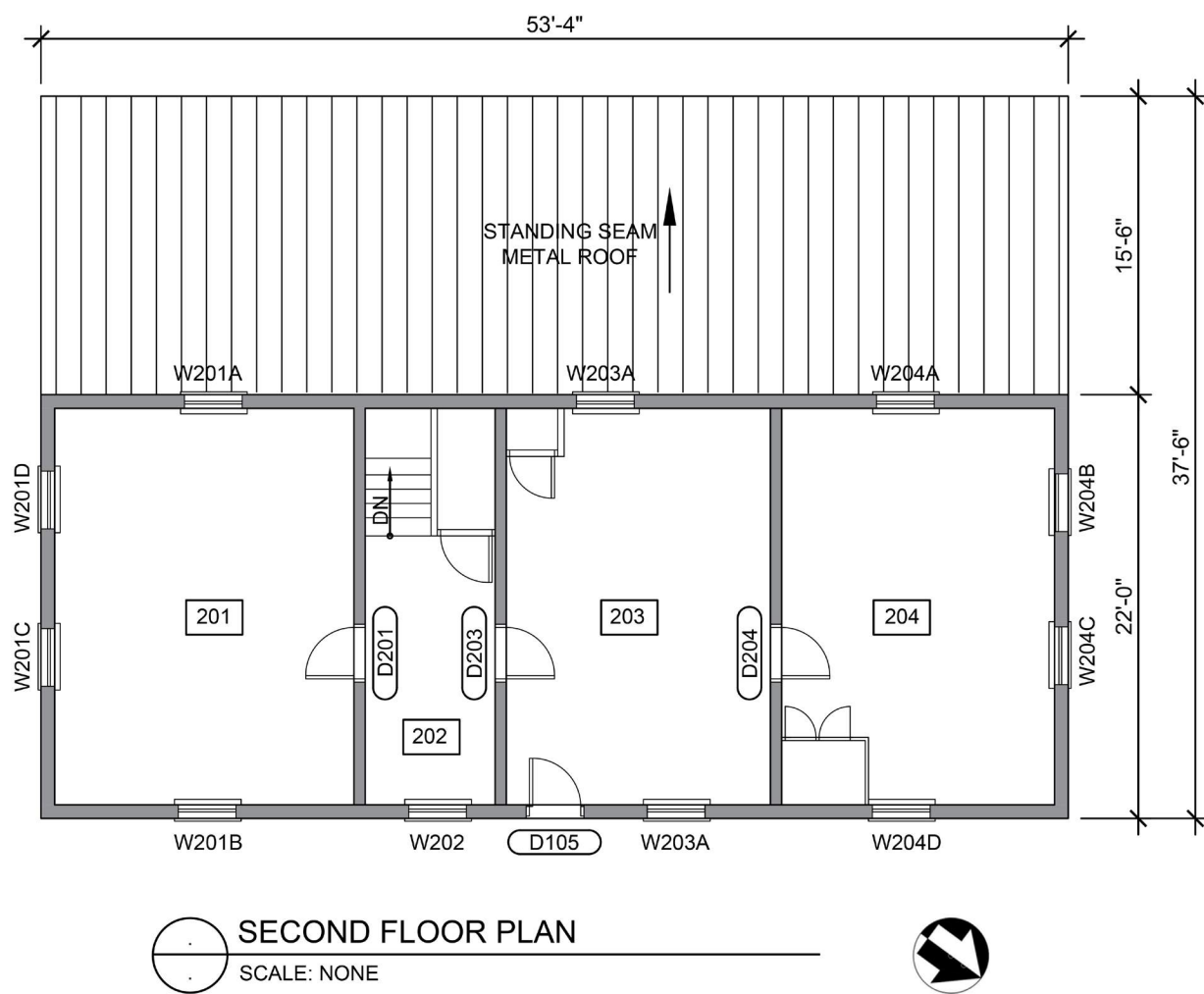


Figure 48. Second floor plan.



Figure 49. Room 201, looking south. (Source: RRJ 2023)



Figure 50. Room 204, looking south. (Source: RRJ 2023)



Figure 51. The Delassus-Kern House as seen from U.S. Highway 61 south of Ste. Genevieve. (Source: LSHLA, 2023)



Figure 52. The Delassus-Kern House, side view of the house looking across the highway toward the common field. (Source: LSHLA, 2023)



Figure 53. The concrete wall in the front yard of the Delassus-Kern House. (Source: LSHLA, 2023)



Figure 54. An outbuilding located north of the house that served as a corn crib. (Source: LSHLA, 2023)

SITE AND LANDSCAPE FEATURES

The Delassus-Kern House is located on the outskirts of Ste. Genevieve and across from the Common Field providing a rural setting very similar to that of the original farmstead. The House is centrally located within the larger site and is surrounded by various outbuildings that once supported the farmstead. A chicken house and woodshed still exist on the south and west sides of the House, and a large corn crib is present north of the House. Foundations and ruins of other previous structures, including a chicken house, smoke house and well were noted throughout the property. Several cisterns are also still present.

The Delassus-Kern House Landscape

The Delassus-Kern House property encompasses approximately 6.76 acres of land, composed of four tracts, with 2.08 acres associated with easements and road rights-of-way. The property falls within Township 37N, Range 9E, Section 2, and Ste. Genevieve County. The majority of the property is located west of U.S. Highway 61, and a small parcel located to the east of the road corridor. Set within the parcel east of the highway is a perennial spring and associated outflow, currently set within a wooded lot surrounded by agricultural fields. The house sits on an elevated terrace edged to the west by woodlands (Figure 53 and Figure 54).

Evidence of former galleries occurs both along the principal façade as well as the side of the house. A



Figure 55. The spring, marked by a corrugated metal pipe. (Source: LSHLA, 2023)

driveway leads toward the house from the highway, which once continued beyond into the woods and hilly terrain behind the house. Behind the house set within the wooded hillside are two extant outbuildings—a chicken house and a wood shed, and the foundations of several other outbuildings. The date of origin of the various outbuildings, cisterns, and well are not currently known.

In front of the house is an expansive lawn, which appears to have been terraced. As the lawn approaches the highway right of way, there is a long concrete retaining wall that follows the alignment of the historic road (Figure 55). There is an additional outbuilding to the northeast of the house that served as a corn crib (Figure 56) and a well in a field further to the north. The portion of the property located across U.S. Highway 61 contains a spring and outflow set within successional woodlands (Figure 57 and Figure 58).

Historic Documentation

The inventoried landscape features described below were observed during field investigations conducted

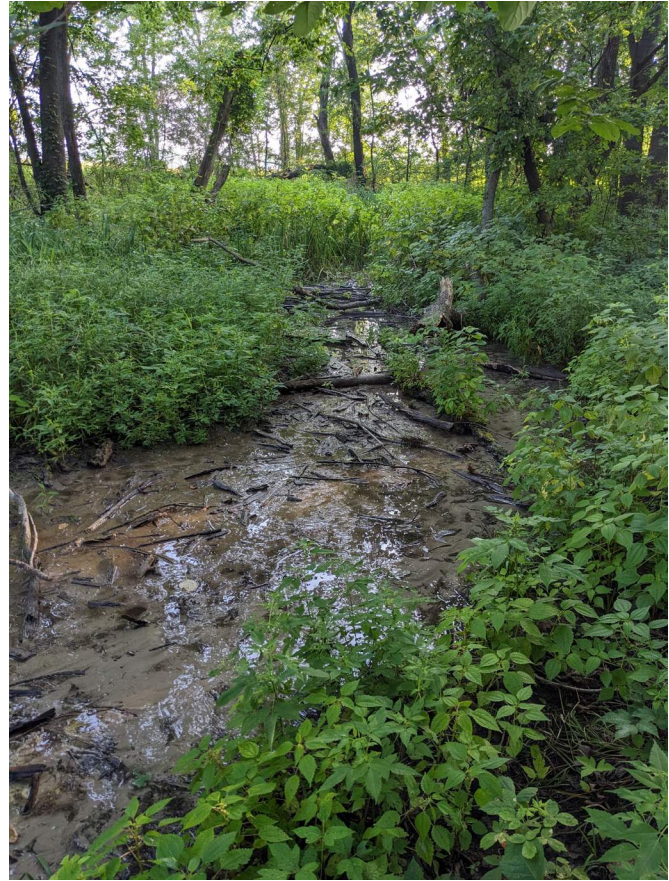


Figure 56. The spring outflow through the wooded parcel east of U.S. Highway 61. (Source: LSHLA, 2023)

on behalf of the HSR (Figure 59). Each inventoried feature is compared with information available about the landscape for periods predating NPS acquisition of the Delassus-Kern House property. Few sources of information exist for the mid-nineteenth-century period during which the house was built. Some Kern Family photographs, likely from 1900s -1930s, provide some insight on the physical layout and configuration of the property prior to formal documentation in 1985 by the Historic American Buildings Survey (HABS). There are also photographs dating to the 1940s and 1950s in the Schram Collection in the archives of the Felix Vallé State Historic Site managed by the Missouri DNR.

The Delassus-Kern House is a relatively large poteaux-sur-sol building that likely reflects the joining of two earlier structures, and the addition of a second story during the nineteenth century. Portions of the building are believed to date to c. 1793-1794 based on dendrochronology of log samples. However, archeological investigations suggest that the current building was assembled on the site between 1830 and 1840, possibly through

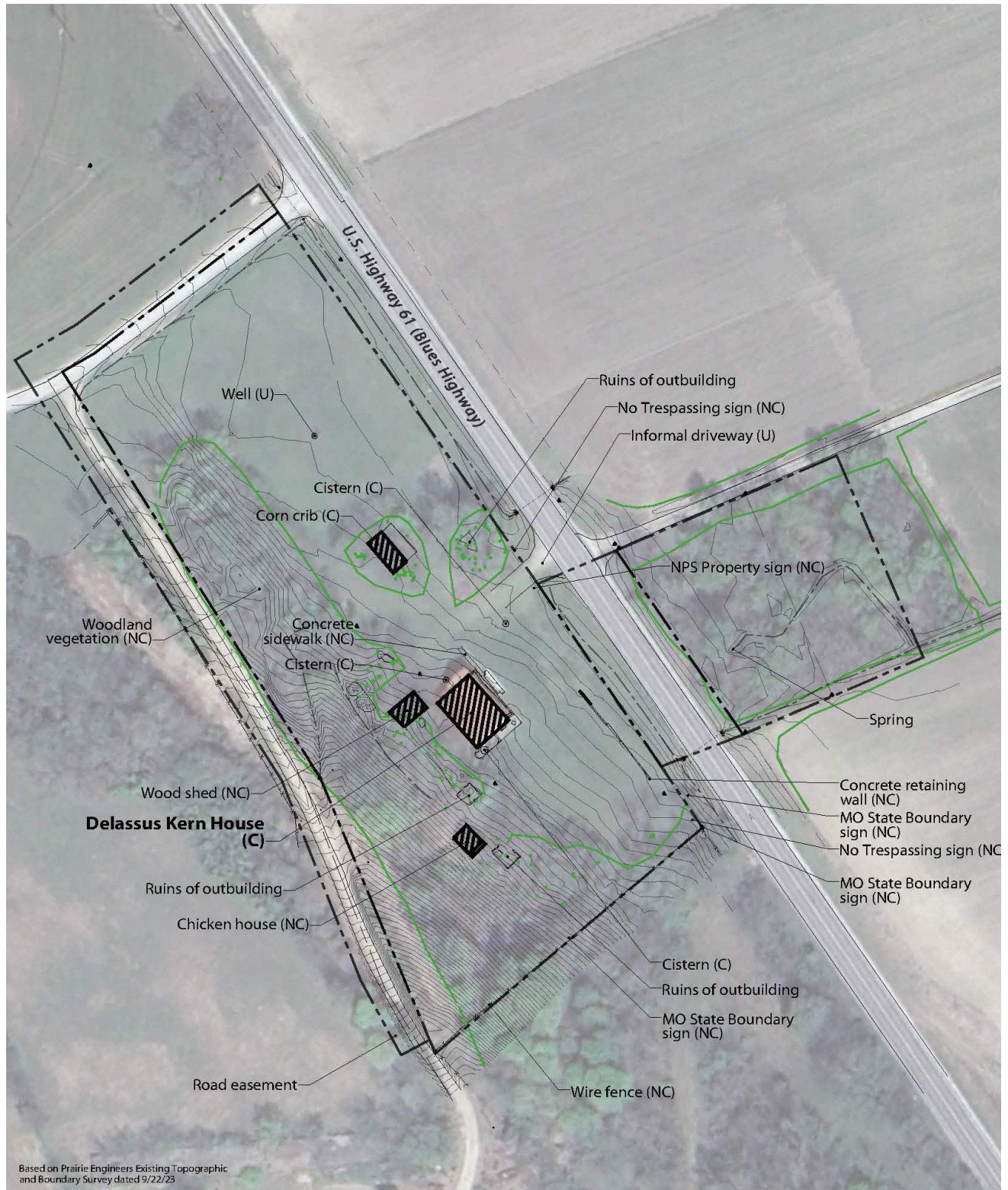


Figure 13. Existing Site Conditions

Delassus-Kern House, Historic Structure Report
Ste. Geneviève National Historical Park

Figure 57. Site plan of the Delassus-Kern House property. (Source: Prairie Engineering Survey, annotated by LSHLA, 2024)

Delassus-Kern House Historic Structure Report

relocation of an earlier structure.¹

The land upon which the Delassus-Kern House is situated was once owned by Pierre-Charles Dehault Delassus de Luzière, a nobleman fleeing the French Revolution who arrived in North America in 1791.² Delassus founded Mont Généreux, later Nouvelle or New Bourbon, c. 1793, as a site where other noblemen from France were encouraged to settle. The town was located on bluffs overlooking the Mississippi River floodplain due west of and in proximity to the Old or original Town of Ste. Genevieve, which was severely impacted by a flood in 1785. The town was initially founded during the early to mid-eighteenth century from the nearby town of Kaskaskia, Illinois, after farmers had depleted the local soils. The initial town of Ste. Genevieve was sited to take advantage of the fertile soils across the river within the Mississippi floodplain. Although many settlers prospered due to productive agricultural cultivation, residents also supplemented their livelihoods through trade associated with lead mines in the region, salt production from saline creek deposits, and fur exchange. It was due to the proximity to the river that the town was impacted by several floods, with that of 1785 being the most devastating. Following the flood, residents began to establish a new townsite and relocate to present-day Ste. Genevieve, which was generally accomplished by 1793. Delassus himself owned approximately 1,000 arpents of land, which he received as a concession from Zenon Trudeau, a lieutenant governor for Spain, in 1798.³

Located within the common field to the east of New Bourbon is an example of a Mississippian period (c. 1000-1500 CE) mound that likely served as a centerpiece of an Indigenous village prior to European American contact. From the Delassus-Kern House expansive views of the common field are afforded. The common field, or Le Grand Champ, extends over approximately 7,000 acres that were fenced and used by community members from Old and New Ste. Genevieve as well as New Bourbon for agriculture, pasturage, and wood gathering. The field was arranged into a series of long strips, each 2 arpents wide.⁴ Residents are recorded as

having grown wheat, maize, and tobacco. Over time, maize became the most popular and productive crop grown in the region. Flooding remained a pervasive threat; in 1797, the river flooded the bottomlands, wiping out the grain crop and threatening famine during the winter of 1797-1798. Otherwise, local farmers raised black cattle, which roamed the land, as well as swine, which also ranged freely across the commons in the woods of the uplands.⁵

A map prepared by Delassus in 1793 (Figure 60) shows two “chemins,” or paths, one along the Mississippi and one atop the bluffs. Both of these paths led downriver to the Saline River where salt had long been extracted from saline springs arising along the banks of the river. The Saline became a locus of settlement for Anglo-American immigrants from the east side of the Mississippi River beginning in the 1790s for the availability of salt deposits.⁶ A second map prepared in 1797 similarly illustrates the relative locations of New Bourbon and Ste. Genevieve and is rendered to show the river and associated bottomlands as well as more rugged upland topography (Figure 61).

At the time New Bourbon was established, the region was under Spanish control. Delassus negotiated with the Governor of Spanish Louisiana upon his arrival to receive land grants and loans to establish settlements within Upper Louisiana. Delassus used his connections to encourage French noblemen fleeing the Revolution to settle in the village he was establishing on the bluffs overlooking the Mississippi River. The New Bourbon settlement did not attract as many residents as Delassus hoped, and once there, many relocated to Ste. Genevieve. Delassus himself also did not prosper. The region became part of the United States in 1804. Even under Spanish rule, the area had remained primarily French in terms of settlements.⁷ French farmers introduced enslaved African to the region. At the same time, Native American tribes remained a significant presence, often engaged in trading and other interactions with French and Creole settlers. Following the Louisiana Purchase, many Anglo-Americans as well as Germans began to

1 Wesler, Stepenoff, Farris, and Morrow, “Archaeological Test Excavations at the Delassus-Kern House,” 69.

2 National Park Service, *Ste. Genevieve Special Resource Study and Environmental Assessment* (May 2016), 76.

3 Wesler, Stepenoff, Farris, and Morrow, “Archaeological Test Excavations at the Delassus-Kern House,” 68-69.

4 An arpent was a standard unit of measure of approximately 1 acre.

5 Ekberg, *French Roots in the Illinois Country*, 207.

6 Ekberg, *French Roots in the Illinois Country*, 93.

7 Wesler, Stepenoff, Farris, and Morrow, “Archaeological Test Excavations at the Delassus-Kern House,” 69.

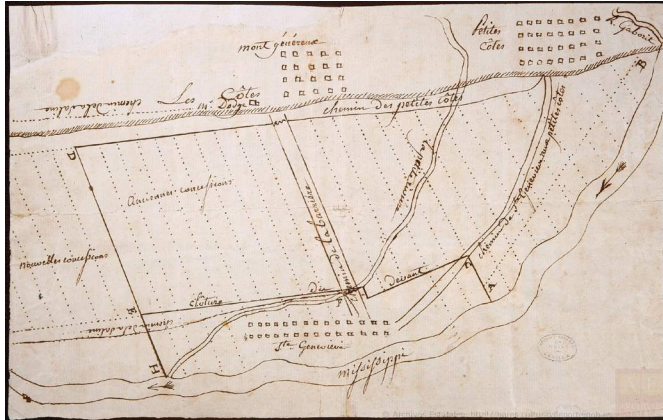


Figure 58. Map of New Bourbon (Mont Généreux), old and new Ste. Genevieve, and Le Grand Champ, c. 1793



Figure 60. A c. 1895 photograph of the Delassus House, with the Kern family standing in front of the picket fence along the front of the property, prior to the addition of a second story (Source: MoDNR Felix Vallé House archives.)



Figure 59. Detail of a 1797 map by de Finiels of Ste. Genevieve and New Bourbon, showing the Delassus property atop the bluff rather than in the current Delassus-Kern House location (Source: Nicolas de Finiels (trans. Carl Ekberg), *An Account of Upper Louisiana*)

settle in the region. Ste. Genevieve contains numerous examples of nineteenth-century dwellings attributed to the groups. Those locating within the New Bourbon area are believed to have adaptively reused the earlier French dwellings on property in the region. New Bourbon, however, remained far less popular to settlement than Ste. Genevieve and all but disappeared as a townsite by 1860;⁸ reference to the community, however, continues to appear on maps of the area today.

The current home on the Delassus-Kern House property was not that of Delassus but may have been built from logs salvaged from Delassus's dwelling or another in New Bourbon. After Delassus died in 1806, his property changed hands several times. It was likely in the possession of his children, who inherited the property but may have remained vacant. In 1835, Carlos/Charles de Lassus secured the land, likely after litigation to clear title. Delassus sold the property to Martin Sweek in 1835, who then sold it to Ichabod Sargent in 1837. A sudden increase in the value of the property based on tax records may indicate the establishment of the present-day house on the property.⁹ Records indicate that Sargent enslaved five people, suggesting that there may have been a quarters on the property between 1837 and 1855. Sargent was a doctor who owned two cows, a horse, and a few hogs.

In 1855, the land was acquired by John D. Kern, of German descent. The German-American Kern family continued to own the property for more than a century

8 Wesler, Stepenoff, Farris, and Morrow, "Archaeological Test Excavations at the Delassus-Kern House," 69.

9 Wesler, Stepenoff, Farris, and Morrow, "Archaeological Test Excavations at the Delassus-Kern House," 70.

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Figure 61. Photographs of the property from the parcel across the highway showing the driveway, house, and a utility shed that is no longer extant in. (Source: 1985 HABS)



Figure 62. Photograph of the house from the south side. (Source: 1985 HABS)

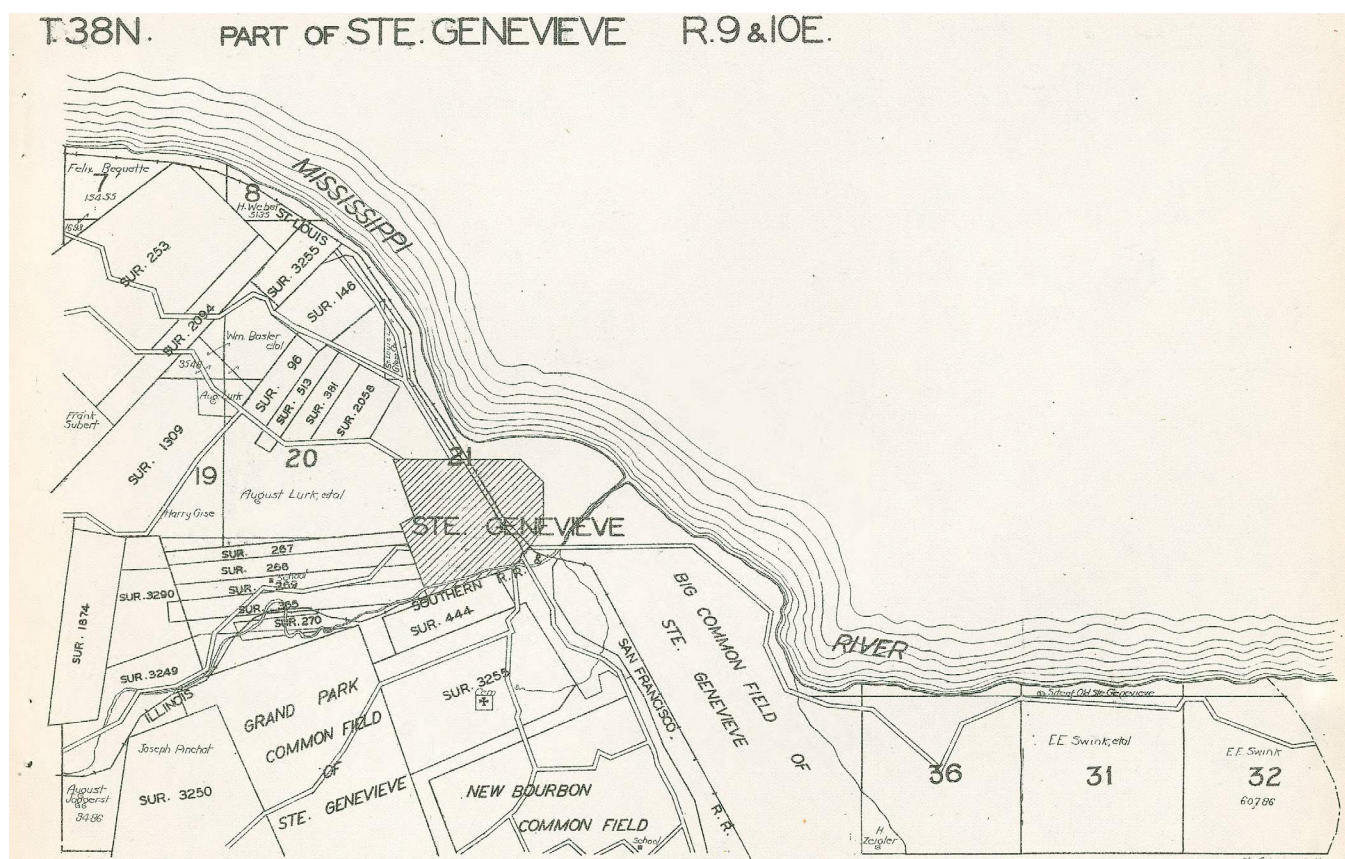


Figure 63. 1930 plat of the area showing the New Bourbon Common Field, Ste. Genevieve Common Field, rail line and highway passing through the area along the margin of the Mississippi River floodplain between Ste. Genevieve and New Bourbon (Source: W. W. Hixson and Company, Plat book of Saint Genevieve County, Missouri, 1930, p. 6. <https://mdh.contentdm.oclc.org/digital/collection/moplatbooks/id/1932>)

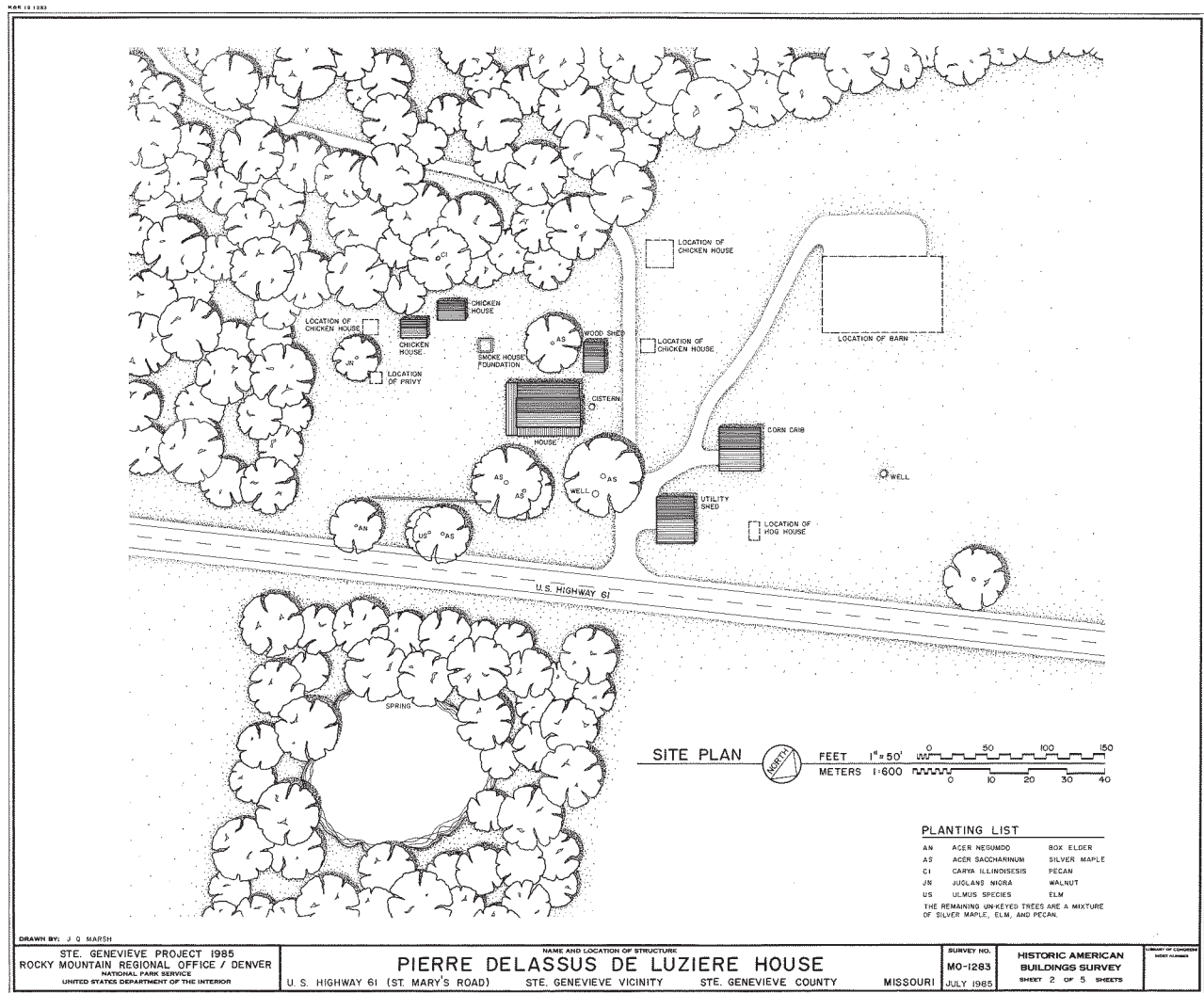


Figure 64. HABS drawing of the Delassus-Kern property (Source: HABS)

until the 1990s. Kern was a farmer who is known to have cultivated grapes and made wine in the 1860s, using the basement of the house as a distillery. An inventory of the property at John Kern's death indicates that he had hundreds of gallons or casks of wine in his possession at the time. Records also indicate that pecan trees were grown by Kern to pay for services and to sell. Kern acquired fifty apple trees, forty-three peach trees, and a pear tree in 1869, also suggesting an investment in producing some fruits either for sale or for distilling.

The house remained a single-story dwelling with six rooms until 1903 (Figure 62), when the second story was

added (Figure 63 and Figure 64). With the addition, the building was reconfigured as a side-gabled farmhouse with clapboard siding.¹⁰ A porch wrapped around the side entrance and front of the building at one time; the porch is no longer extant today. Records suggest that the property may have contained a substantial fruit tree orchard.¹¹ Records also suggest that a Joseph Jokerst was paid to work on the corn crib and a cistern in 1869. Kern family purchase records suggest that another outbuilding, likely large and possibly a barn, was constructed c. 1873 based on acquisition of wood boards, nails, hinges, and door locks.

¹⁰ National Park Service, *Ste. Genevieve Special Resource Study and Environmental Assessment* (May 2016), 76.

¹¹ Wesler, Stepenoff, Farris, and Morrow, "Archaeological Test Excavations at the Delassus-Kern House," 70.

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Figure 65. A 1993 photograph of the property showing the condition of the grounds and outbuildings immediately after the flood. (Source: Ste. Genevieve NHP archives)

A plat map dated 1932 indicates a separate common field for the New Bourbon area and its relationship to the Ste. Genevieve common field to the east. The plat also shows the alignment of the San Francisco Railroad extending along the edge of the common field, and the road that is consistent with present-day U.S. Highway 61 connecting New Bourbon with Ste. Genevieve (Figure 65).

The property was the subject of a Historic American Buildings Survey (HABS) documentation effort in 1985 that was completed in 1987. The documentation included preparation of a site plan of the landscape, measured drawings of the buildings, and photographs of various features (Figure 66). The site plan map provides useful information about the use of individual outbuildings, including those present at the time that are no longer extant today. The site plan indicates standing buildings to include the house, two chicken houses, a wood shed, utility shed, and corn crib, but also notes the presence of foundations or ruins of three additional chicken houses, a privy, smokehouse, hog house, and large barn at the end of an access road. The map shows the driveway continuing behind the house before turning south as it passed into a wooded area. The map also shows a large pond or impoundment below the spring that is not present today.



Figure 66. An image of the house from 1996 that shows the poor condition of the house from the flood damage. (Source: *Ste. Genevieve Herald*, October 9, 1996, p. H)

The Delassus-Kern House was acquired by the state of Missouri based on a gift by Susan Flader in 1993. The property was subsequently administered by the Department of Natural Resources, Division of State Parks. A photograph of the property dated 1993 and another dated 1996 shows the poor condition of the house at the time (Figure 67 and Figure 68). The front porch was damaged during the Mississippi River flood of 1993 and removed in 1996.

The property was investigated archeologically in 1997 as part of the Middle Mississippi Survey, which was welcomed by Missouri's Department of Natural Resources. The work resulted in the recording of the Delassus de Luzières-Hecker Site (23SG176). Additional test excavations were conducted in 2001. The house is also located near the New Bourbon Archeological Site, situated on a bluff overlooking the bottoms and common field. The property was transferred to NPS for inclusion in the Ste. Genevieve NHP after 2020.

Condition Assessments

DEFINITIONS

The following terms define subjective ratings used in this part to apply a sliding scale of condition rating, deficiency of the component and priority of the repair, as developed from Sections 7.2 and 7.4 of the “Field Operations Manual, Volume 1”, United States National Park Service, Washington, D.C., 1985.

CONDITION RATING

Good	The element is intact, structurally sound, and performing its intended purpose. There are few or no cosmetic imperfections, and the elements need no repair and only minor or routine maintenance.
Fair	There are early signs of wear, failure, or deterioration, though the element is generally structurally sound and performing its intended purpose. There is failure of a sub-component of the element. Up to 25 % of the element or replacement of a sub-component is required.
Poor	The element is no longer performing its intended purpose. The element is missing. Deterioration or damage affects more than 25% of the element and cannot be adjusted or rebuilt. The element shows signs of imminent failure or breakdown. The element requires major repair or replacement.
Failed	The element is no longer performing its intended purpose and has deteriorated to a point where it presents a life-safety hazard or is contributing to damage to other elements. Full replacement of the component may be required to restore function and service.

REPAIR PRIORITY

High	There is advanced deterioration which has resulted in the failure of the building element or will result in the failure of the building element if not corrected within two years; and/or there is accelerated deterioration of adjacent or related building materials as a result of the element’s deficiency; and/or there is a threat to the health and/or safety of the user; and/or there is failure to meet a legislative requirement.
Medium	There is deterioration which, if not corrected within two to five years, will result in the failure of the building element, and/or; a threat to the health and/or safety of the user may occur within two to five years if the deterioration is not corrected, and/or; there is deterioration of adjacent or related building materials and/or systems as a result of the element’s deficiency.
Low	Standard preventative maintenance practices and building conservation methods have not been followed, and/or; there is a reduced life expectancy of affected or related building materials and/or systems, and/or; there is a condition with long-term impact beyond five years.

Summary Condition Assessment Tables by Category

SITE AND LANDSCAPE						
Category	Topic	Code		Subtopic	Assessment	
					Condition	Priority
G	BUILDING SITE WORK					
G20	SITE IMPROVEMENTS					
G2031		PAVING AND SURFACING				
			G203101	Circulation: Driveway Trace	Fair	Long-Term
			G203102	Circulation: Concrete Walk	Poor	Short-Term
			G203103	Circulation: Concrete Landing and Steps	Failed	Immediate
G2049		MISCELLANEOUS STRUCTURES				
			G204901	Wood Shed	Poor	Short-Term
			G204902	Chicken House	Poor	Short-Term
			G204903	Corn Crib	Poor	Short-Term
			G204904	Smoke House Ruins	Poor	Short-Term
			G204905	Chicken House Ruins	Poor	Short-Term
			G204906	Hog House (Demolished)	N/A	N/A
			G204907	Utility Shed (Demolished)	N/A	N/A
			G204908	Chicken House(s) (Demolished)	N/A	N/A
			G204909	Latrine (Demolished)	N/A	N/A
			G204910	Barn (Demolished)	N/A	N/A
			G204911	Other Outbuildings (Demolished)	N/A	N/A
			G204912	Concrete Retaining Wall	Poor	Long-Term
G2045		SITE FURNISHINGS				
			G204501	Small-scale Features: Fencing	Poor	Long-Term
			G204502	Small-scale Features: Site Signage	N/A	N/A
G2055		PLANTING				
			G205503	Cultural Vegetation: Woodland	Good	Long-Term
G30	SITE MECHANICAL UTILITIES					
G3013		WELL SYSTEMS				
			G301301	East Yard Cistern	Poor	Immediate
			G301302	North Yard Cistern	Poor	Immediate
			G301303	Kitchen Cistern	Poor	Immediate
			G301304	Porch Cistern	Poor	Immediate
			G301305	Barneyard Well or Cistern	Poor	Immediate

ENCLOSURE SYSTEMS						
Category	Topic	Code		Subtopic	Assessment	
					Condition	Priority
B	SHELL					
B10	SUPERSTRUCTURE					
B1010		FLOOR CONSTRUCTION				
			B101001	East Porch and Gallery (Demolished)	N/A	N/A
			B101002	South Porch (Demolished)	N/A	N/A
B1015		STAIR CONSTRUCTION				
			B101501	Interior Stairs	Poor	Immediate
B20	EXTERIOR ENCLOSURE					
B2011		EXTERIOR WALL CONSTRUCTION				
			B201101	Weatherboard Siding and Trim	Fair	Immediate
B2021		EXTERIOR WINDOWS				
			B202101	W001A	Fair	Immediate
			B202102	W001B	Fair	Immediate
			B202103	W001C	Fair	Immediate
			B202104	W002	Fair	Immediate
			B202105	W101	Poor to Fair	Immediate
			B202107	W102A	Poor	Immediate
			B202108	W102B	Poor	Immediate
			B202109	W103A	Poor	Immediate
			B202110	W103B	Poor	Immediate
			B202112	W104A	Failed	Immediate
			B202113	W104B	Poor to Fair	Immediate
			B202114	W104C	Poor	Immediate
			B202115	W105A	Poor	Immediate
			B202116	W105B	Poor	Immediate
			B202117	W106A	Poor	Immediate
			B202118	W106B	Poor	Immediate
			B202119	W106C	Failed	Immediate
			B202120	W201A	Failed	Immediate
			B202121	W201B	Undetermined	Immediate
			B202122	W201C	Failed	Immediate
			B202123	W201D	Failed	Immediate
			B202124	W202	Fair to Poor	Immediate
			B202125	W203A	Failed	Immediate
			B202126	W203B	Poor	Immediate
			B202127	W204A	Poor	Immediate
			B202128	W204B	Failed	Immediate
			B202129	W204C	Missing	Immediate
			B202130	W204D	Failed	Immediate

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B2030	EXTERIOR DOORS				
		B203001	D001A	Missing	Immediate
		B203002	D001B	Failed	Immediate
		B203003	D101A	Poor	Immediate
		B203004	D102A	Failed	Immediate
		B203005	D105	Missing	Immediate
		B203006	D203B	Poor	Immediate
B30	ROOFING				
B3010	ROOF COVERING				
		B301001	Standing-Seam Metal Panel Roofing	Good	Long-Term
		B301601	Gutters and Downspouts	Fair	Short-Term
B40	OTHER STRUCTURES				
B4010	CHIMNEYS				
		B401001	Interior Chimneys	Failed	Long-Term

STRUCTURAL SYSTEMS					
Category	Topic	Code		Subtopic	Assessment
					Condition Priority
A	SUBSTRUCTURE				
A10	STANDARD FOUNDATION				
	A1011	WALL FOUNDATION			
		A101101	Stone Masonry Foundation Wall	Fair	Long-Term
B	SHELL				
B10	SUPERSTRUCTURE				
	B1010	FLOOR CONSTRUCTION			
		B101001	First Floor Framing	Failed to Fair	Immediate
		B101002	Second Floor Framing	Fair	Short-Term
	B1020	ROOF CONSTRUCTION			
		B102001	Roof Structure	Fair to Good	Short-Term
B20	EXTERIOR ENCLOSURE				
	B2011	EXTERIOR WALL CONSTRUCTION			
		B201102	First Floor Wall Framing	Failed to Fair	Immediate
		B201103	Second Floor Wall Framing	Fair to Good	Short-Term
		B201104	Top and Bottom Plates	Failed to Fair	Immediate

INTERIORS					
Category	Topic	Code		Subtopic	Assessment
					Condition Priority
C	INTERIORS				
C10	INTERIOR CONSTRUCTION				
	C1020	INTERIOR DOORS			
		C102001	D101B	Fair/Poor	Medium
		C102002	D101C	N/A	N/A
		C102003	D102B	N/A	N/A

	C102004	D103A	Fair	Medium
	C102005	D103B	Fair	Medium
	C102006	D104	Fair	Medium
	C102007	D106	Fair	Medium
	C102008	D201	Good/Fair	Long-Term
	C102009	D202	Fair	Medium
	C102010	D203A	Good/Fair	Long-Term
	C102011	D204	Good	Long-Term
C30	INTERIOR FINISHES			
	C30xx	ROOM 001		
	C300000	Interior Overall	Fair	Low
	C302000	Flooring	N/A	N/A
	C301000	Wall Finishes	N/A	N/A
	C303000	Ceiling Finishes	N/A	N/A
	C30xx	ROOM 101		
	C300001	Room 101 Interior Overall	Poor	Short-Term
	C302001	101 Flooring	Failed	Immediate
	C301001	101 Wall Finishes	Failed	Long-Term
	C301001	101 Wall Mouldings	Poor	Long-Term
	C303001	101 Ceiling Finishes	Poor	Long-Term
	C30xx	ROOM 102		
	C300002	Room 102 Interior Overall	Poor	Short-Term
	C302002	102 Flooring	Failed	Immediate
	C301002	102 Wall Finishes	Poor	Long-Term
	C301002	102 Wall Mouldings	Poor	Long-Term
	C303002	102 Ceiling Finishes	Poor	Long-Term
	C30xx	ROOM 103		
	C300003	Room 103 Interior Overall	Poor	Short-Term
	C302003	103 Flooring	Failed	Immediate
	C301003	103 Wall Finishes	Poor	Long-Term
	C301003	103 Wall Mouldings	Poor	Long-Term
	C303003	103 Ceiling Finishes	Poor	Long-Term
	C30xx	ROOM 104		
	C300004	Room 4 (104) Interior Overall	Poor	Short-Term
	C302004	104 Flooring	Poor to Fair	Short-Term
	C301004	104 Wall Finishes	Failed	Long-Term
	C301004	104 Wall Mouldings	Poor	Long-Term
	C303004	104 Ceiling Finishes	Failed	Long-Term
	C30xx	ROOM 105		
	C300005	Room 105 Interior Overall	Poor	Short-Term
	C302005	105 Flooring	Poor	Immediate
	C301005	105 Wall Finishes	Failed	Long-Term
	C301005	105 Wall Mouldings	Poor	Long-Term
	C303005	105 Ceiling Finishes	Failed	Long-Term

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C30xx	ROOM 106				
		C300006	Room 6 (106) Interior Overall	Poor	Short-Term
		C302006	106 Flooring	Poor	Immediate
		C301006	106 Wall Finishes	Failed	Long-Term
		C301006	106 Wall Mouldings	Poor	Long-Term
		C303006	106 Ceiling Finishes	Poor	Long-Term
C30xx	ROOM 201				
		C300007	Room 201 Interior Overall	Poor	Short-Term
		C302007	201 Flooring	Fair	Immediate
		C301007	201 Wall Finishes	Fair	Long-Term
		C301007	201 Wall Mouldings	Fair	Long-Term
		C303007	201 Ceiling Finishes	Fair	Long-Term
C30xx	ROOM 202				
		C300008	Room 202 Interior Overall	Poor	Short-Term
		C302008	202 Flooring	Fair	Immediate
		C301008	202 Wall Finishes	Poor	Long-Term
		C301008	202 Wall Mouldings	Fair	Long-Term
		C303008	202 Ceiling Finishes	Fair	Long-Term
C30xx	ROOM 203				
		C300009	Room 203 Interior Overall	Poor	Short-Term
		C302009	203 Flooring	Poor	Immediate
		C301009	203 Wall Finishes	Poor	Long-Term
		C301009	203 Wall Mouldings	Fair	Long-Term
		C303009	203 Ceiling Finishes	Fair	Long-Term
C30xx	ROOM 204				
		C300010	Room 204 Interior Overall	Poor	Short-Term
		C302010	204 Flooring	Fair	Immediate
		C301010	204 Wall Finishes	Poor	Long-Term
		C301010	204 Wall Mouldings	Fair	Long-Term
		C303010	204 Ceiling Finishes	Fair	Long-Term

MEP/FP SYSTEMS					
Category	Topic	Code	Subtopic	Assessment	
				Condition	Priority
D	PLUMBING				
D20	SITE UTILITIES				
	D2010	WATER UTILITY			
		D201001	Water Utility to the House	Failed	N/A
		D201002	Sanitary Utility to the House	Failed	N/A
		D201003	Abandoned Cisterns	Failed	Immediate
D20	DOMESTIC WATER DISTRIBUTION				
	D2021	COLD WATER SERVICE			
		D202101	Water piping inside the house	Failed	N/A

D2022		HOT WATER SERVICE			
		D202201	Water pump and old water heater	Failed	N/A
D2031		SANITARY WASTE PIPING			
		D203101	Sanitary waste piping in house	Failed	N/A
D2023		PLUMBING FIXTURES			
		D202301	Plumbing Fixtures	N/A	N/A
D2091		GAS SUPPLY SYSTEM			
D30	HEATING, VENTILATING AND AIR CONDITIONING (HVAC)				
D3040		HVAC DISTRIBUTION SYSTEMS			
		D209101	Natural Gas Utility to the House	Failed	N/A
D40	FIRE PROTECTION				
D4010		FIRE PROTECTION SYSTEM			
		D401001	Fire Protection System	N/A	N/A
D	ELECTRICAL				
D50	ELECTRICAL				
D5010		ELECTRICAL POWER DISTRIBUTION			
		D501001	Electrical Utility to House	Failed	Short-Term
		D501002	Electrical Panel In House	Failed	Short-Term
		D501003	Branch Circuits	N/A	Short-Term
		D501004	Electrical Panel In House	N/A	Short-Term
		D501005	Receptacles and Switches	Failed	Short-Term
D5022		LIGHTING EQUIPMENT			
		D502201	Lighting Fixtures	N/A	Short-Term
D5030		TELECOMMUNICATIONS UTILITY			
		D503001	Telecommunications Utility to House	N/A	Immediate
D5037		FIRE ALARM SYSTEMS			
		D503701	Fire Alarm System	N/A	Immediate
D5038		SECURITY AND DETECTION SYSTEMS			
		D503801	Intrusion Alarm System	N/A	Immediate
D5091		GROUNDING SYSTEMS			
		D509101	Lightning Protection System	N/A	Immediate

Summary Condition Assessment Tables by Priority

IMMEDIATE PRIORITY

SITE AND LANDSCAPE						
Category	Topic	Code		Subtopic	Assessment	
					Condition	Priority
G	BUILDING SITE WORK					
G20	SITE IMPROVEMENTS					
	G2031	PAVING AND SURFACING				
			G203103	Circulation: Concrete Landing and Steps	Failed	Immediate
	G2049	MISCELLANEOUS STRUCTURES				
G30	SITE MECHANICAL UTILITIES					
	G3013	WELL SYSTEMS				
			G301301	East Yard Cistern	Poor	Immediate
			G301302	North Yard Cistern	Poor	Immediate
			G301303	Kitchen Cistern	Poor	Immediate
			G301304	Porch Cistern	Poor	Immediate
			G301305	Barnyard Well or Cistern	Poor	Immediate

ENCLOSURE SYSTEMS						
Category	Topic	Code		Subtopic	Assessment	
					Condition	Priority
B	SHELL					
B10	SUPERSTRUCTURE					
B1015		STAIR CONSTRUCTION				
			B101501	Interior Stairs	Poor	Immediate
B20	EXTERIOR ENCLOSURE					
B2011		EXTERIOR WALL CONSTRUCTION				
			B201101	Weatherboard Siding and Trim	Fair	Immediate
B2021		EXTERIOR WINDOWS				
			B202101	W001A	Fair	Immediate
			B202102	W001B	Fair	Immediate
			B202103	W001C	Fair	Immediate
			B202104	W002	Fair	Immediate
			B202105	W101	Poor to Fair	Immediate
			B202107	W102A	Poor	Immediate
			B202108	W102B	Poor	Immediate
			B202109	W103A	Poor	Immediate
			B202110	W103B	Poor	Immediate
			B202112	W104A	Failed	Immediate
			B202113	W104B	Poor to Fair	Immediate
			B202114	W104C	Poor	Immediate
			B202115	W105A	Poor	Immediate
			B202116	W105B	Poor	Immediate

	B202117	W106A	Poor	Immediate
	B202118	W106B	Poor	Immediate
	B202119	W106C	Failed	Immediate
	B202120	W201A	Failed	Immediate
	B202121	W201B	Undetermined	Immediate
	B202122	W201C	Failed	Immediate
	B202123	W201D	Failed	Immediate
	B202124	W202	Fair to Poor	Immediate
	B202125	W203A	Failed	Immediate
	B202126	W203B	Poor	Immediate
	B202127	W204A	Poor	Immediate
	B202128	W204B	Failed	Immediate
	B202129	W204C	Missing	Immediate
	B202130	W204D	Failed	Immediate
B2030		EXTERIOR DOORS		
	B203001	D001A	Missing	Immediate
	B203002	D001B	Failed	Immediate
	B203003	D101A	Poor	Immediate
	B203004	D102A	Failed	Immediate
	B203005	D105	Missing	Immediate
	B203006	D203B	Poor	Immediate

STRUCTURAL SYSTEMS					
Category	Topic	Code	Subtopic	Assessment	
				Condition	Priority
B	SHELL				
B10	SUPERSTRUCTURE				
	B1010	FLOOR CONSTRUCTION			
		B101001	First Floor Framing	Failed to Fair	Immediate
B20	EXTERIOR ENCLOSURE				
	B2011	EXTERIOR WALL CONSTRUCTION			
		B201102	First Floor Wall Framing	Failed to Fair	Immediate
		B201104	Top and Bottom Plates	Failed to Fair	Immediate

INTERIORS					
Category	Topic	Code	Subtopic	Assessment	
				Condition	Priority
C30	INTERIOR FINISHES				
	C30xx	ROOM 101			
		C302001	101 Flooring	Failed	Immediate
	C30xx	ROOM 102			
		C302002	102 Flooring	Failed	Immediate
	C30xx	ROOM 103			
		C302003	103 Flooring	Failed	Immediate

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C30xx	ROOM 105				
		C302005	105 Flooring	Poor	Immediate
C30xx	ROOM 106				
		C302006	106 Flooring	Poor	Immediate
C30xx	ROOM 201				
		C302007	201 Flooring	Fair	Immediate
C30xx	ROOM 202				
		C302008	202 Flooring	Fair	Immediate
C30xx	ROOM 203				
		C302009	203 Flooring	Poor	Immediate
C30xx	ROOM 204				
		C302010	204 Flooring	Fair	Immediate

MEP/FP SYSTEMS					
Category	Topic	Code	Subtopic	Assessment	
				Condition	Priority
D	PLUMBING				
D20	SITE UTILITIES				
	D2010	WATER UTILITY			
		D201003	Abandoned Cisterns	Failed	Immediate
D	ELECTRICAL				
D50	ELECTRICAL				
	D5030	TELECOMMUNICATIONS UTILITY			
		D503001	Telecommunications Utility to House	N/A	Immediate
	D5037	FIRE ALARM SYSTEMS			
		D503701	Fire Alarm System	N/A	Immediate
	D5038	SECURITY AND DETECTION SYSTEMS			
		D503801	Intrusion Alarm System	N/A	Immediate
	D5091	GROUNDING SYSTEMS			
		D509101	Lightning Protection System	N/A	Immediate

SHORT-TERM PRIORITY

SITE AND LANDSCAPE					
Category	Topic	Code	Subtopic	Assessment	
				Condition	Priority
G	BUILDING SITE WORK				
G20	SITE IMPROVEMENTS				
	G2031	PAVING AND SURFACING			
		G203102	Circulation: Concrete Walk	Poor	Short-Term
	G2049	MISCELLANEOUS STRUCTURES			
		G204901	Wood Shed	Poor	Short-Term
		G204902	Chicken House	Poor	Short-Term
		G204903	Corn Crib	Poor	Short-Term
		G204904	Smoke House Ruins	Poor	Short-Term
		G204905	Chicken House Ruins	Poor	Short-Term

ENCLOSURE SYSTEMS					
Category	Topic	Code		Subtopic	Assessment
					Condition Priority
B	SHELL				
B30	ROOFING				
	B3010	ROOF COVERING			
		B301601	Gutters and Downspouts	Fair	Short-Term

STRUCTURAL SYSTEMS					
Category	Topic	Code		Subtopic	Assessment
					Condition Priority
B	SHELL				
B10	SUPERSTRUCTURE				
	B1010	FLOOR CONSTRUCTION			
		B101002	Second Floor Framing	Fair	Short-Term
	B1020	ROOF CONSTRUCTION			
		B102001	Roof Structure	Fair to Good	Short-Term
B20	EXTERIOR ENCLOSURE				
	B2011	EXTERIOR WALL CONSTRUCTION			
		B201103	Second Floor Wall Framing	Fair to Good	Short-Term

INTERIORS					
Category	Topic	Code		Subtopic	Assessment
					Condition Priority
C	INTERIORS				
C10	INTERIOR CONSTRUCTION				
	C1020	INTERIOR DOORS			
		C102001	D101B	Fair/Poor	Short-Term
		C102004	D103A	Fair	Short-Term
		C102005	D103B	Fair	Short-Term
		C102006	D104	Fair	Short-Term
		C102007	D106	Fair	Short-Term
		C102009	D202	Fair	Short-Term
	C30xx	ROOM 101			
		C300001	Room 101 Interior Overall	Poor	Short-Term
	C30xx	ROOM 102			
		C300002	Room 102 Interior Overall	Poor	Short-Term
	C30xx	ROOM 103			
		C300003	Room 103 Interior Overall	Poor	Short-Term
	C30xx	ROOM 104			
		C300004	Room 4 (104) Interior Overall	Poor	Short-Term
		C302004	104 Flooring	Poor to Fair	Short-Term

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C30xx	ROOM 105		
	C300005	Room 105 Interior Overall	Poor Short-Term
C30xx	ROOM 106		
	C300006	Room 6 (106) Interior Overall	Poor Short-Term
C30xx	ROOM 201		
	C300007	Room 201 Interior Overall	Poor Short-Term
C30xx	ROOM 202		
	C300008	Room 202 Interior Overall	Poor Short-Term
C30xx	ROOM 203		
	C300009	Room 203 Interior Overall	Poor Short-Term
C30xx	ROOM 204		
	C300010	Room 204 Interior Overall	Poor Short-Term

MEP/FP SYSTEMS					
Category	Topic	Code		Subtopic	Assessment
					Condition Priority
D	ELECTRICAL				
D50	ELECTRICAL				
	D5010	ELECTRICAL POWER DISTRIBUTION			
		D501001	Electrical Utility to House	Failed	Short-Term
		D501002	Electrical Panel In House	Failed	Short-Term
		D501003	Branch Circuits	N/A	Short-Term
		D501004	Electrical Panel In House	N/A	Short-Term
		D501005	Receptacles and Switches	Failed	Short-Term
	D5022	LIGHTING EQUIPMENT			
		D502201	Lighting Fixtures	N/A	Short-Term

LONG-TERM PRIORITY

SITE AND LANDSCAPE					
Category	Topic	Code		Subtopic	Assessment
					Condition Priority
G	BUILDING SITE WORK				
G20	SITE IMPROVEMENTS				
	G2031	PAVING AND SURFACING			
		G203101	Circulation: Driveway Trace	Fair	Long-Term
	G2049	MISCELLANEOUS STRUCTURES			
		G204912	Concrete Retaining Wall	Poor	Long-Term
	G2045	SITE FURNISHINGS			
		G204501	Small-scale Features: Fencing	Poor	Long-Term
	G2055	PLANTING			
		G205503	Cultural Vegetation: Woodland	Good	Long-Term

ENCLOSURE SYSTEMS						
Category	Topic	Code		Subtopic	Assessment	
					Condition	Priority
B	SHELL					
B30	ROOFING					
	B3010	ROOF COVERING				
		B301001	Standing-Seam Metal Panel Roofing		Good	Long-Term
B40	OTHER STRUCTURES					
	B4010	CHIMNEYS				
		B401001	Interior Chimneys		Failed	Long-Term

STRUCTURAL SYSTEMS						
Category	Topic	Code		Subtopic	Assessment	
					Condition	Priority
A	SUBSTRUCTURE					
A10	STANDARD FOUNDATION					
	A1011	WALL FOUNDATION				
		A101101	Stone Masonry Foundation Wall		Fair	Long-Term

INTERIORS						
Category	Topic	Code		Subtopic	Assessment	
					Condition	Priority
C	INTERIORS					
C10	INTERIOR CONSTRUCTION					
	C1020	INTERIOR DOORS				
		C102008	D201		Good/Fair	Long-Term
		C102010	D203A		Good/Fair	Long-Term
		C102011	D204		Good	Long-Term
C30	INTERIOR FINISHES					
	C30xx	ROOM 001				
		C300000	Interior Overall		Fair	Low
	C30xx	ROOM 101				
		C301001	101 Wall Finishes		Failed	Long-Term
		C301001	101 Wall Mouldings		Poor	Long-Term
		C303001	101 Ceiling Finishes		Poor	Long-Term
	C30xx	ROOM 102				
		C301002	102 Wall Finishes		Poor	Long-Term
		C301002	102 Wall Mouldings		Poor	Long-Term
		C303002	102 Ceiling Finishes		Poor	Long-Term
	C30xx	ROOM 103				
		C301003	103 Wall Finishes		Poor	Long-Term
		C301003	103 Wall Mouldings		Poor	Long-Term

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	C303003	103 Ceiling Finishes	Poor	Long-Term
C30xx	ROOM 104			
	C301004	104 Wall Finishes	Failed	Long-Term
	C301004	104 Wall Mouldings	Poor	Long-Term
	C303004	104 Ceiling Finishes	Failed	Long-Term
C30xx	ROOM 105			
	C301005	105 Wall Finishes	Failed	Long-Term
	C301005	105 Wall Mouldings	Poor	Long-Term
	C303005	105 Ceiling Finishes	Failed	Long-Term
C30xx	ROOM 106			
	C301006	106 Wall Finishes	Failed	Long-Term
	C301006	106 Wall Mouldings	Poor	Long-Term
	C303006	106 Ceiling Finishes	Poor	Long-Term
C30xx	ROOM 201			
	C301007	201 Wall Finishes	Fair	Long-Term
	C301007	201 Wall Mouldings	Fair	Long-Term
	C303007	201 Ceiling Finishes	Fair	Long-Term
C30xx	ROOM 202			
	C301008	202 Wall Finishes	Poor	Long-Term
	C301008	202 Wall Mouldings	Fair	Long-Term
	C303008	202 Ceiling Finishes	Fair	Long-Term
C30xx	ROOM 203			
	C301009	203 Wall Finishes	Poor	Long-Term
	C301009	203 Wall Mouldings	Fair	Long-Term
	C303009	203 Ceiling Finishes	Fair	Long-Term
C30xx	ROOM 204			
	C301010	204 Wall Finishes	Poor	Long-Term
	C301010	204 Wall Mouldings	Fair	Long-Term
	C303010	204 Ceiling Finishes	Fair	Long-Term

Site and Landscape

N/A	GENERAL				
N/A	BUILDING: DELASSUS-KERN HOUSE				
	N/A	N/A			
				Condition	Priority
		N/A	Delassus-Kern House	Good	N/A

Date: c. 1790

Contributing: Contributing

Description

The Delassus-Kern House faces northeast toward US Highway 61 and the Mississippi River beyond. The building measures 62 feet 6 inches by 44 feet 8 inches in plan. The poteaux-sur-sole vertical log structure, believed to have been built c. 1836, possibly from logs used for an earlier structure, exhibits evidence of later alterations during the late Victorian era, including a second story addition, and currently features a standing seam metal roof. Logs used to build the house have been analyzed and appear to date to c. 1793. It is believed that these may have been salvaged from another property, possibly Delassus’s earlier home, or an outbuilding on his property. Although Delassus owned the property, he died in 1806. Following a complicated series of transfers of ownership, the property was eventually acquired by John D. Kern in 1855. The German-American Kern family maintained ownership of the property for more than a century. The Kerns added the second story addition in 1903 and converted the building to a side-gabled farmhouse with clapboard siding. A gallery or porch that once edged the principal façade of the house is no longer extant. Additional covered porches were also once on the front and southeastern gable end of the building. In this location, a stone wall topped with a concrete landing, and a concrete slab edges the house. The door that can be used to enter the house is currently accessed from the landing. The house currently contains two stories and a basement. The original single-story dwelling, which contained six rooms, is of vertical post construction set on a sill resting on a limestone



Figure 67. The east exterior wall before shoring installation. (Source: RRJ 2022)

and sandstone foundation. The walls of the original dwelling were hewn white oak logs mortised into a sill, infilled with bousillage, and plastered or sheathed with horizontal clapboards. The gable roof is covered with metal. Two fireplaces were originally at the north and south ends that were associated with chimneys; these were later replaced with four stove chimneys. The size of the dwelling, which contained twice as many rooms as the average French colonial house, is among the largest known in the area and is the largest extant vertical log structure in Ste. Genevieve.

G	BUILDING SITE WORK				
G20	SITE IMPROVEMENTS				
	G2049	MISCELLANEOUS STRUCTURES			
				Condition	Priority
		G204901	Wood Shed	Poor	Medium

Date: 1900s to 1920s

Contributing: Contributing

Description

Located near the northwestern corner of the house is a wood shed that measures 27 feet 6 inches by 18 feet 2 inches in plan. The building is a wood-frame structure in deteriorated condition. The walls are vertical wood board siding covered with corrugated metal panels. The gable roof is corrugated metal. Foundation stones are evidence around the base of the structure. A single pedestrian door is in the north façade, while a larger barn door is no longer discernible. The south end also contains evidence of a pedestrian door and a larger door in the western facade.

The woodshed is constructed with sawn lumber framing and exterior cladding. The wood cladding is anchored with wire nails, also indicating a post-1900 construction date. Corrugated steel panels are used for the roof of the structure and are also fastened to the east wall.

In general, the woodshed is in poor condition. The vertical wood cladding is severely weathered throughout, and extensive deterioration is found in the lower portion of the west elevation exterior wall. The wood cladding on the south wall has failed due to extensive water damage. The steel roof and other steel elements show uniform corrosion. The interior of the woodshed is full of various types of construction materials and debris.



Figure 68. The woodshed from the south, showing deterioration of the wood siding and structure. (Source: RRJ 2023)



Figure 69. View west toward the wood shed. (Source: LSH-LA, 2023)

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G	BUILDING SITE WORK				
G20	SITE IMPROVEMENTS				
	G2049	MISCELLANEOUS STRUCTURES			
				Condition	Priority
		G204902	Chicken House	Poor	Medium

Date: 1900s - 1920s

Contributing: Contributing

Description

Located to the southwest of the house is another agricultural outbuilding, indicated as a chicken house in the 1986 HABS site plan. The building, which measures 23 feet 8 inches by 16 feet 4 inches, is a wood-frame structure nearly two stories in height that is in deteriorated condition but more intact than the wood shed. The walls are vertical wood board siding covered with corrugated metal panels on the lower half. The metal panels are corroded in places. The gable roof is corrugated metal. The north gable end includes a tall pedestrian door, a wide window opening, and an upper door under the peak of the gable roof, which has a large overhang, and may have been used to store hay. Successional vegetation is engulfing the building.

The chicken house is constructed with vertical posts placed in the ground with a concrete foundation wall that infills around the wood posts. The exterior walls of the building are sawn lumber that are anchored with wire nails, indicating a post-1900 construction date. Weathered finishes indicate that the chicken house was once painted red. Corrugated steel is used for the roof of the structure and is also fastened to the base of the east wall. The chicken house is in fair condition. The exterior paint has failed due to exposure and general weathering, allowing for further weathering of the underlying wood. The roof shows uniform surface corrosion but is otherwise intact. A gutter system was once installed on the east and west elevations of the structure but is severely corroded and non-functional. A few of the concrete foundation walls visible inside the chicken house have shifted or fallen. The door is no longer functional, and there are no coverings over the other openings.



Figure 70. View west toward the chicken house. (Source: LSHLA, 2023)



Figure 71. View of the chicken shed interior. (Source: RRJ 2023)

G	BUILDING SITE WORK				
G20	SITE IMPROVEMENTS				
	G2049	MISCELLANEOUS STRUCTURES			
				Condition	Priority
		G204903	Corn Crib	Poor	Medium

Date: 1900s - 1920s

Contributing: Contributing

Description

Located in a wooded grove north of the house is a corn crib that measures 34 feet 8 inches by 15 feet 7 inches with a wide roof overhang. The wood-frame building sits on a high stacked-stone foundation. The walls are widely-spaced wood board separated by openings for air circulation. The gable roof, which extends as a wide overhang to the east and west, is clad with corrugated metal as are portions of the north and south walls. The finished floor is elevated approximately 2-1/2 feet above the adjacent grade. The building is in deteriorated condition and being overtaken by successional vegetation.

The corn crib is an elevated wood structure supported by a stone masonry foundation. Circular sawn lumber was used to construct the slatted wood walls present on the east, north, and west elevations which allow for airflow within the structure. The south elevation of the structure is clad in corrugated metal. The side-gabled roof is also corrugated metal and provides a deep overhang on the east and west elevations. Overall, the corn crib is in poor condition. The stone masonry foundation is partially intact; however, portions of the east and north walls have collapsed and require reconstruction. The floor beam along the north elevation is displaced from the foundation and wall framing. This beam will need to be reinstalled or supplemented. Most of the elevated floor framing and flooring are missing. The exterior slatted walls are mostly intact and in fair condition. The roof is corroded and has reached the end of its service life.



Figure 72. East exterior wall of the corn crib, showing deterioration of the foundation and roof overhang. (Source: RRJ 2023)



Figure 73. View northwest toward the corn crib. (Source: LSHLA, 2023)

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G	BUILDING SITE WORK				
G20	SITE IMPROVEMENTS				
	G2049	MISCELLANEOUS STRUCTURES			
				Condition	Priority
		G204904	Smoke House Ruins	Poor	Medium

Date: 1900s - 1920s

Contributing: Contributing

Description

The foundation walls of an old smoke house are present between the extant chicken house and the Delassus-Kern House. Three to four courses of cut stone are all that remain of this structure. The use of stone walls rather than concrete may indicate this structure is earlier than other extant outbuildings on the property.

The smoke house ruins pose no life-safety risk, so little intervention is required.

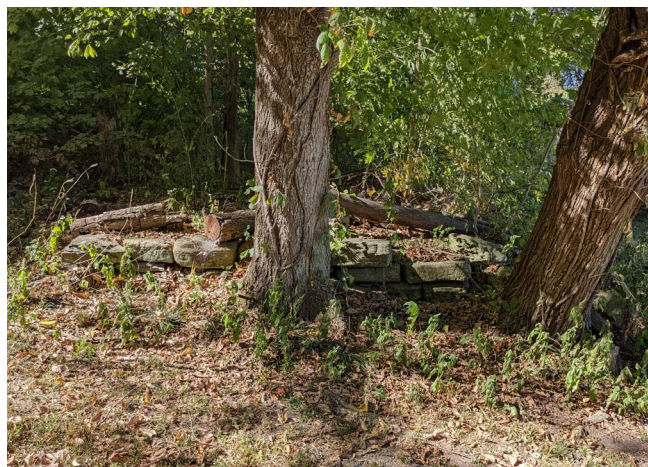


Figure 74. Ruins of the smoke house, located to the south-west of the main house. (Source: RRJ 2023)

G	BUILDING SITE WORK				
G20	SITE IMPROVEMENTS				
	G2049	MISCELLANEOUS STRUCTURES			
				Condition	Priority
		G204905	Chicken House Ruins	Poor	Medium

Date: 1900s - 1920s

Contributing: Contributing

Description

The concrete foundation walls remain of a former chicken house and are located a few feet south of the other remaining chicken house structure. The use of a poured concrete foundation indicates that this chicken house may post-date the extant chicken house and other outbuildings which have stone foundations. The concrete is a large aggregate mix, which appears similar to the concrete used for the retaining wall along US-61, which likely predates improvements to the roadway performed in 1926.

The chicken house ruins pose no life-safety risk, so little intervention is required.



Figure 75. Ruins of the chicken house. (Source: RRJ 2023)



Figure 76. Ruins of the chicken house foundation. (Source: RRJ 2023)

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G	BUILDING SITE WORK				
G30	SITE MECHANICAL UTILITIES				
	G3013	WELL SYSTEMS			
				Condition	Priority
		G301301	East Yard Cistern	Poor	High
		G301302	North Yard Cistern	Poor	High
		G301303	Kitchen Cistern	Poor	High
		G301304	Porch Cistern	Poor	High
		G301305	Barnyard Well or Cistern	Poor	High

Date: Undetermined

Contributing: Not Assessed

Description

East Yard Cistern

The cistern located northeast of the house, in the yard near the main drive, measures 3 feet 2 inches in diameter. The limestone cover measures 6 inches thick and sits atop large pieces of stacked stone masonry rubble. Set into the covering is a metal pump and a door opening inset with a steel ring. The pump is missing the top portion of its housing. The cistern is partially filled with water, and the upper portions of the stone masonry walls are deteriorated and buckling.

North Yard Cistern

The cistern located along the north side of the house also measures 3 feet 2 inches in diameter. The limestone covering measures 6 inches thick and sits atop a brick base that extends to a height of 1 foot 3 inches on the downhill side. The brick masonry walls where exposed are in poor condition. The cistern is partially filled with water and appears to have been connected to the downspouts historically.

Kitchen Cistern

The cistern located on the south side of the house also measures 3 feet 2 inches in diameter. The limestone covering measures 6 inches thick, sits atop a brick base, and is set within the concrete landing that edges the building to the south. There is a large, rusted metal panel over an opening in the top of the stone covering.

At one time, this cistern was located within a screened-in area of the south gallery. The cistern appears to have been connected to the downspouts historically and

and likely provided water for the family's daily use. The cistern is partially filled with water and is in poor condition.

Porch Cistern

A fourth cistern is located at the southeast corner of the main house, set within the concrete landing that was formerly part of the now missing gallery. The opening to the cistern is covered with a loose metal plate. The concrete is heavily deteriorated around the cistern. The cistern appears to have been connected to the downspouts historically.

Barnyard Well or Cistern

Located in the field northwest of the house is a well. This area was formerly part of the barnyard and likely provided water for agricultural uses and animal husbandry.

Like several of the cisterns, the well is topped with a limestone cover and is set on a stone base. The top measures 4 feet 6 inches in diameter and is 6 thick. There is a metal hatch on the top of the stone slab that measures 1 foot 10 inches by 2 feet 2 inches. The structure is 1 foot 4 inches tall on the downhill side, and the exposed stone masonry is deteriorated at displaced. The well is partially filled with water.



Figure 79. Kitchen cistern, located on the south porch, immediately outside the kitchen door. (Source: LSHLA 2023)



Figure 77. East yard cistern with historic pump. (Source: RRJ 2023)



Figure 80. Porch cistern, showing deteriorated concrete and loose metal plate cover. (Source: RRJ 2023)



Figure 78. North yard cistern, adjacent to north exterior wall of house. (Source: LSHLA 2023)



Figure 81. Barnyard well or cistern in the field to the north of the house. (Source: RRJ 2023)

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G	BUILDING SITE WORK				
G20	SITE IMPROVEMENTS				
	G2049	MISCELLANEOUS STRUCTURES			
				Condition	Priority
		G204906	Hog House (Demolished)	N/A	N/A
		G204907	Utility Shed (Demolished)	N/A	N/A
		G204908	Chicken House(s) (Demolished)	N/A	N/A
		G204909	Latrine (Demolished)	N/A	N/A
		G204910	Barn (Demolished)	N/A	N/A
		G204911	Other Outbuildings (Demolished)	N/A	N/A

Date: Undetermined

Contributing: Not Assessed

Description

Numerous other outbuildings were present on the property in the first half of the 20th century. The existence of many of these buildings, including a large barn and multiple smaller barns or sheds, was documented through historic photographs taken by the Kern Family. The HABS site plan also documents the presumed location of several other missing structures not visible in the historic photographs.

Ruins of a former utility shed exist within a wooded area east of the corn crib. This area was excessively overgrown with vegetation making it difficult to inspect. This area is also intentionally avoided during scheduled landscaping activities, due to the presence of building debris. The utility shed was demolished after the 1993 flood and was the most recent loss of an outbuilding.

Remnants of other outbuildings or the debris of demolished buildings exist in the wooded area behind the wood shed.



Figure 82. Barn or shed present on the property in the 1920s. (Source: Source: MoDNR Felix Vallé House archives)



Figure 83. From left to right: the utility shed (demolished c. 1993), corn crib (extant), and barn (demolished before 1985) to the north of the main house, as seen in 1976. (Source Vintage Aerial, Photo 4-FSTG-22, vintageaerial.com/photos/mis-souri/ste-genevieve/1976/FSTG/4)

G	BUILDING SITE WORK				
G20	SITE IMPROVEMENTS				
	G2031	PAVING AND SURFACING			
				Condition	Priority
		G203101	Circulation: Driveway Trace	Fair	Low

Date: Undetermined

Contributing: Not Assessed

Description

An informal driveway extends from U.S. Highway 61 toward the north end of the Delassus-Kern House. The driveway and extension as a farm road would have been part of the essential needs of the farm property from the adjacent major road corridor.

The driveway is not paved. It is a relatively level grass surfaced route. The driveway is graded to be level as it approaches the house. The land to the north of driveway has been graded to form a terrace. The driveway once continued into the hilly terrain behind the house. The trace of the road as it continued is visible on the hillside.



Figure 84. View south toward the house with the graded landform of the driveway visible. (Source: LSHLA 2023)



Figure 85. View looking southwest along the drive at the top of the bluff. Per historic aerial photographs, the main driveway formerly connected with this road, which now must be accessed through the adjacent property to the north. (Source: RRJ 2023)

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G	BUILDING SITE WORK				
G20	SITE IMPROVEMENTS				
	G2031	PAVING AND SURFACING			
				Condition	Priority
		G203102	Circulation: Concrete Walk	Poor	Medium

Date: Undetermined

Contributing: Not Assessed

Description

A concrete walk extends toward the principal façade of the house from the driveway trace. The concrete walk appears to be a later addition to the property. It may have replaced an earlier walk system no longer in evidence.

The walk measures 3 feet 6 inches in width and continues 28 feet toward the site of the front door. The concrete is broken, and grass is growing through the cracks and over top of the surface of the walk.



Figure 86. View southeast along the concrete walk connecting the driveway with the principal façade of the house. (Source: LSHLA 2023)

G	BUILDING SITE WORK				
G20	SITE IMPROVEMENTS				
	G2031	PAVING AND SURFACING			
				Condition	Priority
		G203103	Circulation: Concrete Landing and Steps	Failed	High

Date: Undetermined

Contributing: Not Assessed

Description

A paved concrete landing is present on the south side of the house, which was once part of the galleries. The concrete topping is severely cracked and has detached along the stairs and southeast portion of the landing, where the porch cistern is located. The majority of the concrete topping has failed creating tripping hazards at several locations.



Figure 87. Deteriorated concrete landing. (Source: RRJ 2023)



Figure 88. Deteriorated concrete steps. (Source: RRJ 2023)

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G	BUILDING SITE WORK				
G20	SITE IMPROVEMENTS				
	G2049	MISCELLANEOUS STRUCTURES			
				Condition	Priority
		G204912	Concrete Retaining Wall	Poor	Low

Date: 1900s - 1920s

Contributing: Contributing

Description

A concrete retaining wall of unknown function is located in the field to the southeast of the House. The wall appears to follow the historic aligned of the road before it was improved and expanded to form US-62.

Pockets for a previous railing are present along the top, and three rectangular holes measuring approximately 4 x 6 inches are present along the vertical face, which may be seepage holes to relieve ground water pressure.

The concrete retaining wall is cracked through the full depth of the wall at several locations and is out of plumb.



Figure 89. Displacement and distress to the concrete retaining wall, looking north. (Source: RRJ 2023)



Figure 90. Displacement and distress to the concrete retaining wall, looking south. (Source: LSHLA 2023)

G	BUILDING SITE WORK				
G20	SITE IMPROVEMENTS				
	G2055	PLANTING			
				Condition	Priority
		G205501	Cultural Vegetation: Woodland	Good	Low

Date: Late 20th Century

Contributing: Non-Contributing

Description

Woodland edges the Delassus-Kern House and outbuildings along the western margin of the property. Woodland also surrounds the corn crib building, as well as the spring site to the south of US-61.

None of the woodland on the site appears to date to the 19th century. Trees were likely removed for use as fuel and construction. These woodland areas are representative of formerly cleared land that has undergone secondary succession following reduced maintenance. In the historic Kern Family photographs, this hillside was cleared for agricultural use as early as c. 1895, and aerial photographs from the mid-20th century show agricultural use of the land, organized into orchards, crop plantings, and cleared pastures.

There are examples of non-native plants within the woodland, such as creeping euonymus, which may have been planted as an ornamental in the garden at one time. Photographs from the 1980s indicate that there were trees in front of and around the sides of the house that are no longer extant today. The remainder of the property is maintained in mown turf or field grasses.



Figure 91. Wooded area on the hillside to the west of the main house. (Source: RRJ 2023)

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G	BUILDING SITE WORK				
G20	SITE IMPROVEMENTS				
	G2045	SITE FURNISHINGS			
				Condition	Priority
		G204501	Small-scale Features: Fencing	Poor	Low

Date: Undetermined

Contributing: Non-Contributing

Description

The southern property boundary of the Delassus-Kern House is marked by fencing typical of farm properties. The fence is supported by a combination of round wood posts and rectangular metal posts. The wire fencing is a combination of three strands of twisted and barbwire along the top and boxwire below. The boxwire suggests use to contain smaller livestock, such as hogs or chickens. The fence measures approximately 3 to 4 feet in height.

None of the fencing appears to date to the 19th century. The wood picket and post-and-rail fencing visible in historic photographs is no longer extant.

In some locations, the fencing was partially collapsed or vegetation was displacing the fencing wire.



Figure 92. View toward fencing located along the southern boundary of the property, showing secondary growth of woodland and non-native plants. (Source: LSHLA 2023)

G	BUILDING SITE WORK				
G20	SITE IMPROVEMENTS				
	G2045	SITE FURNISHINGS			
				Condition	Priority
		G204502	Small-scale Features: Site Signage	N/A	N/A

Date: Late-20th Century

Contributing: Non-Contributing

Description

There are several signs associated with the property, most located near the informal entrance drive from US-61. Wooden “No Trespassing” signs are located near the northeast corner of the property, on the northwest side of the driveway trace, and near the northern end of the property along US-61. An “NPS Property” sign edges the driveway trace to the south.

The "No Trespassing" signs are composed of a 4x4 wood post to which is nailed a routed plank. The routed letters are painted yellow. The sign stands 4 feet 7 inches in height and the panel measures 2 feet 4 inches in length and is 5-1/2 inches tall.

The NPS Property sign is a metal plaque mounted on a metal pole. The plaque measures 1 foot 6 inches in length and is 1 foot high. The sign stands 2 feet 10 inches in height. The plaque is printed with a green background and a white border and white text. There are also remnant Missouri state park signs.



Figure 93. Signs near the entrance into the property from US-61. (Source: LSHLA 2023)



Figure 94. Signs near the entrance into the property from US-61. (Source: LSHLA 2023)

Enclosure Systems

B	SHELL				
B30	ROOFING				
	B3010	ROOF COVERING			
				Condition	Priority
		B301001	Standing-Seam Metal Panel Roofing	Good	Low
		B301601	Gutters and Downspouts	Fair	Medium

Date: 2016

Contributing: Non-Contributing but Compatible

Description

The existing standing seam sheet metal roof was replaced c. 2015. At this time the brick chimneys were removed, and a new roof drainage system was installed. Based on historic photographs, the house has had metal panel roofing since the early 20th century, which was common in Ste. Genevieve.

Galvanized steel gutters are present along the full length of the east roof edge and both roof lines along the west. Downspouts are present at the four corners of the house. The southeast downspout drains onto the concrete porch along the south wall. The downspout at the southwest corner extends beyond the porch to drain into the adjacent grass. Corrugated plastic drainage extension pipes are attached to both downspouts on the north wall to facilitate drainage away from the foundation walls. Two downspouts are attached to the second-story gutters along the west wall and drain onto the first-story roof.

The roof is in good condition, but tree trimming is recommended for all trees that touch the first-story roof along the west wall. The drainage system is in good condition, but minor corrosion is present along the underside of the gutters. Additionally, gutters along the west roof edge are full of leaves and should be cleaned to maintain proper drainage.



Figure 95. View of the standing seam metal panel roofing from the west. (Source: RRJ 2023)



Figure 96. View of the standing seam metal panel roofing from the west, showing the gutters full of leaves. (Source: RRJ 2023)

B	SHELL				
B20	EXTERIOR ENCLOSURE				
	B2011	EXTERIOR WALL CONSTRUCTION			
				Condition	Priority
		B201101	Weatherboard Siding and Trim	Fair	High

Date: 20th Century

Contributing: Non-Contributing but Compatible

Description

The log walls are covered with wood, weatherboard siding with approximately 5 to 5.5-inch exposures.

The age of the existing siding is unknown. Weatherboard lap siding is visible on the house in the c. 1895 photograph before the second floor addition. Some existing siding may remain from the c. 1900 alterations; however, color variations in the wood suggest that the majority of the lap siding has been removed and replaced as needed over the years. This is primarily evident at the south wall where evidence of whitewash is present on the siding at the first level, but the siding at the second level is unpainted.

The existing lap siding shows varying degrees of weathering throughout the house. The siding is secured into vertical logs with exposed nails. Warped, split and broken siding was also identified in isolated locations. There are also penetrations in the siding at several locations from previous utilities. The existing lap siding boards are in fair condition, meaning that they are generally performing as intended but with limited remaining service life. Several holes created by squirrels were observed.



Figure 97. Weatherboard siding, showing exposed nails, along with splits in the wood boards. (Source: RRJ 2023)



Figure 98. South exterior wall, showing localized replacement of siding at the upper level. (Source: RRJ 2023)

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B	SHELL				
B20	EXTERIOR ENCLOSURE				
	B2030	EXTERIOR DOORS			
				Condition	Priority
		B203001	D001A	Missing	High
		B203002	D001B	Failed	High
		B203003	D101A	Poor	High
		B203004	D102A	Failed	High
		B203005	D105	Missing	High
		B203006	D203B	Poor	High

Date: 1903, with later alterations

Contributing: Contributing

Description

There are six exterior doors at the Delassus-Kern House; two at the basement level, three at the first-floor and one on the second-floor that once led to a gallery on the east exterior wall. The doors are of varying styles and have miscellaneous, unmatched hardware. The doors appear to date to various periods of time, with two doors dating to the 1903 alterations. Further investigation and research are needed to determine if any of the doors predate the 1903 alteration.

All doors at the house are in failed to poor condition, or were missing entirely. None of the doors were fully operable. The wood frames and doors are severely weathered and/or rotted and there are broken lites in glazing openings.

- **Door D001A** is missing, and the rough opening is covered in plywood. Door D001B could be used as a template to create an appropriate replacement door.
- **Door D001B** is a wood, batten style door with wire nails. A knob and rim lock were present at the interior. Metal strap hinges were also present. Overall, this door has failed and is currently covered in plywood.
- **Door D101A** is a wood door with a raised, four-panel configuration. The top two panels were removed, possibly to provide light into the kitchen. This door is of a similar style to the door visible in the c. 1895 photograph and may be a 19th century door. It is also possible that this door was repurposed from another location on the house at an undetermined time. The door knob was missing. The escutcheon and lock were present but were damaged and likely are not



Figure 99. D001B, a batten style door. (Source: RRJ 2023)

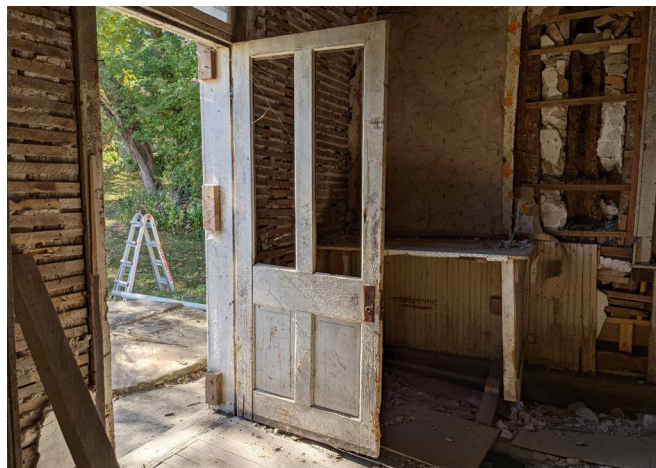


Figure 100. Door 101A, the kitchen door. (Source: RRJ 2023)

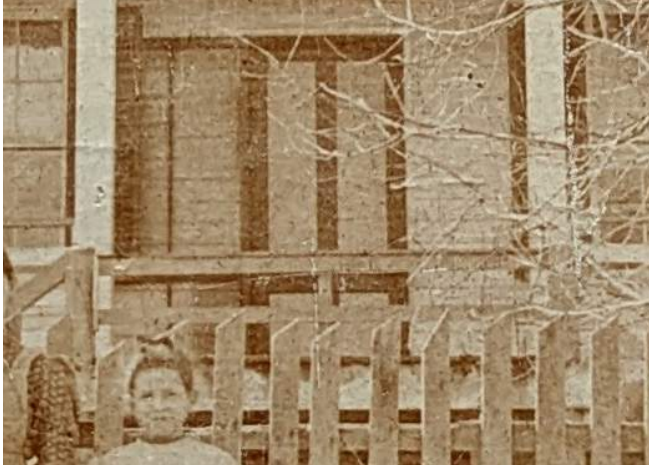


Figure 101. Two-panel door from the c. 1895 photograph, similar to Door D101A. (Source: RRJ 2023)



Figure 102. Replacement hinge on Door D101A. (Source: RRJ 2023)

repairable. The hinges match those found upstairs at D201 but are not original to the current location. A transom was present at this location. The door trim was partially missing. Several layers of paint were noted at the interior and exterior of the door. Both sides of the door were painted white over light blue. Overall, this door was in poor condition but can likely be restored, along with the transom.

- **Door D102A** is the back door on the west wall and is in failed condition with multiple missing components. The door has a raised, nine-panel configuration on the lower half with a spiral sunburst in the center panel, and the upper portion of the door contained a single lite. A decorative hood and sill were present at the lite. This door appears to date to the 1903 renovation or shortly after, as it appears in the early photographs of



Figure 103. Door D201A, the back door, in a failed condition. (Source: RRJ 2023)



Figure 104. Unattached door in Room 106, likely Door D105. (Source: RRJ 2023)

the house. Similar "cottage doors" were found in The Huttig Bros Muscatine, IA, 1900 Catalogue and the Farley and Loetsches Dubuque, IA, 1898 Catalogue, which support the 1903 trimframe for a door of this style; further research may be able to identify the manufacturer or pattern book for these doors. An ornamental knob and escutcheon were present. The screen door appears to be a later replacement.

- **Door D105** was missing. An unattached door was stored in Room 106 that was of the same style as Door D102A; based on photographs from the 1990 Volz and Associates condition assessment report, this is likely the missing door for D105.¹ An ornamental knob and escutcheon and a modern 20th century deadbolt were present. The unattached door is in fair condition and can be restored. The contents of

1 Volz, John R. (Volz and Associates). "Pierre Delassus de Luziere House (Kern House) Condition Assessment Report," 1990.

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the house should be inventoried to determine if other exterior doors are present within the house.

- **Door D203B** once provided exterior access to the second level of the east gallery. The door is a wood door with a raised, four-panel configuration, with the upper panels larger than the lower. The joints have failed and some water damage and cracked panels were noted. The door trim was partially missing. The interior knob was black porcelain. An escutcheon with a simple style was present, but loose. The deadbolt and latch were still in place and a later addition slide lock latch was also present. Butt hinges with ball finials were present. The lower hinge had pulled out of the jamb. Generally, the door was in poor condition but likely can be restored. This may be a repurposed interior door.



Figure 105. Detail of panels and sunburst design of the unattached door, likely Door D105. (Source: RRJ 2023)



Figure 106. Door D203B, which former lead to the upper level of the east gallery. (Source: RRJ 2023)

B	SHELL				
B20	EXTERIOR ENCLOSURE				
	B2021	WINDOWS			
				Condition	Priority
		B202101	W001A	Fair	High
		B202102	W001B	Fair	High
		B202103	W001C	Fair	High
		B202104	W002	Fair	High
		B202105	W101	Poor to Fair	High
		B202107	W102A	Poor	High
		B202108	W102B	Poor	High
		B202109	W103A	Poor	High
		B202110	W103B	Poor	High
		B202112	W104A	Failed	High
		B202113	W104B	Poor to Fair	High
		B202114	W104C	Poor	High
		B202115	W105A	Poor	High
		B202116	W105B	Poor	High
		B202117	W106A	Poor	High
		B202118	W106B	Poor	High
		B202119	W106C	Failed	High
		B202120	W201A	Failed	High
		B202121	W201B	Undetermined	High
		B202122	W201C	Failed	High
		B202123	W201D	Failed	High
		B202124	W202	Fair to Poor	High
		B202125	W203A	Failed	High
		B202126	W203B	Poor	High
		B202127	W204A	Poor	High
		B202128	W204B	Failed	High
		B202129	W204C	Missing	High
		B202130	W204D	Failed	High

Date: 19th century and 1903

Contributing: Contributing

Description

There are four small, square openings on the basement level for ventilation, and wood-framed screens are present in all four locations. There are large gaps around the framing for the basement vents that provide the opportunity for pest infiltration.

There are 24 wood double-hung sash windows throughout the House. Window lite configurations vary between 6-over-6 and 2-over-2, depending on the location. The wood window frames and muntins are weathered and/or deteriorated, and there are broken panes of glass in most windows. The glass generally appeared to be modern 20th century float glass with failed glazing putty.

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There are four attic-level openings that are currently covered in plywood. These openings are on the north and south walls. All windows at the house are in poor to failed condition. None of the windows are fully operable.

Basement Windows

W001A was a small opening at the north elevation of the basement level for ventilation. The opening is covered with a wood-framed screen. There were large gaps around the framing for the basement opening that provides the opportunity for pest infiltration. Overall, the screen was in fair condition.

W001B was a small opening at the north elevation of the basement level for ventilation. The opening was covered with a wood-framed screen. There were large gaps around the framing for the basement opening that provides the opportunity for pest infiltration. Overall, the screen was in fair condition.

W001C was a small opening at the south elevation of the basement level for ventilation. The opening was covered with a wood-framed screen. There were large gaps around the framing for the basement opening that provides the opportunity for pest infiltration. Overall, the screen was in fair condition.

W002 was a small opening at the north elevation of the basement level for ventilation. This opening provided ventilation to the crawl space at the west side of the house. The opening was covered with a wood-framed screen. There were large gaps around the framing for the basement opening that provides the opportunity for pest infiltration. Overall, the screen was in fair condition.

First Floor Windows

W101 was a 6-over-6 wood sash window. The bottom sash and several lites were damaged. The muntins were very thin. The 6-over-6 windows present in Rooms 101, 102, and 103 may predate the 1903 alterations to the house.

The casing was a rectangular style with narrow applied perimeter moulding and a projecting stool; the apron may have been removed when the wainscoting panels were installed. The casing was mostly intact, but no hardware was present. Evidence of previous stains and paints were noted. The oldest color was a light brown stain/paint followed by a blue paint, and the newest finish layer was a white paint. Overall, the window was in poor to fair condition.



Figure 107. W001B, a basement level window on the north exterior wall, showing deterioration of the frame and masonry. (Source: RRJ 2023)



Figure 108. W101, showing the rectangular casing with the applied perimeter trim. (Source: RRJ 2023)



Figure 109. W102A, a first floor window on the west wall, likely a window unit that predates the 1903 alterations to the house. (Source: RRJ 2023)



Figure 110. W104A, a first floor window on the east wall in failed condition, dating to the 1903 alterations to the house. (Source: RRJ 2023)



Figure 111. Applied moulding at the apron of W103A. (Source: RRJ 2023)

W102A was a 6-over-6 wood sash window. The sashes had damage and deterioration but were mostly intact. The glass appeared to be modern 20th century float glass. The casing was a rectangular style with wide applied perimeter moulding with an ogee interior edge and a projecting stool; the apron was missing and may have been removed when the wainscoting panels were installed. The window casing is similar in style to that on the inside faces of Door D101B, Door D102A, and Door 103A. No hardware was present. Evidence of previous stains and paints were noted. The oldest color was a dark brown paint, and the newest finish layer was a white paint. Overall, the window was in poor condition.

W102B was a 6-over-6 wood sash window that was painted white or cream. The lower sash and one of the lites were damaged. The window casing was partially intact, but the apron was removed, possibly to accommodate the wainscoting installation; damage was noted at the lower right jamb trim. The casing is the same as Window W102A. No hardware was present. Overall, the window was in poor condition.



Figure 112. Apron of W104A. (Source: RRJ 2023)

W103A was a 6-over-6 wood sash window. Two of the lites were damaged, and some deterioration was noted on the lower sash. The casing was a simple rectangular profile with a very narrow fluted moulding applied at the head. The stool and apron were intact, and a fluted applied moulding was present at the base of the apron. No hardware was present. Overall, the window was in poor condition.

W103B was a 6-over-6 wood sash window. The upper sash was damaged, and deterioration was noted on the lower sash. No hardware was present. The interior casing was of the same style as Window W103A. Evidence of previous stains and paints were noted on the casing. The oldest color was a light brown followed by a dark brown or maroon paint, and the newest finish layer was a white paint. Overall, the window was in poor condition.

W104A was 2-over-2 wood sash window with damaged upper and lower sashes. The 2-over-2 windows appear to date to the 1903 alterations. The interior casing, sill, and stool were present, but the style of the interior casing in this location was different from casing found in Room 103. The casing was a simple flat profile without applied mouldings; the apron had an applied quarter round moulding and the lower edge was finished with an ogee profile. Evidence of previous stains and paints were noted and were similar to those found at W103B. W104A was installed with dimension lumber in the former location of one of the original stone masonry chimneys. Overall, this window had failed.

W104B was a 2-over-2 wood sash window. The glass and interior casing were missing except for the stool. The upper sash was damaged, and the wood on the lower



Figure 113. W106B, a first floor window on the south wall with a missing lower sash but intact upper sash, dating to the 1903 alterations to the house. (Source: RRJ 2023)



Figure 114. W106B, a first floor window on the south wall, showing the stud frame infill where the stone masonry chimney was removed. (Source: RRJ 2023)

sash was deteriorated. Water damage was noted around the window and at the logs under the window. Overall, the window was in poor to fair condition.

W104C was a 2-over-2 wood sash window that was painted cream on the interior. The glass was present, but the casing was missing. The window stool was partially intact. No hardware was present. Overall, the window was in poor condition.

W105A was a 2-over-2 wood sash window that was painted cream on the interior. The lower right lite was broken, and the hardware and interior casing were missing except for the stool. The sashes were in fair condition, but the wood in the lower rail was deteriorated. Overall, the window was in poor condition.

W105B was a 2-over-2 wood sash window that was painted cream on the interior. The glass was present in, but the interior casing was missing. The window stool was partially intact. Overall, the window was in poor condition.

W106A was a 2-over-2 wooden sash window. The glass was intact. The interior trim and hardware were missing, except for the stool. The interior side of the window was painted cream. Overall the window was in poor condition.

W106B was a 2-over-2 wooden sash window likely from the early 1900s. The bottom sash, interior trim, interior sill and hardware are missing. The glass present at W106B appears to be 20th century float glass. Overall the window was in poor condition.

W106C was a 2-over-2 wooden sash window likely from the early 1900s. The glass within the bottom sash was missing. The interior trim and casing were present and were painted cream. The exterior sill has failed, and the window overall had failed. This window was installed in a stud frame wall where one of the original stone masonry chimneys was located.

Analysis of the windows performed by the Southeast Missouri State University Historic Preservation Field School in 2001 posited that this window unit was a more modern replacement unit due to the use of counterbalances in the wall pocket.¹



Figure 115. Profile of the stool and apron at W201B. (Source: RRJ 2023)



Figure 116. W201B, with missing lower sash. (Source: RRJ 2023)

¹ Wells, Jeremy and Jennifer Feucht. "Dating the Woodwork Moldings in the Delassus-Kern House." Unpublished manuscript, 2001:

Second Floor Windows

W201A was a 2-over-2 wood sash window. The lower sash was missing, and the upper sash was damaged. The casing was intact but minor damage was noted. The interior casing was a simple flat, rectangular style with a projecting stool and apron with an applied quater-round moulding; this style was typical of all second-floor windows. Overall, the window had failed.

W201B was covered with plywood but is likely a 2-over-2 wood sash window. The casing was present and was similar to that found at W204B. Evidence of previous stains and paints were noted. The oldest color was a dark brown stain/paint followed by a later layer of dark cream or yellow paint. Overall, the window was in fair condition.

W201C was a 2-over-2 sash window. The lower sash was missing, and the upper sash was damaged. The casing was present. Evidence of previous stains and paints were noted. The oldest color was a dark brown stain/paint followed by a later layer of dark cream or yellow paint. Overall, the window was in failed condition.

W201D was a 2-over-2 sash window, but the sashes were mostly missing. The casing was intact, but overall the window had failed.

W202 was a 2-over-2 wood sash window that was in fair to poor condition.

W203A was a 2-over-2 wood sash window. The lower sash was pushed up, and the upper sash was missing. The casing was intact and was painted a muddy brown. No hardware was present. Water damage was noted on the window sill and stool. Overall the window was in a failed condition.

W203B was a 2-over-2 wood sash window. Both sashes were damaged. The casing was intact and was painted a muddy brown. No hardware was present, but previous, damaged window treatments were present. Overall, the window was in poor condition.

W204A was a 2-over-2 wood sash window. The sashes were intact but the glass was damaged. The casing was intact and was painted a muddy brown. Overall, this window was in poor condition.

W204B was a 2-over-2 wood sash window. The upper sash was missing and the lower sash was damaged. The casing was intact and was painted a muddy brown.



Figure 117. W203B, a second floor window on the east wall with damaged but intact upper and lower sashes with glazing. (Source: RRJ 2023)



Figure 118. W204A, a second floor window on the west wall with relativelyt intact upper and lower sashes with damaged glazing. (Source: RRJ 2023)

Water damage was noted on the windowsill. The head trim present was a replacement. Overall, the window was in a failed condition.

W204C was likely once a 2-over-2 wood sash window, but both sashes were missing. A screen insert was in place. The casing was intact and was painted a muddy brown. Some water damage was noted on the casing. Overall, the window was in a failed condition.

W204D was a 2-over-2 wood sash window. The upper sash was damaged, and the lower sash was missing. No hardware was present. The casing was intact and was painted a muddy brown. Overall, the window was in a failed condition.

Shutters

The earliest available photographs of the house depict louvered shutters at each of the windows. While none of the shutters are currently in place on the exterior walls, remnants of louvered shutters are present inside the house, stored in the second floor bedrooms along with remnants of window screen inserts. In the crawlspace under Room 102, a small batten-style wood shutter is present, and another is present in the debris in Room 104; these may have been an early shutters for one of the basement level ventilation windows. Two larger batten-style shutters were stored in Room 104; these generally appear to be the correct size for a typical window at the house, but their date of use and original placement is not currently known. Several damaged louvered shutters were observed in the debris on the second floor; these are not suitable for reuse but can serve as a template for reproduction units.



Figure 119. Small batten-style shutter in the debris in Room 104 (Source: RRJ 2023)



Figure 120. Damaged louvered shutter in the debris in Room 204 (Source: RRJ 2023)

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B	SHELL				
B40	OTHER STRUCTURES				
	B4010	CHIMNEYS			
				Condition	Priority
		B401001	Interior Chimneys	Failed	Low

Date: 1903

Contributing: Contributing

Description

Four brick masonry chimney locations were installed on the first floor after the 1903 alterations, which removed the original stone masonry chimneys. Two chimneys were located at the midpoints of the east-west walls separating Rooms 101/102 and Rooms 102/103; the chimney on the north wall of Room 102 had collapsed. Two chimneys spanning both stories were located at the mid-points of the east-west walls separating Rooms 104/105 and Rooms 105/106; the chimney on the south wall of Room 104 was missing.

The chimneys are visible above the roofline in HABS photographs taken in 1986 and as recently as a photograph dating to summer 2011.

During the most recent roof replacement project c. 2016, all four brick chimneys were partial demolished, such that they no longer extend above the roofline.



Figure 121. Chimney in Room 204, showing capped opening for the stove flue. (Source: RRJ 2023)



Figure 122. Collapsed chimney in Room 102, with brick rubble still present in room. (Source: RRJ 2023)

B	SHELL				
B10	SUPERSTRUCTURE				
	B1010	FLOOR CONSTRUCTION			
				Condition	Priority
		B101001	East Porch and Gallery (Demolished)	N/A	N/A
		B101002	South Porch (Demolished)	N/A	N/A

Date: c. 1836 / 1903

Contributing: Contributing

Description

The east exterior wall appeared to historically have always had a porch or gallery, as is seen in the c. 1895 photograph before the 1903 alterations. With the construction of the second floor in 1903, a second level was also added to the east porch. On the south side of the house, the kitchen door historically also had a screened-in porch with a shed roof. From the c. 1920s photographs of the house, the lower level of the east gallery was enclosed with wood siding, and the gallery was supported by a low cut-stone wall. At an undetermined date, the stairs to the east gallery were a split staircase with flights leading up from the north and south; by 1990, the front stair had been modified to a single flight leading up from the north.¹

The east gallery was removed c. 1996, due to deterioration and also damaged caused by the Great Flood of 1993; the low cut-stone wall remains partially in place but is in ruins. The south porch was removed sometime between 2000 and 2007, leaving only the concrete landing.

Several of the metal balusters and fragments of the wrought iron railing that can be seen in the 1985 HABS photographs are stored in Room 204; however, this was not the original railing, which was of undetermined design.



Figure 123. Undated photograph (possibly 1950s) of the east wall, showing the split staircase to the east porch and upper gallery railing. (Source: Volz, "Pierre Delassus de Luziere House (Kern House) Condition Assessment Report," original source not cited.)



Figure 124. 1990s photograph of the east porch stairs. (Source: Volz, "Pierre Delassus de Luziere House (Kern House) Condition Assessment Report,")

¹ Volz, "Pierre Delassus de Luziere House (Kern House) Condition Assessment Report.".

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B	SHELL				
B10	SUPERSTRUCTURE				
	B1015	STAIR CONSTRUCTION			
				Condition	Priority
		B101501	Interior Stairs	Poor	High

Date: 1903

Contributing: Contributing

Description

The interior stairs were added during the construction of the second level in 1903. The stairs form an L-shape with a mid-height landing in the southwest corner of Room 105, leading to Room 202 on the second level.

The stairs are framed of dimesion lumber. The risers appeared to have been painted at multiple points, and the treads have remnants of lineolum or floor cloth tread covers which were held down with small nails. The lineolum tread covers tested negative for asbestos-containing materials (ACM) (Samples 202-ST-08A through 202-ST-08C).

No railings or handrails are present.

The stairs were in poor condition and were fragile. Access to the stairs should be restricted to park staff until repairs can be performed.



Figure 125. Stairs in Room 105, looking south. (Source: RRJ 2023)



Figure 126. Linoleum tread cover. (Source: RRJ 2023)

Structural Systems

A	SUBSTRUCTURE				
A10	STANDARD FOUNDATION				
	A1011	WALL FOUNDATION			
				Condition	Priority
		A101101	Stone Masonry Foundation Wall	Fair	Low

Date: c. 1836

Contributing: Contributing

Description

The poteaux-sur-sole logs bear on a stone masonry foundation at all four exterior elevations. In addition, the interior vertical wall separating the east from west rooms at the first floor is supported by a masonry foundation wall. As the building site slopes downward from east to west, the height of the masonry wall visible above grade increases from approximately one foot along the west exterior wall to six feet along the east.

Stone masonry foundations are present beneath chimneys located at the midpoint of east-west walls separating Rooms 101/102 and Rooms 102/103. Stone masonry piers are present in the basement located at the mid-point of east-west walls separating Rooms 104/105, and Rooms 105/106. The piers transition from stone to brick masonry at the elevation of the bottom face of the timber girders supporting first-floor joists, possibly evidence of a previous repair or alteration.

Masonry piers within the basement appeared to be in fair condition. The pier bases exhibited mortar loss, and isolated cracking was observed in the brick units above the transition from stone to brick masonry within the south pier.

The stone and mortar on the north, west, and south exterior walls were in good condition with minor deterioration and soiling in isolated areas.

The east foundation wall was observed to be a maximum of four degrees out-of-plumb and has moved out-of-plane immediately below the log top sill plate. The top courses of the foundation wall (exterior half) have been displaced by the bulging wall above.

Most of the exterior of the west masonry foundation wall is below grade. From the basement interior,



Figure 127. Stone masonry pier supporting the wood floor girders (Source: RRJ 2023)



Figure 128. Displacement of the top course of stone masonry due to distress of the east log wall. (Source: RRJ 2023)

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displacement was observed at approximately midspan of the wall, likely due to longterm soil pressure from the hillside to the north of the house.

Step cracking was observed on the exterior north exterior wall near the intersection of the internal basement foundation wall and the north foundation wall and the basement interior at the north end of the east wall. Missing mortar and cracking were observed from the interior within the basement at this location.

There are several areas where mortar around the stones was missing allowing for water intrusion and pest infiltration. Evidence of extensive re-pointing at the east face of the interior basement wall was observed.

Tunnels likely dug by animals were observed underneath the masonry wall at two locations within the basement: at the north masonry wall located approximately six feet west of the northeast corner, and at the basement wall supporting the interior east-west demising wall at approximately midspan.



Figure 129. Step cracking and mortar deterioration at the northwest corner of the basement limestone foundation wall. (Source: RRJ 2023)



Figure 130. Deterioration of mortar joints at the west foundation wall/demising wall between Rooms 103 and 104 (Source: RRJ 2023)

B	SHELL				
B20	EXTERIOR ENCLOSURE				
	B2011	EXTERIOR WALL CONSTRUCTION			
				Condition	Priority
		B201102	First Floor Wall Framing	Failed to Fair	Immediate to High

Date: c. 1793 / c. 1836

Contributing: Contributing

Description

The first-floor framing consists of structural vertical wall logs in the form of poteaux-sur-sole construction. The vertical logs are hewn oak and are fit into the timber bottom plate (sill plate) with a mortise and tenon connection; at some locations in Room 103, the bottoms of the logs appear to have been sawn flush and are nailed to the sill plate, possibly evidence of salvage and reuse of logs from an earlier structure.

Rather than an mortise and tenon connection at the top of the wall, like that seen at the Janis-Ziegler House and the Jean Baptiste Vallé House, the logs are notched at their top interior faces to receive the timber top plate. This type of top plate connection is seen in other vertical log structures in Ste. Genevieve, including the Bauvais-Amoureux House.

Typically, exterior walls were observed to measure nominally 6 inches wide, while interior partition log walls measured nominally 5 inches wide. The voids between logs are filled with a mixture of clay and stone known as pierrotage. Diagonal bracing was observed near the ends of several walls and serve as lateral bracing for the structure. The exterior wall logs were identified as a mix of red and white oak, while sycamore and cottonwood or poplar was found at the interior log partition walls.¹

The vertical log construction at the east exterior wall has failed and poses an hazard to the stability of the structure. The failure was caused by deterioration of the top and sill plates due to long-term water infiltration at the entry doors on the first and second levels.

In Room 101, severe water and termite damage have caused several logs to fail on the west wall. In Rooms 101 and 102, water intrusion around the chimneys have



Figure 131. Vertical log walls with corner bracing in Room 106. (Source: RRJ 2023)

caused damage and localized failure of the log walls and second floor framing. Along the west wall in Rooms 101, 102, and 103, the lower 16 inches of the vertical logs wall along the west exterior wall were removed and replaced with a dimensional lumber knee wall between the south exterior wall and Door D102. These alterations are believed to have occurred following the Missouri DNR's acquisition of the property, sometime after 1990, as the knee wall was not present at the time of Volz and Associates's 1990 condition assessment report.

¹ Radivojevic, Suzana. "Wood Condition Assessment of the Kern House," 2023.

Treatment Recommendations

Interior shoring and exterior bracing was installed by NPS in 2023 to stabilize the east wall until repairs can be performed. Access to the interior and immediately around the building should be limited to park staff performing necessary inspection or maintenance work. The shoring and bracing should be left in place until the building can be made safe.

Extensive repairs and likely significant reconstruction of the logs and pierrotage are needed at the east wall, along with replacement of the failed top and sill plates.

Other areas of framing and vertical logs showing significant water and pest deterioration, particularly in Rooms 101, 102, and 103, will need to be replaced in kind. The wood stud wall infill at the base of the west wall should be analyzed by a structural engineer to determine if additional strengthening or bracing is needed.



Figure 132. Exterior bracing at east wall. (Source: RRJ 2024)



Figure 133. Stud wall construction at the west wall in Room 101. (Source: RRJ 2023)



Figure 134. Log wall construction on the west wall of Room 106, looking into Room 101. (Source: RRJ 2023)



Figure 135. Termite and water damage to logs on the west wall of Room 101. (Source: RRJ 2023)



Figure 136. Displacement of the east wall of Room 105, looking at base of wall at failed sill plate. (Source: RRJ 2023)

B	SHELL				
B20	EXTERIOR ENCLOSURE				
	B2011	EXTERIOR WALL CONSTRUCTION			
				Condition	Priority
		B201103	Second Floor Wall Framing	Fair to Good	Medium

Date: 1903

Contributing: Contributing

Description

The house was originally a single story, with a partial framed second floor added in 1903. The second floor is constructed of conventionally framed dimension lumber walls, floors, and roof.

At the second floor, interior finishes are generally present, allowing for observation of the second-floor wall framing at only two locations: south of Door D203B, and north of window W204A. The second-floor wall framing consists of nominal 2x4 members spaced at 16 inches on center. Two 2x4 members comprise the wall top plate, while one 2x4 member comprises the wall sill plate.

Water intrusion at the exterior door in Room 202 has caused deterioration and distress of the wall and floor framing immediately around the door opening. Additionally, the displacement of the east log wall may have compromised the support for the wall and floor along the east.



Figure 137. Damage to roof framing and wall framing in Room 202. (Source: RRJ 2023)



Figure 138. Exposed wall framing in Room 204, west wall, looking into the attic space of the lower roof. (Source: RRJ 2023)

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B	SHELL				
B20	EXTERIOR ENCLOSURE				
	B2011	EXTERIOR WALL CONSTRUCTION			
				Condition	Priority
		B201104	Top and Bottom Plates	Failed to Fair	High

Date: c. 1793 / c. 1836

Contributing: Contributing

Description

At the east wall, the bottom plate was observed to be spliced beneath Door D105 at the approximate centerline of the east exterior wall. The bottom plate measured nominally nine inches square. The top plate at the east wall was observed to be spliced south of window W105B. This splice was observed to be open, with pierrotage infill between vertical faces of the splice, possibly indicating old displacement or distress to the wall. Notches were observed at the top of the top plate at regular intervals. It is likely that these notches once received original roof framing members, which were removed as part of the 1903 alterations.

At the west wall, a portion of the sill plate has been replaced between from the south exterior wall to 8 inches north of Door D102A. The top plate of the west wall was typically obscured by finishes. It is likely that the bottom plate was originally spliced near the centerline of the west exterior wall, as observed at the east exterior wall, and implied by the length and extent of the replaced sill plate.

The bottom plates at the north and south exterior walls were observed to be comprised of two members, interrupted at approximately the midspan by the masonry foundations of previously removed fireplaces. The top plates at north and south wall are likewise comprised of two distinct members, interrupted at the previous fireplace location. The north top plate extends 27 inches east of the interior north-south wall face within room 104. The south top plate extends 24 inches east of the interior north-south wall face within room 106.



Figure 139. Open half-lap splice at top plate in Room 105. (Source: RRJ 2023)



Figure 140. Deterioration of the top plate in Room 105. (Source: RRJ 2023)

B	SHELL				
B10	SUPERSTRUCTURE				
	B1010	FLOOR CONSTRUCTION			
				Condition	Priority
		B101001	First Floor Framing	Failed to Fair	High

Date: c. 1793 / c. 1836

Contributing: Contributing

Description

Under Rooms 104, 105, and 106, the first-floor structure is constructed of 21 timber oak floor joists spanning between the east masonry wall and the interior masonry basement wall.

At their east ends, joists are notched at the bottom face to key into slots in the sill plate. The slots were generally sized to receive timber joists, however, at multiple locations the slots within the sill plate member exceeded the width of the existing timber joists, suggesting the existing joints are later replacements. At the west end, joists are pocketed into the masonry wall. The floor joists varied in condition. Girders varied in condition

The individual joists appeared to date to different phases, ranging from timber members retaining their bark and hewn only at the top to hand-hewn members to saw-cut timbers. The nominal dimensions of the joists ranged in width from 3.5 inches to 10 inches, and in depth from 6 inches to 8.5 inches. With the exception of Joist 16, all joists qualify as “timbers,” measuring greater than 5” in their least dimension. The members were spaced approximately 28 inches on center on average, with spacings ranging from 26 to 32 inches.

Joists within Rooms 101, 102, and 103 extend from the interior masonry wall approximately 62 to 78 inches westward where they bear on a north-south timber girder. This girder was observed to bear directly upon soil within Rooms 102 and 103, and framing was obscured by planking in room 101. HABS drawings also indicate that these joists were each sistered with a 2x dimensional lumber members, likely a repair. These “sister” members are no longer extant in Room 103, and multiple were missing within Room 102.

Nominal 9x9 hewn basement girders span in the north-south direction, bisecting the full-height basement space and supporting the first-floor joists at midspan. Three



Figure 141. Floor joist bearing on the east foundation wall. (Source: RRJ 2023)



Figure 142. Splice in north-south girder at the wood post. (Source: RRJ 2023)

girders are present, spanning in series between the south masonry wall, the south masonry pier, the north masonry pier, and the north wall. Typically, the joists did not bear upon the girders at their midspans, and a gap was present; shims had been installed at some joints.

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A nominal 4x6 post is present at the midspan of the central girder directly below a splice within this member. The girder splice contained two 1" wood dowels. The vertical post extends into the soil within the basement and exhibits some signs of wood decay at the base.



Figure 143. Damaged floor framing in Room 103. (Source: RRJ 2023)



Figure 144. Damaged floor framing in Room 102. (Source: RRJ 2023)



Figure 145. Shims between girder and floor joist. (Source: RRJ 2023)

B	SHELL				
B10	SUPERSTRUCTURE				
	B1010	FLOOR CONSTRUCTION			
				Condition	Priority
		B101002	Second Floor Framing	Fair	Medium

Date: 1903

Contributing: Contributing

Description

The second-floor framing consists of dimensional lumber joists spanning in the east-west direction, nominally spaced at two feet on center. The second floor framing is visible where it bears upon the vertical log top plate along the entirety of the east wall, and along the north-south interior wall in Rooms 104 and 106. The second-floor framing is also visible within room 203 in the vicinity of Door D203B, where the east wall has moved outward.

Measured joists varied in size from 2¼ to 4 inches in width, and from 7 to 8 5/8 inches in depth. The joists were observed to bear atop the first-floor wall top plate, with pierrotage infill between adjacent joists; this infill must have been installed after the 1903 alterations.

The floor framing was generally in good condition except in the area around Door D204B and along the east wall in Room 202, where the joists were damaged by long-term water intrusion through the roofing.

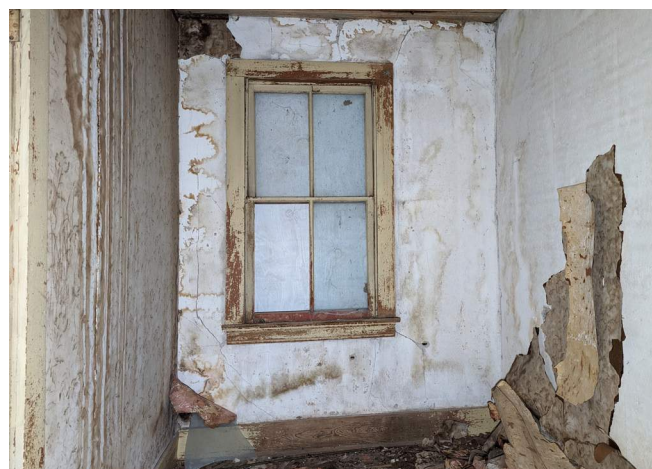


Figure 146. Deterioration of the floor framing in Room 202, under Window W202. (Source: RRJ 2023)

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B	SHELL				
B10	SUPERSTRUCTURE				
	B1020	ROOF CONSTRUCTION			
				Condition	Priority
		B102001	Roof Structure	Fair to Good	Medium

Date: 1903

Contributing: Contributing

Description

Roof framing was observed to consist of 2x4 dimensional lumber rafters and 2x6 ceiling joists, spaced at nominally two feet on center. Roof sheathing consisted of full-log sawn planks with the bark still present.

Distress to the bearing ends of roof rafters and ceiling joists was observed above door D203B and above Window W202, where evidence of past water infiltration was observed.



Figure 147. View of the underside of the roof sheathing, showing paired rafters and wany planks. (Source: RRJ 2023)

Interiors

C	INTERIORS				
C30	INTERIOR FINISHES				
	C30XX	ROOM 001			
				Condition	Priority
		C300000	Interior Overall	Fair	Low
		C302000	Flooring	n/a	n/a
		C301000	Wall Finishes	n/a	n/a
		C303000	Ceiling Finishes	n/a	n/a

Date: c. 1836 / 1903

Contributing: Contributing

Description

The full-height basement is accessible through two doors, one at the south and the other at the east. This area is located below the footprint of Rooms 104, 105 and 106. A crawlspace area is located beneath the footprint of Rooms 101, 102 and 103.

Both areas have a dirt floor and are unfinished. The first-floor framing, consisting of twenty-one timber oak floor joists, and the limestone masonry foundation walls are exposed.



Figure 148. Basement interior, looking east. (Source: RRJ 2023)

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C	INTERIORS				
C10	INTERIOR CONSTRUCTION				
	C1020	INTERIOR DOORS			
				Condition	Priority
		C102001	D101B	Fair/Poor	Medium
		C102002	D101C	n/a	n/a
		C102003	D102B	n/a	n/a
		C102004	D103A	Fair	Medium
		C102005	D103B	Fair	Medium
		C102006	D104	Fair	Medium
		C102007	D106	Fair	Medium
		C102008	D201	Good/Fair	Low
		C102009	D202	Fair	Medium
		C102010	D203A	Good/Fair	Low
		C102011	D204	Good	Low

Date: c. 1836 / 1903, with later alterations

Contributing: Contributing and Non-Contributing

Description

There are 11 interior doors in the house. The doors generally appear to date to the period of significance. Paint analysis and future research are recommended to confirm. The interior doors were generally in fair condition, with some deterioration or date. None of the doors were fully operation, and many were out of plumb to deterioration or deformation of the door opening. Some doors appear to have their original hardware, but later replacements were observed, particularly with hinges. Some hardware was missing, especially door knobs, and some doors were missing entirely.

The majority of the extant doors and casing can be restored; some in-kind replacement may be required at the base of the casing on the first floor due to water damage.

First Floor Doors

Door 101B is a wood door with a raised, four-panel configuration on both sides. Some separation at the joints was noted. A white porcelain knob, rim-lock, strike plate, and butt hinges were present. The rim lock was rusted, but likely can be restored. The strike plate matched the rim lock, and both appeared to be original to the door possibly along with the knob and key plate. The hinges were later replacements, evidenced by scars from

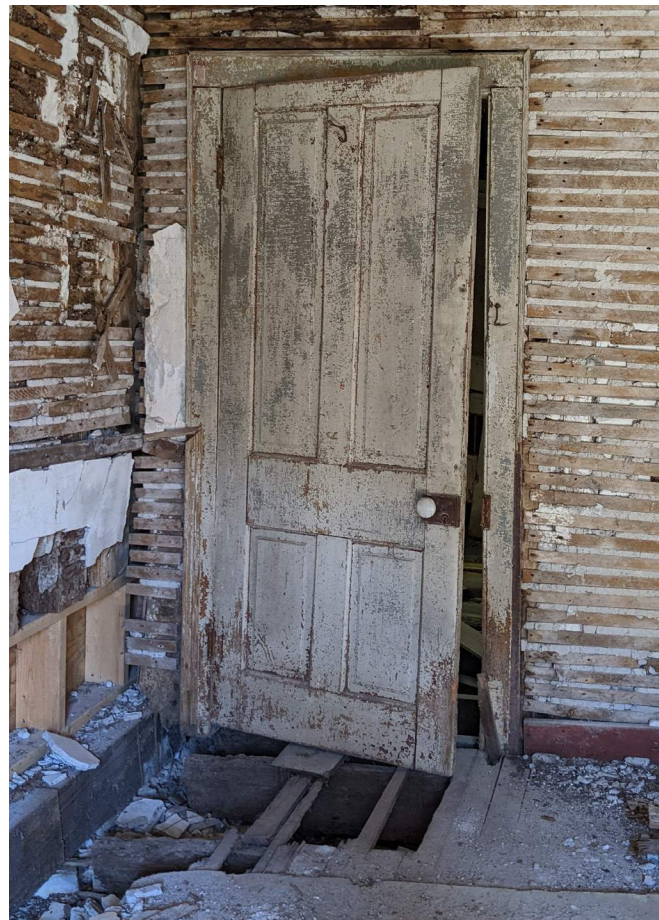


Figure 149. Door D101B, showing the south face. (Source: RRJ 2023)

larger hinge plates on the jamb. The door was painted, and several layers of stain and paint were noted. The oldest layer appeared to be a stain, the subsequent paint layers were, in sequence from oldest to most recent: maroon/reddish brown, light brown, blue, and white paint. Casing and trim around the door was of a simple, flat profile with an applied perimeter moulding.

Door D101C was missing, leaving only the open door frame. The casing in Room 101 was missing; the casing in Room 106 was a narrow wood trim that appears to be a later replacement to the now missing original casing.

Door D102B was missing, leaving only the open door frame. In Room 102, there was evidence of a previous pedimented head trim and flat jamb casing that are now missing. The current trim had a simple rectangular profile and appears to be a later alteration.

Door 103A is a wood door with a raised, four-panel configuration on both sides. The casing was present and was simple in profile with no pediment. The original doorknob was missing, and a later replacement was installed higher on the door with a rim lock. There was evidence of an older slide latch, but that hardware was not present. The hinges may be original and match those found on D201. Several layers of stain/paint were noted on the door with the oldest layer being a stain followed by maroon and white/light brown paint.

An **Unattached Door** of undetermined origin was within Room 103. The door is narrow and may have been one leaf of a double door to a wardrobe or built-in.

Door D103B is a wood door with a flat, four-panel configuration on both sides. The doorknob was missing. The door casing in Room 103 was painted cream over an earlier stain and had a pediment at the head; this casing may original to the 1830s. The trim was missing at the Room 104.

Door D104 is a wood door with a flat, four-panel configuration on both sides. There was evidence of multiple color layers paint. The oldest layer was a stain with faux-graining, followed by cream, light blue, and white paint layers. The order of the paint layers was difficult to determine. The doorknob was missing but a small escutcheon was present. The existing butt hinges appear to be replacements. A previous rim lock is missing, and this area exposes the original faux graining. The trim is missing at the head, and it is possible that the door frame once was pedimented.



Figure 150. Historic rim lock and porcelain knob on D101B. (Source: RRJ 2023)



Figure 151. Door 103B, looking east, showing the pedimented casing. (Source: RRJ 2023)

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Door D106 is a wood door with a flat, four panel configuration on both sides. Some joint separation was noted. The casing was partially missing. A portion of a metal door knob was present. A rimlock with strike plate was present; the rimlock was damaged but can be restored. The hinges were later replacements. Several layers of paint were noted on each side of the door. On the Room 106 side, the layers, from oldest to newest, were light brown/tan, possibly faux graining, and white. On the Room 105 side, the layers were maroon/dark reddish brown, off-white/cream, and white.

Second Floor Interior Doors

Door D201 is a wood door with a raised, four-panel configuration on both sides. The knob is missing but an ornamental brass escutcheon was present. The hinges match and appear original. The deadbolt and latch were present. The hardware can be restored and the door knob can be replaced with a historic knob in an appropriate style. The door casing is painted wood with a simple profile. Several layers of stain and paint were present. The oldest layer was a light brown color and was most likely stained, the next layer appeared light green, and the newest layer was cream.

Door D202 is a wood door with a raised, four panel configuration on both sides that is currently located on the closet in Room 202. Separation of the wood joints at the stiles was noted. The doorknob was missing. Mismatched replacement hardware was present. The upper hinge appears original. Several layers of stain and paint were present. The oldest layer was a light brown color and was most likely stained, the next layer appeared light green. The casing was a flat profile with an applied rectangular moulding.

Door D203A is a wood door with a raised, four-panel configuration on both sides. This door is similar to D201, but they are not identical. Water damage from a previous roof leak was noted at the lower stile and along the top edge of the door. The doorknob was missing, but a rim lock was present. The current hinges are replacement and do not match the notches in the door frame from the original hinges. Simple rectangular trim was present. Three stain/paint layers were noted on the trim: a stain was the oldest layer, followed by green and then a light green. The door was plain sawn and likely was meant to be painted; however, the door was stained rather than painted.



Figure 152. Jamb trim at D103A. (Source: RRJ 2023)



Figure 153. Faux graining exposed on the north face of D104. (Source: RRJ 2023)

Door D204 is a wood door with a raised, four panel configuration on both sides. The doorknob is missing, but an ornamental escutcheon was present. This escutcheon matches the one present at Door D201. The top hinges are replacement butt hinges with ball finals. The bottom hinge is original and matches Door D201. A simple door trim was present. Two stain/paint layers were noted on the trim; the oldest layer was a stain, and a newer layer of dark green paint were noted. The door is unpainted, but a stain was present. The door itself is faux-grained.



Figure 156. D201, showing the north face. (Source: RRJ 2023)



Figure 157. D204, showing faux graining on south face. (Source: RRJ 2023)

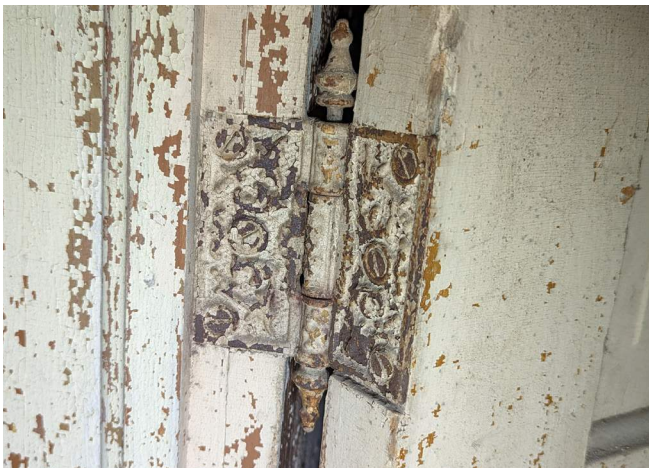


Figure 154. Ornamental hinge on D201. (Source: RRJ 2023)



Figure 155. Faux graining and ornamental escutcheon on D204. (Source: RRJ 2023)

Delassus-Kern House Historic Structure Report

C	INTERIORS				
C30	INTERIOR FINISHES				
	C30XX	ROOM 101			
				Condition	Priority
		C300001	Room 101 Interior Overall	Poor	Medium
		C302001	101 Flooring	Failed	High
		C301001	101 Wall Finishes	Failed	Low
		C301001	101 Wall Mouldings	Poor	Low
		C303001	101 Ceiling Finishes	Poor	Low

Date: c. 1836 / 1903, with later alterations

Contributing: Contributing and Non-Contributing

Description

Room 101 is located in the southwest corner of the first floor. This room serves as the main entrance to the house and provides access to Rooms 102 and 106. Room 101 once served as the kitchen to the home.

Flooring

Wood decking was present in Room 101. The flooring was heavily deteriorated in this room, with areas of high distress present in the vicinity of doorways and at the location of a former bathroom at the wall separating Rooms 101 and 106.

Fragments of linoleum floor rugs were observed in Room 101. The abstract geometric pattern was a combination of colorful rectangles and circles atop a neutral marbled background. A matching pattern was found online, although no source was referenced. The online photograph revealed the colors in this flooring to be shades of red-orange rectangles atop green rectangles and white circles. The grey marbled background was interrupted by gold zig-zagging lines. Similar abstract patterns were found in linoleum flooring catalogs dating to the mid-1930s through mid-1950s; as such, this flooring likely post-dates the period of significance.

Wall Finishes

Remnants of three different types of wallpaper were found in Room 101. Remnants of a wallpaper (WP-14) were visible on the west wall of Room 101. This wallpaper likely dates to the 1960s. Over a white background was a motif of light grey floral roundels. Superimposed atop this pattern were orange, green and yellow depictions of flowerpots, fruits, and kitchen



Figure 158. Room 101, looking north. (Source: RRJ 2023)

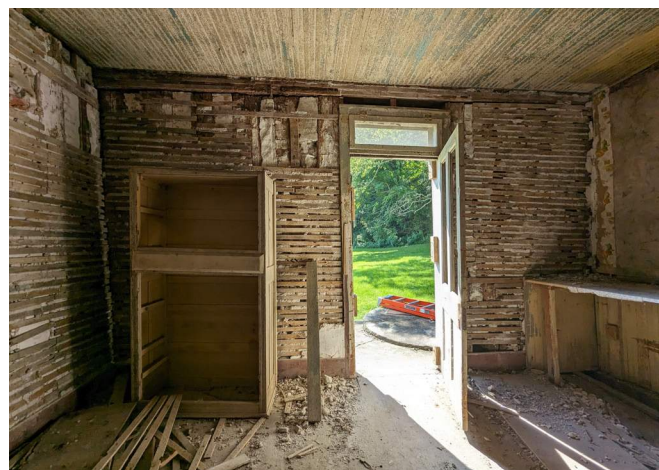


Figure 159. Room 101, looking south. (Source: RRJ 2023)

wares. This wallpaper was applied directly to wallboard on either side of a now missing cabinet or built-in.

Under Wallpaper W-14 was the remnant of a floral wallpaper (WP-15) of undetermined color or age.

A third wallpaper (WP-16) was noted in Room 101. Wallpaper WP-16 contained a marbled pattern of red and blue veins on a white or light grey background. A red and blue geometric border was present at the ceiling border. This wallpaper was found where a cabinet or built-in once was located.

See section "Wallpapers" below for photographs and additional information.

Portions of deteriorating plaster and exposed lath were visible on the remainder of the west wall, in addition to white-painted wainscoting and a chair wall. The north, south, and east walls of this room retained portions of wood lath still attached to the vertical log wall framing.

Wall Mouldings

Wood baseboards were present in Room 101. The baseboards had a simple profile and appeared to be either painted or stained a red color. White-painted quarter-round ceiling trim was also present.

Ceiling Finishes

Ceiling finishes in Room 101 consisted of painted beadboard. The panels appeared to have been painted white at some time, however, blue paint was visible below failing white paint in Room 101. The beadboard is of undetermined date.



Figure 160. Failed flooring around plumbing riser. (Source: RRJ 2023)



Figure 161. Linoleum rug fragment. (Source: RRJ 2023)



Figure 162. Ceiling beadboard in Room 101. (Source: RRJ 2023)

Delassus-Kern House Historic Structure Report

G	BUILDING SITE WORK				
G20	SITE IMPROVEMENTS				
	G2049	MISCELLANEOUS STRUCTURES			
				Condition	Priority
		C300002	Room 102 Interior Overall	Poor	Medium
		C302002	102 Flooring	Failed	High
		C301002	102 Wall Finishes	Poor	Low
		C301002	102 Wall Mouldings	Poor	Low
		C303002	102 Ceiling Finishes	Poor	Low

Date: c. 1836 / 1903, with later alterations

Contributing: Contributing and Non-Contributing

Description

Room 102 is located along the west exterior wall of the house between Rooms 101 and 103. Access to the exterior is possible through Door D102A, which was the rear door to the house. Rooms 101, 103, and 105 can be accessed from Room 102. This room may have served as a sitting room or family room at one time.

Flooring

The majority of the wood plank flooring in Room 102 was missing, and the floor structure had failed. Any flooring that was present was in poor condition.

Wall Finishes

No wallpaper remnants were visible in Room 102. The south wall retained less than half of its plaster. Wood lath was present where plaster was missing along this wall. The west wall retained over half of its plaster. Portions of plaster were missing at the southern half of the west wall at the location of a previous bottom plate repair attempt. Plaster along the north and east walls were heavily cracked and missing in areas.

Beadboard wainscoting and a chair rail of an undetermined date, painted white, were present at the north half of the west wall.

Wall Mouldings

Wood baseboards were present in Room 102. The baseboards had a simple profile and were painted white. White-painted quarter-round ceiling trim was also present.



Figure 163. Room 102, looking west at the back door. (Source: RRJ 2023)



Figure 164. Room 102, looking south, note the loss of plaster on the south interior wall. (Source: RRJ 2023)

Ceiling Finishes

Ceiling finishes in Room 102 consisted of beadboard panels. The panels appeared to have been painted white.



Figure 165. Baseboard and trim on the east wall of Room 102. (Source: RRJ 2023)



Figure 166. Remnants of beadboard wainscoting on the west wall. (Source: RRJ 2023)

Delassus-Kern House Historic Structure Report

C	INTERIORS				
C30	INTERIOR FINISHES				
	C30XX	ROOM 103			
				Condition	Priority
		C300003	Room 103 Interior Overall	Poor	Medium
		C302003	103 Flooring	Failed	High
		C301003	103 Wall Finishes	Poor	Low
		C301003	103 Wall Mouldings	Poor	Low
		C303003	103 Ceiling Finishes	Poor	Low

Date: c. 1836 / 1903, with later alterations

Contributing: Contributing and Non-Contributing

Description

Room 103 is located at the northwest corner of the first floor and provides interior access to Rooms 102 and 104.

Flooring

No flooring remained in Room 103. As a result, the dirt-floor crawl space was fully visible.

Wall Finishes

The majority of the north wall of Room 103 retained wallpaper (WP-12) with a cream background and a pattern of flowering grapevines rendered in light green, light blue, and brown. This wallpaper was applied directly to the plaster, but the age was undetermined. Wallpaper, plaster, and lath were removed at the bottom of the north wall to reveal the bottom ends of vertical log framing and the sill plate. Plaster along the east, west, and south walls were heavily cracked and missing in areas.

See section "Wallpapers" below for photographs and additional information.

Wall Mouldings

Baseboards were missing along the south half of the west wall, where previous bottom plate repairs had taken place, and along the north and south walls of Room 103. The baseboards that were present had a simple profile and were painted white. White-painted quarter-round ceiling trim was also present.



Figure 167. Room 103, looking north. (Source: RRJ 2023)



Figure 168. Room 103, looking west. (Source: RRJ 2023)

Ceiling Finishes

Ceiling finishes in Room 103 consisted of beadboard panels. The panels appeared to have been painted white.



Figure 169. Room 103, looking east. (Source: RRJ 2023)



Figure 170. Detail of north wall and ceiling beadboard in Room 103. (Source: RRJ 2023)

Delassus-Kern House Historic Structure Report

G	BUILDING SITE WORK				
G20	SITE IMPROVEMENTS				
	G2049	MISCELLANEOUS STRUCTURES			
				Condition	Priority
		C300004	Room 4 (104) Interior Overall	Poor	Medium
		C302004	104 Flooring	Poor to Fair	Medium
		C301004	104 Wall Finishes	Failed	Low
		C301004	104 Wall Mouldings	Poor	Low
		C303004	104 Ceiling Finishes	Failed	Low

Date: c. 1836 / 1903, with later alterations

Contributing: Contributing and Non-Contributing

Description

Room 104 is located at the northeast corner of the first floor of the house. This room provides access to Rooms 103 and 105. Note that these photographs were taken before the interior shoring was installed in 2023.

Flooring

Wood flooring was present in Room 104. The condition of the flooring was variable, but generally fair to poor. Areas of high distress were primarily present in the vicinity of doorways.

A small fragment of a linoleum rug or floor cloth was found in Room 105. It was unclear from what room this fragment originated.

Wall Finishes

Vertical logs and infill were exposed at all four interior walls within Room 104. Limewash was observed on the faces of the logs behind the furring, indicating that the logs were likely originally whitewashed before plaster was later applied to the interior walls. The room was formerly plastered, but the plaster was removed in the 1990s and only remnants of sawn lath remain in place. Marks from two different patterns from lath were present: a diagonal pattern in the northwest corner where the lath was applied directly to the logs and a horizontal pattern in all other locations where the lath was applied to vertical battens. This suggests two different eras of interior plaster, as early 19th century diagonal lath has been observed at other log structures in Ste. Genevieve, including the front room of the privately owned Vital St. Gemme Beauvais House. The horizontal lath appeared



Figure 171. Room 104, looking east towards the distressed east wall. (Source: RRJ 2023)



Figure 172. Room 104, looking west. (Source: RRJ 2023)

to have been installed with wire nails, indicated a 20th century origin; this was typical at other rooms on the first floor.

One wallpaper remnant (WP-13) was noted in Room 103. This remnant was applied direct to wallboard over the baseboard. Likely this wallboard was previously applied over the plaster in this room. Wallpaper WP-13 had a cream background with pink and yellow flowers and may date to the 1960s.

See section "Wallpapers" below for photographs and additional information.

Wall Mouldings

Wood baseboards were present in Room 104. The baseboards had more ornamental profile than those found in other rooms and were painted white.

Ceiling Finishes

A suspended panel ceiling with battens in a grid pattern was present in Room 104. However, where paneling had fallen at the west side of this room, white-painted beadboard was observed behind the paneling. On the beadboard, where the white paint was failing, blue paint was visible. The beadboard had been removed along the east wall, likely in the 1990s during investigation of the house.



Figure 173. Marks from now missing diagonal lath, possibly an earlier plaster application, which would have been to the left side of the stone masonry chimney (now missing). (Source: RRJ 2023)



Figure 174. Baseboard with quarter round moulding. (Source: RRJ 2023)



Figure 175. Small fragment of a floor cloth found in Room 105. (Source: RRJ 2023)

Delassus-Kern House Historic Structure Report

C	INTERIORS				
C30	INTERIOR FINISHES				
	C30XX	ROOM 105			
				Condition	Priority
		C300005	Room 105 Interior Overall	Poor	Medium
		C302005	105 Flooring	Poor	High
		C301005	105 Wall Finishes	Failed	Low
		C301005	105 Wall Mouldings	Poor	Low
		C303005	105 Ceiling Finishes	Failed	Low

Date: c. 1836 / 1903, with later alterations

Contributing: Contributing and Non-Contributing

Description

Room 105 is located on the east exterior wall of the first floor of the house between Rooms 104 and 106. This room provides access to Rooms 102, 104, 106, and the stairwell to the second floor. An exterior door to the east exterior wall is also present. This door once led to the gallery which has since been removed. Note that these photographs were taken before the interior shoring was installed in 2023.

Flooring

Wood flooring was present in Room 105. The condition of the flooring was variable but generally poor with areas of deteriorated boards and deflected flooring. Areas of high distress were typically present in the vicinity of doorways.

Wall Finishes

Vertical logs and infill were exposed at all four interior walls. Limewash was observed on the faces of the logs behind the furring, indicating that the logs were likely originally whitewashed before plaster was later applied to the interior walls. The room was formerly plastered, but the plaster was removed in the 1990s and only remnants of sawn lath remain in place. Some evidence of earlier diagonal lath can be seen on the east and south walls. The horizontal lath on vertical battens appeared to have been installed with wire nails.

A fragment of purple wallpaper with a floral motif was observed above vertical log members within the stairwell at the south wall of Room 105.

See section "Wallpapers" below for photographs and



Figure 176. Room 105, looking east, showing the floor bracing that was installed before the 2023 shoring. (Source: RRJ 2023)



Figure 177. Room 105, looking west. (Source: RRJ 2023)

adiditonal information.

Wall Mouldings

Wood baseboards were missing within the east half of both the north and south walls within Room 105. The baseboards that were present had a simple profile and were painted white.

Ceiling Finishes

Ceiling finishes in Room 105 consisted of beadboard panels. The panels appeared to have been painted white. The beadboard had been removed along the east wall and in other areas, likely in the 1990s during investigation fo the house.



Figure 178. Typical hardwood floor boards in Room 105.
(Source: RRJ 2023)



Figure 179. Distress to beadboard ceiling in Room 105.
(Source: RRJ 2023)

Delassus-Kern House Historic Structure Report

C	INTERIORS				
C30	INTERIOR FINISHES				
	C30XX	ROOM 106			
				Condition	Priority
		C300006	Room 6 (106) Interior Overall	Poor	Medium
		C302006	106 Flooring	Poor	High
		C301006	106 Wall Finishes	Failed	Low
		C301006	106 Wall Mouldings	Poor	Low
		C303006	106 Ceiling Finishes	Poor	Low

Date: c. 1836 / 1903, with later alterations

Contributing: Contributing and Non-Contributing

Description

Room 106 is located in the southeast corner of the first floor of the house. Room 106 provides access to Rooms 101 and 105.

Flooring

Wood flooring was present in Room 106. The condition of the flooring was variable, but generally poor with an area of failed flooring near Door D101C, where there was formerly a bathroom. Areas of high distress were generally present in the vicinity of doorways.

Wall Finishes

Vertical logs and infill were exposed at all four interior walls. Limewash was observed on the faces of the logs behind the furring, indicating that the logs were likely originally whitewashed before plaster was later applied to the interior walls. The room was formerly plastered, but the plaster was removed in the 1990s and only remnants of the lath remain in place. One area of diagonal lath was still extant to the west of Window W106C; this is the same location as the evidence of diagonal lath in Room 104 - the west side of the former chimney location. The diagonal lath appeared to have been installed with cut nails, while the horizontal lath on vertical battens appeared to have been installed with wire nails.

Wall Mouldings

Wood baseboards were present in Room 106. The baseboards had a simple profile and were painted white.



Figure 180. Room 106, looking east. (Source: RRJ 2023)



Figure 181. Room 106, looking north. (Source: RRJ 2023)

Ceiling Finishes

Ceiling finishes in Room 106 consisted of beadboard panels. The panels appeared to have been painted white. The beadboard had been removed along the east wall and in other areas, likely in the 1990s during investigation for the house.



Figure 182. Diagonal lath applied directly to the logs in the southwest corner of Room 106. (Source: RRJ 2023)



Figure 183. Baseboards in Room 106. (Source: RRJ 2023)



Figure 184. Beadboard ceiling in Room 106. (Source: RRJ 2023)

Delassus-Kern House Historic Structure Report

C	INTERIORS				
C30	INTERIOR FINISHES				
	C30XX	ROOM 201			
				Condition	Priority
		C300007	Room 201 Interior Overall	Poor	Medium
		C302007	201 Flooring	Fair	High
		C301007	201 Wall Finishes	Fair	Low
		C301007	201 Wall Mouldings	Fair	Low
		C303007	201 Ceiling Finishes	Fair	Low

Date: 1903, with later alterations

Contributing: Contributing and Non-Contributing

Description

Room 201 is located along the south exterior wall of the second floor and is accessed from the main hall, Room 202.

Flooring

Wood flooring was present in Room 201. The second-floor flooring was generally in better condition than the first floor.

Fragments of a palm leaf-patterned linoleum rug were found in this room. This rug appears to be pattern “No. 4752 Quaker Rug” manufactured by Armstrong and found in their catalogs dated 1939 – 1941, indicating that the fragment may date to the very end of the period of significance.¹ Testing of the linoleum rug was negative for for asbestos-containing materials (ACM) (Samples 201-FL-10A through 201-FL-10C).

Wall Finishes

A wallpaper (WP-1) remnant was present in Room 201. The wallpaper had a cream background with a pink and yellow floral pattern and was applied directly to the plaster. The date of the wallpaper is undetermined. Plaster was present at all four walls, showing signs of deterioration and exposure to water under the windows.

See section "Wallpapers" below for photographs and additional information.



Figure 185. Room 201, looking south, showing remnants of wallpaper in the lower left corner. (Source: RRJ 2023)



Figure 186. Room 201, looking east, showing damage to the plaster under the failed window. (Source: RRJ 2023)

¹ Quaker and Standard Rugs and Floor Coverings Armstrong Cork Co. (1939): 18.

Wall Mouldings

Wood baseboards with a simple profile were present in Room 201.

Ceiling Finishes

Ceiling finishes in Room 201 consisted of beadboard panels. The panels appeared to have been painted white.



Figure 187. Painted baseboards and quarter round trim in Room 201. (Source: RRJ 2023)



Figure 188. Wood flooring in Room 201; this flooring was typical throughout the second floor. (Source: RRJ 2023)



Figure 189. Palm leaf-patterned linoleum rug fragment in Room 201. (Source: RRJ 2023)



Figure 190. "No. 4725 Armstrong's Quakler Rug" manufactured by Armstrong in 1939. (Source: RRJ 2023)

Delassus-Kern House Historic Structure Report

C	INTERIORS				
C30	INTERIOR FINISHES				
	C30XX	ROOM 202			
				Condition	Priority
		C300008	Room 202 Interior Overall	Poor	Medium
		C302008	202 Flooring	Fair	High
		C301008	202 Wall Finishes	Poor	Low
		C301008	202 Wall Mouldings	Fair	Low
		C303008	202 Ceiling Finishes	Fair	Low

Date: 1903, with later alterations

Contributing: Contributing and Non-Contributing

Description

Room 202 serves as the main hall for the second floor and contains the stairwell providing access between the two levels. Room 202 provides direct access to Rooms 201 and 203.

Flooring

Wood flooring was present in Room 202. Along the east wall, the flooring exhibited failed planks from water damage from a previous roof leak.

Cream or tan linoleum was found inside the closet. Testing of the linoleum was positive for friable asbestos-containing materials (ACM) (Sample 202-LN-09A through 202-LN-09C).

Wall Finishes

Seven fragments of different types of wallpaper were noted within Room 202. The remaining walls featured cracked plaster; the plaster on the east wall exhibited water damage from a previous roof leak.

A heavily faded wallpaper (WP-2) consisting of a cream background with a brown floral pattern was noted in Room 202. This wallpaper was applied directly to plaster. The age could not be determined.

Fragments of a wallpaper (WP-6) with a brown, gold and yellow acanthus leaf pattern were present in Room 202. This very early wallpaper may date to the 1903 expansion of the house, along wallpaper WP-10, also observed in the stairway. The wallpaper was applied directly to the plaster.

Remnant of a wallpaper (WP-7) applied over WP-6



Figure 191. Room 202, looking northeast, showing the damage to the walls and flooring from the previous roof leak. (Source: RRJ 2023)



Figure 192. Room 202, looking southwest, showing the closet framing to the right and the stairwell. (Source: RRJ 2023)

were observed. This wallpaper was tan with a geometric pattern. The age of this remnant is undetermined.

A third remnant of wallpaper (WP-8) was applied over WP-7 in Room 202. Wallpaper WP-8 had a cream background with a vertical geometric pattern containing a herringbone, stripes, and dots pattern. The foreground of the wallpaper had a floral outline with shading.

Another wallpaper (WP-9) fragment was noted in Room 202. Wallpaper W-9 was heavily oxidized to the point where the pattern was undetermined. This fragment had been applied over WP-10 on one wall, and the top layer of wallpaper was applied over W-7 on another wall.

Another wallpaper fragment (W-10) was found within the stairwell in Room 202. Wallpaper W-10 had a burgundy background with a geometric/floral pattern. The pattern included vivid yellow flowers with pink and blue scrollwork. Liquid mica ink provided dark blue accents. Based on the texture of the ink and dashed lines present, this wallpaper was likely roller printed and also likely dates to the early 1900s. This paper was stylistically similar to Wallpaper W-6 and was applied directly to the plaster in the stairwell.

A remnant of a white textured wallpaper (W-11) was also noted within the stairwell in Room 202. This may have been a vinyl wallpaper, but the age is undetermined.

See section "Wallpapers" below for photographs and additional information.

Wall Mouldings

Wood baseboard with a simple profile were present.

Ceiling Finishes

Ceiling finishes in Room 202 consisted of beadboard panels. The panels appeared to have been painted white. Water damage was present at the east wall.



Figure 193. Typical flooring in Room 202. (Source: RRJ 2023)



Figure 194. Beadboard ceilings with water damage in Room 202. (Source: RRJ 2023)



Figure 195. Multiple layers of wallpaper were present in the southeast corner of Room 202. (Source: RRJ 2023)

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C	INTERIORS				
C30	INTERIOR FINISHES				
	C30XX	ROOM 203			
				Condition	Priority
		C300009	Room 203 Interior Overall	Poor	Medium
		C302009	203 Flooring	Poor	High
		C301009	203 Wall Finishes	Poor	Low
		C301009	203 Wall Mouldings	Fair	Low
		C303009	203 Ceiling Finishes	Fair	Low

Date: 1903, with later alterations

Contributing: Contributing and Non-Contributing

Description

Room 203 is located to the north of the second-floor hall and provides access to Room 204.

Flooring

Wood flooring was present in Room 203. Along the east wall, the flooring exhibited failed planks from water damage from a previous roof leak.

A linoleum rug fragment was found within Room 203. This fragment had an acanthus leaf pattern and the underside was labeled “Congoleum Gold Seal.” While the specific pattern has not yet been identified, a similar acanthus leaf linoleum rug pattern titled “Acanthus Leaf” was found in a Congoleum-Nairn Catalog from 1957; given the popularity of acanthus leaf patterns in the 1950s for floor cloths, the rug may date to outside the period of significance.¹ Testing of the linoleum rug was negative for asbestos-containing materials (ACM) (Sample 203-FL-19A through 203-FL-19C).

Wall Finishes

The south wall of Room 203 was finished with beadboard panels. The west and north walls retained much of their wallpaper. The wallpaper (WP-5) was heavily water-damaged, and the original color and pattern could not be determined. The plaster on these walls was also water-damaged. The east wall had retained several very small wallpaper remnants, featuring floral, Greek key, and brocade patterns. Plaster was missing in the vicinity of



Figure 196. Room 203, looking east towards the water damage to the ceiling, walls, and flooring around the door. (Source: RRJ 2023)



Figure 197. Room 203, looking south at the beadboard wall panels. (Source: RRJ 2023)

¹ "History." Congoleum Flooring. Accessed on March 11, 2024. <https://www.congoleum.com/about/history/>; and *Gold Seal Floors and Walls*. Congoleum-Nairn Inc. (1957): 140, plate 4000. <https://archive.org/details/Congoleum-nairnInc.MakersOfGoldSealFloorsAndWalls/page/n143/mode/2up>



Figure 198. Acanthus leaf "Gold Seal Congoleum" linoleum rug . (Source: RRJ 2023)



Figure 199. Reverse side of the acanthus leaf rug, showing the Congoleum Gold Seal brand. (Source: RRJ 2023)

the east exterior door.

See section "Wallpapers" below for photographs and additional information.

Wall Mouldings

Wood baseboards with a simple profile were present in Room 203.

Ceiling Finishes

Ceiling finishes in Room 203 consisted of beadboard panels. The panels appeared to have been painted brown. The panels were water damaged at the east wall due to a previous roof leak.



Figure 200. Baseboard with an old electrical receptacle. (Source: RRJ 2023)



Figure 201. Beadboard ceiling with the attic access hatch in Room 203. (Source: RRJ 2023)

C	INTERIORS				
C30	INTERIOR FINISHES				
	C30XX	ROOM 204			
				Condition	Priority
		C300010	Room 204 Interior Overall	Poor	Medium
		C302010	204 Flooring	Fair	High
		C301010	204 Wall Finishes	Poor	Low
		C301010	204 Wall Mouldings	Fair	Low
		C303010	204 Ceiling Finishes	Fair	Low

Date: 1903, with later alterations

Contributing: Contributing and Non-Contributing

Description

Room 204 is located along the north exterior wall of the second floor and can only be accessed by crossing through Room 203.

Flooring

Wood flooring was present in Room 204. The second-floor decking was in better condition than the flooring found on the first floor but was generally in fair condition.

Fragments of a floral-patterned linoleum rug were found near the exterior door in Room 203. This pattern appears to be the “No. 4411 Standard Rug” manufacturer by Armstrong and found in a catalog dated 1939 – 1940 indicating that the fragment was likely installed in the late 1930s or early 1940s, right at the end of the period of significance.¹ Testing of the linoleum rug was negative for asbestos-containing materials (ACM) (Sample 203-FL-04A through 203-FL-04C, mislabeled as Room 203).

Wall Finishes

Plaster was present at all four walls. Plaster at the south wall exhibited severe water damage at a brick masonry chimney.

Wallpaper fragments were present at the north, west, and east walls. One wallpaper (WP-3) appeared to be a monochrome grey color and featured brown or grey flowers and leaves on a cream background. The fragment was slightly metallic and textured and may have been vinyl in composition. The wallpaper was



Figure 202. Room 204, looking north. (Source: RRJ 2023)



Figure 203. Room 204, looking south. (Source: RRJ 2023)

1 *Armstrong Pattern Book*. Armstrong Cork Company (1940): plate 4411. Accessed March 11, 2024. <https://archive.org/details/Armstrong-PatternBook/page/n287/mode/2up>.

applied directly to the plaster. Additionally, fragments of a border wallpaper (WP-4) installed over the above mentioned wallpaper were noted. The border wallpaper was a grey floral pattern resembling a cut out frieze.

See section "Wallpapers" below for photographs and additional information.

Wall Mouldings

Wood baseboards with a simple profile were present in Room 204.

Ceiling Finishes

Ceiling finishes in Room 204 consisted of beadboard panels. The panels appeared to have been painted brown.



Figure 204. Linoleum rug in Room 204. (Source: RRJ 2023)



Figure 205. "No. 4411 Standard Rug" manufactured by Armstrong in 1939-1940. (Source: RRJ 2023)



Figure 206. Beadboard ceiling in Room 204, looking east. (Source: RRJ 2023)

Wallpaper

ID:	WP-1	
Room:	201	
Material:	Paper	
Color:	Cream	
Pattern:	Floral	
Date:	Und.	
Notes:		
Pink and yellow flowers on a cream field, applied directly to the plaster.		

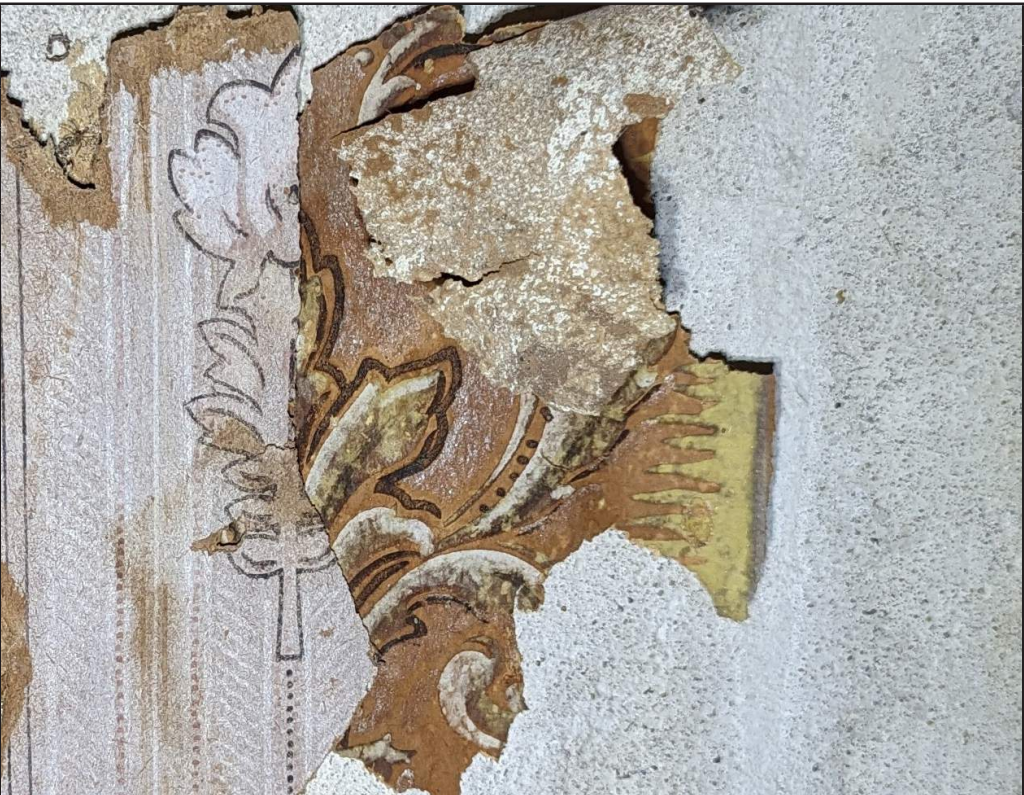
ID:	WP-2	
Room:	202	
Material:	Paper?	
Color:	Cream	
Pattern:	Floral	
Date:	Und.	
Notes:		
Brown flowers or leaves on a white or cream field, applied directly to the plaster. The wallpaper is heavily faded, and the pattern is difficult to identify.		

ID:	WP-3	
Room:	204	
Material:	Vinyl?	
Color:t	Gray	
Pattern:	Floral	
Date:	Und	
Notes:		
Brown or gray flowers and leaves on a cream or cream field, applied directly to the plaster. The wallpaper is slightly textured with metallic ink.		

ID:	WP-4	
Room:	204	
Material:	Und.	
Color:	Gray?	
Pattern:	Floral	
Date:	Und.	
Notes:		
Wall border applied over WP-3, with a scalloped bottom edge.		

Delassus-Kern House Historic Structure Report

ID:	WP-5	
Room:	203	
Material:	Paper?	
Color:	Und.	
Pattern:	Und.	
Date:	Und.	
Notes:		
Heavily oxidized and water damaged; the pattern was not able to be determined. Applied directly to the plaster.		

ID:	WP-6	
Room:	202	
Material:	Paper	
Color:	Gold	
Pattern:	Floral	
Date:	1900s	
Notes:		
Brown, gold, and yellow flowers or leaves on a gold field, possibly roller printed, and stylistically similar to WP-10. Very small fragment, applied directly to the plaster.		

ID:	WP-7
Room:	202
Material:	Paper
Color:	Tan
Pattern:	Geometric
Date:	1930s
Notes:	
Very small fragment, applied over WP-6. Geometric meander in shades of tan and cream over a dappled tan field.	



ID:	WP-8
Room:	202
Material:	Paper
Color:	Cream
Pattern:	Geometric/ Floral
Date:	1930s
Notes:	
Geometric pattern with alternating vertical bands of herringbone stripes and dots in white and brown on a cream field with black and white geometric leaf patterns. Applied over WP-7.	



Delassus-Kern House Historic Structure Report

ID:	WP-9
Room:	202
Material:	Und.
Color:	Und.
Pattern:	Und.
Date:	Und.
Notes:	

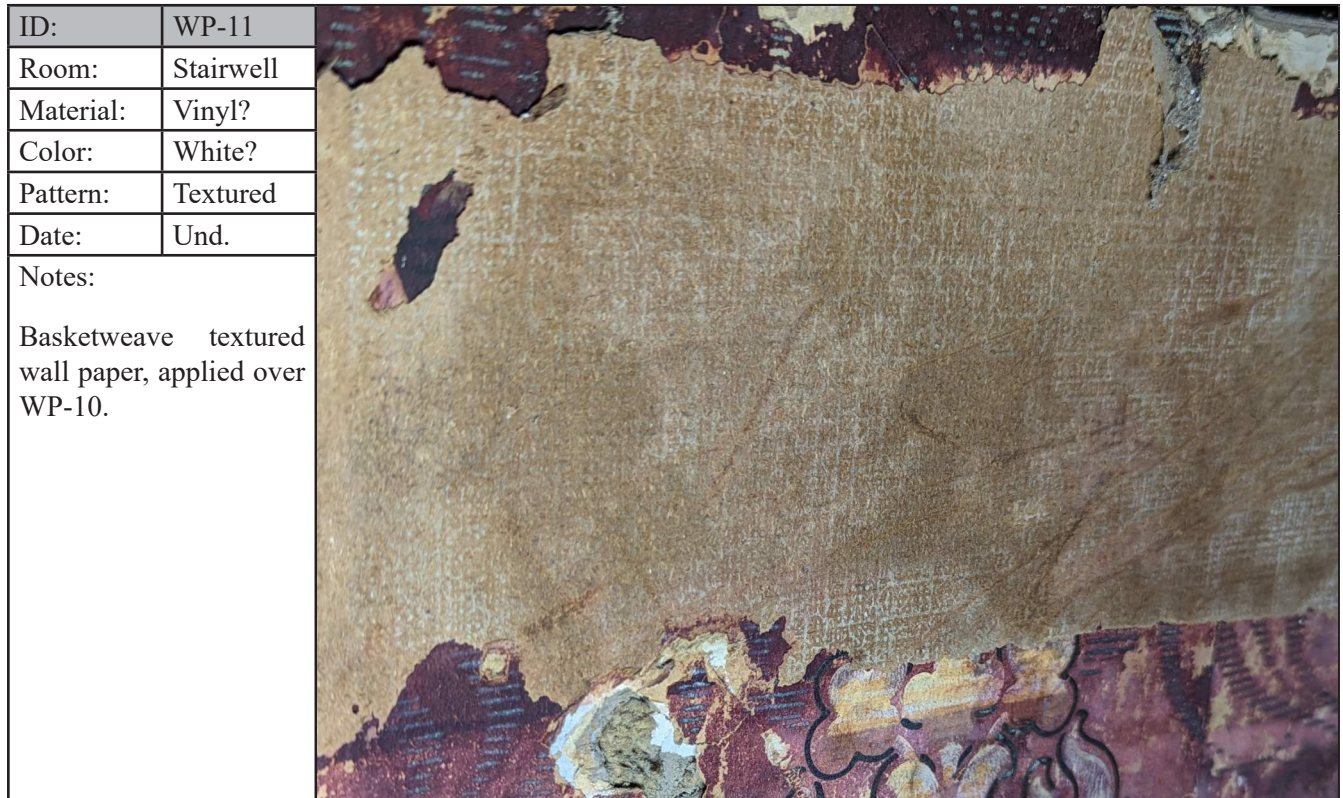
Heavily oxidized and water damaged; the pattern was not able to be determined, possibly a "granitized" or speckled pattern. Applied over WP-8 and WP-10.



ID:	WP-10
Room:	202 and Stairwell
Material:	Paper
Color:	Burgundy
Pattern:	Floral
Date:	1900s
Notes:	

Red background with vivid yellow flowers with pink and blue scroll work. Blue color is liquid mica ink with a slightly metallic sheen. Likely roller printed. Applied directly to the plaster or wood. Stylistically similar to WP-6.





Delassus-Kern House Historic Structure Report

ID:	WP-13
Room:	104
Material:	Und.
Color:	Cream
Pattern:	Floral
Date:	1960s

Notes:

Pink and yellow flowers on a white or cream field. Very small remnant applied over wallboard.



ID:	WP-14
Room:	101
Material:	Und.
Color:	Cream
Pattern:	Figurative
Date:	1960s

Notes:

Orange, yellow, and green fruit and objects on a white field with silver metallic geometric rondels. Applied to wallboard.



ID:	WP-15
Room:	101
Material:	Und.
Color:	Und.
Pattern:	Floral
Date:	Und.
Notes:	
Pattern undetermined. Layer under WP-16 is not clearly visible. This area was previously the backwall of a built-in cabinet.	



ID:	WP-16
Room:	101
Material:	Und.
Color:	White or gray
Pattern:	Marbleized
Date:	Und.
Notes:	
Red and blue veins on a white or light gray field, with a small geometric boarder, applied over WP-14 and WP-15. This area was previously the backwall of a built-in cabinet.	



Mechanical Systems

D	PLUMBING				
D20	SITE UTILITIES				
	D2010	WATER UTILITY			
				Condition	Priority
		D201001	Water Utility to the House	Failed	N/A

Date: Undetermined

Contributing: Non-Contributing

Description

The Delassus-Kern House currently has no external water utility to the house. An abandoned well or cistern with a manual pump resides on the site, located approximately 40-50 feet east of the house. Municipal water supply from the City of Ste. Genevieve does not extend to the parcel. The closest supply main is located approximately one-third mile north of the house, at the intersection of US-61 and Bourbon Road.



Figure 207. Existing well located 40-50 feet northeast of the house. (Source: Alvine 2023)

D	PLUMBING				
D20	SITE UTILITIES				
	D2010	SANITARY UTILITY			
				Condition	Priority
		D201002	Sanitary Utility to the House	Failed	Medium

Date: Undetermined, 20th Century

Contributing: Non-Contributing

Description

There is no sanitary sewer currently serving the Kern house. It is unknown whether the house was served by a sanitary sewer at one time or if it was connected to a private septic field outside the house. The municipal sanitary sewer system does not extend to the parcel.

D	PLUMBING				
D20	SITE UTILITIES				
	D2010	STORM WATER COLLECTION AND STORAGE			
				Condition	Priority
		D201003	Abandoned Cisterns	Failed	High

Date: Undetermined, 20th Century

Contributing: Non-Contributing



Figure 209. Second cistern located near the southeast corner of the house. (Source: Alvine 2023)

Description

The Delassus-Kern House appears to have had storm water roof runoff collected by at least three cisterns. On the south side of the house, there are two existing cisterns. One is located immediately south of the house, while the second is located just outside the house to the southeast. These cisterns are located adjacent to downspout locations where the cisterns would have been used to collect and store rainwater. When these cisterns would have been used, the downspouts would have been provided with a diverter which would have allowed water collected by the gutter and downspout to be directed to the adjacent ground whenever the cistern was full or when the water was flushed from the downspout as to not allow debris, leaves, dirt and bird droppings to be directed to the cistern. Once flushed, the water was then directed to the cistern to be collected.

The southwestern cistern has a clay pipe near to the top of the cistern which extends from below the concrete lid, allowing a means of overflow to grade. The same overflow pipe is not present at the other cistern I, but the overflow may have been removed.



Figure 208. First cistern located near the southwest corner of the house. (Source: Alvine 2023)



Figure 210. Third cistern located on the north side of the house. (Source: Alvine 2023)

It appears that all of the cisterns have been abandoned in place. The cisterns appear to be quite old but no evidence is available stating that the cisterns would have been present or constructed with the house was constructed.

Delassus-Kern House Historic Structure Report

D	PLUMBING				
D20	DOMESTIC WATER DISTRIBUTION				
	D2021	COLD WATER SERVICE			
				Condition	Priority
		D202101	Water piping inside the house	Failed	N/A

Date: Undetermined, 20th Century

Contributing: Non-Contributing

Description

The Kern House has a 1-inch galvanized steel pipe which enters the basement approximately 3-feet above the dirt floor at the southeast wall and routes along the west wall of the Basement above the dirt floor. The piping continues to about the middle of the west wall where it offsets down to an abandoned electric pump located on a small concrete pad. On the vertical piping down to the pump, there is a tee fitting which appears to have been the connection location for another abandoned galvanized pipe which penetrates the north wall near the northeast corner of the basement. This galvanized pipe is not actually connected to the pump piping, but this piping appears to line-up with the piping further to the south.

It was undetermined where the piping routes on site once outside the house. The north pipe exiting the basement appears to line up with cistern which resides approximately 10 to 15 feet outside the north side of the house. Further away from the northeast corner of the house is another well, where remnants of an exterior, manually-operated pump exists. This well is approximately 50 to 60 feet northeast of the northeast corner of the house. This well location lines up east/west from the other well immediately north of the house.

There is no water piping at the First level or Second level of the house as far as could be observed.



Figure 211. Existing 1-inch galvanized water line along the west all of the Basement level where the line extends through the south exterior wall. Note the offset in the piping down to the abandoned pump at the center of the room. (Source: Alvine 2023)



Figure 212. Existing 1-inch galvanized water piping along the west wall where piping is laying on the dirt floor from where it has been disconnected at the vertical pipe offsetting down to the pump at the center of the Basement space. (Source: Alvine 2023)

D	PLUMBING				
D20	DOMESTIC WATER DISTRIBUTION				
	D2022	HOT WATER SERVICE			
				Condition	Priority
		D202201	Water pump and old water heater	Failed	N/A

Date: Undetermined, 20th Century

Contributing: Non-Contributing

Description

Within the Basement level is an abandoned water pump that resides on a thick concrete pad. The pump may have been used to pump water to the First level or higher as part of the house's internal water system. Any piping which may have existed has been removed at the First and Second levels.

Lying next to the concrete pad on the dirt floor is an abandoned water heater which is approximately 14-inch diameter by 3 to 4 feet in length. The water heater may have been located on the concrete pad next to the pump. Both of these two items do not appear original to the house but have been abandoned over the years as the house has been unoccupied for some time.



Figure 213. Photo of existing abandoned water pump located on concrete pad in Basement level in house.. (Source: Alvine 2023)



Figure 214. Photo of existing abandoned water heater lying on dirt floor next to concrete pad. The water heater may have located on the concrete pad at one time. (Source: Alvine 2023)

Delassus-Kern House Historic Structure Report

D	PLUMBING				
D20	PLUMBING UTILITIES				
	D2031	SANITARY WASTE PIPING			
				Condition	Priority
		D203101	Sanitary waste piping in house	Failed	N/A

Date: Undetermined, 20th Century

Contributing: Non-Contributing



Figure 216. Existing sanitary pipes routing along west wall to the south existing wall where lines extend through foundation wall. (Source: Alvine 2023)



Figure 215. Existing 4-inch sanitary piping located at the west wall of the Basement routing south through the south Basement wall. (Source: Alvine 2023)

Description

Remnants of two 4-inch sanitary waste pipes are present in the basement level. The piping currently extends from the southeast exterior wall adjacent to the galvanized water piping. The sanitary pipes extend northwest along the west wall of the basement for a distance of approximately 15-feet. The line closest to the west wall extends up to the main level maintaining a 4-inch size. The other adjacent line extends up to the main level as a 2-inch line where it branches off to the west and horizontally to the northwest below the main level floor. At the main level, the piping terminates with two floor flanges and a third cut-off pipe level with the floor. This appears to be the extent of the sanitary piping.

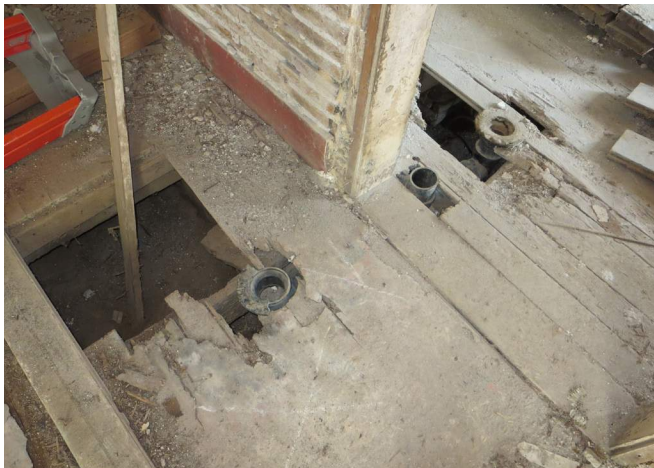


Figure 217. Existing sanitary pipes penetrating the First level floor. (Source: Alvine 2023)

The sanitary piping appears to be ABS (acrylonitrile butadiene styrene) sewer pipe and fittings. The age of the piping is unknown. It is clear that this piping is not original to the house. Based on the configuration of the piping flanges at the floor that the piping may have served some sort of floor-mounted plumbing fixtures which have since been removed.

D	PLUMBING				
D20	PLUMBING FIXTURES				
	D2023	PLUMBING FIXTURES			
				Condition	Priority
		D202301	Plumbing Fixtures	N/A	N/A

Date: Undetermined, 20th Century

Contributing: Non-Contributing

Description

The Kern house currently does not have any plumbing fixtures present in the house. Any plumbing fixtures that might have been present at the house previously have since been removed.

Delassus-Kern House Historic Structure Report

D	HEATING, VENTILATING AND AIR CONDITIONING				
D30	HEATING, VENTILATING AND AIR CONDITIONING (HVAC)				
	D3040	HVAC DISTRIBUTION SYSTEMS			
				Condition	Priority
		D304001	HVAC Systems	N/A	Medium

Date: Undetermined, 20th Century

Contributing: Non-Contributing

Description

The Delassu-Kern House does not have any heating, ventilating or air conditioning including no mechanical equipment or ductwork. There is no evidence of any equipment that may have been in place at the house. In the basement, remnants of fireplace foundations exist providing evidence that fireplaces once existed in the house providing heat. The fireplaces were removed during an extensive remodel of the house in the 1890s. Chimneys and wood burning stoves were added along with constructing the second level as part of the house remodel. The stoves have since been removed.

Exterior views of the house before 2016 show that four brick chimneys for stoves were present, but they were removed when the roof was replaced .



Figure 218. Existing round openings in the north wall of Room 105 indicate where wood stoves were connected to the chimney in the room to the north. (Source: Alvine 2023)



Figure 220. Photograph of Kern house c. 2011 when the chimneys existed at the roof (Source: Alvine 2023)



Figure 219. Existing first level on the other side of the same wall where a chimney exists where another round opening is present for a wood stove connection. (Source: Alvine 2023)

D	PLUMBING				
D20	PLUMBING UTILITIES				
	D2091	GAS SUPPLY SYSTEM			
				Condition	Priority
		D209101	Natural Gas Utility to the House	Failed	N/A

Date: Undetermined, 20th Century

Contributing: Non-Contributing

Description

There is currently no natural gas or propane utilities located at the house. The house does appear to have had a natural gas service in the past; an abandoned gas meter is located in the basement, mounted to the floor joists under Room 106.

D	PLUMBING				
D40	FIRE PROTECTION				
	D4010	FIRE PROTECTION SYSTEM			
				Condition	Priority
		D401001	Fire Protection System	N/A	N/A

Date: Undetermined, 20th Century

Contributing: Non-Contributing

Description

There is no fire protection system of any kind present at the house currently.

Electrical Stystems

D	ELECTRICAL				
D50	ELECTRICAL SERVICE				
	D5010	ELECTRICAL POWER DISTRIBUTION			
				Condition	Priority
		D501001	Electrical Utility to House	Failed	Medium

Date: Undetermined, 20th Century

Contributing: Non-Contributing

Description

At one time, the Kern House had electrical power supplied to it. Currently, the building has no electrical power supplied to it. On the west side of the building, up on the hill, there is an electrical utility company, overhead power line.

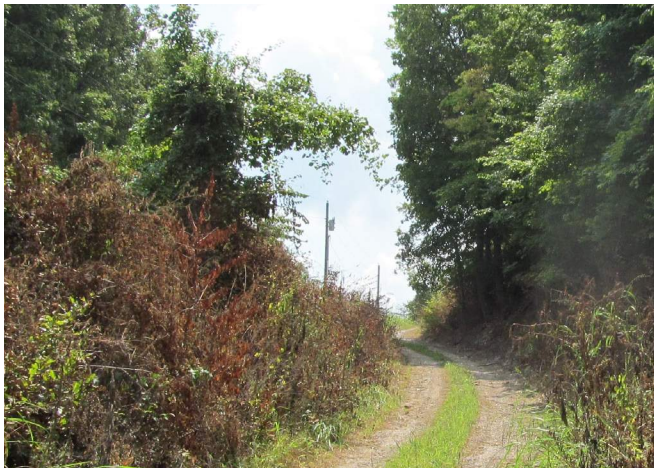


Figure 221. Photograph of existing overhead electrical line near building site. (Source: Alvine 2023)

D	ELECTRICAL				
D50	ELECTRICAL SERVICE				
	D5010	ELECTRICAL POWER DISTRIBUTION			
				Condition	Priority
		D501002	Electrical Panel In House	Failed	Medium

Date: Undetermined, 20th Century

Contributing: Non-Contributing

Description

In the basement, there is an existing 240/120-volt, 1-phase, 6-circuit, plug-fuse panel. This panel is not active. There is no electrical power supplied to the panel, and the panel does not have branch circuits connected to it.



Figure 222. Fuse panel in basement, mounted to the floor structure in the upper right of the photograph. (Source: RRJ 2023)



Figure 223. Photograph of existing, not-active 240/120-volt, 1-phase, 6-circuit, plug-fuse panel in basement. (Source: Alvine 2023)

Delassus-Kern House Historic Structure Report

D	ELECTRICAL				
D50	ELECTRICAL SERVICE				
	D5010	ELECTRICAL POWER DISTRIBUTION			
				Condition	Priority
		D501003	Branch Circuits	N/A	Medium

Date: Undetermined, 20th Century

Contributing: Non-Contributing

Description

The first type of electrical wiring installed in the building was the knob-and-tube-type as visible in the basement.

There are no branch circuits in the building. There are a few lengths or non-metallic-sheathed cable visible in the building, but these are not connected to electrical load, lighting, fixtures, or devices.



Figure 224. Photograph of remaining know-and-tube wiring. (Source: Alvine 2023)



Figure 225. Photograph of remaining know-and-tube wiring. (Source: Alvine 2023)



Figure 226. Photograph of remaining non-metallic sheathed cable. (Source: Alvine 2023)

D	ELECTRICAL				
D50	ELECTRICAL SERVICE				
	D5010	ELECTRICAL POWER DISTRIBUTION			
				Condition	Priority
		D501004	Electrical Panel In House	N/A	Medium

Date: Undetermined, 20th Century

Contributing: Non-Contributing

Description

In the basement, there is an existing 240/120-volt, 1-phase, 6-circuit, plug-fuse panel. This panel is not active. There is no electrical power supplied to the panel, and the panel does not have branch circuits connected to it.



Figure 227. Fuse panel in basement, mounted to the floor structure in the upper right of the photograph. (Source: Alvine 2023)



Figure 228. Photograph of existing, not-active 240/120-volt, 1-phase, 6-circuit, plug-fuse panel in basement. (Source: Alvine 2023)

Delassus-Kern House Historic Structure Report

D	ELECTRICAL				
D50	ELECTRICAL SERVICE				
	D5022	LIGHTING EQUIPMENT			
				Condition	Priority
		D502201	Lighting Fixtures	N/A	Medium

Date: N/A

Contributing: Non-Contributing

Description

There currently are no lighting fixtures installed in the building.

D	ELECTRICAL				
D50	ELECTRICAL SERVICE				
	D5010	ELECTRICAL POWER DISTRIBUTION			
				Condition	Priority
		D501005	Receptacles and Switches	Failed	Medium

Date: Undetermined, 20th Century

Contributing: Non-Contributing

Description

There are currently no functional switches or receptacles in the building.

D	ELECTRICAL				
D50	ELECTRICAL SERVICE				
	D5030	TELECOMMUNICATIONS UTILITY			
				Condition	Priority
		D503001	Telecommunications Utility to House	N/A	High

Date: N/A

Contributing: Non-Contributing

Description

There are currently no communications utility line provided to the building.

D	ELECTRICAL				
D50	ELECTRICAL SERVICE				
	D5037	FIRE ALARM SYSTEM			
				Condition	Priority
		D503701	Fire Alarm System	N/A	High

Date: N/A

Contributing: Non-Contributing

Description

The building does not have a fire alarm system.

Delassus-Kern House Historic Structure Report

D	ELECTRICAL				
D50	ELECTRICAL SERVICE				
	D5038	SECURITY AND DETECTION SYSTEMS			
				Condition	Priority
		D503801	Intrusion Alarm System	N/A	High

Date: N/A

Contributing: Non-Contributing

Description

The building does not have an intrusion alarm system.

D	ELECTRICAL				
D50	ELECTRICAL SERVICE				
	D5091	GROUNDING SYSTEMS			
				Condition	Priority
		D509101	Lightning Protection System	N/A	High

Date: N/A

Contributing: Non-Contributing

Description

The building does not have a lightning protection system.

Wood Species Identification

A limited program of wood species identification was performed as part of the 1986 dendrochronology analysis, which identified species from seven samples taken from the Delassus-Kern House, one sample from the wine press located in the Delassus-Kern House basement, and 136 samples from 23 other log structures in Ste. Genevieve.¹ From this assessment, white oak was identified as the species used for structural floor beams and exterior wall logs, which is consistent with most other vertical log structures. Additionally, cottonwood was identified as a species used for interior vertical logs within the house; though the number of interior samples taken was not noted. As a hardwood species with low density, Cottonwood would be more suitable for interior use.

To support the 1986 wood species identification, 10 locations were sampled from various structural

members of the Delassus-Kern House in 2022 and an additional nine were taken in 2023. Wood species identified in samples collected from the Delassus-Kern House exterior walls, partition walls, and first floor framing members comprise several hardwoods native to the region. Based on the investigation of a small number of randomly collected samples, white oak and red oak appear to be predominant species used for wall construction and for the floor beams. Other hardwoods identified in floor beams (walnut), partition wall logs (cottonwood), and diagonal brace (sycamore) might have been used because the logs were available locally during the period of construction.

Findings of wood species identification for Delassus-Kern House are shown in the following table, and the “Wood Condition Assessment Reports” are attached as an appendix.

WOOD IDENTIFICATION RESULTS FOR THE SAMPLES FROM DELASSUS-KERN HOUSE			
Sample	Component	Location	Wood Species/Species Group
1	Girder	Between B16 and B17, under partition wall between Rooms 101 and 106	Red oak group (<i>Quercus spp.</i>)
2	Girder	Between B20 and B21, under partition wall between Rooms 101 and 106	Red oak group (<i>Quercus spp.</i>)
3	Floor Beam B18	Basement, under Room 106	Black walnut (<i>Juglans nigra</i>).
4	Floor Beam B16	Basement, under Room 106	White oak group (<i>Quercus spp.</i>)
5	Diagonal Brace	Partition wall between Rooms 101 and 106, south of door	Sycamore (<i>Platanus occidentalis</i>)
6	Vertical Log S11	Room 106, south wall west of window	Red oak group (<i>Quercus spp.</i>)
7	Vertical Log E24	Room 105, east wall north of door	Red oak group (<i>Quercus spp.</i>)
8	Vertical Log	Partition wall between Rooms 103 and 104	Cottonwood, aspen, poplar (<i>Populus spp.</i>)
9	Vertical Log N17	Room 104, north wall west of window	White oak group (<i>Quercus spp.</i>)
10	Vertical Log W	Room 102, under south window	White oak group (<i>Quercus spp.</i>)
11	Floor Beam B4	Basement, under Room 104	Black walnut (<i>Juglans nigra</i>)
12	Floor Joist	Room 103 crawlspace	Black walnut (<i>Juglans nigra</i>)

¹ Guyette, "Tree Ring Dating."

Delassus-Kern House Historic Structure Report

WOOD IDENTIFICATION RESULTS FOR THE SAMPLES FROM DELASSUS-KERN HOUSE			
Sample	Component	Location	Wood Species/Species Group
13	Top Plate	Room 106, east wall	White oak group (<i>Quercus spp.</i>)
14	Vertical Log	Partition wall between Rooms 105 and 106, west of door	Cottonwood, aspen, poplar (<i>Populus spp.</i>)
15	Vertical Log	Partition wall between Rooms 101 and 102, east of door	Cottonwood, aspen, poplar (<i>Populus spp.</i>)
16	Sill Plate	Room 102, north of door	White oak group (<i>Quercus spp.</i>)
17	Vertical Log	Partition wall between Rooms 102 and 103, east of door	Cottonwood, aspen, poplar (<i>Populus spp.</i>)
18	Vertical Log	Partition wall between Rooms 104 and 105, west of door	Cottonwood, aspen, poplar (<i>Populus spp.</i>)
19	Diagonal Brace	Room 104, north wall east of window	White oak group (<i>Quercus spp.</i>)

Description of Safety (Summary)

ENVIRONMENTAL ASSESSMENT

A limited Environmental Assessment was performed to determine the presence or absence of asbestos-containing materials (ACM) and lead-based paint (LBP). No analysis of soil or groundwater was performed.

Further information on the limited Environmental Assessment is provided in the *Hazardous Materials Survey of Kern House* report, which is included as an appendix.

Asbestos-Containing Materials (ACM)

Bulk samples for ACM identification were taken for laboratory analysis by Polarized Light Microscopy; sampling was performed where materials were already damaged. Friable ACM was positively identified in concentrations greater than 1% in the following locations:

- Linoleum rug in Room 202.
- Window glazing putty at all windows.

Lead-Based Paint (LBP)

Testing for LBP was performed non-destructively in situ using direct readings from an X-Ray Fluorescence (XRF) spectrum analyzer. A survey was also performed to identify other potentially hazardous materials, including fluorescent light fixtures, ballast, and improperly stored chemicals.

Over 100 sample locations were tested using XRF and multiple locations were positively identified as containing LBP, which are equal to (=) or greater than (>) 1.0 mg/sq.cm as defined by the United States Environmental Protection Agency (USEPA), HUD federal regulatory lead standards, and State of Missouri lead regulations.

Based on this survey, LBP should be assumed to be present at the following locations:

- All painted exterior surfaces, including the weatherboard siding, doors and door frames, and

window sashes and frames.

- Second floor window casing/trim, window sashes, baseboards, and door casing/trim.
- Second floor wood paneling on walls and closets.
- Treads, risers, and stringers of the interior stairs.
- All painted surfaces on the first floor, including doors and casing/trim, baseboards, window sashes and casing/trim, beadboard ceilings, and the panel ceiling in Room 106.

Plaster and log wall surfaces were generally negative for LBP. The outbuildings were also negative for LBP.

Universal Hazardous Materials

No Universal Hazardous Materials were observed.

Part 2: Treatment and Use

Requirements for Treatment

LAWS, REGULATIONS, AND FUNCTIONAL REQUIREMENTS

Key laws, regulations, and functional requirements that apply to the recommended work include the following:

- National Park Service Cultural Resources Management Guideline (Director's Order 28), which requires planning for the protection of cultural resources on park property.
- Section 106 of the National Historic Preservation Act, which mandates that federal agencies, including the National Park Service, take into account the effects of their actions on properties listed or eligible for listing in the National Register of Historic Places and give the Advisory Council on Historic Preservation a reasonable opportunity to comment.

Treatment of the building and site are also to be guided by the following, listed as of the date of preparation of this report and subject to future amendment, revision, and adoption of updated editions:

- Secretary of Interior's Standards for the Treatment of Historic Properties
- National Park Service Management Policies, 2006 Edition
- National Park Service Guiding Principles of Sustainable Design
- Architectural Barriers Act Accessibility Standards (ABAAS)

As well as the current building codes, as adopted by the City of Ste. Genevieve, with local amendments:

- International Building Code (IBC), 2018 Edition
- International Existing Building Code (IEBC), 2018 Edition
- International Residential Building Code (IRC), 2018 Edition
- National Electrical Code (NEC), 2020 Edition
- International Plumbing Code (IPC), 2018 Edition

- International Mechanical Code (IMC), 2018 Edition
- International Fire Code (IFC), 2018 Edition
- International Fuel Gas Code (IFGC), 2018 Edition
- International Property Maintenance Code (IPMC), 2018 Edition

The State of Missouri currently has also adopted the International Energy Conservation Code (IECC), 2018 Edition, but the City of Genevieve has not adopted this code. The State of Missouri allows individual municipalities to adopt any combination of codes and may even forego code adoption. The City of Genevieve currently has not adopted any form of the IECC nor has it adopted the NFPA 101 Life Safety Code.

The NPS is self-regulating in terms of enacting and enforcing building code standards. The Delassus-Kern House is therefore not legally subject to local or state building code requirements. When undertaking repairs to buildings and structures, NPS endeavors to have the work comply with model building code standards.

With historic structures, attempts to achieve strict conformance with model building code standards that are intended for new buildings can lead to destruction of the historic fabric. Alternative compliance procedures, such as Chapter 12 of the IEBC relating to historic buildings, should be referenced in determining code compliance.

NPS currently recognizes the following as the model building codes for design and construction projects:

- International Building Code (IBC), 2021 Edition
- International Energy Conservation Code (IECC), 2021 Edition
- International Existing Building Code (IEBC), 2021 Edition
- NFPA 101 Life Safety Code (where IBC is silent)

Where conflicts exist between the 2021 ICC Codes and the currently adopted Missouri Building Codes, compliance with the more stringent of the two, as determined by a licensed design professional or code official, should be followed.

Additionally, the NPS Authority Having Jurisdiction (AHJ) for Interior Regions 3, 4, and 5 will have input on

determining code-related treatments, including the Regional Chief of Design and Construction and Regional Structural Fire Manager / Fire Control Officer.

Code Analysis

The following specific building code and life safety deficiencies based on the 2021 IBC and NFPA 101 have been identified.

OCCUPANCY

Multiple occupancy classifications are proposed for the preservation of the Delassus-Kern House, potentially to include (as defined by the 2021 IBC, Chapter 3):

- Assembly Group A-3, Art Galleries/ Museums.
- Business Group B. Office.

Each occupancy classification has specific requirements for life-safety considerations such as fire protection and emergency egress that are also factored based on the occupancy load. Efficiencies may be also available by taking advantage of code-permitted exceptions for small assembly spaces with occupant loads below 50 persons, which can be considered as Business Group B under certain circumstances.

EMERGENCY EGRESS

Visitors are not currently permitted to enter the Delassus-Kern House. After rehabilitation, the house will have limited and managed occupancy. The house will typically only open to the public through guided tours or during staffed events. There are multiple egress points on the main level which can be appropriately signed and altered to comply with Group A occupancy egress requirements, including safe path of travel, clearances, and door swing direction, among other requirements. However, there are no accessible egress points or areas of refuge currently, which will be required when the property is made accessible.

The basement and second levels have only a single means of egress each, and the path of travel will be difficult to make accessible without adverse effects to the resource. Given these conditions, the basement and second floor should be closed to general public use and occupancy.

ACCESSIBILITY

The site and existing building will require modification to provide access to visitors with mobility challenges and to comply with ABAAS standards. Current accessibility challenges in summary include:

- There is no accessible parking on the site and no accessible walkways are present.
- The first-floor entrances are elevated from the grade level requiring the use of several steps to access the house. There are no lifts, ramps, or other accessible paths.

FIRE PROTECTION

The existing Delassus-Kern House currently has no commercial or residential fire suppression or fire alarm system. The City of Ste. Genevieve municipal water supply does not extend to the parcel; the nearest city supply main is approximately 1/3-mile north of the property at the intersection of US-61 and Bourbon Road. Without connection to the municipal water supply, retention tanks and a fire pump would be required.

A preliminary review by the NPS Region 5 Structural Fire Coordinator and application of the "Historic Structure Fire Protection System Assessment Matrix" recommends that:

Fire alarm system required; park may want to install a fire suppression system.¹

Providing a traditional fire suppression system at the house is both cost prohibitive and would potentially disturb archeological resources for excavation work for the retention tanks. Given this, a fire alarm system should be provided but a fire suppression system is not required at this time.

Treatment Objectives

The recommendations presented within this report have been developed in accordance with *The Secretary of the Interior's Standards for the Treatment of Historic Properties*. These standards define four treatment approaches that may be applied to historic properties with guidelines for the application of each approach.

Of the four treatment approaches, *Rehabilitation*, which involves making possible a compatible use through repair and alterations, is the most appropriate for the Delassus-Kern House. This approach will permit the removal of

¹ National Park Service. Reference Manual 58: *Structural Fire Protection of Cultural Resources*. September 2023.

Secretary of the Interior's Standards for the Treatment of Historic Properties – Definitions	
Preservation The act or process of applying measures necessary to sustain the existing form, integrity, and materials of an historic property. Work, including preliminary measures to protect and stabilize the property, generally focuses upon the ongoing maintenance and repair of historic materials and features rather than extensive replacement and new construction. New exterior additions are not within the scope of this treatment; however, the limited and sensitive upgrading of mechanical, electrical, and plumbing systems and other code-required work to make properties functional is appropriate within a preservation project.	Restoration The act or process of accurately depicting the form, features, and character of a property as it appeared at a particular period of time by means of the removal of features from other periods in its history and reconstruction of missing features from the restoration period. The limited and sensitive upgrading of mechanical, electrical, and plumbing systems and other code-required work to make properties functional is appropriate within a restoration project.
Rehabilitation The act or process of making possible a compatible use for a property through repair, alterations, and additions while preserving those portions or features which convey its historical, cultural, or architectural values.	Reconstruction The act or process of depicting, by means of new construction, the form, features, and detailing of a non-surviving site, landscape, building, structure, or object for the purpose of replicating its appearance at a specific period of time and in its historic location.

The Secretary of the Interior's Standards for <i>Rehabilitation</i>	
1. A property shall be used for its historic purpose or be placed in a new use that requires minimal change to the defining characteristics of the building and its site and environment. 2. The historic character of a property shall be retained and preserved. The removal of historic materials or alteration of features and spaces that characterize a property shall be avoided. 3. Each property shall be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or architectural elements from other buildings, shall not be undertaken. 4. Most properties change over time; those changes that have acquired historic significance in their own right shall be retained and preserved. 5. Distinctive features, finishes, and construction techniques or examples of craftsmanship that characterize a historic property shall be preserved.	6. Deteriorated historic features shall be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature shall match the old in design, color, texture, and other visual qualities and, where possible, materials. Replacement of missing features shall be substantiated by documentary, physical, or pictorial evidence. 7. Chemical or physical treatments, such as sandblasting, that cause damage to historic materials shall not be used. The surface cleaning of structures, if appropriate, shall be undertaken using the gentlest means possible. 8. Significant archeological resources affected by a project shall be protected and preserved. If such resources must be disturbed, mitigation measures shall be undertaken. 9. New additions, exterior alterations, or related new construction shall not destroy historic materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with the massing, size, scale, and architectural features to protect the historic integrity of the property and its environment. 10. New additions and adjacent or related new construction shall be undertaken in such a manner that if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

non-contributing additions and alterations, any repairs that are necessary to stabilize the historic structure, and the improvements that will be required to meet the programmatic, interpretive, and management needs of NPS.

Ultimate Treatment and Use

Following a participatory workshop which included NPS staff, the consultant team, partners, and other stakeholders, the following preferred treatments were distilled from discussions spurred by the options presented (see the appendix for “Other Treatment Options Considered”).

The Delassus-Kern House and site both offer a moderate level of flexibility for programming, circulation, and interpretation. The preferred treatment recommendations focus on actions to establish barrier-free access to the house and property in compliance with ABAAS, through compatible and appropriate interventions. Preference was also given to treatments which reduced the need for new construction and prioritized maintaining programmatic needs for visitor enjoyment within the footprint of the existing building, while restoring as much as possible the historic site character.

The preferred use of the house was determined to be limited visitor use and interpretive exhibits.

Ultimate Treatment – Site and Landscape

The Delassus-Kern House retains a high level of integrity and can be improved to achieve universal access and public enjoyment of the grounds and house.

The preferred treatment approach entails the establishment of surface parking on the northern end of the parcel. Visitors will primarily access the site traveling south on US-61. The existing gravel drive can be improved to provide access to a surface parking area paved with gravel or other permeable paving suitable for moderate vehicular use. This portion of the site allows sufficient space for a bus turnaround and visitor meeting point. The parking area can also feature a comfort station consisting of waterless or dry-vault toilets. Locating the surface parking on the north side of the parcel creates the least impact to the historic site.

From the parking area, accessible site circulation consisting of paved walkways and landing areas will direct visitors past the extant outbuildings and connect with the new accessible entry to the house. Along the pathway are multiple opportunities for interpretive waysides and viewsheds of the

farmstead and the Common Field.

Upon reaching the house, the site circulation will provide visitors with two potential entries: the accessible entry to the west and an optional entry at the reconstructed east porch.

This preferred treatment includes an option for limited accessible parking to be located in a lawn area immediately to the north of the house.

Ultimate Treatment – Accessibility

Creating an accessible entry to the first floor is a desired intervention for the use and enjoyment of the resource. Several options for accessibility were considered; the recommended treatment is the addition of an ABAAS-compliant ramp on the west side of the building that will connect with accessible pathways and parking on the site.

The ramp can be a simple, post-and-rail design and constructed of wood, which would be visually compatible with the existing gallery railings and the historic character of the house. An unpainted, pressure treated wood ramp will require minimal maintenance, but the ramp may be painted white to blend with the house if preferred. Other railing options such as metal pipe or wire cable are available but are not in keeping with the historic character of the property.

Providing code compliant access to the basement and second levels was considered but would require new construction for an elevator structure beyond the guidelines of the Rehabilitation standards. The park does not anticipate a programmatic need to access the basement and second floor, therefore, this option was deemed too invasive and would result in adverse effects to the house. The basement will be unused to facilitate building monitoring and maintenance and for lower-level MEP systems; the second floor will have limited access. See appendix for “Other Treatment Options Consider” for additional discussion.

Options for an on-site accessible restroom were discussed. Currently, there is no municipal supply water or sanitary sewer service to the property, and bringing such service to the property would involve considerable cost. For the short term, visitors should be directed to alternate facilities, such as the Ste. Genevieve Welcome Center. As a long term solution, a waterless or dry-vault toilet with a solar-powered ventilation can be provided in a shelter in proximity to the parking area.

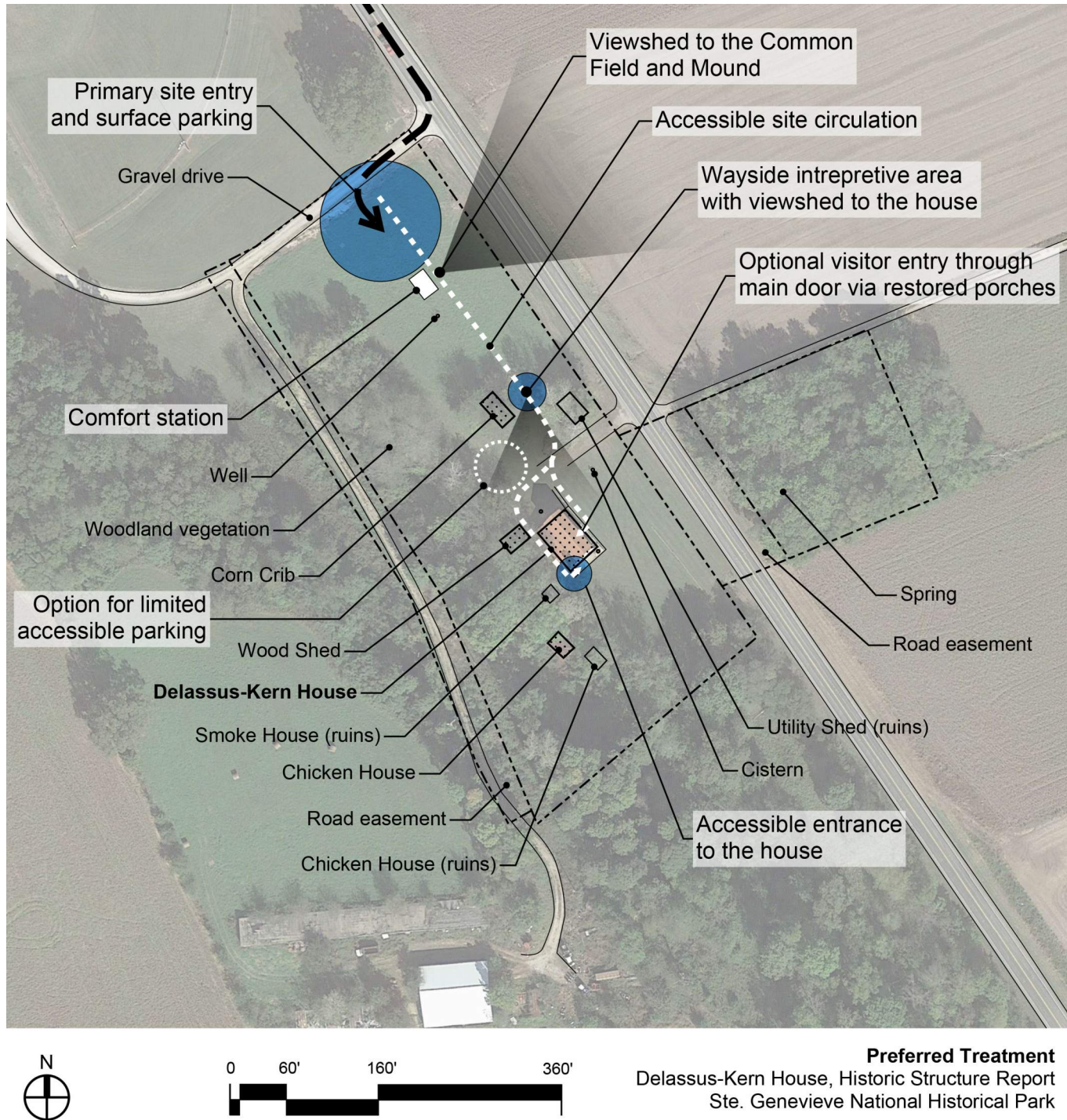


Figure 229. Preferred site and landscape treatment. (Source: LSHLA/RRJ)

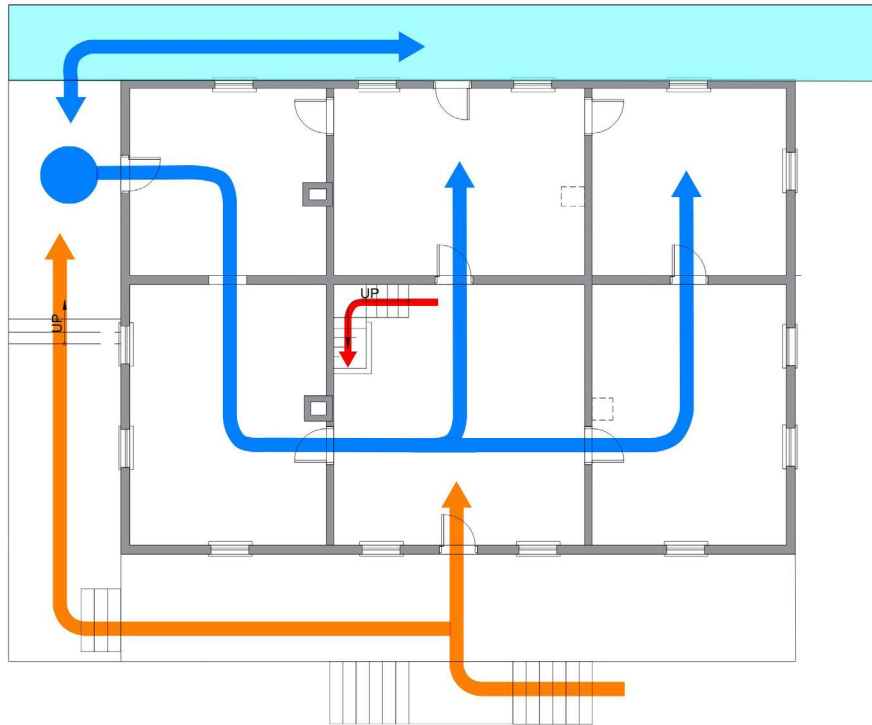


Figure 230. Ramp added to the west exterior wall (light blue), connecting to the kitchen door landing to provide an accessible entrance to the house. An optional nonaccessible entrance can be provided via the reconstructed east porch and stairs (orange). Once inside the first floor, all spaces are accessible (blue lines).

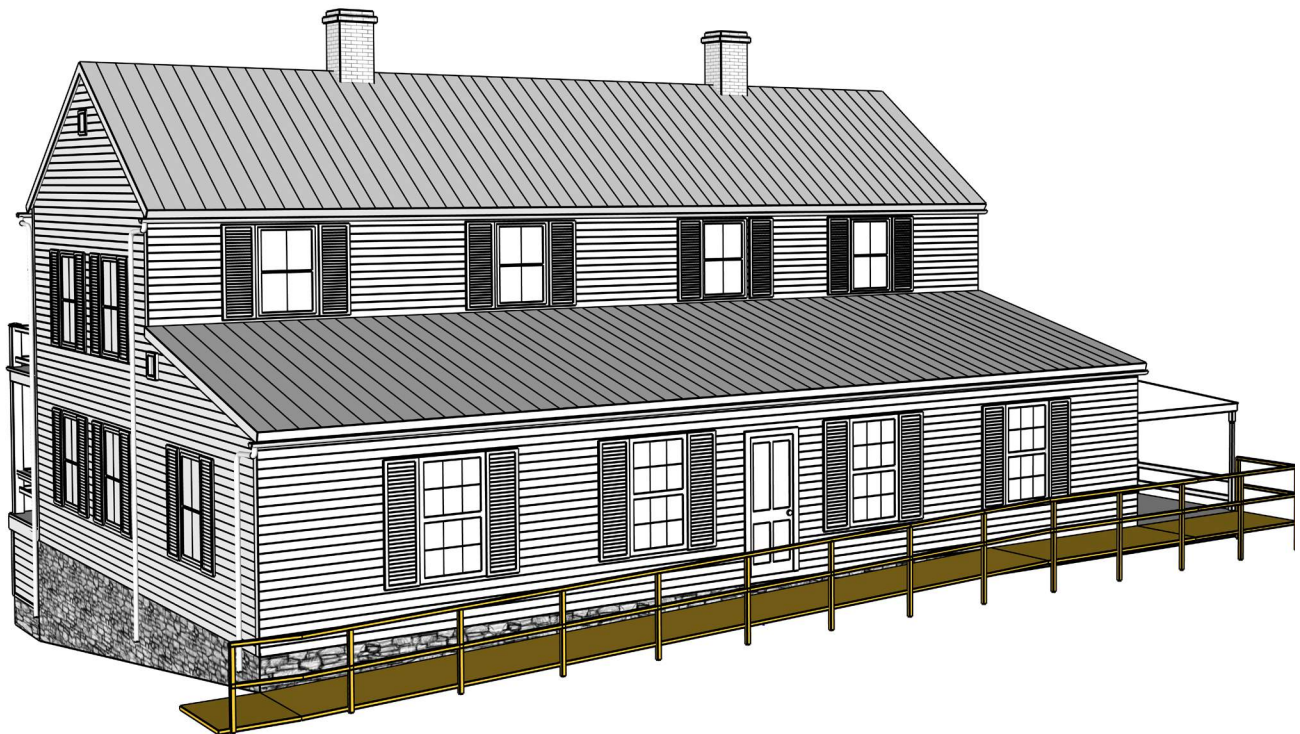


Figure 231. Massing model of the proposed ramp at the west wall (yellow) from the rear of the house.

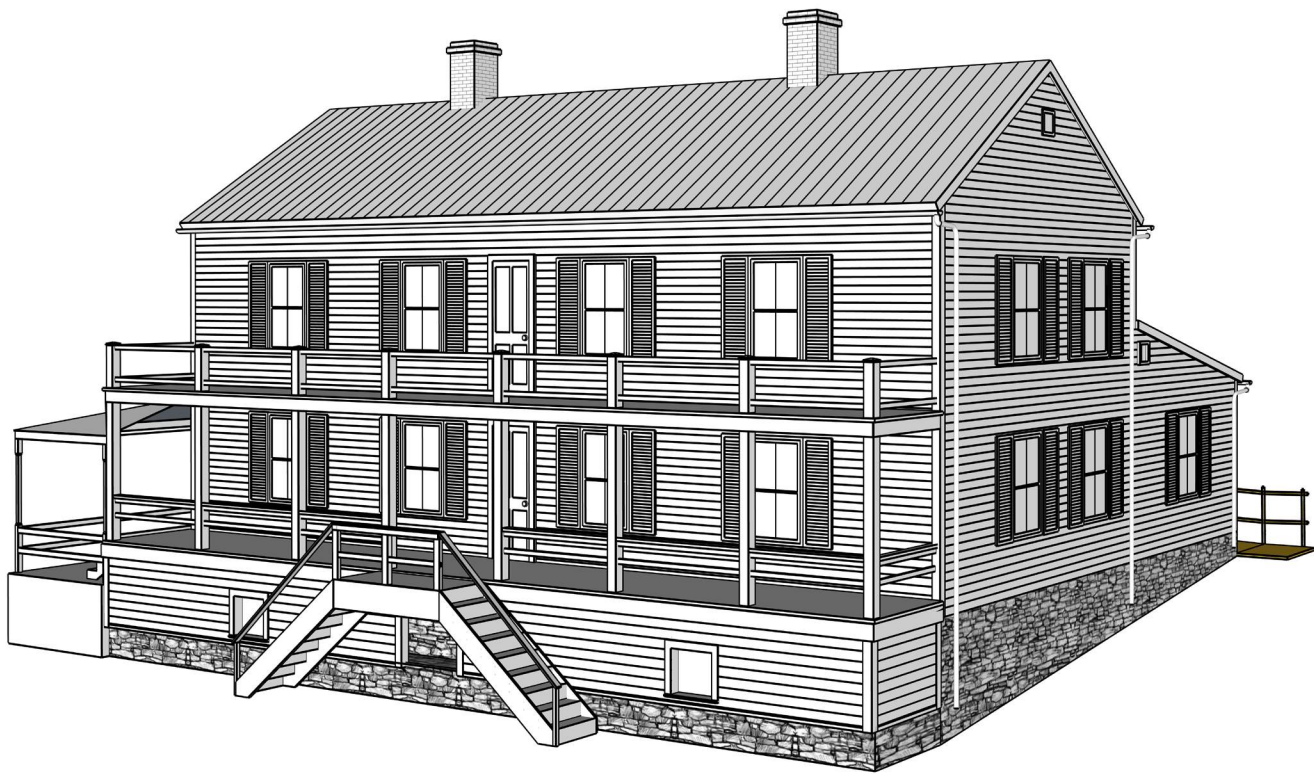


Figure 232. Massing model of the Delassus-Kern House with the east and south porches reconstructed and the exterior restored to the 1903-1939 appearance. The vertical logs will be left exposed in Rooms 104, 105, and 106 for interpretive purposes. Moderate repairs and stabilization of extant finishes will be performed in other rooms.

Ultimate Use – Delassus-Kern House

Based on the outcome of the treatment workshop, the future use of the house will be for visitor enjoyment and flexible interpretive use. The park prefers to perform necessary repairs to the structure and the enclosure systems but to maintain the interior in an unfinished state, with the vertical logs exposed in Rooms 104, 105, and 106 for interpretive purposes. The varying levels of interior finishes will allow the park to interpret multiple dates within the period of significance.

Moderate repairs and stabilization of extant finishes will be performed in other rooms.

High Priority Enclosure and Structural Repairs

Given the poor condition of the envelope components and the structural systems, repairs and stabilization is needed to preserve the structure. High priority repairs include partial reconstruction of the east exterior wall

where the wall is distressed due to deterioration of the top and sill plates. Other localized log replacements are required, along with strengthening of the first and second floor structures for both make-safe repairs and to resist prescriptive live loads in the building code if the house is to be opened to visitors.

Replacement of cladding and roofing materials can be performed in-kind or with alternate historically compatible materials when existing systems have reached the end of service. The windows and doors are generally in poor condition and are protecting the house from weather or pests. Replacement or restoration is required at every exterior door and window.

A detailed summary of recommended envelope and structural repairs, prioritized by severity was provided in the 2023 "Structural and Building Envelope Assessment Report" prepared by RRJ.

The following is summary of the high priority repairs:

- Remove debris and building materials from the

interior and survey debris for historic materials or artifacts that should be preserved. Retain examples of windows, doors, floor boards, trim, shutters, railings, and other components that may serve as templates for in-kind replacements.

- Replace deteriorated exterior doors and door frames to secure the building at all locations.
- Replace the existing plywood sheathing over the window openings with vented panels to allow passive ventilation of the structure. Remove, document, and store window sashes where required to allow ventilation
- Seal gaps in the envelope that may allow pest infiltration.
- Repair deteriorated floor boards, strengthen or supplement the first floor structure, and reconstruct floor framing and decking in rooms where the flooring is deteriorated or missing.
- Perform repairs and stabilization of the east exterior wall. Partial deconstruction of the wall will be required to replace the deteriorated top and sill plates. The existing logs and limestone from the pierrotage should be salvaged and reinstalled wherever possible.
- Keep trees trimmed back from the house and clean gutters twice annually.
- Replace localized areas of warped, damaged, or deteriorated weatherboard siding. New siding shall be in kind or compatible.
- Repoint the stone masonry foundation wall where required with a compatible lime mortar, and perform patch repairs to the concrete landing on the south side of the house to eliminate trip hazards.
- Stabilize the corn crib, including installing new roofing, replace deteriorated framing members, and reconstruct the damaged limestone foundation.
- Install barricades around the existing cisterns and wells to prevent vehicular and pedestrian traffic in the immediate vicinity of the distressed cisterns. The cisterns should be permanently backfilled in the future.

Ultimate Treatment – MEP/FP Systems

A high-level summary of recommended treatments for MEP/FP building systems is provided here, with additional information and detail included in the treatment options section below.

- **Plumbing Systems and Fixtures:** There is no municipal supply water or sanitary sewer service to the property. Based on the outcome of the workshop, services will not be extended to the house, and visitors will be directed to other properties for sanitary facilities.
- **Gas Service:** There is no gas service to the property. The proposed rehabilitation does not recommend extending gas service to the house. Appliances and building services will be electrically powered.
- **Heating, Cooling, and Ventilation Systems:** There are no heating, cooling, or ventilation systems present at the house. Based on the outcome of the workshop, mechanical ventilation systems are preferred, without providing heating or cooling.
- **Electrical Service, Electrical Fixtures, and Devices:** There is currently no electrical service at the property. New service connection can be made at the power pole to the west of the parcel. All new panel, wiring, receptacles and switches, and fixtures will be provided for building systems, generally power needs, and interior lighting.
- **Fire Suppression System and Fire Service:** Currently, the House has no fire suppression system. Given the lack of water service at the house, providing a fire suppression system will involve considerable cost.
- **Fire and Intrusion Alarms:** A fire/intrusion alarm system should be installed with aspirating-type, smoke detectors. An intrusion alarm system should be provided with wireless motion detections and door entry sensors as preferred by the park.
- **Lightning Protection System:** Currently, the building does not have a lightning protection system. A system can be installed on the building. Lightning arrestors and grounding conductors will be visible, and care should be taken in the placement of these components to minimize impact to the resource and visitor experience.

Treatment Recommendations

A detailed summary of recommended envelope and structural repairs, prioritized by severity was provided in the 2023 "Structural and Building Envelope Assessment Report" prepared by RRJ. Updated recommendations are provided below; in many cases the treatment recommendations are carried forward from the condition assessment report.

GENERAL

*Immediate
(Year 1)*

Interior Survey and Cleaning

- Some interior cleaning has been performed to facilitate installation of the basement and first floor shoring.
- Survey the building materials (flooring boards, framing logs, masonry, shutters, doors, and cetera) stored in the house to determine if any of the materials are historic, suitable for potential reuse, or may provide valuable historical or archeological information related to the property.
- Materials determined to be valuable should be clearly marked. Neatly stack larger materials on elevated surfaces like wood pallets, away from areas of deteriorated flooring or floor framing. Repackage smaller items in ventilated wood boxes or relocate items to another facility.
- All materials determined not to be valuable should be removed from the property.
- Remove dust, trash, and debris. Perform cleaning activities in compliance with any containment or abatement requirements as determined by the hazardous materials survey. The presence of ACM and LBP may require special cleaning procedures, extra worker precautions, and controlled disposal of waste.

Mothballing and Temporary Protection

- Mothballing should be implemented after stabilization of the structure and east wall has been performed.
- Replace the basement door on the east wall and the first-floor door on the west wall with new security doors of solid wood or metal with a wood core and new deadbolt locks. Repairs to the opening framing will be required.
- Replace the plywood sheathing over openings as recommended below under "Doors and Windows" for security and weatherproofing. The plywood sheathing at each window should be 30 to 40 percent open with fixed louvers and metal insect screens to allow passive ventilation of the structure. Remove, document, and store window sashes where required to allow ventilation.
- Install fixed louvers and metal insect screens at the existing openings in the end walls to allow passive ventilation of the attic spaces. Consider adding roof vents to the rear-facing roof slopes to improve attic ventilation.
- Install fixed louvers and metal insect screens at the existing openings at the basement level except where water intrusion through the opening is a risk due to the elevation of the exterior grade in relation to the opening.
- All interior doors should be fixed open to allow cross ventilation.
- Cover any openings or gaps that may allow animals or pests to enter the building.

*Medium Term
(2 to 5 Years)***Finishes Analysis**

- Perform an analysis of the remnants of the existing historic finishes, including evidence of whitewash on the logs, painted surfaces, and other finishes. The analysis should attempt to determine if any original or early finishes remain, the approximate date of extant finishes, the type of finish, and the earliest colors where able to be determined.
- Consider archiving samples of the wallpaper and the floor cloths.
- Determine if a finishes analysis is desired for any of the existing outbuildings.

Mortar and Plaster Analysis

- Perform an analysis of the plaster to determine the composition and approximate age of the plaster. Sampling should be performed so as to collect representative sample from undisturbed surfaces where possible, such as behind casing or trim, and to collect samples from each possible addition or alteration to the house. The plaster analysis should also provide a compatible material recipe for repairs.
- Perform an analysis of the pierrotage mortar to determine the composition and to develop a compatible repair mix.
- Mortar and plaster analysis should both physical and chemical analysis, including petrography. Chemical analysis alone is insufficient.

*Preservation
Maintenance***Visual Inspections**

- Perform a weekly inspection of the building exterior to ensure all doors and windows remain secured.
- Perform a quarterly interior inspection for evidence of pest infiltration, water intrusion, and other issues which may affect the condition and stability of the structure.

VERTICAL LOG WALLS*Medium Term
(2 to 5 Years)***Log Repairs Rooms 101 and 102**

- Repair failed top plate at interior chimney.
- Replace deteriorated logs in the west and north walls of Room 101.
- Replace deteriorated logs in the north wall of Room 102.
- Replace the dimensional lumber knee wall at west. Either splice vertical logs at their bases or replace full-height logs in kind..

East Wall Repairs

- Treatment of the east vertical log wall will likely require highly invasive measures.
- The top and bottom plates along the east wall have lost all integrity and must be removed and replaced. This repair would first require complete shoring of both first and second floor framing inboard of the east exterior wall.

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	Vertical logs showing significant pest deterioration shall be replaced in kind, depending on the extent of damage. Partially replacement is preferred where sound wood is present at portions of the log; full replacement shall be performed only where the existing log cannot be spliced or salvaged.
<i>Long Term (5+ Years)</i>	Pierrotage Replace areas of failed or missing pierrotage between vertical logs.
<i>Preservation Maintenance</i>	Inspections Visually monitor all log walls for displacement or movement on a monthly basis until full restoration/stabilization of the structure can be performed.

MASONRY FOUNDATIONS

<i>Immediate (Year 1)</i>	Repairs to East Masonry Wall Repair the loose and displaced masonry at the east wall near the basement door.
<i>Medium Term (2 to 5 Years)</i>	Repairs to East Masonry Wall - The east masonry wall is out of plane and should be repaired and partially rebuilt during the repairs of the east wall vertical logs. Repointing - The masonry wall supporting the north-south interior wall should be fully repointed in the crawlspace. - Repoint other stone masonry joints at the exterior and inside the basement as required. - Repoint the stone and brick masonry piers in the basement. - Pointing mortars should be compatible with the historic mortar and the masonry substrates, as determined by the mortar analysis.
<i>Preservation Maintenance</i>	Inspection and Repointing Inspect mortar joints on an annual basis and provide localized repointing as required.

FIRST-FLOOR STRUCTURE

*Long Term
(5+ Years)*

Flooring Repairs

- Replace, supplement, or splice first-floor joists exhibiting severe section loss.
- Shim between joists and girders to restore the intended structural load path from joists to girders to interior masonry piers.
- Install a stone/concrete foundation for the central girder midspan wood post such that it is not resting in the soil.
- Replace areas of missing, failed, or moisture/pest-damaged planking. Boards should be replaced in-kind wherever possible.
- In Rooms 101, 102, and 103, remove remnants of dimensional lumber framing and repairs, retaining any original timbers. Install a new, self-supporting flooring structure constructed of pressure-treated wood on concrete piers. Consider if installing hardwood flooring in these rooms is desired or if the floors will be interpreted as new materials.

*Preservation
Maintenance*

Inspections

- Visually monitor for ongoing pest activity within framing. If active infestations are observed, have the property professionally treated.

SECOND-FLOOR STRUCTURE

*Long Term
(5+ Years)*

Top Plate Repairs

- Splice or replace deteriorated plate near the second-floor exterior door. Shoring of the ceiling joist and rafter ends will be required to perform the replacement of the deteriorated top plate.

Floor Joist Repairs

- Perform additional investigation into the condition of the floor joists supporting the second floor; this will require removal of ceiling finishes on the first floor. Install additional support or supplemental joists at areas of deterioration, such as along the east wall under the gallery door.

Ceiling Joist and Rafter Repairs

- Splice or replace deteriorated ceiling joists near the second-floor exterior door; coordinate the structural repairs with the roofing replacement.
- Supplement the deteriorated roof rafters near the second-floor exterior door.

INTERIORS

Immediate (Year 1)

Interior Finishes

- Conduct inventory of all objects and construction materials present within the house. Save exemplar samples of windows, doors, shutters, posts, and other relevant historic materials.
- Once inventory is complete, remove and discard all debris.

Medium Term (2 to 5 Years)

Interior Finishes

- Document all interior finishes and archive samples of interior finishes such as wallpaper where applicable. Documentation should include written description, location, and photographs.

Rooms 104, 105, and 106

- Remove any remaining areas of loose plaster; preserve any remaining lath in place, particularly areas of extant diagonal lath.
- Detach and catalogue the historic casing around exterior door and window openings. LBP has been detected on the existing window and door casing. Have the LBP abated and repaint in a historically appropriate color or finish based on the finishes analysis.
- Where existing casing and trim does not need to be removed, resecure pieces to the walls as required. Have the LBP abated and repaint in a historically appropriate color or finish based on the finishes analysis.
- Around doors and other places where visitors may place their hands, remove protruding nails from the vertical logs.
- Remove the panel ceiling in Room 106, leaving the underlying beadboard panels in place. Stabilize the beadboard ceilings. Have the LBP abated and repaint in a historically appropriate color or finish based on the finishes analysis.
- Replace deteriorated flooring boards in kind.

Long Term (5+ Years)

Rooms 101, 102, and 103

- Remove failed and non-contributing wall finishes and stabilize the existing plaster in place. Perform plaster repairs where plaster is damaged or missing to restore continuity of plaster.
- Detach and catalogue the historic casing around exterior door and window openings. LBP has been detected on the existing window and door casing. Have the LBP abated and repaint in a historically appropriate color or finish based on the finishes analysis.
- Where existing casing and trim does not need to be removed, resecure pieces to the walls as required. Have the LBP abated and repaint in a historically appropriate color or finish based on the finishes analysis.
- Where the existing casing or trim is missing, replace in kind.
- Stabilize the beadboard ceilings. Have the LBP abated and repaint in a historically appropriate color or finish based on the finishes analysis.
- Install new wood flooring to match the historic flooring in other rooms.

Rooms 201, 202, 203, and 204

- Remove failed and non-contributing wall finishes and stabilize the existing plaster in place. Perform plaster repairs where plaster is damaged or missing to restore continuity of plaster.
- Detach and catalogue the historic casing around exterior door and window openings. LBP has been detected on the existing window and door casing. Have the LBP abated and repaint in a historically appropriate color or finish based on the finishes analysis.
- Where existing casing and trim does not need to be removed, resecure pieces to the walls as required. Have the LBP abated and repaint in a historically appropriate color or finish based on the finishes analysis.
- Where the existing casing or trim is missing, replace in kind.
- Stabilize the beadboard ceilings and wall panels. Have the LBP abated and repaint in a historically appropriate color or finish based on the finishes analysis.

Interior Doors

- Have all interior doors restored; where doors are missing, provide new wood doors to match the historic doors in place. Have the LBP abated and repaint in a historically appropriate color or finish based on the finishes analysis.

Preservation Maintenance

Inspections

- Inspect interior finishes annually for evidence of additional deterioration or water damage.

ROOFING AND DRAINAGE

Immediate (Year 1)

Drainage System

- The roofing and drainage systems are in fair condition and require minimal intervention in the short term
- Remove debris from all gutters.
- Reconfigure downspout at southeast corner to drain into adjacent soil rather than onto the concrete landing.
- Reattach gutter hangers on west roof edge of second-floor where gutter is sagging.

Tree Maintenance

- Trim trees along west side of the house to prevent damage to roof.

Long Term (5+ Years)

Roofing Replacement

- Replace the existing roofing system. Identifying the period of interpretation will inform an appropriate roofing replacement material, whether wood shingles or shakes or standing-seam metal panel.
- Replace gutters and downspouts with new roofing system. Gutters should be prefinished or galvanized half round gutters with round downspouts.

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Preservation Maintenance

Inspections

- At a minimum, remove debris from gutters in spring and fall.

SIDING

Immediate (Year 1)

Siding Repair

- The existing lap siding has reached the end of its useful service life and should be replaced. Interim repairs are necessary to ensure watertightness if full replacement of siding is not an immediate option
- Remove any warped, split, or broken siding and install new siding to match existing.
- Address all loose nails by hammering back into place.
- Remove lap siding on east wall to address structural bulge in wall. Install new siding to match existing or of a historically appropriate material and form once stabilization work is complete.

Medium Term (2 to 5 Years)

Siding Replacement

- Remove the existing lap siding on all exterior walls.
- Install new siding to match existing or as determined to be historically appropriate for the interpretation period. Provide a weatherbarrier membrane under the siding and drip caps over window and door openings.

Preservation Maintenance

Inspection and Repointing

- Inspect lap siding annually to ensure watertightness is maintained.

DOORS AND WINDOWS

Immediate (Year 1)

Weather Resistance Measures

- The doors and windows are in poor to failed condition. These elements currently provide little to no weather-resistance for the structure. Intervention is necessary to prevent further water intrusion and subsequent water-related damage to internal wood framing and other interior elements. Perform mothballing actions as described above.
- Replace all deteriorated plywood covering with new exterior grade plywood. See also the recommendations for mothballing the structure.
- Install new head cap flashing under the existing siding and over the plywood temporary protection to shed water away from openings.

Pest Management

- Infill gaps around basement vent frames to prevent rodent/pest infiltration

*Long Term
(5+ Years)***Window Replacement**

- Remove all failed windows; some windows may be suitable for restoration.
- Have the LBP abated and repaint in a historically appropriate color or finish based on the finishes analysis.
- Reinstall restored windows or install new windows including casing, frames, and sashes. Sufficient existing material is available for the basis of reproduction units. New windows should be double-hung sashes with locks and other hardware.
- Install new louvered shutters at all windows.

Exterior Door Replacement

- Remove all exterior doors.
- Install new period appropriate exterior doors. For basement doors, a simple batten-style wood plank door should be considered. For the east entry door, restore and reinstall the Greek Revival style door currently located in Room 104; have a reproduction door fabricated for installation at the west entry. At all other exterior doors, replacement units should be 4-panel wood doors to match the existing and historic photographs.
- Restore door hardware where possible or replace with appropriate reproduction units or salvaged historic hardware. Historic hardware from the second floor can be considered for use on the first floor.

*Preservation
Maintenance***Inspections**

- Monthly inspection of plywood coverings is required until more long-term weather-resistance measures are implemented. Replace weathered plywood as necessary to maintain watertightness.
- Window and door inspections can be reduced to quarterly once storm windows/doors or replacement windows/doors are installed.

SITE FEATURES*Immediate
(Year 1)***Loose Concrete Removal**

- The concrete at the south landing has failed and should be replaced.
- Remove all broken and loose concrete topping at south stairs and landing to reduce tripping hazards.

*Medium Term
(2 to 5 Years)***Concrete Repairs**

- Fully remove concrete topping at south landing and replace with new concrete topping.
- Review underlying masonry structure at south landing after topping removal. Make any necessary masonry repairs prior to installation of new concrete topping

Concrete Walkway

Remove and replace the paved concrete walkway along the east wall to provide access to the House

Water Management

- Install a French drain along the foundation wall along the west wall to alleviate moisture concerns such as rising damp. Work that involves excavation will require archeological review and compliance.

Inspections

- Inspect concrete elements annually for evidence of deterioration or delamination.
- The concrete retaining wall located on the eastern edge of the property is in poor condition but is not a life-safety hazard. No repairs to the retaining wall are necessary

OUTBUILDINGS

The outbuildings are in fair to poor condition and are in need of stabilization. Some of the extant outbuildings appear to date to within the period of significance of the house and contributed to the rural agricultural context, the integrity of setting and feeling, and to the significance of the overall site.

Immediate (Year 1)

Corn Crib

- Reinstall displaced floor beam along north wall.
- Rebuild collapsed masonry foundation sections.
- Stabilize roof overhang at east roof edge and replace failed lumber members in kind.
- Remove corrugated steel roof and replace in kind.

Long Term (5+ Years)

Chicken Shed

- Remove corrugated steel roof and replace in kind.
- Stabilize the west columns and footing.

Woodshed

- Remove deteriorated wood siding and corrugated metal cladding and install new vertical wood siding to match the existing.
- Remove corrugated steel roof and replace in kind.
- Conduct inventory of interior contents of the woodshed. Save exemplar examples of any structural or architectural elements

Corn Crib

- Rebuild the floor framing and reinstall displaced flooring.
- Conduct inventory of interior contents of the corn crib. Save exemplar examples of any structural or architectural elements

*Preservation
Maintenance***Inspections**

- Remove vegetation surrounding the chicken house and smokehouse foundations and site of former hog house as needed to prevent overgrowth.
- Conduct annual inspection of all outbuildings for signs of distress

CISTERNS AND WELL*Immediate
(Year 1)***Cistern and Well Safety Measures**

- Secure steel cistern lids at south to prevent tripping and falling.
- Install barricades around the cisterns in the lawn and to the north of the house and at the well in the north field to prevent vehicular and pedestrian traffic in the immediate vicinity of the distressed cisterns. A radius of 10-feet is recommended. Barricades can be temporary in the form of metal posts and snow (orange safety) fencing or more permanent structures like wood fences.

*Medium Term
(2 to 5 Years)***Backfilling Cisterns and Wells**

- All four abandoned cisterns and the well should be filled with grout and clean fill to prevent collapse of the shaft. The Missouri Well Construction Rule (Missouri Code of State Regulations 10 CSR 23-3.110) outlines requirements for reporting and permitting for filling of abandoned wells. Consultation with the Missouri Department of Natural Resources is recommended to determine if the regulations for hand-dug wells of less than 80-feet are applicable to this property.
- Once the cistern and wells have been properly backfilled, the barricades may be removed.

Masonry Repairs

- After the cisterns and wells have been backfilled, repoint deteriorated mortar and rebuild areas of collapsed shaft walls above grade. Reinstall the historic cover.

Landscaping

- Remove overgrown vegetation surrounding the well and consider marking the location so that the well will not be damaged by machinery from regular vegetation maintenance activities (haymaking or mowing of the field).

*Long Term
(5+ Years)***Historic Cistern in the Lawn**

- Portions of pumping mechanism are present at the cistern in the main lawn. Consider restoration of pump mechanism to its historic appearance

*Preservation
Maintenance***Inspections**

- Remove vegetation surrounding the well as needed to prevent overgrowth

MECHANICAL TREATMENT RECOMMENDATIONS

Plumbing

NPS has indicated that providing new plumbing utilities including water supply and sanitary sewer for the Delassus-Kern House is not necessary or desired. Portable restroom facilities or some type of comfort station can be provided for visitors to the house during limited tours.

Plumbing systems would require a new water well for a water supply to serve domestic water. A septic field would also be required to handle sanitary waste disposal since there is no sanitary sewer at the site.

Fire Protection

As part of the initial considerations for the Delassus-Kern House, it was originally desired for the house to have a fire protection system. As the result of an initial site investigation, it was determined that no active water utility is currently available at the site. Without a stable and adequate source of water for the site, there would be the need for NPS to provide a well or a fire water storage tank to provide the source of water to the house to serve any new fire protection system.

Providing fire water for a wet-pipe or dry-pipe sprinkler system for the house would also require a fire pump to provide adequate water pressure for the piping system and sprinkler heads necessary to cover the interior of the structure and attic. Where the fire pump and storage tank(s) would be located at the basement level, this space would require a room and adequate heating to keep the system from freezing.

Based on a preliminary review by the NPS Region 5 Structural Fire Coordinator and application of the "Historic Structure Fire Protection System Assessment Matrix," a fire suppression system is not required at the property.

To address minimal life safety for the house, smoke detectors connected to a fire alarm system should be provided, which can provide this early warning protection for any occupants and which can notify the local fire department of a smoke and fire condition at the house allowing them to respond to the site.

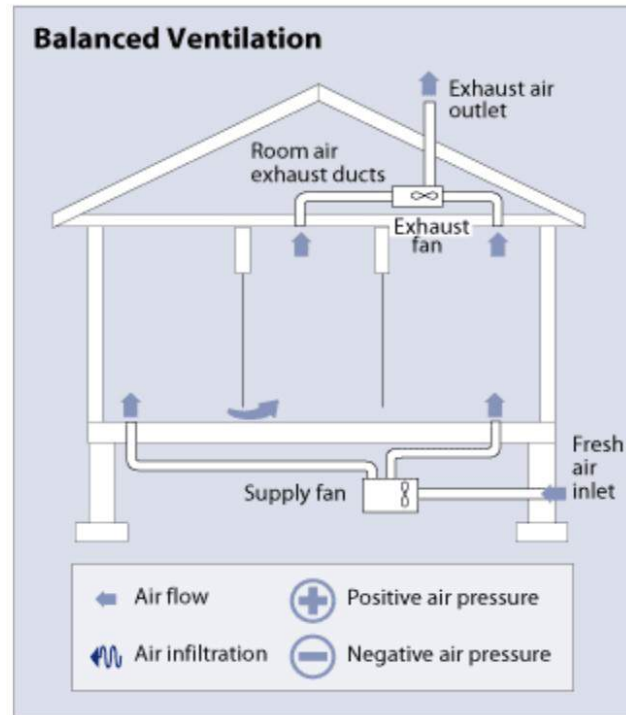


Figure 233. Diagram of a balanced ventilation system. (Source: U.S. Department of Energy, "Whole-House Ventilation." <https://www.energy.gov/energysaver/whole-house-ventilation>)

HVAC and Mechanical Ventilation

Based on the consensus decision reached during the treatment workshop, no heating or cooling systems are required at the building; however, there is an acknowledged need for improving ventilation through the installation of a mechanical ventilation system. To meet this requirement, a Balanced Ventilation System is recommended.

Balanced ventilation systems, if properly designed and installed, neither pressurize nor depressurize the structure. Rather, they introduce and exhaust approximately equal quantities of fresh outside air and polluted inside air.

A balanced ventilation system usually has two fans and two duct systems. Fresh air supply and exhaust vents can be installed in every room, but a typical balanced ventilation system is designed to supply fresh air to bedrooms and living rooms where occupants spend the most time. It also exhausts air from rooms where moisture and pollutants are most often generated

(kitchen, bathrooms, and perhaps the laundry room).

Some designs use a single-point exhaust. Because they directly supply outside air, balanced systems allow the use of filters to remove dust and pollen from outside air before introducing it into the house.

Balanced ventilation systems are appropriate for all climates. Because they require two duct and fan systems, however, balanced ventilation systems are usually more expensive to install and operate than more simple supply or exhaust systems.

Balanced ventilation systems do not temper or remove moisture from the make-up air before it enters the house. If humidity control is desired, dehumidification systems should be provided.

ELECTRICAL SYSTEMS, FIXTURES, AND DEVICES OPTIONS

Electrical Utility

It is recommended to have the electrical utility company extend an overhead, medium-voltage distribution system from its current location on top of the hill to the west of the house, down the hill to the base of the hill near the Kern's House. Existing trees and brush will need to be trimmed or removed to make a clear path for this overhead distribution line.

On the end of the overhead distribution line at the base of the hill, the electrical utility company would set a wooden power pole. On this power pole, the electrical utility company would provide a pole-mounted transformer. From the pole-mounted transformer, an overhead 240/120-volt, single-phase, 3-wire, 200-amp electrical service cable should drop to the electric service pole. The electrical drop cable is provided by the electrical utility company and is an aluminum triplex cable. Triplex wire is commonly used for overhead, single-phase service and contains three individual wires twisted around each other. The two insulated conductors are called the 'hot' legs of the service, while the bare (uninsulated) wire is the neutral wire of the service.

The new electrical panel can be installed on the first level, possibly in Room 101 to minimize potential humidity issues if installed in the basement. A typed panel circuit directory will be provided with the new panel.

Electrical Power Distribution

The electrical service pole would be provided by the electrical contractor. On the electrical service pole, the electrical contractor would provide a 200-amp meter socket with a 200-amp-rated service riser to the top of the pole. The service riser would be three #3/0 AWG copper conductors with THHN/THWN insulation installed in a 2-inch rigid galvanized steel conduit. At the top of the service riser, there will be a weatherhead where the #3/0 AWG conductors exit the conduit and get terminated to the electrical utility company triplex cable.

Also, on the electrical service pole, the electrical contractor would provide a 240/120-volt, single-phase, 3-wire, 200-amp electrical panel. The electrical panel will have a 200-amp main circuit breaker, branch circuit breakers to serve lighting, receptacle, mechanical equipment loads, as well as fire alarm and intrusion alarm panels.

Except for the breakers that serve the fire alarm and intrusion alarm panels, the branch circuit breakers will be the arc fault circuit interrupter (AFCI) type. AFCI circuit breakers are designed to protect against fires caused by electrical arc faults.

The electrical panel will also have a surge protective device (SPD). SPDs can stop or reduce power surges caused by voltage spikes and protect electrical equipment from damage. The electrical panel enclosure will be NEMA 3R construction suitable for outdoor environments and have a hinged, lockable door. The electrical panel will be installed outdoors instead of the basement because the basement would be below the 100-year flood elevation.

The existing electrical panel in the basement should be removed.

Grounding

On the electrical panel, a grounding electrode system would be provided which would consist of two

#6 AWG ground wires, each in a 3/4-inch conduit and each connected to a 3/4-inch diameter, 10'-0" long copper-clad driven ground rod to comply with NEC Article 250.50.

The electrical meter socket would also have a #6 AWG wire in 3/4-inch conduit connected to a 3/4-inch

diameter, 10'-0" long copper-clad driven ground rod.

An intersystem bonding termination device (IBT) will be provided and installed to bond the new incoming communication utility services. A bare #6 AWG copper grounding conductor in 3/4-inch conduit will be routed from the IBT to the new panel to comply with NEC Article 250.94.

Exterior Wiring

Exterior underground wiring would be copper conductors with THHN/THWN insulation installed in

PVC-40 conduit. A green insulated equipment ground wire would also be routed in the conduit.

Interior Wiring

It is recommended that metal-clad cable be installed inside the building. Metal-clad cable is a factory-made assembly with multiple insulated conductors enclosed in an armor of interlocking metal tape. The metal-clad cable is more durable and less likely to get damaged as compared to non-metallic (NM) cable. In areas, such as the basement where electrical devices are surface-mounted to walls and floor joists, then it is recommended to install individual conductors in electrical metallic tubing (EMT) conduit.

The original electrical knob-and-tube wiring in the basement should remain for historic preservation reasons but should be tagged as not in service.

Lighting

One-pole toggle switches to control the interior lighting are recommended. Temporary LED security lighting on the building exterior can be provided to discourage vandalism and trespassing. The LED security lighting can be controlled by photocells or by motion detectors.

It is recommended that the interior of the building have minimal temporary LED lighting for park staff to inspect the building or for any construction project workers.

For permanent use, new general use and service lighting should be provided. Ambient lighting can be provided by permanent fixtures of an appropriate appearance or by moveable lamps or similar fixtures.

All new fixtures should be light emitting diode (LED)

type lighting fixtures for energy conservation. The new LED lighting fixtures should have the style and locations needed to compliment the building improvements and intended usage.

Devices (Switches and Receptacles)

New lighting controls and receptacles will be required. General-purpose receptacles shall be duplex Type 5-20R, 125-volt, 20-amp, 2-pole, 3-wire grounding, side-wired, specification-grade. Ground-fault circuit interrupter (GFCI) receptacles shall be duplex, Type 5-20R, 125-volt, 20-amp, 2-pole, 3-wire grounding, side-wired, specification-grade. GFCI receptacles shall be used outdoors, in the basement, and in other wet or humid spaces.

Communications

A new fiber optic line can be provided in the basement up to a small rack-mounted patch panel on first floor. From the patch panel, Category 6A, copper, twisted-pair data cables can be extended out to new fire alarm and intrusion alarm panels.

The new rack-mounted patch panel needs to be installed in a small closet or cabinet in a conditioned space. The patch panel should not be installed in the basement because the basement is located below the 100-year flood elevation.

Fire Alarm Systems

It is recommended to provide an addressable fire alarm system for the building. An addressable manual pull station would be provided in the basement and at one location on the first floor. An audible/visual signal would be provided at one location on the first floor. An additional weatherproof audible/visual signal would be provided on the exterior of the building. Audible signals will be the horn-type. These would be wired devices.

The fire alarm wiring would be the metal-clad cable, MC-FPLP type.

An addressable heat detector(s) would be installed in each room in the basement, first floor, and second floor. These would be wired devices.

Smoke detectors cannot be installed in unconditioned spaces and are not recommended.

The new fire alarm control panel needs to be installed in a small closet or cabinet on first floor that is conditioned.

Exit Lighting and Emergency Lighting

Depending on the future use of the building, exit lighting and egress lighting may be required to be installed. The egress lighting could be accomplished by utilizing the normal lighting fixtures, backed up by a small battery powered inverter. The exit lighting fixture could have back-up battery power from an inverter system or individual, self-contained batteries.

Intrusion Alarm System

An intrusion alarm system is recommended for the building. A motion detector would be installed on each floor. The intrusion alarm motion detectors would be the wired-type.

The intrusion alarm wiring would be the metal-clad, signal-cable type.

The new intrusion alarm control panel needs to be installed in a small closet or cabinet on first floor.

Lightning Protection System

A lightning protection system could be added to the building; however, the visible lightning arrestors on the roof, and the grounding conductors routed down the outside of the building to ground rods, would be visible on the sides of the building and may be aesthetically objectionable.

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ADDITIONAL COLLECTIONS AND SOURCES CONSULTED:

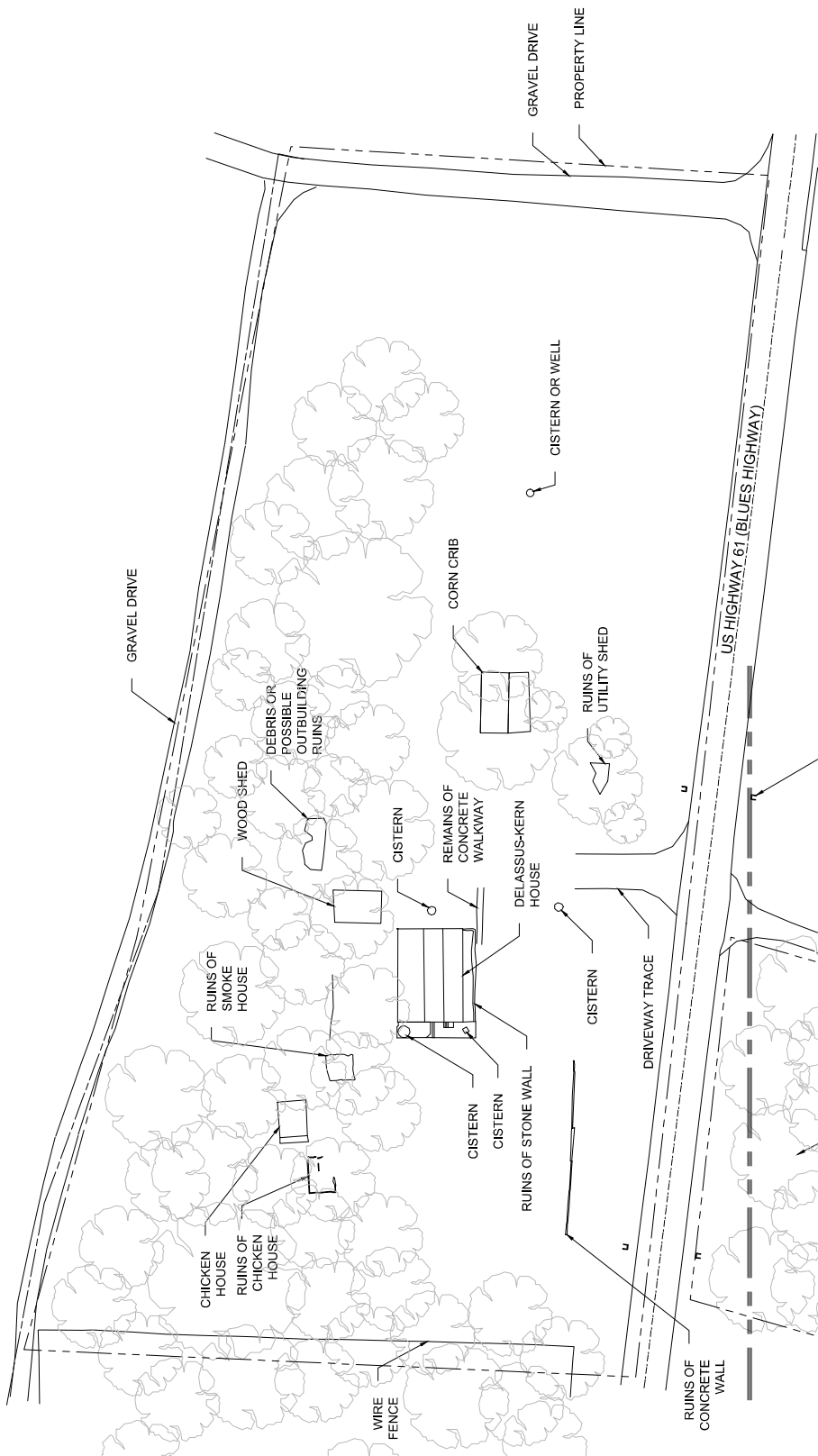
Mercantile Library at St. Louis University

Ste. Genevieve Archive in the Missouri State Historical Society

Ste. Genevieve County Courthouse
Ste. Genevieve Museum and Learning Center
Felix Vallé House State Historic Site
National Park Service Website Files
Brenda Kern, Kern Family Private Records

Appendix A:

Existing Condition Drawings



1

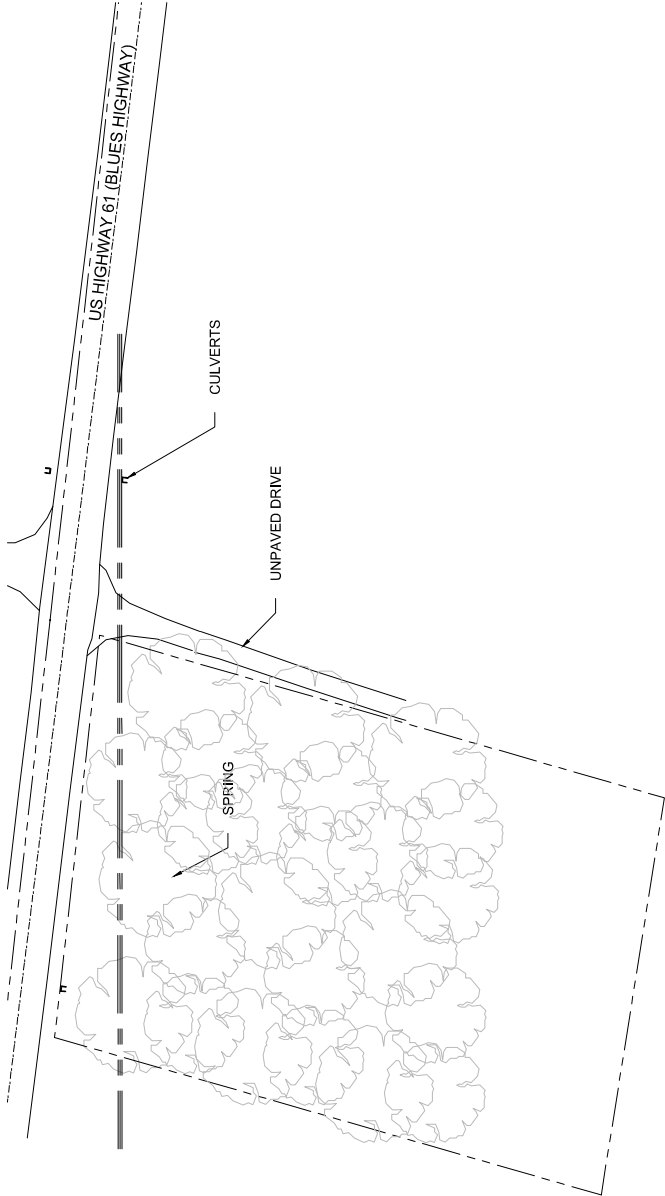
G.01

SCALE 1/8" = 1'-0"

0 10 20



A/E FIRM RATHUS, RATHUS & JOHNSON, INC. 1900 Jullier Road, Suite 200 Winnetka, IL 60093 (847) 227-5068	DESIGNED: CAD: AMMB TECH. REVIEW: DATE: 9/15/2024	SUB SHEET NO. G.01	TITLE OF SHEET SITE PLAN, WEST PARCEL EXISTING CONDITIONS STE. GENEVIEVE NATIONAL HISTORICAL PARK	DRAWING NO. 80005
				PAPER NO. 311634
				SHEET 2 OF 25

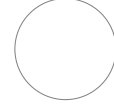


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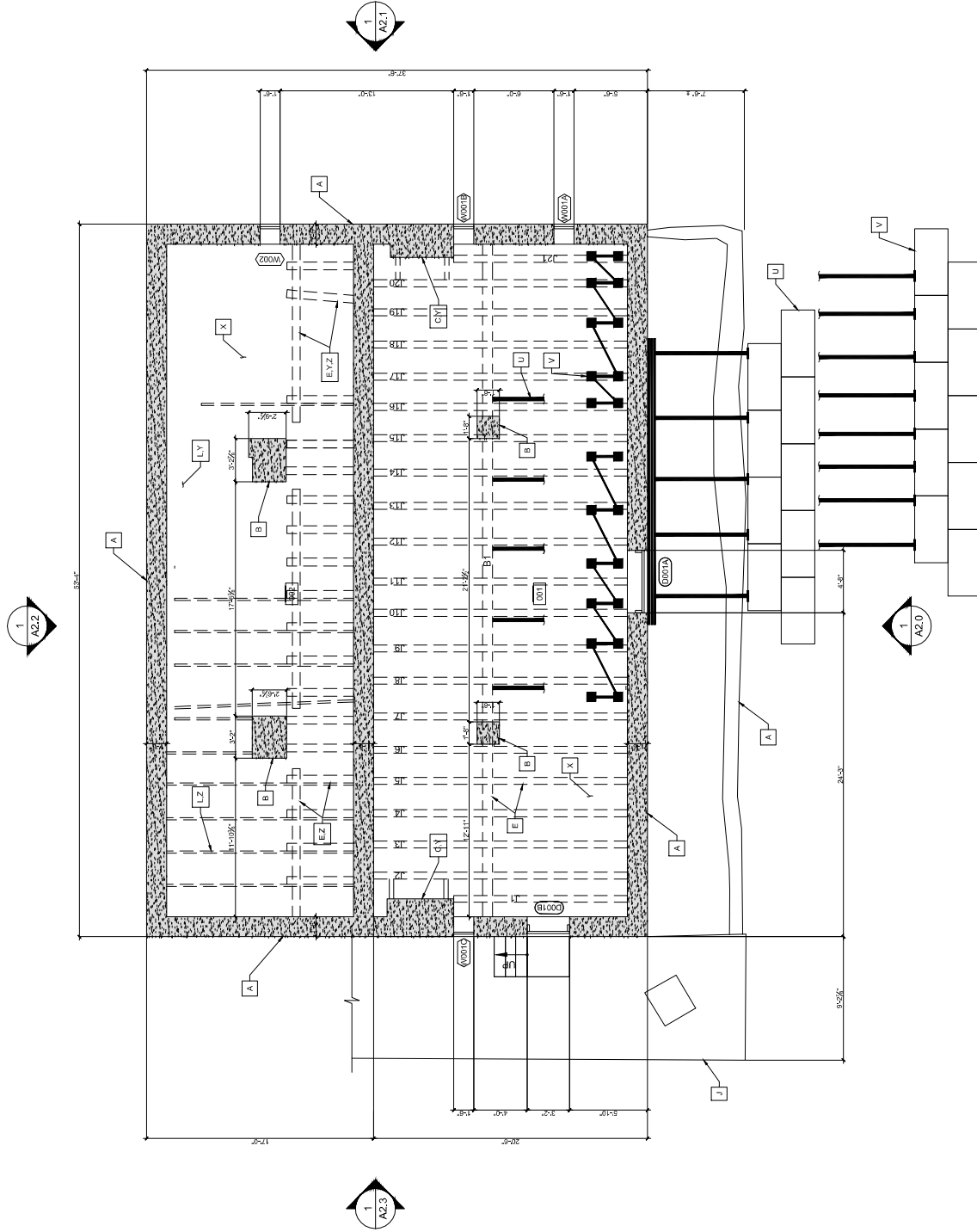
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SITE PLAN, EAST PARCEL

SCALE: 1/8" = 1'-0"



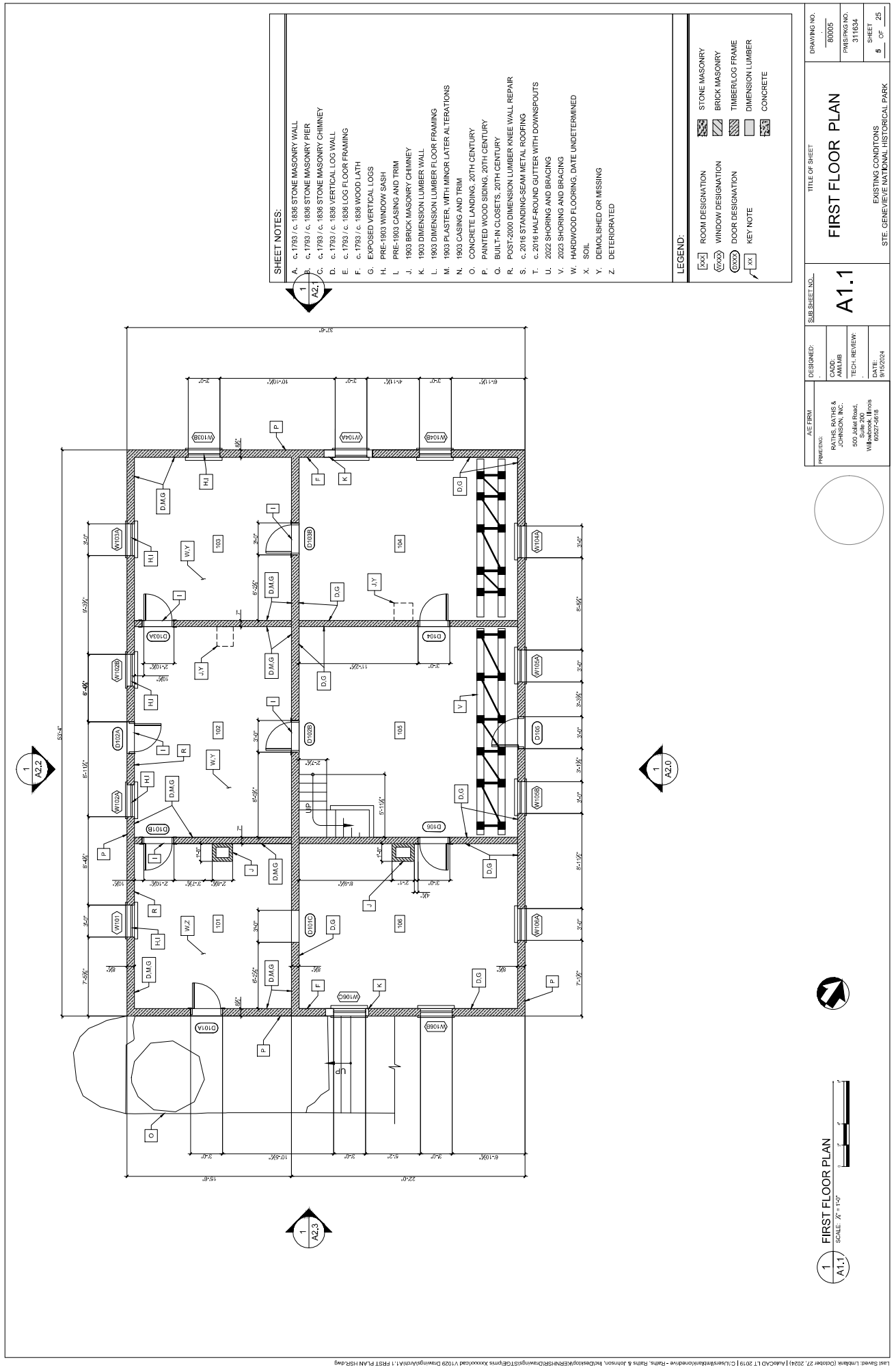
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SHEET		111634	
8		OF 25	
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STE. GENEVIEVE NATIONAL HISTORICAL PARK			
A/E FIRM		DESIGNED:	
RATHS, RATHS & JOHNSON, INC.		CADD:	
1900 Jolly Road, Suite 202 Waukegan, Illinois 60087-0576		AMLMB	
		TECH. REVIEW:	
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PRIMING		SUB SHEET NO.	
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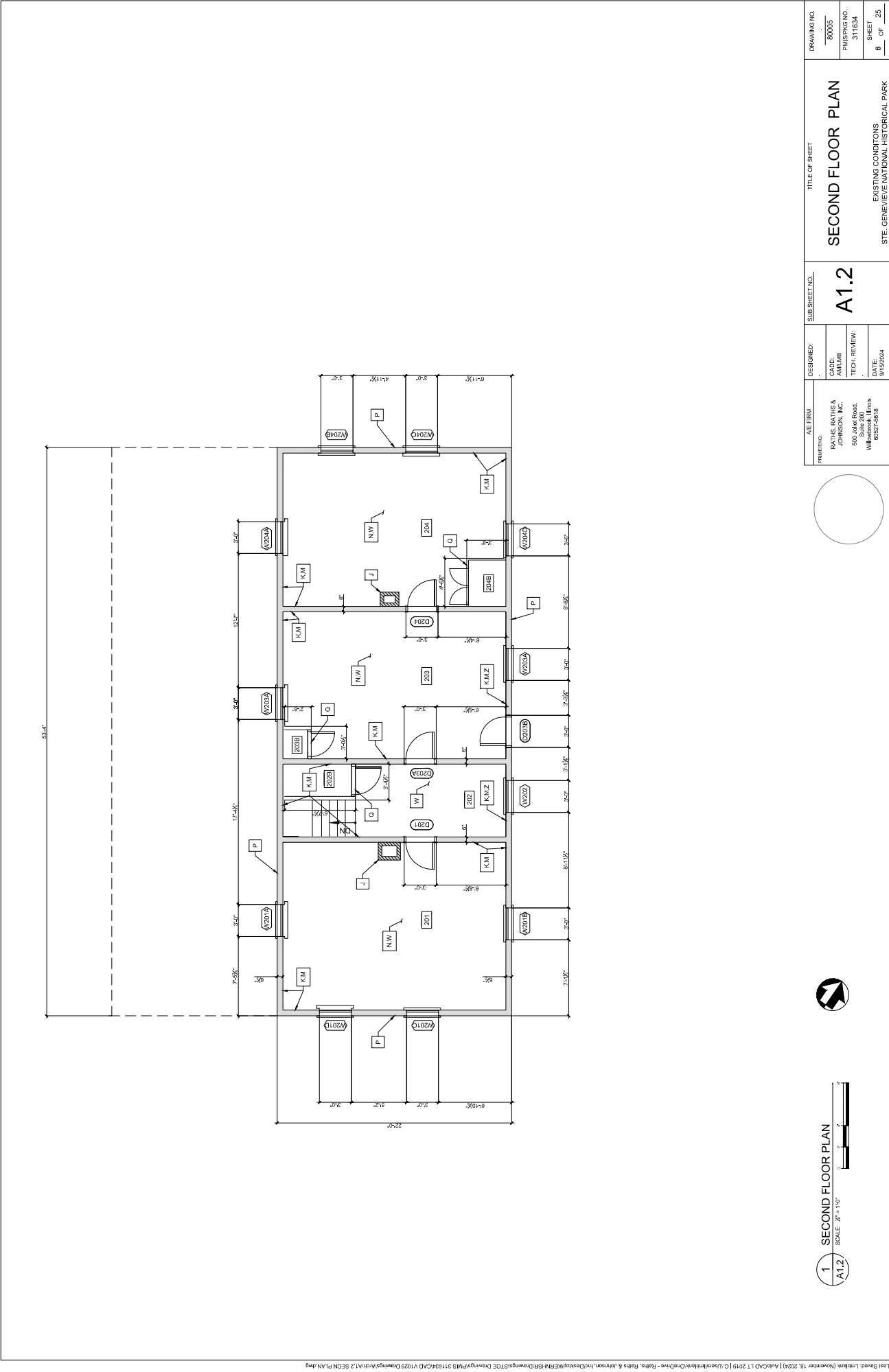


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B.	a. 1793 / c. 1838 STONE MASONRY PIER
C.	c. 1793 / c. 1838 STONE MASONRY CHIMNEY
D.	e. 1793 / c. 1838 VERTICAL LOG WALL
E.	c. 1793 / c. 1838 LOG FLOOR FRAMING
F.	c. 1793 / c. 1838 WOOD LATH
G.	c. EXPOSED VERTICAL LOGS
H.	PRE-1903 WINDOW SASH
I.	PRE-1903 CASING AND TRIM
J.	1903 BRICK MASONRY CHIMNEY
K.	1903 DIMENSION LUMBER WALL
L.	1903 DIMENSION LUMBER FLOOR FRAMING
M.	1903 PLASTER, WITH MINOR LATER ALTERATIONS
N.	1903 CASING AND TRIM
O.	CONCRETE LANDING, 20TH CENTURY
P.	PAINTED WOOD SIDING, 20TH CENTURY
Q.	BUILT-IN CLOSETS, 20TH CENTURY
R.	POST-2000 DIMENSION LUMBER KNEE WALL REPAIR
S.	c. 2018 STANDING-SEAM METAL ROOFING
T.	c. 2018 HALF-ROUND GUTTER WITH DOWNSPOUTS
U.	2002 SHORING AND BRACING
V.	2002 SHORING AND BRACING
W.	HARDWOOD FLOORING, DATE UNDETERMINED
X.	SOL
Y.	DEMOLISHED OR MISSING
Z.	DETERIORATED

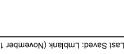
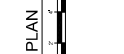
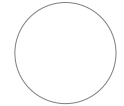
LEGEND:	
	STONE MASONRY
	BRICK MASONRY
	TIMBERLOG FRAME
	DIMENSION LUMBER
	CONCRETE
	WINDOW DESIGNATION
	ROOF DESIGNATION
	DOOR DESIGNATION
	KEY NOTE

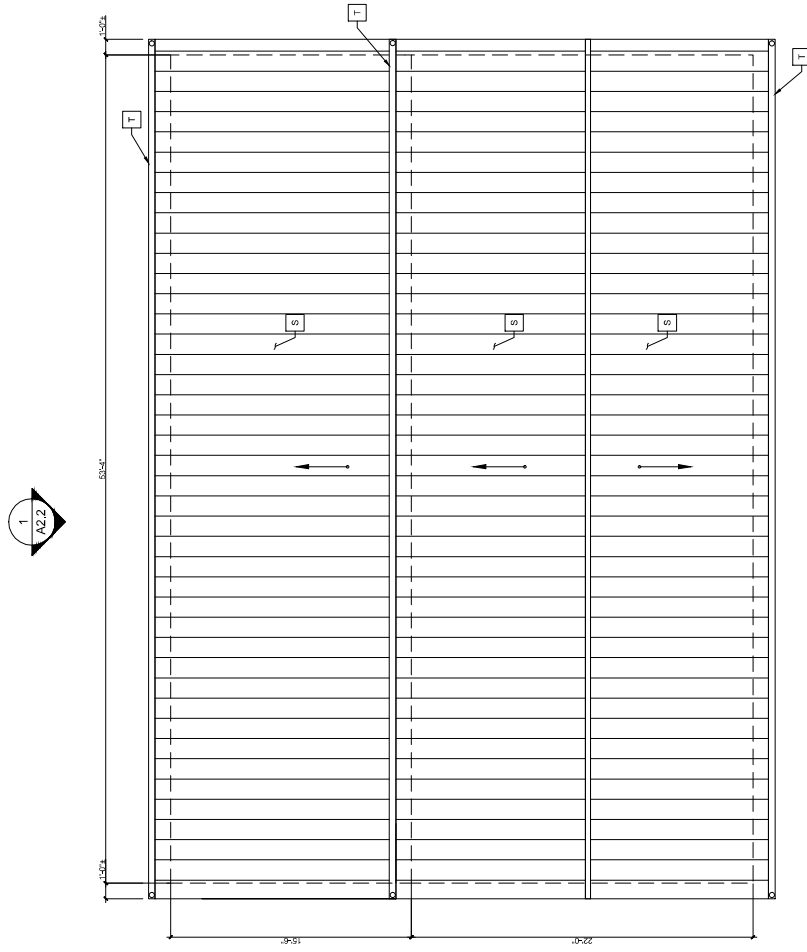
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RAYING & CIVIL & JOHNSON, INC.		TECH. REVIEW			PAPERING NO. 311634
500 John Road, Suite 200 Wilmette, Illinois 60097-9818		DATE: 8/15/2024			SHEET # 4 OF 25
EXISTING CONDITIONS HISTORICAL DATA SITE GENERATE NEW DATA HISTORICAL DATA					





DRAWING NO. 80005	TITLE OF SHEET SECOND FLOOR PLAN	
	SUB SHEET NO. A1.2	
DESIGNED: CADD: TECH. REVIEW: DATE:	RATHS, RATHS & JOHNSON, INC. 190 Joliet Road, Suite 202 Winchester, MA 01890	EXISTING CONDITIONS STE. GENEVIEVE NATIONAL HISTORICAL PARK
SHEET 8 OF 25		





SHEET NOTES:

- | | |
|----|--|
| A. | c. 1793 / c. 1836 STONE MASONRY WALL |
| B. | c. 1793 / c. 1836 STONE MASONRY PIER |
| C. | c. 1793 / c. 1836 STONE MASONRY CHIMNEY |
| D. | c. 1793 / c. 1836 VERTICAL LOG WALL |
| E. | c. 1793 / c. 1836 LOG FLOOR FRAMING |
| F. | c. 1793 / c. 1836 WOOD LATH |
| G. | EXPOSED VERTICAL LOGS |
| H. | PRE-1903 WINDOW SASH |
| I. | PRE-1903 CASING AND TRIM |
| J. | PRE-1903 BRICK MASONRY CHIMNEY |
| K. | 1903 DIMENSION LUMBER WALL |
| L. | 1903 DIMENSION LUMBER FLOOR FRAMING |
| M. | 1903 PLASTER, WITH MINOR LATER ALTERATIONS |
| N. | 1903 CASING AND TRIM |
| O. | CONCRETE LANDING, 20TH CENTURY |
| P. | BUILT-UP WOOD SIDING, 20TH CENTURY |
| Q. | PAINTED WOOD CEILING, 20TH CENTURY |
| R. | POST-2000 DIMENSION LUMBER KNEE WALL, REPAIR |
| S. | POST-2000 DIMENSION LUMBER KNEE WALL, REPAIR |
| T. | c. 2016 STANDING-SEAM METAL ROOFING |
| U. | c. 2016 HALF-ROUND GUTTER WITH DOWNSPOUTS |
| V. | 2022 SHORING AND BRACING |
| W. | 2023 SHIPING AND BRACING |
| X. | HARDWOOD FLOORING, DATE UNDETERMINED |
| Y. | SOIL |
| Z. | DEMOLISHED OR MISSING |
| | DETERIORATED |

LEGEND:

	ROOM DESIGNATION		STONE MASONRY
	WINDOW DESIGNATION		BRICK MASONRY
	DOOR DESIGNATION		TIMBERLOG FRAME
	KEY NOTE		DIMENSION LUMBER
			CONCRETE

1 ROOF PLAN
A1.3 SCALE: 1/8" = 1'-0"

 $\frac{7c}{11 \cdot 0}$ 

SUB SHEET NO. **A1.3**

DESIGNED:	
CADD:	AMILMB
TECH. REVIEW:	
DATE:	9/15/2024

PRIME/ENG:	A/E FIRM RATHS, RATHS & JOHNSON, INC. 500 Joliet Road, Suite 200 Willowbrook, Illinois 60527-6618
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TITLE OF SHEET

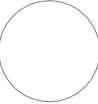
ROOF PLAN

EXISTING CONDITIONS
STE. GENEVIEVE NATIONAL HISTORICAL PARK

DRAWING NO.

$$\frac{.}{80005}$$

7 OF 25 SHEET



A/E FIRM RATHIS, RATHIS & JOHNSON, INC. 1900 Jullier Road, Suite 200 Winnetka, IL 60093 847.227.5618	DESIGNED: CAD: AM/LMB TECH: REVIEW:
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SUB SHEET NO. A2.0	DATE: 9/15/2024
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EXISTING CONDITIONS STE. GENEVIEVE NATIONAL HISTORICAL PARK	PAPER NO. 311834
SHEET B OF 25	

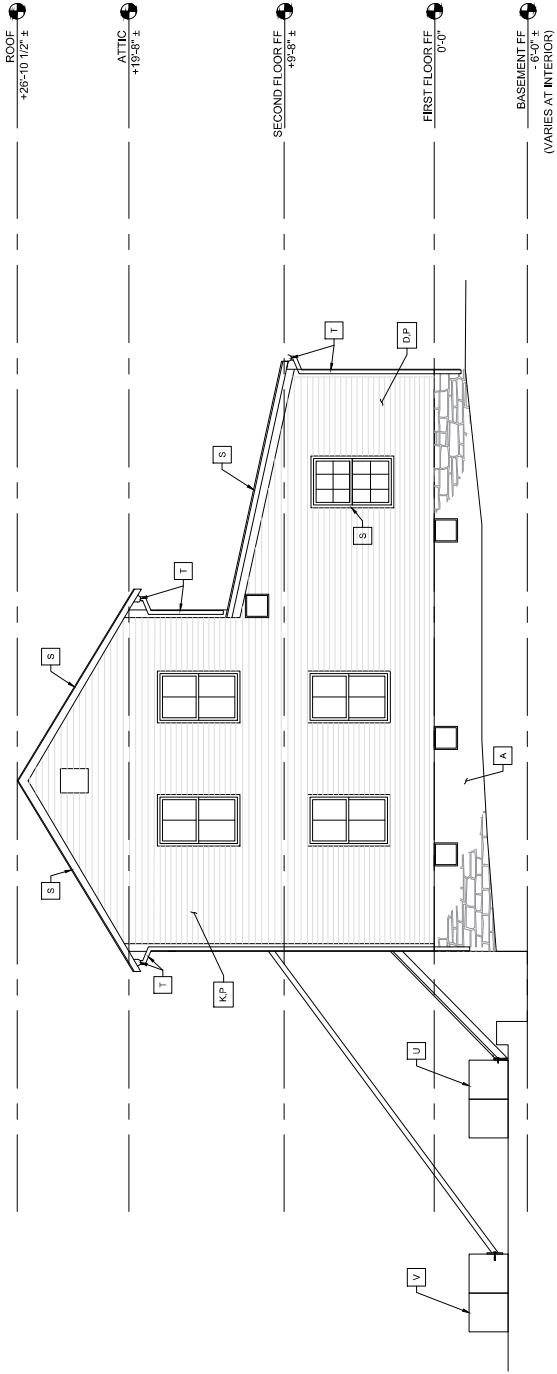


SHEET NOTES:

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- B. c. 1793 / c. 1838 STONE MASONRY PIER
- C. c. 1793 / c. 1838 STONE MASONRY CHIMNEY
- D. c. 1793 / c. 1838 VERTICAL LOG WALL
- E. c. 1793 / c. 1838 LOG FLOOR FRAMING
- F. c. 1793 / c. 1838 WOOD LATH
- G. EXPOSED VERTICAL LOGS
- H. PRE-1903 WINDOW SASH
- I. PRE-1903 CASING AND TRIM
- J. 1903 BRICK MASONRY CHIMNEY
- K. 1903 DIMENSION LUMBER FLOOR WALL
- L. 1903 DIMENSION LUMBER FLOOR FRAMING
- M. 1903 PLASTER, WITH MINOR LATER ALTERATIONS
- N. 1903 CASING AND TRIM
- O. CONCRETE LANDING, 20TH CENTURY
- P. PAINTED WOOD SIDING, 20TH CENTURY
- Q. BUILT-IN CLOSETS, 20TH CENTURY
- R. POST-2000 DIMENSION LUMBER KNEE WALL REPAIR
- S. c. 2016 STANDING-SEAM METAL ROOFING
- T. c. 2016 HALF-ROUND GUTTER WITH DOWNSPOUTS
- U. 2022 SHORING AND BRACING
- V. 2023 SHORING AND BRACING
- W. HARDWOOD FLOORING, DATE UNDETERMINED
- X. SOIL
- Y. DEMOLISHED OR MISSING
- Z. DETERIORATED

LEGEND:

- | | |
|---|------------------|
|  | STONE MASONRY |
|  | BRICK MASONRY |
|  | TIMBER/LOG FRAME |
|  | DIMENSION LUMBER |
|  | CONCRETE |
-
- | | |
|---|--------------------|
|  | ROOM DESIGNATION |
|  | WINDOW DESIGNATION |
|  | DOOR DESIGNATION |
|  | KEY NOTE |

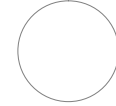


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- D. c. 1793 / c. 1838 VERTICAL LOG WALL
- E. c. 1793 / c. 1838 LOG FLOOR FRAMING
- F. c. 1793 / c. 1838 WOOD LATH
- G. EXPOSED VERTICAL LOGS
- H. PRE-1903 WINDOW SASH
- I. PRE-1903 CASING AND TRIM
- J. 1903 BRICK MASONRY CHIMNEY
- K. 1903 DIMENSION LUMBER WALL
- L. 1903 DIMENSION LUMBER FLOOR FRAMING
- M. 1903 PLASTER, WITH MINOR LATER ALTERATIONS
- N. 1903 CASING AND TRIM
- O. CONCRETE LANDING, 20TH CENTURY
- P. PAINTED WOOD SIDING, 20TH CENTURY
- Q. BUILT-IN CLOSETS, 20TH CENTURY
- R. POST-2000 DIMENSION LUMBER KNEE WALL REPAIR
- S. c. 2016 STANDING-SEAM METAL ROOFING
- T. c. 2016 HALF-ROUND GUTTER WITH DOWNSPOUTS
- U. 2022 SHORING AND BRACING
- V. 2023 SHORING AND BRACING
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- X. SOIL
- Y. DEMOLISHED OR MISSING
- Z. DETERIORATED

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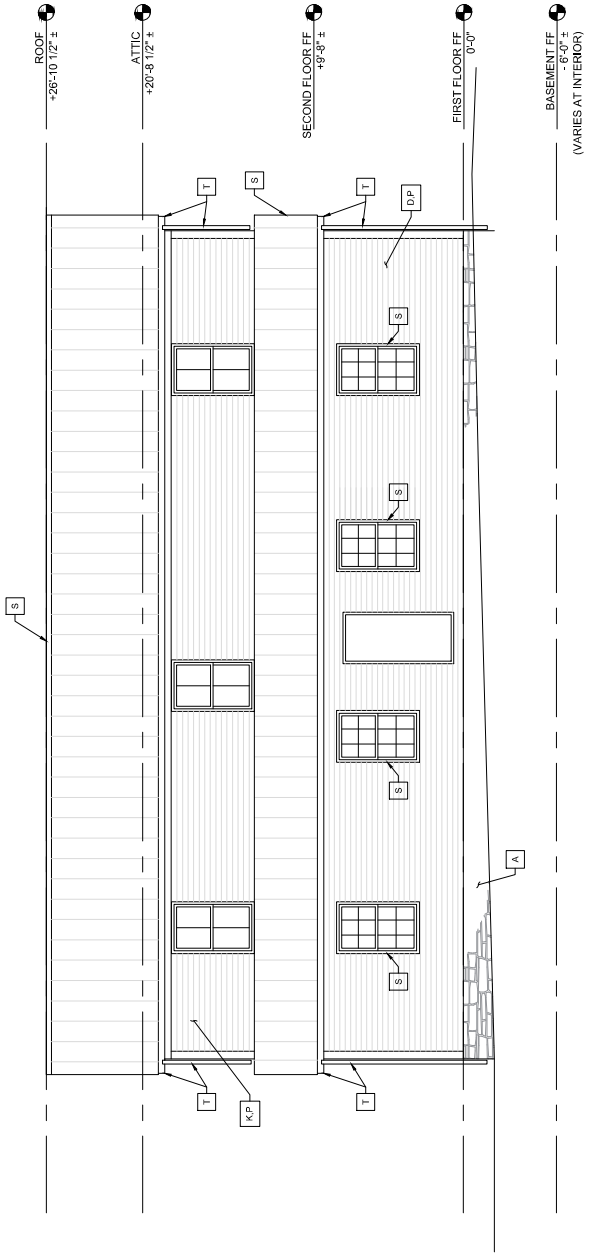
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|--|--------------------|--|------------------|
| | ROOM DESIGNATION | | STONE MASONRY |
| | WINDOW DESIGNATION | | BRICK MASONRY |
| | DOOR DESIGNATION | | TIMBER/LOG FRAME |
| | KEY NOTE | | DIMENSION LUMBER |
| | | | CONCRETE |



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DRAWING NO.	80005
PAPER/PG. NO.	311834
SHEET	8 OF 25

EXISTING CONDITIONS
STE. GENEVIEVE NATIONAL HISTORICAL PARK



SHEET NOTES:

- A. c. 1793 / c. 1838 STONE MASONRY WALL
- B. c. 1793 / c. 1838 STONE MASONRY PIER
- C. c. 1793 / c. 1838 STONE MASONRY CHIMNEY
- D. c. 1793 / c. 1838 VERTICAL LOG WALL
- E. c. 1793 / c. 1838 LOG FLOOR FRAMING
- F. c. 1793 / c. 1838 WOOD LATH
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- Q. BUILT-IN CLOSETS, 20TH CENTURY
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- U. 2022 SHORING AND BRACING
- V. 2023 SHORING AND BRACING
- W. HARDWOOD FLOORING, DATE UNDETERMINED
- X. SOIL
- Y. DEMOLISHED OR MISSING
- Z. DETERIORATED

LEGEND:

	STONE MASONRY
	BRICK MASONRY
	TIMBER/LOG FRAME
	DIMENSION LUMBER
	CONCRETE

1

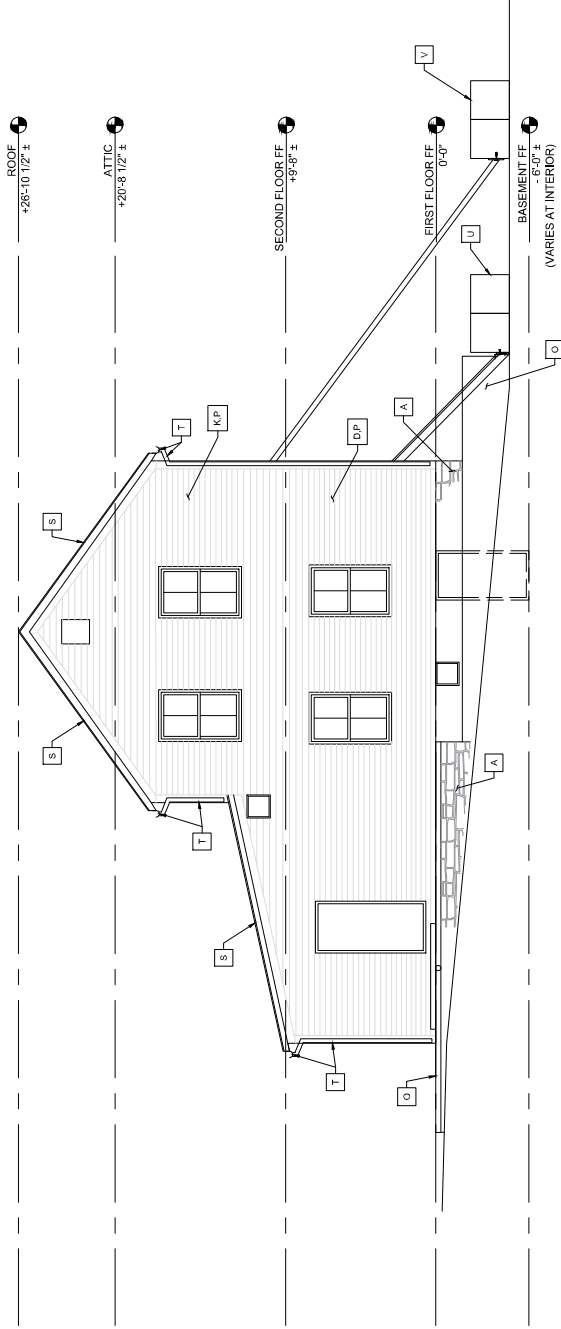
WEST ELEVATION

SCALE: 1/4" = 1'-0"

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DRAWING NO.	80005
PAPER NO.	311834
SHEET	10 OF 25

EXISTING CONDITIONS
STE. GENEVIEVE NATIONAL HISTORICAL PARK



SHEET NOTES:

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- B. c. 1793 / c. 1838 STONE MASONRY PIER
- C. c. 1793 / c. 1838 STONE MASONRY CHIMNEY
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- J. 1903 BRICK MASONRY CHIMNEY
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- M. 1903 PLASTER, WITH MINOR LATER ALTERATIONS
- N. 1903 CASING AND TRIM
- O. CONCRETE LANDING, 20TH CENTURY
- P. PAINTED WOOD SIDING, 20TH CENTURY
- Q. BUILT-IN CLOSETS, 20TH CENTURY
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- S. c. 2016 STANDING-SEAM METAL ROOFING
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- U. 2022 SHORING AND BRACING
- V. 2023 SHORING AND BRACING
- W. HARDWOOD FLOORING, DATE UNDETERMINED
- X. SOIL
- Y. DEMOLISHED OR MISSING
- Z. DETERIORATED

LEGEND:

	ROOM DESIGNATION		STONE MASONRY
	WINDOW DESIGNATION		BRICK MASONRY
	DOOR DESIGNATION		TIMBER/LOG FRAME
	KEY NOTE		DIMENSION LUMBER
			CONCRETE



1 SOUTH ELEVATION

A2.3

AE FIRM	DESIGNED:	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
PRIMEERING: RATHS, RATHS & JOHNSON, INC. 1900 Jellie Road, Suite 200 Winchester, MA 01890	CADD: AMMB TECH: REVIEW DATE: 9/15/2024	A2.3	SOUTH ELEVATION	80005

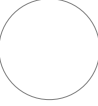
EXISTING CONDITIONS
STE. GENEVIEVE NATIONAL HISTORICAL PARK

SHEET
11 OF 25

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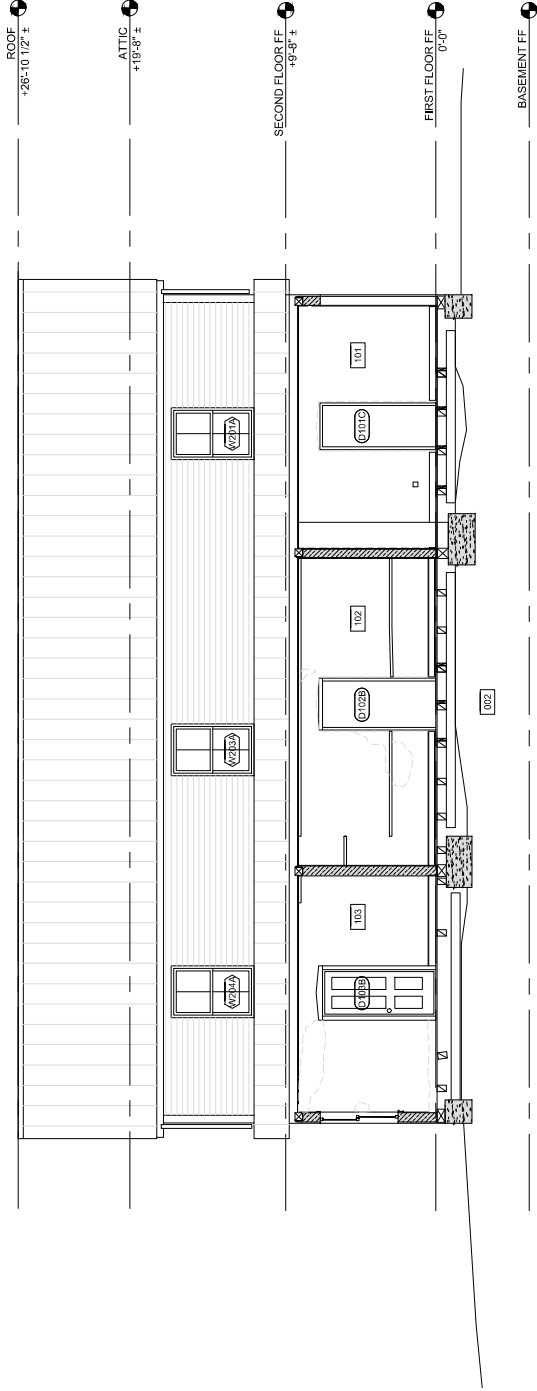
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BUILDING SECTION - LOOKING EAST
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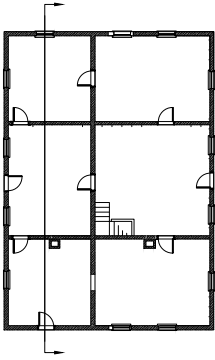


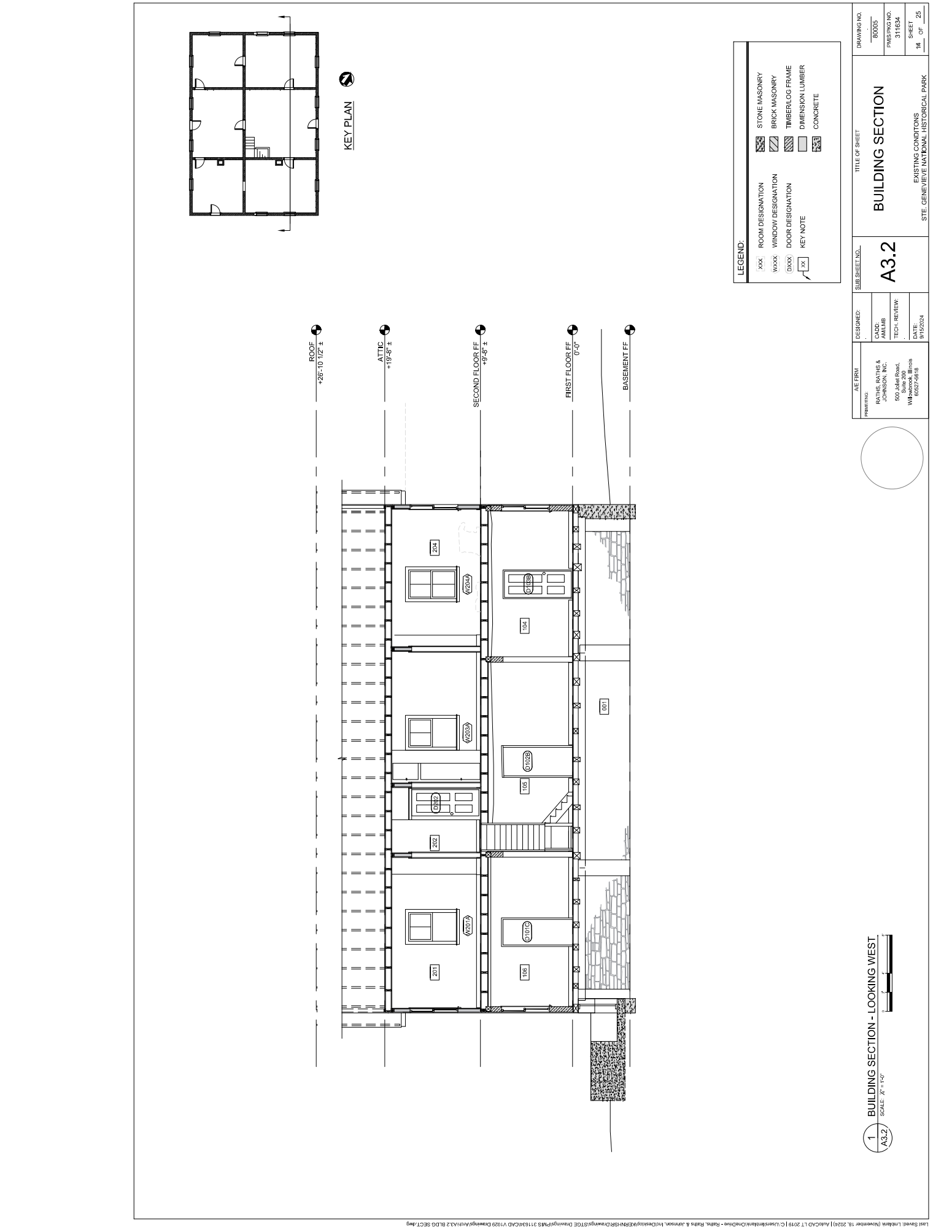
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PAPERING NO. 317834		EXISTING NATIONAL HISTORICAL PARK STE. GENEVIEVE NATIONAL HISTORICAL PARK					
SUB SHEET NO. A3.1		DESIGNED: AVE FIRM RATHS, RATHS & JOHNSON, INC. 1900 Juliet Road, Suite 200 Winchmore, Illinois 60187-0247				CADD: AMMB TECH. REVIEW: DATE: 9/15/2024	

LEGEND:	
XXX	ROOM DESIGNATION
XXXX	WINDOW DESIGNATION
XXXX	DOOR DESIGNATION
XX	KEY NOTE
	STONE MASONRY
	BRICK MASONRY
	TIMBER/LOG FRAME
	DIMENSION LUMBER
	CONCRETE



KEY PLAN





DRAWING NO. 80005		BUILDING SECTION		DRAWING NO. 311834		SHEET 14 OF 25	
SUB SHEET NO.		A3.2		EXISTING CONDITIONS		STE. GENEVIEVE NATIONAL HISTORICAL PARK	
DESIGNED:		CADD:		TECH. REVIEW:		DATE:	
AE FIRM		RATHS, RATHS & JOHNSON, INC.		500 Jullien Road, Suite 202		Waukegan, IL 60078	
PRIMER:		RATHS, RATHS & JOHNSON, INC.		500 Jullien Road, Suite 202		Waukegan, IL 60078	
TITLE OF SHEET		BUILDING SECTION		EXISTING CONDITIONS		STE. GENEVIEVE NATIONAL HISTORICAL PARK	
LEGEND:		ROOM DESIGNATION		STONE MASONRY		BRICK MASONRY	
WINDOW DESIGNATION		DOOR DESIGNATION		TIMBER/LOG FRAME		DIMENSION LUMBER	
KEY NOTE		CONCRETE					

1 BUILDING SECTION - LOOKING WEST SCALE: 1/8" = 1'-0"

KEY PLAN

ROOF +26'-10 1/2" ±

ATTIC +19'-4" ±

SECOND FLOOR FF +9'-4" ±

FIRST FLOOR FF 0'-0" ±

BASEMENT FF

201 202 203 204

101 102 103 104

1001

1002

1003

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1005

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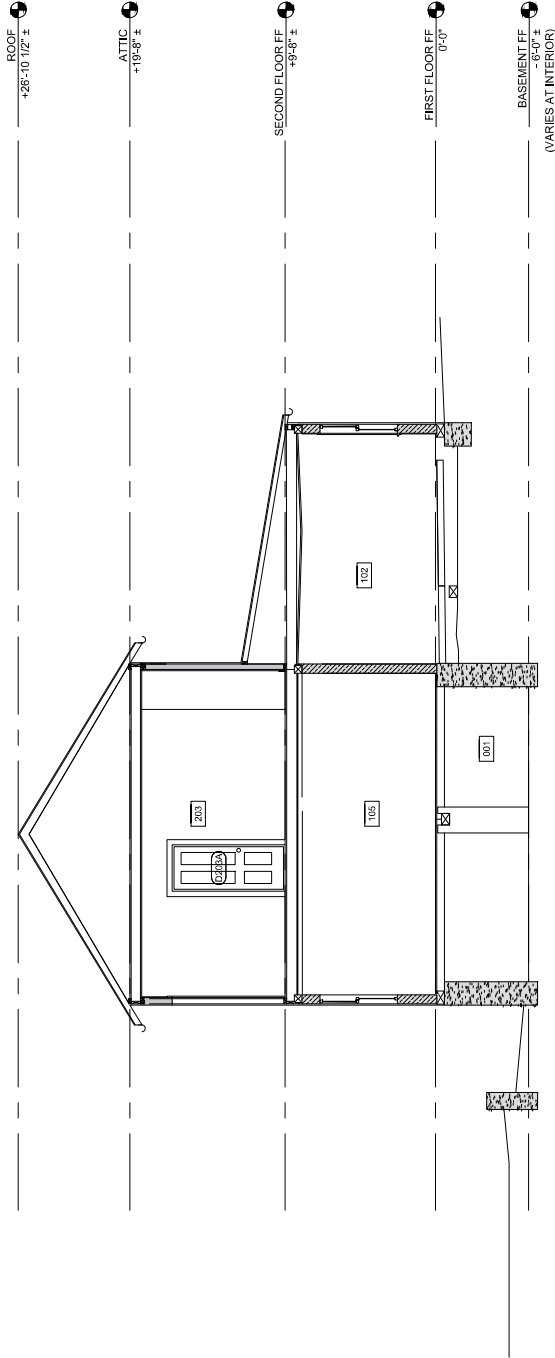
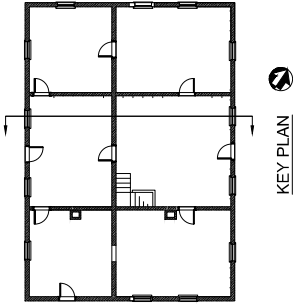
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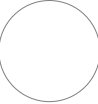
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LEGEND:			
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WXXX	WINDOW DESIGNATION	BRICK MASONRY	
DXXX	DOOR DESIGNATION	TIMBER/LOG FRAME	
XX	KEY NOTE	DIMENSION LUMBER	
		CONCRETE	



DESIGNED:		SUB SHEET NO.		TITLE OF SHEET	
A/E FIRM		DRAWING NO.		BUILDING SECTION	
PRIMEING:		CADD:		A3.6	
RATHS, RATHS & JOHNSON, INC.		AM/LMB		EXISTING CONDITIONS	
100 Jellie Road,		TECH. REVIEW:		STE. GENEVIEVE NATIONAL HISTORICAL PARK	
Suite 203		DATE:		18 OF 25	
Winchester, MA 01890		9/15/2024			



AE FIRM	DESIGNED:	SUB SHEET NO.	TITLE OF SHEET
PRIMING: RATHS, RATHS & JOHNSON, INC. 1900 Jellie Road, Suite 200 Winlock, TN 38591 615.227.5468	CADD: AMMB TECH: REVIEW		
	DATE:		
	9/15/2024		

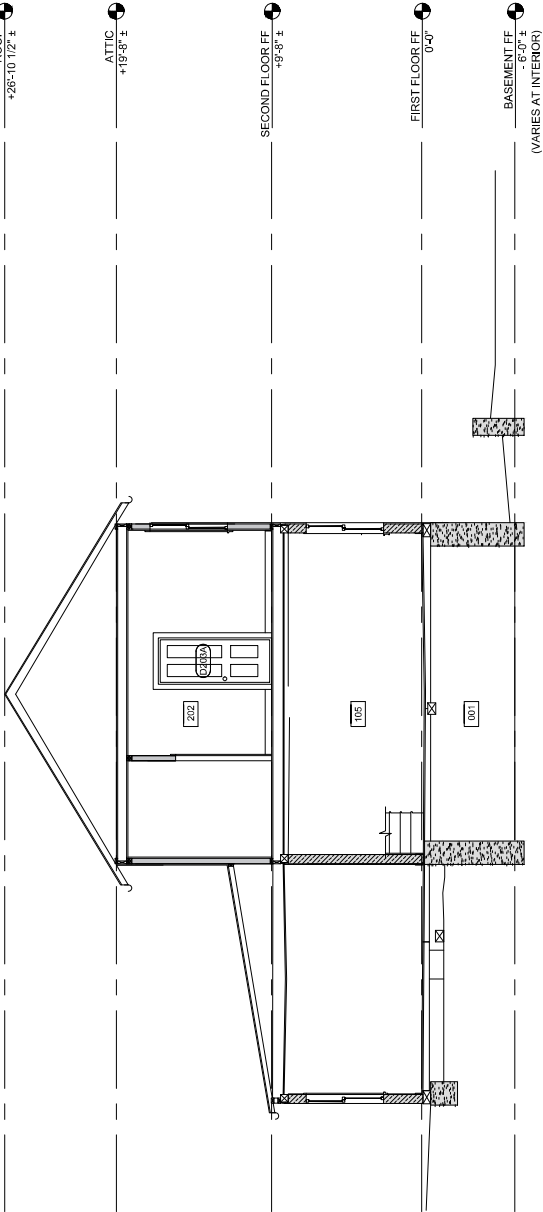
DRAWING NO.	80005
PAPER NO.	311834
SHEET	21 OF 25

BUILDING SECTION

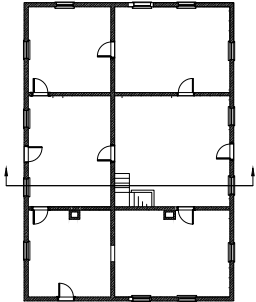
A3.9

EXISTING CONDITIONS
STE. GENEVIEVE NATIONAL HISTORICAL PARK

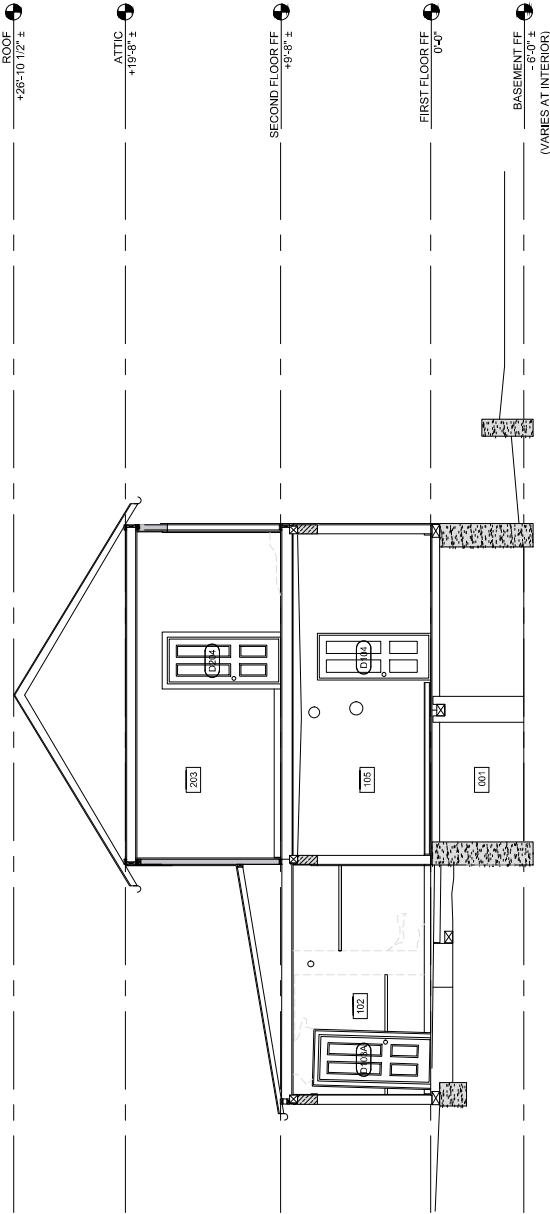
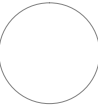
LEGEND:	
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WXXX	WINDOW DESIGNATION
DXXX	DOOR DESIGNATION
XX	KEY NOTE
	STONE MASONRY
	BRICK MASONRY
	TIMBER/LOG FRAME
	DIMENSION LUMBER
	CONCRETE



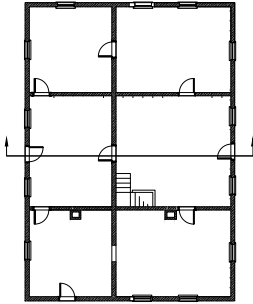
KEY PLAN



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A3.10
BUILDING SECTION - LOOKING NORTH
SCALE: 1/4" = 1'-0"



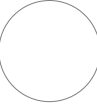
KEY PLAN



LEGEND:	
XXX	ROOM DESIGNATION
XXXX	WINDOW DESIGNATION
XXXX	DOOR DESIGNATION
XX	KEY NOTE
	STONE MASONRY
	BRICK MASONRY
	TIMBER/LOG FRAME
	DIMENSION LUMBER
	CONCRETE

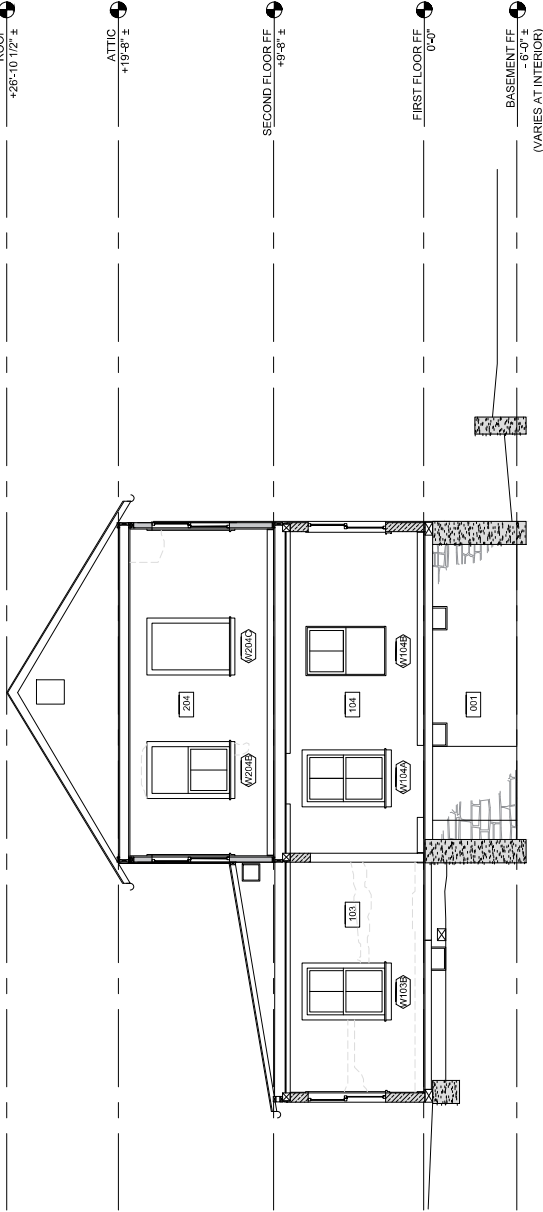
DRAWING NO. 80005		TITLE OF SHEET BUILDING SECTION		DRAWING NO. 311834		SHEET 22 OF 25	
SUB SHEET NO. A3.10		EXISTING CONDITIONS		STE. GENEVIEVE NATIONAL HISTORICAL PARK			
DESIGNED: RATHIS, RATHIS & JOHNSON, INC. 100 Jellie Road, Suite 202, Winlock, UT 84601		CADD: AMMB		TECH. REVIEW:		DATE: 9/15/2024	

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 A3.11
 BUILDING SECTION - LOOKING NORTH
 SCALE: 1/8" = 1'-0"

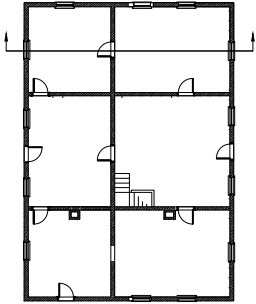


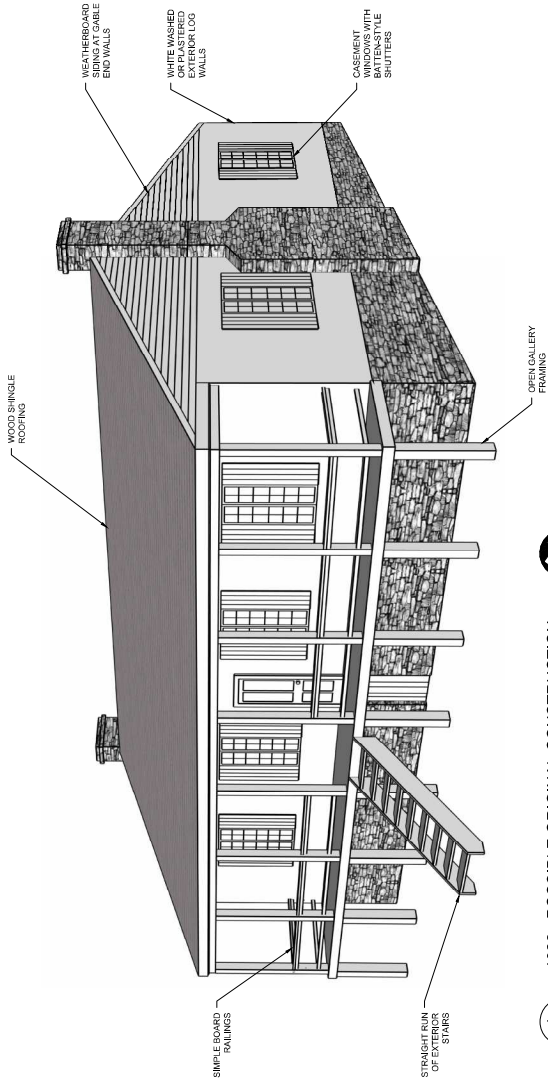
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PRIMEERING	RATHS, RATHS & JOHNSON, INC.	A3.11	BUILDING SECTION	80005
CADD: AMMB	TECH: REVIEW			31153
DATE: 9/15/2024				

LEGEND:	ROOM DESIGNATION	STONE MASONRY
XXXX	WINDOW DESIGNATION	BRICK MASONRY
XXXX	DOOR DESIGNATION	TIMBER/LOG FRAME
XX	KEY NOTE	DIMENSION LUMBER
		CONCRETE

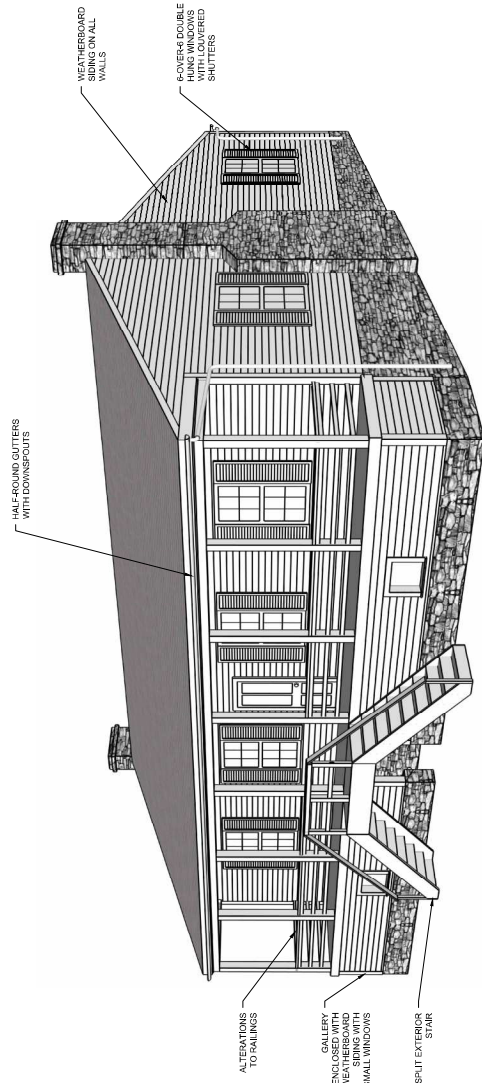


KEY PLAN

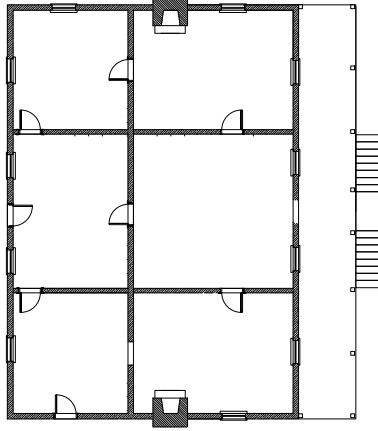
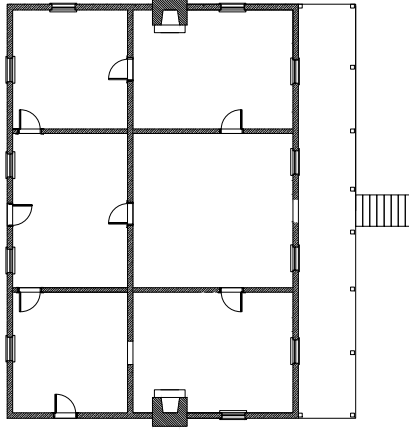




1 c. 1836 - POSSIBLE ORIGINAL CONSTRUCTION
A4.0 SCALE: N.T.S.

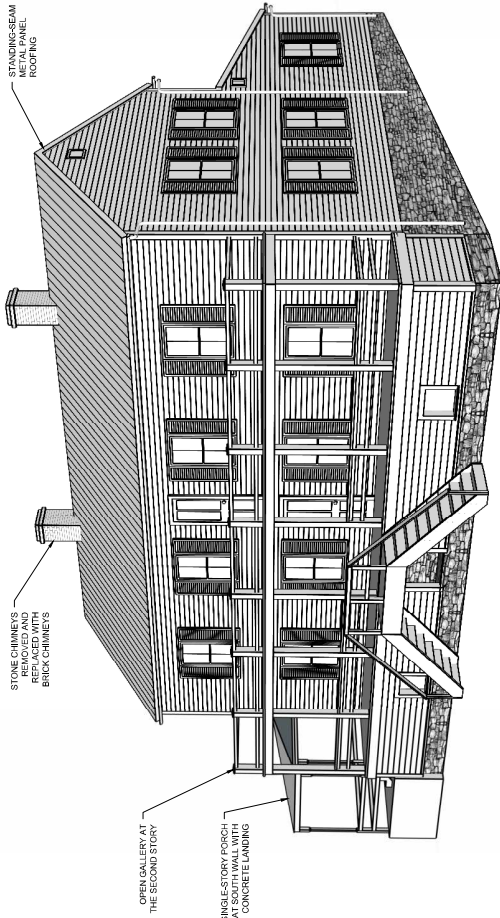


2 MID-19TH CENTURY EXTERIOR ALTERATIONS
A4.0 SCALE: N.T.S.

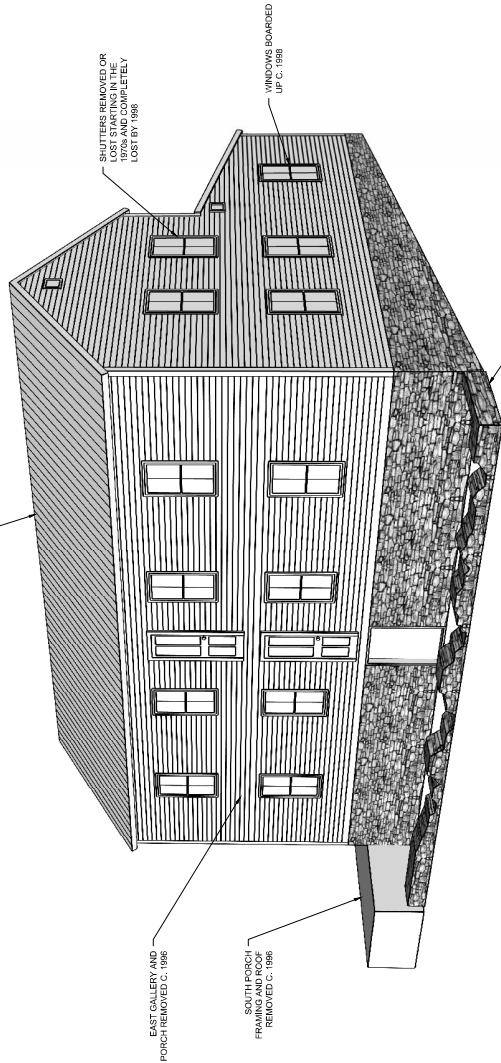


PROJECT: RATHS, RATHS & JOHNSON, INC. 100 Julliet Road, Suite 200 Waukegan, IL 60087	DESIGNED: CADD: AMMB TECH: REVIEW: DATE: 9/15/2024	SUB SHEET NO. A4.0	TITLE OF SHEET PERIOD PLANS	DRAWING NO. 80005
				PAPER NO. 311834
				SHEET 24 OF 25

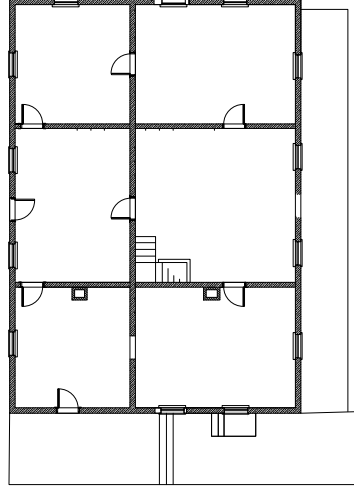
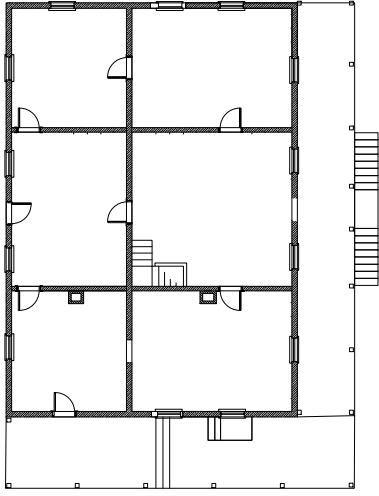
EXISTING CONDITIONS
STE. GENEVIEVE NATIONAL HISTORICAL PARK



1 1903 - SECOND STORY CONSTRUCTION
A4.1 SCALE: N.T.S.



2 POST-1993 FLOOD ALTERATIONS
A4.1 SCALE: N.T.S.



PRIMER:		AE FIRM:	DESIGNED:	SUB SHEET NO.	TITLE OF SHEET		DRAWING NO.	
RATHS, RATHS & JOHNSON, INC.			CADD:	A4.1	PERIOD PLANS		80005	
100 Jolie Road,			AMLMB					
Salem 200			TECH. REVIEW					
Winchester, Mass 01890-5016			DATE:	EXISTING CONDITIONS				PAPERING NO.
			9/15/2024	STE. GENEVIEVE NATIONAL HISTORICAL PARK				311634
								SHEET
								26 OF 25

Appendix B:

Historic Photographs



Figure 1. The earliest known photograph of the Delassus-Kern House, c. 1895, before the addition of the second story, with members of the Kern Family. Note the gabled roof shape and the single gallery or porch on the front. The chimneys are brick, and the position of the chimneys in relation to the roof ridge suggests that the first floor is two rooms deep. (Source: MoDNR Felix Vallé House archives.)



Figure 2. Undated (possibly 1910s) photograph of the rear west side of the house, showing the shed roof over the kitchen door and the new brick masonry chimneys. (Source: MoDNR Felix Vallé House archives.)

Delassus-Kern House Historic Structure Report



Figure 3. An undated (possibly 1910s) photograph of the Delassus-Kern House property looking northwest, possibly taken from one of the large trees in front of the house. The shadow of the house in the lower left indicates this is after the construction of the second story. The outbuilding at lower left is a shed of undetermined use, and the building at upper right is the stable or barn; neither building is extant. (Source: MoDNR Felix Vallé House archives)



Figure 4. Undated photograph of the property, possibly looking west at the bluff, showing the post and rail fencing, turkeys, and possibly chickens. (Source: MoDNR Felix Vallé House archives.)



Figure 5. Undated photograph of the property (possibly 1910s), looking east, showing a shed in the foreground (perhaps the location of the Utility Shed, now missing) and a barn or shed (no longer extant) in the right background on the east side of the road (now US-61). (Source: MoDNR Felix Vallé House archives.)



Figure 6. Undated photograph of the House (possibly 1910s), likely of Nettie and Katherine Kern, standing in front of the east porch, which was enclosed with siding and windows; the stone wall is today in ruins and the porch has been removed. (Source: MoDNR Felix Vallé House archives.)

Delassus-Kern House Historic Structure Report



Figure 7. Undated photograph of the property (possibly 1910s), standing in front of the house and looking north, showing the horse stable or barn from Figure 3 in the left background. Note the wood agricultural fences in the barnyard area and the ornamental wire fences around the house lawn. (Source: MoDNR Felix Vallé House archives.)



Figure 8. Undated photograph of the property, possibly to the south and west of the house, showing agricultural fields planted with corn. (Source: MoDNR Felix Vallé House archives.)



Figure 9. Undated photograph of the property, looking east along the north fence. The hay storage was located north of the stable or barn visible in Figure 3. (Source: MoDNR Felix Vallé House archives.)



Figure 10. Undated photograph of the property (possibly 1910s or 1920s), with the Kern Family, showing an outbuilding or shed, possibly looking west or northwest from the yard. This building is no longer extant. Note the post and wire fence enclosing a garden or livestock area in the lower right background. (Source: MoDNR Felix Vallé House archives.)

Delassus-Kern House Historic Structure Report



Figure 11. Undated photograph of the property (possibly 1900s or 1910s), with the Kern Family, looking at the west exterior wall of the house and the backdoor, showing louvered shutters and a screen door. A small wood-framed platform was present outside the door that is now missing. (Source: MoDNR Felix Vallé House archives.)



Figure 12. Undated photograph of the barnyard (possibly 1920s), likely of Nettie Kern, with the large barn or stable in the left background and the haystack in the middle background. The shelter to the right may be the edge of the corn crib or another outbuilding. The Kerns appeared to have had horses, cows, and possibly mules. (Source: MoDNR Felix Vallé House archives.)



Figure 13. Undated photograph of the property (possibly 1920s), showing a small barn on the east side of the road. This photograph may date to before the 1920s improvements New Bourbon Road (now US-61). (Source: MoDNR Felix Vallé House archives.)

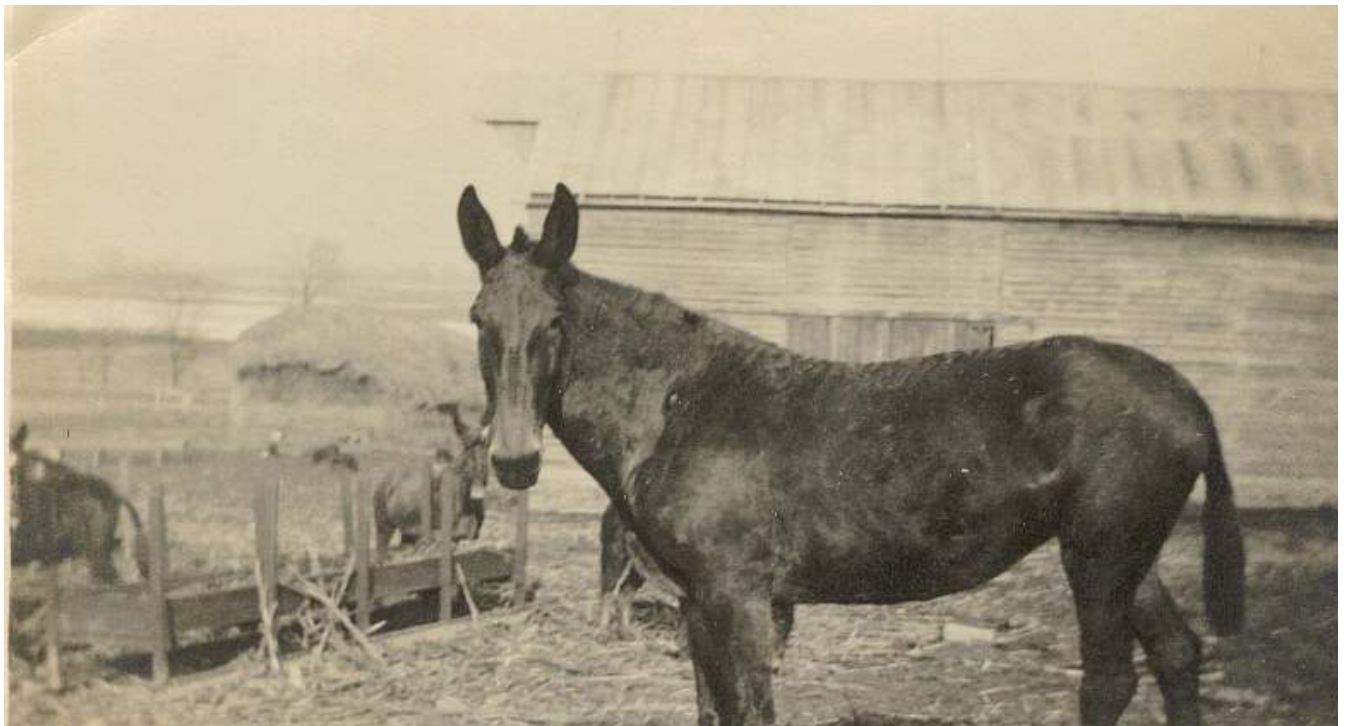


Figure 14. Undated photograph of the barnyard (possibly 1910s or 1920s), showing the west side of the barn (Source: MoDNR Felix Vallé House archives.)

Delassus-Kern House Historic Structure Report



Figure 15. An undated (possibly 1920s) photograph of the south side of the house from the cultivated field. Note the barn or stable (no longer extant) at right of the house and the roofline of the large stable just to the left of the house. The man in the hat appears to be August Kern. (Source: MoDNR Felix Vallé House archives)

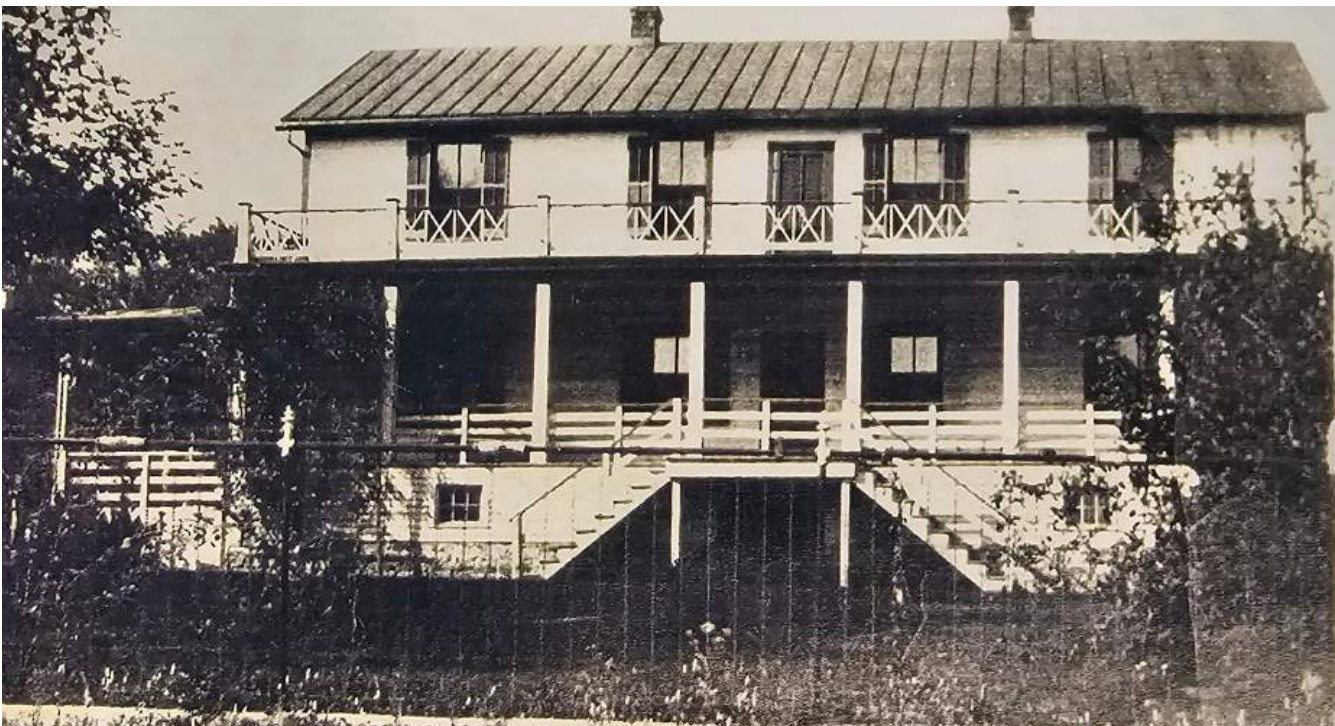


Figure 16. Undated photograph of the house (possibly 1950s), showing the double-height east porch with upper gallery and the split stair. (Source: MoDNR Felix Vallé House archives.)



Figure 17. 1976 aerial photograph of the property, showing from left (south) to right (north): Chicken House, Main House, Wood Shed (barely visible), Utility Shed (demolished), Corn Crib, Barn (demolished), and livestock pond (infilled). Note the trees in the lawn and the extension of the drive up the bluff and to the south. (Source: Vintage Aerials)



Figure 18. 1985 view of the main house, showing large trees in the yard and the east and south porches still intact. (Source: HABS)

Delassus-Kern House Historic Structure Report



Figure 19. 1985 view of the main house, showing large trees in the yard and the east and south porches still intact (Source: HABS)



Figure 20. 1985 view of the main house, showing large trees in the yard and the east and south porches still intact. (Source: HABS)



Figure 21. 1985 view of the west (rear) wall of the house. (Source: HABS)



Figure 22. 1985 view of the south wall of the main house, showing the south porch and screened-in area next to the kitchen door. Note the pump housing on the southeast cistern (Source: HABS)



Figure 23. 1985 view looking west of the interior of the screened-in porch next to the kitchen door, showing the cistern with no pump. (Source: HABS)



Figure 24. 1985 photograph of the basement, showing the historic wine press (now stored in the Ste. Genevieve NHP headquarters). (Source: HABS)



Figure 25. 1985 photograph of the northwest corner of Room 103, showing the vertical logs and pierrotage behind the plaster.. (Source: HABS)

Delassus-Kern House Historic Structure Report



Figure 26. The east exterior in 1990, showing continued deterioration of the exterior. (Source: Volz and Associates, "Pierre Delassus de Luziere House (Kern House) Condition Assessment Report").



Figure 27. 2000 photograph of the east porch stairs; note that the left flight is now missing. (Source: Volz and Associates, "Pierre Delassus de Luziere House (Kern House) Condition Assessment Report").



Figure 28. The south exterior wall in 1990, showing continued deterioration of the exterior. (Source: Volz and Associates, "Pierre Delassus de Luziere House (Kern House) Condition Assessment Report").



Figure 29. 2000 photograph of the west exterior, showing the deterioration and deformation of the sill plate in Rooms 101 and 102 prior to the stud wall repairs. (Source: Volz and Associates, "Pierre Delassus de Luziere House (Kern House) Condition Assessment Report").

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Figure 30. A photograph taken in 1993 after the Great Flood, looking slightly southwest from the Common Field. This photograph was taken shortly before the utility shed (far left) was removed. (Source: Ste. Genevieve NHP archives)



Figure 31. Photograph c. 1995, looking southwest, showing the poor condition of the house and the collapsing double porch. (Source: MoDNR Felix Vallé House archives)



Figure 32. Photograph c. 1995, of the east exterior wall, showing the poor condition of the house and the collapsing double porch. (Source: MoDNR Felix Vallé House archives)



Figure 33. October 1998, showing the continued deterioration of the exterior. (Source: Evans, Mark. "DNR Ties to Unravel Mystery of De Luziere House," *Ste. Genevieve Herald* (October 9, 1996): 1B.)

Delassus-Kern House Historic Structure Report



Figure 34. Photograph taken in July 2000, looking west, after the porches have been removed. Note that the large tree visible in previous photographs is now a deteriorated stump at far right. (Source: MoDNR Felix Vallé House archives)



Figure 35. April 2007 photograph, showing the deterioration of the west wall sill plate and bottom of the vertical logs at Room 102. (Source: MoDNR Felix Vallé House archives)



Figure 36. April 2007 photograph, showing the east and north exterior walls. This was taken before the c. 2016 roofing replacement, and the brick masonry chimneys are still in place. (Source: MoDNR Felix Vallé House archives)



Figure 37. May 2022, view of the east exterior wall. (Source: RRJ 2022)

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Figure 38. May 2002, view of the north and east exterior walls, with the wood shed at right. (Source: RRJ 2022)



Figure 39. August 2022, view of the east exterior wall during installation of the first floor bracing. (Source: RRJ 2022)



Figure 40. October 2022, after installation of the first floor bracing. (Source: RRJ 2022)



Figure 41. April 2024, after installation of the second floor bracing. (Source: RRJ 2024)

Appendix C:

Topographical Survey

DEC. 04, 2023, 3:23 PM, JBUJLFFER
I:\085\2020\306.2001.04 NFS KERN HOUSE\DRAWINGS\ SHEET C1 EXSURY PLANDWG

TOPOGRAPHIC & BOUNDARY SURVEY

PART OF FRACTIONAL SECTION 2, PART OF U.S.
SURVEYS 70, 71, 72, AND 2082,
T-37-N, R-9-E OF THE 5TH P.M.,
ST GENEVIEVE COUNTY, MO

SITE INFORMATION

DELASSUS-KERN HOUSE HOUSE
STE. GENEVIEVE NATIONAL HISTORICAL PARK AT
19071 US 61, STE. GENEVIEVE, MISSOURI

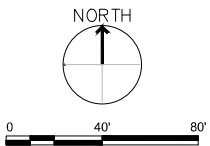
PLAT OF SURVEY
S.R. BK 2, PAGE UNKNOWN
"1994", PLS 1904

LOCATION SURVEY PLAT
DOC.# 2014-1975
PLS 2004001329

SURVEY
S.R. BK 9, PG 89
JULY 1887, A.H. CHADWELL

PLAT OF SURVEY
PLAT CAB B, PG. 79
"1993" RLS 1904

BASIS OF BEARING - NAD83, MO EAST(2011)



•BM	BENCHMARK	— COMM —	UNDERGROUND COMMUNICATIONS
•IPC	IRON PIN WITH CAP	— X —	FENCE
•	CONTROL POINT	— o o o —	BOTTOM DITCH
<	CULVERT	— wavy —	TIMBER / CULTIVATION LINE
□	POWER POLE	— --- —	BOUNDARY LINE
○	POST/FENCE POST	— - - - -	RIGHT-OF-WAY LINE
⊙	FOUND MONUMENT	— - - - -	ADJACENT BOUNDARY LINE
○	PIPE	— --- —	US SURVEY LINE
⊙	UTILITY POST	— SD —	STORM SEWER
—	SIGN	— 739 —	MINOR CONTOUR
⊙	JUNCTION BOX	— -740- —	MAJOR CONTOUR
□	LIGHT POLE	— PVC —	POLYVINYL CHLORIDE PIPE
⊙	DECIDUOUS TREE	— CMP —	CORRUGATED METAL PIPE
⊙	CONIFEROUS TREE	— INV. —	INVERT ELEVATION
⊙	VENT	(M)	MEASURED
◇		(FS)	FORMER SURVEY
		N 22°42'21" W	BEARING

NOTES:

1. FIELD WORK: 8/16/23 - 9/22/23.
2. THE HORIZONTAL REFERENCE FOR THIS SURVEY IS THE MISSOURI STATE PLANE COORDINATE SYSTEM, EAST ZONE, NAD83 (2011ADJ.) US SURVEY FEET
3. THE VERTICAL DATUM FOR THIS SURVEY IS NAVD '88.
4. THE LOCATION OF EXISTING UTILITIES WAS DETERMINED FROM AVAILABLE FIELD EVIDENCE AND MAPS PROVIDED. UTILITIES SHOWN ARE APPROXIMATE ONLY AND SHALL BE FIELD VERIFIED FOR EXACT LOCATIONS.
5. UNDERGROUND UTILITIES MAY NOT BE SHOWN.
6. NO EVIDENCE OF SANITARY CONNECTION WERE FOUND VISIBLE DURING FIELD SURVEY
7. LOCATED INDIVIDUAL 6" OR GREATER TREES NEAR SITE AND OUTLINED TIMBER LINES IN OTHER AREAS.
8. NO TITLE COMMITMENT WAS PROVIDED FOR THE SURVEYED PROPERTY. THE LAND SURVEYOR HAS MADE NO INDEPENDENT SEARCH FOR EASEMENTS, RESTRICTIVE COVENANTS OR ENCUMBRANCE, OWNERSHIP TITLE EVIDENCE OR FACTS THAT A TITLE SEARCH MAY DISCLOSE. THERE MAY BE RECORDED OR NON-RECORDED DOCUMENTS THAT MAY AFFECT THIS SURVEYED TRACT. ALL PROPERTY OWNERSHIP SHOWN ON THIS DOCUMENT WAS OBTAINED FROM THE COUNTY RECORDER AND OR ASSESSORS OFFICE AND ARE CONSIDERED TO BE CURRENT. THE LAND SURVEYOR MAKES NO GUARANTEE TO THE ACCURACY OF THE DEEDS OR THE PROPERTY OWNERS CURRENT STATUS.
9. THIS RETRACEMENT SURVEY IS BASED ON FOUND MONUMENTS FROM A BOUNDARY SURVEY BY KENNETH G. BAER, PLS 1904 FOR THE MISSOURI DEPARTMENT OF NATURAL RESOURCES, DATED 03-14-1994, LOCATED IN SURVEY BOOK 2 AND RETRIEVED THROUGH THE MISSOURI DEPARTMENT OF AGRICULTURE AS DOCUMENT NUMBER 1860354A01.

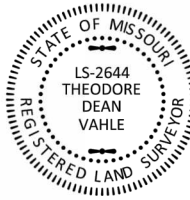
I HEREBY CERTIFY THAT THE ABOVE BOUNDARY RETRACEMENT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT THE SURVEY WAS EXECUTED IN ACCORDANCE WITH THE CURRENT MISSOURI MINIMUM STANDARDS FOR BOUNDARY AND TOPOGRAPHIC SURVEYS AS ESTABLISHED BY THE MISSOURI DEPARTMENT OF AGRICULTURE AND THE MISSOURI BOARD FOR ARCHITECTS, PROFESSIONAL ENGINEERS AND PROFESSIONAL LAND SURVEYORS, AND THAT I AM A DULY LICENSED LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MISSOURI.

Theodore D. Vahle

THEODORE D. VAHLE LICENSE NO. PLS-2644
EXPIRES: 12-31-2024
CERTIFICATION COVERS SHEETS 1 OF 1

12/4/2023
DATE

PREPARED FOR: NATIONAL PARK SERVICE
FIELD SURVEY COMPLETED 9/22/2023



POINT NUMBER	NORTHING	EASTING	ELEVATION	DESCRIPTION
1	769571.861	960008.754	383.66	5/8 IP WITH CAP
2	769580.776	959858.968	392.59	5/8 IP WITH CAP
3	769720.344	959736.473	386.67	5/8 IP WITH CAP
4	769914.754	959494.675	388.01	5/8 IP WITH CAP
5	770045.310	959722.237	380.54	5/8 IP WITH CAP
6	769831.525	959915.661	380.66	5/8 IP WITH CAP
BM1	769821.559	959878.178	379.77	CUT SQUARE
BM2	769626.942	960058.892	380.76	FOUND CUT SQUARE



Prairie Engineers, P.C.
404 N. Main St.
Columbia, IL 62236
(217) 605-0403

DESIGNED:
SUB SHEET NO.
TECH. REVIEW:
DATE: 9/22/23

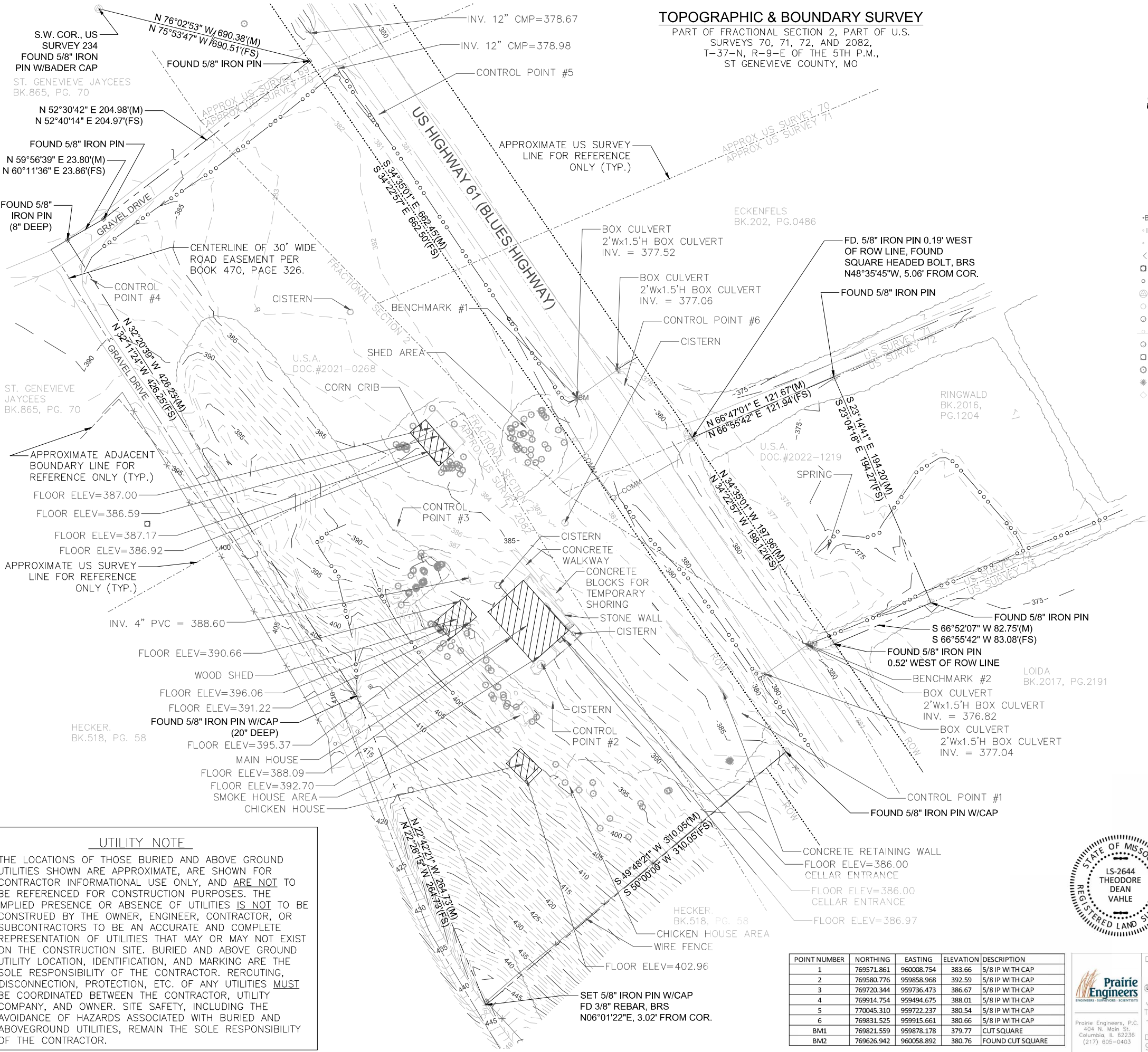
TITLE OF SHEET
EXISTING TOPOGRAPHIC &
BOUNDARY SURVEY

Delassus-Kern House
Ste. Genevieve National Historical Park at
19071 US 61, Ste. Genevieve, Missouri

DRAWING NO.
PMIS/PKG NO.
SHEET
1 OF 1

UTILITY NOTE

THE LOCATIONS OF THOSE BURIED AND ABOVE GROUND UTILITIES SHOWN ARE APPROXIMATE, ARE SHOWN FOR CONTRACTOR INFORMATIONAL USE ONLY, AND ARE NOT TO BE REFERENCED FOR CONSTRUCTION PURPOSES. THE IMPLIED PRESENCE OR ABSENCE OF UTILITIES IS NOT TO BE CONSTRUED BY THE OWNER, ENGINEER, CONTRACTOR, OR SUBCONTRACTORS TO BE AN ACCURATE AND COMPLETE REPRESENTATION OF UTILITIES THAT MAY OR MAY NOT EXIST ON THE CONSTRUCTION SITE. BURIED AND ABOVE GROUND UTILITY LOCATION, IDENTIFICATION, AND MARKING ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. REROUTING, DISCONNECTION, PROTECTION, ETC. OF ANY UTILITIES MUST BE COORDINATED BETWEEN THE CONTRACTOR, UTILITY COMPANY, AND OWNER. SITE SAFETY, INCLUDING THE AVOIDANCE OF HAZARDS ASSOCIATED WITH BURIED AND ABOVEGROUND UTILITIES, REMAIN THE SOLE RESPONSIBILITY OF THE CONTRACTOR.



Appendix D:

Other Treatment Options Considered

OTHER TREATMENT OPTIONS CONSIDERED

In the course of developing conceptual treatments for the Delassus-Kern House, multiple options for addressing site, landscape, circulation, and accessibility were developed to facilitate discussion during the participatory workshop which included NPS staff, the project consultant team, park partners, and other stakeholders. The outcome of that workshop was a consensus agreement on the preferred treatment recommendations; included here the alternative options presented. Additionally, alternate options to address HVAC system needs were considered; these are also presented here for reference.

SITE AND LANDSCAPE OPTIONS CONSIDERED

Three conceptual options were presented for consideration related to the provision of accessible parking, site access, and house and landscape circulation systems that meet ABBAS. Each option suggests potential ways in which visitors may arrive, park, and circulate within the Delassus-Kern property. The figure below illustrates the site access treatment options as presented.

Existing Conditions

No ABAAS Compliant Access to the House and Landscape

One treatment option not considered was the option of taking no action and making no interventions to the site. This approach does

- There is currently no accessible entrance to the house due to the loss of the east porch and the deterioration of the south porch and steps.
- There is no dedicated parking and no accessible parking.
- There are no site walkways.

Currently, the existing conditions do not respond to NPS goals or objectives for interpretation for the House and site and do not provide a barrier-free experience for visitors. As such, this option was not presented for discussion.

Option 1: Flexible visitor capacity

Treatment Option 1 proposes an accessible circulation route to and within the Delassus-Kern parcel between a new parking area on the north side of the property.

In this option, visitors likely arrive to the site from town, traveling south on US-61. The new surface parking would be accessed from the gravel drive, which can be improved. The surface parking would connect to the historic site via pedestrian walkways with interpretive nodes and significant viewsheds. The walkways would be engage the outbuildings and connect with the new accessible entrance to the house. Visitor amenities such as a comfort station and picnic areas with seating can be provided. This option benefits from one or more buildings on the site being open to visitors. Sufficient area is available for the surface parking to provide room for a bus turnaround and a meeting point.

Treatment Option 1 addresses many of the deficiencies to a barrier-free experience described above in “Existing Conditions,” as well as incorporating new features to improve visitor experience and provide interpretive opportunities in the site. Based on discussions during the treatment workshop, this option was the more preferred of the three and was developed into the preferred treatment.

Option 2: Limited visitor capacity

Treatment Option 2 presents a scaled-down version of Option 1, with visitor circulation and limited surface parking provided within the immediate vicinity of the historic site.

In this option, visitors likely arrive to the site from town, traveling south on US-61. A small surface parking for only a few vehicles would be accessed from the current drive in front of the house, which would need to be paved or graveled. Pedestrian walkways on the site would be limited and would not take advantage of the significant viewshed of the Common Field and mound. Visitor amenities would be limited, without a comfort station or picnic areas with seating. Insufficient area is available for a bus turnaround or a meeting point.

Treatment Option 2 raised additional questions about visitors being able to safely park or merge with traffic on US-61, given the inability to provide room for a vehicle turnaround. The park did not prefer to have parking

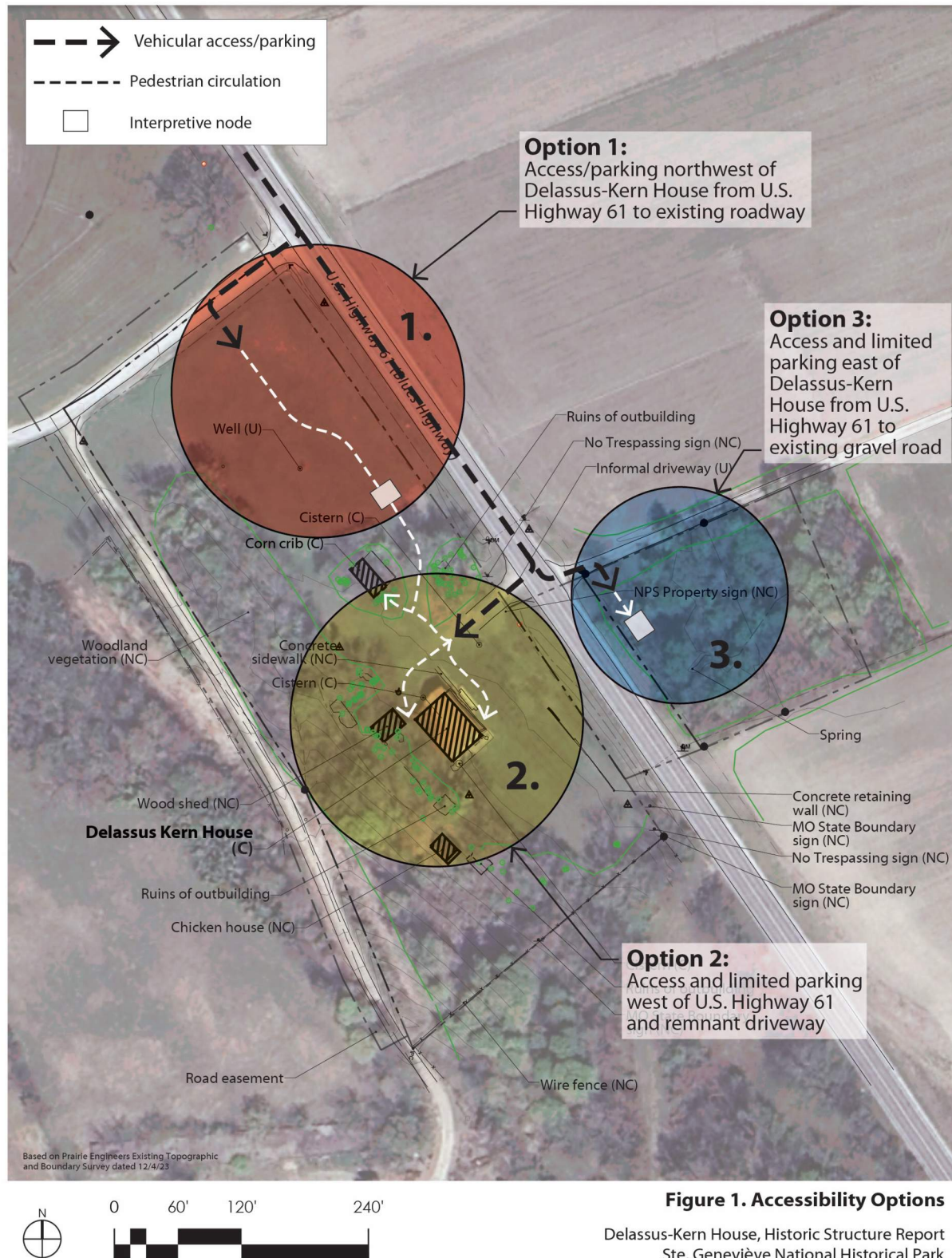


Figure 1. Conceptual options for landscape treatment. (Source: LSHLA)

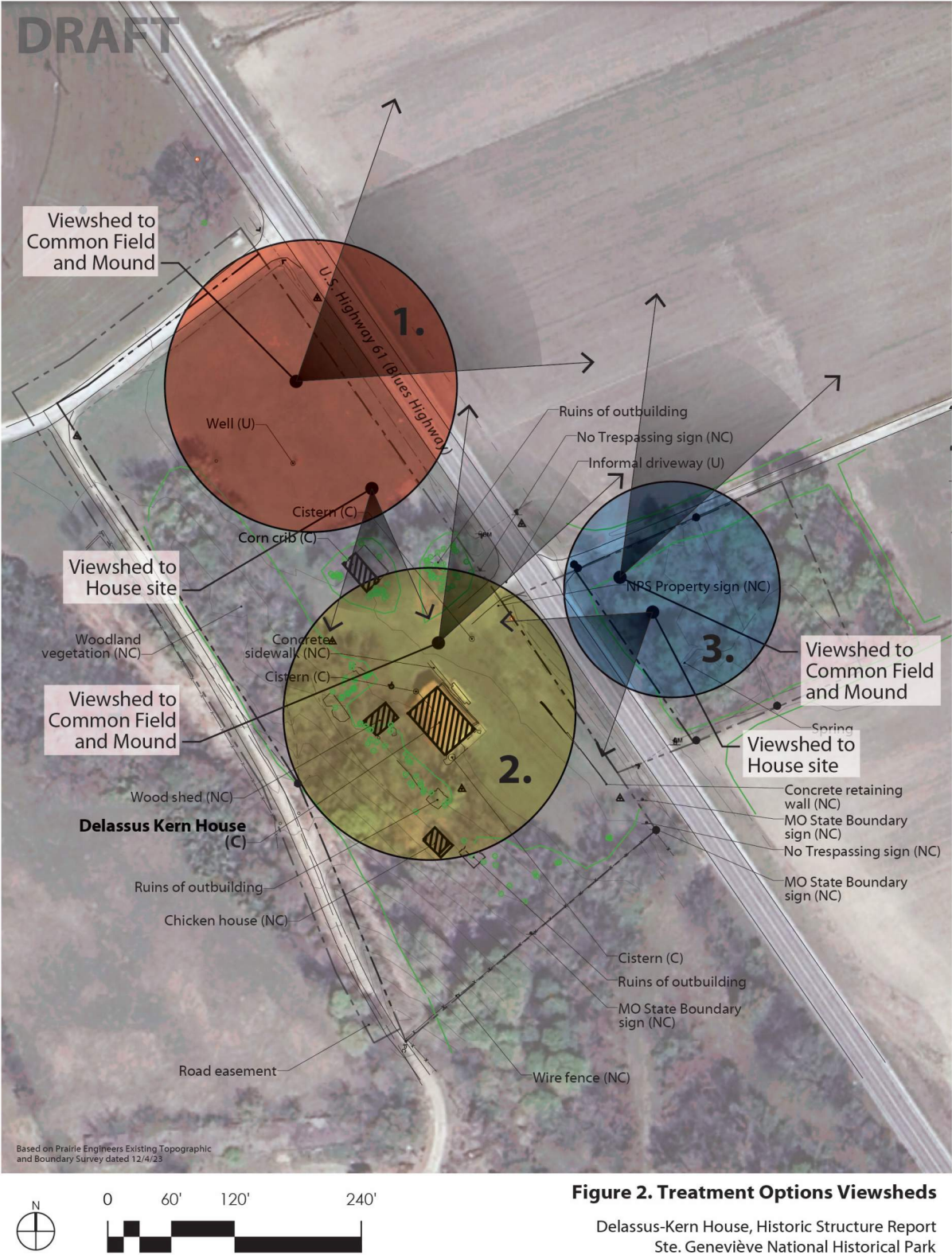


Figure 2. Treatment Options Viewsheds
Delassus-Kern House, Historic Structure Report
Ste. Geneviève National Historical Park

Figure 2. Treatment Option viewsheds at the site. (Source: LSHLA)

immediately adjacent to the historic house. Based on discussions during the treatment workshop, this option not preferred.

Option 3: Restricted visitation

Treatment Option 3 restricts visitors to the east side of US-61. This option was developed to consider options where the Delassus-Kern House could not be made safe and was not open to visitors to still allow some engagement with the resource.

In this option, visitors likely arrive to the site from town, traveling south on US-61. Limited parking is available along the gravel drive to the north of the spring, on the east side of the road. The gravel drive would not be improved. Pedestrians would not be encouraged to cross US-61, and the site would be closed to vehicles. Visitor amenities would be limited, without a comfort station or picnic areas with seating. Insufficient area is available for vehicle turnarounds.

Interpretive materials can be provided to increase visitor understanding of the site. Additionally, this option provides improved visitor engagement and significant viewsheds of the Common Field to the east and north.

Treatment Option 3 raised similar questions about visitors being able to safely park or merge with traffic on US-61, given the inability to provide room for a vehicle turnaround and the unimproved nature of the gravel drive. The park and park partners also did not prefer to encourage visitation to the east side of the parcel. Based on discussions during the treatment workshop, this option not preferred.

ACCESSIBILITY OPTIONS CONSIDERED

No accessible route currently exists to bring mobility challenged visitors to the main level of the house. Multiple options were considered for providing an accessible entry to the main level, as well as options that could provide accessible circulation to the basement and second levels. These options, which included the addition of motorized lifts and elevators to make various levels of the structure accessible, were determined to have an adverse effect on the historic resource due to the level of physical intervention required for construction, as well as a significant negative impact to the exterior appearance and integrity.

Option 1: Exterior Chair Lifts

Options for adding an accessible route to the main level were considered which included the addition of a motorized chair lift at the south end of the house. A vertical wheelchair lift would be suitable to bring a visitor from grade to the west (rear) door. These lifts are typically electric with battery backup and can bridge a 5-foot difference in elevation between two level surfaces. Larger models capable of supporting heavier, motorized wheelchairs and mobility devices are available.

The primary advantage of a motorized chair lift is the relatively small footprint the equipment requires, compared to space intensive options, such as ramps. Disadvantages of chair lifts include that they require power to operate and require regular maintenance. When the motorized chair lift is out of service, there are no secondary options for barrier free access to the site. Additionally, a lift is more expensive in both initial costs and periodic maintenance costs than a ramp.

For these reasons, a lift was not selected as the preferred treatment option.

Option 2: Elevator

Options were also considered for providing universal access to all interior levels of the house, which would require installing an elevator.

The primary issue with installing an elevator at the Delassus-Kern House is the space required by the equipment and chase. Limited Use/Limited Application (LULA) Elevators are smaller than standard passenger elevators. The enclosure for LULA elevators can be wood framed rather than concrete, and the cabs and controls are fully compatible with ABAAS requirements for elevators. The maximum vertical travel distance for a LULA elevator is typically 25-feet, which would meet the needs at the House.

LULA elevators are available in both electric, machine room-less (MRL) options or a standard hydraulic drive. Both options eliminate the need for a traditional elevator pit, requiring less than 2-feet depth. This reduces the need for excavation inside the footprint of the historic structure, which will require archeological review and compliance and potentially localized stabilization of the existing foundation footing. Since LULA elevators are less expensive and require less maintenance than traditional passenger elevators, they are considered an

Delassus-Kern House Historic Structure Report

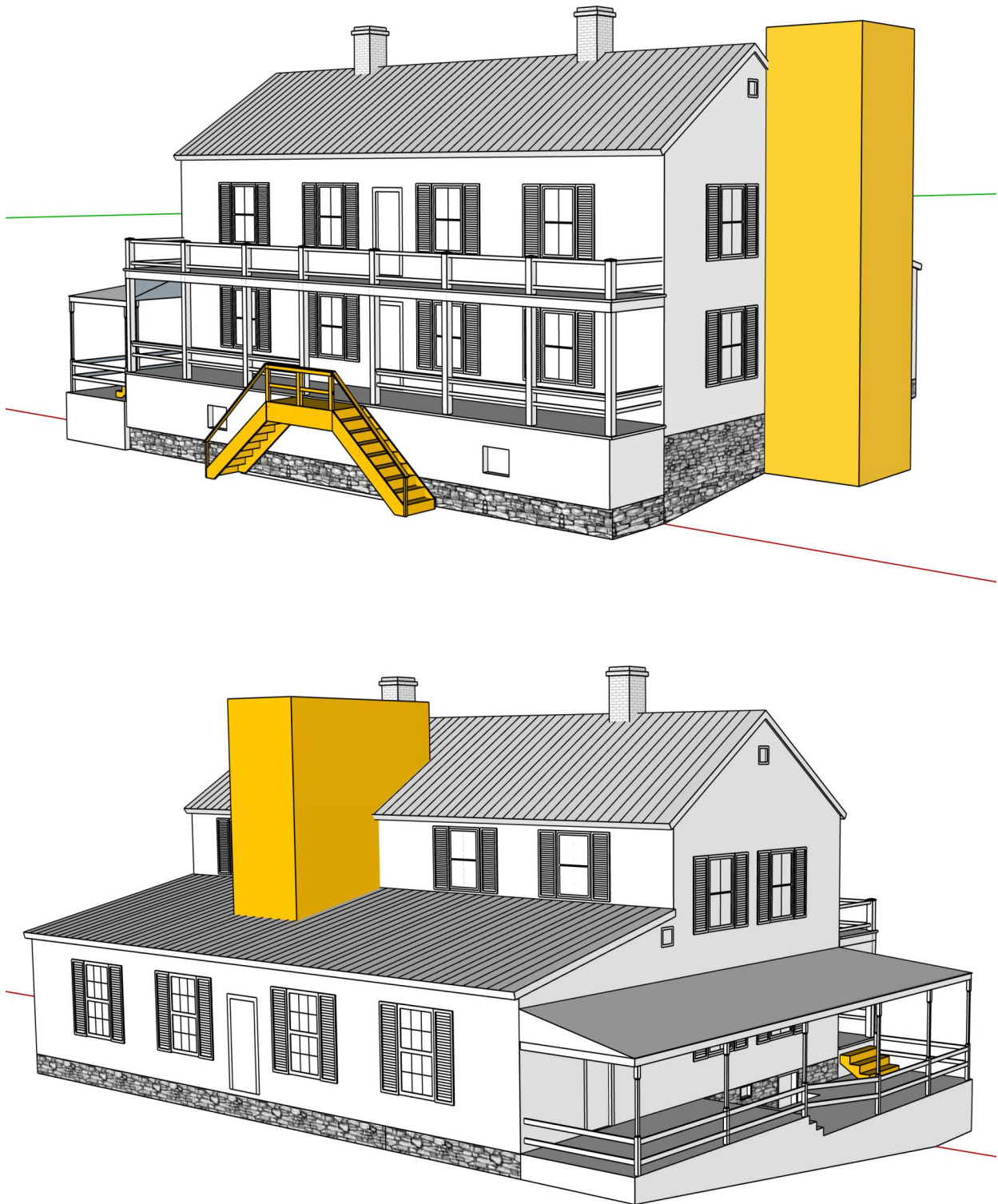


Figure 3. Massing models showing the optional placement of a new elevator structure at either the north wall (upper) or the west wall (lower), showing the size and massing of the new construction required and the adverse effect on the historic character. (Source: RRJ)

economical option for small commercial use and for retrofit applications.

Advantages of an elevator include the ease of use for visitors and the ability to make the house fully accessible. However, installing an elevator has several challenges and presents adverse effects to the historic resource.

The primary challenge is the lack of available space within the historic footprint that can accommodate the enclosure dimensions and overhead clearances required even for LULA elevators. A 42-inch by 60-inch elevator cab will require a hoistway (shaft) of approximately 70-inches by 80-inches, plus the thickness of the shaft walls, a total footprint of approximately 7-feet by 8-feet; this is a significant amount of space within the modest footprint of the house and would negatively impact interior historic spaces and finishes. To accommodate even a LULA elevator, a new elevator structure would be required that would visibly modify the building massing and roofline. The shaft structure would be highly visible and incompatible with the historic character.

Additionally, the high initial cost to install an elevator, along with required maintenance and inspections, makes this option significantly more expensive than a lift or ramp. Since the park does not anticipate a programmatic need for the public to access the basement or second floor and given the adverse impact of the new construction, this option was not selected as the preferred treatment.

HVAC OPTIONS CONSIDERED

HVAC – Ventilation

NPS has indicated that providing ventilation for the house is desired. Providing ventilation can be achieved by many various means and can take many different forms. Very generally, systems can be categorized into about a half-dozen generic types.

Type 1: No Ventilation

Under this scenario, there is no mechanical system to remove stale indoor air (and moisture) or bring in fresh outside air. When this strategy is employed, generally the building does not have any insulation and this strategy would work reasonably well—relying on the natural leakiness of the house. It's worth noting that even a leaky house doesn't ensure good ventilation. For this strategy to work there has to be either a breeze outside or a significant difference in temperature

between outdoor and indoors. Either of these conditions creates a pressure difference between indoors and out, driving the ventilation. On calm days in the spring and summer, there might be very little air exchange even in a really leaky house.

Type 2: Natural Ventilation

This option may be known as the "Stack-effect" ventilation option as it works to naturally circulate air based on changes in air pressure, density and temperature levels between the inside and outside of the house.

With this strategy, specific design features are incorporated to bring in fresh air and get rid of stale air. One approach is to create a "chimney effect" in which warmer air rises up and out through vents near the top of the building. This in turn lowers the pressure in the house, which draws fresh air in through openings in the perimeter wall or through windows. This only works if the house has a pathway for air to travel up through the house and escape at the top. The Delassus-Kern house does not have a chimney or any other natural vertical pathway for airflow to pass upwards through the house other than the vertical stairway from the First Floor to the Second Floor. This pathway would work but would result in a possible wind tunnel with air passing up through the stairway which may be objectionable.

Type 3: Exhaust Ventilation Systems

Exhaust ventilation systems work by depressurizing the house. This type of ventilation system exhausts air from the house while make-up air infiltrates through leaks in the building shell or through passive vents or windows.

Exhaust ventilation systems are most appropriate for cold climates. In climates with warm humid summers, depressurization can draw moist air into building wall cavities, where it may condense and cause moisture damage.

Exhaust ventilation systems are relatively simple and inexpensive to install. Typically, an exhaust ventilation system consists of a single fan connected to a centrally located, single exhaust point in the house. A better design is to connect the fan to ducts from several rooms, preferably rooms where pollutants are generated, such as bathrooms. Adjustable, passive vents through windows or walls can be installed in other rooms to introduce fresh air rather than rely on leaks in the building envelope. Passive vents may, however, they

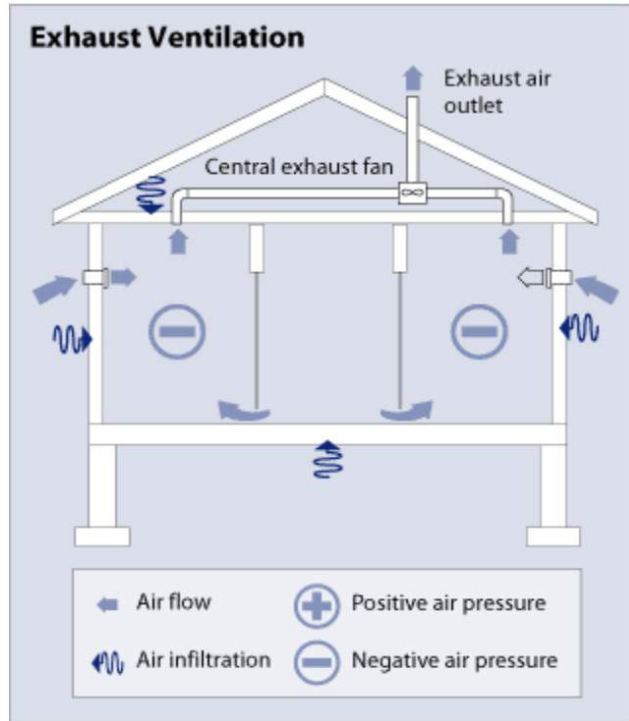


Figure 4. Diagram of an exhaust ventilation system. (Source: U.S. Department of Energy, "Whole-House Ventilation." <https://www.energy.gov/energysaver/whole-house-ventilation>)

require larger pressure differences than those induced by the ventilation fan to work properly.

One concern with exhaust ventilation systems is that -- along with fresh air -- they may draw in pollutants, including:

- Radon and molds from a crawlspace
- Dust from an attic
- Flue gases from a fireplace or fossil-fuel-fired water heater and furnace.

These pollutants are a particular concern when bath fans, range fans, and clothes dryers (which also depressurize the home while they operate) are run when an exhaust ventilation system is also operating.

Exhaust ventilation systems can also contribute to higher heating and cooling costs compared with energy recovery ventilation systems because exhaust systems do not temper or remove moisture from the make-up air before it enters the house.

Type 4: Supply Ventilation Systems

Supply ventilation systems use a fan to pressurize your

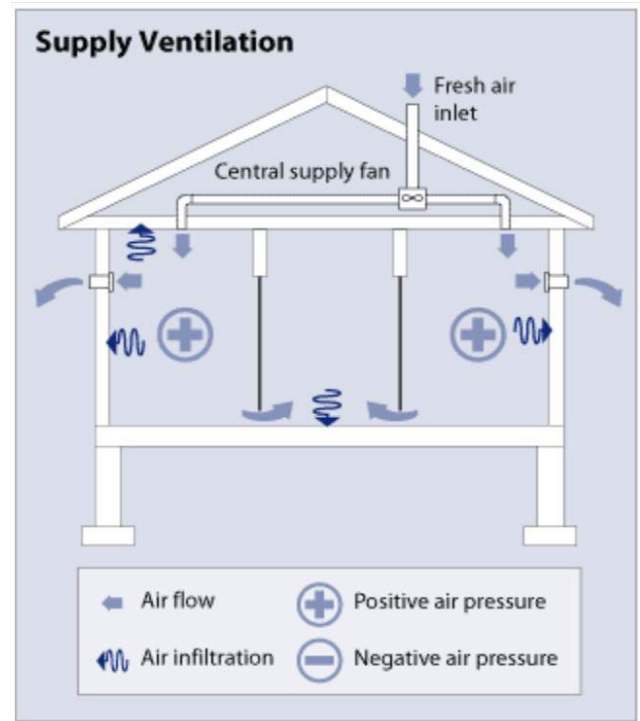


Figure 5. Diagram of a supply ventilation system. (Source: U.S. Department of Energy, "Whole-House Ventilation." <https://www.energy.gov/energysaver/whole-house-ventilation>)

home, forcing outside air into the building while air leaks out of the building through holes in the building envelope or other intentional vents (if any exist).

Like exhaust ventilation systems, supply ventilation systems are relatively simple and inexpensive to install. A typical supply ventilation system has a fan and duct system that introduces fresh air into usually one -- but preferably several -- rooms. This system may include adjustable window or wall vents in other rooms.

Supply ventilation systems allow better control of the air that enters the house than exhaust ventilation systems do. By pressurizing the house, supply ventilation systems minimize outdoor pollutants in the spaces. Supply ventilation also allows outdoor air introduced into the house to be filtered to remove pollen and dust. It can also be dehumidified to provide humidity control if some sort of cooling or dehumidification system were employed.

Supply ventilation systems work best in hot or mixed climates. Because they pressurize the house, these systems have the potential to cause moisture problems in cold climates. In winter, if the house is heated, the

supply ventilation system causes warm interior air to leak through random openings in the exterior wall and ceiling. If the interior air is humid enough, moisture may condense in the attic or cold outer parts of the exterior wall, resulting in mold, mildew, and decay.

Like exhaust ventilation systems, supply ventilation systems do not temper or remove moisture from the make-up air before it enters the house.

Type 5: Balanced Ventilation Systems

Balanced ventilation systems, if properly designed and installed, neither pressurize nor depressurize your home. Rather, they introduce and exhaust approximately equal quantities of fresh outside air and polluted inside air.

A balanced ventilation system usually has two fans and two duct systems. Fresh air supply and exhaust vents can be installed in every room, but a typical balanced ventilation system is designed to supply fresh air to bedrooms and living rooms where occupants spend the most time. It also exhausts air from rooms where moisture and pollutants are most often generated (kitchen, bathrooms, and perhaps the laundry room).

Some designs use a single-point exhaust. Because they directly supply outside air, balanced systems allow the use of filters to remove dust and pollen from outside air before introducing it into the house.

Balanced ventilation systems are appropriate for all climates. Because they require two duct and fan systems, however, balanced ventilation systems are usually more expensive to install and operate than supply or exhaust systems.

Like both supply and exhaust systems, balanced ventilation systems do not temper or remove moisture from the make-up air before it enters the house. Therefore, they may contribute to higher heating and cooling costs, unlike energy recovery ventilation systems.

Type 6: Energy Recovery Ventilation Systems

Energy recovery ventilation systems provide a controlled way of ventilating a home while minimizing energy loss. They reduce the costs of heating ventilated air in the winter by transferring heat from the warm inside exhaust air to the fresh (but cold) outside supply air. In the summer, the inside air cools the warmer supply air to reduce cooling costs. These systems are best used with a

house which has both heating and cooling.

There are two types of energy-recovery systems: heat-recovery ventilators (HRV) and energy-recovery (or enthalpy-recovery) ventilators (ERV). Both types include a heat exchanger, one or more fans to push air through the machine, and controls. There are some small wall- or window-mounted models, but the majority are central, whole-house ventilation systems with their own duct system or shared ductwork.

The main difference between a heat-recovery and an energy-recovery ventilator is the way the heat exchanger works. With an energy-recovery ventilator, the heat exchanger transfers a certain amount of water vapor along with heat energy, while a heat-recovery ventilator only transfers heat.

Because an energy-recovery ventilator transfers some of the moisture from the exhaust air to the usually less humid incoming winter air, the humidity of the house air stays more constant. This also keeps the heat exchanger core warmer, minimizing problems with freezing.

In the summer, an energy-recovery ventilator may help to control humidity in the house by transferring some of the water vapor in the incoming air to the theoretically drier air that's leaving the house. If one was to use an air conditioner, an energy-recovery ventilator generally offers better humidity control than a heat-recovery system. However, there's some controversy about using ventilation systems at all during humid, but not overly hot, summer weather. Some suggest that it is better to turn the system off in very humid weather to keep indoor humidity levels low. You can also set up the system so that it only runs when the air conditioning system is running, or use pre-cooling coils.

Most energy recovery ventilation systems can recover about 70% to 80% of the energy in the exiting air and deliver that energy to the incoming air. However, they are most cost-effective in climates with extreme winters or summers, and where fuel costs are high. In mild climates, the cost of the additional electricity consumed by the system fans may exceed the energy savings from not having to condition the supply air.

Energy recovery ventilation systems usually cost more to install than other ventilation systems. In general, simplicity is key to a cost-effective installation. To save on installation costs, many systems share existing

ductwork. Complex systems are not only more expensive to install, but they are generally more maintenance intensive and often consume more electric power.

Duct runs should be as short and straight as possible. The correct size duct is necessary to minimize pressure drops in the system and thus improve performance. Insulate ducts located in unheated spaces, and seal all joints with duct mastic (never ordinary duct tape).

Also, energy recovery ventilation systems operated in cold climates must have devices to help prevent freezing and frost formation. Very cold supply air can cause frost formation in the heat exchanger, which can damage it. Frost buildup also reduces ventilation effectiveness.

Energy recovery ventilation systems require more maintenance than other ventilation systems. They need to be cleaned regularly to prevent deterioration of ventilation rates and heat recovery and to prevent mold and bacteria on heat exchanger surfaces.

Ventilation Option Recommendation

Based on NPS's desire to not add heating and cooling to the Delassus-Kern house, maintaining the house's interior materials may be difficult as breakdown of building materials can be caused by large temperature and moisture swings. Allowing the building materials in a house to naturally and slowly change as the environment outside changes, generally causes the least amount of material damage.

As NPS desires to have no cooling or heating added, employing a strategy of energy recovery yields no benefit as there is no energy transfer than can take place between outside air and any air that may be conditioned to occur. It is for this reason, ventilation Option No. 6 including energy recovery ventilation is not being recommended.

Type - 1 (No ventilation) is a strategy that currently exists at the house currently in that no ventilation air is currently provided at the house. Air naturally infiltrates and exfiltrates based on temperature and pressure changes caused by the changing of the seasons throughout the year.

Type - 2 (Natural Ventilation) offers not much more benefit over Type - 1 other than it does provide a small degree of air movement within the house caused mainly by air stratification caused by the change in elevation

of the lower level and the upper level since warmer air rises. This type of strategy offers little when outdoor temperatures are lower outside during the winter months when air temperature stratification may not exist in the house or might be limited to sunny days which could cause some internal warming.

Of the remaining Types 3 through 5, Type - 3 (Exhaust Ventilation) and Type - 4 (Supply Ventilation) would appear to be beneficial in either cold or warm climates. It is for this reason, Types - 3 and 4 are not being recommended. Type - 5 (Balanced Ventilation System) would appear to be a ventilation option that could be employed in both cold or warm climate and may offer the most benefit for the Delassus-Kern house since the Delassus-Kern house based on its location, would experience both climate changes throughout the year. It is for this reason, Type - 5 using balanced ventilation would be the ventilation system recommended.

Heating

If heating the house is desired, some form of electric heat or gas-fired heat could be utilized. The house had a gas utility provided to it at one time but this utility has since been removed. Electric heat would be an option if the desire is not to return the gas utility to the house.

Heating equipment can be provided at the basement level to provide heat for the first level where a gas-fired furnace or electric furnace could be located in the Basement and insulated ductwork could be provided to distribute the heated air to floor registers strategically located at the First level floors. The floor registers could be provided with a vintage look to mimic an older vintage style more fitting of a house of the age of the Delassus-Kern House. The furnace at the basement while serving the first level, could provide heating for the basement level as well since the distribution ductwork would be located and routed through the basement. Supply air registers located at the sides of the ductwork could provide the heated air to the basement while simultaneously serving the first level above.

Cooling

If cooling were desired for the First level, a direct expansion cooling-coil could be added to the furnace system located at the basement level to provide comfort cooling for the first level occupied spaces. The same ductwork providing heat could also provide the cooling.

One caveat of providing added cooling would be the necessity to provide refrigerant piping lines from the cooling to some outside grade-located air-cooled condensing unit which may not be desirable with the relatively open landscaping around the house. Exactly where to locate a condensing unit would have to be explored.

If air conditioning the second level were to be desired whether the Second level would be accessible to visitors or not, either a gas-fired furnace or electric furnace could be located in the attic to serve the second level from the attic space above. This would require the furnace be placed in a thermally protected space or small room and would require access to it from the second level. Insulated ductwork could provide distribution of heated air to the Second floor utilizing ceiling registers for air discharge.

Temperature control could be provided by simple wall-mounted thermostats.

Dehumidification

The added cooling coils at the furnaces can provide dehumidification of the spaces. The return air delivered back to the furnace would pass through the cooling coil where the temperature of the air is cooled below the dew point allowing the moisture to condense out of the air where the cooler and dryer air is then returned to the space via the duct system. A small condensate pump would be needed to capture the condensate from the cooling coil where it could then be pumped to outside the building and discharged to grade. Dehumidification could be accomplished at the Second level by adding a cooling-coil at the attic unit as well.

Humidification

Providing humidification during the dryer winter months can be achieved by adding by-pass humidifiers to each furnace system.

The only drawback to providing humidification to the house is that currently no source of potable water to support the humidifiers is available and getting a minimal water supply to the house to support the relatively small humidification needs would not be cost effective. One possible solution to this issue could be to extend a water utility from any potable water provided for a comfort station restroom adjacent to the parking lot to the north of the house. A small water line could be extended

underground to the house to support the humidifiers. Routing a water line to an attic level furnace humidifier would take some investigation to find a location to route the water line while keeping it out of site from any visitors passing through the spaces. This may involve routing up through an interior wall which has another wall located above it at the Second level where the walls would be the pathway.

Appendix E:

RRJ Condition Assessment Report

Delassus-Kern House
Ste. Genevieve National Historical Park
Ste. Genevieve, Missouri

**Structural and Building
Envelope Assessment Report**
2023



Delassus-Kern House, east facade.

Prepared for:
National Park Service, Midwest Regional Office
601 Riverfront Drive, Omaha, Nebraska 68102
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Prepared by
Raths, Raths & Johnson, Inc.
500 Joliet Road, Suite 200
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DE Lassus-Kern House Structural and Building Envelope Assessment Report

Ste. Genevieve National Historical Park

Ste Genevieve, Missouri

Recommended:



Digitally signed by CHRISTOPHER
COLLINS
Date: 2023.12.06 09:29:17 -06'00'

Date: December 6, 2023

Superintendent,
Ste. Genevieve National Historical Park



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All photographs are courtesy of Raths, Raths & Johnson, Inc.,
and were taken October 2022, except where noted otherwise.

A NOTE ON DATES

The dates as presented in this report are drawn from the information available at the time of writing. In a few cases, the dates are supported by direct historical documentation, but in the majority of cases, the dates proposed are based on the project team's best determination based on factors such as physical evidence, circumstantial documentation, research by others, professional experience, or those dates adopted by general consensus. Further research, investigation, and analysis may refine or refute the dates proposed herein.

- No notation** Direct attribution of the date or date range given is supported by historical documentation or physical evidence; ex: 1826 or 1938 – 1940.
- Circa (c.)** Attribution to within one or two years of the date or date range given is supported by historical documentation or physical evidence, but the precise dates are not known; ex: c. 1785 or c. 1955 – c. 1958.
- Dash (–)** Indicates that the range given is inclusive of the years between the start and end dates, such as an ongoing event or period of ownership, ex: 1937 – 1955.
- Slash (/)** Indicates that two or more specific dates are referenced without being inclusive of the years between; ex: c. 1785/c. 1955 or 1940/1972.
- Decade Span** Indicates a general ten-year span, but the date or date range given are approximate; ex: 1920s or 1880s – 1900s.

A NOTE ON NAMES

Although the house sits on land once owned by Pierre Charles Dehault Delassus Deluzières (commonly referred to as Pierre Delassus), a direct link between Delassus and the existing structure that stands on U.S. 61 is currently conjectural. For consistency of nomenclature, this report follows the naming convention of “Delassus-Kern House” by which the house is generally known and was used in the 2016 *Ste. Genevieve Special Resource Study*.

INTRODUCTION

Raths, Raths & Johnson, Inc. (RRJ), was contracted by the National Park Service (NPS) to perform a structural and envelope assessment of the Delassus-Kern House and prepare a report of findings to include observed conditions, limited structural analysis, and preliminary treatment recommendations with probable construction costs. This assessment was prompted by park staff concerns related to distress observed at the exterior wall on the east due to deterioration of horizontal top and sill plate timbers and displacement of the vertical logs. A comprehensive historic structure report (HSR) has been contracted and will be completed in 2024.

From October 4 to 6, 2022, representatives from RRJ were on site to perform a physical investigation into the structural systems and the condition of the exterior cladding and roofing. The physical investigation was limited to areas readily visible; no overly intrusive investigation was performed, and no finishes were removed to expose concealed conditions.

General Description

The Delassus-Kern House is located on U.S. 61 in Ste. Genevieve County, Missouri, approximately five miles southeast of downtown Ste. Genevieve (Photo 1 through Photo 6). The Delassus-Kern House is recognized as the largest surviving vertical log dwelling of its period in Ste. Genevieve and one of the few remaining traces of the settlement of New Bourbon, founded in 1793 but later abandoned.

The house is a side-gabled, *poteaux-sur-sole* (French, meaning “posts on a sill”) structure on a stone masonry foundation with a partial basement. The house has a vertical log-framed first story and a partial lumber-framed second story. It measures 53’-5” along the front (east) façade and 37’-6” along the side (north) wall. The current footprint of the house is three rooms wide and two rooms deep on the main

level and four rooms wide and one room deep on the second level. The rooms are directly connected without passageways, and doors and windows are generally aligned.

The exact origin of the house remains a mystery that has been the subject of debate for decades. Current research suggests either the vertical log portion of the Delassus-Kern House was one large 18th century house, possibly remnants of Pierre Delassus’s house,¹ relocated to the current site in the 1830s, or it was a new 1830s house constructed with salvaged materials from various 18th century New Bourbon structures.² Dendrochronology conducted in 1986 estimated a c. 1793 fell date for the logs used for the first story;³ however, archeological excavations have determined the earliest likely dates of occupation for the site were the 1830s.⁴ The house was enlarged and remodeled c. 1900, and the second story and double-height porch were added.

Several outbuildings, foundations of no longer extant buildings, cisterns, and other site features are also present on the property.

Methodology

In the execution of this scope, the project team performed the following:

- Reviewed documentation on the Delassus-Kern House provided by NPS and from other sources, as well as available documentation on similar structures in Ste. Genevieve, Missouri.
- Performed a physical investigation of the house and ancillary structures on the site from the interior and exterior.
- Field verified select dimensions and measurements to confirm conditions as documented by others.

¹ Pierre-Charles Delassus de Luzieres was the commandant of New Bourbon, a French settlement near the current location of the Kern House. His house, no longer extant, was described as being on the bluff just to the northwest of the Delassus-Kern House parcel.

² Rucker, B. H. “Recommendations for Preservation Management of the Kern House,” 2012.

³ Guyette, Richard. “Tree Ring Dating of French Colonial Vertical Log Houses in St. Genevieve, Missouri.” University of Missouri – Columbia. 1986.

⁴ Wesler, Kit W., Bonnie Stepenoff, N. Renae Farris, and Carol A. Morrow, “Archaeological Test Excavations at the Delassus-Kern House, Ste. Genevieve, Missouri,” *Ohio Valley Historical Archaeology* 14 (1999): 67-88.

- Performed moisture content readings of logs at first floor and basement level to develop a qualitative moisture content profile.
- Performed resistance drilling at select vertical logs, beams, and other members, in an effort to identify areas of concealed decay.
- Collected samples of wood from select structural members for species identification.
- Collected discrete samples of the original *pierrotage* mortar and interior lime plaster, for study.

Definitions

The following terms define subjective ratings used in this report to apply a qualitative scale for the overall condition and priority of the repair, as developed from Sections 7.2 and 7.4 of the “Field Operations Manual, Volume 1”, United States National Park Service, Washington, D.C., 1985.

Condition Rating

- Good** The element is intact, structurally sound, and performing its intended purpose. There are few or no cosmetic imperfections, and the elements require no repair and only minor or routine maintenance.
- Fair** There are early signs of wear, failure, or deterioration, though the element is generally structurally sound and performing its intended purpose. There may be failure of a sub-component of the element. Up to 25% of the element requires repair or restoration, or replacement of a sub-component may be required.
- Poor** The element is no longer performing its intended purpose. Deterioration or damage affects more than 25% of the element. The element shows signs of imminent failure or breakdown. The element requires major repair, restoration, or replacement.
- Failed** The element is no longer performing its intended purpose, has deteriorated to a point where it presents a life-safety hazard, is contributing to damage to other elements, or is missing. Full replacement of the component may be required to restore function and service.

Repair Priority

- Low** Standard preventative maintenance practices and building conservation methods have generally been followed, but repair or restoration is needed; there is a reduced life expectancy of affected or related building materials or systems; and/or there is a condition with long-term impact beyond five years.
- Moderate** There is deterioration which, if not corrected within two to five years, will result in the failure of the building element; a threat to the health and/or safety of the user may occur within two to five years if the deterioration is not corrected; and/or there is deterioration of adjacent or related building materials or systems as a result of the element’s deficiency.
- High** There is advanced deterioration which has resulted in the failure of the building element or will result in the failure of the building element if not corrected within two years; there is accelerated deterioration of adjacent or related building materials as a result of the element’s deficiency; there is a threat to the health or safety of the user; and/or there is failure to meet a legislative requirement.

ABBREVIATED HISTORY OF DEVELOPMENT

Chronology of Development and Use⁵

Pierre Delassus arrived in Ste. Genevieve sometime in 1792 and over a period of several years was granted multiple land concessions, making him a significant landowner in the area. References to his house in historical documents were unclear as to the precise location, although it was described as located on a bluff near New Bourbon, likely precluding the current location of the Delassus-Kern House as Pierre's original home.

The following is an abbreviated chronology of the development and use of the house as documented in readily available sources; further research into primary and secondary sources should be conducted to verify and supplement this information.

c. 1793 Felling date of the logs used in the construction of the first floor of the Delassus-Kern House, confirmed by dendrochronology.

Between c. 1793 and the 1830s, there is currently little to no documentary evidence of the Delassus-Kern House or the specific parcels that the house occupies. The parcels were part of a larger land holding by Pierre Delassus.

1794 Pierre Delassus deeded his land to his son Camille in 1794, then died in 1806.

1812 Camille Delassus died, seven years before his father's estate was even settled. Long probate periods were common at the time, and similarly Camille's estate did not settle until 1824.

1819 The Delassus property was auctioned to pay Pierre's remaining debts. Camille's brother Charles purchased the property and in turn deeded it to Camille's children.

1830s The Delassus-Kern House is either moved and rebuilt or is constructed from salvaged logs at the current location. The exact origin of the construction materials is still

under debate. Archaeological data strongly suggest there was no structure on the site prior to the 1830s.

1834 Peter Pratte, the widower of Camille's daughter Marie Louis, obtained ownership of the portion of Delassus land where the Delassus-Kern House now stands.

1835 Between 1804 and 1834, Charles Delassus undertook protracted legal proceedings to have Pierre's original land grants, and by extension his descendants' claims to the property, validated by the United States government. This process was finally resolved in his favor in an 1835 ruling by the United States Supreme Court.⁶

1836 Martin Sweek purchased property from Peter Pratte for \$200 (about \$6,500 in today's dollars).

1837 Dr. Ichabod Sargeant purchased the property from Martin Sweek for \$1,200 (about \$38,000 in today's dollars).

1855 John Kern acquired the property from Ichabod Sargeant's estate for \$1,000. The Kern family operated their family farm in this location into the early 1980s.

c. 1900 The Delassus-Kern House was enlarged and remodeled. The original roofing and roof framing were removed, and a second story was added. The stone masonry fireplaces were removed and replaced by stoves with brick masonry chimneys. At some point, a small porch was also present on the south wall over the kitchen door.

Post-1900 The existing outbuildings appear to be 20th century structures, although the dates are currently undetermined.

1980s Awareness of the original vertical-log structure within the Delassus-Kern House

⁵ B.H. Rucker, "Recommendations for Preservation Management of the Kern House," 2012.; HABS, 1985.

⁶ *Delassus v. United States*, 34 U.S. 117, 1835.

grew. Due to its large size and general location, it was speculated that this may have been the home of Pierre Delassus, during his time as commandant of New Bourbon.

At this time, the house was not continually occupied, but there are oral accounts that the owner may have begun but did not complete repairs to address areas of deterioration.

1987 The property was documented by HABS. In the HABS photographs, the main house, utility shed, wood shed, and two chicken houses south of the main house are visible. The ruins of what may be the smoke house foundation are visible in the background of one photograph.

Post-1987 The southernmost chicken house and smoke house were removed at an undetermined date; only the foundations remain.

1993 The house was damaged by the Great Flood. The structure marked as the “utility shed” on the HABS site plan was also removed sometime after 1993.

1993 An anonymous donor purchased the Delassus-Kern House and surrounding acres from the Kern family and gifted the site to the Missouri Department of Natural Resources (MoDNR) for preservation. The house was in an advanced state of disrepair. MoDNR performed limited repairs and mothballed the house with the hope for future restoration work.

1996 The two-story porch on the east and south exterior walls was removed in 1996, based on photographs of the house.

2000 An archeological study performed by the MoDNR found evidence of a house site on the bluff above the Delassus-Kern House. Some speculation was raised if this site

may be related to the Delassus family and the Delassus-Kern House site, but no further investigation has been performed.

Post-2000 MoDNR stabilized portions of the west exterior wall by replacing the deteriorated timber sill and replacing the deteriorated bases of the vertical logs with a framed knee wall. Holes in the metal standing-seam roof were repaired.

Post-2008 The porch and roof over the kitchen door on the south wall was removed at an undetermined date.

2012 A condition assessment was performed, and a preservation management plan developed by MoDNR staff. At the time of the report, the house was described as a ruin. No additional preservation work had been performed on the house.

c. 2015 A new standing-seam metal roof and new gutters were also installed, and the brick masonry chimneys were removed.

2019 A breach in the Levee District 2 system in June threatened the house with floodwaters from the Mississippi River. Previous breaches in Levee District 2 in 2017 had also exposed the house to floodwaters but had caused only minimal damage.⁷

2021 The house was acquired by NPS and incorporated into the Ste. Genevieve NHP.

2022 Shoring was installed along the first-floor sill at the east wall due to displacement of the vertical logs. NPS engaged RRJ to assess the property and prepare this report.

2023 In May 2023, construction documents for additional shoring were prepared by RRJ, and the contract for construction was awarded in July 2023. The shoring installation is anticipated to be complete in early 2024.

⁷ “Felix Valle Staff Monitors Floodwater Near Kern House,” *Ste. Genevieve Herald*, June 4, 2019. [https://www.stegenherald.com/2019/06/04/felix-valle-staff-](https://www.stegenherald.com/2019/06/04/felix-valle-staff-monitors-floodwater-near-kern-house-works-with-nps-on-transition/)

[monitors-floodwater-near-kern-house-works-with-nps-on-transition/](https://www.stegenherald.com/2019/06/04/felix-valle-staff-monitors-floodwater-near-kern-house-works-with-nps-on-transition/).

Delassus-Kern House
Ste. Genevieve National Historical Park



Photo 1. East (main) facade of the Delassus-Kern House in May 2022.



Photo 2. South (side) exterior wall of the Delassus-Kern House in May 2022.

Delassus-Kern House
Ste. Genevieve National Historical Park



Photo 3. North (side) exterior wall of the Delassus-Kern House in May 2022.



Photo 4. West (rear) exterior wall of the Delassus-Kern House in October 2022.

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Ste. Genevieve National Historical Park



Photo 5. East (main) exterior wall of the Delassus-Kern House in October 2022, with first-floor shoring in place.



Photo 6. Southeast corner of the Delassus-Kern House in October 2022, with first-floor shoring in place.

DESCRIPTION

Physical Description – Original Construction

The Delassus-Kern House (Photo 1 through Photo 6) was originally constructed as a side-gabled, single-story poteaux-sur-sole log structure, consisting of vertical log walls keyed into timber top and bottom plates (Photo 7), built atop stone masonry foundation walls. Dendrochronology analysis performed by the University of Missouri indicates that vertical logs and joists comprising the first floor were harvested in 1793,⁸ but it is unknown whether the structure as it stands today dates from this period or was assembled at a later date with salvaged logs. Several joists supporting the first floor appear to have been replaced over time. Archaeological studies performed by the Southeast Missouri State University strongly imply that the site around the Delassus-Kern house was not occupied prior to 1830s.⁹

The current floor plan of the first-floor poteaux-sur-sole structure within the Delassus-Kern House is three rooms wide and two rooms deep (Figure 1 through Figure 3). It is possible that the original house structure was three rooms wide and one room deep, as observed in many other vertical log structures extant in Ste. Genevieve, and the other rooms were added to the structure at a later date. The western three rooms appear to have been constructed separately, potentially from reused logs, but removal of additional plaster wall finishes would be required to better understand the construction sequence.

Both HABS documentation and the report written by B. H. Rucker state that the Delassus-Kern House originally contained 6 rooms. The existing structure and available documentation of the site do not provide conclusive evidence to this end, and no historic photographs of the house prior to the construction of the second floor have yet been identified. The lack of rafter notches or seats in the timber top plate of the north-south partition wall suggests that the house may have been constructed at this site as a six-room structure, but possibly of salvaged timbers from multiple structures.

Earlier articles and studies, including B. H. Rucker's report, have referenced a c. 1895 photograph of a house believed to be the Delassus-Kern House (Photo 8); the original photograph is in the collection of the MoDNR at the Felix Vallé State Historic Site. The facades of the two houses share striking similarities; they are likely the same property, but this is unconfirmed. The house in the photograph appears to be located on a gently sloped parcel with outbuildings and trees on relatively level ground to the right background, while the Delassus-Kern House is located at the foot of an embankment with a 30-foot rise in grade. However, since the hillside is denuded of trees in the historic photograph and given potential distortion from the camera lens, the perception of depth may be misleading. For the purposes of this report, this photograph is assumed to be of the Delassus-Kern House; further analysis will be performed for the forthcoming HSR.



Photo 7. Exposed poteaux-sur-sole structure at the interior.

⁸ Guyette, "Tree Ring Dating."

⁹ Wesler, "Archaeological Test Excavations...", 67-88.

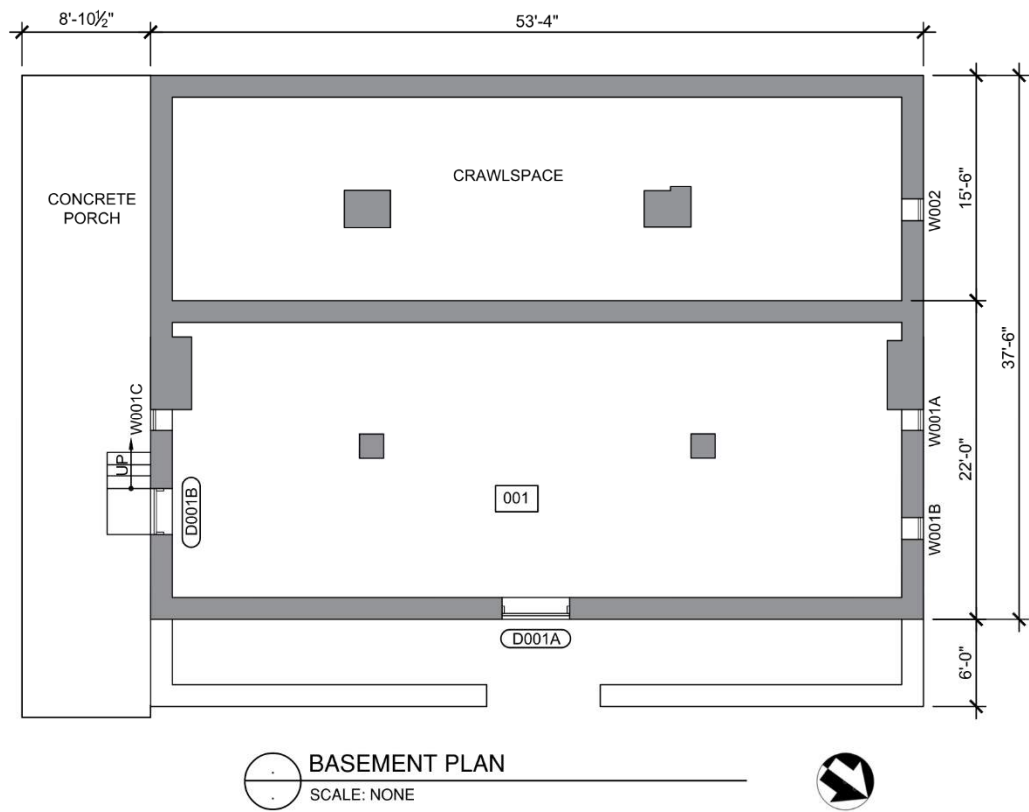


Figure 1. Schematic basement plan.

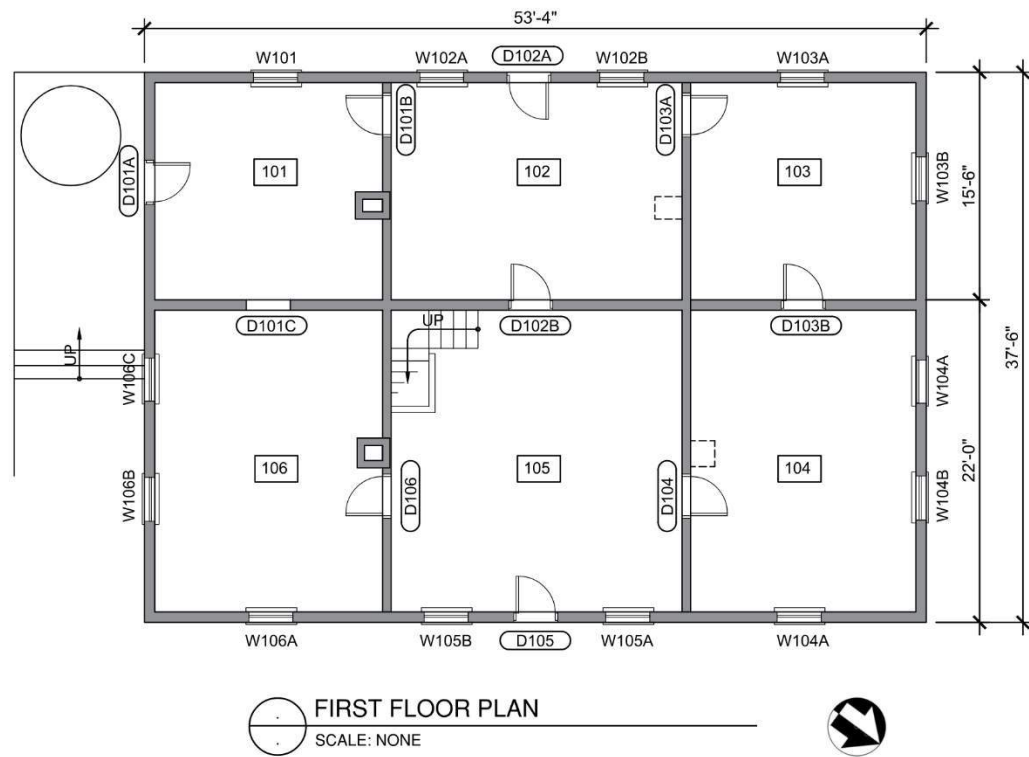


Figure 2. Schematic first floor plan.

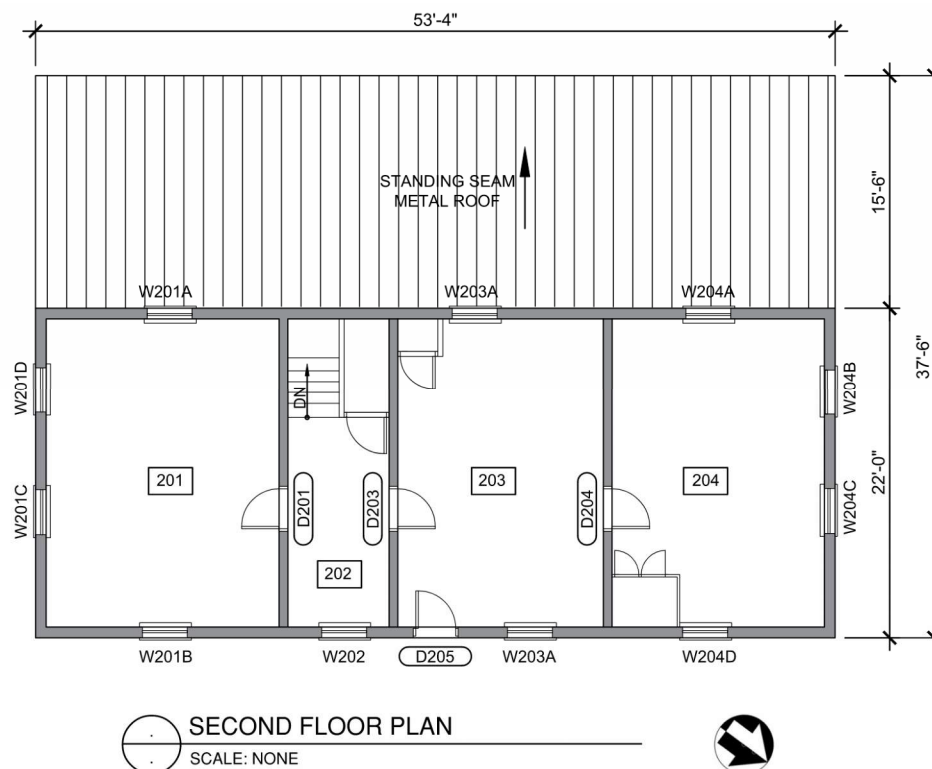


Figure 3. Schematic second floor plan.

Physical Description – Later Alterations

A second floor was added c. 1900 using conventional framing methods, according to HABS documentation: “About 1898-1900 a second floor was added above the three front rooms and the house lost its original French roof. Chimneys, closets, and a bathroom were added; the staircase was moved.”¹⁰

With the addition of the second story, the stone masonry chimneys at north and south were removed and infilled with dimension-lumber framing and windows. Four brick masonry chimneys with stoves were added to interior walls. In addition, a porch was added along the east and south exterior walls at the first-floor line, and a gallery was added at the second-floor line at the east facade.

At some time between 1996 and 2000, the south and east porches were removed (Photo 11). At present,

the majority of the interior finishes have been removed within the first floor, exposing the interior surface of wood log framing, pierrotage infill, and wood plank flooring; this was done sometime after 1990. On the second floor, interior wall finishes remain in place but exhibit signs of past water infiltration at locations near the east door and near the north chimney. Fragments of historic floor cloths or linoleum are present in several rooms, including the upstairs bedrooms, the stair treads, and the kitchen. Some cabinetry, shelves, balusters from the porch, and other miscellaneous items remain within the two northern-most rooms within the second floor.

¹⁰ HABS, 1985

Delassus-Kern House
Ste. Genevieve National Historical Park



Photo 8. A c. 1895 photograph of the Kern Family in front of the Delassus-Kern House prior to the addition of the second story. (MoDNR Archives, Felix Vallé House State Historic Site).



Photo 9. A c. 1900 photograph of the Delassus-Kern House from the southwest after the construction of the second story, showing the small, covered porch at the kitchen door. The roofing appears to be standing-seam metal panels. (MoDNR Archives, Felix Vallé House State Historic Site).

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Photo 10. East façade of the house in the 1970s, before the porch, gallery, and front steps were removed. (Volz and Associates, "Pierre Delassus de Luziere House (Kern House) Condition Assessment Report," 1990.)



Photo 11. East facade of the house in 1985 (HABS).

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Photo 12. The property as seen from the Grand Champ in November 1993, shortly after the Great Flood of 1993. Note the shed (left foreground) was still standing at this time. (NPS Archives, Jean Baptiste Valle House, unlabeled box with envelope marked “Prints from Mississippi Flood, Terry Morris, Nov 3 93” in an unlabeled white banker box)



Photo 13. A c. 1995 photograph of the Delassus-Kern House from the northwest. (MoDNR Archives, Felix Vallé House State Historic Site).

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Photo 14. The house as it appeared in 1996 (*Ste. Genevieve Herald*, October 9, 1996, page 1B)



Photo 15. The house as it appeared in July 2000, after the removal of the porch on the east façade.

STRUCTURAL SYSTEMS

Vertical Log Walls

The structural vertical wall logs, according to the 1986 dendrochronology report, are composed of white oak, and some interior walls also contain cottonwood logs. The poteaux-sur-sole construction of the first floor is present at the north, east, and south exterior walls (Photo 16 and Photo 17). The vertical logs on these walls are hewn and typically fit into the timber bottom plate (the sill plate) with a mortise and tenon connection. The logs are likewise notched at their top interior faces to receive a timber plate running across the tops of the log walls. Typically, the exterior walls were observed to measure nominally 6-

inches wide, while interior partition log walls measured nominally 5-inches wide. The voids between logs are filled with field stone laid in clay mortar, called pierrotage.

At the first floor, the interior finishes, plaster, and furring have been largely removed from the east rooms (104, 105, and 106), allowing for visual observation of the logs at each wall from at least one side. The west rooms (101, 102, and 103) retain varying amounts of wall finishes, plaster, and furring, allowing for limited observation of vertical logs forming these walls (Photo 18 and Photo 19). Typically, all cabinetry, non-load bearing partition



Photo 16. Vertical log walls on the south exterior wall and west interior wall of Room 104.



Photo 18. Remaining interior finishes at the west and north exterior walls of Room 103.



Photo 17. Vertical log walls on the south interior wall and west interior wall of Room 105.



Photo 19. Remaining interior finishes at the south interior wall of Room 103.



Photo 20. Typical interior vertical log wall with diagonal member within room 106.

walls, and casework shown within 1985 HABS documentation have been removed from the first floor.

Diagonal Bracing

Diagonal logs were observed near the ends of several walls and serve as lateral bracing for the structure (Photo 20). Diagonal logs were observed in the following locations:

- East exterior wall, at north and south ends
- West exterior wall, at north end; the south end was concealed by finishes.
- North exterior wall, at east and west ends.
- South exterior wall, at east end; the west end was concealed by finishes.
- North-south interior wall, at north and south ends.
- East-west interior wall at north, immediately on either side of the north-south interior wall.
- East-west interior wall at south – on either side of the north-south interior wall.



Photo 21. East wall top plate splice within room 105. The splice appears to have been constructed in this "open" position, with pierrotage infill placed between members.



Photo 22. Vertical log top plate at the east exterior wall within room 104. Second-floor joists sit atop the existing top plate. Notches at the top of the top plate were likely created to receive the original roof framing members.

East Exterior Wall – Top and Bottom Plates

The bottom plate at the east wall was observed to be spliced beneath Door D105 at the approximate centerline of the east wall. The bottom plate measured nominally 9-inches square.

The top plate at the east wall was observed to be spliced south of window W105B (Photo 21). This splice was observed to be open, with pierrotage infill between vertical faces of the splice. It appears that the splice was installed in this open configuration, perhaps indicating a lack of fit as part of the original construction. Notches were observed at the top of the



Photo 23. The west vertical log wall as viewed from within Room 102. The dimensional lumber knee wall and replaced bottom plate extend along approximately half of this wall between the south wall and the exterior door.



Photo 24. Lower termination of vertical log walls within room 105. The tenon at the log end is visible where the sill plate has heavily deteriorated.

top plate at regular intervals (Photo 22). It is likely that these notches once received original roof framing members.

West Exterior Wall – Alterations

At the west exterior wall, a portion of the sill plate has been replaced between from the south exterior wall to within 8-inches north of Door D102A. Similarly, the lower 16-inches of the vertical logs wall along the west wall were removed and replaced with a dimensional lumber knee wall between the south exterior wall and Door D102 (Photo 23). These alterations are believed to have occurred following the Missouri DNR's acquisition of the property. The top plate of the west wall was typically concealed by



Photo 25. The south vertical log wall as viewed from within Room 106, showing dimensional lumber framing at the righthand window. This was the previous location of a stone masonry chimney. Note the original log framing at the lefthand window opening.



Photo 26. Typical top plate wall splice within north wall of room 106. Splices were observed to have one 1-inch wood trenail pinning the splice in place.

finishes. It is likely that the bottom plate was originally spliced near the centerline of the west wall, as observed at the east wall, and implied by the length and extent of the replaced sill plate.

North and South Exterior Walls – Top and Bottom Plates

The bottom plates at the north and south exterior walls were observed to be constructed of two members, interrupted at approximately midspan by the masonry foundations of now missing stone fireplaces. Based on historic photographs, the north and south chimneys appear to have been removed c. 1900 with the other alterations of the house.

Directly above the chimney foundations at the first floor, stone or brick infill is present within wall areas



Photo 27. East wall top plate distress within room 104. The top plate has split through its mid-height, and is crushing and rotating. The lower face of the top plate is visible.



Photo 28. East wall top plate distress within room 105. Pest and water damage to the top plate has created large voids in the timber section, allowing for further animal-related deterioration as evidenced by snakeskin caught between rough surfaces.

where the fireplaces likely stood. Logs are typically mortised into the bottom plates (Photo 24) and nailed to the top plates.

The top plates at north and south wall are likewise constructed of two distinct members, interrupted at the previous chimney location (Photo 25). The north top plate extends 27-inches east of the interior north-south wall into room 104 (Photo 26). The south top plate extends 24-inches east of the interior wall into room 106.

Interior Walls – Top and Bottom Plates

The top plate of the interior wall spanning north-south was observed to be spliced above the north jamb of Door D102B. The bottom plate appears to bear directly on floor framing beams pocketed into the

masonry wall below. The vertical logs appear to be toe-nailed into the bottom plate, where visible in room 103.

The top plates of the two interior walls spanning east-west were both observed to be spliced about 28 inches east of the interior wall face. The connection of the bottom of interior walls logs to the bottom sill was concealed by finishes.

Condition Assessment

The vertical log wall at the east exterior wall has failed in place and threatens the overall stability of the structure (Photo 27 and Photo 28). The top plate of the interior wall separating rooms 101 and 102 has failed in the vicinity of a masonry chimney.

East Wall – Movement

The east exterior vertical log wall has moved out-of-plane relative to the masonry wall below. Where the interior wall separating rooms 104 and 105 abuts the exterior east wall, the pierrotage has either been removed or has dislodged (Photo 29). The wall separating rooms 105 and 106 also exhibits separation and pierrotage loss where this wall abuts the exterior east wall.



Photo 29. Pierrotage has dislodged where the east-west interior wall separating rooms 104 and 105 abuts the laterally displaced east exterior wall (gap at left).

The bottom plate at the exterior east wall has moved approximately 7-inches out of plane near Door D105 (Photo 30 and Photo 31). The bottom plate showed a split in the interior vertical face at approximately half-depth along the entire east wall but also exhibited a vertical longitudinal split along the majority of its length. Below door D105, the bottom plate was



Photo 30. East wall bottom plate distress near exterior door within room 105. The bottom plate has split vertically, crushed, rotated, and deteriorated as the vertical log wall moved out of plane, exposing the notched lower ends of vertical logs. Daylight is visible below the door threshold.



Photo 31. Underside of east wall bottom plate visible from exterior where the log wall and top course of stones have moved out of plane. The exposed log surface shows evidence of moisture and pest damage.

observed to have suffered severe section loss due to a combination of moisture and pests. The bottom plate was also observed to have crushed and rotated at this location.

The top plate at the exterior east wall has moved out of plane approximately 5½-inches near the intersection with the interior wall separating room 104 from room 105. The top plate has split and exhibits crushing and/or pest damage at its interior vertical face. The top plate also exhibited distress at its intersection with the interior wall separating rooms 105 and 106.



Photo 32. Failed top plate within the wall separating rooms 101 and 102 at room centerline.



Photo 33. Rotated door framing and cracked interior finishes observed within the south wall of room 103.

Neither the top nor bottom plates currently exhibit displacement at the north and south building corners.

East-West Interior Wall at South – Failure

The top plate of the interior wall separating rooms 101 and 102 has failed adjacent to a partially extant brick masonry chimney (Photo 32). Total section loss was observed at this location, likely due to termite activity and water infiltration.

East-West Interior Walls at West Ends – Movement

Walls in the vicinity of doors D101B and D103A exhibited extensive movement of the west wall relative to the interior walls. Doors 101B and D103A cannot close due to differential vertical movement of the two door jambs (Photo 33). Plaster finishes

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exhibited diagonal cracking immediately east of the two doors.

Miscellaneous Conditions

Other distress conditions were observed, including isolated locations of missing pierrotage between interior logs.

Locations of suspected animal entry were identified below window W104B and within the top plate splice at the building northeast corner.

Penetrations are present in all interior walls where past mechanical fixtures were once present.

Masonry Foundations

The poteaux-sur-sole logs bear on a stone masonry foundation at all four exterior walls (Photo 34). In addition, the interior vertical wall separating east from west rooms at the first floor is supported by a masonry foundation wall. As the building site slopes downward from east to west, the height of the masonry wall visible above grade increases from approximately one foot along the west wall to six feet along the east wall.

Stone masonry foundations are present beneath chimneys located at the interior walls separating rooms 101 and 102 and rooms 102 and 103. Stone masonry piers are present in the basement located at the mid-point interior walls separating rooms 104 and 105 and rooms 105 and 106. The piers transition from stone to brick masonry at the bottom edge of the timber girders.

Condition Assessment

The stone and mortar on the north, west, and south walls were in good condition with minor deterioration and soiling in isolated areas. The east foundation wall was observed to be approximately four degrees out-of-plumb and distressed in the vicinity of the vertical log wall that has moved out-of-plane immediately above. Several stones in the top courses of the foundation wall have been displaced by the log movement above (Photo 35).

At the foundation wall supporting the interior wall, areas of mortar loss and loose stones were observed (Photo 36).



Photo 34. The masonry foundation walls, as viewed from northeast. The height of masonry walls increases from west to east, as the ground level slopes down toward the Common Field.



Photo 35. Lateral displacement of the outer course of the east masonry foundation wall near the middle of the wall.



Photo 36. Missing mortar within interior masonry wall west face as viewed from room 103.



Photo 37. Step cracking at northeast corner, east wall viewed from basement.



Photo 38. Masonry pier in the basement. Note mortar loss at base and transition from stone to brick masonry at the bottom face of the wood girder.

Step cracking was noted on the north wall near the intersection of the internal basement foundation wall and the north foundation wall (Photo 37). Missing mortar and cracking were observed from the interior within the basement at this location. Step cracking was also observed from the basement interior at the north end of the east wall. There are several areas where mortar around the stones was missing, allowing for water intrusion and pest infiltration.

Evidence of extensive re-pointing at the east face of the interior basement wall was observed. Most of the exterior of the west masonry foundation wall is below grade.



Photo 39. The interior chimney within Room 102 has collapsed or been disassembled.



Photo 40. Interior chimney within Room 204 exhibiting moisture-related deterioration to finishes.

Tunnels likely dug by animals were present underneath the masonry wall at two locations within the basement: at the north masonry wall located approximately 6-feet from the northeast corner and at the basement wall supporting the interior east-west demising wall at approximately midspan.

Masonry piers within the basement provided support for the stove chimneys. The piers appeared to be in fair condition (Photo 38). The pier bases exhibited mortar loss, and isolated cracking was observed in the brick units above the transition from stone to brick masonry within the south pier.

Interior Chimneys

Four brick masonry chimney locations were identified within the first floor. Chimneys spanning one story-height are located at the midpoint of the east-west walls separating rooms 101 and 102 and rooms 102 and 103. Chimneys spanning both stories were located at the midpoint of the east-west walls separating rooms 104 and 105 and rooms 105 and 106. The chimneys are visible above the roofline in HABS photographs taken in 1986 and in a photograph dating to summer 2011. During the most recent roof replacement project c. 2015, the brick chimneys were truncated such that they do not extend above the roofline at both first-floor and second-floor roof areas.

Condition Assessment

The chimney within the north wall of room 102 has collapsed southward (Photo 39). The bricks are still present within room 102, though many have fallen into the crawlspace below. The remaining chimneys are in fair condition. At the second floor, the interior finishes covering the chimney in room 204 show signs of significant water infiltration at the chimney location, likely predating the roof replacement project (Photo 40).

First-Floor Structure

The first-floor structure is constructed of 21 timber oak floor joists spanning between the east masonry wall and the interior masonry basement wall (Photo 41). For identification, joists were numbered from north to south (see framing plan in Appendix A). At the east ends, joists are notched at the bottom face to



Photo 41. Overview of timber joists supporting the first wall, notched into the bottom plate of the east wall. The east wall at its south end is pictured.



Photo 42. Joists within room 102.



Photo 43. Framing joists and girder resting on ground within room 103.



Photo 44. Gap observed between joist 9 and girder.



Photo 45. Shims present between joist 21 and girder.

key into slots within the east wall sill plate member. The slots were generally sized to receive timber joists; however, at multiple locations, the slots within the sill plate member exceeded the width of the existing timber members. At the west end, joists are pocketed into the masonry wall. The individual joists appeared to date to varying periods of construction or repairs, ranging from timber members retaining their bark and hewn only at the top (puncheon) to hand-hewn members to saw-cut timbers. The nominal dimensions of the joists ranged from 3.5-inches to 10-inches in width and from 6-inches to 8.5-inches in depth. With the exception of joist 16, all joists measure greater than 5 inches in their least dimension. The members were spaced approximately 28-inches on center on average, with spacings ranging from 26 to 32-inches.



Photo 46. Splice within girder at center of full-height basement.



Photo 47. Timber post at girder center exhibits some wood decay at the post/soil intersection.

Joists within the west rooms extend from the interior masonry wall approximately 62 to 78-inches westward and have been cut (Photo 42). The beams were likely supported at midspan by a girder (Photo 43); this girder was observed to rest directly upon soil within rooms 102 and 103, but the floor framing was obscured by planking in room 101. HABS drawings also indicate that the joists were each sistered with a 2x member at an undetermined date. These “sister”

members are no longer extant in room 103 and multiple were missing within room 102.

Nominal 9x9 hewn basement girders span in the north-south direction to support the first-floor joists at midspan. Three girders span in a series between the south masonry wall, the south masonry pier, the north masonry pier, and the north wall.

A nominal 4x6 post is present at the midspan of the central girder directly at a splice. The girder splice contained two 1-inch wood pins (Photo 46). The vertical post extends into the soil within the basement and exhibits some signs of initial wood decay at the base.

Condition Assessment

Joists varied in condition. Girders varied in condition.

Typically, joists were observed to not bear upon the three girders at their midspans (Photo 44). Approximately seven joists had been shimmed in place to reestablish bearing (Photo 45).

Wood decay was observed at the base of the post supporting the midpoint of the central girder, where it is in contact with soil (Photo 47).

Planking varied in condition throughout the first floor, ranging from missing or failed planking to planking in fair condition. Failed planking was observed adjacent to previous floor penetrations and near interior door thresholds, especially at the east exterior door. Planking is missing within room 103, and very little planking remains within room 102.

Second-Floor Structure

Second-floor framing consists of dimensional lumber joists spanning in the east-west direction, nominally spaced at 24-inches on center. The second floor framing is visible where it bears upon the vertical log top plate along the entirety of the east wall and along the north-south interior wall in rooms 104 and 106 (Photo 48). The framing is also visible within room 203 in the vicinity of Door D203B, where the east wall has displaced (Photo 49). Measured joists varied in size from 2.25 to 4-inches in width and from 7 to 8 0.625-inches in depth. Second-floor joists were



Photo 48. Second floor joists viewed from first floor at north-south interior wall within room 106.



Photo 49. Second floor joists viewed from second floor at east wall.

observed to bear atop the first-floor wall top plate, with pierrotage infill between adjacent joists, likely added when the second story was originally constructed c. 1900.

On the second floor, interior finishes are generally present, allowing for observation of the second-floor wall framing at only two locations: south of Door D203B and north of window W204A (Photo 50). The second-floor wall framing consists of nominal 2x4 members spaced at 16 inches on center. Two 2x4 members comprise the wall top plate, while one 2x4 member comprises the wall sill plate.

The second-floor floor was finished with 1x3 tongue-and-groove, hardwood planks, which appeared to be original to the second-story construction. The



Photo 50. Second-floor stud wall framing visible within areas of missing plaster finishes.



Photo 51. Top plate distress above exterior wall at second floor.



Photo 52. 2x4 dimensional lumber roof rafters spaced at 24 inches on center and planking (bark still in place).

hardwood flooring was generally observed to be in good condition, except at the east wall near door D203B.

Condition Assessment

The second-floor framing is in fair condition. Top plate distress and distress to the floor joists were observed above door D203B, where evidence of past water infiltration was observed and has damaged the structure and interior finishes (Photo 51).

Roof Structure

Roof framing was observed to consist of 2x4 dimensional lumber rafters and 2x6 ceiling joists spaced at nominally 24-inches on center. Roof sheathing consisted of full-log sawn planks with the bark still present (Photo 52).

Condition Assessment

Roof rafter and ceiling joist end distress were observed above door D203B, where evidence of past water infiltration was observed and has damaged the structure and interior finishes.

SITE FEATURES

East Porch Landing

The landing located along the south wall is constructed of stone masonry with a concrete topping. Two cisterns are integrated into this structure.

Condition Assessment

The concrete topping is severely cracked and had debonded along the stairs and southeast portion of the porch (Photo 53 through Photo 55), resulting in pitted and uneven walking surfaces.

Concrete Walkway

A paved concrete walkway which once led to the main porch is present along the east facade. The walkway is a concrete slab-on-grade.

Condition Assessment

The concrete walkway is in poor condition (Photo 56). The walkway has sunken and cracked.

Concrete Site Wall

A concrete retaining wall of unknown function is located in the field to the southeast of the house (Photo 57). Pockets for a previous railing are present along the top, and three rectangular holes measuring approximately 4x6 inches are present along the vertical face and may be present to allow drainage from behind the wall.

Condition Assessment

The concrete retaining wall is cracked through the full depth of the wall at several locations and is out of plumb. This element is in poor condition; however, no intervention is needed since it serves no current function and is not a life-safety hazard.

Cisterns and Well

Four cisterns and a well are located on the property. Two of the cisterns are integrated into the concrete porch along the south wall (Photo 58 and Photo 59). These cisterns are sealed with steel and stone lids. The brick wall of the southwest cistern is exposed along the south edge of the porch. The third cistern is detached



Photo 53. South view of deteriorated concrete topping at south elevation.



Photo 54. Deteriorated concrete topping at steps to south entrance.



Photo 55. Deteriorated concrete topping at steps to south basement entrance.



Photo 56. Deteriorated concrete walkway.



Photo 57. Concrete retaining wall at eastern edge of property



Photo 58. Cistern at the southeast corner of the house, with a metal cap and distressed concrete.

from the house and is located a few feet from the north wall (Photo 60). It is built of rough cut stone and brick and is capped with two large stones. The fourth cistern is northeast of the house in the lawn (Photo 61 and Photo 62). It is also constructed with rough cut stone but is capped with a concrete top, and parts of the hand pump are still present. Remnants of a stone well are also present in the field north of the house (Photo 63 and Photo 64).

Condition Assessment

Mortar is missing from the exposed brick walls of the southwest and north cisterns. The steel lid on the northeast cistern is out of place and poses a tripping



Photo 59. Cistern at the southwest corner of the house, with a stone cover and distressed stone and brick masonry.



Photo 60. Cistern on the north side of the house. This cistern has also not been backfilled.



Photo 61. Cistern on front lawn is distressed. The cistern has not been backfilled and is partially filled with water.



Photo 62. View into cistern.

and falling hazard. None of the cistern lids were removed during the investigation and it is unknown if the cisterns have been infilled.

OUTBUILDINGS

Three outbuildings formerly used for farming practices are located throughout the property. These structures include a chicken house, woodshed, and a corn crib. Ruins of other former structures are also present including the foundations of a second chicken house and smoke house, and possibly the foundation of a hog house.



Photo 63. Well in the field to the north of the corn crib with a stone cap. The well had not been backfilled.



Photo 64. View into the north field well.

A capped well is located north of the corn crib. The well is constructed of cut stone walls and is capped with a stone top with a steel lid. Overgrown vegetation surrounds the well location.

Chicken House

Still standing is one of the former chicken houses located southwest of the Delassus-Kern House (Photo 65 and Photo 66). This chicken house is constructed with vertical posts placed in the ground with a concrete foundation wall that infills around the vertical logs. The exterior walls of the building are sawn lumber that are anchored with round nails, indicating a post-1900 construction date. Weathered finishes indicate that the chicken house was once

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Photo 65. South side of chicken house.



Photo 67. Wood shed exterior, south and east walls.



Photo 66. Interior and roof framing of chicken house.



Photo 68. Wood shed interior, looking northwest.

painted red. Corrugated steel is used for the roof of the structure and is also fastened to the base of the east wall.

Condition Assessment

The chicken house is in fair condition. Exterior paint coatings have worn away, leaving wood siding and trim exposed and subject to weathering. The roof shows uniform surface corrosion but is otherwise intact. A gutter system was once installed on the east and west sides of the structure but is severely corroded and non-functional. A few of the concrete foundation walls visible inside the chicken house have shifted or fallen. The door is no longer functional, and there are no coverings over the other openings. The structure appears fragile but currently stable; however, further stabilization would be necessary prior to opening for access by visitors.



Photo 69. Detail of sill framing at the Wood shed.

Woodshed

The woodshed is constructed primarily of sawn 2x dimension lumber framing on a heavy timber sill; some rough-cut members are present, particularly for smaller blocking members, and some roof members appear to be more recent replacements. The timber sill is supported by a low limestone foundation or footing; in some locations the sill has been displaced off the footing, likely due to overall deterioration of the structure. The exterior cladding is circular-sawn wood planks, oriented vertically, which are heavily deteriorated in some areas and overlaid with corrugated steel sheet in other areas (Photo 67). The wood cladding is anchored with wire nails, also indicating a post-1900 construction date. Like the chicken house, corrugated steel is used for the roof of the structure.

Condition Assessment

In general, the woodshed is in poor condition. The vertical wood cladding is severely weathered throughout, and extensive deterioration is found in the lower portion of the west exterior wall. The wood cladding on the south wall has failed due to extensive water damage. Corrugated steel panels were installed along the east wall of the structure. The steel roof and other steel elements show uniform corrosion. The interior of the woodshed is full of various types of construction materials and debris. The framing of the woodshed generally appears stable (Photo 68 and Photo 69); however, full replacement of the exterior cladding is required to prevent further deterioration of the structure. The contents of the interior should be inventoried prior to disposal or reuse.

Corn Crib

The corn crib is an elevated wooden structure supported by a stone masonry foundation (Photo 70 through Photo 72). Circular sawn lumber was used to construct the slatted wood walls present on the east, north, and west walls which allow for airflow within the structure. The south wall of the structure is clad in corrugated metal. The side-gabled roof is also corrugated metal and provides a deep overhang on the east and west walls.

Condition Assessment

Overall, the corn crib is in fair to poor condition. The stone masonry foundation is distressed; portions of the east and north walls have collapsed and will need



Photo 70. Exterior of corn crib.



Photo 71. Roof overhang of corn crib at east.



Photo 72. Interior of corn crib including slatted walls, masonry foundation, and access opening

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to be rebuilt. The floor beam along the north wall is displaced from the foundation and wall framing. This beam will need to be reinstalled. Most of the elevated floor framing and flooring have been removed but there are remnants of these materials inside the structure. The exterior slatted walls are mostly intact and in good condition. The roof is corroded and has reached the end of its service life. Full replacement of the roofing is recommended. Stabilization of the structure of the roof overhang is also necessary. The contents of the interior should be inventoried prior to disposal or reuse.



Photo 73. Foundation of former smoke house.

Other Structures

Several remnants of other structures were noted throughout the property. The foundation walls of an old smoke house are present between the chicken house and the north wall of the Delassus-Kern House (Photo 73Photo 74). Three to four courses of cut stone are all that remain of this structure.



Photo 74. Remaining foundation of former chicken house.

The concrete foundation walls remain of a former chicken house are located a few feet south of the other remaining chicken house structure (Photo 74).

It is possible that the footprint of a former utility shed exists within a wooded area east of the corn crib. This area was excessively overgrown with vegetation making it difficult to inspect. This area is also intentionally avoided during scheduled landscaping activities indicating the potential presence of debris

Condition Assessment

These additional outbuildings are in various states of ruin. None of the structures pose any life-safety risk so little intervention is required. All of the structures do contribute to the historic context of the overall site as remnants of previous farming activities and should be made more visible. Excess vegetation and debris located around these elements should be removed to highlight and maintain these contributing structures.

WOOD SPECIES IDENTIFICATION

A limited program of wood species identification was performed as part of the 1986 dendrochronology analysis, which identified species from seven samples taken from the Delassus-Kern House, one sample from the wine press located in the Delassus-Kern House basement, and 136 samples from 23 other log structures in Ste. Genevieve.¹¹ From this assessment, white oak was identified as the species used for structural floor beams and exterior wall logs, which is consistent with most other vertical log structures. Additionally, cottonwood was identified as a species used for interior vertical logs within the house; though the number of interior samples taken was not noted. As a hardwood species with low density, Cottonwood would be more suitable for interior use.

To support the 1986 wood species identification, a further 10 locations were sampled from various structural members of the Ken House. Samples were removed from vertical logs, floor beams, girders, and diagonal braces.

Findings of wood species identification for Delassus-Kern House are shown in Table 1, and the “Wood Condition Assessment Report” is attached as Appendix A. Wood species identified in samples collected from the Delassus-Kern House exterior walls, partition walls, and first floor framing members comprise several hardwoods native to the region. Based on the investigation of a small number of randomly collected samples, white oak and red oak appear to be predominant species used for wall construction and for the floor beams. Other hardwoods identified in floor beams (walnut), partition wall logs (cottonwood), and diagonal brace (sycamore) might have been used because the logs were available locally during the period of construction.¹²

Table 1. Wood identification results for the samples from Delassus-Kern House			
Sample No.	Component	Location	Wood Species/Species group
1	Girder	Between B16 and B17	Red oak group (<i>Quercus</i> spp.)
2	Girder	Between B20 and B21	Red oak group (<i>Quercus</i> spp.)
3	Floor Beam B18	Basement	Black walnut (<i>Juglans nigra</i>).
4	Floor Beam B16	Basement	White oak group (<i>Quercus</i> spp.)
5	Diagonal brace	Partition wall between Rooms I and II, south of door	Sycamore (<i>Platanus occidentalis</i>)
6	Vertical log S11	Room II	Red oak group (<i>Quercus</i> spp.)
7	Vertical log E24	Room II	Red oak group (<i>Quercus</i> spp.)
8	Vertical log	Partition wall between Rooms III and IV	Cottonwood, aspen, poplar (<i>Populus</i> spp.)
9	Vertical log N17	Room IV	White oak group (<i>Quercus</i> spp.)
10	Vertical log W	Room VI, under window	White oak group (<i>Quercus</i> spp.)

¹¹ Guyette, "Tree Ring Dating."

¹² Ligno Logic LLC, "Wood Condition Assessment of the Kern House and Jean Baptiste Valle House", 2022

WOOD ASSESSMENT

First-Floor Framing Members

Wood moisture contents of floor framing members were on average 16-18%, which is within expected range for the basement and the climate at the building site and below the threshold required by wood decay fungi for active growth and wood decay. Evidence of past moisture issues was present in some locations, specifically in areas surrounding the chimneys and in proximity to the east wall. Members in these locations also had higher incidence of wood decay, insect damage and overall poor condition.

In general, the condition of floor beams (and girder) ranged from poor to good. The principal cause of deterioration is fungal decay, frequently accompanied or followed by wood deteriorating insect infestations. Resistance drilling results (see Appendix A) suggest that many members have compromised integrity due to powder post beetle damage or incipient decay. This “punky” region extends up to 1.5 inches from the surface. Internal decay, characterized by internal voids due to fungal decay, was observed in approximately one third of the east ends of the beams, and in girders next to chimneys and walls.

Vertical Log Walls

Resistance drilling results for vertical logs at the exterior and interior walls are shown in Table B2 (see Appendix A).

The condition of exterior wall vertical logs ranges from poor to good. Deterioration is primarily caused by fungal decay. There is active powder post beetle infestation in several areas as indicated by the accumulation of frass on the surfaces below logs.

Pest Damage

Insect Damage

Damage to wood structural members caused by various wood-boring insects was documented during



Photo 75. Termite damage to vertical logs in Room 101.

the physical investigation (Photo 75). No live insects were observed, and no entomological analysis was performed within the scope of the structural assessment to verify insect species. In some cases, the damage observed followed well-recognized patterns of insect activity; in other cases, it may be possible that multiple insect vectors are responsible for the damage observed.

In many cases, the extent of damage from insects to the wood structural members was not visible from visual observation alone.

Termites

Four species of termites occur naturally in Missouri. All these species are closely related and belong to the genus *Reticulitermes*. All of Missouri's native *Reticulitermes* termites are subterranean.¹³ Subterranean termites live in colonies below ground and only enter into a wooden structure to feed. When above ground, they construct mud tubes as a link between their food source and colony, which protect them from predators and dry air. The clay infill of the pierrotage construction allows termites to propagate to the interior wood members at elevated floors without detection. Termites eat the wood cellulose,

¹³ Richard M. Houseman, "Subterranean Termites," University of Missouri – Columbia, Department of Entomology, <https://extension.missouri.edu/publications/g7420>. Accessed March 28, 2021.

which weakens the rigidity and strength of the wood members.

Presence of mud tubes on wood surfaces suggest past infestation with an unknown termite species. It appears that the termite damage is in most instances restricted to wood that also shows signs of advanced decay. Some wood boring insects prefer wood that is already softened or degraded by wood decay fungi, and although the signs of insect damage can appear more alarming than wood decay, insects are secondary wood deterioration organisms that almost exclusively infest wood with already compromised structural integrity.

Powder Post Beetles

Powder post beetles are within the group of wood-eating beetles referred to as "woodworm" because they spend several years as grubs tunneling through the wood before they depart as an adult beetle. The wood that they inhabit was sometimes colonized before the tree was felled; thus the structure may have been infested from its initial construction. The adult beetle lays its eggs in crevices in the timber, with larvae emerging soon afterward, eating their way through the timber for the next several years. Eventually, pupation will occur in chambers just below the surface. The adult beetle emerges from the timber through an exit hole or "flight hole." A mating flight then follows, and, subsequent to mating, the female seeks out a suitable place to lay eggs, and the cycle begins again.¹⁴

This cycle may take place over and over again within the protected confines of the affected structure. This is a long-term infestation and has caused significant structural damage but has been mostly confined to the outer 2 inches of the affected logs.

Powder post beetle damage is widespread as confirmed by the presence of pin-size emergence holes on wood surfaces suggesting long-term infestation and fresh frass in some areas indicating

currently active infestation. It appears that in most instances, powder post beetle damage is limited to sapwood of oak and does not extend into naturally durable heartwood. The extent of damage in beams made with other wood species depend on the insect preference for individual species and its heartwood durability.¹⁵

Animal Damage

Damage from larger animal pests was also observed at the house (Photo 76). Common animal pests in Missouri include squirrels, mice, and rats, burrowing animals like groundhogs, birds, and bats. Controlling damage from animal pests is typically approached through sealing potential entry points, eliminating



Photo 76. Animal damage to vertical log near a hole in exterior cladding below window W104B.

attractive nuisances like overhanging trees or woodpiles, and performing regular inspections for signs of infestation. Cruelty-free repellent treatments like ultrasonic devices, ammonia-based repellants, and predator urine are often anecdotally described as effective, but in practice, may have limited or inconsistent success. No active animal infestations were observed, but evidence of burrowing animals, squirrels, and snakes were observed in the house.

¹⁴ Richard M. Houseman, "Wood-Boring Beetles," University of Missouri – Columbia, Department of Plant Sciences, <https://extension.missouri.edu/publications/g7422>. Accessed March 28, 2021.

¹⁵ Ligno Logic LLC, "Wood Condition Assessment of the Kern House and Jean Baptiste Valle House", 2022

ENVELOPE ASSESSMENT

Roof and Drainage System

The existing standing seam sheet metal roof was installed in approximately 2012 (Photo 77 and Photo 78). At this time the brick chimneys were removed, and a new roof drainage system was installed.

Galvanized steel gutters are present along the full length of the east roof edge and both roof lines along the west roof edge. Downspouts are present at the four corners of the house. The southeast downspout drains onto the concrete porch along the south wall. The downspout at the southwest corner extends beyond the porch to drain into the adjacent grass. Corrugated plastic drainage extension pipes are attached to both downspouts on the north wall to facilitate drainage away from the foundation walls. Two downspouts are attached to the second-story gutters along the west wall and drain directly onto the first-story roof (Photo 79).

Condition Assessment

The roof is in good condition. No deficiencies were noted on the roof, but tree trimming is recommended for all trees that touch the first-story roof along the west wall.

The drainage system is in good condition, but minor corrosion is present along the underside of the gutters. Additionally, gutters along the west roof edge are full of leaves and should be cleaned to maintain proper drainage.

Siding

Typically, the exteriors of French Colonial timber framed houses were originally covered in whitewash or stucco to protect the timbers and infill. Many homes in Ste. Genevieve later had wood weatherboard (lap) siding applied to some or all of the exterior wall. The age of the existing siding is unknown. Some existing siding may remain from the c. 1900 alterations; however, color variations in the wood suggest that segments of lap siding were removed and replaced as needed over the years. This is primarily evident at the south wall where evidence



Photo 77. First and second story roofs at West wall.



Photo 78. Standing seam of sheet metal roof.



Photo 79. West gutter showing anchored gutter hangers and visible corrosion on gutter.

Delassus-Kern House
Ste. Genevieve National Historical Park



Photo 80. South wall showing whitewashed older siding at first floor and later aged replacement siding at second floor.



Photo 81. General weathering of lap siding and one split board of siding at north wall.

of whitewash is present on the siding at the first level, but the siding at the second level is unpainted (Photo 80); these repairs were likely performed by MoDNR in the 1990s.

Condition Assessment

The existing lap siding shows varying degrees of weathering throughout the house (Photo 81) and isolated areas of damaged from other causes such as animals. The siding is secured into vertical logs with exposed nails. Nails are aligned vertically and are spaced according to the location of structural vertical logs. Loose nails are present in some areas of lap siding, primarily at the south wall. Warped, split and broken siding was also identified in isolated



Photo 82. Window 104A on north wall, showing typical 2-over-2 windows installed after the second floor was added.



Photo 83. Window 103A on west wall, showing 6-over-6, double hung sash.



Photo 84. Delicate muntins at the 6-over-6 windows. Further research is needed to determine an approximate age of these window units compared to the 2-over-2 units.



Photo 85. Door 101A, missing hardware and glass.



Photo 86. Historic but not original hinge at Door 101A.

locations. There are also penetrations in the siding at several locations from previous utilities. A large wall bulge has developed on the east wall due to the instability of interior structural members. Temporary bracing and ties have been installed between windows 105B and 104C on the first floor and to the basement.

The existing lap siding boards are in fair condition, meaning that they are generally performing as intended but with limited remaining service life. Full replacement of the lap siding is recommended. At the very least, all loose nails should be hammered flush with the siding, and any broken or deteriorated siding should be replaced with in-kind wood siding. The east wall siding should be replaced during permanent stabilization of the east wall.

Windows

There are 24 wood double-hung sash windows throughout the House. Window lite configurations vary between 2-over-2 and 6-over-6, depending on side of the building (Photo 82 and Photo 83). The ages of the existing windows are currently unknown. The 6-over-6 style may date to before the alteration of the house c. 1900. The 2-over-2 style can be seen in photographs of other houses in Ste. Genevieve around the turn of the 20th century, including known historic photos of the Delassus-Kern House, and appears to be original to the c. 1900 alterations.

There are also four small, square openings on the basement level for ventilation and four small openings for ventilation into the attics that are covered with wood-framed screens.

Condition Assessment

All doors and windows at the House are in poor condition. None of the doors or windows are fully operable. The wood window frames and muntins are severely weathered and/or rotted and there are broken panes of glass in most windows (Photo 84). There are large gaps around the framing for the basement vents that provide the opportunity for pest infiltration.

Doors

There are six exterior doors at the Delassus-Kern House; two at the basement level, three at the first floor (Photo 85) and one on the second floor that once led to the upper level of the gallery on the east facade. The doors are of varying styles and have miscellaneous, unmatched hardware (Photo 86). The doors appear to date to various periods of time, and likely no original doors are extant. Further investigation and research are needed to determine if any of the doors predate the c. 1900 alterations.

Delassus-Kern House
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Condition Assessment

All doors at the House are in poor condition (Photo 87 through Photo 89). None of the doors are fully operable. The wood frames and doors are severely weathered and/or rotted and there are broken panes of glass in glazing openings.



Photo 87. Door 102A with ornamental panels in failed condition.



Photo 88. Exterior door stored in Room 106, similar to Door 101A but in better condition. Possibly the door from Room 104.



Photo 89. Ornamental panels and moulding on exterior door, with ornate hardware.

CONSIDERATIONS FOR PRESERVATION

Preliminary Evaluation of Significance

Ste. Genevieve, Missouri, has been recognized as having local, state, and national levels of significance under the criteria of the National Register of Historic Places. The multiple levels of significance have been described in the following documents:

- Ste. Genevieve National Historic Landmark (NHL) District, 1960 (Expanded and revised, 1970)
- Ste. Genevieve National Register Historic District, 2002
- Ste. Genevieve Special Resource Study and Environmental Assessment, 2016
- Ste. Genevieve National Historical Park (NHP), 2018
- Archeological Overview and Assessment, 2021

Although the Delassus-Kern House is located outside the boundaries of the 1960/70 NHL district and the 2002 National Register district, its historical significance was recognized by the 2016 Special Resource Study and by its inclusion in Ste. Genevieve NHP.

The house is eligible for individual listing on the National Register of Historic Places on the national level under Criteria A and C, for its poteaux-sur-sole construction and association with broad patterns of exploration and settlement.

The house is also eligible on the local level under Criterion D for its potential for archeological information.

Preliminary Evaluation of Integrity

Per the National Register Bulletin 15: *How to Apply the National Register Criteria for Evaluation*, “integrity” is the ability of a property to convey its historic significance. Integrity is evaluated under seven aspects: Location, Design, Setting, Materials, Workmanship, Feeling, and Association. Depending

on the significance criterion of the property, some aspects of integrity are more critical to expressing the building’s historic significance than others, but the property must retain integrity to be considered significant.

The primary historical significance of the Kern House is its use of the poteaux-sur-sole construction technique and its time period of construction c. 1840. The Kern House is within the period of significance of 1750 – 1846 and within the boundaries of the district of national significance proposed by the 2016 Ste. Genevieve Final Special Resource Study and Environmental Assessment. The house is the largest known extant poteaux-sur-sole structure in the district. Despite later alterations, including the addition of the second-floor structure c. 1900, the original vertical log structure and its stone masonry foundation remain majorly intact.

Although much research remains to be done to understand the full history of the Delassus-Kern House, a preliminary assessment suggests that the property retains a high degree of integrity and represents a unique perspective and context in comparison to the other properties held by Ste. Genevieve NHP. The property retains a high degree of integrity of Location, Setting, Materials, Workmanship, and Feeling due to the surviving poteaux-sur-sole construction and the preservation of its rural context with the unobstructed viewshed across the Common Field. The integrity of Design is somewhat diminished by the c. 1900 addition of the second floor, although further analysis and research are needed to determine the period of significance which will inform the integrity assessment. Further research is also needed to determine if any integrity of Association with Pierre Delassus can be established.

The integrity of the property is threatened by the poor condition of the structure and potential development or expansion of services at the Port of New Bourbon, which may increase vehicular traffic along US-61.

TREATMENT RECOMMENDATIONS

General

*Immediate
(Year 1)*

Hazardous Materials Survey

- Engage a qualified inspector to perform a survey and test for hazardous materials, including lead-based paint (LBP), asbestos containing materials (ACM), and other environmental or material-based hazards at the property.
- Until this survey and testing has been completed, care should be taken when inside the house to avoid disturbing friable materials and to minimize dust producing activities.
- Note that this scope is under contract as part of the HSR scheduled to be completed in 2024.

Interior Survey and Cleaning

- Survey the building materials (flooring boards, framing logs, masonry, shutters, doors, and cetera) stored on the first floor to determine if any of the materials are historic, suitable for potential reuse, or may provide valuable historical or archeological information related to the property.
- Survey the materials and debris (furniture, shutters, window sashes, boxes of miscellaneous items, and et cetera) on the second floor to determine if any of the materials are historic, suitable for potential reuse, or may provide valuable historical or archeological information related to the property.
- Materials determined to be valuable should be clearly marked. Neatly stack larger materials on elevated surfaces like wood pallets, away from areas of deteriorated flooring or floor framing. Repackage smaller items in ventilated wood boxes or relocate items to another facility.
- All materials determined not to be valuable should be removed from the property.
- Remove dust, trash, and debris. Perform cleaning activities in compliance with any containment or abatement requirements as determined by the hazardous materials survey.

Mothballing and Temporary Protection

- Mothballing should be implemented after stabilization of the structure and east wall has been performed.
- Replace the basement door on the east wall and the first-floor door on the west wall with new security doors of solid wood or metal with a wood core and new deadbolt locks. Repairs to the opening framing will be required.
- Replace the plywood sheathing over openings as recommended below under “Doors and Windows” for security and weatherproofing. The plywood sheathing at each window should be 30 to 40 percent open with fixed louvers and metal insect screens to allow passive ventilation of the structure. Remove, document, and store window sashes where required to allow ventilation.¹⁶
- Install fixed louvers and metal insect screens at the existing openings in the end walls to allow passive ventilation of the attic spaces. Consider adding roof vents to the rear-facing roof slopes to improve attic ventilation.

¹⁶ Park, Sharon C. “Preservation Brief 31: Mothballing Historic Buildings.” *The Preservation of Historic Architecture, The U.S. Government’s Official Guidelines for Preserving Historic Homes*. Guilford, CT: The Lyons Press, 2004.

	- Install fixed louvers and metal insect screens at the existing openings at the basement level except where water intrusion through the opening is a risk due to the elevation of the exterior grade in relation to the opening. - All interior doors should be fixed open to allow cross ventilation. - Cover any openings or gaps that may allow animals or pests to enter the building.
<i>Medium Term</i>	<u>Finishes Analysis</u> - Perform an analysis of the remnants of the existing historic finishes, including evidence of whitewash on the logs, painted surfaces, and other finishes. The analysis should attempt to determine if any original or early finishes remain, the approximate date of extant finishes, the type of finish, and the earliest colors where able to be determined. - Consider archiving samples of the wallpaper and the floor cloths. - Determine if a finishes analysis is desired for any of the existing outbuildings. <u>Mortar and Plaster Analysis</u> - Perform an analysis of the plaster to determine the composition and approximate age of the plaster. Sampling should be performed so as to collect representative sample from undisturbed surfaces where possible, such as behind casing or trim, and to collect samples from each possible addition or alteration to the house. The plaster analysis should also provide a compatible material recipe for repairs. - Perform an analysis of the pierrotage mortar to determine the composition and to develop a compatible repair mix. - Mortar and plaster analysis should both physical and chemical analysis, including petrography. Chemical analysis alone is insufficient. <u>Fire and Smoke Detection</u> - Currently, the structure has no fire or smoke detection systems. Install a smoke and fire alarm system with remote alert capabilities; this will likely require internet or telecommunication lines being installed at the property. Until power or telecommunication lines can be established, a cellular-service based system may be available, pending sufficient signal at the property.
<i>Long Term (5+ Years)</i>	<u>Porch Reconstruction</u> Consider reconstructing the two-story porch on the east wall to restore the missing character-defining feature.
<i>Preservation Maintenance</i>	<u>Visual Inspections</u> - Perform a weekly inspection of the building exterior to ensure all doors and windows remain secured. - Perform a quarterly interior inspection for evidence of pest infiltration, water intrusion, and other issues which may affect the condition and stability of the structure.

Vertical Log Walls

At the time of writing, wood bracing is in place to support the lateral movement of the first-floor sill. This bracing is temporary and should not be expected to prevent further movement of the structure. A project for additional shoring to stabilize the east wall is anticipated to be completed by early 2024.

Immediate (Year 1)	<u>Install Additional Shoring</u> - Install vertical shoring of both the first and second floor framing along the east wall. - Install diagonal bracing to the first-floor sill plate and top plate at areas of existing horizontal displacement. - A stabilization project has been contracted and work is expected to be completed in early 2024.
Medium Term (2 to 5 Years)	<u>Failed Top Plate between Rooms 101 and 102</u> - Splice failed top plate at interior chimney. <u>East Wall Repairs</u> - Treatment of the east vertical log wall will likely require highly invasive measures. - The top and bottom plates along the east wall have lost all integrity and must be removed and replaced. This repair would first require complete shoring of both first and second floor framing inboard of the east exterior wall. - Vertical logs showing significant pest deterioration shall be replaced in kind, depending on the extent of damage. Partially replacement is preferred where sound wood is present at portions of the log; full replacement shall be performed only where the existing log cannot be spliced or salvaged. - Replace the dimensional lumber knee wall at west. Either splice vertical logs at their bases or replace full-height logs in kind.
Long Term (5+ Years)	<u>Pierrotage</u> Replace areas of failed or missing pierrotage between vertical logs.
Preservation Maintenance	<u>Inspections</u> Visually monitor all log walls for displacement or movement on a monthly basis until full restoration/stabilization of the structure can be performed.

Masonry Foundations

Immediate (Year 1)	<u>Repairs to East Masonry Wall</u> Repair the loose and displaced masonry at the east wall near the basement door.
Medium Term (2 to 5 Years)	<u>Repairs to East Masonry Wall</u> - The east masonry wall is out of plane and should be repaired and partially rebuilt during the repairs of the east wall vertical logs. <u>Repointing</u> - The masonry wall supporting the north-south interior wall should be fully repointed in the crawlspace. - Repoint other stone masonry joints at the exterior and inside the basement as required. - Repoint the stone and brick masonry piers in the basement.

	Pointing mortars should be compatible with the historic mortar and the masonry substrates, as determined by the mortar analysis.
<i>Preservation Maintenance</i>	<u>Inspection and Repointing</u> Inspect mortar joints on an annual basis and provide localized repointing as required.

First-Floor Structure

<i>Immediate (Year 1)</i>	<u>Flooring Stabilization</u> - Several areas of flooring have deteriorated and do not provide a safe walking surface. Provide temporary stabilization for deteriorated and missing areas of floorboards. - Construct a walking platform to replace the failed flooring system in Room 101. - These items are within the stabilization scope and are anticipated to be completed in 2023.
<i>Long Term (5+ Years)</i>	<u>Flooring Repairs</u> - Replace, supplement, or splice first-floor joists exhibiting severe section loss. - Shim between joists and girders to restore the intended structural load path from joists to girders to interior masonry piers. - Install a stone/concrete foundation for the central girder midspan wood post such that it is not resting in the soil. - Replace areas of missing, failed, or moisture/pest-damaged planking. Boards should be replaced in-kind wherever possible. - In Rooms 101, 102, and 103, remove remnants of dimensional lumber framing and repairs, retaining any original timbers. Install a new, self-supporting flooring structure constructed of pressure-treated wood on concrete piers. Consider if installing hardwood flooring in these rooms is desired or if the floors will be interpreted as new materials.
<i>Preservation Maintenance</i>	<u>Inspections</u> Visually monitor for ongoing pest activity within framing. If active infestations are observed, have the property professionally treated.

Second-Floor Structure

<i>Long Term (5+ Years)</i>	<u>Top Plate Repairs</u> - Splice or replace deteriorated plate near the second-floor exterior door. Shoring of the ceiling joist and rafter ends will be required to perform the replacement of the deteriorated top plate. <u>Floor Joist Repairs</u> - Perform additional investigation into the condition of the floor joists supporting the second floor; this will require removal of ceiling finishes on the first floor. Install additional support or supplemental joists at areas of deterioration.
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Roof Structure

*Long Term
(5+ Years)*

Structural Repairs

- Splice or replace deteriorated ceiling joists near the second-floor exterior door; coordinate the structural repairs with the roofing replacement.
- Supplement the deteriorated roof rafters near the second-floor exterior door.

Interiors

*Immediate
(Year 1)*

Interior Finishes

- Conduct inventory of all objects and construction materials present within the house. Save exemplar samples of windows, doors, shutters, posts, and other relevant historic materials.
- Once inventory is complete, remove and discard all debris.

Wine Press

- Remove the wine press from the basement and store in a protected environment.

*Medium Term
(2 to 5 Years)*

Interior Finishes

- Document all interior finishes and archive samples of interior finishes such as wallpaper where applicable. Documentation should include written description, location, and photographs.

Wine Press

- Engage the services of an object conservator to determine the significance and assess the condition of the wine press. The conservator may make recommendations for preservation and storage, or if warranted, disposition.

*Preservation
Maintenance*

Inspections

- Inspect interior finishes annually for evidence of additional deterioration or water damage.

Roofing and Drainage

The roofing and drainage systems are in fair condition and require minimal intervention in the short term.

*Immediate
(Year 1)*

Drainage System

- Remove debris from all gutters.
- Reconfigure downspout at southeast corner to drain into adjacent soil rather than onto the concrete landing.
- Reattach gutter hangers on west roof edge of second-floor where gutter is sagging.

Tree Maintenance

- Trim trees along west side of the house to prevent damage to roof.

<i>Long Term (5+ Years)</i>	<u>Roofing Replacement</u> - Replace the existing roofing system. Determining the period of significance and identifying the period of interpretation will inform an appropriate roofing replacement material, whether wood shingles or shakes or standing-seam metal. - Replace gutters and downspouts with new roofing system.
<i>Preservation Maintenance</i>	<u>Inspections</u> At a minimum, remove debris from gutters in spring and fall.

Siding

The existing lap siding has reached the end of its useful service life and should be replaced. Interim repairs are necessary to ensure watertightness if full replacement of siding is not an immediate option.

<i>Immediate (Year 1)</i>	<u>Siding Repair</u> - Remove any warped, split, or broken siding and install new siding to match existing. - Address all loose nails by hammering back into place. - Remove lap siding on east wall to address structural bulge in wall. Install new siding to match existing or of a historically appropriate material and form once stabilization work is complete.
<i>Medium Term (2 to 5 Years)</i>	<u>Siding Replacement</u> - Remove the existing lap siding on all exterior walls. - Install new siding to match existing or as determined to be historically appropriate for the interpretation period.
<i>Preservation Maintenance</i>	<u>Inspections</u> Inspect lap siding annually to ensure watertightness is maintained.

Doors and Windows

The doors and windows are in poor to failed condition. These elements currently provide little to no weather-resistance for the structure. Intervention is necessary to prevent further water intrusion and subsequent water-related damage to internal wood framing and other interior elements.

<i>Immediate (Year 1)</i>	<u>Weather Resistance Measures</u> - Replace all deteriorated plywood covering with new exterior grade plywood. See also the recommendations for mothballing the structure. - Install new head cap flashing under the existing siding and over the plywood temporary protection to shed water away from openings.
<i>Medium Term (2 to 5 Years)</i>	<u>Pest Management</u> - Infill gaps around basement vent frames to prevent rodent/pest infiltration. <u>Window Replacement</u> - Remove all failed windows. - Install new windows including casing, frames, and sashes. Sufficient existing material may be available for the basis of reproduction units. Further research is needed to determine an appropriate style.

	<u>Exterior Door Replacement</u> - Remove all exterior doors. - Install new period appropriate exterior doors. Date of existing doors is unclear. Further research is needed to determine an appropriate style for replacement doors.
	<u>Shutter Installation</u> Install new wooden shutters in historically appropriate style.
<i>Preservation Maintenance</i>	<u>Inspections</u> - Monthly inspection of plywood coverings is required until more long-term weather-resistance measures are implemented. Replace weathered plywood as necessary to maintain watertightness. - Window and door inspections can be reduced to quarterly once storm windows/doors or replacement windows/doors are installed.

Site Features

Concrete Elements

The concrete topping at the south landing has failed and should be replaced. The concrete retaining wall located on the eastern edge of the property is in poor condition but is not a life-safety hazard. No repairs to the retaining wall are necessary.

<i>Immediate (Year 1)</i>	<u>Concrete Topping Removal</u> Remove all broken and loose concrete topping at south stairs and landing to reduce tripping hazards.
<i>Medium Term (2 to 5 Years)</i>	<u>Concrete Topping Replacement</u> - Fully remove concrete topping at south landing and replace with new concrete topping. - Review underlying masonry structure at south landing after topping removal. Make any necessary masonry repairs prior to installation of new concrete topping. <u>Concrete Walkway</u> - Remove and replace the paved concrete walkway along the east wall to provide access to the House. <u>Water Management</u> - Install a French drain along the foundation wall along the west wall to alleviate moisture concerns such as rising damp.
<i>Preservation Maintenance</i>	<u>Inspections</u> Inspect concrete elements annually for evidence of deterioration or delamination.

Outbuildings

The outbuildings are in fair condition and are in need of stabilization. The outbuildings post-date the period of significance of the house but contributed to the rural agricultural context, the integrity of setting and feeling, and to the significance of the overall site. The period of interpretation should be determined to guide any rehabilitation efforts greater than stabilization of the existing structures.

Immediate (Year 1)	<u>Corn Crib</u> - Reinstall displaced floor beam along north wall. - Rebuild collapsed masonry foundation sections. - Stabilize roof overhang at east roof edge.
Long Term (5+ Years)	<u>Chicken Shed</u> - Remove corrugated steel roof and replace in kind. <u>Woodshed</u> - Remove deteriorated wood siding and corrugated metal cladding and install new vertical wood siding to match the existing. - Remove corrugated steel roof and replace in kind. - Conduct inventory of interior contents of the woodshed. Save exemplar examples of any structural or architectural elements. <u>Corn Crib</u> - Rebuild the floor framing and reinstall displaced flooring. - Conduct inventory of interior contents of the corn crib. Save exemplar examples of any structural or architectural elements.
Preservation Maintenance	<u>Inspections</u> - Remove vegetation surrounding the chicken house and smokehouse foundations and site of former hog house as needed to prevent overgrowth. - Conduct annual inspection of all outbuildings for signs of distress.

Cisterns and Well

Immediate (Year 1)	<u>Cistern and Well Safety Measures</u> - Secure steel cistern lids at south to prevent tripping and falling. - Install barricades around the cisterns in the lawn and to the north of the house and at the well in the north field to prevent vehicular and pedestrian traffic in the immediate vicinity of the distressed cisterns. A radius of 10-feet is recommended. Barricades can be temporary in the form of metal posts and snow (orange safety) fencing or more permanent structures like wood fences.
Medium Term (2 to 5 Years)	<u>Backfilling Cisterns and Wells</u> All four abandoned cisterns and the well should be filled with grout and clean fill to prevent collapse of the shaft. The Missouri Well Construction Rule (Missouri Code of State Regulations 10 CSR 23-3.110) outlines requirements for reporting and permitting for filling of abandoned wells.¹⁷ Consultation with the Missouri

¹⁷ Missouri Department of Natural Resources, “Missouri Well Construction Rule, found in Code of State Regulations. Accessed March 2, 2023. <https://dnr.mo.gov/land-geology/hazards/abandoned-wells>.

	Department of Natural Resources is recommended to determine if the regulations for hand-dug wells of less than 80-feet are applicable to this property. Once the cistern and wells have been properly backfilled, the barricades may be removed.
	<u>Masonry Repairs</u> After the cisterns and wells have been backfilled, repoint deteriorated mortar and rebuild areas of collapsed shaft walls above grade. Reinstall the historic cover.
	<u>Landscaping</u> Remove overgrown vegetation surrounding the well and consider marking the location so that the well will not be damaged by machinery from regular vegetation maintenance activities (haymaking or mowing of the field).
Long Term (5+ Years)	<u>Historic Cistern in the Lawn</u> Portions of pumping mechanism are present at the cistern in the main lawn. Consider restoration of pump mechanism to its historic appearance.
Preservation Maintenance	<u>Inspections</u> Remove vegetation surrounding the well as needed to prevent overgrowth.

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APPENDICES

Appendix A – Ligno Logic LLC, "Wood Condition Assessment of the Kern House and Jean Baptiste Valle House", 2022

Appendix F:

Environmental Survey Report



Consulting
Engineers and
Scientists

December 20, 2023
GEI Project 2302906

VIA EMAIL: lmblank@rrj.com

Lurita McIntosh Blank
Raths, Raths & Johnson, Inc.
500 Joliet Road
Suite 200
Willowbrook, IL 60527

Dear Ms. McIntosh Blank:

**Re: Environmental Survey of Lead-Based Paint, Asbestos, and Hazardous Materials
Delassus-Kern House
Ste. Genevieve, Missouri**

GEI Consultants, Inc. is pleased to submit this report presenting the findings of the lead-based paint, asbestos, and hazardous materials survey performed at the Delassus-Kern House located at 19071 US-61, St. Genevieve, Missouri on August 21 and 22, 2023. This work was completed in accordance with the Standard Agreement between Raths, Raths, & Johnson, Inc. and GEI dated October 9, 2020 and the RRJ, Inc. Task Order Number 140P6023F0027 dated July 5, 2023.

GEI subcontracted SITEX Environmental, Inc. of St. Louis Missouri to lead the field investigation activities at the Delassus-Kern House. The investigation report prepared by SITEX is attached.

If you have any questions, please feel free to contact me at 314-328-0716

Sincerely,

GEI CONSULTANTS, INC.

A handwritten signature in blue ink, appearing to read "Nathan McNurlen", written over a light blue circular stamp.

Nathan McNurlen, CHMM
Project Manager

Attachments

Hazardous Materials Survey of Delassus-Kern House – SITEX Environmental, Inc.

SITEX Project No: 20388

HAZARDOUS MATERIALS SURVEY

Of

Kern House
19071 US-61
Saint Genevieve, Missouri 63670

Prepared for:

GEI Consultants
400 North Lakeview Parkway, Suite 140
Vernon Hills, Illinois 60061

Prepared by:

SITEX Environmental, Inc.
1525 South Broadway
St. Louis, Missouri 63104

September 28, 2023



Your Sole Provider of Environmental Health & Safety Services



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EXECUTIVE SUMMARY

SITEX Environmental, Inc. (SITEX) was awarded the contract by GEI Consultants, Inc. (GEI) to perform a hazardous materials survey of the Kern House located at 19071 US-61 in Saint Genevieve, Missouri. This assessment was performed to determine the presence or absence of asbestos-containing materials (ACM) and lead-based paint (LBP) for the purposes of building renovation and demolition. Bulk samples of suspect building materials were analyzed for asbestos content by Polarized Light Microscopy (PLM). Paint on surfaces was tested for lead content using an X-Ray Fluorescence (XRF) spectrum analyzer. Additionally, SITEX took an inventory of universal hazardous materials; however, at the time of the hazardous materials survey, no universal hazardous materials were observed.

SURVEY INTRODUCTION/SCOPE OF WORK

This survey was conducted by Robert H. Hill II on August 21, 2023, and August 22, 2023. The 1790s French log/timber structure is a two-story log cabin residential structure with full basement. The structure is part of the National Park Service (NPS). The exterior roof is pitched with metal roof. The exterior wall is wood lap siding. The interior ceilings consist of hardwood and/or painted ceiling board. Interior walls consisted of painted drywall, plaster, exposed wood lathe, timber, and chinking. Interior floors consisted of hardwood flooring.

ASBESTOS SURVEY SUMMARY TABLE DEFINITIONS

Sample Number

A number is assigned to each sample to track results. A homogenous area is defined as an area of material that is uniform in color, texture, and age. Each homogenous area was given a distinct letter designation. An example of the numbering sequence is as follows:

101-PL-01A

101 = Kern House Room Number

PL = Plaster

01 = Homogeneous area number designation

A = First sample taken of homogeneous number designation of building material description

Sample Description

Describes the bulk sample material collected.



Approximate Quantity

Approximate quantity of ACM broken down by location.

Abbreviations

DW = Drywall Joint Compound System

MTR = Mortar

PL = Plaster

WG = Window Glazing

WP = Wallpaper

Condition

Condition of the suspect material at the time of this inspection. This is based on the discretion of the inspector. The condition categories are as follows:

Good = no visible damage

Fair = minor damage

Poor = major damage, needs action as soon as possible

Accessibility

Indicates how accessible the suspect material is and to what group of people. The categories are as follows:

Low = material is inaccessible, or access is very limited

Moderate = material is only accessible to maintenance personnel

High = material is accessible to the general public

Friability (Non-Friable versus Friable)

A designation to indicate friability (extent to which material, when dry, may be crushed, crumbled, or reduced to powder with hand pressure):



Friability (Non-Friable versus Friable) Continued

No = non-friable
Yes = friable

Bulk Sample Results

Positive - > 1% Asbestos
Negative - < or = 1% Asbestos

The United States Environmental Protection Agency (U.S. EPA) guidelines for classifying asbestos containing material is any material that contains equal to or greater than one percent (1%) asbestos by visual estimated weight percent (% weight).

ASBESTOS SURVEY SUMMARY

SITEX collected up to three bulk samples of each homogeneous suspect asbestos containing building materials (ACBM) which was observed throughout the interior or exterior of the structure.

Bulk samples were collected in discrete locations or in areas which already had sustained water and/or physical damage.

Assumptions

SITEX assumed that all remaining windows on first floor were asbestos containing based on original construction, age of structure, and analysis results.

SITEX assumed that all remaining windows on second floor were asbestos containing based on original construction, age of structure, and analysis results.



SAMPLE NUMBER	SAMPLE LOCATION	SAMPLE DESCRIPTION	APPROXIMATE QUANTITY	CONDITION	ACCESSIBILITY	FRIABILITY	SAMPLE RESULTS
204-WP-01A	Room 204	Brown Wallpaper	N/A	Poor	High	Yes	Negative
204-WP-01B	Room 204			Poor	High	Yes	Negative
204-WP-01C	Room 204			Poor	High	Yes	Negative
204-MTR-02A	Room 204	Gray Mortar	N/A	Poor	High	No	Negative
204-MTR-02B	Room 204			Poor	High	No	Negative
204-MTR-02C	Room 204			Poor	High	No	Negative
204-PL-03A	Room 204	Gray Plaster	N/A	Poor	High	Yes	Negative
203-PL-03B	Room 203			Poor	High	Yes	Negative
202-PL-03C	Room 202			Poor	High	Yes	Negative
203-FL-04A	Room 203	White and Black Flooring	N/A	Poor	High	Yes	Negative
203-FL-04B	Room 203			Poor	High	Yes	Negative
203-FL-04C	Room 203			Poor	High	Yes	Negative
203-WP-05A	Room 203	Tan and Brown Wallpaper	N/A	Poor	High	Yes	Negative
203-WP-05B	Room 203			Poor	High	Yes	Negative
203-WP-05C	Room 203			Poor	High	Yes	Negative
202-WP-06A	Room 202	Tan and White Wallpaper	N/A	Poor	High	Yes	Negative
202-WP-06B	Room 202			Poor	High	Yes	Negative
202-WP-06C	Room 202			Poor	High	Yes	Negative



SAMPLE NUMBER	SAMPLE LOCATION	SAMPLE DESCRIPTION	APPROXIMATE QUANTITY	CONDITION	ACCESSIBILITY	FRIABILITY	SAMPLE RESULTS
202-DW-07A	Room 202	Tan and White Drywall	N/A	Poor	High	No	Negative
202-DW-07B	Room 202			Poor	High	No	Negative
202-DW-07C	Room 202			Poor	High	No	Negative
202-ST-08A	Room 202	Black Stair Tread	N/A	Poor	High	No	Negative
202-ST-08B	Room 202			Poor	High	No	Negative
202-ST-08C	Room 202			Poor	High	No	Negative
202-LN-09A	Room 202	Tan Linoleum	20 SF	Poor	High	Yes	Positive
202-LN-09B	Room 202			Poor	High	Yes	Stop Positive
202-LN-09C	Room 202			Poor	High	Yes	Stop Positive
201-FL-10A	Room 201	Yellow and Brown Flooring	N/A	Poor	High	Yes	Negative
201-FL-10B	Room 201			Poor	High	Yes	Negative
201-FL-10C	Room 201			Poor	High	Yes	Negative
201-PL-11A	Room 201	White Plaster	N/A	Poor	High	Yes	Negative
201-PL-11B	Room 201			Poor	High	Yes	Negative
201-PL-11C	Room 201			Poor	High	Yes	Negative
201-WG-12A	Room 201	Gray and White Window Glazing	11 Windows	Poor	High	Yes	Positive
201-WG-12B	Room 201			Poor	High	Yes	Stop Positive
201-WG-12C	Room 201			Poor	High	Yes	Stop Positive



SAMPLE NUMBER	SAMPLE LOCATION	SAMPLE DESCRIPTION	APPROXIMATE QUANTITY	CONDITION	ACCESSIBILITY	FRIABILITY	SAMPLE RESULTS
101-PL-13A	Room 101	White Plaster	N/A	Poor	High	No	Negative
101-PL-13B	Room 101			Poor	High	No	Negative
101-PL-13C	Room 101			Poor	High	No	Negative
105-CH-14A	Room 105	White Chinking	N/A	Poor	High	No	Negative
105-CH-14B	Room 105			Poor	High	No	Negative
105-CH-14C	Room 105			Poor	High	No	Negative
106-CB-15A	Room 106	White and Brown Ceiling Board	N/A	Poor	High	No	Negative
106-CB-15B	Room 106			Poor	High	No	Negative
106-CB-15C	Room 106			Poor	High	No	Negative
EWS-WG-16A	Exterior (West)	Yellow and Gray Window Glazing	13 Windows	Poor	High	Yes	Positive
EWS-WG-16B	Exterior (West)			Poor	High	Yes	Stop Positive
EWS-WG-16C	Exterior (West)			Poor	High	Yes	Stop Positive
001-MTR-17A	Basement	White Mortar	N/A	Poor	High	Yes	Negative
001-MTR-17B	Basement			Poor	High	Yes	Negative
001-MTR-17C	Basement			Poor	High	Yes	Negative
001-EW-18A	Basement	Black and Gray Electrical Wire	N/A	Poor	High	Yes	Negative
001-EW-18B	Basement			Poor	High	Yes	Negative
001-EW-18C	Basement			Poor	High	Yes	Negative



SAMPLE NUMBER	SAMPLE LOCATION	SAMPLE DESCRIPTION	APPROXIMATE QUANTITY	CONDITION	ACCESSIBILITY	FRIABILITY	SAMPLE RESULTS
203-FL-19A	Room 203	Various Color Flooring	N/A	Poor	High	No	Negative
203-FL-19B	Room 203			Poor	High	No	Negative
203-FL-19C	Room 203			Poor	High	No	Negative



Notes:

The United States Environmental Protection Agency (U.S. EPA) has defined an asbestos material to contain equal to or greater than one percent asbestos.

The Occupational Safety and Health Administration (OSHA) has determined asbestos detected at any level is a potential health exposure hazard.

Bulk samples were analyzed using Polarized Light Microscopy (PLM) by a trained McCrone Research Institute microscopist.

PLM Methodology using United States Environmental Protection Agency (U.S. EPA) EPA/600/R-93/116 based on a total visual estimated weight percentage.

Bulk samples ending with 1/2/3 denote each sample collected per homogeneous sample set.

Negative = A non-regulated material containing less than one percent asbestos (<1%).

SF = Square feet.

LF = Linear feet.

N/A = Not applicable

Stop Positive = First bulk sample in homogenous detected with asbestos stop analysis on other sample in the same homogenous set.

ASBESTOS SAMPLING AND ANALYTICAL PROCEDURES

Random bulk samples, representative of the suspect asbestos-containing building materials of each homogeneous area, were collected. Representative sampling is based on the following criteria:

1. The distribution of the suspect material throughout the homogeneous area.
2. The suspect material's physical characteristics and application.
3. Random sampling patterns determined for each homogeneous area.

Suspect materials, sampled and analyzed should be considered to be representative of materials in each homogeneous area if:

1. They exhibit similar physical characteristics. (i.e., color, texture).
2. The application of the sampled material can be correlated to the application of unsampled material by physical appearance and time of application.

All bulk samples collected were analyzed using the Environmental Protection Agency's Method for the Detection of Asbestos in Bulk Samples (EPA 600/M4-82020, December 1982) and the McCrone Research Institute's The Asbestos Particle Atlas as method references.

The bulk samples were collected on August 21, 2023. A total of 54 bulk samples were collected by Robert H. Hill II for asbestos analysis. SITEX was responsible for determining if asbestos was present on the exterior and interior of the structure and if present, provide estimated quantities of asbestos materials found. The samples, along with the proper Chain-of-Custody forms were sent to SITEX Environmental Solutions, Inc. (SITEX) for bulk sample analysis. The analysis of the bulk samples was performed on August 24, 2023, to September 1, 2023. SITEX uses McCrone Institute certified microscopist and is an environmental laboratory. A copy of the McCrone Institute microscopists



credentials are included in this report as Appendix E – Laboratory and Accreditations and Individual Certifications.

XRF LEAD-BASED PAINT SURVEY SUMMARY

The XRF lead paint survey shots are included in this report and summarized in Appendix C – XRF Lead Paint Summary. An X-ray Fluorescence analyzer spectrum (XRF) was used for the lead survey. The InnoV-X Systems Delta Standard (model DS-2000, Serial #501736) was calibrated by the manufacturer. A copy of XRF Manufacturer's calibration and the field calibration is included with this report as Appendix D – XRF Certificate of Calibration.

Assumptions

SITEX assumed that all remaining windows on first floor were LBP based on original construction, and shots taken.

SITEX assumed that all remaining windows on second floor were LBP based on original construction, and shots taken.

SITEX assumes the ceiling in Room 102 and baseboard in Room 103 are LBP based on original construction .

XRF Lead Shot Sample Identification and Documentation

Each lead shot taken was immediately recorded onto the Lead Paint Survey field log sheet. The following paragraphs provide an explanation of the terms used on the lead paint survey log sheet.

Lead Survey Paint Field Log Sheet

The lead paint survey field log sheet includes the shot number, shot location, a description of the building component shot, its condition, paint substrate, paint color, XRF shot results, positive/negative, and estimated quantity. The following paragraphs provide an explanation of the above-mentioned terms used on the lead paint survey data sheet.

Shot Number

The shot number is a three-digit sequential number beginning with 001. The shot number includes pre-calibration and post-calibration shots, and quality control shots (duplicates or re-takes). An example of the numbering sequence is as follows:

001 = First shot taken for the lead survey

Shot Location

Describes the shot's physical location of the painted building component within the facility exterior or interior.

Component

Describes the painted building component material being tested.

Condition

Describes the physical condition of the building component material. Two physical conditions exist which include intact or deteriorated as described in these categories.

Intact: Exterior surfaces with large surface areas with no deteriorated paint.

Intact: Interior surfaces with large surface areas with no deteriorated paint.

Intact: Interior and Exterior components with small surface area with no deteriorated paint.

Deteriorated: Exterior components with large surface area more than 10 square feet of deteriorated paint or, Interior components with large surface more than 2 square feet of deteriorated paint or interior and exterior components with small surface area more than 10 percent (10%) of the total surface area of the component.

Substrate

Defines the composition of the material (concrete, metal, wood, plastic) to which the paint is adhered to.

Color

Provides the physical description of the color of the painted building component. Color helps the lead-risk assessor determine homogenous areas (similar painting history) and can assist with certain types of older paint known to contain lead (battleship gray, red).

Results

Shows the units of measure for the painted building component. For purposes of this survey, the XRF direct-reading instrument displays the lead content in milligrams per square centimeter (mg/cm²). This unit of measure can be directly compared to the federal HUD guideline definition of LBP.

Positive/Negative

The determination of whether a painted component is positive or negative is given by the XRF direct-reading measurement displayed in mg/cm^2 . Painted building components which are equal to ($=$) or greater than ($>$) $1.0 \text{ mg}/\text{cm}^2$ are considered to be lead-based paint (LBP). LBP is regulated under the United States Environmental Protection Agency (USEPA), HUD federal regulatory lead standards, and State of Missouri lead regulations.

Painted building components which do not exceed ($<$) $1.0 \text{ mg}/\text{cm}^2$ are not considered to be LBP and are not regulated. However, the Occupational Safety and Health Administration (OSHA) regulates lead exposure to workers. OSHA considers any amount of lead in a painted building component to be a lead-containing material (LCM). According to OSHA, LCMs have the potential to create lead exposure hazards to workers.

For purposes of this survey the following terms will be used to represent the following:

Positive: Painted component which contains $>$ or $= 1.0 \text{ mg}/\text{cm}^2$ lead content.
Negative: Painted component which contains $< 1.0 \text{ mg}/\text{cm}^2$ lead content.

Painted components which are listed as positive are LBP; these materials are regulated.

Painted components which are negative are LCM; these materials are non-regulated.

Quantity

The approximate estimated quantities of the lead building component expressed as square feet (SF), linear feet (LF), or each (Each).

Pre- and post-calibration shots do not have a quantity associated with these shots.

Regulatory Guidance

Lead-based paint is considered 1.0 milligrams per square centimeter (mg/cm^2) for the XRF instrumentation, or 0.5 lead percent by weight ($\%$ weight) if a physical lead paint chip sample had been collected.

Lead testing combinations were followed in accordance with the federal United States Department of Urban and Housing Development (HUD) guidelines. The XRF instrument was pre- and post-calibrated using a manufactured coin, a negative plastic-coated lead template (SRM 2570), and a positive plastic-coated lead template (SRM 2573).

According to the Resource Conservation Recovery Act (RCRA) for Lead-Based Paint (LBP) renovation/demolition activities, general construction debris which contains lead must be analyzed by the Toxicity Characteristic Leaching Procedure (TCLP) to determine



toxicity. Construction debris that exceeds 5 parts per million (ppm) will be disposed of as hazardous waste. Construction debris that is below 5 ppm is considered to be non-hazardous and be disposed into a sanitary landfill.

The Occupational Safety and Health Administration (OSHA) has determined that any level of lead in a substance is defined as a Lead Containing Material (LCM). When disturbing LCMs the contractor is held to specific work practices and employee protection in accordance with the Lead in Construction Standard 20CFR 1926.62.

LBP PAINT SAMPLING AND ANALYTICAL PROCEDURES

The direct-reading shots were taken on August 22, 2023. A total of 103 shots were taken by State of Missouri Lead Risk-Assessor Robert Hill II. SITEX did not collect paint chip samples because the direct-reading instrument had no inconclusive readings. SITEX identified 65 painted building components which were identified with LBP on the interior and exterior of the structure.

UNIVERSAL HAZARDOUS MATERIALS INVENTORY

SITEX took an inventory of hazardous materials which were observed on the interior of the structure. The inventory revealed no hazardous materials observed in or near the Subject Property.

CONCLUSIONS AND RECOMMENDATIONS

SITEX performed an asbestos and LBP survey of the Delassus-Kern House located at 19071 US-61 in Saint Genevieve, Missouri in preparation of planned demolition and renovation. SITEX presents the following conclusions and recommendations.

Identified Asbestos Containing Materials (ACM)

Based on the bulk samples collected and review of laboratory analytical results ACM was identified on the interior or exterior of the building.

<u>Bulk Sample Number</u>	<u>Floor</u>	<u>Location</u>	<u>Estimated Quantities</u>
202-LN-09A/B/C	Second Floor	Room 202	20 SF
201-WG-12A	Second Floor	Room 201	11 Windows
EWS-WG-16A	First Floor	Exterior (West)	13 Windows



Identified Lead-Based Paint Building Components

<u>Shot Number</u>	<u>Shot Location</u>	<u>Result</u>	<u>Estimated Quantity</u>
004	Exterior (North)	Lap Siding	3,750 SF
005	Exterior (North)	Door Frame	1 Each
006	Exterior (North)	Door	1 Each
007	Exterior (West)	Window Frame	13 Each
008	Exterior (West)	Window	13 Each
009	Exterior (West)	Door	1 Each
010	Exterior (West)	Door Frame	1 Each
015	Room 204 (West)	Window Frame	4 Each
016	Room 204 (West)	Window	4 Each
018	Room 204 (South)	Door Frame	1 Each
020	Room 204 (East)	Closet Frame	1 Each
022	Room 204 (East)	Baseboard	75 LF
026	Room 203 (North)	Door Frame	1 Each
028	Room 203 (East)	Window	1 Each
029	Room 203 (East)	Window Frame	1 Each
030	Room 203 (South)	Door Frame	1 Each
032	Room 203 (West)	Window	1 Each
033	Room 203 (West)	Window Frame	1 Each
034	Room 203 (South)	Baseboard	72 LF
037	Room 201 (South)	Window Frame	1 Each
038	Room 201 (South)	Window	1 Each
039	Room 201 (South)	Baseboard	75 LF
041	Room 201 (North)	Door Frame	1 Each
042	Room 201 (North)	Door	1 Each
044	Room 202 (East)	Window Frame	1 Each
045	Room 202 (East)	Window	1 Each
046	Room 202 (North)	Door Frame	1 Each
049	Room 202 Closet	Wall (South)	50 SF
051	Room 202 Closet	Door	1 Each
052	Room 202 (South)	Baseboard	60 LF
054	Stairs 105	Stringer	1 Each
055	Stairs 105	Tread	1 Each
056	Stairs 105	Riser	1 Each
057	Room 103 (East)	Door Frame	1 Each
058	Room 103 (East)	Door	1 Each
059	Room 103	Ceiling	240 SF
060	Room 106	Ceiling	320 SF
061	Room 106	Ceiling Board	320 SF
062	Room 106 (North)	Window	3 Each
063	Room 106 (North)	Window Frame	3 Each

Identified Lead-Based Paint Building Components (Continued)

<u>Shot Number</u>	<u>Shot Location</u>	<u>Result</u>	<u>Estimated Quantity</u>
064	Room 106 (West)	Baseboard	72 LF
065	Room 106	Door Frame	1 Each
066	Room 106	Door	1 Each
067	Room 105	Ceiling	400 SF
068	Room 105 (West)	Baseboard	80 LF
069	Room 105 (North)	Door Frame	1 Each
070	Room 105 (East)	Window	2 Each
071	Room 105 (East)	Window Frame	2 Each
072	Room 105 (North)	Baseboard	80 LF
073	Room 105 (West)	Door Frame	1 Each
075	Room 102 (East)	Baseboard	70 LF
076	Room 104	Ceiling	336 SF
077	Room 104 (North)	Door Frame	1 Each
078	Room 104 (North)	Door	1 Each
081	Room 104 (South)	Window Frame	3 Each
083	Room 104 (South)	Baseboard	60 LF
084	Room 104 (West)	Door Frame	1 Each
085	Room 101	Ceiling	240 SF
087	Room 101 (North)	Door Frame	1 Each
088	Room 101 (North)	Door	1 Each
089	Room 101 (West)	Window Frame	1 Each
090	Room 101 (West)	Window	1 Each
092	Room 101 (South)	Door	1 Each
093	Room 101 (South)	Door Frame	1 Each
095	Room 101 (South)	Transom	2 Each

Recommendations

ACM

Asbestos Containing Building Materials (ACBM) were found on the interior of the Subject Property. At the time of the site reconnaissance, the observed suspect ACBM was in poor condition. Prior to future planned renovation/demolition activities, suspect or confirmed ACBM should be removed by a Missouri licensed asbestos abatement contractor.



LBP

Lead-based paints were found to be present on the interior and exterior of the Subject Property. SITEX recommends that these materials be stabilized and/or removed by a State of Missouri lead abatement contractor prior to the demolition/renovation activities.

Additionally, the results indicate that some of the paint does contain lead below 1.0 mg/cm². The Occupational Safety & Health Administration (OSHA) regulations require proper handling and safety precautions when working with any amount of lead-containing paint. SITEX recommends that the use of cutting equipment that will raise the temperature of the lead-containing surface above 250° F be prohibited.

Universal Hazardous Materials

SITEX did not observe universal hazardous materials at the time of the hazardous materials survey.

SURVEY TEAM

The representative for SITEX Environmental, Inc. conducting the survey was Robert H. Hill II and GEI Staff Geologist David Lere. Mr. Hill is accredited in Missouri as an asbestos inspector and Lead Risk Assessor. Mr. Hill's certifications are included in Appendix E – Laboratory Accreditations and Individual Certifications of this report.

Limitations

Due to the severity of structural failure and collapse (collapsed or missing floor, inward or outward sloping walls, sagging or unsound ceilings), SITEX was unable to gain access into rooms 102 and 103. However, sufficient bulk samples and LBP shots were taken in other areas to be representative of the entire structure.

Disclaimer

These results do not imply nor deny conditions that may have existed prior to our sampling or previous inspections. This survey and sampling were performed in a thorough and professional manner consistent with industry standards.

The ACM and LBP survey are representative of bulk samples collected and XRF shots taken at the time of the survey. SITEX performed limited destructive sampling. The analytical results are valid only for the bulk samples collected and the XRF shots taken.



If during renovation and/or demolition activities, additional asbestos and/or lead is uncovered, SITEX recommends that a State of Missouri licensed asbestos or lead inspector collect a bulk sample for analysis to determine the presence of asbestos or taken additional shots to determine the presence of lead.

The Asbestos and Lead-Based Paint (LBP) Survey Team consisted of the following State of Missouri licensed individuals.

Surveyed by:

Robert Hill II
Missouri Asbestos Inspector
Missouri Certificate #7118020416MOSR2164

Missouri Lead Risk Assessor
Missouri Certificate #01057-200133036

FIGURES

FIGURE 1 – Asbestos Bulk Sample Locations

FIGURE 2 – Lead-Based Pant Shot Locations

APPENDICES

Appendix A – SITEX Laboratory PLM Analysis Reports

Appendix B – Photograph Log

Appendix C – XRF Lead Paint Summary Log Sheets

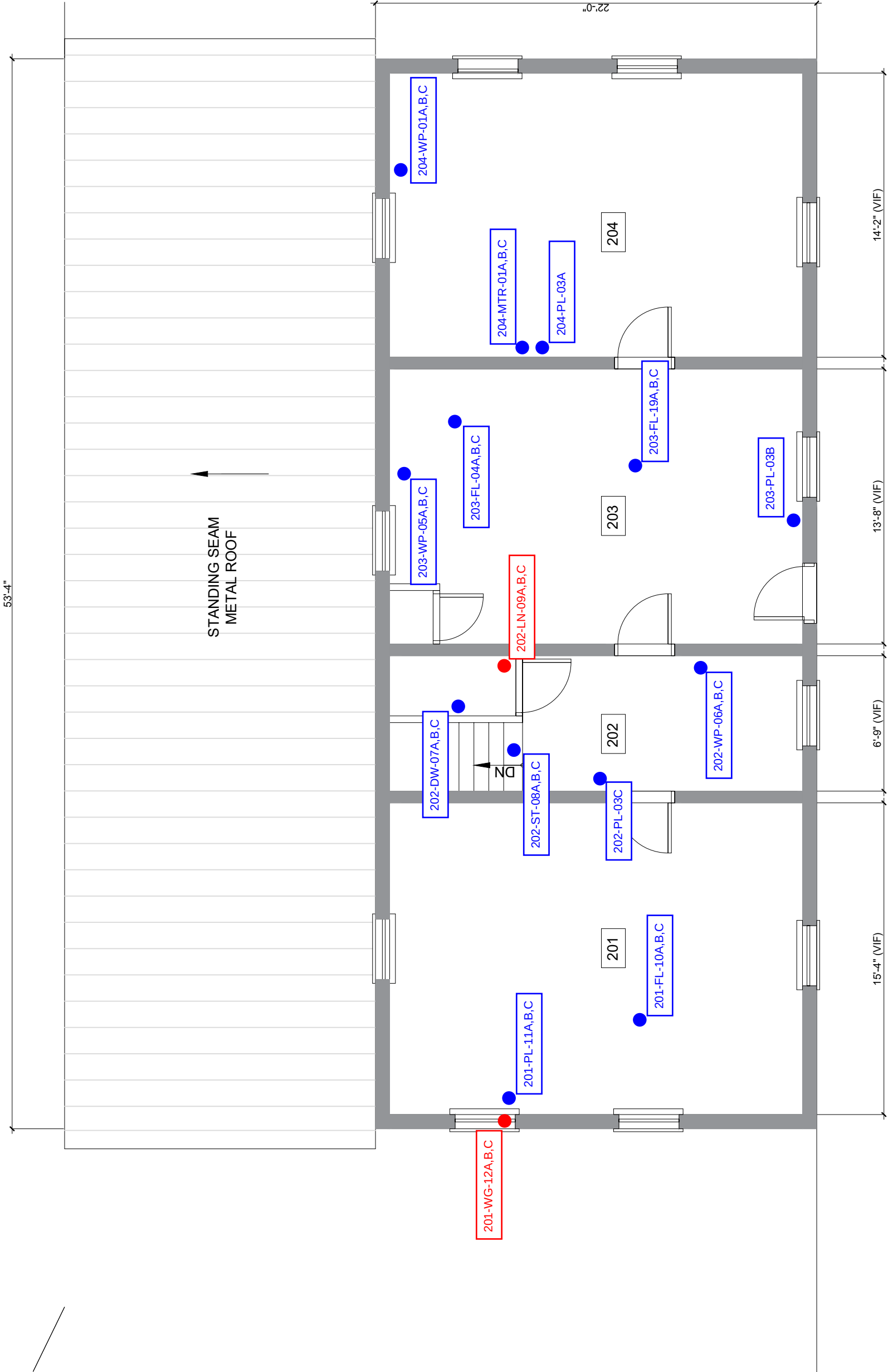
Appendix D – XRF Certificate of Calibration

Appendix E – Laboratory Accreditation and Individual Certifications

FIGURES

FIGURE 1

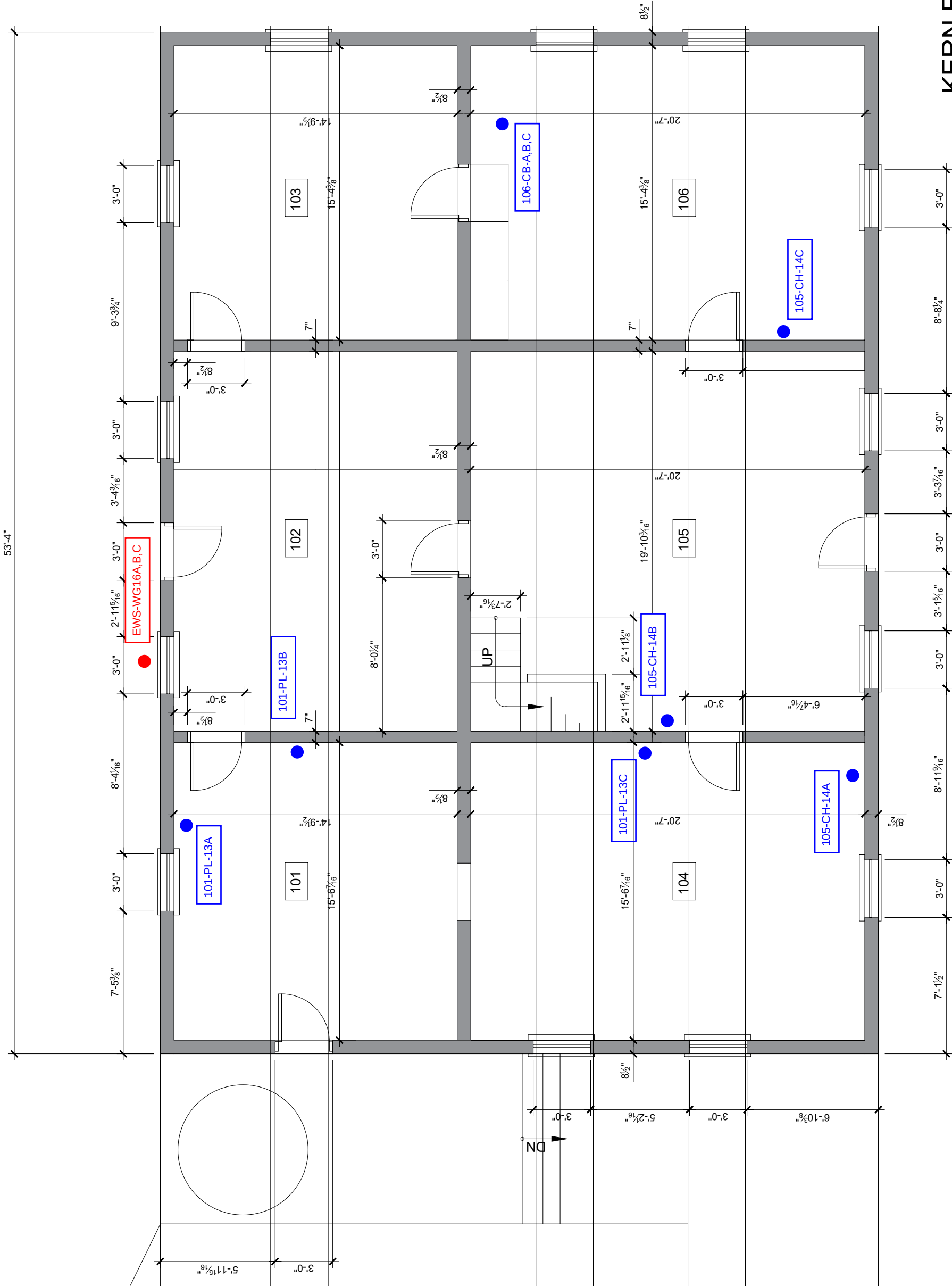
Asbestos Bulk Sample Locations



KERN SECOND FLOOR PLAN

SCALE: $\frac{3}{16}" = 1'-0"$





SCALE: 3/16" = 1'-0"



LEGEND

001-MTR-17B



Negative Result
Asbestos Sample
Location

EWS-WG-16A,B,C



Positive Result
Asbestos Sample
Location

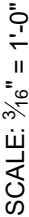


FIGURE 2

Lead-Based Paint Shot Locations



KERN SECOND FLOOR PLAN

SCALE: $\frac{3}{16}" = 1'-0"$



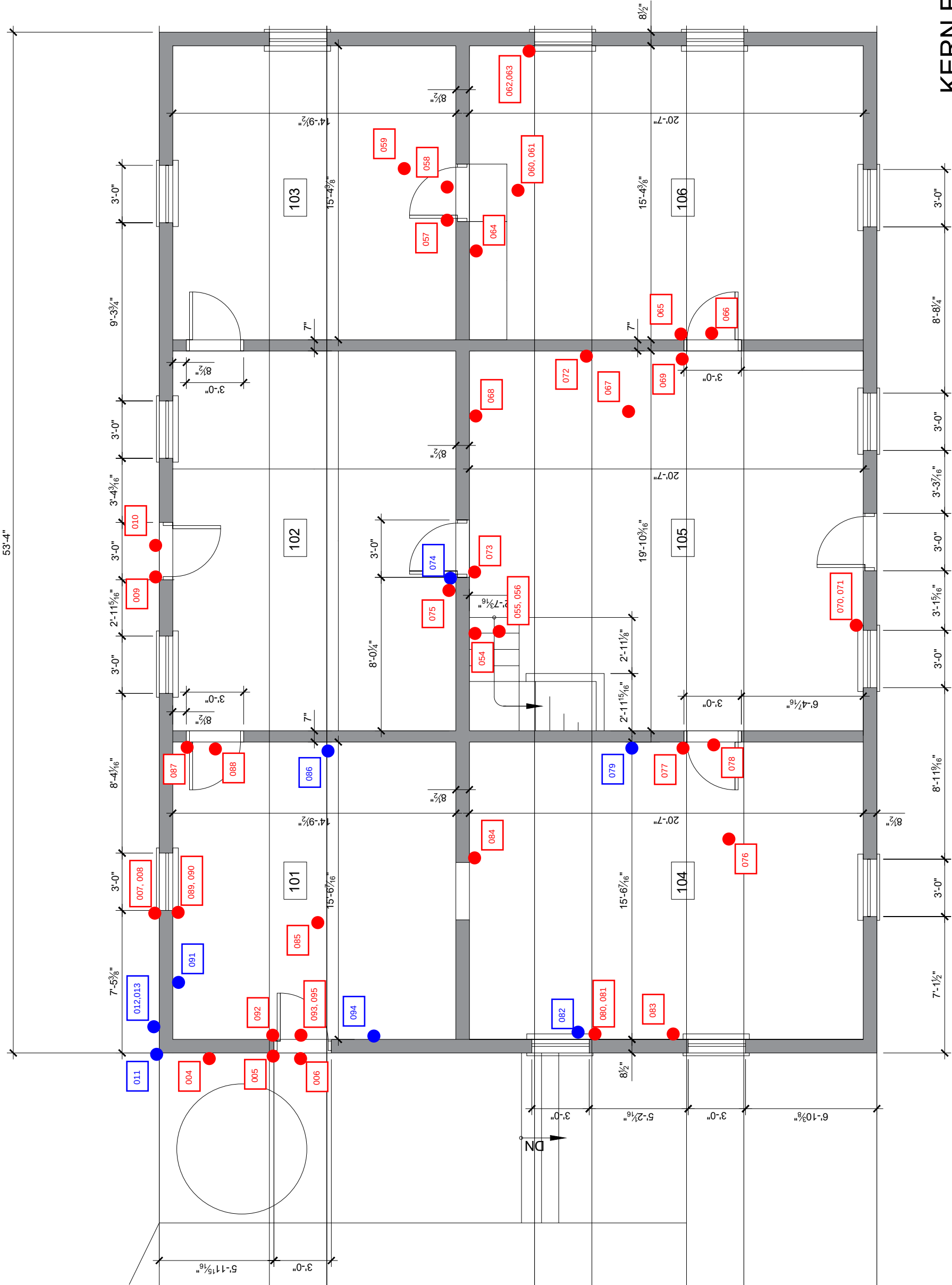
LEGEND

051

Negative Result
Lead Sample
Location

040

Positive Result
Lead Sample
Location



LEGEND

051



Negative Result
Lead Sample
Location

040



Positive Result
Lead Sample
Location

KERN FIRST FLOOR PLAN

SCALE: 3/16" = 1'-0"



APPENDIX A

SITEX LABORATORY PLM ANALYSIS REPORT

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NY ELAP LAB# 11993 for
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EPA Lab ID #DE004

NVLAP

Lab Code: 101032-0

Dept. Code: PLM

Rev. #: 0

Batch#: N/A

COC#: N/A

CERTIFICATE OF PLM ANALYSIS

Page 1 of 13

Test Method: EPA/600/R-93/116 in conjunction with Batta SOP

Report Date: 09/01/23

Sampling Data

BLI Project #: R106315

Date Sampled: 08/21/23

Project Name: SITEX ENV.-20388-KERN HOUSE-19071 US-61

Sampled By: CLIENT

Date Analyzed: 09/01/23

Sample ID		Client-supplied Data		Analytical Data			Reported Results	
Lab Sample#	Client Sample#	Sample Description	Material Type	Friable?	Texture/	Gross Color	Non-asbestiform Components	Asbestiform Components
1424149	204-WP-01A	Room 204	Wallpaper	n/a	Paperlike Heterogeneous	Brown	80% Cellulose 20% Non-fibrous Material	No Asbestos Found
1424150	204-WP-01B	Room 204	Wallpaper	n/a	Paperlike Heterogeneous	Brown White	70% Cellulose 30% Non-fibrous Material	No Asbestos Found
1424151	204-WP-01C	Room 204	Wallpaper	n/a	Paperlike Heterogeneous	Tan Brown	70% Cellulose 30% Non-fibrous Material	No Asbestos Found
1424152	204-MTR-02A	Room 204	Mortar	n/a	Cementitious Homogeneous	Gray	1% Cellulose 99% Non-fibrous Material	No Asbestos Found
1424153	204-MTR-02B	Room 204	Mortar	n/a	Cementitious Homogeneous	Gray	1% Cellulose 99% Non-fibrous Material	No Asbestos Found

Note 1 Due to limitations of the EPA PLM method, floor tiles may yield false negative (<1%) results by this method. As such, the EPA recommends further analysis by electron microscopy. Batta recommends the NY 198.4 over the Chatfield method.

Note 2 Unless otherwise specified, Tr=Trace and correlates to <0.25% (based on a 400-point EPA point count).

Note 3 Materials containing vermiculite are not good candidates for analysis using standard EPA 600 PLM protocol. Results may be low-biased due to inherent limitations caused by the material. The EPA recommends that vermiculite attic insulation (VAI) be prepped and analyzed using EPA 600/R-04/004, known as "The Cincinnati Method".

ANALYST: JWL

REVIEWED BY: APL

QA/QC Officer/Signatory

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*The test data pertain only to the items tested. No assumptions or conclusions should be made to materials or samples not analyzed. Furthermore, Batta Laboratories, LLC assumes no responsibility for the accuracy of results influenced by the use of improper collection techniques or equipment.

*Organically-bound, nonfriable material may interfere with the accurate and reproducible quantification of asbestos. In these cases, the EPA recommends further analysis by a matrix-reduction method. Batta recommends the NY ELAP Item 198.6/198.4 over the Chatfield method. When point count techniques are utilized on organically-bound, nonfriable materials without the EPA-recommended matrix reduction steps, Batta Laboratories assumes no responsibility regarding the accuracy or precision associated with these results. In these cases, Batta employs a modified version of the EPA point count method.

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EPA Lab ID #DE004

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Report Date: 09/01/23

Sampling Data

BLI Project #: R106315

Date Sampled: 08/21/23

Project Name: SITEX ENV.-20388-KERN HOUSE-19071 US-61

Sampled By: CLIENT

Date Analyzed: 09/01/23

Sample ID		Client-supplied Data		Analytical Data				Reported Results	
Lab Sample#	Client Sample#	Sample Description	Material Type	Friable?	Texture/	Gross	Color	Non-asbestiform Components	Asbestiform Components
1424154	204-MTR-02C	Room 204	Mortar	n/a	Cementitious		Tan	1% Cellulose 99% Non-fibrous Material	No Asbestos Found
					Homogeneous				
1424155	204-PL-03A	Room 204	Plaster	n/a	Granular		Gray	1% Cellulose 99% Non-fibrous Material	No Asbestos Found
					Homogeneous				
1424156	203-PL-03B	Room 203	Plaster	n/a	Cementitious		Gray	1% Cellulose 99% Non-fibrous Material	No Asbestos Found
					Homogeneous				
1424157	202-PL-03C	Room 202	Plaster	n/a	Cementitious		Gray White	1% Cellulose 99% Non-fibrous Material	No Asbestos Found
					Homogeneous				
1424158	203-FL-04A	Room 203	Flooring	n/a	Fibrous Firm		Black Brown White	50% Cellulose 50% Non-fibrous Material	No Asbestos Found
					Heterogeneous				

Note 1 Due to limitations of the EPA PLM method, floor tiles may yield false negative (<1%) results by this method. As such, the EPA recommends further analysis by electron microscopy. Batta recommends the NY 198.4 over the Chatfield method.

Note 2 Unless otherwise specified, Tr=Trace and correlates to <0.25% (based on a 400-point EPA point count).

Note 3 Materials containing vermiculite are not good candidates for analysis using standard EPA 600 PLM protocol. Results may be low-biased due to inherent limitations caused by the material. The EPA recommends that vermiculite attic insulation (VAI) be prepped and analyzed using EPA 600/R-04/004, known as "The Cincinnati Method".

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REVIEWED BY: APL

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NVLAP
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CERTIFICATE OF PLM ANALYSIS

Page 3 of 13

Test Method: EPA/600/R-93/116 in conjunction with Batta SOP

Report Date: 09/01/23

Sampling Data

BLI Project #: R106315

Project Name: SITEX ENV.-20388-KERN HOUSE-19071 US-61

Date Sampled: 08/21/23

Sampled By: CLIENT

Date Analyzed: 09/01/23

Sample ID		Client-supplied Data		Analytical Data			Reported Results	
Lab Sample#	Client Sample#	Sample Description	Material Type	Friable?	Texture/ Gross	Color	Non-asbestiform Components	Asbestiform Components
1424160	203-FL-04B	Room 203	Flooring	n/a	Fibrous Firm Heterogeneous	Black Brown White	60% Cellulose 40% Non-fibrous Material	No Asbestos Found
1424162	203-FL-04C	Room 203	Flooring	n/a	Fibrous Firm Heterogeneous	Black Brown White	60% Cellulose 40% Non-fibrous Material	No Asbestos Found
1424164	203-WP-05A	Room 203	Wallpaper	n/a	Paperlike Homogeneous	Brown	100% Cellulose	No Asbestos Found
1424165	203-WP-05B	Room 203	Wallpaper	n/a	Paperlike Heterogeneous	Tan Brown	95% Cellulose 5% Non-fibrous Material	No Asbestos Found
1424166	203-WP-05C	Room 203	Wallpaper	n/a	Paperlike Heterogeneous	Tan Brown	99% Cellulose 1% Non-fibrous Material	No Asbestos Found

Note 1 Due to limitations of the EPA PLM method, floor tiles may yield false negative (<1%) results by this method. As such, the EPA recommends further analysis by electron microscopy. Batta recommends the NY 198.4 over the Chatfield method.

Note 2 Unless otherwise specified, Tr=Trace and correlates to <0.25% (based on a 400-point EPA point count).

Note 3 Materials containing vermiculite are not good candidates for analysis using standard EPA 600 PLM protocol. Results may be low-biased due to inherent limitations caused by the material. The EPA recommends that vermiculite attic insulation (VAI) be prepped and analyzed using EPA 600/R-04/004, known as "The Cincinnati Method".

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Page 4 of 13

Test Method: EPA/600/R-93/116 in conjunction with Batta SOP

Report Date: 09/01/23

Sampling Data

BLI Project #: R106315

Date Sampled: 08/21/23

Project Name: SITEX ENV.-20388-KERN HOUSE-19071 US-61

Sampled By: CLIENT

Date Analyzed: 09/01/23

Sample ID		Client-supplied Data		Analytical Data			Reported Results	
Lab Sample#	Client Sample#	Sample Description	Material Type	Friable?	Texture/ Gross	Color	Non-asbestiform Components	Asbestiform Components
1424167	202-WP-06A	Room 202	Wallpaper	n/a	Paperlike Heterogeneous	Tan White	99% Cellulose 1% Non-fibrous Material	No Asbestos Found
1424168	202-WP-06B	Room 202	Wallpaper	n/a	Paperlike Heterogeneous	Tan White	98% Cellulose 2% Non-fibrous Material	No Asbestos Found
1424169	202-WP-06C	Room 202	Wallpaper	n/a	Paperlike Heterogeneous	Tan White	95% Cellulose 5% Non-fibrous Material	No Asbestos Found
1424170	202-DW-07A	Room 202	Drywall	n/a	Firm Homogeneous	Tan White	1% Cellulose 99% Non-fibrous Material	No Asbestos Found
1424172	202-DW-07B	Room 202	Drywall	n/a	Firm Homogeneous	Tan White	1% Cellulose 99% Non-fibrous Material	No Asbestos Found

Note 1 Due to limitations of the EPA PLM method, floor tiles may yield false negative (<1%) results by this method. As such, the EPA recommends further analysis by electron microscopy. Batta recommends the NY 198.4 over the Chatfield method.

Note 2 Unless otherwise specified, Tr=Trace and correlates to <0.25% (based on a 400-point EPA point count).

Note 3 Materials containing vermiculite are not good candidates for analysis using standard EPA 600 PLM protocol. Results may be low-biased due to inherent limitations caused by the material. The EPA recommends that vermiculite attic insulation (VAI) be prepped and analyzed using EPA 600/R-04/004, known as "The Cincinnati Method".

ANALYST: JWL

REVIEWED BY: APL

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CERTIFICATE OF PLM ANALYSIS

Page 5 of 13

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Report Date: 09/01/23

Sampling Data

BLI Project #: R106315

Project Name: SITEX ENV.-20388-KERN HOUSE-19071 US-61

Date Sampled: 08/21/23

Sampled By: CLIENT

Date Analyzed: 09/01/23

Sample ID		Client-supplied Data		Analytical Data			Reported Results	
Lab Sample#	Client Sample#	Sample Description	Material Type	Friable?	Texture/	Gross Color	Non-asbestiform Components	Asbestiform Components
1424174	202-DW-07C	Room 202	Drywall	n/a	Firm	Tan White	<1% Cellulose 100% Non-fibrous Material	No Asbestos Found
					Homogeneous			
1424176	202-ST-08A	Room 202	Stair Tread	n/a	Fibrous Firm	Black Brown	15% Cellulose 85% Non-fibrous Material	No Asbestos Found
					Heterogeneous			
1424177	202-ST-08B	Room 202	Stair Tread	n/a	Fibrous Firm	Black Brown	25% Cellulose 75% Non-fibrous Material	No Asbestos Found
					Heterogeneous			
1424178	202-ST-08C	Room 202	Stair Tread	n/a	Fibrous Firm	Black Brown	20% Cellulose 80% Non-fibrous Material	No Asbestos Found
					Heterogeneous			
1424179	202-LN-09A	Room 202	Linoleum	n/a	Firm	Tan	5% Cellulose 65% Non-fibrous Material	30% Chrysotile Total Asbestos = 30%
					Homogeneous			

Note 1 Due to limitations of the EPA PLM method, floor tiles may yield false negative (<1%) results by this method. As such, the EPA recommends further analysis by electron microscopy. Batta recommends the NY 198.4 over the Chatfield method.

Note 2 Unless otherwise specified, Tr=Trace and correlates to <0.25% (based on a 400-point EPA point count).

Note 3 Materials containing vermiculite are not good candidates for analysis using standard EPA 600 PLM protocol. Results may be low-biased due to inherent limitations caused by the material. The EPA recommends that vermiculite attic insulation (VAI) be prepped and analyzed using EPA 600/R-04/004, known as "The Cincinnati Method".

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REVIEWED BY: APL

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EPA Lab ID #DE004

NVLAP
Lab Code: 101032-0

Dept. Code: PLM

Rev. #: 0

Batch#: N/A

COC#: N/A

CERTIFICATE OF PLM ANALYSIS

Page 6 of 13

Test Method: EPA/600/R-93/116 In conjunction with Batta SOP

Report Date: 09/01/23

Date Sampled: 08/21/23

Sampled By: CLIENT

Date Analyzed: 09/01/23

Sampling Data

BLI Project #: R106315

Project Name: SITEX ENV.-20388-KERN HOUSE-19071 US-61

Sample ID		Client-supplied Data			Analytical Data			Reported Results	
Lab Sample#	Client Sample#	Sample Description	Material Type	Friable?	Texture/	Gross	Color	Non-asbestiform Components	Asbestiform Components
1424181	202-LN-09B	** Room 202	Linoleum	n/a					Sample Not Analyzed (positive stop rules)
1424183	202-LN-09C	** Room 202	Linoleum	n/a					Sample Not Analyzed (positive stop rules)
1424185	201-FL-10A	Room 201	Flooring	n/a	Fibrous Firm Heterogeneous		Black Brown	75% Cellulose 25% Non-fibrous Material	No Asbestos Found
1424187	201-FL-10B	Room 201	Flooring	n/a	Fibrous Firm Heterogeneous		Black Yellow	70% Cellulose 30% Non-fibrous Material	No Asbestos Found
1424189	201-FL-10C	Room 201	Flooring	n/a	Fibrous Firm Heterogeneous		Black Brown	70% Cellulose 30% Non-fibrous Material	No Asbestos Found

Note 1 Due to limitations of the EPA PLM method, floor tiles may yield false negative (<1%) results by this method. As such, the EPA recommends further analysis by electron microscopy. Batta recommends the NY 198.4 over the Chatfield method.

Note 2 Unless otherwise specified, Tr=Trace and correlates to <0.25% (based on a 400-point EPA point count).

Note 3 Materials containing vermiculite are not good candidates for analysis using standard EPA 600 PLM protocol. Results may be low-biased due to inherent limitations caused by the material. The EPA recommends that vermiculite attic insulation (VAI) be prepped and analyzed using EPA 600/R-04/004, known as "The Cincinnati Method".

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REVIEWED BY: ARL

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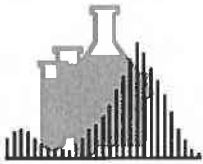
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EPA Lab ID #DE004

NVLAP
Lab Code: 101032-0

Dept. Code: PLM

Rev. #: 0
Batch#: N/A
COC#: N/A

CERTIFICATE OF PLM ANALYSIS

Page 7 of 13

Test Method: EPA/600/R-93/116 in conjunction with Batta SOP

Report Date: 09/01/23

Sampling Data

BLI Project #: R106315
Project Name: SITEX ENV.-20388-KERN HOUSE-19071 US-61

Date Sampled: 08/21/23

Sampled By: CLIENT

Date Analyzed: 09/01/23

Sample ID		Client-supplied Data		Analytical Data				Reported Results	
Lab Sample#	Client Sample#	Sample Description	Material Type	Friable?	Texture/	Gross	Color	Non-asbestiform Components	Asbestiform Components
1424191	201-PL-11A	Room 201	Plaster	n/a	Cementitious		White	3% Cellulose 97% Non-fibrous Material	No Asbestos Found
					Homogeneous				
1424193	201-PL-11B	Room 201	Plaster	n/a	Cementitious		White	2% Cellulose 98% Non-fibrous Material	No Asbestos Found
					Homogeneous				
1424195	201-PL-11C	Room 201	Plaster	n/a	Cementitious		White	5% Cellulose 95% Non-fibrous Material	No Asbestos Found
					Homogeneous				
1424197	201-WG-12A	Room 201	Window Glaze	n/a	Firm		Gray White	1% Cellulose 97% Non-fibrous Material	2% Chrysotile Total Asbestos = 2%
					Homogeneous				
1424198	201-WG-12B **	Room 201	Window Glaze	n/a					Sample Not Analyzed (positive stop rules)

Note 1 Due to limitations of the EPA PLM method, floor tiles may yield false negative (<1%) results by this method. As such, the EPA recommends further analysis by electron microscopy. Batta recommends the NY 198.4 over the Chatfield method.

Note 2 Unless otherwise specified, Tr=Trace and correlates to <0.25% (based on a 400-point EPA point count).

Note 3 Materials containing vermiculite are not good candidates for analysis using standard EPA 600 PLM protocol. Results may be low-biased due to inherent limitations caused by the material. The EPA recommends that vermiculite attic insulation (VAI) be prepped and analyzed using EPA 600/R-04/004, known as "The Cincinnati Method".

ANALYST: JWL

REVIEWED BY: ARL

QA/QC Officer/Signatory

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Page 8 of 13

Test Method: EPA/600/R-93/116 in conjunction with Batta SOP

Report Date: 09/01/23

Sampling Data

BLI Project #: R106315
Project Name: SITEX ENV.-20388-KERN HOUSE-19071 US-61

Date Sampled: 08/21/23

Sampled By: CLIENT

Date Analyzed: 09/01/23

Sample ID		Client-supplied Data			Analytical Data			Reported Results	
Lab Sample#	Client Sample#	Sample Description	Material Type	Friable?	Texture/	Gross	Color	Non-asbestiform Components	Asbestiform Components
1424199	201-WG-12C **	Room 201	Window Glaze	n/a					Sample Not Analyzed (positive stop rules)
1424200	101-PL-13A	Room 101	Plaster Skim	n/a	Cementitious Homogeneous		White	100% Non-fibrous Material	No Asbestos Found
1424201	101-PL-13A (Layer 1)	Room 101	Plaster Base	n/a	Cementitious Homogeneous		White	3% Cellulose 97% Non-fibrous Material	No Asbestos Found
1424202	101-PL-13B	Room 101	Plaster Skim	n/a	Cementitious Homogeneous		White	<1% Cellulose 100% Non-fibrous Material	No Asbestos Found
1424203	101-PL-13B (Layer 1)	Room 101	Plaster Base	n/a	Cementitious Homogeneous		Tan White	1% Cellulose 99% Non-fibrous Material	No Asbestos Found

Note 1 Due to limitations of the EPA PLM method, floor tiles may yield false negative (<1%) results by this method. As such, the EPA recommends further analysis by electron microscopy. Batta recommends the NY 198.4 over the Chatfield method.

Note 2 Unless otherwise specified, Tr=Trace and correlates to <0.25% (based on a 400-point EPA point count).

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CERTIFICATE OF PLM ANALYSIS

Page 9 of 13

Test Method: EPA/600/R-93/116 in conjunction with Batta SOP

Report Date: 09/01/23

Sampling Data

BLI Project #: R106315
Project Name: SITEX ENV.-20388-KERN HOUSE-19071 US-61

Date Sampled: 08/21/23

Sampled By: CLIENT

Date Analyzed: 09/01/23

Sample ID		Client-supplied Data		Analytical Data			Reported Results	
Lab Sample#	Client Sample#	Sample Description	Material Type	Friable?	Texture/ Gross	Color	Non-asbestiform Components	Asbestiform Components
1425968	101-PL-13B (Layer 2)	Room 101	Plaster Middle Layer	n/a	Cementitious Homogeneous	Gray	<1% Cellulose 100% Non-fibrous Material	No Asbestos Found
1424204	101-PL-13C	Room 101	Plaster	n/a	Cementitious Homogeneous	Tan White	<1% Cellulose 100% Non-fibrous Material	No Asbestos Found
1424206	105-CH-14A	Room 105	Chinking Top	n/a	Cementitious Homogeneous	White	1% Cellulose 99% Non-fibrous Material	No Asbestos Found
1424207	105-CH-14A (Layer 1)	Room 105	Chinking Base	n/a	Cementitious Homogeneous	White	1% Cellulose 99% Non-fibrous Material	No Asbestos Found
1424208	105-CH-14B	Room 105	Chinking Top	n/a	Cementitious Homogeneous	White	<1% Cellulose 100% Non-fibrous Material	No Asbestos Found

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Note 2 Unless otherwise specified, Tr=Trace and correlates to <0.25% (based on a 400-point EPA point count).

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EPA Lab ID #DE004

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Page 10 of 13

Test Method: EPA/600/R-93/116 in conjunction with Batta SOP

Report Date: 09/01/23

Sampling Data

BLI Project #: R106315

Date Sampled: 08/21/23

Project Name: SITEX ENV.-20388-KERN HOUSE-19071 US-61

Sampled By: CLIENT

Date Analyzed: 09/01/23

Sample ID		Client-supplied Data		Analytical Data			Reported Results	
Lab Sample#	Client Sample#	Sample Description	Material Type	Friable?	Texture/ Gross Color		Non-asbestiform Components	Asbestiform Components
1424209	105-CH-14B (Layer 1)	Room 105	Chinking Base	n/a	Cementitious Homogeneous	White	1% Cellulose 99% Non-fibrous Material	No Asbestos Found
1424210	106-CH-14C	Room 106	Chinking Top	n/a	Cementitious Homogeneous	White	1% Cellulose 99% Non-fibrous Material	No Asbestos Found
1424211	106-CH-14C (Layer 1)	Room 106	Chinking Base	n/a	Cementitious Homogeneous	White	1% Cellulose 99% Non-fibrous Material	No Asbestos Found
1424212	106-CB-15A	Room 106	Ceiling Board	n/a	Fibrous Firm Homogeneous	Brown	100% Cellulose	No Asbestos Found
1424213	106-CB-15B	Room 106	Ceiling Board	n/a	Fibrous Firm Homogeneous	Brown	100% Cellulose	No Asbestos Found

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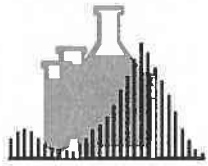
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Rev. #: 0
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CERTIFICATE OF PLM ANALYSIS

Page 11 of 13

Test Method: EPA/600/R-93/116 in conjunction with Batta SOP

Report Date: 09/01/23

Sampling Data

BLI Project #: R106315
Project Name: SITEX ENV.-20388-KERN HOUSE-19071 US-61

Date Sampled: 08/21/23

Sampled By: CLIENT

Date Analyzed: 09/01/23

Sample ID		Client-supplied Data		Analytical Data			Reported Results	
Lab Sample#	Client Sample#	Sample Description	Material Type	Friable?	Texture/ Gross	Color	Non-asbestiform Components	Asbestiform Components
1424214	106-CB-15C	Room 106	Ceiling Board	n/a	Fibrous Firm	Brown	100% Cellulose	No Asbestos Found
					Homogeneous			
1424215	EWS-WG-16A	Exterior West Side	Glazing	n/a	Firm	Yellow Gray	96% Non-fibrous Material	4% Chrysotile Total Asbestos = 4%
					Homogeneous			
1424216	EWS-WG-16B **	Exterior West Side	Glazing	n/a				Sample Not Analyzed (positive stop rules)
1424217	EWS-WG-16C **	Exterior West Side	Glazing	n/a				Sample Not Analyzed (positive stop rules)
1424218	001-MTR-17A	Basement	Mortar	n/a	Cementitious	White	<1% Cellulose 100% Non-fibrous Material	No Asbestos Found
					Homogeneous			

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NVLAP
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CERTIFICATE OF PLM ANALYSIS

Page 12 of 13

Test Method: EPA/600/R-93/116 in conjunction with Batta SOP

Report Date: 09/01/23

Sampling Data

BLI Project #: R106315

Date Sampled: 08/21/23

Project Name: SITEX ENV.-20388-KERN HOUSE-19071 US-61

Sampled By: CLIENT

Date Analyzed: 09/01/23

Sample ID		Client-supplied Data		Analytical Data			Reported Results	
Lab Sample#	Client Sample#	Sample Description	Material Type	Friable?	Texture/	Gross Color	Non-asbestiform Components	Asbestiform Components
1424219	001-MTR-17B	Basement	Mortar	n/a	Cementitious Homogeneous	White	<1% Cellulose 100% Non-fibrous Material	No Asbestos Found
1424220	001-MTR-17C	Basement	Mortar	n/a	Cementitious Homogeneous	White	<1% Cellulose 100% Non-fibrous Material	No Asbestos Found
1424221	001-EW-18A	Basement	Electrical Wire	n/a	Firm Heterogeneous	Black Gray	50% Cellulose 50% Non-fibrous Material	No Asbestos Found
1424222	001-EW-18B	Basement	Electrical Wire	n/a	Firm Heterogeneous	Black Gray	75% Cellulose 25% Non-fibrous Material	No Asbestos Found
1424223	001-EW-18C	Basement	Electrical Wire	n/a	Firm Heterogeneous	Black Gray	75% Cellulose 25% Non-fibrous Material	No Asbestos Found

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Test Method: EPA/600/R-93/116 in conjunction with Batta SOP

Report Date: 09/01/23

Sampling Data

BLI Project #: R106315

Date Sampled: 08/21/23

Project Name: SITEX ENV.-20388-KERN HOUSE-19071 US-61

Sampled By: CLIENT

Date Analyzed: 09/01/23

Sample ID		Client-supplied Data		Analytical Data				Reported Results	
Lab Sample#	Client Sample#	Sample Description	Material Type	Friable?	Texture/	Gross	Color	Non-asbestiform Components	Asbestiform Components
1424224	203-FL-19A	Room 203	Flooring	n/a			Various	80% Cellulose 20% Non-fibrous Material	No Asbestos Found
					Heterogeneous				
1424226	203-FL-19B	Room 203	Flooring	n/a			Various	75% Cellulose 25% Non-fibrous Material	No Asbestos Found
					Heterogeneous				
1424228	203-FL-19C	Room 203	Flooring	n/a			Various	75% Cellulose 25% Non-fibrous Material	No Asbestos Found
					Heterogeneous				

Note 1 Due to limitations of the EPA PLM method, floor tiles may yield false negative (<1%) results by this method. As such, the EPA recommends further analysis by electron microscopy. Batta recommends the NY 198.4 over the Chatfield method.

Note 2 Unless otherwise specified, Tr=Trace and correlates to <0.25% (based on a 400-point EPA point count).

Note 3 Materials containing vermiculite are not good candidates for analysis using standard EPA 600 PLM protocol. Results may be low-biased due to inherent limitations caused by the material. The EPA recommends that vermiculite attic insulation (VAI) be prepped and analyzed using EPA 600/R-04/004, known as "The Cincinnati Method".

ANALYST: JWL

REVIEWED BY: ARL

QA/QC Officer/Signatory

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*This report does not constitute endorsement by NVLAP and/or any other US government agencies.

*The test data pertain only to the items tested. No assumptions or conclusions should be made to materials or samples not analyzed. Furthermore, Batta Laboratories, LLC assumes no responsibility for the accuracy of results influenced by the use of improper collection techniques or equipment.

*Organically-bound, nonfriable material may interfere with the accurate and reproducible quantification of asbestos. In these cases, the EPA recommends further analysis by a matrix-reduction method. Batta recommends the NY ELAP Item 198.6/198.4 over the Chatfield method. When point count techniques are utilized on organically-bound, nonfriable materials without the EPA-recommended matrix reduction steps, Batta Laboratories assumes no responsibility regarding the accuracy or precision associated with these results. In these cases, Batta employs a modified version of the EPA point count method.

*WRTA refers to a group of fibrous Amphiboles typically associated with 'Libby Amphibole'. Within this classification are: winchite, richterite, tremolite, and actinolite.



SITEX Environmental Inc.
1525 S. Broadway
St. Louis, MO 63104-4014

Phone: (314) 421-0600
FAX: (314) 421-0234

CHAIN OF CUSTODY / LABORATORY WORK REQUEST

Page 2 of 2

Project Name: Kern House
Project Address: 19071 US-61
Sainte Genevieve
Missouri 63670
Project #: 20388
Client Contact: Robert Hall
E-Mail: bob@stexsolutions.com

Invoice to: SITEX ENVIRONMENTAL
1525 S. Broadway
Saint Louis
Missouri 63104

Date: August 21, 2023
P.O. #:

Sample ID	Description	Date/Time Sampled	# of Cont	Type	Matrix				Preservative						Analysis Required																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
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Comments:

Stop at first positive per homogenex
sample set.

Turn Around Time

Samples Taken By

1 hour
2-3 hour
6-8 Hours
24 Hour
Same Day
48 Hours
3-5 Day

Relinquished By	Date/Time	Received By	Date/Time
<u>Robert Hall</u>	<u>August 22, 2023 4p</u>	<u>Kyle</u>	<u>8/24/23 1130</u>



SITEX Environmental Inc.
1525 S. Broadway
St. Louis, MO 63104-4014

Phone: (314) 421-0600
FAX: (314) 421-0234

CHAIN OF CUSTODY / LABORATORY WORK REQUEST

Page 2 of 2

Project Name: Ken House
Project Address: 19011 US 67
Sainte Genevieve
Missouri 63670
Project #: 20388
Client Contact: Robert Hill
E-Mail: rob@sitexsolutions.com

Invoice to: SITEX Environmental
1525 S. Broadway
Saint Louis
Missouri 63104

Date: August 21, 2023
P.O. #:

Sample ID	Description	Date/Time Sampled	# of Cont	Type	Matrix			Preservative						Analysis Required									
					Bulk	Air	Water	Soil	Sludge	Unpres.	HNO ₃	NaOH	H ₂ SO ₄	HCl	Cold	PLM / DS							
202-WP-06A	Room 202 Wallpaper	8/21/23	1	Bags	X	X	X	X	X	X	X	X	X	X	X	X							1424
202-WP-06B	Room 202 Wallpaper		1		X	X	X	X	X	X	X	X	X	X	X	X							167
202-WP-06C	Room 202 Wallpaper		1		X	X	X	X	X	X	X	X	X	X	X	X							168
202-DW-07A	Room 202 Drywall		1		X	X	X	X	X	X	X	X	X	X	X	X							169
202-DW-07B	Room 202 Drywall		1		X	X	X	X	X	X	X	X	X	X	X	X							170-171
202-DW-07C	Room 202 Drywall		1		X	X	X	X	X	X	X	X	X	X	X	X							172-173
202-ST-08A	Room 202 Stair-Tread		1		X	X	X	X	X	X	X	X	X	X	X	X							174-175
202-ST-08B	Room 202 Stair-Tread		1		X	X	X	X	X	X	X	X	X	X	X	X							176
202-ST-08C	Room 202 Stair-Tread		1		X	X	X	X	X	X	X	X	X	X	X	X							177
202-LN-09A	Room 202 Linoleum		1		X	X	X	X	X	X	X	X	X	X	X	X							178
202-LN-09B	Room 202 Linoleum		1		X	X	X	X	X	X	X	X	X	X	X	X							179-180
202-LN-09C	Room 202 Linoleum		1		X	X	X	X	X	X	X	X	X	X	X	X							81-182
201-FL-10A	Room 201 Flooring		1		X	X	X	X	X	X	X	X	X	X	X	X							183-184
201-FL-10B	Room 201 Flooring		1		X	X	X	X	X	X	X	X	X	X	X	X							185-186
201-FL-10C	Room 201 Flooring		1		X	X	X	X	X	X	X	X	X	X	X	X							187-188

Comments:

Stop at first positive per homogeneous
sample set.

Turn Around Time

Samples Taken By

1 hour
2-3 hour
6-8 Hours
24 Hour
Same Day
48 Hours
5-7 Day
15

Relinquished By	Date/Time	Received By	Date/Time
<u>Robert Hill</u>	<u>August 22, 2023 9p</u>	<u>M.H.</u>	<u>8/24/23 11:30</u>



SITEX Environmental Inc.
1525 S. Broadway
St. Louis, MO 63104-4014

Phone: (314) 421-0600
FAX: (314) 421-0234

CHAIN OF CUSTODY / LABORATORY WORK REQUEST

Page 2 of 2

Project Name: Keen House
Project Address: 1907 W 51st

Invoice to: SITEX Environmental
1525 S. Broadway
Saint Louis
Missouri 63104

Project #: 20388
Client Contact: Robert Hill
E-Mail: robert.hill@sitex.com

Date: August 21, 2023
P.O. #:

Sample ID	Description	Date/Time Sampled	# of Cont	Type	Matrix					Preservative					Analysis Required				
					Bulk	Air	Water	Soil	Sludge	Unpres.	HNO ₃	NaOH	H ₂ SO ₄	HCl	Cold	PLM / DS			
201-PC-11A	Room 201 Plaster	8/12/23	1	Baggie	X	X	X	X	X	X	X	X	X	X	X	X	1424		
201-PC-11B	Room 201 Plaster	{	1	{	X	X	X	X	X	X	X	X	X	X	X	X	191-192		
201-PC-11C	Room 201 Plaster		1		X	X	X	X	X	X	X	X	X	X	X	X	X	193-194	
201-WG-12A	Room 201 Window Glaze		1		X	X	X	X	X	X	X	X	X	X	X	X	X	195-196	
201-WG-12B	Room 201 Window Glaze	{	1	{	X	X	X	X	X	X	X	X	X	X	X	X	197		
201-WG-12C	Room 201 Window Glaze		1		X	X	X	X	X	X	X	X	X	X	X	X	X	198	
101-PC-13A	Room 101 Plaster		1		X	X	X	X	X	X	X	X	X	X	X	X	X	199	
101-PC-13B	Room 101 Plaster	{	1	{	X	X	X	X	X	X	X	X	X	X	X	X	200-201		
101-PC-13C	Room 101 Plaster		1		X	X	X	X	X	X	X	X	X	X	X	X	X	202-203	
105-CH-14A	Room 105 Chinking		1		X	X	X	X	X	X	X	X	X	X	X	X	X	204-205	
105-CH-14B	Room 105 Chinking	{	1	{	X	X	X	X	X	X	X	X	X	X	X	X	206-207		
106-CH-14C	Room 106 Chinking		1		X	X	X	X	X	X	X	X	X	X	X	X	X	208-209	
106-CB-15A	Room 106 Ceiling Board		1		X	X	X	X	X	X	X	X	X	X	X	X	X	210-211	
106-CB-15B	Room 106 Ceiling Board	{	1	{	X	X	X	X	X	X	X	X	X	X	X	X	212		
106-CB-15C	Room 106 Ceiling Board		1		X	X	X	X	X	X	X	X	X	X	X	X	X	213	
106-CA-15C	Room 106 Ceiling Board		1		X	X	X	X	X	X	X	X	X	X	X	X	214		

Comments: Stop at first positive per homogenized sample set

Turn Around Time

Samples taken by RS

☐ 1 hour
☐ 2-3 hour
☐ 6-8 Hours
☐ 24 Hour
☐ Same Day
☐ 48 Hours
☒ 3-5 Day

Relinquished By	Date/Time	Received By	Date/Time
<u>Robert Hill</u>	<u>August 22, 2023 4p</u>	<u>Mykel</u>	<u>8/24/23 1130</u>



SITEX Environmental Inc.
1525 S. Broadway
St. Louis, MO 63104-4014

Phone: (314) 421-0600
FAX: (314) 421-0234

CHAIN OF CUSTODY / LABORATORY WORK REQUEST

Page 2 of 2

Project Name: Keen House
Project Address: 10171 US 61
Spate Creek
Missouri 63670
Project #: 20388
Client Contact: Robert Hill
E-Mail: rhill@keensolutions.com

Invoice to: SITEX Environmental
1525 South Broadway
St. Louis
Missouri 63104

Date: August 24, 2023
P.O. #:

Sample ID	Description	Date/Time Sampled	# of Cont	Type	Matrix					Preservative					Analysis Required																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
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1424
215
223
224-225
226-227
228-229

Comments:

Stop at first positive per homogeneous sample set

Turn Around Time

1 hour
2-3 hour
6-8 Hours
24 Hour
Same Day
48 Hours
3-5 Day

Samples Taken By
[Signature]

Relinquished By	Date/Time	Received By	Date/Time
<u>[Signature]</u>	<u>August 27, 2023 4pm</u>	<u>Kyle</u>	<u>8/24/23 1130</u>

APPENDIX B

PHOTOGRAPH LOG



Photograph 1: Facing toward the north and east exterior (LBP lap siding and windows).



Photograph 2: Facing toward the south exterior (LBP lap siding, door, door frame and transom).



Photograph 3: Facing toward the west exterior (LBP lap siding, window, and window frame).



Photograph 4: LBP window and window frame Room 101.



Photograph 5: LBP door, door frame, and ceiling Room 101.



Photograph 6: LBP ceiling Room 101.



Photograph 7: LBP ceiling, window, window frame, and door frame Room 104.



Photograph 8: LBP ceiling, baseboard, door, and door frame Room 104.



Photograph 9: LBP stair, tread, and stringer Room 105.



Photograph 10: LBP baseboard, window, window frame, ceiling Room 105.



Photograph 11: LBP baseboard, window, window frame, and ceiling Room 102.



Photograph 12: LBP baseboard, window, window frame, and ceiling Room102.



Photograph 13: LBP door frame, ceiling, baseboard Rooms 105 and 102.



Photograph 14: LBP door frame, door, window, window frame, ceiling board and ceiling Room 106.



Photograph 15: LBP baseboard, window, and window frame Room 201.



Photograph 16: LBP door and door frame Room 201.



Photograph 17: LBP tread, riser, window, window frame, baseboard, and closet wall Room 202.



Photograph 18: LBP closet door (white), closet wall (brown), and asbestos linoleum Room 202.



Photograph 19: LBP closet door frame Room 203.



Photograph 20: LBP window, window frame, and baseboard Room 203.



Photograph 21: LBP window, window frame, and baseboard Room 204.



Photograph 22: View of basement no suspect hazardous materials observed.



Photograph 23: Non asbestos electrical wiring in basement Room 001.



Photograph 24: Non-asbestos and non-LBP north shed.

APPENDIX C

XRF LEAD PAINT SUMMARY LOG SHEETS



LEAD PAINT SURVEY

Project Name: Kern House

Date Collected: August 22, 2023

On-Site Technician: Robert H. Hill II

Project Number: 20388

Project Location: 19071 US 61

Instrument Used: Olympus Innov-X XRF Analyzer

SAMPLE	LOCATION	COMPONENT	CONDITION	SUBSTRATE	COLOR	RESULTS	POS/NEG	QUANTITY
001	Calibration	Coin	Intact	Metal	Silver	Pass	N/A	N/A
002	Calibration	SRM 2570	Intact	Plastic	White	0.00±0.00	NEG	N/A
003	Calibration	SRM 2573	Intact	Plastic	Red	1.10±0.05	POS	N/A
004	Exterior (South)	Lap Siding	Deteriorated	Wood	White	5.00±0.32	POS	3,750 SF
005	Exterior (South)	Door Frame	Deteriorated	Wood	White	5.00±0.35	POS	1 Each
006	Exterior (South)	Door	Deteriorated	Wood	White	5.00±0.27	POS	1 Each
007	Exterior (West)	Window Frame	Deteriorated	Wood	White	3.88±0.19	POS	13 Each
008	Exterior (West)	Window	Deteriorated	Wood	White	5.00±0.37	POS	13 Each
009	Exterior (West)	Door	Deteriorated	Wood	White	5.00±0.25	POS	1 Each
010	Exterior (West)	Door Frame	Deteriorated	Wood	White	5.00±0.27	POS	1 Each
011	Exterior (South)	Gutter	Deteriorated	Wood	White	0.18±0.01	NEG	N/A
012	Exterior (West)	Soffit	Deteriorated	Wood	White	0.00±0.00	NEG	N/A
013	Exterior (West)	Facia	Deteriorated	Wood	White	0.00±0.00	NEG	N/A
014	Room 204	Ceiling	Deteriorated	Wood	Brown	.031±0.01	NEG	N/A
015	Room 204 (West)	Window Frame	Deteriorated	Wood	Brown	1.05±0.04	POS	4 Each
016	Room 204 (West)	Window	Deteriorated	Wood	Brown	1.55±0.08	POS	4 Each
017	Room 204 (North)	Wall	Deteriorated	Plaster	White	0.00±0.00	NEG	1 Each
018	Room 204 (South)	Door Frame	Deteriorated	Wood	Brown	1.84±0.05	POS	1 Each
019	Room 204 (South)	Door	Deteriorated	Wood	Varnish	0.07±0.01	NEG	N/A
020	Room 204 (East)	Closet Frame	Deteriorated	Wood	Tan	1.05±0.02	POS	1 Each
021	Room 204 (East)	Closet Door	Deteriorated	Wood	Tan	0.76±0.03	NEG	N/A
022	Room 204 (East)	Baseboard	Deteriorated	Wood	Brown	1.28±0.07	POS	75 LF
023	Room 203	Ceiling	Deteriorated	Wood	Brown	0.03±0.01	NEG	N/A
024	Room 203	Attic Access	Deteriorated	Wood	Brown	0.04±0.01	NEG	N/A
025	Room 203 (North)	Wall	Deteriorated	Wood	Brown	0.56±0.03	NEG	N/A
026	Room 203 (North)	Door Frame	Deteriorated	Wood	Brown	1.04±0.03	POS	1 Each
027	Room 203 (North)	Door	Deteriorated	Wood	Varnish	0.10±0.01	NEG	N/A
028	Room 203 (East)	Window	Deteriorated	Wood	Brown	1.02±0.01	POS	1 Each
029	Room 203 (East)	Window Frame	Deteriorated	Wood	Brown	1.21±0.06	POS	1 Each
030	Room 203 (South)	Door Frame	Deteriorated	Wood	Brown	1.05±0.02	POS	1 Each
031	Room 203 (West)	Wall	Deteriorated	Wood	Gray	0.00±0.00	NEG	N/A
032	Room 203 (West)	Window	Deteriorated	Wood	Brown	1.07±0.05	POS	1 Each
033	Room 203 (West)	Window Frame	Deteriorated	Wood	Brown	1.09±0.03	POS	1 Each
034	Room 203 (South)	Baseboard	Deteriorated	Wood	Brown	1.03±0.01	POS	72 LF



LEAD PAINT SURVEY

Project Name: Kern House

Date Collected: August 22, 2023

On-Site Technician: Robert H. Hill II

Project Number: 20388

Project Location: 19071 US61

Instrument Used: Olympus Innov-X XRF Analyzer

SAMPLE	LOCATION	COMPONENT	CONDITION	SUBSTRATE	COLOR	RESULTS	POS/NEG	QUANTITY
035	Room 203 (North)	Crown Molding	Deteriorated	Wood	Brown	0.49±0.00	NEG	N/A
036	Room 201	Ceiling	Deteriorated	Wood	Cream	0.08±0.01	NEG	N/A
037	Room 201 (South)	Window Frame	Deteriorated	Wood	Brown	3.55±0.10	POS	1 Each
038	Room 201 (South)	Window	Deteriorated	Wood	Brown	3.21±0.08	POS	1 Each
039	Room 201 (South)	Baseboard	Deteriorated	Wood	Tan	5.00±0.14	POS	75 LF
040	Room 201 (West)	Wall	Deteriorated	Plaster	White	0.00±0.00	NEG	N/A
041	Room 201 (North)	Door Frame	Deteriorated	Wood	Tan	5.00±0.14	POS	1 Each
042	Room 201 (North)	Door	Deteriorated	Wood	Tan	3.61±0.10	POS	1 Each
043	Room 202	Ceiling	Deteriorated	Wood	White	0.26±0.01	NEG	N/A
044	Room 202 (East)	Window Frame	Deteriorated	Wood	Green	2.54±0.31	POS	1 Each
045	Room 202 (East)	Window	Deteriorated	Wood	Green	1.38±0.05	POS	1 Each
046	Room 202 (North)	Door Frame	Deteriorated	Wood	Green	1.06±0.04	POS	1 Each
047	Room 202 Closet	Interior Shelves	Deteriorated	Wood	White	0.01±0.01	NEG	N/A
048	Room 202 Closet	Shelf	Deteriorated	Wood	White	0.00±0.00	NEG	N/A
049	Room 202 Closet	Wall (South)	Deteriorated	Wood	Brown	1.02±0.01	POS	50 SF
050	Room 202 Closet	Door Frame	Deteriorated	Wood	Green	0.21±0.01	NEG	N/A
051	Room 202 Closet	Door	Deteriorated	Wood	Green	3.41±0.10	POS	1 Each
052	Room 202 (South)	Baseboard	Deteriorated	Wood	Green	1.07±0.05	POS	60 LF
053	Room 202 (South)	Quarterround	Deteriorated	Wood	Green	0.20±0.01	NEG	N/A
054	Stairs 105	Stringer	Deteriorated	Wood	White	3.76±0.11	POS	1 Each
055	Stairs 105	Tread	Deteriorated	Wood	Green	3.44±0.10	POS	1 Each
056	Stairs 105	Riser	Deteriorated	Wood	Green	4.41±0.14	POS	1 Each
057	Room 103 (East)	Door Frame	Deteriorated	Wood	White	5.00±0.25	POS	1 Each
058	Room 103 (East)	Door	Deteriorated	Wood	White	5.00±0.17	POS	1 Each
059	Room 103	Ceiling	Deteriorated	Wood	White	2.77±0.09	POS	240 SF
060	Room 106	Ceiling	Deteriorated	Wood	Green	5.00±0.34	POS	320 SF
061	Room 106	Ceiling Board	Deteriorated	Wood	White	3.64±0.14	POS	320 SF
062	Room 106 (North)	Window	Deteriorated	Wood	White	1.03±0.02	POS	3 Each
063	Room 106 (North)	Window Frame	Deteriorated	Wood	White	1.05±0.04	POS	3 Each
064	Room 106 (West)	Baseboard	Deteriorated	Wood	White	4.70±0.21	POS	72 LF
065	Room 106	Door Frame	Deteriorated	Wood	White	5.00±0.22	POS	1 Each
066	Room 106	Door	Deteriorated	Wood	White	5.00±0.16	POS	1 Each
067	Room 105	Ceiling	Deteriorated	Wood	Brown	5.00±0.33	POS	400 SF
068	Room 105 (West)	Baseboard	Deteriorated	Wood	White	5.00±0.18	POS	80 LF



LEAD PAINT SURVEY

Project Name: Kern House

Date Collected: August 22, 2023

On-Site Technician: Robert H. Hill II

Project Number: 20388

Project Location: 19071 US 61

Instrument Used: Olympus Innov-X XRF Analyzer

SAMPLE	LOCATION	COMPONENT	CONDITION	SUBSTRATE	COLOR	RESULTS	POS/NEG	QUANTITY
069	Room 105 (North)	Door Frame	Deteriorated	Wood	White	5.00±0.25	POS	1 Each
070	Room 105 (East)	Window	Deteriorated	Wood	White	5.00±0.29	POS	2 Each
071	Room 105 (East)	Window Frame	Deteriorated	Wood	White	5.00±0.27	POS	2 Each
072	Room 105 (North)	Baseboard	Deteriorated	Wood	White	5.00±0.19	POS	80 LF
073	Room 105 (West)	Door Frame	Deteriorated	Wood	White	5.00±0.28	POS	1 Each
074	Room 102 (East)	Wall	Deteriorated	Plaster	White	0.00±0.00	NEG	N/A
075	Room 102 (East)	Baseboard	Deteriorated	Wood	White	5.00±0.14	POS	70 LF
076	Room 104	Ceiling	Deteriorated	Wood	Brown	5.00±0.20	POS	336 SF
077	Room 104 (North)	Door Frame	Deteriorated	Wood	White	1.37±0.14	POS	1 Each
078	Room 104 (North)	Door	Deteriorated	Wood	White	5.00±0.27	POS	1 Each
079	Room 104 (North)	Flue	Deteriorated	Plaster	White	0.00±0.00	NEG	1 Each
080	Room 104 (South)	Window Frame	Deteriorated	Wood	White	0.33±0.02	NEG	1 Each
081	Room 104 (South)	Window Frame	Deteriorated	Wood	White	5.00±0.31	POS	3 Each
082	Room 104 (South)	Window Sill	Deteriorated	Wood	White	0.70±0.02	NEG	N/A
083	Room 104 (South)	Baseboard	Deteriorated	Wood	White	5.00±0.03	POS	60 LF
084	Room 104 (West)	Door Frame	Deteriorated	Wood	White	5.00±0.37	POS	1 Each
085	Room 101	Ceiling	Deteriorated	Wood	Green	1.02±0.01	POS	240 SF
086	Room 101 (North)	Flue	Deteriorated	Plaster	White	0.00±0.00	NEG	N/A
087	Room 101 (North)	Door Frame	Deteriorated	Wood	Grey	3.60±0.12	POS	1 Each
088	Room 101 (North)	Door	Deteriorated	Wood	Grey	5.00±0.16	POS	1 Each
089	Room 101 (West)	Window Frame	Deteriorated	Wood	Grey	1.90±0.08	POS	1 Each
090	Room 101 (West)	Window	Deteriorated	Wood	Grey	5.00±0.21	POS	1 Each
091	Room 101 (West)	Wall	Deteriorated	Wood	White	0.57±0.02	NEG	N/A
092	Room 101 (South)	Door	Deteriorated	Wood	White	5.00±0.03	POS	1 Each
093	Room 101 (South)	Door Frame	Deteriorated	Wood	White	2.49±0.08	POS	1 Each
094	Room 101 (South)	Baseboard	Deteriorated	Wood	Red	0.02±0.00	NEG	N/A
095	Room 101 (South)	Transom	Deteriorated	Wood	White	1.34±0.01	POS	2 Each
096	North Shed (EE)	Wall	Deteriorated	Wood	Red	0.00±0.00	NEG	N/A
097	North Shed (NE)	Wall	Deteriorated	Wood	Red	0.02±0.00	NEG	N/A
098	North Shed (EW)	Opening	Deteriorated	Wood	Green	0.16±0.01	NEG	N/A
099	South Shed (NE)	Wall	Deteriorated	Metal	Red	0.09±0.01	NEG	N/A
100	Room 202	Floor	Deteriorated	Wood	Red	0.20±0.02	NEG	N/A
101	Calibration	Coin	Intact	Metal	Silver	PASS	NEG	N/A
102	Calibration	SRM 2570	Intact	Plastic	White	0.00±0.00	NEG	N/A
103	Calibration	SRM2573	Intact	Plastic	Red	1.65±0.008	POS	N/A

APPENDIX D

XRF CERTIFICATE OF CALIBRATION



Your Vision, Our Future

Olympus America, Inc.
110 Magellan Circle
Webster, TX 77598
Tel: (281) 922-9300
Fax: (281) 922-9303
www.olympus-ims.com
ho.ani@olympus-ossa.com



Date Certified: 18-Mar-2019
Certification Number: 190567-01
Serial Number: 501736
Model: DS-2000
Temperature: 77
Relative Humidity: 38

This instrument was certified according to Olympus Scientific Solutions Americas calibration procedures. The calibration was verified using Certified Reference Materials produced by Analytical Reference Materials International (ARMI), NIST and/or other certified materials. The calibration materials are verified to be traceable and within their expiration date.

This instrument conforms to Olympus Scientific Solutions Americas Quality Assurance Standards.

Analyzer modes are tested to meet the criteria as listed on the associated certification page. OSSA does not require a specific certification interval, however the analyzer may be re-certified on a fixed schedule based on the end-user's requirements.


Calibration Technician Signature

Certificate Number: 190567-01

Serial Number: 501736

Modes or Methods certified by this document

Modes / Methods: Soil

Lead Paint

Mining, Mining Plus, Empirical , Fast ID and custom element additions do not have specific quality control criteria. They have been verified to meet basic calibration standards. Empirical modes are customer configurable and may need reconfiguration after calibration.

Soil Environmental/Exploration

Certificate: 190567-01

Serial Number: 501736

Standard	Description	Element	Requirement		Assay	±	Reported	P/F
			Min	Max				
RTC-408	Metals in Soil	Ag	400	650	500	15.1	510	Pass
		As	400	650	500	15.1	449	Pass
		Hg	400	600	500	15.1	497	Pass
		Pb	400	600	500	15.1	460	Pass
		Se	350	600	500	15.1	511	Pass
NIST MED 2711a	NIST SRM 2711a Montana Soil	As	50	200	107	5.0	92	Pass
		Cu	105	175	140	2.0	141	Pass
		Pb	1250	1550	1400	10.0	1356	Pass
		Zn	340	488	414	11.0	417	Pass
RTC-407	Metals in Clay	Cr	850	1150	1000	29.1	1035	Pass

Lead Paint								
Certificate Number: 190567-01					Serial Number: 501736			
Lead Paint without Shield								
Standard	Description	Element	Requirement		Assay	±	Reported	P/F
			Min	Max				
SRM 2575	Green Lead Paint Film SRM 2575	Pb	0.200	0.400	0.307	0.021	0.33	Pass
SRM 2573	Red Lead Paint Film SRM 2573	Pb	0.950	1.140	1.040	0.064	1.06	Pass
SRM 2572	Orange Lead Paint Film SRM 2572	Pb	1.400	1.650	1.527	0.091	1.61	Pass
Lead Paint with Shield								
Standard	Description	Element	Requirement		Assay	±	Reported	P/F
			Min	Max				
SRM 2575	Green Lead Paint Film	Pb	0.200	0.400	0.307	0.021	0.35	Pass
SRM 2573	Red Lead Paint Film SRM 2573	Pb	0.950	1.140	1.040	0.064	1.08	Pass
SRM 2572	Orange Lead Paint Film	Pb	1.400	1.650	1.527	0.091	1.63	Pass

APPENDIX E

LABORATORY ACCREDITATION AND INDIVIDUAL CERTIFICATIONS

United States Department of Commerce
National Institute of Standards and Technology



Certificate of Accreditation to ISO/IEC 17025:2017

NVLAP LAB CODE: 101032-0

Batta Laboratories, LLC
Newark, DE

is accredited by the National Voluntary Laboratory Accreditation Program for specific services,
listed on the Scope of Accreditation, for:

Asbestos Fiber Analysis

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017.
This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality
management system (refer to joint ISO-ILAC-IAF Communique dated January 2009).

2023-07-01 through 2024-06-30

Effective Dates



A handwritten signature in blue ink, appearing to read "Peter S. Lander".

For the National Voluntary Laboratory Accreditation Program



June 5, 2023

Robert H Hill II
608 N 43rd St
Belleville, IL 62226

CERTIFICATION NUMBER:
7118051923MOIR2164

THIS CERTIFIES
Robert H Hill II
HAS COMPLETED THE CERTIFICATION
REQUIREMENTS FOR
Inspector



APPROVED: **06/05/2023**
EXPIRES: **06/05/2024**

TRAINING DATE: **05/19/2023**


Director of Air Pollution Control Program

RE: Missouri Asbestos Occupation Certification Card

Enclosed is your certification card for Asbestos Inspector, as issued by the Asbestos Unit of the Missouri Department of Natural Resources' Air Pollution Control Program.

Missouri Certification Number: 7118051923MOIR2164
Course Training Date: May 19, 2023
Missouri Certification Approval Date: June 05, 2023
Missouri Certification Expiration Date: June 05, 2024

Note:

- All Missouri-certified asbestos personnel must comply with the following statutes and regulations:
 - Sections 643.225 to 643.250, RSMo;
 - 10 CSR 10-6.241 *Asbestos Projects-Registration, Abatement, Notification, Inspection, Demolition, and Performance Requirements*; and
 - 10 CSR 10-6.250 *Asbestos Projects-Certification, Accreditation and Business Exemption Requirements*.
- To keep your occupation certification up-to-date, you must complete an annual refresher course and submit a renewal application each year.
- In order to be eligible to renew your certification, you must successfully complete a refresher course with a Missouri-accredited training provider within 12 months of the expiration date of your current training certificate. If you exceed this grace period, you will be required to retake a Missouri-accredited initial course in order to be eligible for Missouri certification.

To obtain a copy of the certification renewal application, or review regulations and requirements, please visit our website at <http://dnr.mo.gov/env/apcp/asbestos/index.htm>.

If you have any questions please call the Air Pollution Control Program at 573-751-4817.

AIR POLLUTION CONTROL PROGRAM



Director of Air Pollution Control Program





June 5, 2023

Robert H Hill II
608 N 43rd St
Belleville, IL 62226

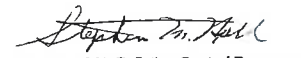
CERTIFICATION NUMBER:
7118052623MOSR2164

THIS CERTIFIES
Robert H Hill II
HAS COMPLETED THE CERTIFICATION
REQUIREMENTS FOR
Supervisor



APPROVED: **06/05/2023**
EXPIRES: **06/05/2024**

TRAINING DATE: **05/26/2023**


Director of Air Pollution Control Program

RE: Missouri Asbestos Occupation Certification Card

Enclosed is your certification card for Asbestos Supervisor, as issued by the Asbestos Unit of the Missouri Department of Natural Resources' Air Pollution Control Program.

Missouri Certification Number: 7118052623MOSR2164
Course Training Date: May 26, 2023
Missouri Certification Approval Date: June 05, 2023
Missouri Certification Expiration Date: June 05, 2024

Note:

- All Missouri-certified asbestos personnel must comply with the following statutes and regulations:
 - Sections 643.225 to 643.250, RSMo;
 - 10 CSR 10-6.241 *Asbestos Projects-Registration, Abatement, Notification, Inspection, Demolition, and Performance Requirements*; and
 - 10 CSR 10-6.250 *Asbestos Projects-Certification, Accreditation and Business Exemption Requirements*.
- To keep your occupation certification up-to-date, you must complete an annual refresher course and submit a renewal application each year.
- In order to be eligible to renew your certification, you must successfully complete a refresher course with a Missouri-accredited training provider within 12 months of the expiration date of your current training certificate. If you exceed this grace period, you will be required to retake a Missouri-accredited initial course in order to be eligible for Missouri certification.

To obtain a copy of the certification renewal application, or review regulations and requirements, please visit our website at <http://dnr.mo.gov/env/apcp/asbestos/index.htm>.

If you have any questions please call the Air Pollution Control Program at 573-751-4817.

AIR POLLUTION CONTROL PROGRAM



Director, of Air Pollution Control Program



**STATE OF MISSOURI
DEPARTMENT OF HEALTH AND SENIOR SERVICES**

LEAD OCCUPATION LICENSE REGISTRATION

Issued to:

Robert H. Hill II

The person, firm or corporation whose name appears on this certificate has fulfilled the requirements for licensure as set forth in the Missouri Revised Statutes 701.300-701.338, as long as not suspended or revoked, and is hereby authorized to engage in the activity listed below.

Lead Risk Assessor
Category of License

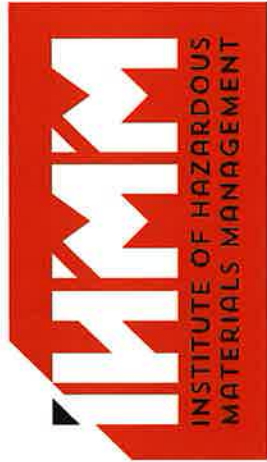
Issuance Date: **5/15/2023**
Expiration Date: **5/17/2025**
License Number: **010517-200133036**



Paula F. Nickelson

Paula F. Nickelson
Acting Director
Department of Health and Senior Services

Lead Licensing Program, PO Box 570, Jefferson City, MO 65102



THIS CERTIFIES THAT

Robert H. Hill

HAS SUCCESSFULLY MET ALL THE REQUIREMENTS OF EDUCATION, EXPERIENCE AND
EXAMINATION, AND IS HEREBY DESIGNATED A

CERTIFIED HAZARDOUS MATERIALS MANAGER®

CHMM®

1/31/2007

DATE OF CERTIFICATION

14171

CREDENTIAL NUMBER



1/31/2028

CERTIFICATION EXPIRES

EUGENE A. GUILFORD, JR.
EXECUTIVE DIRECTOR

VERIFIABLE AS AUTHENTIC AT
https://online.ihmm.org/ihmssa/censsacustikup.query_page



Accredited by the American National Standards Institute and
the Council of Engineering and Scientific Specialty Boards



Appendix G:

Wood Assessment Report and Wood Species Identification Report

REPORT

WOOD CONDITION ASSESSMENT OF THE KERN HOUSE, NPS, STE. GENEVIEVE, MO



Prepared for:

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Prepared by:

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P. O. Box 271400. Fort Collins, CO 80527-1400
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1919 Woodlawn Ave. Eugene, OR 97403-1887

February 28, 2023

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REPORT:

Wood Condition Assessment of the Kern House, NPS, Ste. Genevieve, MO

BACKGROUND

This work was performed based on information provided by Rath's, Rath's & Johnson, Inc (RRJ). The site visit was conducted on October 4-6, 2022, with the RRJ project team. The purpose of the assessment of the Kern House was to determine the wood species of selected structural members, conduct a condition assessment of the vertical wall logs and floor framing members and provide treatment recommendations. The investigation and data collection were performed on-site. Wood identification was performed at the Ligno Logic lab. Based on the assessment, the RRJ project team should have the necessary information to make informed decisions about structural interventions and treatment recommendations.

SCOPE OF WORK

The scope of work for the wood assessment was determined after a review of the existing documentation provided by RRJ, and confirmed on site after a walk-through of the building with the project team.

The scope of work included the following tasks:

- Conduct a field investigation of the Kern House with members of the project team.
- Collect up to ten wood samples to identify the wood species or wood species groups for structural members of the Kern House of interest to the structural engineer.
- Conduct a condition assessment of accessible wood members utilizing visual assessment, probing, moisture content measurements, and resistance drilling.
- Conduct data analysis and summarize the findings in a written report.
- Assist the project team in formulating appropriate treatment recommendations for the wood members.

FIELD AND LABORATORY PROCEDURES

WOOD SPECIES IDENTIFICATION

Identifying wood species in building components makes it possible to select compatible materials for repair and replacement interventions. Additionally, knowing the wood species along with the structural grade and the wood condition of structural members allows for determination of design properties for conducting engineering analysis.

Samples for wood species identification were removed from a selection of floor framing members (floor beams and girders) and vertical wall logs. The sample removed corresponds to the smallest amount of wood required for analysis (Figure 1). Wood species were identified using standard microscopic and macroscopic wood identification techniques.

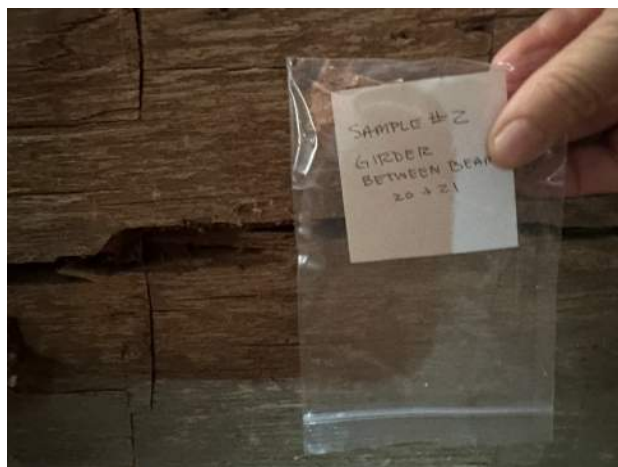


Figure 1. Sampling location for Sample #1. Girder between floor joists B20 and B21.



Figure 2. Probing of the wood using an awl.

VISUAL ASSESSMENT

Visual assessment of building elements allows identification of materials that are missing, broken, or in an advanced state of deterioration. Visual assessment also enables detection of the most common deterioration mechanisms, such as external wood decay and wood-boring insect activity. In addition, current or past moisture problems can be identified, and the moisture sources or areas of potential moisture intrusion that can create favorable conditions for wood deterioration can be determined.

Internal decay and insect damage are often difficult to detect due to a lack of evidence on exposed wood surfaces. Probing the wood with an awl can quickly detect voids and decay that may not be visible on the surface (Figure 2). Probing can also indicate the approximate depth and extent of deterioration that is visible on the surface. In addition, visual inspection and probing, along with wood moisture content measurement and mapping, provide a rapid approach to identifying areas that may require further investigation.

MOISTURE CONTENT MEASUREMENTS

Prolonged exposure to excessive moisture can create favorable conditions for wood colonization by decay fungi and encourage infestation of wood-boring insects. Typical problems associated with excessive moisture include high shrinkage and swelling, checking, loose connections, galvanic corrosion of ferrous fasteners, wood decay, and fungal staining.

Moisture content measurements identify locations with favorable moisture levels for the growth of wood decay fungi and, in some instances, wood-boring insect infestation. In general, fungi cannot grow in wood with a moisture content below 20%, even if they may be present in the wood. Moisture contents between 20% and 30% indicate areas of concern with sufficient moisture to support fungal growth but insufficient to indicate advanced decay. Moisture contents above 30% often indicate advanced decay with internal voids and/or surface deterioration.

Wood moisture contents of vertical wall logs and floor framing members were measured with a Delmhorst J-2000 resistance-type moisture meter with regular pins or with a hammered insulated pin attachment with a maximum penetration depth of one inch (Figure 3).



Figure 3. Use of a resistance-type moisture meter to measure the moisture content of a vertical log.



Figure 4. Use of a resistance drill to investigate the internal wood condition in a floor beam.

RESISTANCE DRILLING

Resistance drilling is a quasi-nondestructive technique for determining the relative density of wood. The resistance drill measures the torque applied to a small diameter needle (typically between 1.5 and 3 mm) as it penetrates wood at a constant speed. The relative density profile is plotted against the depth of needle penetration. Resistance drilling is best suited for determining internal problems in large wood cross-sections that do not show obvious signs of deterioration, such as surface decay. Any internal void or early stage of decay at the drilled location can be detected by determining the relative density of the wood.

Limited resistance drilling was used to verify internal condition of first-floor wall logs and floor framing members. Resistance drilling was done using a Rinntech Resistograph R650-PR Resistance Drill (Figure 4).

The condition of wood seen on the resistance drilling profiles is termed as *solid*, *punky* or *void*. Solid wood has a resistance drilling (relative density) profile typical for healthy and sound wood (free of decay or insect damage). Punky wood is soft and easy to penetrate but has not yet deteriorated to the point where there is a void; the resistance drilling profile has lower relative density range than sound wood and lacks a sharp definition of wood features such as growth rings. Voids develop after deterioration of the wood fibers and loss of structural integrity with a relative density at the baseline of the resistance drilling profile.

Resistance drilling profiles are classified as having less or more than 50% of the profile loss relative to the depth of drill path (element dimension). The distinction between less than or greater than 50% of profile loss is arbitrary and adopted only for the purpose of sorting the members that are more severely deteriorated. An engineering analysis would allow for determining whether 50% remaining solid wood on the members subjected to resistance drilling is sufficient based on anticipated loads, wood species, and structural grade.

Approximate resistance drilling locations are marked on the drawings and photographs with dots representing profiles with more (red) or less (blue) than 50% profile loss, relative to the dimension of a drilled element.

NOMENCLATURE

The nomenclature for building sections and elements used in assessment, data analysis, and presentation was adopted from the RRJ project team.

Basement: Floor beams are labeled from north elevation (B1) to south elevation (B21). Girder is labeled G. Sill plate is labeled SP.

First-floor rooms: First-floor rooms are labeled I to VI starting from Room I at the main entrance and numbered counterclockwise.

Vertical log walls: Vertical logs of exterior walls are labeled based on the elevation (E, S, W, and N) and numbered counterclockwise.

FINDINGS

WOOD SPECIES IDENTIFICATION

Findings of wood species identification for Kern House are shown in Table 1. Wood species identified in samples collected from the exterior and partition wall logs, and first-floor framing members comprise several hardwoods native to the geographic region of the building, suggesting local sourcing of wood at the time of construction.

Based on investigation of a small number of randomly collected samples, white oak and red oak (mixed oak) appear to be the predominant wood species group(s) used for exterior wall construction and floor beams. The individual species within either the red oak or white oak groups cannot be separated with certainty based on the wood anatomical features. The red oak group includes all species of red oaks listed in 'Northern Red Oak' and 'Red Oak' sawn lumber species and species combinations under the National Design Specification for Wood Construction.¹ White oaks

¹ National Design Specification (NDS) Supplement: Design Values for Wood Construction, 2018.

are listed under the 'White Oak' species group under the National Design Specification for Wood Construction. Numerous species of white and red oaks are native to Missouri and have been used in building construction.

Table 1. Wood identification results for samples from Kern House, Ste. Genevieve, MO.

Sample number	Component	Location	Wood Species/Species group
1	Girder	Basement, between B16 and B17	Red oak group (<i>Quercus</i> spp. <i>Erythrobalanus</i> group)
2	Girder	Basement, between B20 and B21	Red oak group (<i>Quercus</i> spp. <i>Erythrobalanus</i> group)
3	Floor beam B18	Basement	Black walnut (<i>Juglans nigra</i>)
4	Floor beam B16	Basement	White oak group (<i>Quercus</i> spp. <i>Leucobalanus</i> group)
5	Interior wall diagonal log	Partition wall between Rooms I and VI	Sycamore (<i>Platanus occidentalis</i>)
6	Vertical log S11	Room VI	Red oak group (<i>Quercus</i> spp. <i>Erythrobalanus</i> group)
7	Vertical log E24	Room V	Red oak group (<i>Quercus</i> spp. <i>Erythrobalanus</i> group)
8	Interior wall vertical log	Partition wall between Rooms III and IV	Cottonwoods, aspens, poplars (<i>Populus</i> spp.)
9	Vertical log N17	Room IV	White oak group (<i>Quercus</i> spp. <i>Leucobalanus</i> group)
10	Vertical log W	Room II, under window	White oak group (<i>Quercus</i> spp. <i>Leucobalanus</i> group)

One floor beam was identified as a black walnut (*Juglans nigra*), suggesting that other locally available hardwood species were used along with mixed oak (*Quercus* spp.), at least for floor beams. A single log from the interior partition walls was identified as *Populus* genus (*Populus* spp.) that comprises numerous species of aspens, poplars, and cottonwoods, which cannot be separated into individual species based on wood anatomy. Eastern cottonwood (*Populus deltoides*) is the most common species native to Missouri, and bigtooth or large-toothed aspen (*P. grandidentata*) occurs in a few locations in the state.² One diagonal brace is identified as a sycamore (*Platanus occidentalis*). Our findings are in agreement with previous research reporting the use of cottonwood (*Populus* spp.) for interior log walls in the Kern House.³ A more comprehensive wood identification campaign would be required to determine the prevalence of cottonwood in vertical logs and sycamore in the diagonal logs, and a broader wood species composition of interior wall logs.

In some instances, hardwood species can be identified or classified to some level of taxon (i.e., genus) based on the macroscopic characteristics visible with an unaided eye. In the case of vertical wall logs, the diagnostic features on wood surfaces are obscured by surface roughness and weathering consistent with *pierrotage* construction, remnants of plaster and lath, and other interior

² "Cottonwood." Missouri Department of Conservation. December 20, 2022. <https://mdc.mo.gov/discover-nature/field-guide/cottonwood>.

³ J.R. Luer and J.W. Francis, *Vanishing French Heritage*, (Chesterfield, Missouri: Independent Publishing Corporation, 2014), 120.

finishes. While some oak logs were identifiable macroscopically, they could not be separated into red and white oak species groups.

MAIN DETERIORATION MECHANISMS

Wood decay fungi are the principal deterioration agents responsible for the material loss and reduction in structural integrity of vertical wall logs, floor beams, sill and top plates (Figure 5). Surface decay, detected by wood probing, is limited to sapwood of oak logs or entire surfaces of logs constructed with non-durable species such as cottonwood. Fungal decay in oak sapwood is often accompanied by the powderpost beetle damage. Deteriorated oak sapwood usually appears punky (less resistance) in resistance drilling profiles. Internal decay was frequently found in heartwood of oak logs. Internal voids cannot be readily detected by visual inspection and surface probing, except when deterioration extends to and is visible on the surface (open internal voids) and required resistance drilling.



Figure 5. Severe deterioration and void in the vertical wall logs and top plate on the west wall. Room I.



Figure 6. Termite damage in the top sill and vertical logs. Room I.



Figure 7. Powderpost beetle pin-size emergence holes and damage restricted to the sapwood of oak.



Figure 8. Large wood-boring beetle emergence holes measuring 1/4 inch in diameter.

Evidence of a damage caused by a variety of wood-boring insect species was observed in the wood members. Termite damage is common in vertical logs and generally concomitant with fungal decay, suggesting that termites infest wood already compromised and softened by wood decay fungi (Figure 6). The evidence of powderpost beetle infestation, including pin-size emergence holes (pinholes) and powdery frass, are present throughout the building (Figure 7).

Powderpost beetle emergence holes are characterized by sharply defined round edges and small diameters (1/32"-3/32"), consistent with Anobiid beetles.⁴ Recently created pinholes and fresh frass accumulated around their edges and on the surfaces below the areas with recent beetle activity are present in various parts of the building suggesting an active infestation. Live or dead adult beetles were not found in the building. Anobiid beetles cause the greatest damage to wood with a moisture content above 12%, especially in poorly ventilated areas. Unheated and unventilated interior of Kern House provides favorable conditions for powderpost beetle infestation. Additionally, the removal of interior finishes may have contributed to the severity of the current infestation as the beetles oviposit eggs only on bare wood surfaces. The powderpost beetle has a life cycle of up to eight years and is capable of reinfesting wood. The infestations often die out naturally but can persist for many years and cause significant damage. Extensive damage appears in the resistance drilling profiles as a punky region with lower relative density range than solid wood.

Some vertical wall logs also have larger round emergence holes measuring approximately ¼ of an inch in diameter, confirming infestation with a large wood-boring insect such as Cerambycid beetles (Figure 8). The beetle emergence holes generally have weathered edges suggesting that the holes are old. Other signs of an active infestation, including adult insects or larvae were not observed. Although these insects are capable of creating large tunnels, the infestation appears less extensive and the damage seems less significant compared to other wood deterioration mechanisms

FLOOR FRAMING MEMBERS

Investigation of first-floor framing members included floor beams, girder, and south and west sill plates accessible from the basement. East and west sill plates were accessed by RRJ project team and determined to be in poor condition and were consequently excluded from further wood assessment.

Floor beams comprise round timber with bark, partially or fully debarked, or hewn on one end, square full-length hewn timbers, and sawn members (Figure 9). Beams comprising round logs appear original to the building (B1, B3, B4, B6, B8, B10, B14, B19, and B21). Squared hewn beams and sawn timbers (B2, B5, B7, B9, B11-B13, B15-B18, and B20) are possible replacements of a later date as suggested by differences in finishing technique (i.e., tool marks) and the presence of cut out openings in the sill beam on the east elevation created to accommodate the beam replacement (Figure 10).

Wood species identification suggest that the floor framing members comprise a mix of hardwood species. White oak and black walnut were identified from floor beams and red oak was identified in two girders (Table 1).

⁴ *Anobiid Beetles in Structures*, EB 1577, by Daniel A. Suomi (Washington State University, Pullman, 1991).

Generally, the condition of floor framing members (floor beams, girders, and south and north sill beams) ranges from poor-to-good. The principal cause of deterioration of timber in the basement is fungal decay, which is often accompanied by wood-boring insect deterioration.



Figure 9. Floor beams comprising different dimensions, finishing, and wood species.



Figure 10. Opening in the sill beam cut out to accommodate the beam replacement. Round log on the left appears original to the building.



Figure 11. Floor beam B15. Note moisture stains on the flooring boards and the beam. Surface wood decay is confirmed by probing with an awl.



Figure 12. Pin-size powderpost beetle emergence holes on the wood surface.

Wood moisture contents were between 16% and 18% for floor beams and around 15% for sill plates at the time of assessment. These wood moisture contents correspond to expected values for the building basement and respective weather conditions for the building site and the time of assessment. Wood moisture contents in the building basement are currently below the 20% required for active growth of wood decay fungi. Wood moisture stains, suggesting moisture intrusion, were observed in most locations exhibiting extensive wood decay, including areas adjacent to the east foundation wall and around both chimneys where the girder and floor beams are in contact with masonry (Figure 11). Building elements that have been exposed to elevated

moisture, either frequently or for an extended period of time, had a higher incidence of wood decay, insect damage, and were in, overall, poor condition. Wood moisture conditions should be monitored during the wet season and high precipitation events to identify any active moisture sources.

Visual inspection and probing confirmed the presence of pinholes and punky consistency of wood surfaces consistent with powderpost beetle damage (Figure 12). Some beams, especially on the north side of the basement, have pinholes surrounded by fresh, wood-colored, dust-free frass, indicating recent and possibly active infestation. The powderpost beetle damage in (white) oak is restricted to sapwood, measuring approximately 1-1 ½ inches in width along the log circumference. The oak heartwood is considered naturally durable, and the powderpost beetles normally do not colonize healthy heartwood. The deterioration pattern and the amount of damage in beams made with other wood species depend on the species' natural durability and susceptibility to insect attack. It should be noted that the powderpost beetle activity was also observed in the black walnut floor beam.

The extensive termite galleries and dark-colored frass and soil debris observed on wood surfaces suggest infestation with termites. The termite damage was found mostly in wood in the advanced stages of fungal decay, indicating that termites colonized the wood after it had decayed. Live termites were not observed during assessment and would require an entomologist to determine an active infestation.

Visual assessment confirmed surface wood decay, restricted mainly to sapwood except in severely decayed members where the internal voids extend to the surface and are visible on the exterior. Limited resistance drilling was used to determine internal wood conditions and estimate the size of any internal voids in individual members.

Resistance drilling was done on both ends of each floor beam. The first drilling was done approximately twelve inches from the beam end. If the first drilling profile showed large internal voids comprising approximately 50% or more of the drilled profile, the second drilling was repeated at one foot or more from the first testing location to evaluate the size of the void. Resistance drilling was done in an upward direction through the middle of the width for floor beams (unless noted otherwise), horizontally (from north to south) and upward for the girder, and horizontally (from the interior toward the exterior of the building) for the sill beams. The resistance drilling results are summarized in the Appendix (Table 1A). Approximate resistance drilling locations and the graphical representation of the results for floor framing are shown in Figure 13. Some resistance drilling profiles show punky wood consistency at the bottom of the floor beams. The punky region typically extends less than 1 ½ inches from the surface coinciding with the width of non-durable oak sapwood deteriorated by powderpost beetle and fungal decay. In some cases, the punky region in the profile reflects the presence of tree bark on logs.

Deterioration and associated cross-section losses of the floor beams are generally more severe on the east than on the west side of the basement. In particular, floor beams B2, B5, B7-B8, and B14-B17 have large internal voids that affect their structural capacity. These beams should be evaluated by the structural engineer and considered for reinforcement or replacement.

The girders have large internal voids in proximity to exterior walls and chimneys and should be evaluated for structural capacity.

North and south sill plates are in poor condition at their ends where the end grain is exposed to moisture intrusion from the exterior. The east sill plate was not investigated following the recommendation of the RRJ project team.

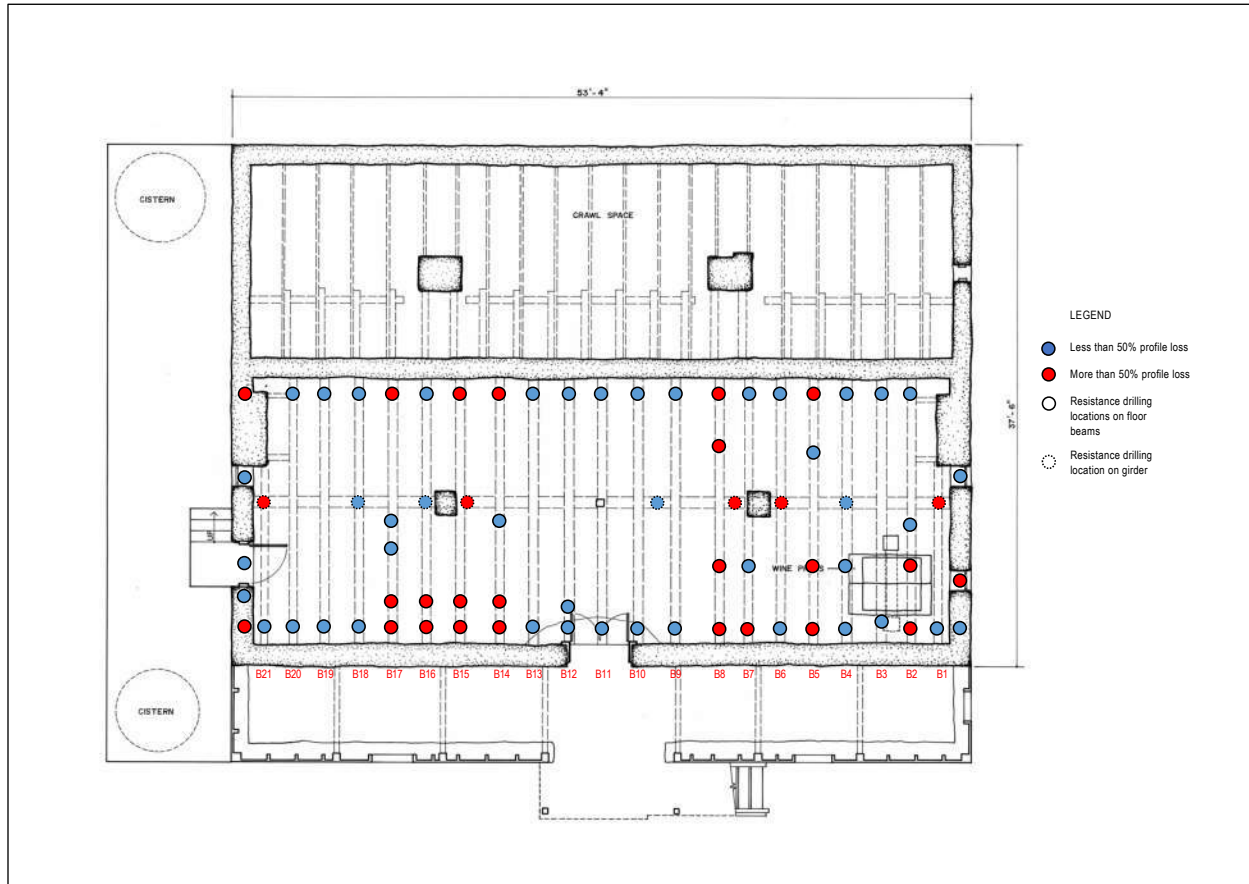


Figure 13. Resistance drilling locations and findings for the floor framing members. Resistance drilling locations are marked as having more (red dots) or less (blue dots) than 50% profile loss at that location.

EXTERIOR WALLS

The exterior walls are built with vertical logs set on a sill (*poteaux sur solle*). The wall logs are of a variable width, approximately 6 ½-7 inches thick, hewn flat on the exterior and interior surfaces, and with bark on the abutting surfaces (Figure 14). Logs appear to be bearing on the sill (Figure 15). The spaces between logs are filled with *pierritage*. Based on wood species identification, the exterior wall logs are mixed white and red oak species groups.

Vertical logs were assessed visually and with limited resistance drilling (Table 2A, Appendix). Overall, their condition ranges from poor-to-good. Deterioration is primarily caused by fungal decay and termite damage. Past powderpost beetle damage is evident on most logs, and some logs show signs of an active powderpost beetle infestation. The powderpost beetle damage is mainly confined to the sapwood of oak logs comprising up to 1 ½" of wood under bark on both

sides of the log. Large wood-boring insect exit holes were observed in multiple locations, but the damage appears of minor significance for the overall conditions of wall elements and no signs of current beetle activity were found at the time of assessment.

Wood moisture contents in logs measured on the building interior were between 10% and 12% suggesting that moisture conditions were unfavorable for fungal decay at the time of assessment. It should be noted that the measurement of log moisture contents was limited in scope because it required hammering of insulated pin attachment that caused movement and detachment of *pierrotage* from the wall.



Figure 14. View of exterior wall showing hewn vertical logs and spaces between logs filled with *pierrotage*.



Figure 15. Vertical logs are resting on the sill.

WEST EXTERIOR WALL

Vertical wall logs on the west wall were assessed from the interior of Rooms I, II, and III. Exterior wall logs are in all three rooms partially covered with wall finishes and were investigated only in areas where they are exposed and accessible. The floor conditions on the west side of Room I were determined to be unsafe by the RRJ team, and the west wall logs were accessed only visually from a distance.

The condition of the wall logs ranges from poor-to-good, with severity of damage and material loss decreasing from the south end (Room I) to the north end of the wall (Room III). Individual west wall sections are shown in Figures 16-19, and annotated corresponding to the visual inspection findings (areas) and resistance drilling locations (dots) with less (blue) or more (red) than approximately 50% profile loss. The deterioration of the west wall follows the pattern of prolonged moisture intrusion from the exterior in the southwest corner, resulting in advanced wood decay and termite damage in this location. The condition of wall members improves further from the southwest corner toward the north end of the west wall. The damage was addressed during a prior repair campaign by replacing the sill plate and lower sections of the wall logs on approximately half of the west wall – from the southwest corner to the door in Room II. The knee wall repair was constructed with dimension lumber and is inappropriate to the historic construction. The remaining parts of the original wall logs are in variable conditions. Several logs on the left of the south window in Room I

have failed due to advanced fungal decay and concomitant termite damage (Figure 16). Moisture stains and debris collected between the lathe and logs in the upper northwest corner of the wall suggest deterioration of the logs behind the lathe. The middle part of the west wall in Room II is covered with wall finishes and was not investigated (Figures 17 and 18). Short sections of the original logs between the knee wall and the window in Room II are severely deteriorated with large internal voids extending to the surface. Logs on the north end of the west wall, accessed using visual inspection and drilling through an existing test opening, appeared in good condition (Figure 19). The original west wall sill, which remains between the door in Room II and the northwest corner of the building, is in good condition, lacking any internal voids, as confirmed by resistance drilling (Figures 18 and 19). The top plate in Room I appears significantly deteriorated, based on the visual assessment.



Figure 16. Section of west wall. Room I.



Figure 17. South section of the west wall. Room II.



Figure 18. North section of the west wall. Room II.



Figure 19. Section of west wall. Room III.

NORTH EXTERIOR WALL

The north wall was investigated from Rooms III and IV as shown in Figures 19 and 20. Visual inspection findings (areas) and resistance drilling locations (dots) are annotated in blue and red, for lower and higher than 50% profile losses, respectively. Wall logs in the west section of the north exterior wall (Room III) were accessed at their bases and along an existing test opening at the mid-height of the wall (Figure 20). The entire sill plate and lower sections of most logs are in advanced stages of decay, with internal voids extending to the surface or are hollow at the base. Deterioration in this part of the wall is exacerbated by moisture intrusion at the ground level. The condition of wall members improves with distance from the ground, and logs appear solid at the level of the test opening, approximately at the middle of the wall height. The diagonal N3 and logs N6-N7, and N12-N14 have large voids or are hollow at the base. For example, the depth of the internal void in the diagonal N3 decreases from 4 inches at the base to 2 ½ inches at 2 feet and is solid at the height of 4.5 feet. There are moisture stains visible on wall finishes in the upper parts of the wall suggesting moisture intrusion. The logs accessible through the test opening in the wall were solid, based on the visual inspection and resistance drilling.

The original sill comprises two beams. The sill beam on the west has a void along its length ranging in depth between 2 ½ and 7 inches and extending to the interior face in some locations (Figure 20). A section of the second sill beam in Room III is missing due to decay. The top plate on the north wall in Room III is not visible.



Figure 20. Section of the north wall. Room III.

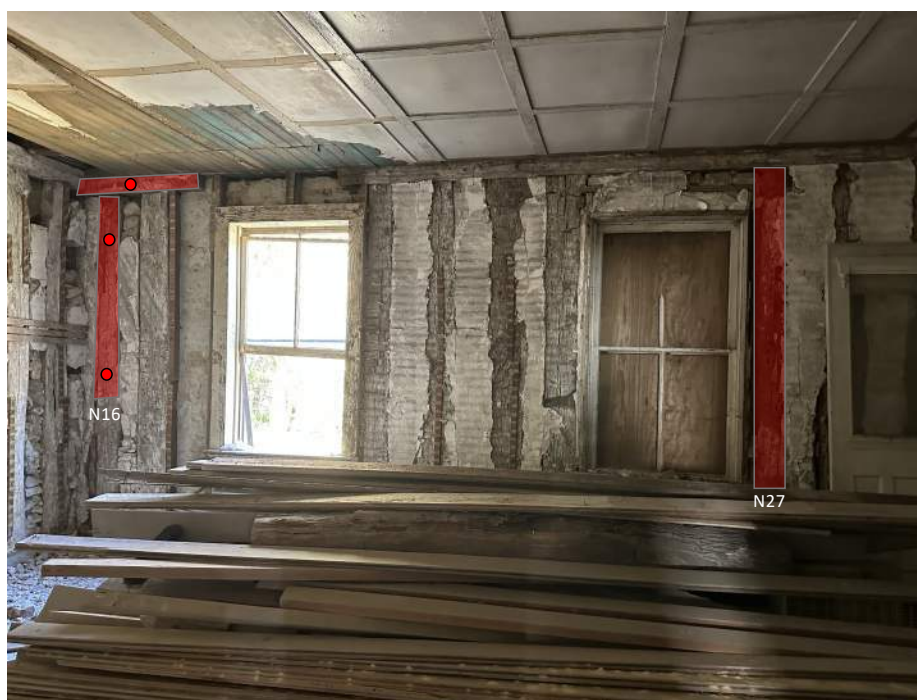


Figure 21. Section of the north wall. Room IV.

The north sill beam in Room IV is concealed by wall finishes and was not investigated. Vertical wall logs in Room IV were assessed at the west and east ends of the wall. Middle section of the wall was

inaccessible due to the lumber stored in the room at the time of assessment (Figure 21). The upper section of log N16 and the top plate in the west corner are deteriorated and have large internal voids. The severity of deterioration decreases downward with the distance from the top plate. The original top sill and wall logs around the west window in Room IV are missing or were replaced with dimension lumber when the window was installed at a later period after initial construction. The logs under the east window are deteriorated or missing. The diagonal log (N31) on the east side of the north wall is sound, as confirmed by resistance drilling. Generally, logs on the east end of the north wall and the top sill, which were accessible only for visual assessment from a distance, appear in good condition.

EAST EXTERIOR WALL

The east wall logs were investigated from Rooms IV, V, and VI. The condition of east wall vertical logs ranges from poor-to-good (Figures 22-24). Highlighted areas (visual inspection) and dots (resistance drilling locations) correspond to less (blue) and more (red) than approximately 50% profile loss. Most logs have some level of fungal or insect deterioration of the sapwood.

The first log (E1), the diagonal brace (E2) in the northeast corner, and logs E5, E6, E15, and E16, visible in Room IV, have internal voids of different depths (Figure 22). Vertical logs in Room V appear to be in sound condition, except for the log segments of E26 and E27, which have large internal voids (Figure 23). Vertical logs E44 and the upper part of the diagonal log on the south end of the wall (E47) visible in Room VI also have large internal voids, as confirmed by resistance drilling (Figure 24). The entire first-floor top plate on the east elevation has significant deterioration and deflection and was exempt from the assessment, based on RRJ team recommendations.

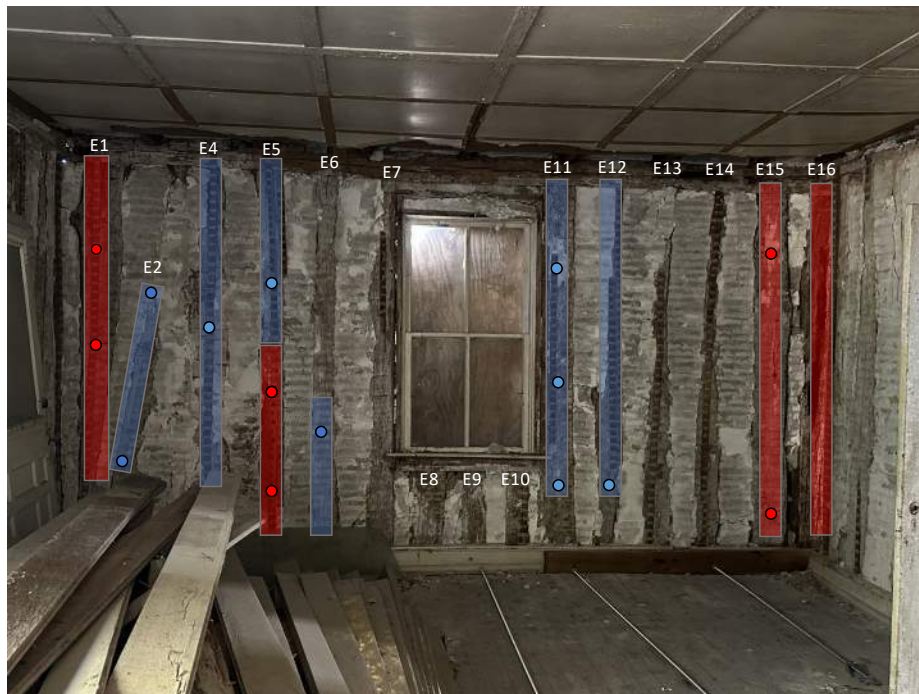


Figure 22. Section of the east wall. Room IV.



Figure 23. Section of the east wall. Room V.



Figure 24. Section of the east wall. Room VI.

SOUTH EXTERIOR WALL

Exterior logs on the south wall were accessed from the interiors of Rooms VI and I (Figures 25 and 26). The condition of logs ranges from poor-to-good. First vertical log in the southeast corner has advanced fungal decay and termite damage, as determined by visual assessment. The lower part of diagonal log S3 has a one-inch internal void (Figure 25). Other wall logs appear sound, apart from the sapwood damage common to most exterior wall logs. The original logs surrounding the west window in Room VI have been replaced by new wood framing, and the top plate is missing in this section. The remaining visible sections of top plate show evidence of fungal decay and insect damage. The resistance drilling profiles of top plate suggest either a punky interior or a wood species with a lower density than the wall logs.

The south wall logs in Room I are largely concealed by plaster and lathe, but there are visible signs of advanced wood deterioration, especially in the upper section of the wall logs and the top plate. Resistance drilling confirmed a large void in one on of the logs in this area suggesting that deterioration is not superficial and does extend to the log interior (Figure 26).



Figure 25. Section of the south wall. Room VI.



Figure 26. Section of the south wall. Room I.

PARTITION WALLS

Interior partition walls are constructed using similar vertical log and *pierrotage* construction techniques as the exterior walls (Figure 27). The thickness of the vertical logs is approximately five inches, on average. Wood identification confirmed cottonwood (*Populus* spp.) in vertical logs and sycamore (*Platanus occidentalis*) in a diagonal log. Earlier research reported that the interior walls of the Kern house are made of cottonwood.⁵ Additional evidence, such as the light color of fresh powderpost beetle frass and the lower relative density in resistance drilling profiles of interior wall logs are consistent with the use of cottonwood and similar softer and lighter hardwoods other than oaks (Figure 28).

The condition of interior wall logs ranges from poor-to-good. Fungal decay and termite damage were observed on the west end of the partition wall between Rooms I and II, particularly above the door. The leading cause of deterioration is powderpost beetle damage, which is apparent on most interior wall surfaces (Figure 29). Fresh frass collected on the walls and accumulated beneath wall logs and numerous beetle emergence holes suggest long-term and presently active infestation. Powderpost beetle is known to be destructive and capable of causing extensive damage to hardwoods like maples and poplars. Unlike oak, heartwood of these species often lacks natural resistance to the powderpost beetle attack, rendering the wood susceptible to damage throughout the entire cross-section.

⁵ J.R. Luer and J.W. Francis, *Vanishing French Heritage*, (Chesterfield, Missouri: Independent Publishing Corporation, 2014), 120.



Figure 27. Interior partition wall showing similar construction techniques as for the exterior walls.



Figure 28. Lightly colored powderpost beetle frass from the interior wall logs.



Figure 29. Powderpost beetle emergence holes on the interior wall log.



Figure 30. Opening in the interior wall log.

There are openings in the partition walls created during the occupancy of the building (Figure 30).

The severity of beetle damage varies among interior logs (Figure 31). Some logs lack or have very few pinholes, while others have numerous densely distributed pinholes across the entire log surface. Heavy and active infestations were observed on the north-south partition wall between Rooms III and IV, on the south end of the wall between Rooms II and V, and on the north end of the wall between Rooms I and VI, as well as on west ends of east-west walls between Rooms IV and V and between Rooms V and VI. Based on the resistance drilling data, logs in areas with severe powderpost beetle infestation have punky exterior and 2 to 3 ½ inches thick sound interiors (Table 2A, Appendix). Logs in areas lacking evidence of severe powderpost beetle damage generally have a wider solid profile sections ranging between 3 ½ and 5 inches. Resistance drilling results also suggest that diagonal logs might be more deteriorated than vertical logs.

Larger insect emergence holes that suggest a Cerambycid beetle species are sporadically found on interior wall logs. The extent of internal damage due to beetle tunneling is unclear but is likely secondary to the powderpost beetle damage.

Based on the visual assessment and probing, interior wall logs are mostly free of surface fungal decay. There is a large void that extends to the surface of the first log on the north end of the north-south partition wall, and several other logs have some minor, localized decay.

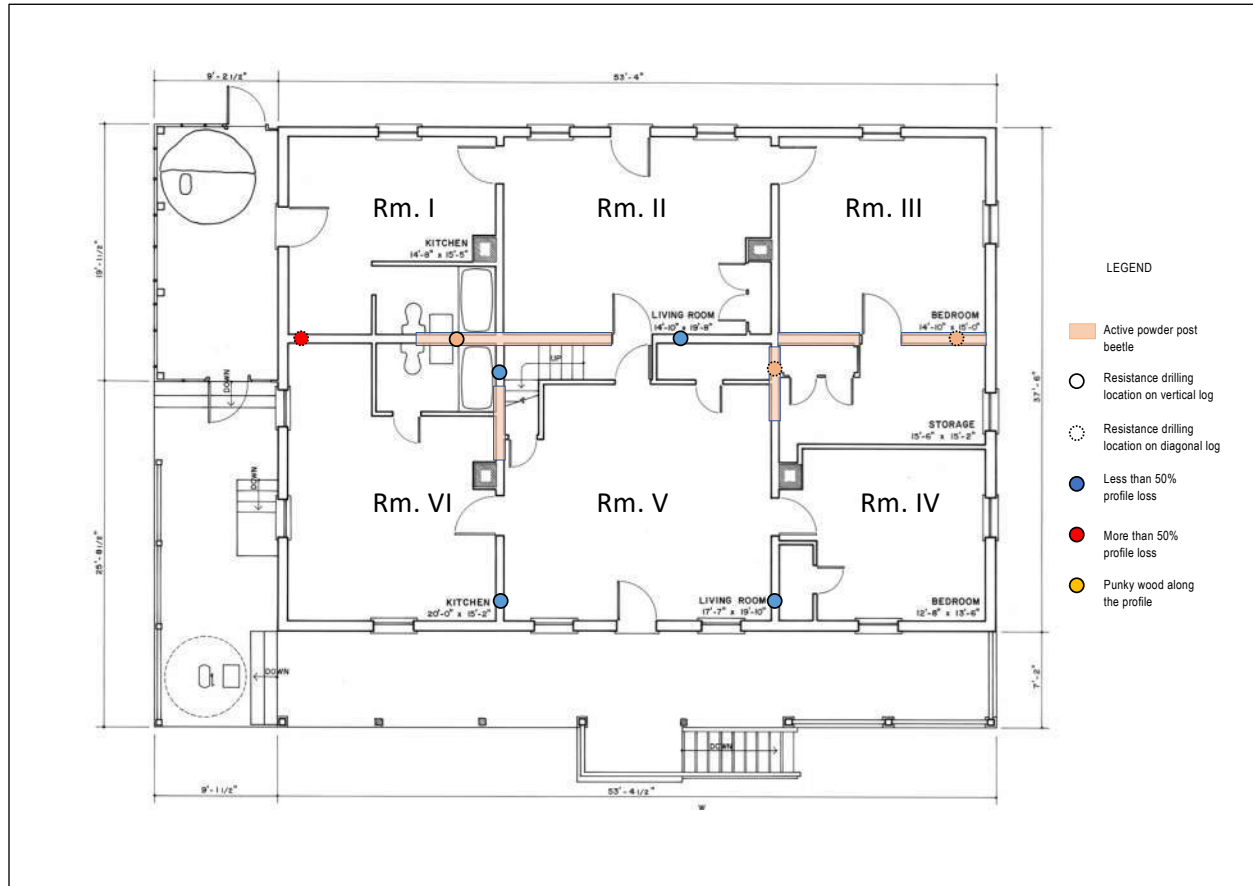


Figure 31. Summary of findings for the first-floor interior partition walls showing wall sections with active powderpost beetle infestation and the condition of interior vertical and diagonal logs.

SUMMARY

- Wood samples from exterior vertical logs were identified as mixed white and red oak (*Quercus* spp.). Cottonwood (*Populus* spp.) was identified in a single sample from the interior partition wall logs. Interior wall diagonal log is a sycamore (*Platanus occidentalis*). White oak and black walnut (*Juglans nigra*) were identified in floor beams, and two girder elements are red oak. All identified wood species are native and were locally available at the time of construction. It is uncertain if other wood species were used for structural members not sampled but, given the diversity of available species, that would not be unusual.
- The condition of floor framing members ranges from poor-to-good, with fungal decay and wood-boring insect damage as primary deterioration mechanisms.
- Wood moisture contents ranged between 15% and 18% in the basement, and between 10% and 12% on the first floor at the time of investigation. While these moisture conditions are unfavorable for active wood decay (below the threshold of 20%), higher values can be expected following high precipitation events. It is recommended that the wood moisture contents are monitored during high precipitation season. Any areas with active moisture intrusion should be identified and the sources of moisture eliminated.
- Main losses in the cross-section of beams are caused by the deterioration of 1-1 ½" wide sapwood on the perimeter of oak logs and internal voids of variable size caused by fungal decay. Deterioration is more severe in the end sections of beams, especially on the east side and in the proximity to chimneys.
- Floor beams B2, B5, B7, B8, B14, B15, B16, and B17 have large internal voids extending more than 50% of the resistance drilling profile. The structural capacity of these beams should be evaluated by the structural engineer and considered for reinforcement or replacement accordingly.
- The girder is identified as red oak. There are large internal voids in proximity to exterior walls and chimneys necessitating evaluation by the structural engineer.
- North and south sill beams have large internal voids at their ends in the corners of foundations (due to the end grain of the beams) but are sound in the middle section.
- Exterior wall vertical logs are in poor-to-good conditions, with a punky consistency of sapwood and frequently with internal voids caused by fungal decay.
- Interior wall logs were in poor-to-good condition, with principal deterioration caused by powderpost beetle damage, which is currently active.
- Vegetation along the building perimeter that can adversely affect moisture conditions of logs should be periodically trimmed, especially in the southwest corner of the building.
- Surface treatments of wood with sodium borates (disodium octaborate tetrahydrate) or other borate-based wood preservatives have been shown to provide long-term efficacy against powderpost beetles. The surface treatment is effective at killing larvae after hatching and before they bore into the wood, as well as adult beetles that ingest the insecticide as they emerge. However, because of the relatively long life-cycle of beetles, the eradication of the entire beetle population may take many years and repeated insecticide

applications. Borates are broad-spectrum wood preservatives. They are highly toxic to target organisms but have low mammalian toxicity and are environmentally safe, which makes them especially suitable for treating building interiors. Borates are widely available, including liquid and solid formulations, which can be applied by spray application or inserting into the wood member.

- Treatment with a borate-based wood preservative can be recommended as part of a regular building maintenance protocol and reapplied on a 5-year cycle by surface spraying. Alternative control measures such as pheromone traps and electric UV flying insect traps can abate reinfestation by trapping adult beetles after emergence and before reinfestation of structural elements.

APPENDIX: RESISTANCE DRILLING RESULTS

Table 1A. Findings of resistance drilling investigation for the floor framing members, Kern House, Ste. Genevieve, MO. Floor beams are labeled B1 to B21 from north to south. Girder is labeled G. Sill plate is labeled SP.

Drilling number	Member	Drilling Location	Dimensions	Findings/Condition Summary	Profile Loss
80035	B21	1' from east end	6" x 6"	1" punky, 5" solid	< 50%
80036	B20	1' from east end	6.5" x 7"	7" solid	< 50%
80037	B19	1' from east end	7.5 x 6.5	1 3/4" bark/punky, 4 3/4" solid	< 50%
80038	B18	1' from east end	7" x 7"	1" punky, 4 1/2" solid (interior)	< 50%
80039	B17	1' from east end	6" x 8"	2 " punky, 4 1/2' void	> 50%
80040	B17	3' from east end	6" x 8"	2 " punky, 4" void, 1 1/2" punky	> 50%
80041	B17	6" from girder	6" x 8"	punky throughout	n/a
80042	B17	52" from girder	6" x 8"	3/4" punky, 5 3/4" solid	< 50%
80043	B16	1' from east end	3-1/4" x 7.5"	2 " punky, 4" void, 1 1/2" punky	> 50%
80044	B16	3' from east end	3-1/4" x 7.5"	punky throughout	n/a
80045	B15	1' from east end	8" x 8.5"	6 1/2" internal void	> 50%
80046	B15	3' from east end	8" x 8.5"	8" internal void	> 50%
80047	B15	3' from east end. Horizontal N to S	8" x 8.5"	3 3/4" punky, 4 3/4" internal void	> 50%
80048	B14	1' from east end	7" x 8"	punky, 4" internal void	> 50%
80049	B14	4 1/2' from east end	7" x 8"	1" bark/punky, 2 1/2" solid, 4" void	> 50%
80050	B14	next to girder	7" x 8"	punky throughout	n/a
80051	B13	1' from east end	6" x 8.5"	1 1/2" punky, 4 1/2" solid	< 50%
80052	B12	1' from east end	7" x 7"	1/2" punky, 8" solid	< 50%
80053	B12	18" from girder	7" x 7"	1" punky, 7" solid	< 50%
80054	B11	1' from east end	6" x 8-1/2"	7 1/2" solid	< 50%
80055	B10	1' from east end	7" x 6"	1" punky, 7" solid	< 50%
80056	B9	1' from east end	6" x 8.5"	7 3/4" solid	< 50%
80057	B8	1' from east end	9" x 8"	3" punky, 4" internal void	> 50%
80058	B8	midspan	9" x 8"	2" punky, 5" internal void	> 50%
80059	B7	1' from east end	9" x 8"	1 1/2" punky, 7 1/2" void	> 50%
80060	B7	midspan	9" x 8"	8" solid	< 50%
80061	B6	18" from girder?	9" x 8.5"	9" solid	< 50%
80062	B5	1' from east end	7" x 8.5"	1 3/4" punky, 3 1/2" void, 4" punky	> 50%
80063	B5	midspan	7" x 8.5"	2" punky, 2 1/2" void, 3 1/2" solid	> 50%
80064	B4	18" from east end	6" x 8"	3/4" punky, 7" solid	< 50%
80065	B4	midspan	6" x 8"	3/4" punky, 7" solid	< 50%
80066	B3	2' from east end	8.5" x 10"	1" punky, 7 1/2" solid	< 50%
80067	B2	1' from east end	6.5" x 9"	1/2" punky, 7" void	> 50%
80068	B2	3' from east end	6.5" x 9"	1" punky, 5 1/2" void	> 50%
80069	B2	next to girder	6.5" x 9"	solid	< 50%
80072	B1	1' from east end	6.5" x 6.5"	solid	< 50%
80073	G	6" from North. Horizontal 2" from top		1" punky, 6 1/2" void, 1 1/2" punky	> 50%
80074	G	Under B4. Horizontal 2" from top		8" solid, 1" punky	< 50%
80075	G	Under B6		3" punky, 4 1/2 void, 1 3/4" solid	> 50%
80076	G	Under B7. Horizontal		2 1/2" solid, 5 1/2" void, 2" solid	> 50%
80077	G	Between B9 and B10. Horizontal		1" punky, 8" solid,	< 50%
80078	G	Under B15		7" void	> 50%
80079	G	Under B16. Horizontal		solid	< 50%
80080	G	Under B18. Horizontal		solid	< 50%

Drilling number	Member	Drilling Location	Dimensions	Findings/Condition Summary	Profile Loss*
80081	G	Under B21		1" solid, 6" void, 2 3/4" solid	> 50%
80083	B2	1' from west end	6.5" x 9"	1" punky, 6 1/2" solid	< 50%
80084	B3	1' from west end	8.5" x 10"	1" punky, 5 1/2" solid, 2" punky	< 50%
80085	B4	1' from west end	6" x 8"	3/4" punky, 7" solid	< 50%
80086	B5	1' from west end	7" x 8.5"	punky throughout	n/a
80087	B5	Midspan between West wall and girder	7" x 8.5"	1" punky, 7" solid	< 50%
80088	B6	2' from west end	9" x 8.5"	2' punky, 4" solid, 1" void, 2" solid	< 50%
80090	B7	1' from west end	9" x 8"	1" punky, 7" solid	< 50%
80091	B8	1' from west end	9" x 8"	1" punky, 5 1/2" void, 1" punky	> 50%
80092	B8	Midspan between West wall and girder	9" x 8"	2" punky, 5 void, 1" punky	> 50%
80093	B9	10" from West end	6" x 8.5"	8" solid	< 50%
80094	B10	10" from West end	7" x 6"	1" punky, 6" solid	< 50%
80095	B11	1' from west end	6" x 8-1/2"	1" punky, 6 1.5" solid	< 50%
80096	B12	10" from West end	7" x 7"	1/2" punky, 5 1/2" solid	< 50%
80097	B13	1' from west end	6" x 8.5"	1/2" punky, 7" solid	< 50%
80098	B14	1' from west end	7" x 8"	punky throughout	n/a
80099	B15	1' from west end	8" x 8.5"	punky throughout	n/a
80100	B16	1' from west end	3-1/4" x 7.5"	7" solid	< 50%
80101	B17	1' from west end	6" x 8"	1" punky, 1" solid, 3" void, 1" solid	> 50%
80102	B18	1' from west end	7" x 7"	2" punky, 5" solid	< 50%
80103	B19	1' from west end	7.5 x 6.5	1" punky, 4" solid, 1 1/2" punky	< 50%
80104	B20	1' from west end	6.5" x 7"	1/2" punky, 7" solid	< 50%
80105	SP - South	6" from West wall		punky throughout	n/a
80107	SP - South	Above window/vent		1" punky, 9" solid	< 50%
80119	SP - South	Above door		1/2" punky, 9" solid	< 50%
80120	SP - South	3' from East wall		1" punky, 8" solid (1/2" void in the middle)	< 50%
80121	SP - South	1' from East wall		3" solid, 4 3/4" void, 1 1/2" solid	> 50%
80122	SP - North	18" from East wall		6 1/2" solid, 1 1/2" decayed, 1" solid	< 50%
80123	SP - North	Above East window		1 1/2" punky, 2 1/2" solid, 2" void, 2" solid	> 50%
80124	SP - North	Above West window		9" solid	< 50%

* - profile loss is expressed as the percentage of void along the path of resistance drill at that location

Table 2A. Findings of resistance drilling investigation for vertical wall logs, Kern House, Ste. Genevieve, MO. Vertical logs of exterior walls are labeled based on the elevation (E, S, W, and N) and numbered counterclockwise. Sill plate is labeled SP. Interior wall vertical and diagonal logs are not numbered and are identified by drilling location.

Drilling number	Member	Drilling Location	Findings/Condition	Profile Loss*
80003	E1	4' above floor	1/2" punky, 1 3/4" solid, 3" void	> 50%
80004	E1	6' above floor	1/2" punky, 1 3/4" solid, 3" void	> 50%
80005	E4	55" above floor	1/2" punky, 5" solid	< 50%
80006	E5	16" above floor	1/2" punky, 2 1/2" solid, 2" void	~ 50%
80007	E5	5' above floor	5 1/2" solid	< 50%
80008	E5	3' above floor	2" punky, 3 1/2" void	> 50%
80009	E6	2' above floor	1/2" punky, 3 1/4" solid, 2" punky	< 50%
80010	E6	2' above floor	3 1/4" solid (intermittent decay), 3 1/4" void	< 50%
80011	E11	1' above floor	6 1/4" solid	< 50%
80012	E11	3' above floor	6 1/4" solid	< 50%
80013	E11	6' above floor	1/2" punky, 6" solid	< 50%
80014	E12	1' above floor	1/2" punky, 5" solid	< 50%
80015	E15	9" above floor	void	> 50%
80016	E15	6 1/2" above floor	2 1/4" punky, 2 1/2" void, 2" punky	> 50%
80017	E17	16" above floor	1/2" punky, 5 1/2" solid	< 50%
80018	E24	4' above floor	6" solid	< 50%
80019	E26	20" below top plate	1" punky, 4 1/4" void, 1 1/4" punky	> 50%
80020	E26	5.3" above floor	6" solid	< 50%
80021	E27	20" above floor	1 1/2" punky, 2" void, 3" punky	> 50%
80022	E27	4' above floor	6" solid	< 50%
80023	E27	6' above floor	6" solid	< 50%
80024	E28	1' above floor	5 3/4" solid	< 50%
80025	E32	42" above floor	5 3/4" solid	< 50%
80026	E38	1' above floor	6" solid	< 50%
80027	E38	1' above floor - 45 degrees	1" void, 5 1/2" solid	< 50%
80028	E43	1' above floor	5 1/4" solid	< 50%
80029	E43	5 1/2' above floor	5 3/4" solid	< 50%
80030	E47 (Diagonal)	1' above floor	6" solid	< 50%
80031	E47(Diagonal)	6' above floor	punky throughout	n/a
80125	S3	12" above floor	2 1/2" solid, 1" void, then solid	< 50%
80131	S3	4" above floor	6 1/2" solid	< 50%
80132	S3	6.5' above floor	5 1/2" solid, 1" punky	< 50%
80133	S7	12" above floor	1 1/2" punky, 4 1/2" solid	< 50%
80134	S Top plate	Above S5	6" solid	< 50%
80135	S Top plate	Above S12	6" solid	< 50%
80136	S16	12" above floor	1 1/2" punky, 4" solid	< 50%

Drilling number	Member	Drilling Location	Findings/Condition	Section Loss
80137	S Top plate	Above S16	punky throughout	n/a
80138	S21	4.5' above floor	punky, 5" void	> 50%
80139	W7	6' above floor	6" solid	< 50%
80140	West SP	Rm II, under north window	1" punky, 5 1/2" solid	< 50%
80141	West SP	Rm III, under window	10" solid	< 50%
80142	West Diagonal	Rm III, diagonal, 4' above floor	6 1/2" solid	< 50%
80143	North SP	Rm III, above N3	3/4" punky, 3" solid, 3" void, 3" solid	< 50%
80144	North SP	Rm III, under window	3/4" punky, 2" solid, 7" void	> 50%
80145	North SP	Rm III, above N12	3/4" punky, 4 1/4" solid, 2 1/2" void, 2 1/2" solid	< 50%
80146	N3 (Diagonal)	6" above floor	1 1/2" solid, 4" void, 1" solid	> 50%
80147	N3 (Diagonal)	4.5' above floor	6 1/2" solid	< 50%
80148	N3 (Diagonal)	2' above floor (through plaster)	2" solid, 2 1/2" void, 1" solid	< 50%
80149	N12	6" above floor	1" punky, 4" void, 1" solid	> 50%
80150	N13	6" above floor	1/2" punky, 3" void, 1 1/2" punky, 1 1/2" solid	> 50%
80151	N14	6" above floor	1/2" punky, 5" void, 1" punky	> 50%
80152	N Top plate	above N16	2" solid, 3 1/2" void, 2" punky	< 50%
80153	N16	12" below top plate	1 1/2" punky, 3 1/2" void, 1" solid	> 50%
80154	N16	mid-height	2" solid, 2 1/4" void, 1" solid	< 50%
80155	N 31 (Diagonal)	12" above floor	6 1/2" solid	< 50%
80156	N 31 (Diagonal)	5' above floor	6 1/2" solid	< 50%
80157	E2 (Diagonal)	12" above floor	1/2" punky, 3" solid, 1/2" punky, 1 1/2" solid	~ 50%
80158	E2 (Diagonal)	5' above floor	1/2" punky, 5" solid, 1" void	< 50%
80159	Interior log	Partition Rm IV/V, 5th log from east	5" solid	< 50%
80160	Interior diagonal	Partition Rm III/IV, drilled from Rm IV to III, north of door	2" solid interior	~ 50%
80166	Interior diagonal	Partition Rm IV/V, west corner	2" punky, 3" solid	< 50%
80167	Interior top plate	Partition Rm IV/V, drilled from Rm IV to V	3 1/2" solid	< 50%
80172	Interior log	Partition Rm V/VI, 1st log from east, drilled from Room V to VI	4 1/2" solid	< 50%
80173	Interior log	Partition Rm V/II, 1st log right of door, drilled from Room V to II	3 1/2" solid	< 50%
80174	Interior log	Partition wall at Rm V stairs, 6" from ceiling	4 1/2" solid	< 50%
80175	Interior log	Partition Rm V/VI, stairs, 6" from landing	4 1/2" solid	< 50%
80176	Interior log	Partition Rm VI/I, 4th log right of door	1 1/2" punky, 3 1/2" solid	< 50%
80177	Interior diagonal	Partition Rm VI/I, diagonal left of door in Rm VI	4 1/2" punky	> 50%
80179	Interior diagonal	Partition Rm I/VI, west corner	4 1/2" solid	< 50%

* - profile loss is expressed as the percentage of void along the path of resistance drill at that location

REPORT

WOOD SPECIES IDENTIFICATION FOR THE KERN HOUSE, NPS, STE. GENEVIEVE, MO

Prepared for:

Raths, Raths & Johnson, Inc.
500 Joliet Road, Suite 200.
Willowbrook, IL 60527-5618

Prepared by:

Ligno Logic LLC
2382 Malabar Dr.
Eugene, OR 97403

September 14, 2024

REPORT:

Wood Species Identification for the Kern House, NPS, Ste. Genevieve, MO

BACKGROUND

The purpose of the investigation was to determine the wood species (or wood species group) of the Kern House structural members of interest to the RRJ project team. Wood samples were collected from the Kern house during the site visit on August 22, 2023. Wood identification was performed at the Ligno Logic lab using standard microscopic wood identification techniques.

Based on the wood species assignments for selected structural members, the RRJ project team should have the necessary information to make informed decisions about structural interventions and treatment recommendations.

SCOPE OF WORK

The scope of work included:

Collection of ten wood samples from structural members of the Kern House, based on the sampling scheme developed by RRJ.

- Wood species identification using standard wood identification methodology.
- Preparation of a written report with a summary of results.

WOOD SPECIES IDENTIFICATION PROCEDURES

Identifying wood species in building components makes it possible to select compatible materials for repair and replacement interventions. In addition, knowing the wood species along with the structural grade and wood condition of structural members allows the determination of design properties for conducting engineering analysis.

Samples for wood species identification were removed from floor beams in the basement and the crawl space, and the interior vertical logs, diagonal brace, and top and bottom plates on the first floor. The sampling scheme was provided by the RRJ project team (Figures 1 and 2). A sample from the second-floor framing requested by the RRJ team was not acquired. The sample size corresponds to the smallest amount of wood required for analysis (Figures 3-10). Wood species were identified using standard microscopic and macroscopic wood identification techniques.

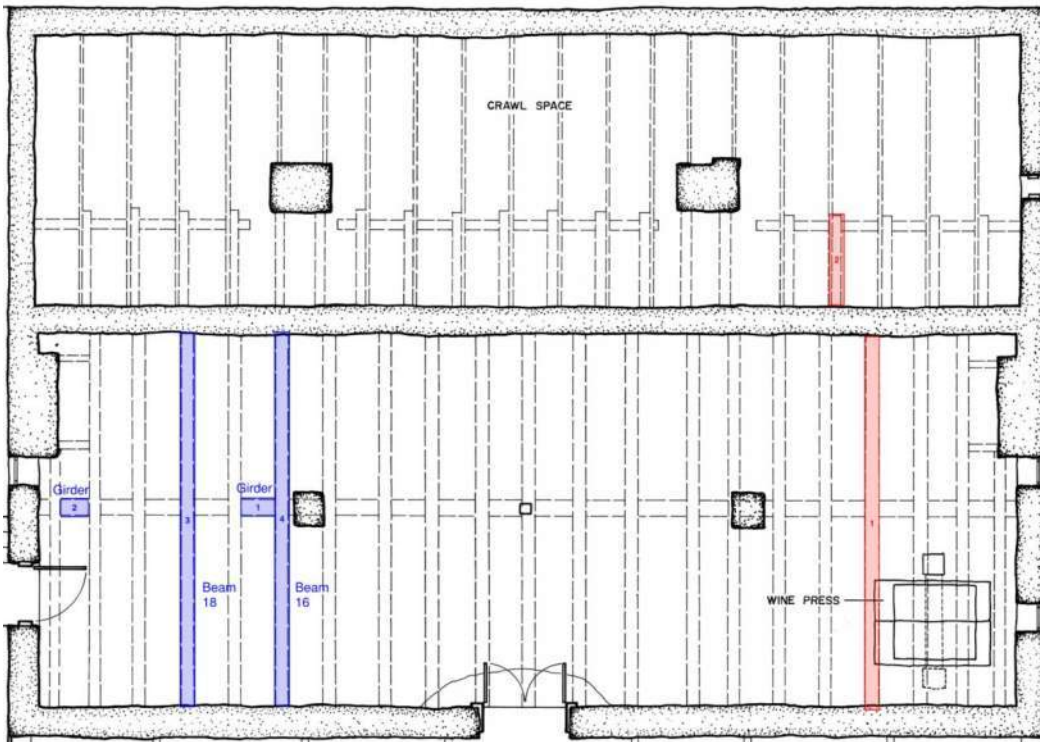


Figure 1. Basement plan. Members with previously completed wood species identification shown in blue. Current sampling locations shown in red.

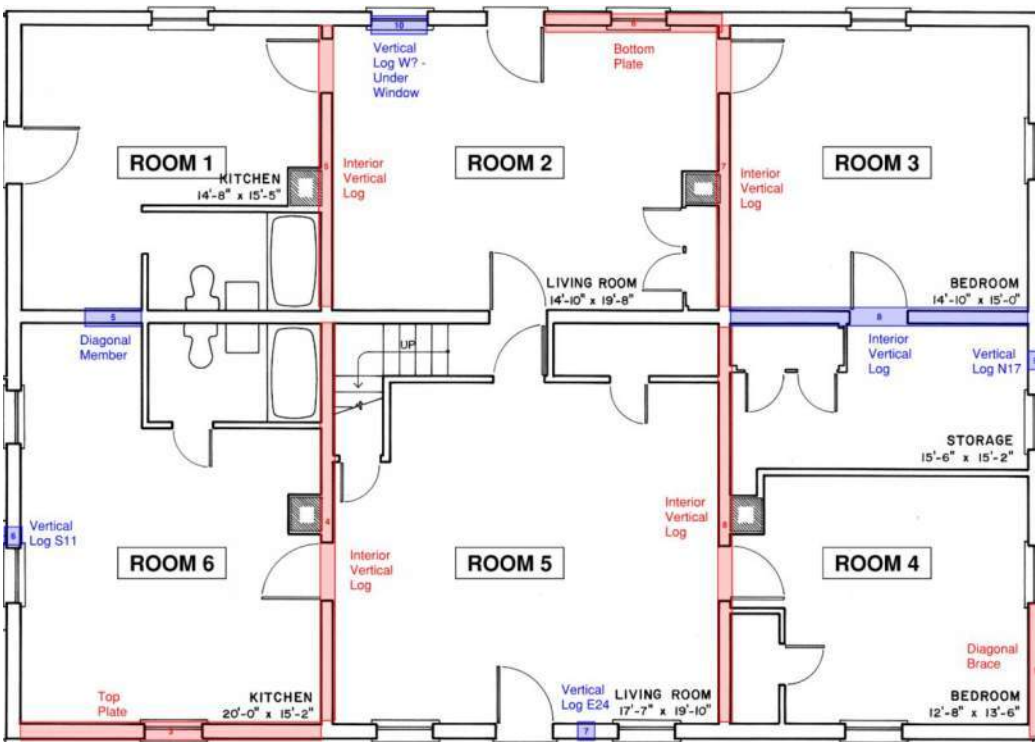


Figure 2. First floor of the Kern House. Members with previously completed wood species identification shown in blue. Current sampling locations shown in red.

RESULTS

Wood identification results for samples collected from the Kern House are summarized in Table 1. Sampling locations for Samples 2-9 are shown in Figures 3-10. All wood samples from the interior partition walls are cottonwood or aspen (*Populus* spp.). Samples from the exterior wall components, namely the top plate in Room 6, the bottom plate in Room 2, and the diagonal brace in Room 4 are white oak species group (*Quercus* spp.). Floor beam B4 and the crawlspace joist are black walnut (*Juglans nigra*).

The individual species within the white oak species group cannot be separated with certainty based on the wood anatomy. White oaks are listed under the 'White Oak' species group under the National Design Specifications for Wood Design. White oak *Quercus alba* is the most common species of white oak in Missouri.

Table 1. Wood identification results for the samples from the Kern House, Ste. Genevieve, MO.

Sample number	Component	Location	Wood species/species group
1	Floor beam B4	Basement	Black walnut (<i>Juglans nigra</i>)
2	Joist	Room 3 crawlspace	Black walnut (<i>Juglans nigra</i>)
3	Top plate	Room 6	White oak group (<i>Quercus</i> spp.)
4	Vertical log	Rooms 5/6 partition wall	Cottonwood or Aspen (<i>Populus</i> spp.)
5	Vertical log	Rooms 1/2 partition wall	Cottonwood or Aspen (<i>Populus</i> spp.)
6	Bottom plate	Room 2	White oak group (<i>Quercus</i> spp.)
7	Vertical log	Rooms 2/3 partition wall	Cottonwood or Aspen (<i>Populus</i> spp.)
8	Vertical log	Rooms 4/5 partition wall	Cottonwood or Aspen (<i>Populus</i> spp.)
9	Diagonal brace	Room 4	White oak group (<i>Quercus</i> spp.)



Figure 3. Sample 2. Floor beam, Room 3. Black walnut.



Figure 4. Sample 3. Top plate, Room 6. White oak.



Figure 5. Sample 4. Rooms 5/6 partition wall vertical log. Cottonwood or aspen.



Figure 6. Sample 5. Rooms 1/2 partition wall vertical log. Cottonwood or aspen.



Figure 7. Sample 6. Bottom plate, Room 2. White oak



Figure 8. Sample 7. Rooms 2/3 partition wall vertical log. Cottonwood or aspen.



Figure 9. Sample 8. Rooms 4/5 partition wall vertical log. Cottonwood or aspen.



Figure 10. Sample 9. Diagonal brace, Room 4. White oak.

SUMMARY

- All analyzed first-floor interior partition wall vertical logs are cottonwood or aspen (*Populus* spp.).
- The top plate (Room 6), the bottom plate (Room 2), and the exterior wall diagonal log brace (Room 4) are white oak species group (*Quercus* spp.).
- Floor beam B4 and the crawlspace joist are black walnut (*Juglans nigra*).
- The wood species identification requested for the sample from the second-floor wall framing was not performed.
- All identified wood species are native to the geographic region of the building location. The material for future repair and replacement of the building components is recommended to be of the same wood species (or species group) and of comparable quality as the original material.

Appendix H:

Treatment Workshop Minutes

KERN-DELIASSUS HOUSE TREATMENT WORKSHOP

IDIQ Contract No.: 140P6020D0002	Task Order No.: 140P6023F0027
Project: Kern-Delassus House Historic Structures Report	
RRJ Project No.: 19203.16	
Date: March 26, 2024 – 8:00 AM to 12:00 PM	

WORKSHOP ATTENDEES		
CONTACT	FIRM AND ROLE	EMAIL
Lurita Blank	Raths, Raths, and Johnson, Inc. (RRJ) Project Manager Historical Architect	lblank@rrj.com
Racheal Lute	RRJ Technical Staff	rdlute@rrj.com
Liz Sargent	Liz Sargent HLA (LSHLA) Historical Landscape Architect	lzsargent@lsnla.com
Jane Jacobs	LSHLA Historical Landscape Architect	janejacobs@lsnla.com
Christina Osborn	LSHLA Historical Landscape Architect	cosborn@lsnla.com
John Rosemurgy	NPS MWRO Cultural Resources COR/Historical Architect	john_rosemurgy@nps.gov
Christopher Collins	NPS Ste. Genevieve NHP Park Superintendent	christopher_collins@nps.gov
Jacob Moody	MWAC Archeologist	jacob_moody@nps.gov
Anderson Newman-Johnson	NPS Ste. Genevieve NHP Supervisory Facilities Operations Specialist	anderson_newman-johnson@nps.gov
Mark Buechel	NPS HPTC Program Historical Architect	mark_buechel@nps.gov
Timothy Schilling	NPS Midwest Archeological Center Archeologist	tim_schilling@nps.gov
Leah Edwards	NPS Landscape Architect	leah_edwards@nps.gov
Eden Hemming	Osage Nation Archeologist	eden.hemming@osagenation-nsn.gov
Melissa Dirr-Gengler	Historic Resources Group Historian	melissa@hrq-nebraska.com
Robert Mueller	Foundation for the Restoration of Ste. Genevieve	muellerj13@yahoo.com
Jim Baker	Missouri DNR Felix Vallé House State Historic Site Site Manager (retired)	jbaker363@att.net

WORKSHOP MEETING MINUTES

The Workshop was held on March 26, 2024, from 8:00 AM – 12:00 PM CST via Microsoft Teams. In attendance were representatives of NPS representing multiple departments and areas of technical expertise, NPS park staff, the consultant team for the Kern-Delassus House (K-D House), and select community stakeholders. The following meeting minutes are provided to summarize discussions and decisions made during this meeting for the project record. Should there be any questions or additions to these minutes, RRJ would appreciate the opportunity to update this document, as appropriate.

A. Project Overview

1. Meeting attendees provided short introductions and are documented for the record in the table above. An overview of the workshop agenda, goals, and virtual meeting etiquette was given by Lurita Blank with RRJ.
2. Lurita Blank with RRJ summarized the social history and changes over time as presented in draft Historic Structure Report (HSR). Liz Sargent and Jane Jacobs of LSHLA summarized analysis of the historic landscape.
3. The working Period of Significance (POS) is stated to be 1836 – 1939, encompassing the estimated date of construction, early ownership by the Sargent Family, cultivation of the

land as a farmstead under the Kern Family ownership which lasted over eight decades, and all major structural changes to the home. Further discussion on the POS and character-defining features was conducted later in the workshop agenda.

4. The house has been referred to informally by many names including “Pierre Delassus de Luzieres House, “Delassus House”, “Kern House’ and “Delassus-Kern House”. Research has revealed that it is unlikely that the House was ever owned by Delassus spurring the discussion on whether to remove reference to Delassus from the formal name of the House. Discussion on selecting a formal nomenclature for the house was conducted in the workshop.

5. Discussion – *Period of Significance*

- i. Several attendees asked questions regarding the start date of the period of significance. A start date of circa 1793, the fell date of the logs within the home, was supported by several attendees for various reasons:
 - a) Jim Baker expressed concern that the 1836 date would not fully illustrate the importance of the site in relation to the New Bourbon settlement. He sees the site as the best interpretation of that period of settlement and interpretation of New Bourbon. The cultural identity of New Bourbon was different from Ste. Genevieve and a 1793 start date to the period of significance would allow for larger interpretation of that identity.
 - b) Eden Hemmings also supports an earlier start date for the period of significance going back to at least the 1790s to better acknowledge Native American history in the area. The Osage have considered the site significant for centuries and it is important to acknowledge that there were already people living in the area when European settlers arrived and that is part of the reason why they chose the area as a place to settle.
 - c) Chris Collins supports a 1793 start date due to the dates of materials used within the house.
 - d) John Rosemurgy also supports the earlier start date for the period of significance.
- ii. Liz Sargent and Leah Edwards provided some insight into the work being done on the Ste Genevieve Cultural Landscape report. This work is looking to understand the broader context of New Bourbon and Delassus’ interest in the area. The CLR will look at the connections between New Bourbon and Ste. Genevieve and the broader context of the area. The earlier date will be included as part of the period of significance for the CLR.
- iii. The project team agreed that the end date of 1939 seemed reasonable.

6. Discussion – *Formal Name for the House*

- i. Bob Mueller suggested the House be named the “Kern-Delassus House” to honor the Kern Family and their contributions to the house and site and to avoid local controversy by removing the reference to Delassus. Bob also stated that it is important to keep the connection between the House and Delassus and New Bourbon.

- ii. Jim Baker agreed that the name of the House is a touchy subject and suggested the use of “Delassus-Kern Property” rather than “House”. The House was first linked to Delassus in the 1980s and this connection greatly increased interest in the House and its restoration.

B. Physical Investigation Overview

1. Lurita Blank briefly summarized the findings of the recent physical investigation of the B-A House as discussed in the draft HSR provided for this workshop. The following items were discussed:
 - i. Architectural features and interior finishes.
 - ii. Enclosure and structural systems.
 - iii. Site and landscape.
 - iv. Code, accessibility, and MEP systems
2. Questions and Discussion
 - i. A general discussion was held on the previous investigations and repairs performed at the property. The project team discussed that the information provided in the draft HSR is based on the 2020 physical investigation and that only limited information on previous investigations conducted by others was available for the project team’s reference; where available, this information has been incorporated into the HSR.

C. Treatment Alternates

1. Lurita Blank provided an overview of the project goals.
 - i. Treatment goals were discussed with the underlying understanding that some of the park management documents for the Ste Genevieve NHP are still underway. The Foundation Document is available, but a Long Range Interpretive Plan (LRIP) has not yet been prepared.
 - ii. Christopher Collins with NPS indicated that the long-range planning exercise for the park is scheduled to take place in 2026. Results of this exercise and subsequent LRIP will inform selection of treatment alternatives.
 - iii. The project team proposed a Rehabilitation approach with aspects of Preservation, Restoration, and Reconstruction as appropriate. There was a general consensus by attendees that Rehabilitation was the appropriate treatment approach based on the park’s needs and goals.
 - iv. A list of necessary repairs to address structural deficiencies, performance issues, and/or life safety issues were provided. These repairs must be performed regardless of ultimate treatment chosen.
2. Landscape and accessibility recommendations were presented by Liz Sargent and Jane Jacobs of LSHLA.

- i. Three potential site access and circulations options were proposed by the project team.
 - a) Option 1: Development of access/parking area northwest of the House, with access from Highway US-61 to the existing gravel road on the north side of the property.
 - b) Option 2: Development of access/limited parking on the west side of US-61 and driveway trace immediately adjacent to the historic site.
 - c) Option 3: Development of access/limited parking on the east side of US-61 using the existing gravel road on the north side of the spring.
- ii. Challenges regarding accessible access to the House were discussed due to the significant change in grade around the House.
 - a) Options for construction of an accessible ramp or a hydraulic lift were provided. Conceptual options for elevator access to the second floor were also presented.
- iii. Opportunities to open the viewshed from the Kern-Delassus House looking north and east over the common field, and south and west toward the historic farmstead were discussed.
- iv. Potential locations for interpretive nodes for the site were presented.
- v. Discussion
 - a) Eden Hemming with the Osage Nation stated that they would be strongly opposed to Site Access Option 3 and any other development near the spring. The Osage Nation would also prefer that any option chosen include minimal ground disturbances during implementation.
 - a. There was a general consensus by all attendees that Option 3 was not preferred. This option would provide no safe pedestrian route between the historic site and the parking area due to the traffic and speed limit of US-61.
 - b) Attendees generally agreed that Option 1 would be most compatible with the existing landscape and goals for the site. It was also agreed that the west elevation is the best location for development of an accessible ramp to provide accessible entrance to the house and main entrance for all visitors.
 - c) Attendees agreed that construction of a hydraulic lift is not an appealing option due to subsequent maintenance requirements. A ramp was preferred over a lift.
 - d) Attendees agreed that construction of an elevator would represent an adverse effect on this historic resource and was not the preferred approach. Interpretive programming and visitor access will be limited to the first floor, and the park does not anticipate a need for an accessible entry to the basement or second floor.

- e) Mark Buechel with NPS recommended that new walkways and ramps utilize existing landscape as much as possible to reduce the need for railings, where possible.
 - f) Anderson Newman-Johnson with NPS recommended that development of access and parking options should occur after rehabilitation of the House to reduce visitation to the house due to safety concerns.
- 3. Lurita Blank with RRJ presented three architectural treatment concepts, which all included options for accessibility from the site to the building. All approaches included the accessible entrance on the west end of the structure.
 - i. Concept 1 returns the exterior to a c. 1903 appearance and partially restores the interior. Accessible access to the House would be provided on the south side via a ramp. Concept 1 restores the east and south porches and stairs and all windows, doors and shutters. Interior work would include preservation of some interior rooms as they currently are and would recreate missing finishes in-kind in other rooms on the first floor. The second floor interiors would be cleaned and stabilized in place. Concept 1 also includes stabilization of all outbuildings.
 - a) Concept 1 was of interest the workshop attendees with recommendations for further consideration as discussed below to refine the preferred treatment approach.
 - ii. Concept 2 included partial rehabilitation of the structure that returns the exterior to a c. 1903 appearance but only partially restores the interior. The porches would be reconstructed and an accessible entrance would be provided on the south elevation.
 - a) Certain aspects of concept 2 were of interest the workshop attendees with recommendations for further consideration as discussed below to refine the preferred treatment approach.
 - iii. Concept 3 proposed stabilization of the structure but maintaining existing appearance. The doors and windows would be restored to maintain watertightness, cladding and roofing would be replaced, and all outbuildings would be stabilized.
 - a) Certain aspects of concept 3 were of interest the workshop attendees with recommendations for further consideration as discussed below to refine the preferred treatment approach.
 - iv. Discussion:
 - a) Attendees were interested in the restoration of the porches provided in Options 1 and 2, but some expressed concern about subsequent maintenance requirements. There was also concern about incorporating modern railing requirements without diminishing architectural integrity of the porches.
 - b) Attendees were most interested in the partial rehabilitation option provided in Option 2. Stabilization of the exterior would provide NPS time to determine how to approach the interior treatment and what level of rehabilitation is preferred.

- c) A general discussion was held regarding the significance of the house as a poteaux-sur-sole structure and how this significance is demonstrated or concealed by exterior repair treatments. The exterior form of the house is a vernacular American-style farmhouse, which does not reflect the primary significance of the structure. Several options were discussed to address this, and there was a general consensus that interpretation would be the best approach to minimize irreversible interventions to the structure.
- 4. Utilities recommendations were discussed by Lurita Blank with RRJ. Treatment options for water, sewer, electrical power and telecommunications were presented.
 - i. City water and sewer do not connect to the property and the nearest connection is 0.3 miles away, north of the property. A septic system would need to be installed to provide sewer utilities.
 - ii. Power and telecom connections exist on the hill behind the House. An entirely new electrical system will be required to provide lighting and receptacles, HVAS, security/alarm system and a fire alarm system.
 - iii. Discussion
 - a) Power and communications systems are needed at the property.
 - b) Alternate provisions will need to be made for domestic water supply and sewer services at the Property, such as vault toilet for visitors.
 - c) The park expressed a need for ventilation in the structure to prevent further decay of materials. Conditioning (heating and cooling) the structure were discussed, but not preferred over ventilation.
 - d) Due to lack of municipal water supply, providing retention tanks and a fire pump for the property would be invasive, costly, and require significant ground disturbance. At the start of the HSR project, a discussion was held with the Midwest region fire manager. A fire alarm system will be provided, but a fire suppression system is not preferred for this property.
- 5. Consensus and Preferred Treatment Options
 - i. Landscape: Workshop attendees indicated a preference for the site access and parking locations presented in Option 1, with parking on the north part of the parcel and walkways to the historic site and interpretive nodes. Ground and site disturbances should be kept to a minimum.
 - ii. Accessibility: A ramp along the west side of the house, connecting the new site walkways and the south porch was preferred for creating an accessible entry to the house.
 - iii. Architecture: Concept 2 was identified as the preferred treatment alternate, which provides an accessible ramp and entry at south, stabilization of the east wall, reconstructed porches, and rehabilitation of the enclosure. The NPS team concluded that accessibility to the second floor and basement is not a priority. Modern technology can be used to provide visitor interaction with the space and interpretation from the first floor.

- iv. MEP/FP: Provide electrical service, telecommunication services, mechanical ventilation, and potentially a vault toilet for visitor use. A fire suppression system is not required.

D. Summary and Closing

1. Lurita Blank with RRJ briefly reviewed the action items for the project team and thanked the workshop participants.
2. The workshop concluded at approximately 12:00 pm.

Appendix I:

Treatment Cost Estimate

United States Department of the Interior
National Park Service
Class A Construction Cost Estimate

LINE ITEM COST SUMMARY

Class C Construction Cost Estimate Template

National Park Service (NPS) - Denver Service Center (DSC) | 5-27-21

By using this Construction Cost Estimate template, you acknowledge you read and understand the corresponding Instructions.

PROJECT INFORMATION

Project: Delassus-Kern House HSR
Park: St. Genevieve National Historic Park
Park Apha: STGE
PMIS: 311634
Estimate Date: 11/15/2024
Prepared By: Lurita Blank
Company: Raths, Raths and Johnson, Inc.
Address: 500 Joliet Road, Suite 200
City, State Zip: Willowbrook, IL 60526
Phone: 630.325.6160

BACKGROUND SUPPORTING MATERIAL (Scope of Work):

Preferred treatment and treatment recommendations for the Delassus-Kern House Historic Structure Report.

SOURCE OF COST DATA:

Historic data, RS Means, and current pricing from active projects.

Excludes "Immediate Priority" repairs from the Condition Assessment Report treatment recommendations, as those are standalone treatment recommendations.

"Medium Term" and "Long Term" repairs from the CAR are included.

ESTIMATE ASSUMPTIONS:

Class C estimate level.

MAJOR CHANGES FROM PREVIOUS ESTIMATE:

Historic preservation factor added to markups.

Inflation rate adjusted based CPI projections for 2025.

Project midpoint reduced to 12 months.

**United States Department of the Interior
National Park Service
Class A Construction Cost Estimate**

LINE ITEM COST SUMMARY

PROJECT INFORMATION

Project: [Delassus-Kern House HSR](#)
Park: [St. Genevieve National Historic Park](#)
Park Apha: [STGE](#)
PMIS: [311634](#)
Estimate Date: [11/15/2024](#)

DESCRIPTION OF MARK-UP & ADD-ONS:

Design Contingency:	30.00%	This is due to the unforeseen conditions on the project, percentage aligns with recommendation per the NPS Cost Estimating Handbook.
Historic Preservation Factor	5.00%	Limited extant historic finishes; compatible replacement materials generally readily available; no speciality coordination, access, or protectionr requirements beyond standard general conditions
Location Factor:	7.00%	
State and Local Taxes:	9.23%	Missouri State, Ste. Genevieve County, and City of Ste. Genevieve sales taxes
Standard. General Conditions:	10.00%	
Government General Conditions:	5.00%	
Contractor Overhead:	15.00%	
Contractor Profit:	10.00%	
Contracting Method Adjustment:	8.00%	Standard competitive bid without SBA set-asides. Includes 3% bonds.
Annual Inflation Escalation Factor:	3.50%	Projected annual inflation rate based on CPI of 2.5% to 4.5% for 2025 per the Federal Reserve
Time Until Project Midpoint (Months)	12	Number of months from estimate (or data) date until the projects midpoint of construction.

OTHER COMMENTS:

United States Department of the Interior
National Park Service
Class A Construction Cost Estimate
LINE ITEM COST SUMMARY

Project: Delassus-Kern House HSR
Park: St. Genevieve National Historic Park
Park Alpha: STGE
PMIS Number: 3T1634

Estimate By: Lurita Blank
Date: 11/15/24
Reviewed By:
Date:

Bid Item No.	Bid Item Description	Total Material Cost	Total Labor Cost	Total Equipment Cost	Total Direct Construction Costs	Design Contingency	Historic Preservation Factor	Location Factor	State and Local Taxes	General Conditions	General Contractor Overhead	General Contractor Profit	Contracting Method Adjustment	Inflation Escalation		Bid Item Total
														APR	Months	
														3.50%	12	
TOTAL VALUE OF GOVERNMENT FURNISHED PROPERTY (if any):																
\$ -																
Bid Item:																
1	Exteriors	\$ 211,931	\$ 172,939	\$ 102,784	\$ 487,654											
2	Structure	\$ 150,439	\$ 352,475	\$ 46,247	\$ 549,161											
3	Site Features	\$ 77,593	\$ 108,305	\$ 20,180	\$ 206,068											
4	Plumbing	\$ 25,732	\$ 9,668	\$ 6,550	\$ 41,950											
5	Electrical	\$ 26,121	\$ 62,929	\$ 16,340	\$ 105,391											
6	HVAC	\$ 17,918	\$ 10,472	\$ 290	\$ 28,680											
7	Interiors	\$ 85,683	\$ 157,557	\$ 19,169	\$ 262,610											
8	Accessibility	\$ 8,323	\$ 14,763	\$ 4,988	\$ 28,053											
Total - Bid Item	0	\$ 603,929	\$ 889,107	\$ 216,528	\$ 1,709,564	\$ 512,869	\$ 85,478	\$ 119,669	\$ 55,743	\$ 372,499	\$ 428,373	\$ 285,582	\$ 285,582	\$ 134,938	\$ 134,938	\$ 3,990,297
Total Bid Items 1-10		\$ 603,929	\$ 889,107	\$ 216,528	\$ 1,709,564	\$ 512,869	\$ 85,478	\$ 119,669	\$ 55,743	\$ 372,499	\$ 428,373	\$ 285,582	\$ 285,582	\$ 134,938	\$ 134,938	\$ 3,990,297

United States Department of the Interior
National Park Service
Class A Construction Cost Estimate
LINE ITEM COST SUMMARY

Project: Delassus-Kern House HSR
Park: St. Genevieve National Historic Park
Park Alpha: STGE
PMIS Number: 311634

Estimate By: Lurita Blank
Date: 11/15/24
Reviewed By:
Date:

Bid Item Number BID ITEM		Asset / Project Element / Description Asset / Project Element / Description	Size/Count 4,081	Units SF								
Item No.	WBS	Description	Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Direct Cost/Unit	Total Direct Costs	NET Cost/Unit	Total NET Costs
1		Foundations	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2		Basement Construction	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
3	B10	Superstructure	\$ 6.61	\$ 26,981.38	\$ 31.59	\$ 128,900.18	\$ 8.56	\$ 34,934.60	\$ 46.76	\$ 190,816.16	\$ 105.38	\$ 430,053.91
4	B20	Enclosure	\$ 6,542.85	\$ 299,407.42	\$ 1,745.93	\$ 372,028.30	\$ 2,954.07	\$ 102,858.60	\$ 11,242.86	\$ 774,294.32	\$ 25,338.71	\$ 1,745,073.94
5	B30	Roofing	\$ 21.54	\$ 35,980.30	\$ 8.22	\$ 24,485.50	\$ 1.95	\$ 11,238.00	\$ 31.71	\$ 71,703.80	\$ 71.47	\$ 161,603.19
6	C10	Interior Finishes	\$ 21.04	\$ 85,883.45	\$ 38.61	\$ 157,557.25	\$ 4.70	\$ 19,168.95	\$ 64.35	\$ 262,609.65	\$ 145.03	\$ 591,859.25
7		Stairs										
8		Interior Construction										
9		Conveying Systems										
10	D40	Plumbing Systems	\$ 6.31	\$ 25,731.60	\$ 2.37	\$ 9,668.00	\$ 1.60	\$ 6,550.00	\$ 10.28	\$ 41,949.60	\$ 23.17	\$ 94,544.35
11	D30	HVAC	\$ 4.39	\$ 17,918.00	\$ 2.57	\$ 10,472.00	\$ 0.07	\$ 290.00	\$ 7.03	\$ 28,680.00	\$ 15.84	\$ 64,637.85
12		Fire Protection										
13	D50	Electrical	\$ 6.40	\$ 26,121.25	\$ 15.42	\$ 62,929.25	\$ 4.00	\$ 16,340.00	\$ 25.82	\$ 105,390.50	\$ 58.20	\$ 237,524.94
14		Equipment										
15		Furnishings										
16		Special Construction										
17		Selective Building Demolition										
18		Site Preparation										
19	G20	Site Improvements	\$ 15.27	\$ 62,322.50	\$ 24.97	\$ 101,882.50	\$ 3.44	\$ 14,047.50	\$ 43.68	\$ 178,252.50	\$ 98.44	\$ 401,736.44
20	G30	Site Mechanical Utilities	\$ 5.78	\$ 23,583.00	\$ 5.19	\$ 21,184.50	\$ 2.72	\$ 11,100.00	\$ 13.69	\$ 55,867.50	\$ 30.85	\$ 125,911.96
21		Site Electrical Utilities	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
22		Other Site Construction	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
23		Special Use - 1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
24		Special Use - 2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
25		Special Use - 3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Subtotal Direct Construction Costs			\$ 6,630	\$ 603,929	\$ 1,875	\$ 889,107	\$ 2,381	\$ 216,528	\$ 11,486	\$ 1,709,564	\$ 25,887.09	\$ 3,852,947.83
Total Value of Government Furnished Property (GFP) Inc. in Direct Cost				\$ 0.00		\$ -	\$	\$ 216,527.85		\$ 0		
Direct Cost Subtotal without GFP				\$ 603,929		\$ 889,107.48		\$ 216,527.85		\$ 1,709,564		
preserve	Design Contingency											
	Total Direct Construction Costs											
	Location Factor											
	State and Local Taxes											
	Standard General Conditions											
	Government General Conditions											
	Subtotal NET Construction Cost											
	Overhead											
	Profit											
	Estimated NET Construction Cost											
	Contracting Method Adjustment											
	Inflation Escalation			12		Months		Annual Rate =		3.50%		
Total Estimated NET Cost of Construction			\$ 3,852,948									

GFP costs only apply when the Government pre-purchases items, or provides other materials out of Government inventory, to be installed by contractor. Adjustments and Markup on GFP only include Inflation Escalation; No other adjustment factors or O&P markup have been applied.

United States Department of the Interior
National Park Service
Class A Construction Cost Estimate
LINE ITEM COST SUMMARY

Project: Delassus-Kern House HSR
Park: St. Genevieve National Historic Park
Park Alpha: STGE
PMIS: 311634

Estimate By: Lurita Blank
Date: 11/15/24
Reviewed By:
Date:

Summary Item: 1 Exteriors Total Cost: \$487,654

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
B3010	ROOFING										
B3010	Standing-seam metal panel roofing, prefinished steel or aluminum, concealed fasteners	1620	SQFT	\$ 4.35	\$7,047	\$ 7.25	\$11,745	\$ 4.50	\$7,290	\$ 16.10	\$26,082
	preservation factor added to markups.										
	Inflation rate										
	adjusted based CPI projections for 2025.										
	Project midpoint reduced to 12 months.										
B3010	Underlayment and accessories	1620	SQFT	\$ 1.25	\$2,025	\$ 1.25	\$2,025	\$ 0.75	\$1,215	\$ 3.25	\$5,265
B3010	Prefinished gutters, 5" half round	162	LNFT	\$ 5.65	\$915	\$ 3.25	\$527	\$ 1.50	\$243	\$ 10.40	\$1,685
B3010	Prefinished downspouts, 3" round	100	LNFT	\$ 1.45	\$145	\$ 3.25	\$325	\$ 1.50	\$150	\$ 6.20	\$620
	Outbuildings										
B3010	Corn Crib - Corrugated Galv. Metal	2200	SQFT	\$ 7.18	\$15,796	\$ 2.74	\$6,028	\$ 0.65	\$1,430	\$ 10.57	\$23,254
B3010	Wood Shed - Corrugated Galv. Metal	750	SQFT	\$ 7.18	\$5,385	\$ 2.74	\$2,055	\$ 0.65	\$488	\$ 10.57	\$7,928
B3010	Chicken House - Corrugated Galv. Metal	650	SQFT	\$ 7.18	\$4,667	\$ 2.74	\$1,781	\$ 0.65	\$423	\$ 10.57	\$6,871
				\$ -	\$0	\$ -	\$0	\$ -	\$0	\$ -	\$0
SUBTOTAL	ROOFING	4081	SF	\$22	\$35,980	\$8	\$24,486	\$2	\$11,238	\$32	\$71,704

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
B2030	EXTERIOR WINDOWS										
	Replica Windows (5' 4" x 3' 4")	29	EACH	\$ 1,515.60	\$43,952	\$ 260.00	\$7,540	\$ 1,804.60	\$52,333	\$ 3,580.20	\$103,826
	Window Framing / Blocking	29	EACH	\$ 185.00	\$5,365	\$ 113.75	\$3,299	\$ 327.75	\$9,505	\$ 626.50	\$18,169
	Wood Shutters, Painted	29	EACH	\$ 590.55	\$17,126	\$ 85.00	\$2,465	\$ 704.55	\$20,432	\$ 1,380.10	\$40,023
				\$ -	\$0	\$ -	\$0	\$ -	\$0	\$ -	\$0
SUBTOTAL	EXTERIOR WINDOWS	4081	SF	\$2,291	\$66,443	\$459	\$13,304	\$2,837	\$82,270	\$5,587	\$162,017

United States Department of the Interior
National Park Service
Class A Construction Cost Estimate
LINE ITEM COST SUMMARY

Project: Delassus-Kern House HSR
Park: St. Genevieve National Historic Park
Park Alpha: STGE
PMIS: 311634

Estimate By: Lurita Blank
Date: 11/15/24
Reviewed By:
Date:

Summary Item: 1 Exteriors		Total Cost: \$487,654									
Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
B2030	EXTERIOR DOORS										
	Replace Wood Doors, 6-panel	4	EACH	\$ 1,850.00	\$7,400	\$ 245.00	\$980	\$ 15.00	\$60	\$ 2,110.00	\$8,440
	Replace Wood Doors, Board & Batten	2	EACH	\$ 1,750.00	\$3,500	\$ 285.00	\$570	\$ 15.00	\$30	\$ 2,050.00	\$4,100
	Replace Wood Doors, Framing & Blocking	7	EACH	\$ 367.00	\$2,569	\$ 320.00	\$2,240	\$ 25.00	\$175	\$ 712.00	\$4,984
	Z-Flashing (Stainless Steel)	4	EACH	\$ 18.75	\$75	\$ 97.50	\$390	\$ 25.00	\$100	\$ 141.25	\$565
				\$ -	\$0	\$ -	\$0	\$ -	\$0	\$ -	\$0
SUBTOTAL		4081	SF	\$3,986	\$13,544	\$948	\$4,180	\$80	\$365	\$5,013	\$18,089

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
B2011	EXTERIOR WALLS										
	Siding and Flashing										
	Remove / Replace Existing Siding - Cedar	4238	SQFT	\$ 14.90	\$63,146	\$ 18.35	\$77,767	\$ 0.75	\$3,179	\$ 34.00	\$144,092
B2011	weatherboard with 5" exposure, painted	2450	SQFT	\$ 0.25	\$613	\$ 0.50	\$1,225	\$ 0.15	\$368	\$ 0.90	\$2,205
B2011	New Tyvek House Wrap	185	LNFT	\$ 18.75	\$3,469	\$ 97.50	\$18,038	\$ 2.00	\$370	\$ 118.25	\$21,876
B2011	Z-Flashing at Base (Stainless Steel)	165	SQFT	\$ 28.80	\$4,752	\$ 23.75	\$3,919	\$ 2.50	\$413	\$ 55.05	\$9,083
B2011	Remove / Rebuild (new) Knee Wall (2" x 8")	18	LNFT	\$ 14.50	\$261	\$ 45.50	\$819	\$ 2.50	\$45	\$ 62.50	\$1,125
	New Cedar Trim (6"), painted				\$0		\$0		\$0	\$ -	\$0
	Masonry Repairs										
B2011	Repointing - Crawlspace Wall	250	SQFT	\$ 32.00	\$8,000	\$ 18.15	\$4,538	\$ 5.00	\$1,250	\$ 55.15	\$13,788
B2011	Repointing - Piers	80	SQFT	\$ 32.00	\$2,560	\$ 18.15	\$1,452	\$ 5.00	\$400	\$ 55.15	\$4,412
B2011	Rebuild Limestone Wall	100	SQFT	\$ 90.00	\$9,000	\$ 42.50	\$4,250	\$ 15.00	\$1,500	\$ 147.50	\$14,750
	Outbuildings										
	Wood Shed - Wood plank siding replace and paint	1050	SQFT	\$ 2.25	\$2,363	\$ 10.25	\$10,763	\$ 0.75	\$788	\$ 13.25	\$13,913
B2011	Chicken House - Wood plank siding replace and paint	800	SQFT	\$ 2.25	\$1,800	\$ 10.25	\$8,200	\$ 0.75	\$600	\$ 13.25	\$10,600
					\$0		\$0		\$0	\$ -	\$0
SUBTOTAL		4081	SF	\$236	\$95,963	\$285	\$130,970	\$34	\$8,911	\$555	\$235,844

United States Department of the Interior
National Park Service
Class A Construction Cost Estimate
LINE ITEM COST SUMMARY

Project: Delassus-Kern House HSR
Park: St. Genevieve National Historic Park
Park Alpha: STGE
PMIS: 311634

Estimate By: Lurita Blank
Date: 11/15/24
Reviewed By:
Date:

Summary Item: 1 Exteriors
Total Cost: \$487,654

Uniformat II WBS Code		Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
					Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
1		Exteriors	4081	SF	\$ 51.93	\$211,931	\$ 42.38	\$172,939	\$ 25.19	\$102,784	\$ 119.49	\$487,654

United States Department of the Interior
National Park Service
Class A Construction Cost Estimate
LINE ITEM COST SUMMARY

Project: Delassus-Kern House HSR
Park: St. Genevieve National Historic Park
Park Alpha: STGE
PMIS: 311634

Estimate By: Lurita Blank
Date: 11/15/24
Reviewed By:
Date:

Summary Item: 2 Structure Total Cost: \$549,161

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
B1013	GALLERIES										
	East Gallery Reconstruction										
B1013	2x12 Joists, pressure treated pine	574	LNFT	\$ 3.00	\$1,722	\$ 12.50	\$7,175	\$ 7.50	\$4,305	\$ 23.00	\$13,202
B1013	Ledger boards 2x12, pressure treated pine	244	LNFT	\$ 3.00	\$732	\$ 12.50	\$3,050	\$ 2.50	\$610	\$ 18.00	\$4,392
B1013	Decking 1x pressure treated pine planks	756	SQFT	\$ 0.75	\$567	\$ 6.25	\$4,725	\$ 2.50	\$1,890	\$ 9.50	\$7,182
B1013	Posts, 6x6 pressure treated pine, carved	140	LNFT	\$ 4.05	\$567	\$ 27.50	\$3,850	\$ 4.50	\$630	\$ 36.05	\$5,047
B1013	Stone masonry wall reconstruction	162	SQFT	\$ 3.50	\$567	\$ 42.50	\$6,885	\$ 5.25	\$851	\$ 51.25	\$8,303
B1013	Wood steps, pressure treated pine	21	SQFT	\$ 0.75	\$16	\$ 55.00	\$1,155	\$ 1.10	\$23	\$ 56.85	\$1,194
	Skirting, 5" exposed face weatherboard siding, cedar, painted	270	SF	\$ 14.90	\$4,023	\$ 15.50	\$4,185	\$ 5.75	\$1,553	\$ 36.15	\$9,761
B1013	Exterior painting	826	SF	\$ 0.10	\$83	\$ 1.10	\$909	\$ 0.05	\$41	\$ 1.25	\$1,033
B1013	Concrete footings, 12x12x36	10	EA	\$ 125.00	\$1,250	\$ 560.00	\$5,600	\$ 250.00	\$2,500	\$ 935.00	\$9,350
B1013	Split stair construction				\$0		\$0		\$0	\$ -	\$0
	New split stairs - pressure treated pine stringers and treads, 2x12, painted stringers	125	LF	\$ 3.00	\$375	\$ 27.50	\$3,438	\$ 1.25	\$156	\$ 31.75	\$3,969
B1013	Post and rails, pressure treated pine, 2x4 rails and 4x4 posts, painted	145	LF	\$ 3.35	\$486	\$ 27.50	\$3,988	\$ 1.25	\$181	\$ 32.10	\$4,655
B1013	New landing, 1x pressure treated pine planks	50	SF	\$ 0.75	\$38	\$ 6.25	\$313	\$ 1.25	\$63	\$ 8.25	\$413
B1013	North Stairs - concrete footings	8	EA	\$ 125.00	\$1,000	\$ 75.00	\$600	\$ 1.25	\$10	\$ 201.25	\$1,610
B1013	Railings, pressure treated pine 2x4, painted	384	LF	\$ 0.75	\$288	\$ 27.50	\$10,560	\$ 2.50	\$960	\$ 30.75	\$11,808
	South Gallery Reconstruction										
B1013	2x12 Joists, pressure treated pine	297	LF	\$ 3.00	\$891	\$ 12.50	\$3,713	\$ 7.50	\$2,228	\$ 23.00	\$6,831
B1013	2x12 Rafters, pressure treated pine	462	LF	\$ 3.00	\$1,386	\$ 12.50	\$5,775	\$ 7.50	\$3,465	\$ 23.00	\$10,626
B1013	Ledger boards 2x12, pressure treated pine	44	LF	\$ 3.00	\$132	\$ 12.50	\$550	\$ 2.50	\$110	\$ 18.00	\$792
B1013	Posts, 6x6 pressure treated pine, carved	60	LF	\$ 4.05	\$243	\$ 27.50	\$1,650	\$ 4.50	\$270	\$ 36.05	\$2,163
B1013	Decking 1x pressure treated pine planks	396	SF	\$ 0.75	\$297	\$ 6.25	\$2,475	\$ 2.50	\$990	\$ 9.50	\$3,762
B1013	Exterior painting	644	SF	\$ 0.10	\$64	\$ 1.10	\$708	\$ 0.05	\$32	\$ 1.25	\$805
SUBTOTAL				\$ 3.61	\$14,726	\$ 17.47	\$71,302	\$ 5.11	\$20,867	\$ 26.19	\$106,895

United States Department of the Interior
National Park Service
Class A Construction Cost Estimate
LINE ITEM COST SUMMARY

Project: Delassus-Kern House HSR
Park: St. Genevieve National Historic Park
Park Alpha: STGE
PMIS: 311634

Estimate By: Lurita Blank
Date: 11/15/24
Reviewed By:
Date:

Summary Item: 2 Structure

Total Cost: \$549,161

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
B2011	EXTERIOR WALLS										
	East Wall Repairs										
B2011	Top Plate Replacement, 5 x 7 White Oak	37	LNFT	\$ 108.88	\$4,029	\$ 73.51	\$2,720	\$ 25.00	\$925	\$ 207.39	\$7,674
B2011	Sill Plate Replacement, 5 x 7 White Oak	37	LNFT	\$ 108.88	\$4,029	\$ 59.73	\$2,210	\$ 25.00	\$925	\$ 193.61	\$7,164
B2011	Sill/Top Plate Replacement - Temp Shoring	1	LSUM	\$ 3,500.00	\$3,500	\$ 5,480.00	\$5,480	-	\$0	\$ 8,980.00	\$8,980
B2011	Install Salvaged Logs	35	EACH	\$ -	\$0	\$ 4,555.00	\$159,425	\$ 15.00	\$525	\$ 4,570.00	\$159,950
B2011	Pierlodge Repair - Limestone & Mortar	400	SQFT	\$ 90.00	\$36,000	\$ 42.50	\$17,000	\$ 5.00	\$2,000	\$ 137.50	\$55,000
B2011	Misc Plaster Stabilization and Crack Repair	200	SQFT	\$ 32.00	\$6,400	\$ 18.15	\$3,630	\$ 5.00	\$1,000	\$ 55.15	\$11,030
B2011	Remove/ Salvage Logs/Stone from Pierlodge	375	SQFT	\$ -	\$0	\$ 9.96	\$3,735	\$ 2.50	\$938	\$ 12.46	\$4,673
B2011	Log Replacement, 5" x 7" x9'-0"	25	EACH	\$ 980.00	\$24,500	\$ 325.00	\$8,125	\$ 100.00	\$2,500	\$ 1,405.00	\$35,125
	Other Exterior Wall Repairs										
	Pierlodge Repair - Limestone & Mortar										
B2011	(Limited)	500	SQFT	\$ 90.00	\$45,000	\$ 42.50	\$21,250	\$ 5.00	\$2,500	\$ 137.50	\$68,750
SUBTOTAL		4081	SF	\$ 30.25	\$123,457	\$ 54.78	\$223,575	\$ 2.77	\$11,313	\$ 87.81	\$358,345

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
B1010	CONCRETE										
	Concrete Repairs	100	SQFT	\$ 11.35	\$1,135	\$ 27.50	\$2,750	\$ 1.25	\$125	\$ 40.10	\$4,010
				\$0	\$0	\$ -	\$0	\$ -	\$0	\$ -	\$0
SUBTOTAL		4081	SF	\$ 0.28	\$1,135	\$ 0.67	\$2,750	\$ 0.03	\$125	\$ 0.98	\$4,010

United States Department of the Interior
National Park Service
Class A Construction Cost Estimate
LINE ITEM COST SUMMARY

Project: Delassus-Kern House HSR
Park: St. Genevieve National Historic Park
Park Alpha: STGE
PMIS: 311634

Estimate By: Lurita Blank
Date: 11/15/24
Reviewed By:
Date:

Summary Item: 2 Structure		Total Cost: \$549,161									
Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
B1010	FLOOR CONSTRUCTION										
	Floor Joist Sistering 2" x 6" x 10'	10	EACH	\$ 37.38	\$374	\$ 128.00	\$1,280	\$ 35.00	\$350	\$ 200.38	\$2,004
B1010	Reconstruct Flooring - Subfloor Joists	28	EACH	\$ 58.00	\$1,624	\$ 135.00	\$3,780	\$ 35.00	\$980	\$ 228.00	\$6,384
B1010	Reconstruct Flooring - Subfloor Footings	12	EACH	\$ 85.00	\$1,020	\$ 85.00	\$1,020	\$ 35.00	\$420	\$ 205.00	\$2,460
B1010	Reconstruct Flooring - Subfloor Plywood	770	SQFT	\$ 5.34	\$4,112	\$ 4.50	\$3,465	\$ 5.00	\$3,850	\$ 14.84	\$11,427
B1010	Shim Floor Joists	20	EACH	\$ 28.00	\$560	\$ 55.00	\$1,100	\$ 25.00	\$500	\$ 108.00	\$2,160
					\$0	\$ -	\$0	\$ -	\$0	\$ -	\$0
SUBTOTAL		4081	SF	\$ 1.88	\$7,690	\$ 2.61	\$10,645	\$ 1.49	\$6,100	\$ 5.99	\$24,435

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
B1020	ROOF CONSTRUCTION										
	Roof Rafter Sistering 2" x 6" x 10'	10	EACH	\$ 42.50	\$425	\$ 128.00	\$1,280	\$ 35.00	\$350	\$ 205.50	\$2,055
B1020	2" x 6" x 10' Sill Plate Replacement (2nd floor)	12	LNFT	\$ 8.47	\$102	\$ 65.83	\$790	\$ 35.00	\$420	\$ 109.30	\$1,312
	2" x 6" x 10' Top Plate Replacement (2nd floor)	12	LNFT	\$ 8.47	\$102	\$ 87.14	\$1,046	\$ 35.00	\$420	\$ 130.61	\$1,567
	Sill/Top Plate Replacement - Temp Shoring	1	LSUM	\$ 1,500.00	\$1,500	\$ 2,160.00	\$2,160	\$ -	\$0	\$ 3,660.00	\$3,660
	Ceiling Joist Sistering 2" x 6" x 10'	10	EACH	\$ 62.50	\$625	\$ 187.00	\$1,870	\$ 35.00	\$350	\$ 284.50	\$2,845
					\$0	\$ -	\$0	\$ -	\$0	\$ -	\$0
SUBTOTAL		4081	SF	\$ 0.67	\$2,753	\$ 1.75	\$7,146	\$ 0.38	\$1,540	\$ 2.80	\$11,439

United States Department of the Interior
National Park Service
Class A Construction Cost Estimate
LINE ITEM COST SUMMARY

Project: Delassus-Kern House HSR
Park: St. Genevieve National Historic Park
Park Alpha: STGE
PMIS: 311634

Estimate By: Lurita Blank
Date: 11/15/24
Reviewed By:
Date:

Summary Item: 2 Structure
Total Cost: \$549,161

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
B1020	OUTBUILDING STABILIZATION										
B1020	Corn Crib (Allowance)	945	SQFT	\$ 0.50	\$473	\$ 27.50	\$25,988	\$ 4.50	\$4,253	\$ 32.50	\$30,713
B1020	Wood Shed (Allowance)	490	SQFT	\$ 0.25	\$123	\$ 13.50	\$6,615	\$ 2.50	\$1,225	\$ 16.25	\$7,963
B1020	Chicken House (Allowance)	330	SQFT	\$ 0.25	\$83	\$ 13.50	\$4,455	\$ 2.50	\$825	\$ 16.25	\$5,363
					\$0	\$ -	\$0	\$ -	\$0	\$ -	\$0
SUBTOTAL				\$ 0.17	\$678	\$ 9.08	\$37,058	\$ 1.54	\$6,303	\$ 10.79	\$44,038

Summary Item: 2 Structure											
Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
2	Structure	4081	SF	\$ 36.86	\$150,439	\$ 86.37	\$352,475	\$ 11.33	\$46,247	\$ 134.57	\$549,161

United States Department of the Interior
National Park Service
Class A Construction Cost Estimate
LINE ITEM COST SUMMARY

Project: Delassus-Kern House HSR
Park: St. Genevieve National Historic Park
Park Alpha: STGE
PMIS: 311634

Estimate By: Lurita Blank
Date: 11/15/24
Reviewed By:
Date:

Summary Item: 3 Site Features

Total Cost: \$206,068

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
G3013	WELL SYSTEMS										
	Decommission/backfill cisterns and well, clean common fill	300	CY		\$21,600	\$ 62.00	\$18,600		\$10,500	\$ 169.00	\$50,700
G3013	Cistern Walls	50	SQFT	\$ 24.66	\$1,233	\$ 29.23	\$1,462	\$ 5.00	\$250	\$ 58.89	\$2,945
G3013	Reproduction Cistern Pump - Installation	1	Unit	\$ 750.00	\$750	\$ 1,123.00	\$1,123	\$ 350.00	\$350	\$ 2,223.00	\$2,223
SUBTOTAL	WELL SYSTEMS	4081	SF	\$ 5.78	\$23,583	\$ 5.19	\$21,185	\$ 2.72	\$11,100	\$ 13.69	\$55,868

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
G2040	SITE DEVELOPMENT										
	Site Drainage				\$0		\$0		\$0	\$ -	\$0
G2040	French Drain - 4" Perf. Pipe Below Grade	120	LNFT	\$ 43.00	\$5,160	\$ 13.50	\$1,620	\$ 20.83	\$2,500	\$ 77.33	\$9,280
G2040	Excavation & Backfill	120	LNFT	\$ 25.00	\$3,000	\$ 15.00	\$1,800	\$ 10.00	\$1,200	\$ 50.00	\$6,000
					\$0		\$0		\$0	\$ -	\$0
SUBTOTAL	SITE DEVELOPMENT	4081	SF	\$ 2.00	\$8,160	\$ 0.84	\$3,420	\$ 0.91	\$3,700	\$ 3.74	\$15,280

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
G2055	SITE CLEANING										
	Remove utility shed debris	1	LSUM	\$ -	\$0	\$ 1,500.00	\$1,500	\$ -	\$0	\$ 1,500.00	\$1,500
G2055	Remove debris in wooded areas	1	LSUM	\$ -	\$0	\$ 1,500.00	\$1,500	\$ -	\$0	\$ 1,500.00	\$1,500
SUBTOTAL	SITE CLEANING	4081	SF	\$ -	\$0	\$ 0.74	\$3,000	\$ -	\$0	\$ 0.74	\$3,000

United States Department of the Interior
National Park Service
Class A Construction Cost Estimate
LINE ITEM COST SUMMARY

Project: Delassus-Kern House HSR
Park: St. Genevieve National Historic Park
Park Alpha: STGE
PMIS: 311634

Estimate By: Lurita Blank
Date: 11/15/24
Reviewed By:
Date:

Summary Item: 3 Site Features		Total Cost: \$206,068									
Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
G2049	SITE CIRCULATION AND PARKING										
G2049	Regrade and pave driveway, concrete on crushed gravel base	3960	SF	\$ 4.00	\$15,840	7.50	\$29,700	0.50	\$1,980	12.00	\$47,520
G2049	Paved accessible parking with space for bus turnaround, concrete on crushed gravel base	4000	SF	\$ 4.00	\$16,000	7.50	\$30,000	0.50	\$2,000	12.00	\$48,000
G2049	Provide new accessible site walkways, 4-ft paved walkways, concrete slab-on-grade, pebbledash finish	2800	SF	\$ 5.00	\$14,000	7.50	\$21,000	0.50	\$1,400	13.00	\$36,400
SUBTOTAL		4081	SF	\$ 11.23	\$45,840	\$ 19.77	\$80,700	\$ 1.32	\$5,380	\$ 32.33	\$131,920

Summary Item: 3 Site Features											
Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
3	Site Features	4081	SF	\$19.01	\$77,583.00	\$26.54	\$108,304.50	\$4.94	\$20,180.00	\$50.49	\$206,068

United States Department of the Interior
National Park Service
Class A Construction Cost Estimate
LINE ITEM COST SUMMARY

Project: Delassus-Kern House HSR
Park: St. Genevieve National Historic Park
Park Alpha: STGE
PMIS: 311634

Estimate By: Lurita Blank
Date: 11/15/24
Reviewed By:
Date:

Summary Item: 4 Plumbing

Total Cost: \$41,950

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
D2020	VAULT TOILET, COMFORT STATION										
D2020	Excavation for vault	672	CUFT	\$ -	\$0	\$ 1.50	\$1,008	\$ 3.25	\$2,184	\$ 4.75	\$3,192
D2020	Compact gravel subbase for vault	112	SQFT	\$ 0.15	\$17	\$ 6.50	\$728	\$ 0.25	\$28	\$ 6.90	\$773
D2020	Clean backfill	168	CUFT	\$ 0.10	\$17	\$ 6.50	\$1,092	\$ 0.25	\$42	\$ 6.85	\$1,151
D2020	1-stall, fully accessible vault toilet structure, block walls and precast vault	1	EA	\$ 19,500.00	\$19,500	\$ 5,000.00	\$5,000	\$ 3,500.00	\$3,500	\$ 28,000.00	\$28,000
D2020	Solar fan and light kit	1	EA	\$ 2,400.00	\$2,400	-	\$0	-	\$0	\$ 2,400.00	\$2,400
D2020	Skylight or clerestory windows	1	EA	\$ 1,400.00	\$1,400	\$ 200.00	\$200	-	\$0	\$ 1,600.00	\$1,600
D2020	Electronic timed exterior door locks, battery or solar powered	1	EA	\$ 1,150.00	\$1,150	\$ 200.00	\$200	-	\$0	\$ 1,350.00	\$1,350
D2020	6" slab-on-ground foundation on crushed gravel base, 16'-0" x 12'-0"	192	SQFT	\$ 6.50	\$1,248	\$ 7.50	\$1,440	\$ 0.50	\$96	\$ 14.50	\$2,784
D2020	Transportation fees	1	LSUM	\$ -	\$0	-	\$0	\$ 700.00	\$700	\$ 700.00	\$700
SUBTOTAL	VAULT TOILET, COMFORT STATION	4081	SF	\$ 6.31	\$25,732	\$ 2.37	\$9,668	\$ 1.60	\$6,550	\$ 10.28	\$41,950

Summary Item: 4 Plumbing

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
4	Plumbing	4081	SF	\$ 6.31	\$25,732	\$ 2.37	\$9,668	\$ 1.60	\$6,550	\$10	\$41,950

United States Department of the Interior
National Park Service
Class A Construction Cost Estimate
LINE ITEM COST SUMMARY

Project: Delassus-Kern House HSR
Park: St. Genevieve National Historic Park
Park Alpha: STGE
PMIS: 311634

Estimate By: Lurita Blank
Date: 11/15/24
Reviewed By:
Date:

Summary Item: 5 Electrical

Total Cost: \$105,391

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
D5011	ELECTRICAL SERVICE AND DISTRIBUTION										
	New electrical and grounded panel, EMT conduit at all locations, grounded and GFCI receptacles	4081	SQFT	1.25	\$5,101	3.75	\$15,304	2.50	\$10,203	7.50	\$30,608
D5011	Existing electrical demo allowance	4081	SQFT	-	\$0	0.50	\$2,041	-	\$0	0.50	\$2,041
D5011	Repair historic finishes disturbed by electrical replacement work	250	SQFT	1.25	\$313	15.00	\$3,750	-	\$0	16.25	\$4,063
D5011	Extend overhead utility service to new power pole	350	LNFT	3.25	\$1,138	9.00	\$3,150	2.25	\$788	14.50	\$5,075
D5011	Underground connection from power pole to house, trench and cover	50	LNFT	7.50	\$375	57.00	\$2,850	9.00	\$450	73.50	\$3,675
SUBTOTAL	DISTRIBUTION	4081	SF	1.70	\$6,926	6.64	\$27,094	2.80	\$11,440	11.14	\$45,461

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
D5090	LIGHTNING PROTECTION SYSTEM										
	Install new lightning protection system	1	EA	1,750.00	\$1,750	4,225.00	\$4,225	1,850.00	\$1,850	7,825.00	\$7,825
SUBTOTAL	LIGHTNING PROTECTION SYSTEM	4081	SF	0.43	\$1,750	1.04	\$4,225	0.45	\$1,850	1.92	\$7,825

United States Department of the Interior
National Park Service
Class A Construction Cost Estimate
LINE ITEM COST SUMMARY

Project: Delassus-Kern House HSR
Park: St. Genevieve National Historic Park
Park Alpha: STGE
PMIS: 311634

Estimate By: Lurita Blank
Date: 11/15/24
Reviewed By:
Date:

Summary Item: 5 Electrical		Total Cost: \$105,391									
Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
D5030	TELECOMMUNICATIONS										
	Telephone service to structure from local connection box	350	LNFT	\$ 1.50	\$525	\$ 55.00	\$19,250	\$ 5.00	\$1,750	\$ 61.50	\$21,525
D5030	Provide a new intrusion alarm system	1	EA	\$ 2,550.00	\$2,550	\$ 3,300.00	\$3,300	\$ 650.00	\$650	\$ 6,500.00	\$6,500
D5030	Provide a new fire alarm system	1	EA	\$ 2,550.00	\$2,550	\$ 3,300.00	\$3,300	\$ 650.00	\$650	\$ 6,500.00	\$6,500
SUBTOTAL	TELECOMMUNICATIONS	4081	SF	\$ 1.38	\$5,625	\$ 6.33	\$25,850	\$ 0.75	\$3,050	\$ 8.46	\$34,525

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
D5092	ELECTRICAL FIXTURES										
	Provide new low-profile, ceiling mounted LED lighting in in all rooms, with new EMT wiring in attic	24	EA	\$ 405.00	\$9,720	\$ 165.00	\$3,960	\$ -	\$0	\$ 570.00	\$13,680
D5092	Provide battery-backup exit lighting/egress lighting	12	EA	\$ 175.00	\$2,100	\$ 150.00	\$1,800	\$ -	\$0	\$ 325.00	\$3,900
Historic preservation											
SUBTOTAL	ELECTRICAL FIXTURES	4081	SF	\$ 2.90	\$11,820	\$ 1.41	\$5,760	\$ -	\$0	\$ 4.31	\$17,580

Summary Item: 5 Electrical											
Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
5	Electrical	4081	SF	\$6.40	\$26,121.25	\$15.42	\$62,929.25	\$4.00	\$16,340.00	\$25.82	\$105,391

United States Department of the Interior
National Park Service
Class A Construction Cost Estimate
LINE ITEM COST SUMMARY

Project: Delassus-Kern House HSR
Park: St. Genevieve National Historic Park
Park Alpha: STGE
PMIS: 311634

Estimate By: Lurita Blank
Date: 11/15/24
Reviewed By:
Date:

Summary Item: 6 HVAC

Total Cost: \$28,680

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
D3040	HVAC DISTRUBUTION SYSTEM										
	Housekeeping pad, 4" concrete on crushed gravel subbase	60	SQFT	\$ 4.00	\$240	\$ 7.50	\$450	\$ 0.50	\$30	\$ 12.00	\$720
D3040	Rigid sheetmetal duct, supply and return	600	LNFT	\$ 1.05	\$630	\$ 12.10	\$7,260	\$ 0.10	\$60	\$ 13.25	\$7,950
D3040	Duct insulation	180	LNFT	\$ 0.55	\$99	\$ 7.25	\$1,305	-	\$0	\$ 7.80	\$1,404
D3040	Air intake hoods	2	EA	\$ 255.00	\$510	-	\$0	-	\$0	\$ 255.00	\$510
D3040	Registers and grilles, supply and return	28	EA	\$ 25.50	\$714	\$ 1.50	\$42	-	\$0	\$ 27.00	\$756
D3040	Furnace controls/thermostat	1	EA	\$ 225.00	\$225	\$ 65.00	\$65	\$ 50.00	\$50	\$ 340.00	\$340
D3040	Forced air ventilation system	1	EA	\$ 15,500.00	\$15,500	\$ 1,350.00	\$1,350	\$ 150.00	\$150	\$ 17,000.00	\$17,000
SUBTOTAL	HVAC DISTRUBUTION SYSTEM	4081	SF	\$ 4.39	\$17,918	\$ 2.57	\$10,472	\$ 0.07	\$290	\$ 7.03	\$28,680

Summary Item: 6 HVAC

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
6	HVAC	4081	SF	\$ 4.39	\$17,918	\$ 2.57	\$10,472	\$ 0.07	\$290	\$ 7.03	\$28,680

United States Department of the Interior
National Park Service
Class A Construction Cost Estimate
LINE ITEM COST SUMMARY

Project: Delassus-Kern House HSR
Park: St. Genevieve National Historic Park
Park Alpha: STGE
PMIS: 311634

Estimate By: Lurita Blank
Date: 11/15/24
Reviewed By:
Date:

Summary Item: 7 Interiors

Total Cost: \$262,610

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
C1011	INTERIOR FINISHES										
C1011	Wood t&g hardwood flooring - Removal	1600	SQFT	\$ -	\$0	\$ 3.50	\$5,600	\$ 2.50	\$4,000	\$ 6.00	\$9,600
C1011	Hardwood T&G flooring- Install	1850	SQFT	\$ 15.00	\$27,750	\$ 7.00	\$12,950	\$ 2.50	\$4,625	\$ 24.50	\$45,325
C1011	Clean loose plaster and protruding nails in Rooms 104 to 106	2010	SQFT	\$ -	\$0	\$ 1.50	\$3,015	\$ 2.50	\$5,025	\$ 4.00	\$8,040
C1011	Paint interior wall trim and baseboards	2820	SQFT	\$ 1.35	\$3,807	\$ 6.25	\$17,625	-	\$0	\$ 7.60	\$21,432
C1011	Paint interior window and door trim and casing	512	SQFT	\$ 1.35	\$691	\$ 6.25	\$3,200	-	\$0	\$ 7.60	\$3,891
C1011	Replace interior trim and casing in kind where missing in Rooms 101, 102, and 103, walnut or oak trim	100	SQFT	\$ 17.50	\$1,750	\$ 22.00	\$2,200	\$ 0.25	\$25	\$ 39.75	\$3,975
C1011	Plaster stabilization and repairs, Rooms 101 to 103 and Rooms 201 to 204	3245	SQFT	\$ 0.10	\$325	\$ 0.95	\$3,083	\$ 0.25	\$811	\$ 1.30	\$4,219
C1011	Remove non-contributing wall paper in Rooms 101, 103, 202, 203, and 204	2350	SQFT	\$ -	\$0	\$ 0.75	\$1,763	-	\$0	\$ 0.75	\$1,763
C1011	Repaint rooms 101 to 103 and 201 to 204, primer and top coat	3430	SQFT	\$ 1.35	\$4,631	\$ 6.25	\$21,438	-	\$0	\$ 7.60	\$26,068
C1011	Repair ceiling beadboard panels, all rooms	350	SQFT	\$ 2.75	\$963	\$ 13.50	\$4,725	-	\$0	\$ 16.25	\$5,688
C1011	Clean, repair, and refinish interior doors	369	SQFT	\$ 1.35	\$498	\$ 8.25	\$3,044	\$ 1.50	\$554	\$ 11.10	\$4,096
C1011	Replace missing interior doors, to panel wood doors to match existing	2	EA	\$ 125.00	\$250	\$ 650.00	\$0	\$ 35.00	\$0	\$ 810.00	\$1,620
SUBTOTAL	INTERIOR FINISHES	4081	SF	\$ 9.96	\$40,664	\$ 19.27	\$78,642	\$ 3.69	\$15,040	\$ 32.92	\$134,346

United States Department of the Interior
National Park Service
Class A Construction Cost Estimate
LINE ITEM COST SUMMARY

Project: Delassus-Kern House HSR
Park: St. Genevieve National Historic Park
Park Alpha: STGE
PMIS: 311634

Estimate By: Lurita Blank
Date: 11/15/24
Reviewed By:
Date:

Summary Item: 7 Interiors

Total Cost: \$262,610

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
C1011	INTERIOR FINISHES FOR EAST WALL REPAIRS										
C1011	Remove baseboards	75	LNFT	\$ -	\$0	\$ 3.00	\$225	\$ 4.50	\$338	\$ 7.50	\$563
C1011	Install baseboard	75	LNFT	\$ 8.50	\$638	\$ 5.00	\$375	\$ 2.50	\$188	\$ 16.00	\$1,200
C1011	Demo/Prep - Plaster on Wood Lath	600	SQFT	\$ -	\$0	\$ 2.46	\$1,476	\$ 2.50	\$1,500	\$ 4.96	\$2,976
C1011	Repair Plaster on Wood Lath	600	SQFT	\$ 73.80	\$44,280	\$ 15.00	\$9,000	\$ 2.50	\$1,500	\$ 91.30	\$54,780
				\$0	\$0		\$0		\$0	\$ -	\$0
SUBTOTAL	REPAIRS	4081	SF	\$ 11.01	\$44,918	\$ 2.71	\$11,076	\$ 0.86	\$3,525	\$ 14.58	\$59,519

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
C1011	INTERIORS, PROFESSIONAL SERVICES										
	Factor added to	1	LSUM	\$ -	\$0	\$ 25,000.00	\$25,000	\$ -	\$0	\$ 25,000.00	\$25,000
C1011	Conservation of historic wine press (allowance)										
	Lead paint encapsulation and asbestos abatement (allowance)	3021	SQFT	\$ 0.10	\$302	\$ 4.25	\$12,839	\$ 0.20	\$604	\$ 4.55	\$13,746
C1011	Mortar analysis for stone wall and pierrotage (allowance)	1	LSUM	\$ -	\$0	\$ 8,000.00	\$8,000	\$ -	\$0	\$ 8,000.00	\$8,000
C1011	Finishes analysis for interiors (allowance)	1	LSUM	\$ -	\$0	\$ 10,000.00	\$10,000	\$ -	\$0	\$ 10,000.00	\$10,000
C1011	Wallpaper sampling and archival conservation (allowance)	1	LSUM	\$ -	\$0	\$ 6,000.00	\$6,000	\$ -	\$0	\$ 6,000.00	\$6,000
C1011	Floor cloth sampling and archival conservation (allowance)	1	LSUM	\$ -	\$0	\$ 6,000.00	\$6,000	\$ -	\$0	\$ 6,000.00	\$6,000
				\$0	\$0		\$0		\$0	\$ -	\$0
SUBTOTAL	INTERIORS, PROFESSIONAL SERVICES	4081	SF	\$ 0.07	\$302	\$ 16.62	\$67,839	\$ 0.15	\$604	\$ 16.85	\$68,746

Summary Item: 7 Interiors

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
7	Interiors	4081	SF	\$ 21.04	\$85,883	\$ 38.61	\$157,557	\$ 4.70	\$19,169	\$ 64.35	\$262,610

United States Department of the Interior
National Park Service
Class A Construction Cost Estimate
LINE ITEM COST SUMMARY

Project: Delassus-Kern House HSR
Park: St. Genevieve National Historic Park
Park Alpha: STGE
PMIS: 311634

Estimate By: Lurita Blank
Date: 11/15/24
Reviewed By:
Date:

Summary Item: 3 Site Features
Total Cost: \$28,053

Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
G2049	ACCESSIBLE RAMP										
	New wood ABAAS ramp at south gallery, pressure treated pine planking	375	SQFT	\$ 12.50	\$4,688	\$ 12.50	\$4,688	-	\$0	\$ 25.00	\$9,375
G2049	Framing, 2x8, pressure treated pine	580	LNFT	\$ 2.75	\$1,595	\$ 12.50	\$7,250	\$ 7.50	\$4,350	\$ 22.75	\$13,195
G2049	Powder coated pipe handrails	75	LNFT	\$ 20.50	\$1,538	\$ 2.50	\$188	\$ 7.50	\$563	\$ 30.50	\$2,288
G2049	New concrete footings	30	EA	\$ 12.00	\$360	\$ 75.00	\$2,250	\$ 1.25	\$38	\$ 88.25	\$2,648
G2049	Ramp landing pad, concrete slab on grade	35	SQFT	\$ 4.00	\$140	\$ 7.50	\$263	\$ 0.50	\$18	\$ 12.00	\$420
G2049	Modify south gallery railing	5	LNFT	\$ 0.50	\$3	\$ 25.00	\$125	-	\$0	\$ 25.50	\$128
SUBTOTAL	ACCESSIBLE RAMP	4081	SF	\$ 2.04	\$8,323	\$ 3.62	\$14,763	\$ 1.22	\$4,968	\$ 6.87	\$28,053

Summary Item: 3 Site Features											
Uniformat II WBS Code	Description	Quantity	Unit	MATERIAL		LABOR		EQUIPMENT		TOTALS	
				Material Cost/Unit	Total Material Cost	Labor Cost/Unit	Total Labor Cost	Equipment Cost/Unit	Total Equipment Cost	Total Cost/Unit	Total Cost
3	Site Features	4081	SF	\$ 2.04	\$8,323	\$ 3.62	\$14,763	\$ 1.22	\$4,968	\$ 6.87	\$28,053