



KAOLIN MUSEUM CHARRETTE



UNIVERSITY OF
GEORGIA

Archway Partnership
Center for Community Design and Preservation
College of Environment and Design

October 18-21, 2018 | Sandersville, GA



UNIVERSITY OF
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*Note: all photos taken by charrette team members unless otherwise noted.

WHAT IS KAOLIN?

A bright white chalky rock comprised predominately of the clay mineral kaolinite ($\text{Al}_2(\text{Si}_2\text{O}_5)(\text{OH})_4$), its first documented use was porcelain ceramics clay in China in the 7-8th centuries. Since then, it has been in demand for a wide variety of uses, making it a valuable natural resource.

While kaolin deposits can be found around the world, the Fall Line deposit in Central Georgia is renowned for both quality and quantity. Georgia's kaolin was deposited in the Late Cretaceous (about 100 to 65 million years ago) to Early Paleogene (65

to 45 million years ago) time periods, from weathering of the young Appalachian Mountains. During these ancient times, sediments were transported by rivers to the coast, which was located at the present-day Fall Line.

Typically, industrial mining companies extract the rocks from the earth then crush them into powder for further processing. Kaolin is used as a paper coating to improve brightness; as a ceramics clay; insecticide; and a filler/extender in plastics, paint, ink, rubber, cement, and glue

(Schroeder 2018). It is valuable for human health as well. When applied topically, it acts as an emollient and drying agent, making it useful for treating rashes like poison ivy. Cosmetics companies use it in mineral makeup formulations and also market it as a gentle clay facial mask. When ingested, it binds gastrointestinal toxins, making it a key ingredient of Pepto-Bismol. Pregnant women sometimes become addicted to eating it for the texture, though it is harmless if ingested in small amounts ("Eat White Dirt" 2017).



Introduction

Washington County, Georgia, has been characterized historically as the Kaolin Capital of the World. Kaolin is a bright white clay mineral found along Georgia's Fall Line, with a variety of industrial uses, including paper coating, ceramics clay, and cosmetics.

Community leaders recently proposed building a natural history museum with a focus on kaolin and the geology, industry, and culture surrounding it. In August 2017, University of Georgia (UGA) Professors David and Dorinda Dallmeyer visited Sandersville and spoke to a group of civic and kaolin industry leaders about the geology of the area and the potential to tell the story of kaolin. The local audience was mesmerized. The idea of a kaolin museum focused on industry, local transportation initiatives, Fall Line fossils, geology, historic sea level, local history, and kaolin uses around the world began to take hold. It could serve as a cultural history center in addition to a museum.

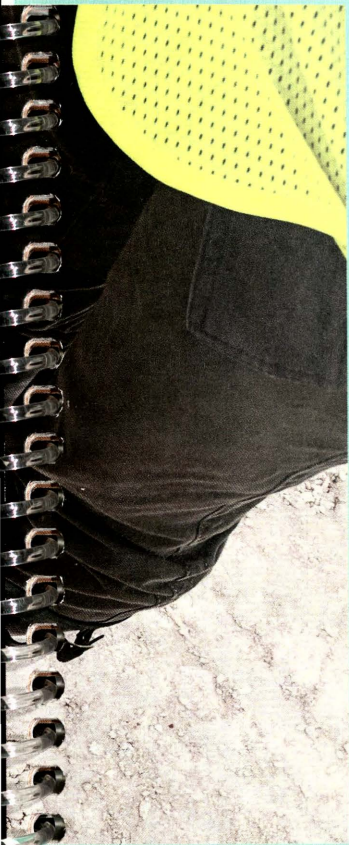
Kaolin industry leaders see great value in having an established program in a space designed for teaching local children and attracting education-based tourism. The industry leads

elementary school tours at kaolin mines, but while they are comfortable having guests on site and their program is good, it is not regularly scheduled. Also, industry leaders are starting to retire and their stories need to be captured.

Local stakeholders from Washington County had expressed interest in pursuing the idea of a museum, but needed ideas about what the museum could look like, where it could be located, and what kind of educational programming should be included. The UGA Archway Partnership enlisted the help of the College of Environment and Design (CED) with planning the museum through a community visioning process called a "charrette." "Charrette" describes a rapid, intensive, and creative work session, usually lasting several days, in which a design team focuses on a particular design problem and arrives at a collaborative solution. Charrettes are product-oriented. The public charrette is fast becoming a preferred way to face the planning challenges confronting American cities. CED's Center for Community Design & Preservation has conducted over 100 design charrettes since 1997.

The charrette was timed to take advantage of research being done by a group of undergraduate students from the UGA Terry College of Business's Institute for Leadership Advancement. These students produced a business sustainability strategy for a potential kaolin museum, which included financial, strategic, and customer analysis plans. They recommended a mission statement, target market, staffing structure, board structure, pricing structure, location, general budget, and advertising strategy. The students' strategy encouraged industry leaders to think with a long-term perspective when considering if and how they will support the museum.

On October 18-21, 2018, a team of nine UGA students—representing Landscape Architecture, Historic Preservation and Geology—participated in the design charrette in Sandersville, GA, led by CED Outreach Director Jennifer Lewis and Environmental Ethics Coordinator and Geologist Dorinda Dallmeyer. There was a mix of undergraduate, master's, and PhD students with a variety of expertise, but everyone shared a love of museums, childhood interest in science, and curiosity about participating in a creative process.



Objectives

OVERALL GOAL:

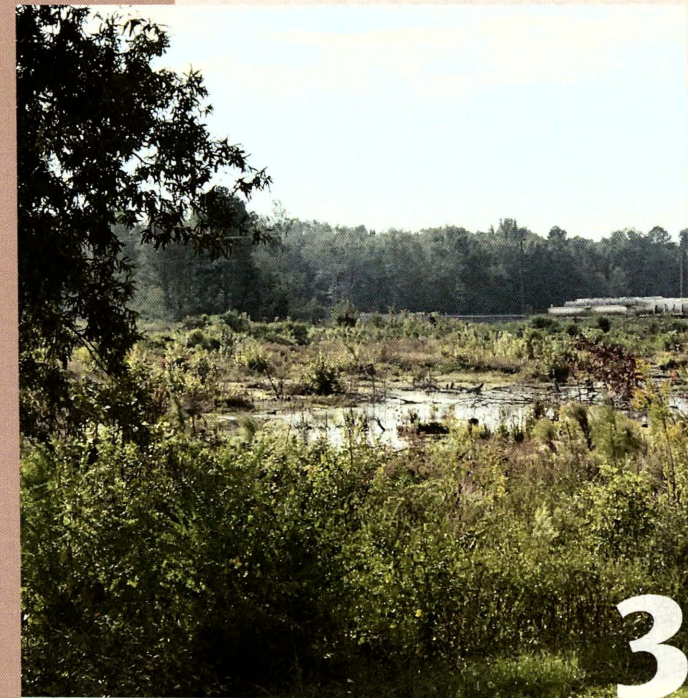
Advance local interest in a kaolin museum by conceptualizing multiple ideas for buildings and programming.



Sandersville School



Downtown



Fall Line Freeway

OBJECTIVES:

Explore design concepts for three potential locations focused on architectural design, land planning, connectivity, and exhibit programming.

Three sites in Sandersville were chosen as hypothetical design scenarios to explore the possibilities of locating a museum in a variety of contexts. The sites included the vacant historic Sandersville School, a partially undeveloped block in downtown Sandersville, and a 99-acre tract on the Fall Line Freeway just outside of town.

While the Sandersville School had previously been discussed as a potential museum location, the downtown parcel and the Freeway parcel were not in contention as actual sites. However, they are indicative of the type of sites that should be considered when making an investment of this nature in a community.

It was important to consider multiple options for potential locations and the site teams posited well-developed pros and cons for each site. Challenges and opportunities were site-specific,

and defined the type of exhibits and programming that would work best. The citizen group advocating for reuse of the historic school wants the museum investment to happen at the school as a catalyst for rehabilitating the building for future generations. However, many other stakeholders envision a more contemporary science museum unlimited by the constraints of a historic building.

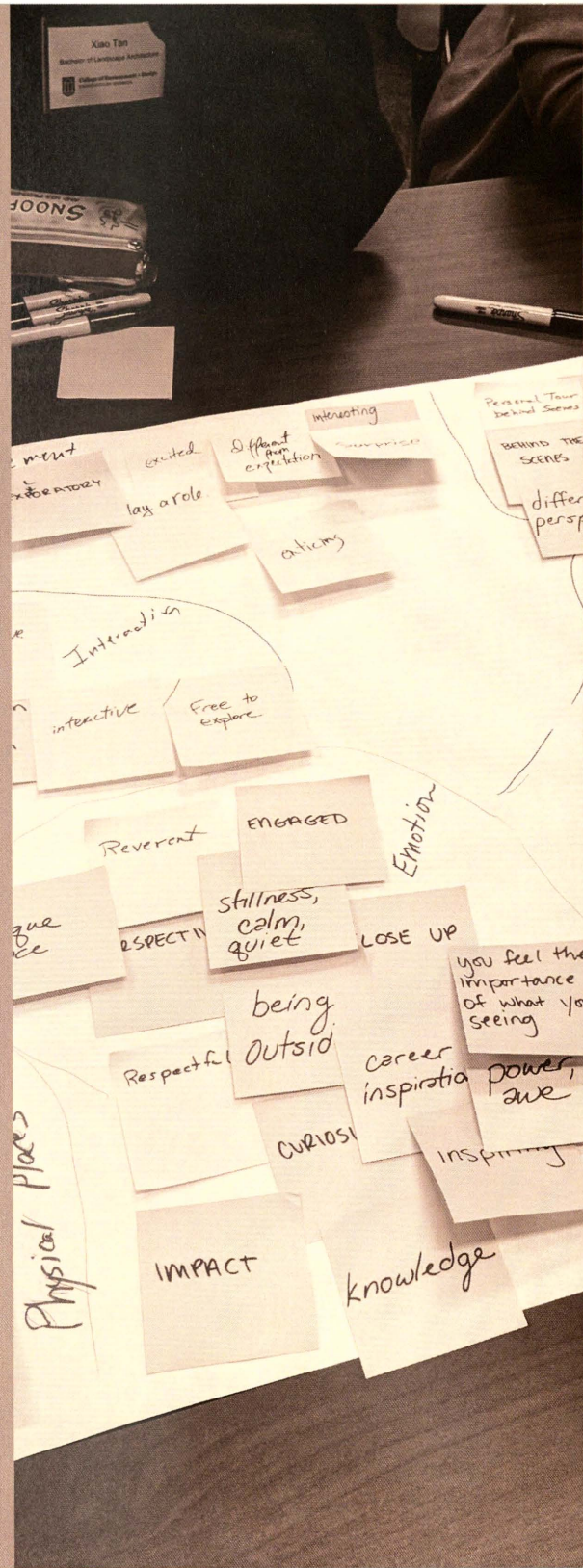
While the decision ultimately rests in the stakeholders' hands, the charrette team was able to illustrate the opportunities and challenges that each type of site presents, and the kind of museum exhibits that would succeed in each. For example, the historic school may not be able to have the "Wow!" factor of a dinosaur hanging from the lobby ceiling that a new building could have, but it does have the benefit of being able to start

small and develop classroom-sized exhibits as well as stimulate reuse of the school as a community center, which is the ultimate goal of the school advocates. The 99-acre site on the Freeway has limitless possibilities and easy access, but would be more difficult to start small and is more disconnected from town. Developing a vacant parcel downtown focuses the investment in the city center Sandersville is working to revitalize and could allow for a compatible contemporary building, but would not necessarily include room to grow its footprint in the future.

The charrette team was able to present stakeholders with opportunities beyond what was being considered, by virtue of bringing potential investors and advocates together to get excited about the possibilities of a kaolin museum, and providing unbiased arguments for a variety of location options.



Washington County Archway Professional Conni Fennell-Burley guides stakeholders and students toward achieving the workshop's objectives.



Charrette Process

PHASE I

Research, Assessment, & Preparation

Working with a local steering committee to identify stakeholders and user groups, set goals, develop base maps, research historic photographs, gather previous plans and studies, and plan for Phase II.

PHASE II

Design Workshop

A three-day event held in the community, beginning with direct public discussion to inform the charrette team of relevant issues, begin constructive visioning for community improvement, and create community buy-in. Work proceeds by refining ideas and eliminating ineffective options through regular feedback loops from stakeholders. The team's workspace remains open to the public so that citizens can stop by to provide feedback and additional information. The workshop concludes with a presentation of the team's solutions for final input from stakeholders.

PHASE III

Refine the Concepts

The charrette team generates a variety of final products to best suit each project. For the kaolin museum, this included a second presentation, posters, and this final report.

INPUT SESSION

The first day began with an input session that included the UGA student team and local stakeholders mixed into small groups. The goals of the session were to develop collective ideas around what makes museums impactful, and solicit specific ideas for the kaolin museum.



Participants were asked to recall a personal experience visiting a museum, national park, historic site, etc., that had made an impression on them and where they learned new things. It could be a place they had visited as a child, with their family, or someplace they remember wishing a particular friend was with them because they would have loved it.

Once participants had the memory of that place, they were asked to jot

down words that came to mind when describing what made that experience memorable. Each word or short phrase was written on its own post-it note and placed to the side.

Participants shared their notes in the middle of the table and grouped common concepts together. Each of these collections was labeled with a common theme. Groups shared the themes they identified. Although the places in everyone's memories varied,

the themes were similar, illustrating that there are universal attributes of a memorable learning experience. These themes would serve as guiding principles for the rest of the charrette.

Inspired, participants then worked in their small groups to brainstorm ideas for a kaolin and natural history museum. Design teams took the stakeholders' ideas into consideration when generating their own ideas later.



- Common themes:**
- Interactive
 - Hands-on
 - Sensory
 - Emotional
 - Historical
 - Educational
 - Friendly

Frequently mentioned museum ideas:

- Pottery
- Fossils
- Visualizing the passage of time - how the landscape/geology formed, evolution of plant and animal life
- Displaying products that contain kaolin to illustrate its uses
- Post-mining kaolin processing information
- Visualizing the size of mining equipment, perhaps climbing on it
- Post-mining site reclamation





Image credit: Shannah Montgomery UGA Public Service and Outreach



Image credit: Shannah Montgomery UGA Public Service and Outreach


WASHINGTON COUNTY TOUR



Image credit: Shannah Montgomery UGA Public Service and Outreach



Image credit: Shannah Montgomery UGA Public Service and Outreach



The student charrette team toured Washington County, including kaolin mining sites in neighboring Deepstep, GA, to understand the mining process and see the operation first-hand. The soft white clay was too tempting not to touch, confirming a key element needed in the museum! The team also visited restored mining operation landscapes, and then toured the three locations that were used for the design exercise. It was important to the mining company stakeholders that the charrette team visit remediated mines. The companies focus significant efforts on this phase of the mining cycle, managing the land sustainably to

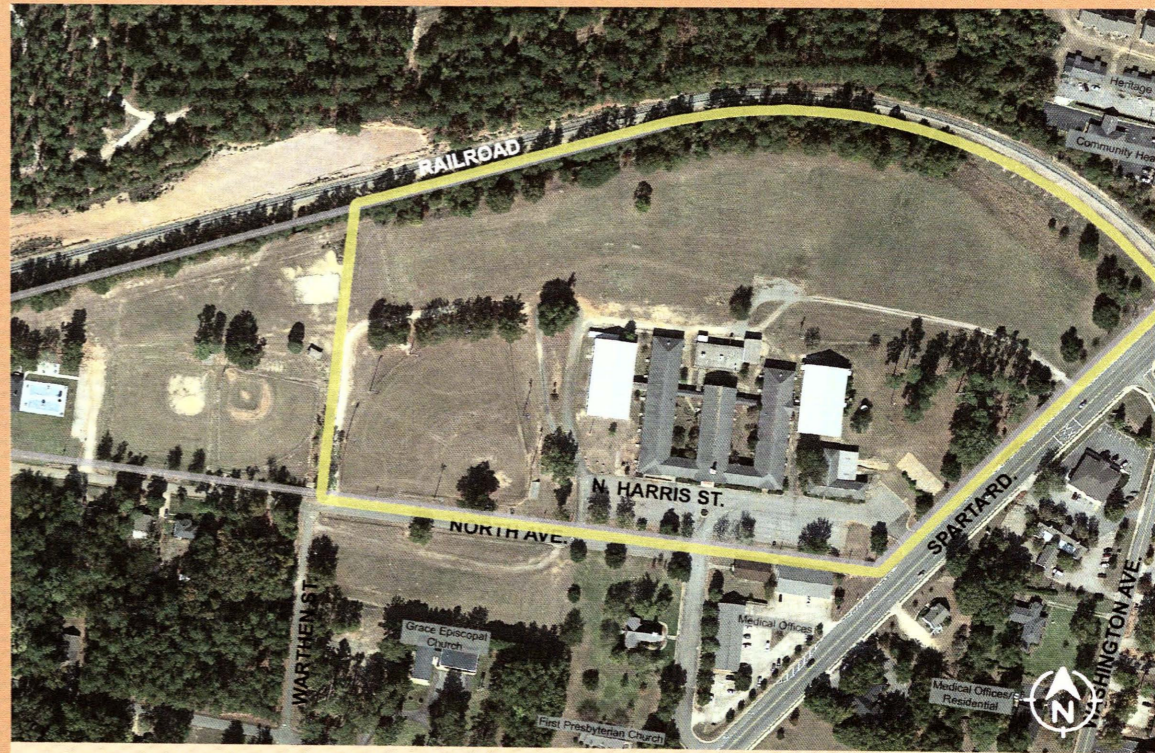
ensure that no environmental issues persist after the mining project is over. They typically re-grade and re-vegetate the land, creating wetlands for wildlife habitat, community recreation, farming, hunting, or timber operations (Kogel 2014). After selecting which location they wanted to work on, the three-member site teams discussed opportunities and challenges for their site, refined goals for their museum, and developed designs and programming for their site.

At the midpoint of the charrette, the stakeholders were invited back to hear initial ideas from each site

team. This feedback loop is an important part of the charrette process, as it helps eliminate concepts that might not work and home in on ideas worth further exploration. After this feedback, the site teams had a clearer picture of the major ideas they wanted to develop and continued to refine their plans.

Work continued until Sunday afternoon, when the teams presented their final concepts to stakeholders. Additional feedback from this wrap-up session was factored into a final presentation given in Sandersville in December.

Potential Sites



Site 1: Sandersville School

A vacant historic building beloved by generations of Washington County residents.



Site 2: Downtown

A partially undeveloped block in downtown Sandersville surrounded by historic structures, reminders of the area's industrial legacy.



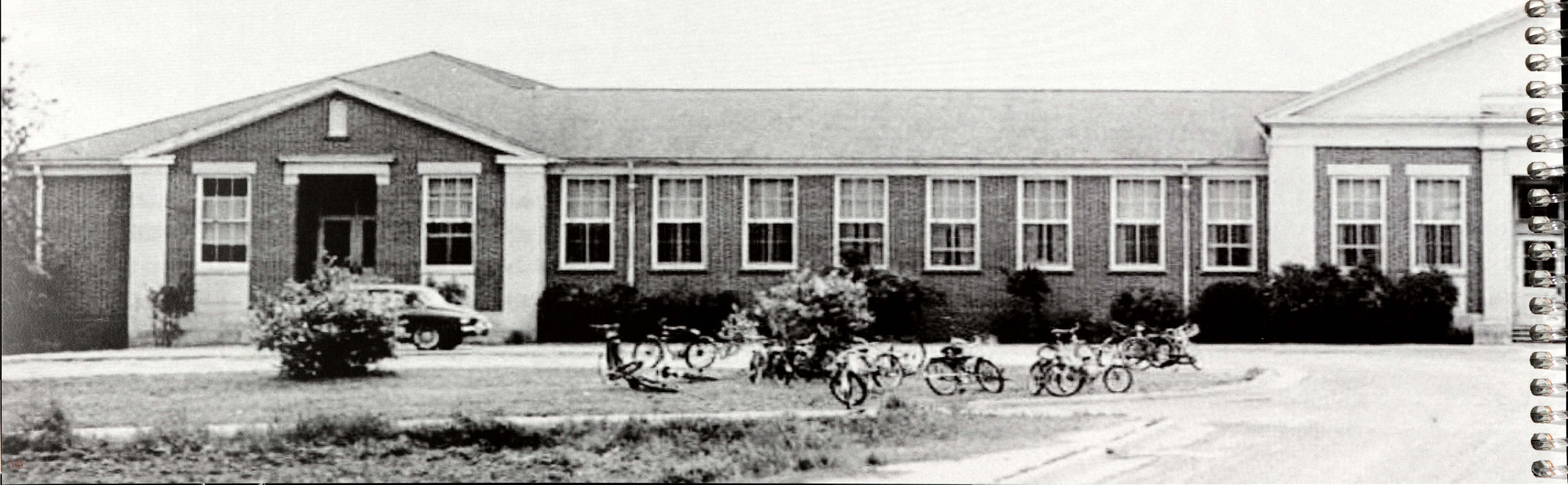
Site 3: Fall Line Freeway

An expansive 99-acre tract on the Fall Line Freeway just outside of town, with wetlands on site.

SANDERSVILLE SCHOOL

Carolina Angulo, MLA
Kelly Cronin, PhD Geology
Emma Keethler, MHP

Few people from Washington County can remember a landscape without Sandersville Elementary School on the rise at the top of North Harris Street. Thousands of county residents received their complete schooling in that building, and teachers taught children from multiple generations of families. The 1939 school building is typical of those in small towns throughout the United States. It holds immeasurable value for the community in terms of history and personal memories of growth. The great majority of Washington County's population, both African American and white, want to see the buildings revived, bringing new experiences in education, history, the arts, and entertainment to residents and visitors of all ages.



Just over 20 acres at the north end of North Harris Street in Sandersville (the county seat), comprise the property. It lies at the end of Sandersville's main street, three-quarters of a mile from the courthouse square, providing a nice walk. Visually, it represents the northern terminus of the city's main street. The property includes the original 1939 school building with three additions (1959, 1978, and 1995), and a 1945 agriculture building that included a cannery and

vocational shop. The school's Georgian-Colonial façade with a porch and four pilasters surmounted by a cupola is an imposing key landmark for the City of Sandersville. The original structure is wood-frame with brick veneer, built on one level in the shape of an E. The 700-seat auditorium, former lunch room, and music/expression rooms are in the center. In the past there were small plots of vegetables, fruit trees, and ornamental plants in the

courtyards between wings. Originally the eastern wing housed the high school and the western wing housed the grammar school. From 1939-1959, the school was known as Sandersville High School, then it became Sandersville Elementary School from 1959-2009. Many people still refer to it as Sandersville Elementary School, but the Sandersville School Building Authority wants to transition to the more general "Sandersville School," (Lansdell 2016).





Image credit: Shannah Montgomery UGA Public Service and Outreach

The Sandersville School is a beloved fixture in the community, situating it at the center of many resources and differing opinions about its future. While the opportunities for its use as a kaolin museum are wide open, some restrictions—financial and spatial—may apply.





OPPORTUNITIES

Using a local school building links the history of kaolin to Washington County and its people.

The existing building needs sustainable programming.

The classroom/hallway format allows for the museum to start small and expand as time and resources allow.

Community members are very supportive of the school's renovation.

The school is zoned correctly for multi-use.

Existing revenue-generating spaces can take pressure off of ticket sales.

CHALLENGES

Community members' interests differ regarding interior alterations.

Retrofitting and repairs will be expensive.

Repairs will be ongoing, requiring a maintenance budget.

If the historic interior is to be preserved, the layout will be predetermined and inflexible.

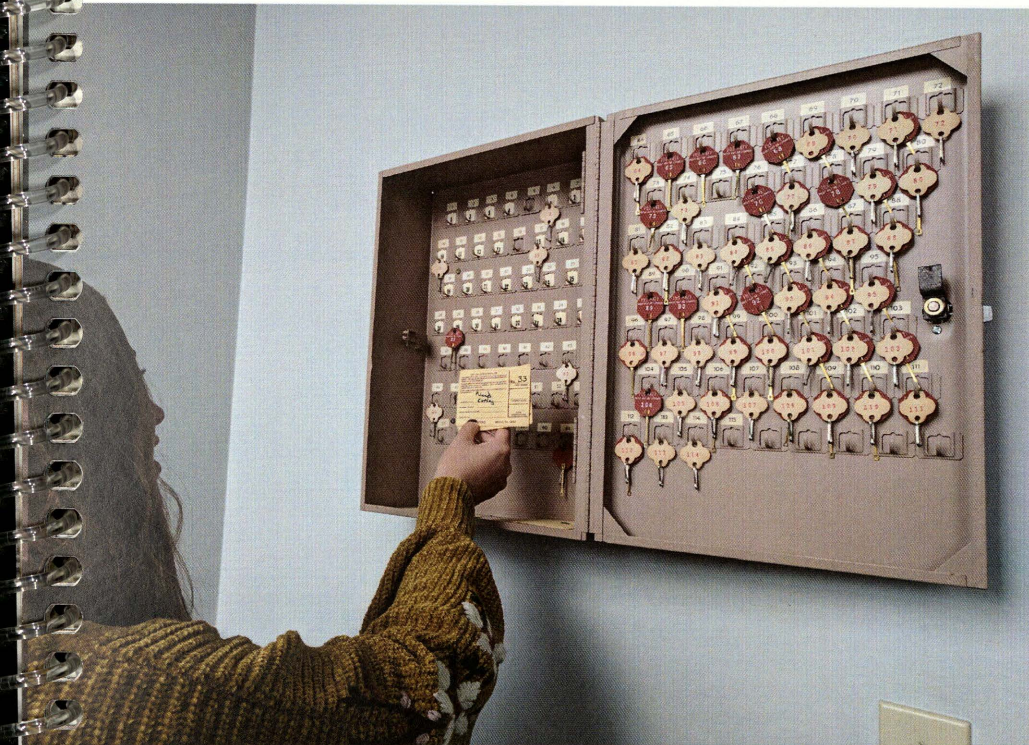
GOALS

Convey an understanding of geologic history in Washington County.

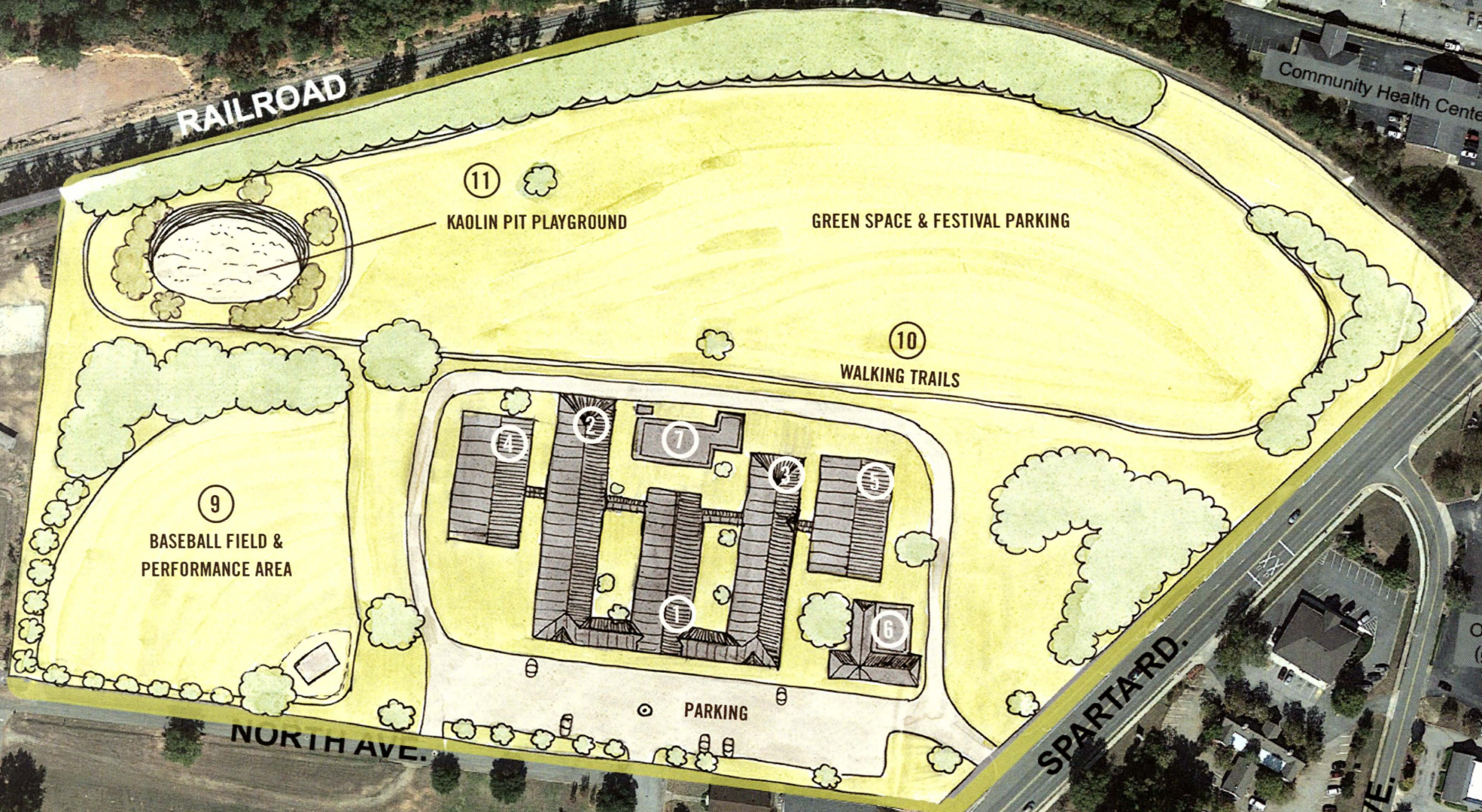
Focus on historic and modern mining practices locally within the social context.

Respect the historic character of the school.

Integrate the museum into the building as a multi-use community center.



MASTER PLAN



RAILROAD

11

KAOLIN PIT PLAYGROUND

GREEN SPACE & FESTIVAL PARKING

10

WALKING TRAILS

9

BASEBALL FIELD & PERFORMANCE AREA

8

1

2

3

4

5

6

PARKING

NORTH AVE.

SPARTA RD.

WASHINGTON AVE.

Heritage Inn

Community Health Center

Ocoee Center (government)

Medical Offices

Medical Offices

Grace Episcopal Church



Rendering: Carolina Angulo

The front block of the building should be restored to the period of historic significance (1939–1945) (see master plan, 1). Front classrooms could provide a glimpse into this time period. The rooms could be utilized to teach classes, begin/end tours, or host discussions.

Restoring the auditorium could provide space for educational films or old movies. Restoring the auditorium would also provide performance space for local or traveling musicians, which could become a monthly community event.

A library could be housed in the front block of the building. Eliminating a wall in one classroom to expand the space would provide a small, quiet reading area within the library and allow for easy management of books and patrons.

Creating an art gallery space within the school would offer opportunities for local artists and interpretation of folk-art traditions.

The kaolin museum could be divided into two wings. The west wing/historic elementary school (2) could be devoted to natural history. It would include an interpretation of the evolution of Washington County and the Fall Line throughout geologic time. The east wing/historic high school (3) could include programming about the history of kaolin and evolution of mining practices—including its contemporary connections to our lives. Programming would convey the importance of reclamation, remediation, and conservation to the mining companies.

The 1995 addition (4), gymnasium (5), business incubator (6), and detached kitchen (7) could become revenue-producing rental spaces and/or classroom/studio space. The building authority could continue renting the gymnasium to the church or rent it as an event space. The business incubator could become a classroom or office rental space, or administrative offices.

The restored detached kitchen could be rented to local caterers or used as a cooking facility for on-site events or concessions on festival days.

Planning the landscape surrounding the school building would involve partnering with the county to incorporate Linton Park (8). If the baseball field (9) were restored, Sandersville could begin hosting recreation league games, which can provide an additional pull to the site. Incorporating walking trails across the property (10) would highlight an “interpretive” kaolin pit playground (11) with traditional play equipment and/or mining equipment or life-sized fossil specimens for kids to explore.

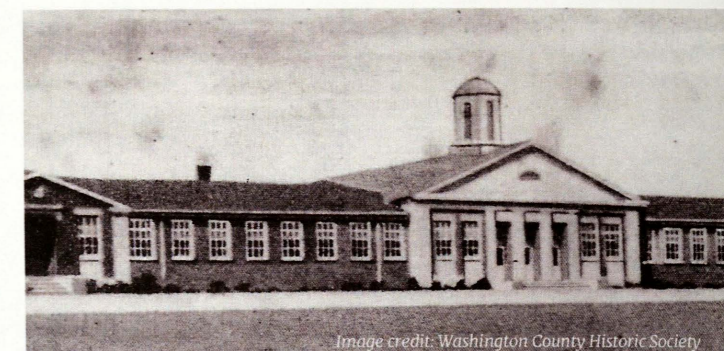


Image credit: Washington County Historic Society

ARCHITECTURAL HISTORY

This architectural style was popular for Georgia schools from the 1920s through the 1940s. Sandersville School owes its design to William J.J. Chase (1884–1967), a prominent Atlanta architect who designed schools, courthouses, jails, and theaters that are also listed on the National Register of Historic Places. Most of the schools that Chase designed were built during the consolidation period. Schools were built larger to accommodate more students. For instance, the number of schools in Washington County was reduced from 99 to 79 between 1890 and 1892. Sandersville High School exemplifies an early consolidated school.

The school was built with grant funding from the Public Works Administration (PWA). Franklin D. Roosevelt initiated the PWA as one of the New Deal programs during the Great Depression. A national program that operated its own projects in cooperation with state and local governments, it employed millions of workers to carry out construction projects. Typical PWA projects were schools, hospitals, and dams (Lansdell 2016).

CASE STUDIES

The Sandersville School site team approached their design by conducting a series of case studies of other rehabilitated historic school buildings, most of which were in current use as museums and/or multi-use community centers. Their findings helped inform their priorities for the site and museum programming.

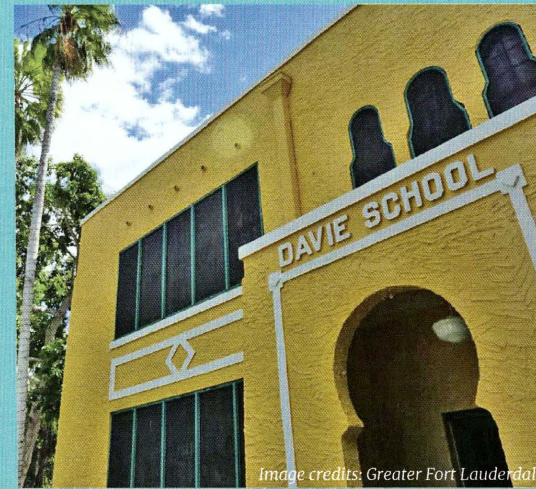


Image credits: Greater Fort Lauderdale

Old Davie School Historical Museum Davie, FL

Built in 1917, the Old Davie School in Davie, Florida, was the first permanent school in the Everglades. The Old Davie School Historical Museum houses exhibits about life and agriculture during the development of Davie in the 1920s. After restoration, the school regained the integrity of its early years. The lower level of the museum contains a restored 1920s classroom and exhibits. The campus also includes a reconstructed 1909 pioneer home that elucidates life on the Everglades frontier at the turn of the century, as well as the historic Viele and Walsh-Osterhoudt homes, both

built in 1912 and relocated to the Old Davie School campus. A reconstructed Citrus Packing House, currently under construction, will demonstrate the stages of citrus growing, picking, packing and shipping that made Davie famous.

Rather than building new structures onto the property like the Davie Museum, the team recommends utilizing the outside space on the Sandersville School lot in the same way to bring in mining equipment that children could explore, interact with, and play on.

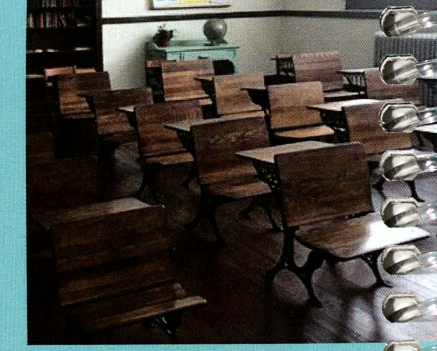
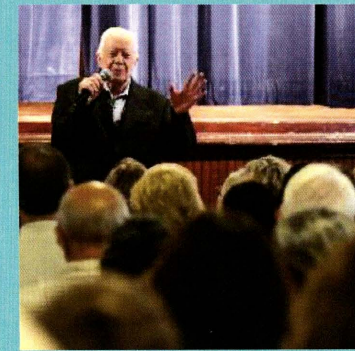


Image credits: National Park Service Jimmy Carter National Historic Site/Carolyn G

Jimmy Carter National Historic Site Plains, GA

The Plains High School Museum at the Jimmy Carter National Historic Site is located in Plains, Georgia, where Jimmy Carter grew up and attended high school. The school was restored to look as it would have when Jimmy and Rosalyn Carter attended. It can serve as an example of how to preserve and interpret the front part of a building to maintain the character and value of the collective memory it holds. Restoring the front block in Sandersville to its period of significance (1938-1945) would meet stakeholder goals,

situate the space as the historic focal point of the building, tie into the rest of the historic exterior, and provide a glimpse into the historic interior. This allows for event space and auditorium use without having to open up the other wings of the museum.

Like the Plains Museum, Sandersville could restore a classroom or two to the period of significance. Rehabilitating a classroom would make room for museum-specific interpretation without having to open up the rest of the museum.

Deerfield Beach Old Schoolhouse Museum

Deerfield Beach, FL

A 1920s schoolhouse in Deerfield Beach, Florida opened as a small independent museum and eventually partnered with the Smithsonian museum group. Now, the museum receives rotating exhibits and artifacts from the Smithsonian group collections.

In Sandersville, one classroom in the historic front “block” of the building could be utilized as a constantly rotating exhibit, perhaps every three or six months. This would keep local visitors intrigued over time, and potentially draw in new visitors interested in the rotating material.



Image credits: Smithsonian Magazine

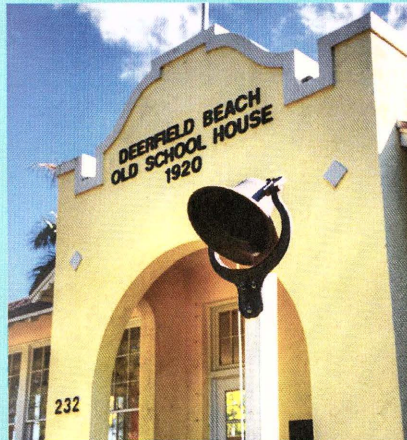
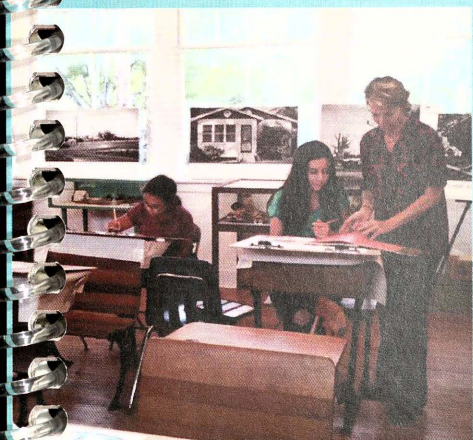
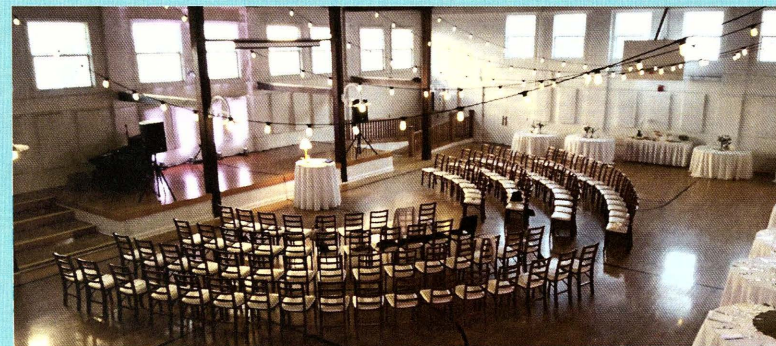


Image credits: Old School Square



Old School Square Delray Beach, FL

This large old school in Delray Beach, Florida is now the cornerstone for a shopping, entertainment, and arts district. The gymnasium is currently used for event space including weddings, class reunions, family reunions, galas, etc. Using Sandersville School’s gymnasium for a similar purpose would help strengthen community ties and bring in revenue for the museum.

Harvard Museum of Natural History

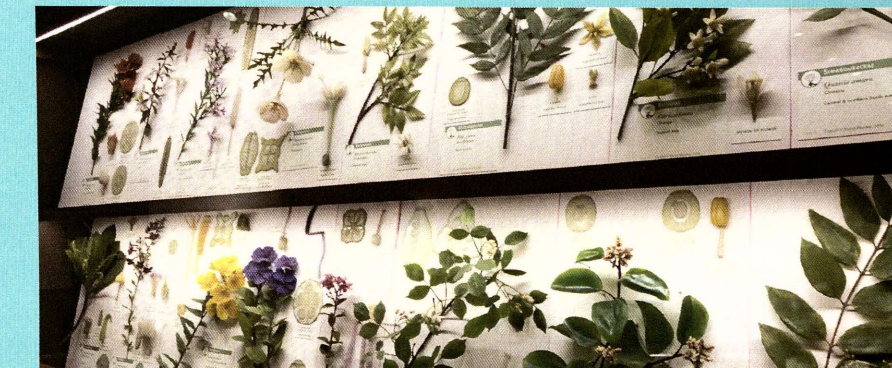
Cambridge, MA

The Harvard Museum of Natural History displays a sampling of specimens from the University’s natural history collections. It is housed in the University Museum Building on the campus of Harvard University in Cambridge, Massachusetts. The building, which was listed on the National Register of Historic Places in 1986, is a large U-shaped brick structure whose oldest portion dates to 1859. It provides an example of a large natural history museum with a predetermined layout.

The idea of displaying large specimens with a cohesive system could easily be implemented in the Sandersville School. Museum planners could work with a local craftsman to create a display system for specimens and artifacts—classic, elegant, wood-and-glass cases like those at the Harvard Museum.



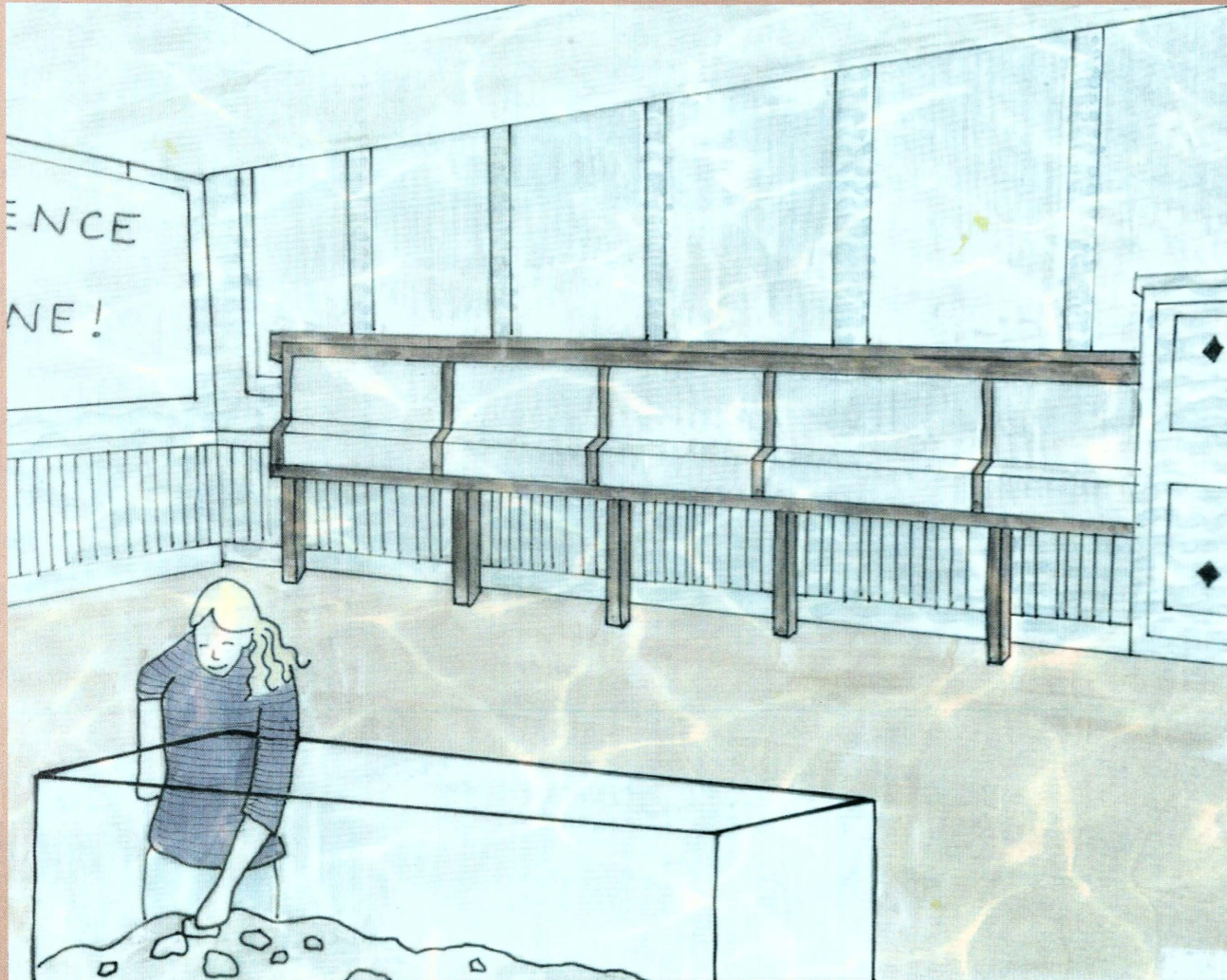
Image credits: Harvard University



MUSEUM CONCEPT

The kaolin museum would be comprised of a series of individual classrooms, unified as a “railroad ride” through time. Hallway walls and/or ceilings would give the impression of taking a Sandersville Railroad ride through the museum, directing the flow of visitor traffic. The railroad concept could also fill in time that is not described or highlighted in the rooms. Time could start at the formation of the Earth (~4.5 billion years ago) or at the beginning of the formation of the Appalachian Mountains (Ordovician Period, 440–480 million years ago), etc. In the modern kaolin mining section, facts about the railroad and kaolin transportation could be included in the hallways.

GEOLOGIC HISTORY ROOMS



Conceptual rendering of the “Eocene” geologic timeline room by Carolina Angulo.

A series of geologic timeline rooms would tell the story of the various environments Washington County has experienced over time. The rooms could be used to emphasize and elaborate on the important time periods for kaolin formation and deposition, interesting local fossils, and modern or recognizable Washington County.

Paleozoic Room: Formation of Kaolin

This room would address the question of where kaolin came from. Kaolinite was formed from the chemical weathering of potassium feldspar (K-spar) that was physically transported from the early Appalachian mountains. It traveled downstream toward the ancient coast, located at the Georgia Fall Line. This exhibit would address the importance of this process in the context of the Appalachian mountains and future deposition of sediment. In this room, the team envisions huge early Appalachian peaks of igneous and metamorphic rock at the visitor’s back upon entering the room. The coast of the Iapetus ocean could appear to spread out on the far wall.

Cretaceous Room: Deposition of Kaolin, Age of the Dinosaurs

The geologic formation containing soft kaolin is Cretaceous in age. Kaolin was deposited in

a terrestrial environment, so this room should include dinosaurs and terrestrial history of Georgia during the Cretaceous period. Any microfossils found in the kaolin or associated deposits should also be highlighted.

Eocene Seas Room: Washington County Underwater

Since kaolin was formed in a transitional zone where terrestrial and marine environments meet, this room would tell the story of the area’s marine past by conferring the feeling of being underwater. Hanging a clear box of water, rippling by the motion of a fan and positioned under a lightbulb, would create the effect of being underwater. Fossils, sand dollars, whale ancestors, shark and ray teeth, and ray vertebrae would all be part of the story.

Modern Era Room

This room would seem familiar and represent historical Washington County, just before the beginning of kaolin mining. It could also take a wider view, from the Piedmont through the Fall Line to the coast of Georgia. The main idea would be to describe the area’s modern ecology and distance to the coast. Connecting the deposition and erosion of sediment since the Eocene to the continuous erosion of the Appalachians ties this room back to the Paleozoic room.

KAOLIN MINING & HISTORY ROOMS



Conceptual rendering of a kaolin mining history room by Carolina Angulo.

The Kaolin Mining and History rooms would explore aspects of the history of kaolin mining in Washington County, from past, present, and future mining practices to the industrial and creative uses of kaolin to the ways in which mining has shaped the social history of the county.

These themes could be expanded into more rooms than those suggested below, or combined to fill fewer rooms. All the rooms should convey the feeling of modern or historic Washington County, rather than its geologic past.

History of Kaolin Mining Room

This room might look like the inside of a mine (walls are painted to resemble the stratified sides, floor painted white, etc.), and illustrate kaolin mining in Washington County from the first mines to modern reclamation practices. It could also compare Washington County's kaolin industry to global mining in Cornwall, England and China, and touch on other important minerals associated with the kaolin mines.

Kaolin Processing and Industrial Uses Room

With a modern, varied, and hopeful design, this room would illustrate past and present uses of

kaolin in industry. For instance, it might feature archival images of scientists testing kaolin at Imerys lab spaces or the process whereby kaolin is applied as a paper coating. Future, evolving uses would be included too, perhaps mentioning its usage in fish farming and as a pizza box coating.

Pottery Room(s)

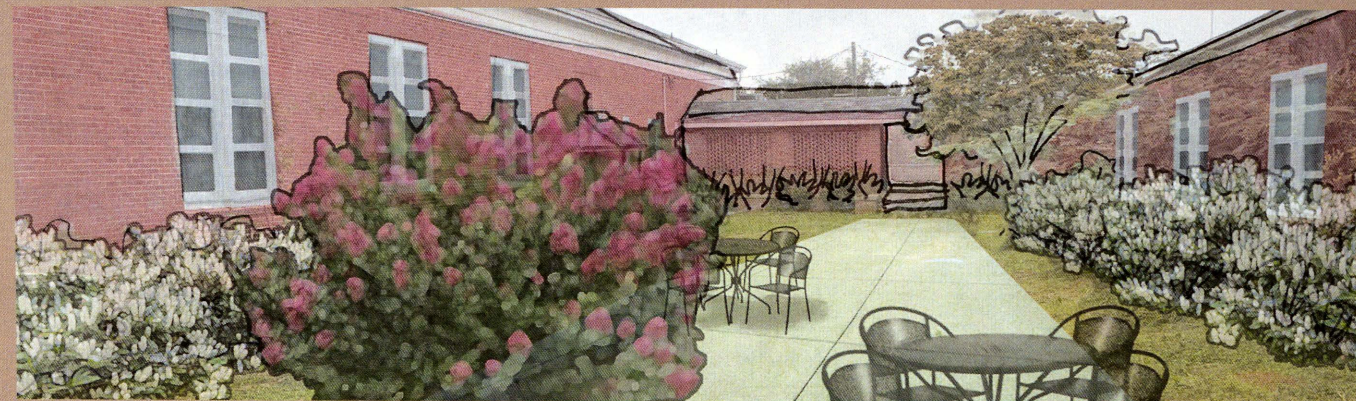
The history of kaolin in ceramics/pottery would be important for guests to understand and interact with. This studio room would include a working pottery wheel with an artisan turning clay, as well as opportunities for visitors to play with the kaolin.

Social History of Washington County Room

Many historical images of Washington County during the history of kaolin mining there would describe how the industry shaped the social history of the county.

Library/Coffee Shop

Using the donated books from Imerys, the museum could seed a library about kaolin, mining, etc. near the front of the museum. This room might also contain a small coffee shop selling coffee and baked goods.



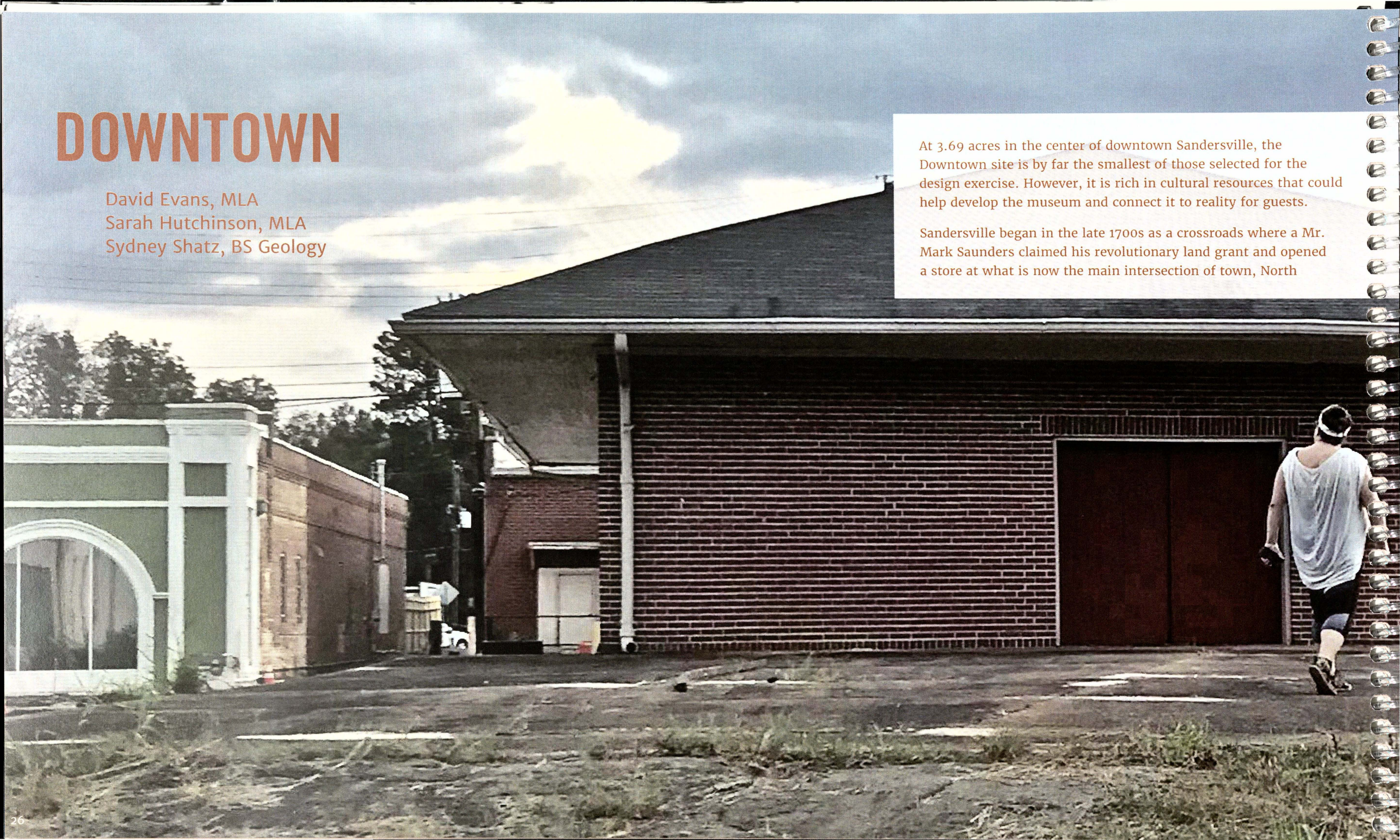
The spaces between the building's wings could be reimagined as courtyards for visitors.

DOWNTOWN

David Evans, MLA
Sarah Hutchinson, MLA
Sydney Shatz, BS Geology

At 3.69 acres in the center of downtown Sandersville, the Downtown site is by far the smallest of those selected for the design exercise. However, it is rich in cultural resources that could help develop the museum and connect it to reality for guests.

Sandersville began in the late 1700s as a crossroads where a Mr. Mark Saunders claimed his revolutionary land grant and opened a store at what is now the main intersection of town, North



Harris and Haynes Streets—just one block away from this hypothetical design site (Lansdell 2016). Any downtown site selected would share such proximity to the town's origins. Also nearby, the old Sandersville Railroad depot would leave an impression on visitors regarding the area's industrial past. Originally chartered in 1893, the railroad has been owned by the same family since 1916. It played an enormous role in

kaolin's success as Washington County's greatest economic asset during the latter two-thirds of the 20th century, providing transport of raw materials to processing plants and beyond (Sandersville Railroad Company 2005).

There are two historic buildings on site, which were formerly affiliated with the railroad depot. The majority of downtown,

including the iconic red brick courthouse building, lies just west of the site. A popular local restaurant, Chester Dean's, borders the lot on one corner, while the Sandersville Railroad Company and historic depot border on another. An indicator of economic growth, the present construction surrounding the site bodes well for a museum.





Two buildings exist on site, formerly affiliated with the Sandersville Railroad Depot.



Image credits: Google Maps

The people of Washington County form a vibrant, active community. Downtown Sandersville is a major gathering space for events such as the annual Kaolin Festival and parade pictured below. Because these social aspects are so well-integrated into the downtown historic structures—which represent the significance of kaolin and its transport via railroad—this site is ripe with potential to host a museum.



Image credit: Washington County Chamber of Commerce



The many historic buildings and railroad depot nearby provide an opportunity to connect kaolin to Washington County's industrial past.



OPPORTUNITIES

Like kaolin, this site is located at the heart of Sandersville.

Topography is relatively flat, allowing for easy building construction without extensive grading.

The lot is a good size for the museum to start off with—neither too small nor too large.

Pedestrian access from downtown is excellent.

The site is close to social aspects of downtown.

CHALLENGES

Although the lot size is good to start off with, it might be too small as the museum grows.

There is some visual blight in surrounding lots: derelict historic buildings overrun with weeds, construction sites, dumpsters, etc.

Parking would have to be located primarily off-site, which could deter some visitors.

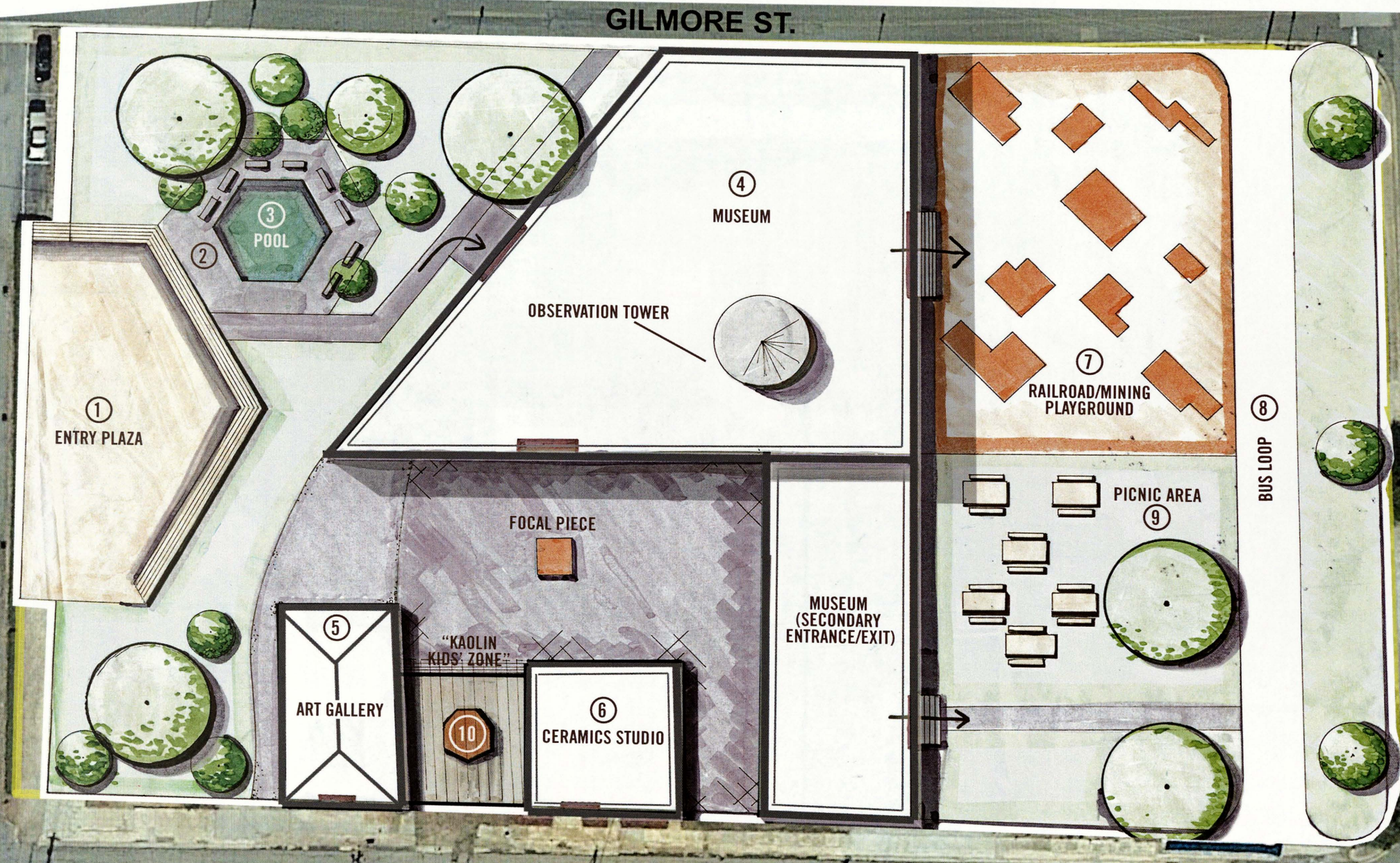
GOALS

Convey an understanding of processes and products of kaolin.

Connect mining to the local transportation industry.

Provide an outdoor learning environment for visitors.

MASTER PLAN



GILMORE ST.

N. SMITH ST.

E. HAYNES ST.



Rendering by: Sarah Hutchinson

This largely vacant block, bounded by Gilmore, North Smith, and East Haynes Streets, presents a unique redevelopment opportunity in the middle of downtown Sandersville.

The large entry plaza (see master plan, 1) closest to downtown draws people down a staircase and onto the site. It was inspired by kaolin settling ponds as well as the mineral's hexagonal crystal structure. White concrete pavers would reflect heat and represent the color of kaolin. There would be a shaded plaza space (2), including a hexagonal, teal "settling pond" to function as a reflecting pool (3) for community members and visitors.

The museum itself (4) would incorporate the two historic buildings on site (on East Haynes Street). Keeping the old railroad depot (5) was especially important to pay homage to the Sandersville Railroad, which was key to

Washington County's success in the past. The attached concrete loading deck should also remain, as an entrance to the museum. The railroad depot could be converted to a local art/ceramics shop, while the white brick building beside it (6) would become a clay studio where ceramic artists could work or teach classes. The tall windows in that building would show off the fun to passersby.

The team focused on making the site friendly for school children, as field trips might be a major part of the museum's business. A playground (7) would be conveniently located behind the museum on the corner of Gilmore and North Smith Streets, next to a bus loop (8) to allow easy pick-up after field trips. Inspired by its excellent vantage point looking toward the Sandersville Railroad depot, the playground would incorporate construction

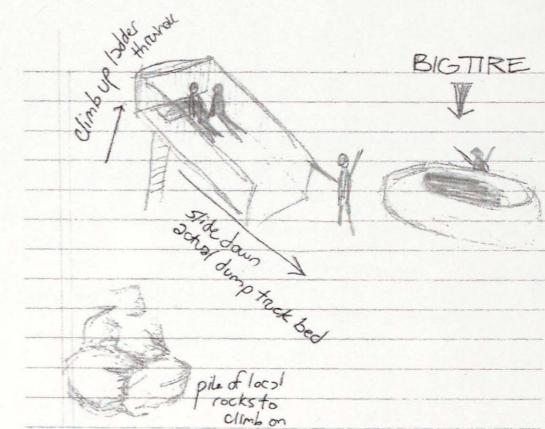
and railroad-like play equipment. The nearby corner of East Haynes and North Smith Streets would incorporate a picnic area (9) with plenty of shade and vegetation, for classes to eat lunch or parents/teachers to supervise children on the playground.

In conclusion, the team succeeded at integrating stakeholder input into their design. Because the site was in a downtown location, the primary focus was on conveying cultural and social history. Community members had suggested a pottery museum and gift shop, both of which would be housed in the existing historic buildings. Creating experiential class field trips, including fossil hunting, was another focus of the team's design. Most importantly, stakeholders wanted kids to play with kaolin, engaging all their senses, which the "Kaolin Kids' Zone" (10) readily accomplished.



Image credit: Wheal Martyn Clay Works

The reflecting pool draws inspiration from kaolin settling ponds at mining operations.



Ideas for a playground incorporating real mining and railroad equipment by Sarah Hutchinson.

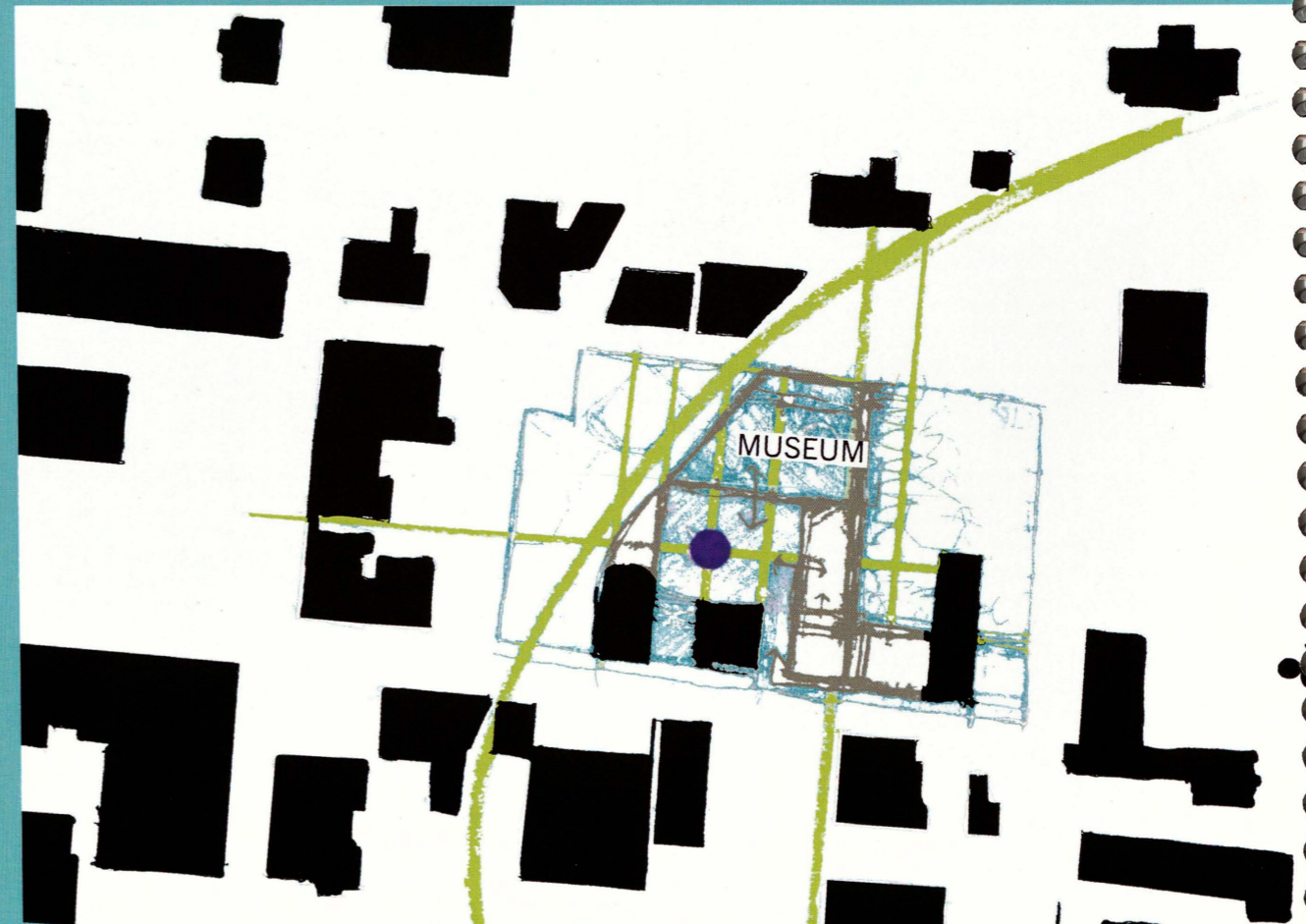
FIGURE-GROUND STUDY

Recognizing the historic pattern of development informs how a new building can fit in.

Using downtown building densities, alignment, and the curve of a once-extant railroad line helped the team connect a new building within the block.



Image credit: Google Maps

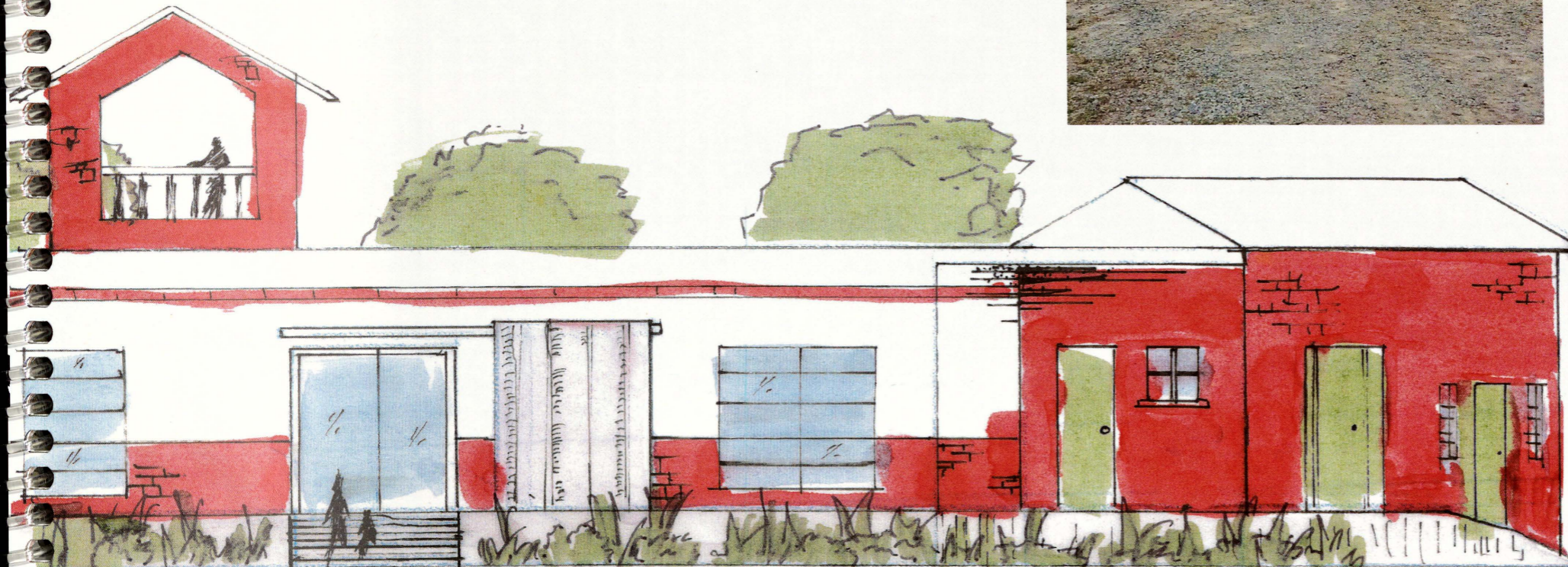


ARCHITECTURAL INSPIRATION

Any new building in this block should be inspired by surrounding architecture—both formal brick styles and vernacular industrial designs—to be contemporary, yet compatible.

The new museum building would feature piecemeal geometry, industrial metal sliding doors, perhaps arched windows (inspired by the adjacent building), and an overlook tower on the roof. The tower would echo the adjacent

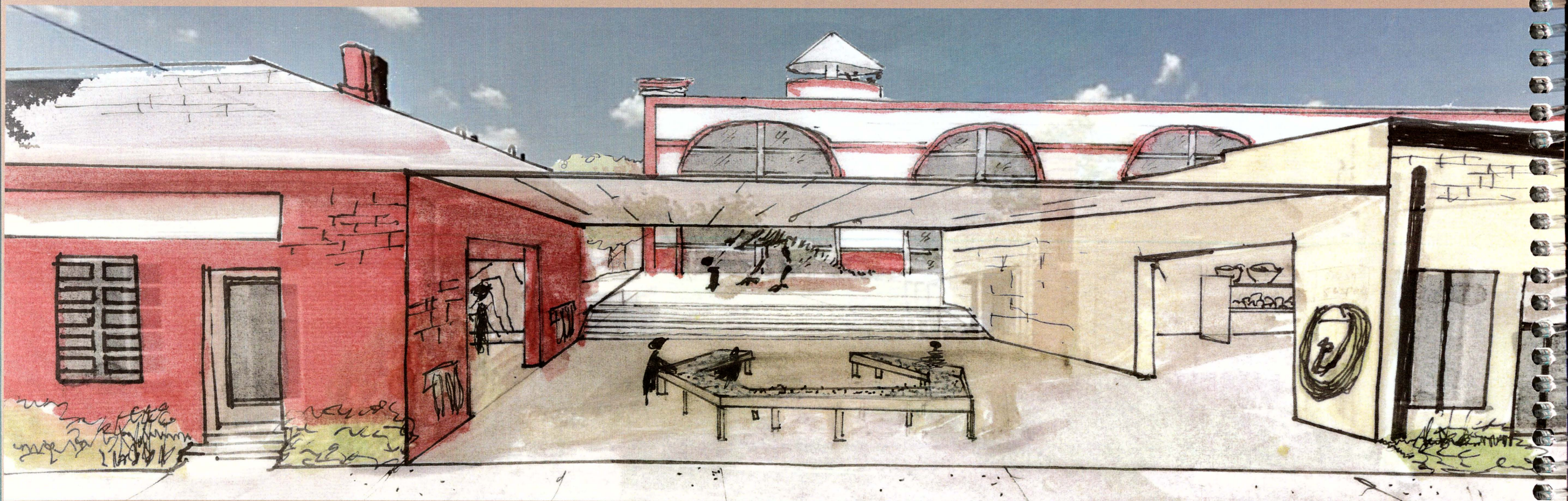
cotton gin's aesthetic and provide a view of Washington County's industrial past. The building could be white in color for a more modern look and to represent kaolin, with red brick as an accent (a nod to the nearby historic courthouse).



Renderings: David Evans

KAOLIN KIDS' ZONE

Between the buildings would be a hybrid indoor/outdoor area for children to get messy playing with wet kaolin clay in a sandpit-like structure. A hose would allow for easy clean-up in this "Kaolin Kids' Zone"!



Rendering: David Evans

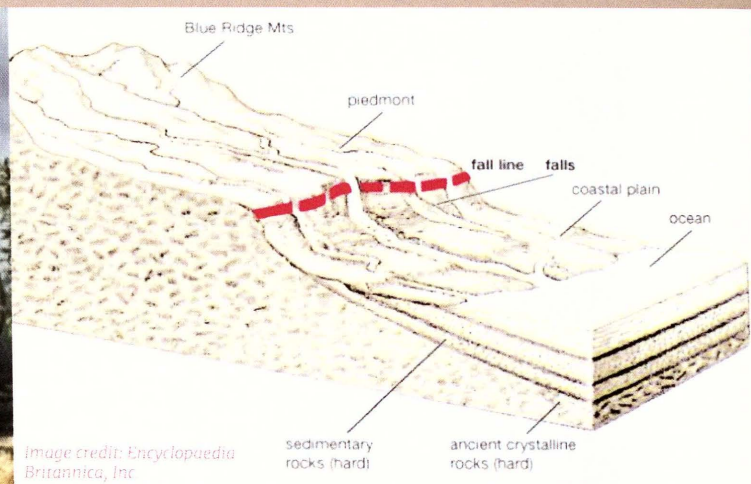
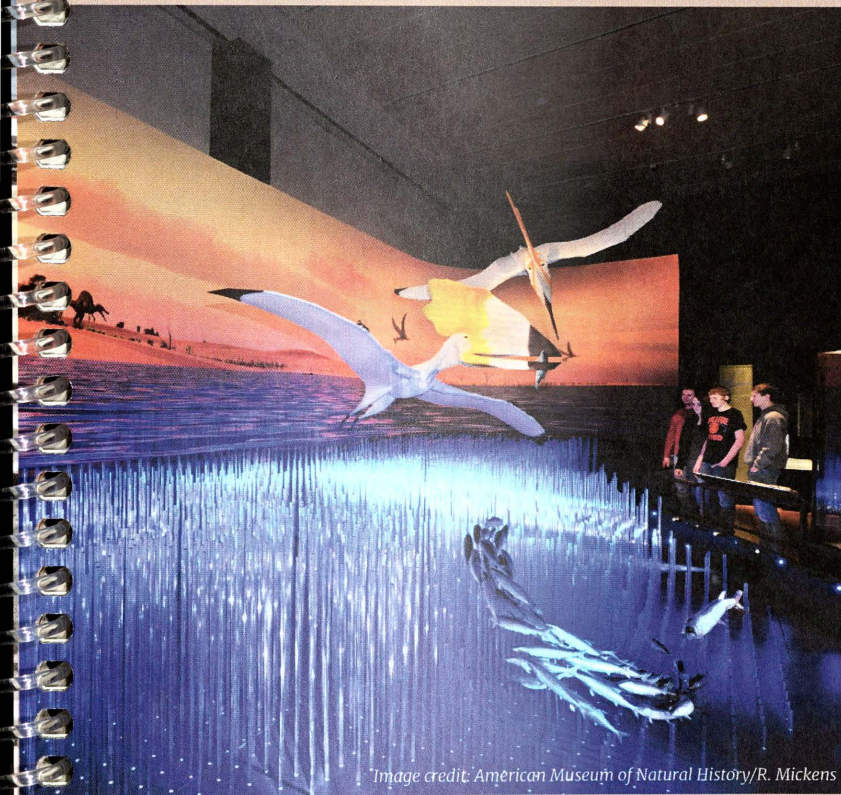
MUSEUM CONCEPT

One of the stakeholders' major requests was to take visitors through a timeline of how the kaolin belt formed. The museum programming would begin by explaining how the Appalachian Mountains were much bigger 150 million years ago, forming from the Appalachian Orogeny.

Describing the Cretaceous Period next would incorporate dinosaurs into the museum, which is sure to engage children.

Next, there would be an exhibit on the weathering of the hard mineral K-Spar into the soft white kaolin clay we see today, and then the transport of this clay from the mountains down to the ancient coast at the present-day Fall Line. The clay settled in a thick layer, endured high temperatures and pressure, formed beds, and was eventually discovered in the bands that Washington County mines.

The fact that fossils are frequently uncovered in mining operations is another opportunity to engage the audience. Ultimately, the exhibits aim to show geologic history with real samples of kaolin and fossils, and environments during each geologic time period envisioned as dioramas.

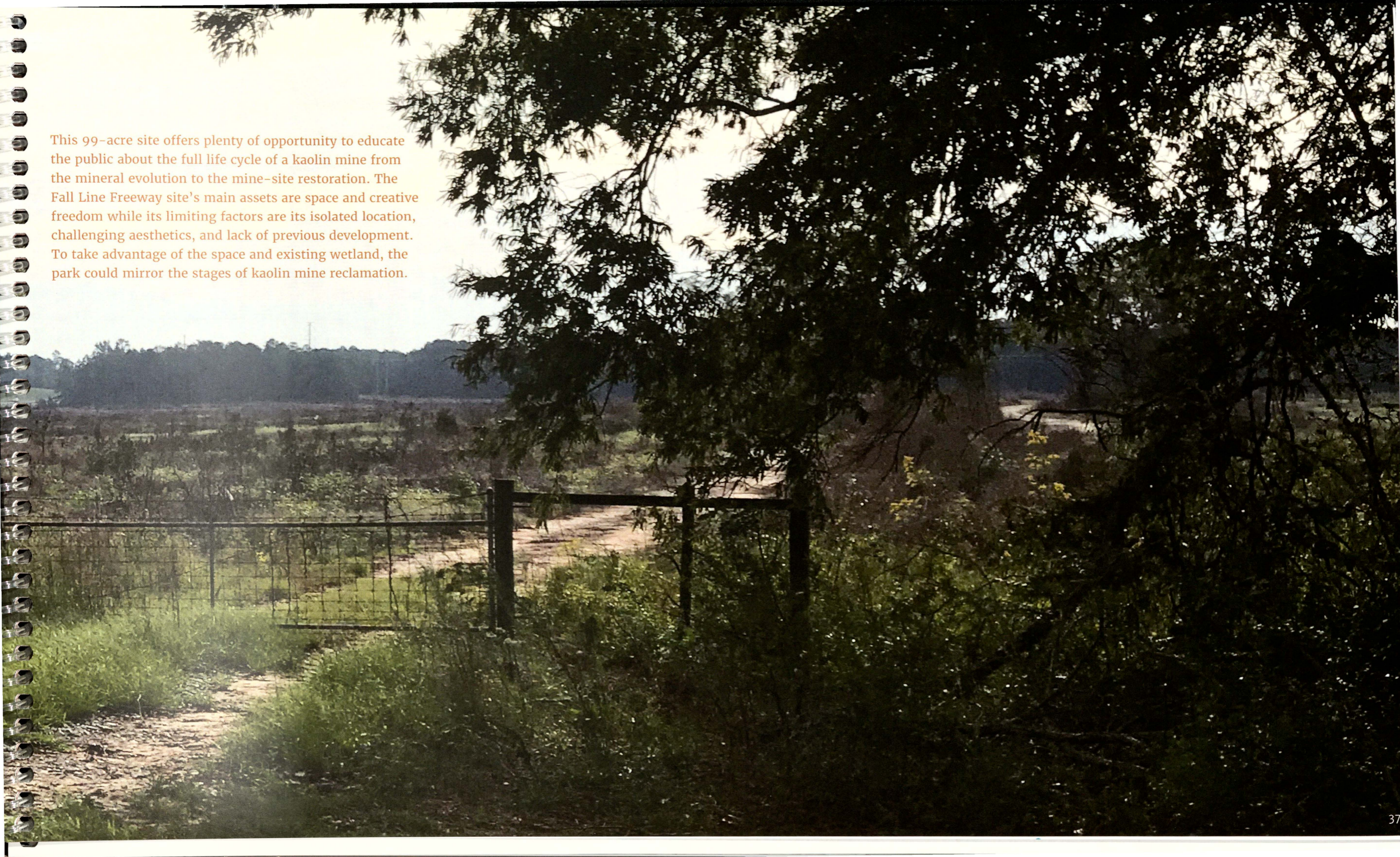


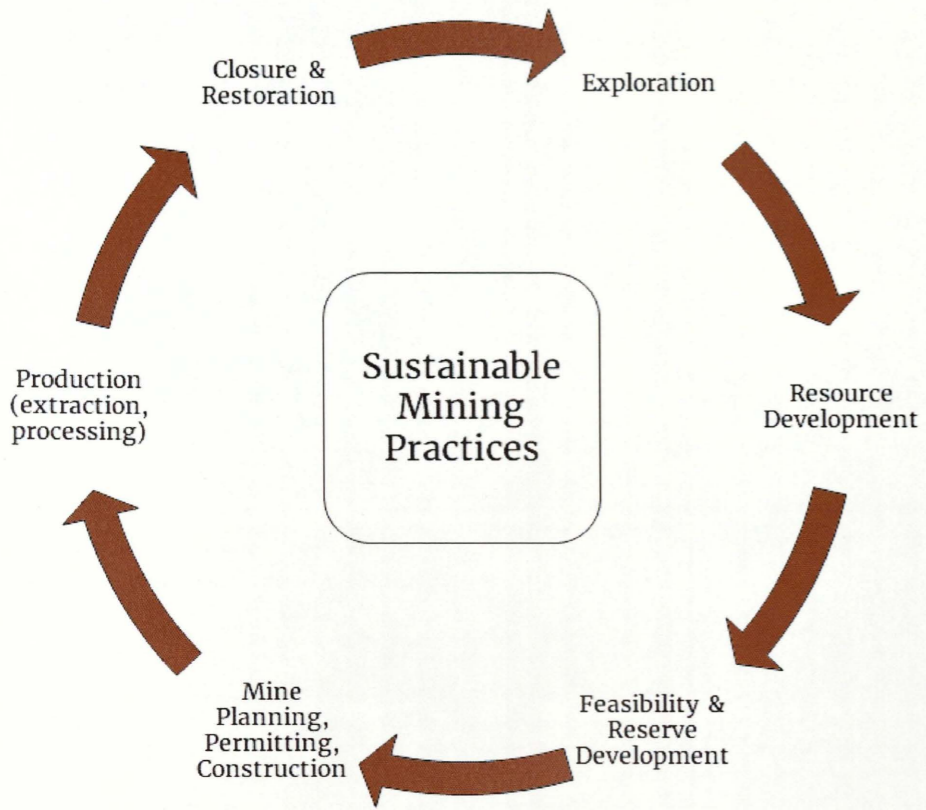
FALL LINE FREEWAY

Bear Jordan, MS Geology
Jacob Schindler, MLA
Xiao Tan, BLA



This 99-acre site offers plenty of opportunity to educate the public about the full life cycle of a kaolin mine from the mineral evolution to the mine-site restoration. The Fall Line Freeway site's main assets are space and creative freedom while its limiting factors are its isolated location, challenging aesthetics, and lack of previous development. To take advantage of the space and existing wetland, the park could mirror the stages of kaolin mine reclamation.





Sustainable kaolin mining practices, a cycle that the Fall Line Freeway site's design would try to illustrate. Diagram adapted from Kogel 2014.



GOALS

Provide flexible building opportunities based on budget.

Educate visitors on climate, biogeochemistry, oceanography, fossils, and geophagy.

Describe the transformation from K-Spar to kaolin and relate it with larger concepts like climate, biogeochemical cycles, and oceanography.

Present samples of local fossils and describe paleoecology.

Model the industrial kaolin mining process, and raw material processing techniques.

Provide a space for community events, recreation, temporary exhibits, and pottery classes.

Conceptually connect the local industry with kaolin's global distribution.

Demonstrate land restoration practices and provide outdoor recreation space.



Image credit: Google Maps

OPPORTUNITIES

The site is super-sized and unrestricted, making it easy to start small and expand, scaling up to a park-like complex.

The wetland on site provides an opportunity to educate visitors on its importance.

The site's proximity to the Fall Line Freeway could draw in out-of-town visitors and create easy access for school groups.

Trails could be created to traverse the large site, making it a more interactive museum and creating the opportunity for outdoor education.

Because the site is located far from downtown restaurants, a café could be integrated with the museum, drawing in extra revenue.

CHALLENGES

Wetland ecology is sensitive, so constructing the museum could pose a threat to species residing there.

There is an unsightly transformer station adjacent to the site, and a power line easement cutting through the southeast corner.

The enormous size of the site could be costly to manage or plan.

Proximity to the Fall Line Freeway could detract from the ambiance of the naturalistic outdoor setting.

The site is far from downtown, which would prevent connectivity via foot traffic.

Other than the museum, there is no draw to this area of town, making it hard for visitors to chance upon.



MASTER PLAN



SPARTA RD.

FALL LINE FREEWAY

PARKING

ENTRANCE

WETLAND

MUSEUM

RESTORED FOREST

RESTORATION POND

TRAILS

INTERMEDIATE PINE FOREST

POWER LINE EASEMENT/DISC GOLF COURSE

RESTORED FOREST AND POTENTIAL CAMPGROUND

RV PARKING

HORTON ST

N. PECAN DR.

1000 ft



Rendering: Jacob Schindler, Xiao Tan

ARCHITECTURAL INSPIRATION

The architecture of the museum would reflect its goals with large open spaces, featuring massive windows with views into the outside world. The museum would not feel out of place in Washington County because it would reflect the history of the area by invoking elements found in historic mining buildings. The historic Thiele industrial plant could inspire the front facade of the museum, which would include industrial elements like brick, glass and metal. Upon walking into the museum, visitors would be welcomed by a giant fossil replica suspended behind the information desk, allowing a view into the heart of the museum and drawing guests into the space.

At the core of the Fall Line Freeway Site design is the desire for an educational space that extends beyond the physical footprint of the museum building, utilizing the large property and placing earth science education outside. Extending education beyond classroom settings would hopefully encourage visitors to think critically about the environment they live in. The museum would flow from indoor to outdoor areas, blending education and recreation in exciting and challenging ways. Visitors would have the opportunity to engage with the full mining process, from the development of kaolin to its extraction. Connecting the local material to a global context would also help expand the museum beyond its physical borders.



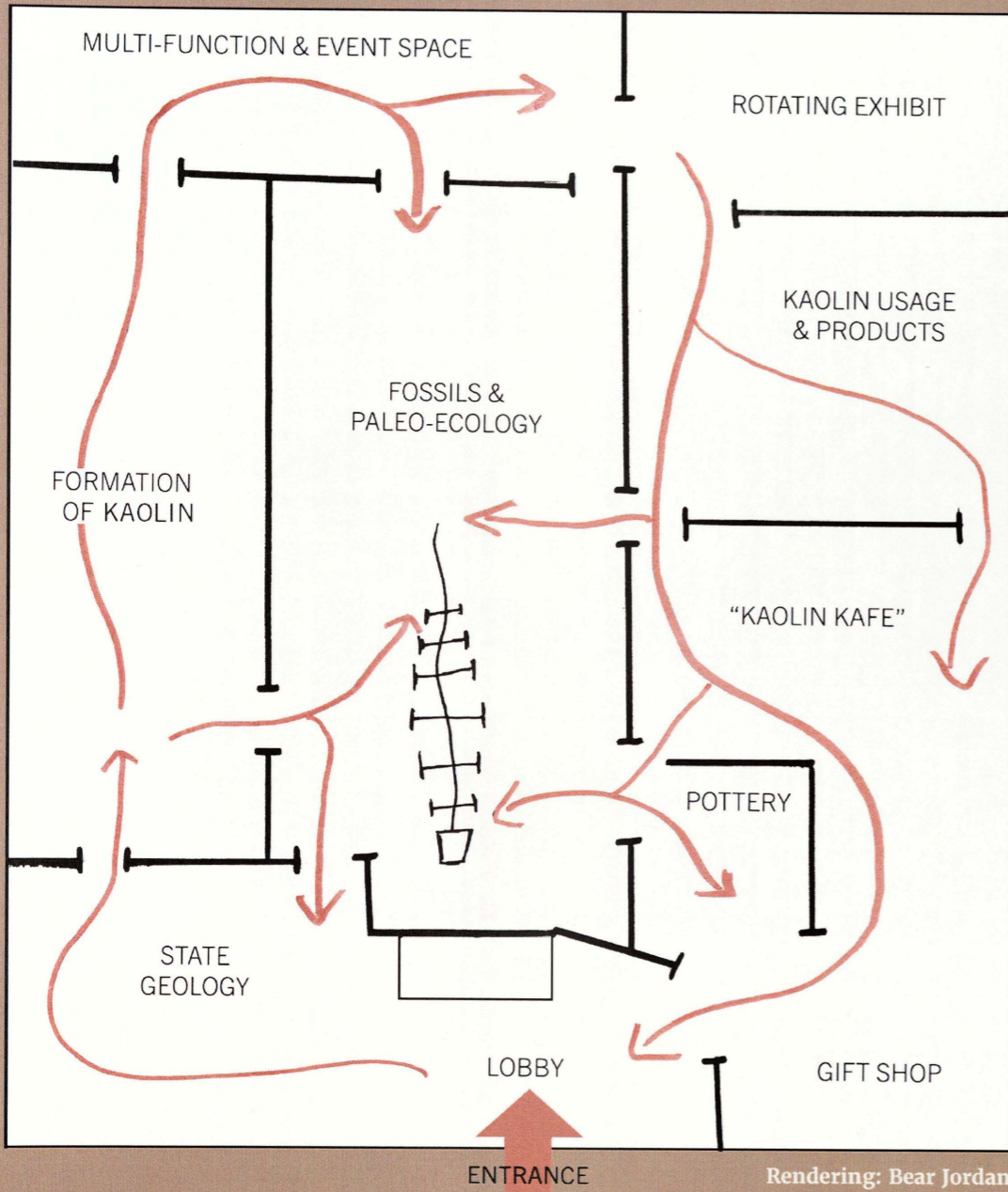
Image credit: AEG Berlin Gesundbrunnen/Peter Behrens



Image credit: SandersvilleGeorgia.blogspot.com

MUSEUM CONCEPTS

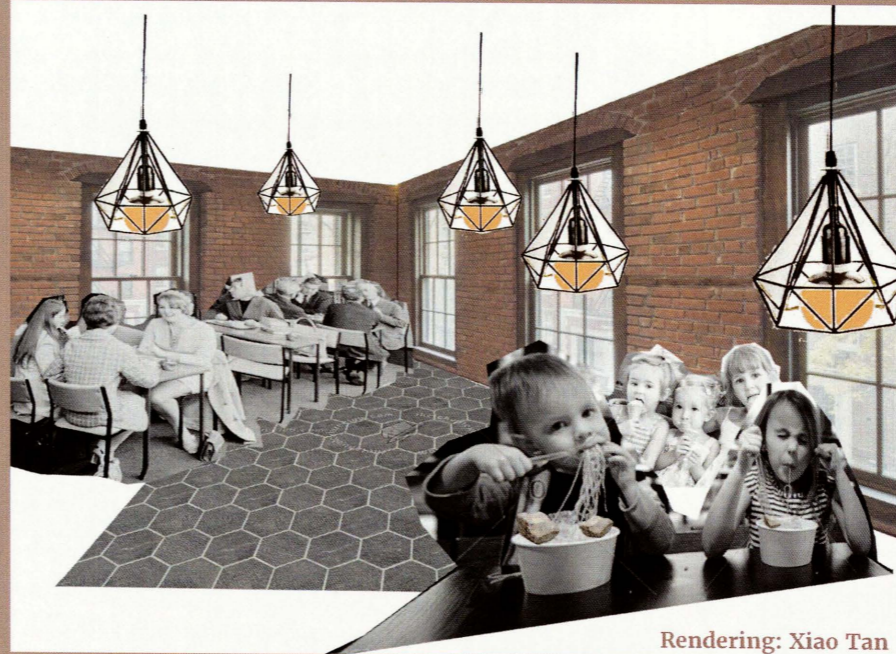
INDOOR EXHIBITS



Rendering: Bear Jordan

Industrial Materials

The inspiration for this exhibit showcasing the uses and distribution of kaolin across the world and in everyday life came from the opening input session. Local community members and industry leaders expressed a desire for museum visitors to understand the applications of kaolin minerals.



Rendering: Xiao Tan



Rendering: Bear Jordan

Kaolin Kafé

The “Kaolin Kafé” introduces the idea of geophagy—mineral consumption and surface chemistry—envisioned as an interactive exhibit on minerals that are safe to taste, such as halite (table salt), kaolinite, and sylvite. In addition, this exhibit will include a cultural history of mineral consumption and anecdotal antimicrobial effects. The café would include more traditional concessions as well.

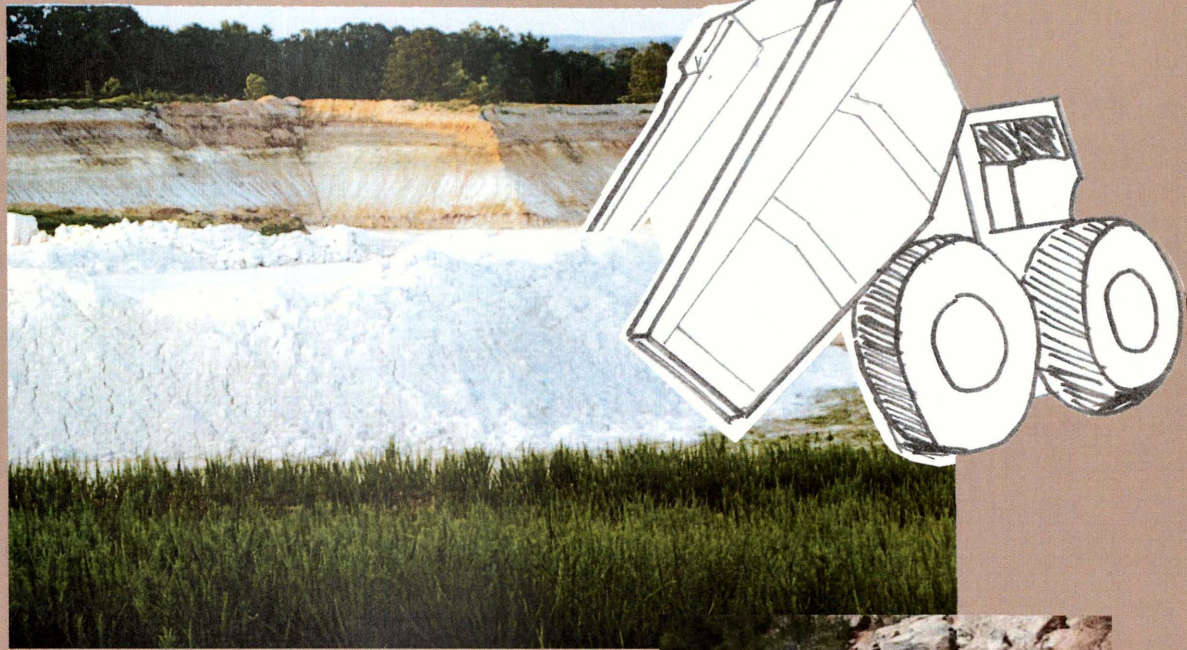
K-Spar to Kaolin

A tactile mural under a large glass canopy could illustrate how kaolin minerals evolved, satisfying the community’s desire for visitors to learn how kaolin was formed. Visitors would also see the alpine mountain and braided river environments that at one point were local to Georgia but have long since degraded. After describing the development of kaolin, the exhibit would link the tiny clay mineral with global cycles such as oceanography, climate change and plant communities.



Rendering: Xiao Tan

OUTDOOR EXHIBITS



Fossil Dig Area & Play Pit

The fossil dig area was an idea initially suggested by community members who had visited other museums with similar exhibits. Students would be introduced to a paleontological dig site and engage with primary materials. The exhibit should include a partially exposed fossil, which is how many discoveries are made. Overburden from the mining industry could be brought into the site. A dump truck would be converted into a slide into the soft kaolin. Displays that walk guests through the development of the mining process would surround the Play Pit, allowing adults to relax and learn while the children play.



Image source: Picture Alliance



Renderings: Jacob Schindler

Wetland Trail

A trail winding through the wetland would teach about ecology and land restoration practices as well as the “social contract” that mining companies must maintain with the surrounding community. A boardwalk plus minimal signage or an audio tour could showcase the importance of the industry to be environmentally conscious while providing outdoor recreation.

Conclusion

Design charrettes succeed by bringing people together around a shared goal and a democratic process that allows for a variety of viewpoints but streamlines decision-making. The goal of the charrette was to host a community discussion around what a kaolin museum could look like and how it could tell the local, regional and global history—and pre-history!—of kaolin. The three sites considered are different in a variety of ways, but all proved that no matter the location, the story is worth telling. The other universal truth is this: to truly appreciate the geologic and regional history of kaolin, you have to see it for yourself. Getting our hands in the clay was paramount to understanding its usefulness and its appeal, not to mention completely satisfying! Any museum experience should include an offering of supervised site visits to a kaolin mine, whether an active site or a former mine pit that has been retained for educational purposes.

The Terry College of Business students concluded their findings a few weeks after the charrette. A valuable part of their research was interviewing ten museum locations across the country that were similar in thematic content and size, including art and science museums, mineral/mining museums and local history museums. The directors of these museums were asked about their initial funding, obstacles encountered, and general advice or best practices to share with Washington County. Some common advice emerged:

Secure a sponsor and develop a board of directors, even if the full picture isn't developed yet. Start small, perhaps within an established museum, but have big plans for future growth. Inspire investors. Establish a Friends group. Partner with universities and K-12 educators. Seek out relationships with collectors and industry. Explore grants related to STEM fields. Join museum alliances and organizations. Ensure community

buy-in and maintain community involvement and interest. Leverage your board's resources through donations of expertise, time and materials.

Having the museum within the Sandersville School could allow for gradual program development and stimulate the reuse of a beloved building into a needed community center. Constructing a museum downtown expands the possibilities for a contemporary showpiece and cutting edge exhibits within the context of Sandersville's railroad history while contributing to a revitalized city center. An expansive site on the Fall Line Freeway could attract a greater number of travelers and visitors to a museum that provides wide open spaces and a larger view into the world of natural history. While the intention of the charrette was to show three museum alternatives, perhaps what has emerged are three phases of development?

Acknowledgements

Jennifer Lewis, Director
Center for Community Design
and Preservation College of
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Georganne Cook
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Penny Slice

The charrette team would like to thank Conni Fennell-Burley and the Washington County Archway Partnership for including us in their kaolin museum journey. Our students consistently cite service-learning experiences as one of the most beneficial parts of their program of study. Working with Archway communities is especially gratifying because they have the leadership infrastructure to identify priorities and follow through on suggestions.

Those of us new to geology have loved learning about kaolin—how it was formed, all its thousands of uses we take for granted, why this part of Georgia is so unique in the world, how deep its history goes. This invaluable experience was made richer by the passionate

citizens who volunteered their time to teach us about kaolin, share their vision for a museum, provide thoughtful feedback to our ideas, and guide us toward better solutions. Students feel appreciated by their community partners and excited when ideas get implemented.

Dorinda and David Dallmeyer are credited with sparking the idea of a kaolin museum in the hearts of Washington County leaders, and rightly so! Dorinda has been engaged in the idea of a kaolin museum much longer than the rest of us and was an invaluable adviser on our charrette. She brought great insight into the science of geology, museum programming case studies and expertise in environmental site considerations. She is a masterful storyteller

and we were blessed to have this time with her before her much-deserved retirement.

Charrettes are intense, fast-paced and hard work. While our CED students learned about epic spans of time that form clay and fossils, our geology students learned to design educational experiences with hardly any time at all! In their reflections after the charrette, all nine students said that learning from students in other disciplines was the most valuable part of the weekend. This was a truly enjoyable team to work with. Thank you to our students for volunteering your expertise and energy to this charrette!

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KAOLIN MUSEUM CHARRETTE

October 18-21, 2018 | Sandersville, GA



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