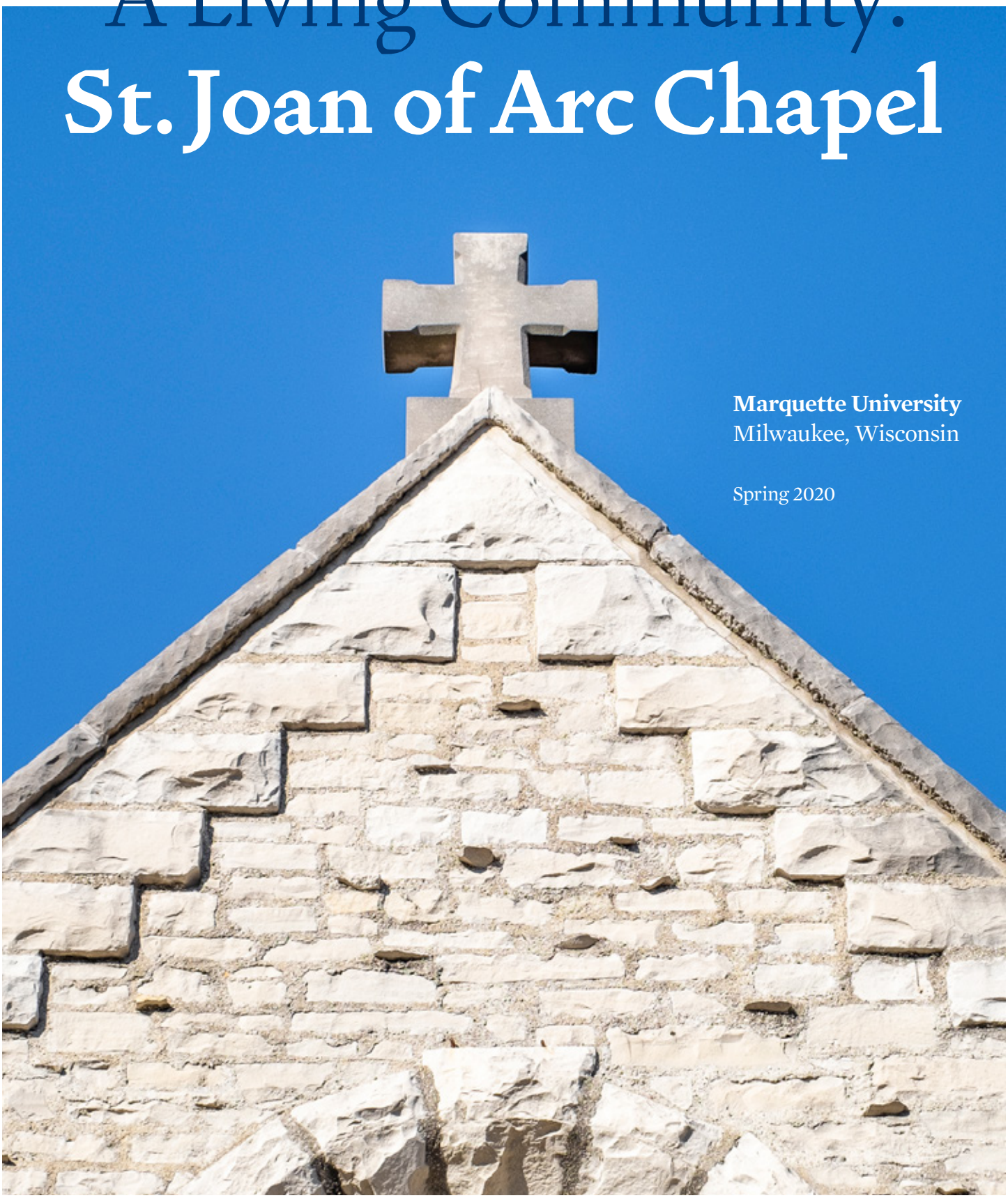
A Living Community:
St. Joan of Arc Chapel



Marquette University
Milwaukee, Wisconsin

Spring 2020

The Kubala Washatko Architects

St. Joan of Arc Chapel interior.
Image credit: Wayne Reckard, The Kubala Washatko Architects

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MARQUETTE UNIVERSITY

BE THE DIFFERENCE.

A letter from our President

Soon after arriving at Marquette, my wife Amy and I experienced the beauty and hallowed space of the St. Joan of Arc Chapel. When we attend the Tuesday 10:00 p.m. Mass, we share what generations of students have experienced within this inspirational and historic chapel, originally built in medieval France and reconstructed on campus more than 50 years ago.

The quiet power of St. Joan of Arc Chapel is as awesome as the story of its namesake and as strong as its stone walls.

It's the literal and spiritual centerpiece of campus that welcomes all - from students, faculty and staff to alumni and visitors - inviting them to prayerful reflection or simply to enjoy respite from the world outside.

It's a worldwide historical treasure that graces Marquette and Milwaukee - the gift of Lillian and Marc Rojtman, made in honor of their friendship with former university President John Raynor, S.J., and the Society of Jesus.

It's a cultural artifact and living work of art that represents the largest and most prominent object in the collection of Marquette's Haggerty Museum of Art - with architecture and features reflecting the interrelationship between religion and art that permeates nearly all cultures throughout history.

Truly, the St. Joan of Arc Chapel is a unique and beloved space that speaks to us on so many levels.

To preserve the chapel for future generations, time and conditions demand that we address the maintenance and upkeep of the 600+ year-old structure to ensure its ongoing presence. Recent studies confirm the necessity of significant renovation efforts. These include not only immediate needs such as roofing, security and temperature control highly important to the integrity of this medieval masterpiece, but also long-term assessment of critical renovations.

As you review this report outlining what must be done, please consider what the St. Joan of Arc Chapel means to you and how you can help preserve our most timeless and precious campus gem for the future.

Michael R. Lovell
President
Marquette University

A Place of **Living Community**

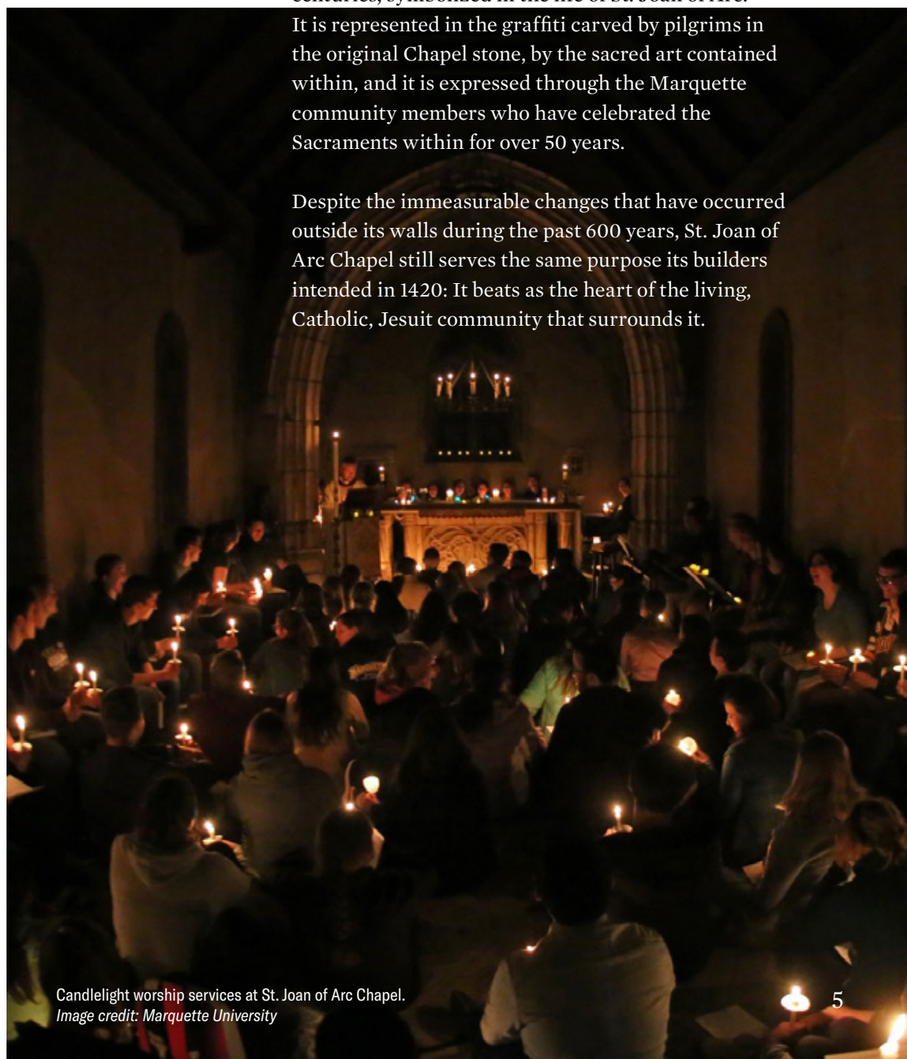
The St. Joan of Arc Chapel is the heart of the Marquette University campus. It is a place of community, especially in times of joy and sorrow. It has been the site of emotional candlelit vigils and of political protests. It draws people of all backgrounds and faiths. The Chapel hosts regular Masses that often test the capacity of the diminutive structure.

Beyond its role as a spirtual center the Chapel is an important focus of academic learning and discovery, featured in numerous classes and exhibitions. It has been used as a major art collecting and display center on campus, and still functions in that vein today.

The structure tells a story of Christian faith, of longing and suffering, and of the hope of real people through centuries; symbolized in the life of St. Joan of Arc. It is represented in the graffiti carved by pilgrims in the original Chapel stone, by the sacred art contained within, and it is expressed through the Marquette community members who have celebrated the Sacraments within for over 50 years.

Despite the immeasurable changes that have occurred outside its walls during the past 600 years, St. Joan of Arc Chapel still serves the same purpose its builders intended in 1420: It beats as the heart of the living, Catholic, Jesuit community that surrounds it.

> 4 *As you come to him, the living Stone—rejected by humans but chosen by God and precious to him—*
> 5 *you also, like living stones, are being built into a spiritual house to be a holy priesthood, offering spiritual sacrifices acceptable to God through Jesus Christ.*
> —
> Peter 2:4-5



Candlelight worship services at St. Joan of Arc Chapel.
Image credit: Marquette University

Chapel History

Image credit: Wayne Reckard, The Kubala Washatko Architects

The Chapel:
Early History in France

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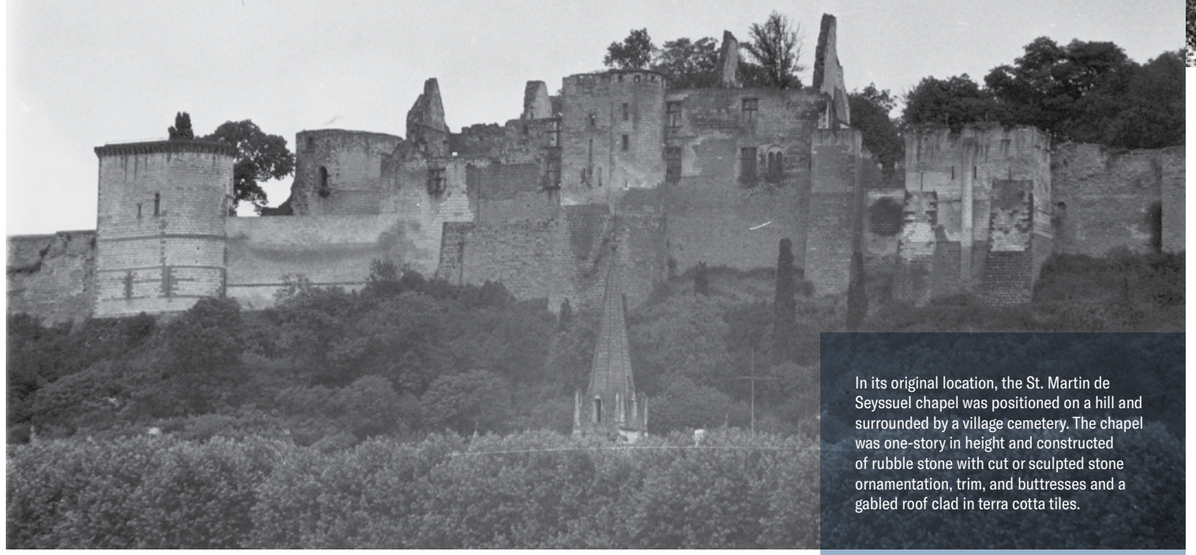
Originally known as Chapelle de St. Martin de Seyssuel, the St. Joan of Arc Chapel was constructed around 1420 in the community of Chasse-sur-Rhône in southeastern France.

The church served the village parish for over 400 years until it began to fall into a state of disrepair.

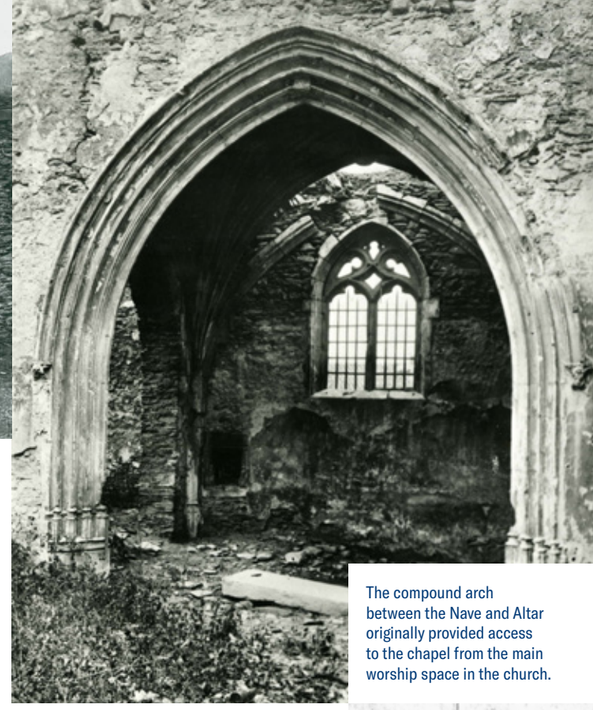
Due to ongoing deterioration of the old structure, construction of a new church was begun in the village in 1889. A request by the village was made to the Prefect from Vienna in 1897 to erect an emergency chapel in the new church complex, still under construction, as the old church threatened to collapse.

The ringing of the bells in the old belfry stopped on February 18, 1900, and by the end of the following year St. Martin de Seyssuel church was declared "unhealthy". It wasn't until Easter 1920, that the bell from St. Martin de Seyssuel first rang in the new church.†

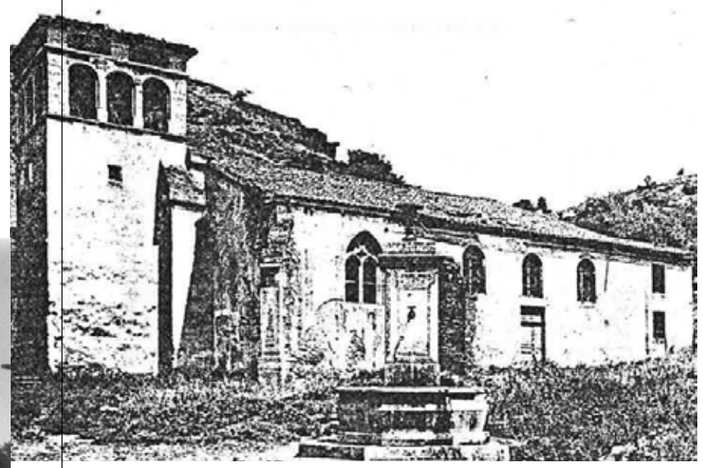


In its original location, the St. Martin de Seyssuel chapel was positioned on a hill and surrounded by a village cemetery. The chapel was one-story in height and constructed of rubble stone with cut or sculpted stone ornamentation, trim, and buttresses and a gabled roof clad in terra cotta tiles.

A two-story bell tower was located at the west (main) façade of the church. The original main entrance to the church was located at the bell tower and is now the main entrance, at the east façade, to the chapel.



The compound arch between the Nave and Altar originally provided access to the chapel from the main worship space in the church.

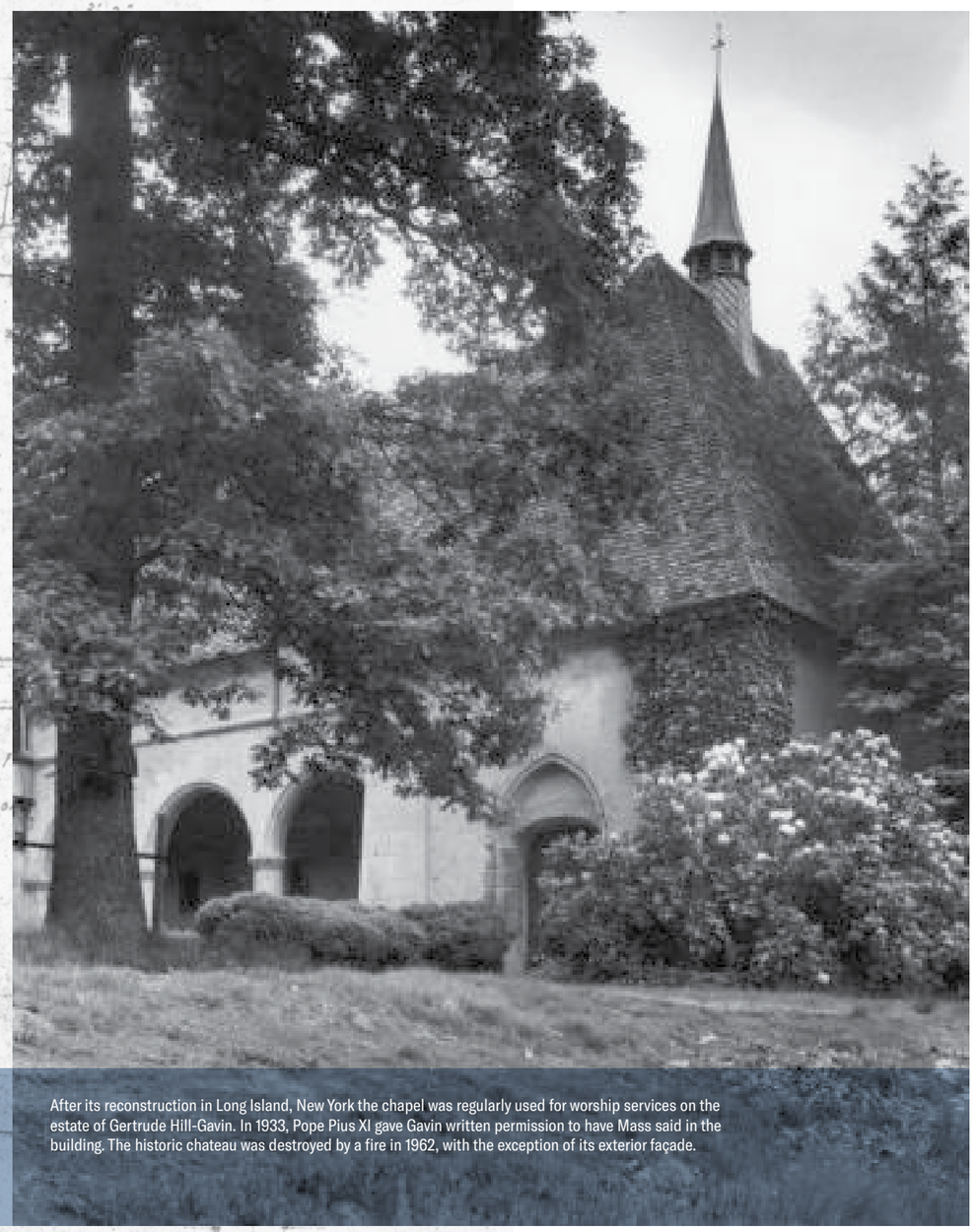


Original location of structure now known as Marquette University St. Joan of Arc Chapel. This 19th century photograph shows the larger church complex the small chapel was once part of. The "Fontaine St. Martin" is visible in the foreground.

Image credits: Marquette University Raynor Library Archives, Google Earth

The Chapel Location Today

In modern day France, nothing remains of the historic St. Martin de Seyssuel church. The site was eventually used to construct a building and garage for the local fire department, as well as a pumping station for the municipal water distribution network. The historic St. Martin fountain remained in its original location until it was removed between 2012 and 2019. The fountain's location is currently unknown. A few selected tombstones remain intact on the hillside.



After its reconstruction in Long Island, New York the chapel was regularly used for worship services on the estate of Gertrude Hill-Gavin. In 1933, Pope Pius XI gave Gavin written permission to have Mass said in the building. The historic chateau was destroyed by a fire in 1962, with the exception of its exterior façade.

Image credits: Marquette University Raynor Library Archives

The Move to Long Island, NY

The Chapel ruins were purchased by Gertrude Hill-Gavin, daughter of James J. Hill, an American railroad baron most notable for the creation of the Great Northern Railway. Enamored with the story of Joan of Arc (1412–31) the French heroine of the Hundred Years War, Gavin renamed the chapel in honor of the young French saint.

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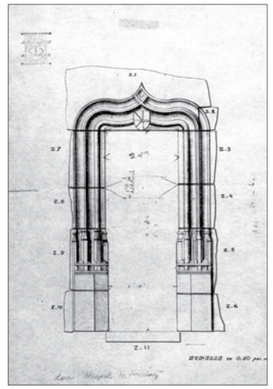
In the late 1920's, Jacques Couelle, a young architect from Aix-en-Provence, France discovered the ruins of the chapel and prepared dimensioned drawings and photographs of the remaining cut and sculpted stones so they could be disassembled and subsequently reconstructed. At the time, Couelle wrote that the chapel was "absolutely unique in its genre."

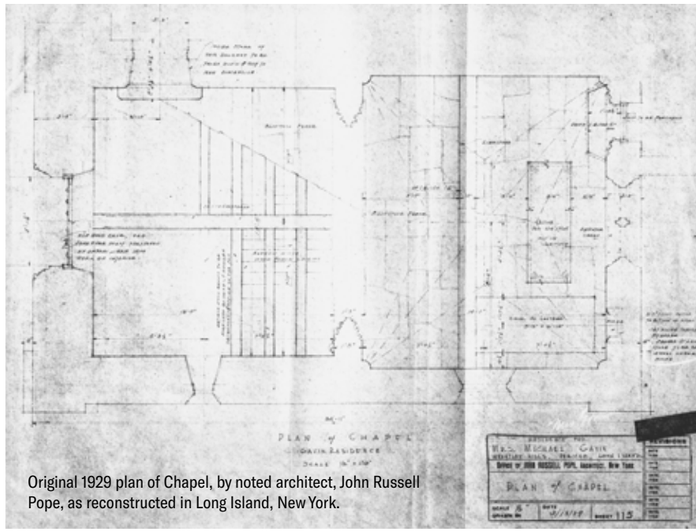
In addition to the chapel, Gertrude also purchased the ruins of a French Renaissance chateau, the Hotel le Cocq in Melun, France, which once belonged to the Dukes of Orleans-Longueville. The sale and disassembly of both the chapel and chateau were negotiated and supervised in France by Jacques Couelle.

The first shipment of remnants from Chapelle de St. Martin de Seyssuel left France in February 1927. The ruins were shipped to Gertrude's estate Graenan, in Wheatley Hills, Jericho, Long Island, New York, where prominent architect John Russell Pope was responsible for the reconstruction.

Once reconstructed, the chapel was regularly used for worship services. The chateau was destroyed by a fire in 1962, with the exception of the exterior façade.†



Original dimensional drawing by French architect, Jacques Couelle, illustrating details for cutting and disassembly of chapel arch. Today, this historic stone arch is located in the passageway between the altar and sacristy of Marquette University's St. Joan of Arc Chapel.



Original 1929 plan of Chapel, by noted architect, John Russell Pope, as reconstructed in Long Island, New York.

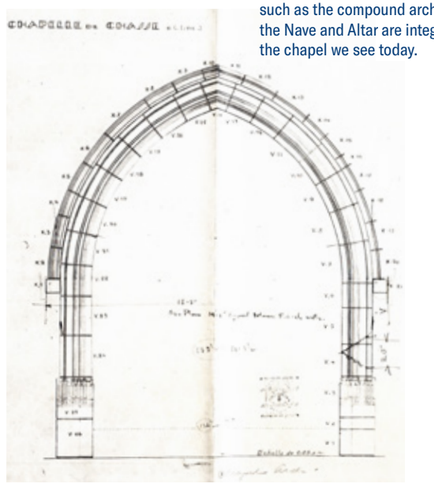
Reconstruction at Marquette University

Reconstruction on the Marquette University campus illustrates the use of historic stone chapel elements combined with modern concrete block masonry.

In 1962, Gavin sold the chateau and chapel to Marc Rojtman – who had been president of J.I. Case until 1960 – and his wife Lillian. Five days before they were due to move in, the house was ravaged by fire but the attached chapel miraculously escaped damage.

The Rojtmans sought a new home for the surviving chapel and wrote to former president Rev. Edward J. O'Donnell, S.J., offering it to Marquette, where they believed their gift would be appreciated for its historical and artistic value, functionality, and unique status.

The remaining façade of the chateau was disassembled and donated to The Metropolitan Museum of Art in 1964.



Original historic chapel elements, such as the compound arch between the Nave and Altar are integrated into the chapel we see today.

Image credits: Marquette University Raynor Library Archives

Construction workers prepare the roof for placement of historic clay tiles on the Chapel.

The chapel's nave was lengthened, creating additional space inside for larger worship services and gatherings.

Workers spent nine months carefully taking apart the chapel on Long Island and marking each of its stones before loading them onto a fleet of semis bound for Milwaukee. The first shipment of the twice disassembled chapel arrived in Milwaukee on January 31, 1965.

Once arrived, the stones were reassembled and selected changes were made to suit the site, such as a longer nave and modern conveniences like radiant floor heating and electricity. Ultimately, the reconstructed chapel incorporated 30 tons of historic stone elements and 18,000 historic terra cotta tiles into the chapel.

The reconstruction of the chapel at Marquette University was designed by French architect, Ernest Bonnamy, of the New York architectural firm of Kahn & Jacobs.

The dedication of the St. Joan of Arc Chapel on May 26, 1966, included a Mass celebrated by Marquette President John P. Raynor, an official blessing by Archbishop William E. Cousins, and a medieval-style pageant staged by the Marquette University Players, depicting the life of Joan of Arc.

Today, the Chapel and much of its furnishings are cared for by Campus Ministry, the Department of Facilities Planning & Management, the Haggerty Museum of Art, and the Office of Mission & Ministry.†

"...this chapel means far more to me than any donation I have ever made and transcends by far any mere monetary value."

Marc Rojtman
Letter to former Marquette University president
Rev. Edward J. O'Donnell, S.J.

Chapel donors Marc and Lillian Rojtman converse with guests during a party celebrating the St. Joan of Arc Chapel dedication.

Historic Structure Report Summary

St. Joan of Arc Chapel exterior.
Image credit: Wayne Reckard, The Kubala Washatko Architects

HSR Methodology

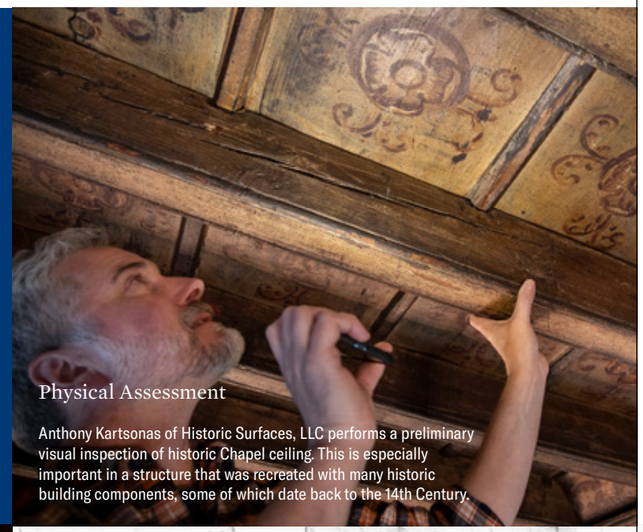
What is a Historic Structure Report?

A historic structure report (HSR) provides documentary, graphic, and physical information about a property's history and existing condition. The HSR has a defined format and required contents established by the U. S. Department of the Interior and National Park Service. Recognized as an essential part of preservation planning, a historic structure report also addresses goals for use of a property. It provides a thoughtfully considered argument for selecting the most appropriate approach to treatment prior to the commencement of work, and outlines a scope of recommended work. The report serves as an important guide for all changes made to a historic property during a project repair, rehabilitation, or restoration and provides guidelines for future maintenance. Finally, it records the findings of research and investigation, as well as the processes of physical work, for future researchers.

The Process

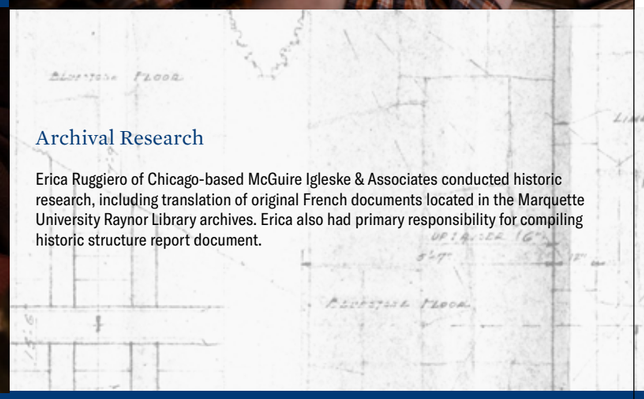
After soliciting proposals from qualified consultants Marquette University selected a multidisciplinary team led by The Kubala Washatko Architects (TKWA).

A project kickoff meeting was held on the Marquette University campus in January, 2020. Subsequent campus visits included visual inspection of the chapel and site, as well as research in the Marquette University Raynor Library Archives.



Physical Assessment

Anthony Kartsonas of Historic Surfaces, LLC performs a preliminary visual inspection of historic Chapel ceiling. This is especially important in a structure that was recreated with many historic building components, some of which date back to the 14th Century.



Archival Research

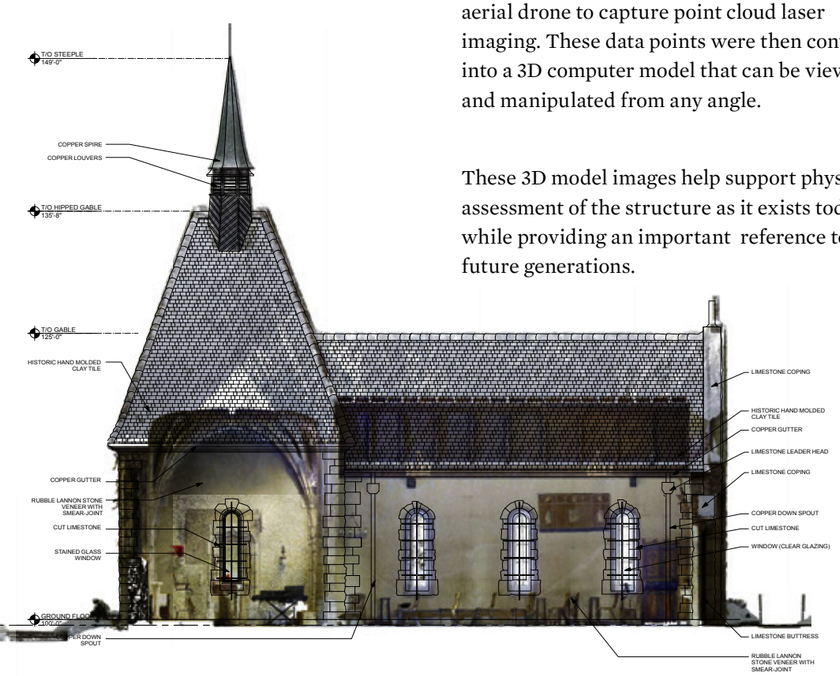
Erica Ruggiero of Chicago-based McGuire Igleske & Associates conducted historic research, including translation of original French documents located in the Marquette University Raynor Library archives. Erica also had primary responsibility for compiling historic structure report document.

Using Modern Technology to Preserve History

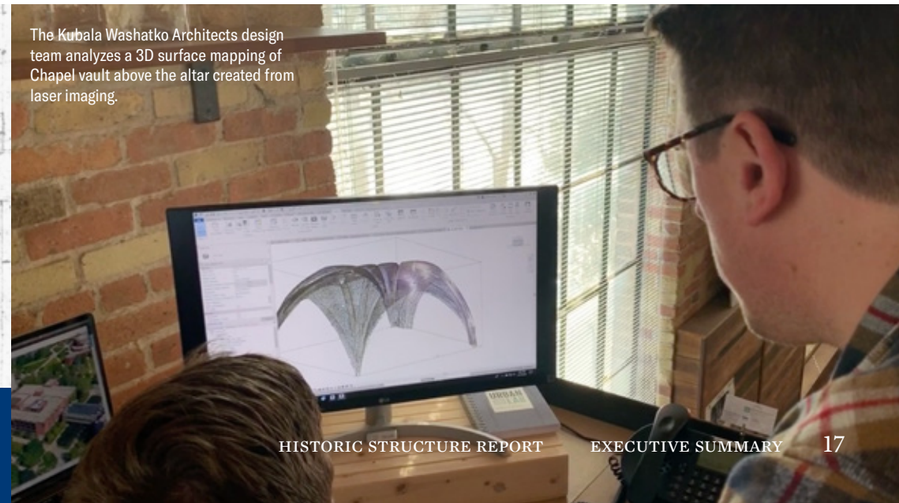
The HSR project team employed the latest technology to document the historic Chapel, both inside and out.

C.D. Smith Construction operated a remote aerial drone to capture point cloud laser imaging. These data points were then converted into a 3D computer model that can be viewed and manipulated from any angle.

These 3D model images help support physical assessment of the structure as it exists today, while providing an important reference tool for future generations.



Surface mapping 3D REVIT model overlay with traditional 2D building documentation.



The Kubala Washatko Architects design team analyzes a 3D surface mapping of Chapel vault above the altar created from laser imaging.

Preserving the Historic Roof

Approximately 25 - 30% of the historic clay roof tiles are deteriorated and would not survive removal and reuse.

A preliminary roof tile inspection was conducted at the lower west corner on the south slope of the nave.

Historic Clay Tiles

ISSUE

The historic roof of the chapel is in need of repair. Many original historic terra cota clay tiles are deteriorated, broken, or missing. For any repair approximately 25 – 30 % would not survive removal and reuse. Additionally, the felt roof underlayment at the spillway areas is deteriorated and the same is suspected in the field at broken tiles.

SOLUTION

Provide an entirely new roof system while also preserving the original character and historic material to the extent possible - a blend of historic and new tile. The work will include upsized gutters and additional downspouts to address the existing overburdened drainage system.

Solder joints and copper roofing of the historic are in need of repair and reinforcement. The solid roof deck and closed floor of the louvered area need opening for installation of the ventilation shaft.

Gutters and downspouts are also in need of improvement to adequately drain water away from the chapel walls and foundation.

Historic Steeple

ISSUE

Currently, the Chapel lacks adequate interior airflow during warm summer months, which reduces occupant comfort and increases humidity levels. It is noteworthy that mechanical cooling is not an option given the lack of equipment space and the desire to maintain the historic integrity and aesthetic of the space.

Inspection of the historic steeple also revealed that solder joints and copper roofing has deteriorated over time, creating potential for water intrusion and damage.

SOLUTION

The decorative louvers near the top of the steeple provide an excellent opportunity to introduce natural ventilation and exhaust with minimal impact on the interior aesthetic and no impact at all on the exterior of the building.

Install a duct connected to a new exhaust grille discretely located in the ceiling on the west side of the interior arch - out of view from the Nave. A motorized damper will allow for control of ventilation when conditions are favorable. An additional option could be to add an inline exhaust fan to help facilitate air flow. For all options, either natural ventilation or forced exhaust, a path of relief air must be established to allow outside air to be drawn into the building.

Temporary removal of the steeple will facilitate installation of the ventilation shaft and provide an opportunity to repair failed solder joints.

Mechanical & Electrical Systems

Bluestone flooring installed during the 1966 Chapel reconstruction will be salvaged and reused as part of the proposed new radiant floor heating system.

Thermal infrared camera image reveals temperature gradient caused by failed radiant floor heating system in the Chapel nave.

Radiant Floor Heating

ISSUE

The existing heating system in the Chapel relies on an electric radiant coil below the stone flooring. More than half of this system no longer functions. This imbalance causes large temperature variations within the Chapel - some areas of the floor provide no heat while other areas are measured at temperatures that can cause burns or be uncomfortable to walk/stand on. The altar can also be uncomfortably cold in winter months.

SOLUTION

Install a new electric radiant floor heating coil system. This option offers the best solution as it delivers occupant level heating with minimal noise while preserving the historic character of the Chapel. The lack of equipment room space in the Chapel is also a factor in selecting a radiant floor system. Three new radiant heat zones will provide greater control of interior conditions. Improved natural ventilation will be introduced through subtle modifications within the steeple.

Improving thermal comfort in all seasons for Chapel occupants is an important renovation priority. Supplemental heating strategies can be employed to target improved thermal comfort in the altar and sacristy areas of the Chapel.

Technology enhancements will provide improved Chapel security and access control.

Existing electrical boxes are crowded into the sacristy closet and need upgrades.

Technology infrastructure can be added to allow remote, live-stream of Chapel services and events.

Interior Surfaces

A condition called ‘shadowing’, which reveals outlines of otherwise hidden concrete block construction, has appeared along walls with exterior exposure. Water staining is visible below the window.

Rising damp is visible at the base of the interior wall resulting from moisture introduced by landscape plantings and mulch beds at the perimeter of the chapel.

Water Infiltration/Plaster Damage

ISSUE

Several contributing factors are adversely affecting the interior plaster finish of the Chapel. Rising damp is visible at the base of the wall resulting from moisture introduced by landscape plantings and mulch beds at the perimeter of the chapel. In the Nave and sanctuary, water staining is visible below window sills and cracks in the plaster are evident at the window heads.

SOLUTION

Move planting beds away from exterior chapel walls to better shed water and moisture. Repair cracks at window heads and repaint plaster.

Finish Analysis

Painted wood elements on the Chapel ceiling date from the 16th Century and are a character defining feature of the interior. To ensure long term preservation of these finishes it is important to examine them carefully. Visual inspections help identify issues such as warped or spilt wood panels. A comprehensive evaluation not only requires physical assessment but also other methods such as laboratory analysis, which is currently ongoing. These efforts will help determine the best procedures for conservation.

Preliminary analyis of interior wood finishes on the Chapel ceiling.

When the chapel was reconstructed on the Marquette campus new wood was added to the historic wood in order to extend the size of the Nave.

Certain areas of the interior stonework have remnants of historic paint. Examples of original Medieval polychrome painting on stone is rare. Our lab analysis work will look to identify if these are historic paint surfaces indicative of the time period.

Site Repair & Accessibility Improvements

Accessibility

ISSUE

Existing site conditions require modification to improve accessibility, safety, and aesthetics. The bluestone paving around the Chapel and fountain is in poor condition, making the surface a trip hazard and non-compliant with ADA standards. Mortared stone walls need repair and tuck-pointing. There are moisture wicking issues with the vegetation along the perimeter of the chapel. Many trees have structural issues and are showing signs of decline, as well as having leaf disease / fungal problems. Many trees are planted close to the chapel and cause leaf debris and seeds to fall on the roof and into gutters.

SOLUTION

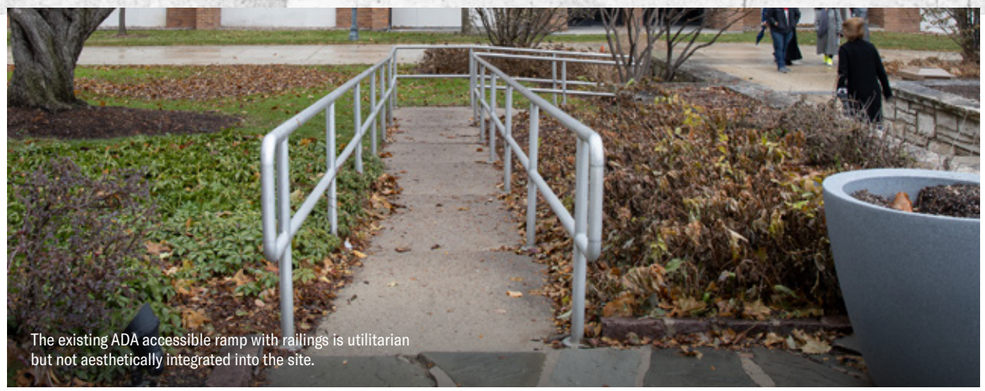
Remove and replace bluestone paving with stone to match the newly installed Grotto paving. Repair mortared stone walls as needed. Replace steps and landings with new reinforced color-matched concrete. Add accessible pathways at the west and north site entries where grade allows for low impact improvements.

Remove old or compromised trees. Install new native tree species which are adaptable to site conditions and provide a more formal look to the chapel site and gardens. Existing gardens (shrubs, perennials, groundcovers) should be evaluated and potentially replaced and redesigned for the site as appropriate.

Provide new stone urns, planters and benches. The materials should be high quality natural or cultured stone and match appropriately to the architecture of the chapel.

Bluestone paving has missing stones or cracked and missing mortar joints, creating accessibility, safety, and aesthetic concerns.

Removing planting beds from direct contact with the perimeter of the Chapel will reduce mositure wicking issues with interior walls.



The existing ADA accessible ramp with railings is utilitarian but not aesthetically integrated into the site.

Limestone steps are spalling and cracking, and also pose a trip hazard.

Paving around the fountain is in poor condition, making the surface a trip hazard and non-compliant with ADA standards.

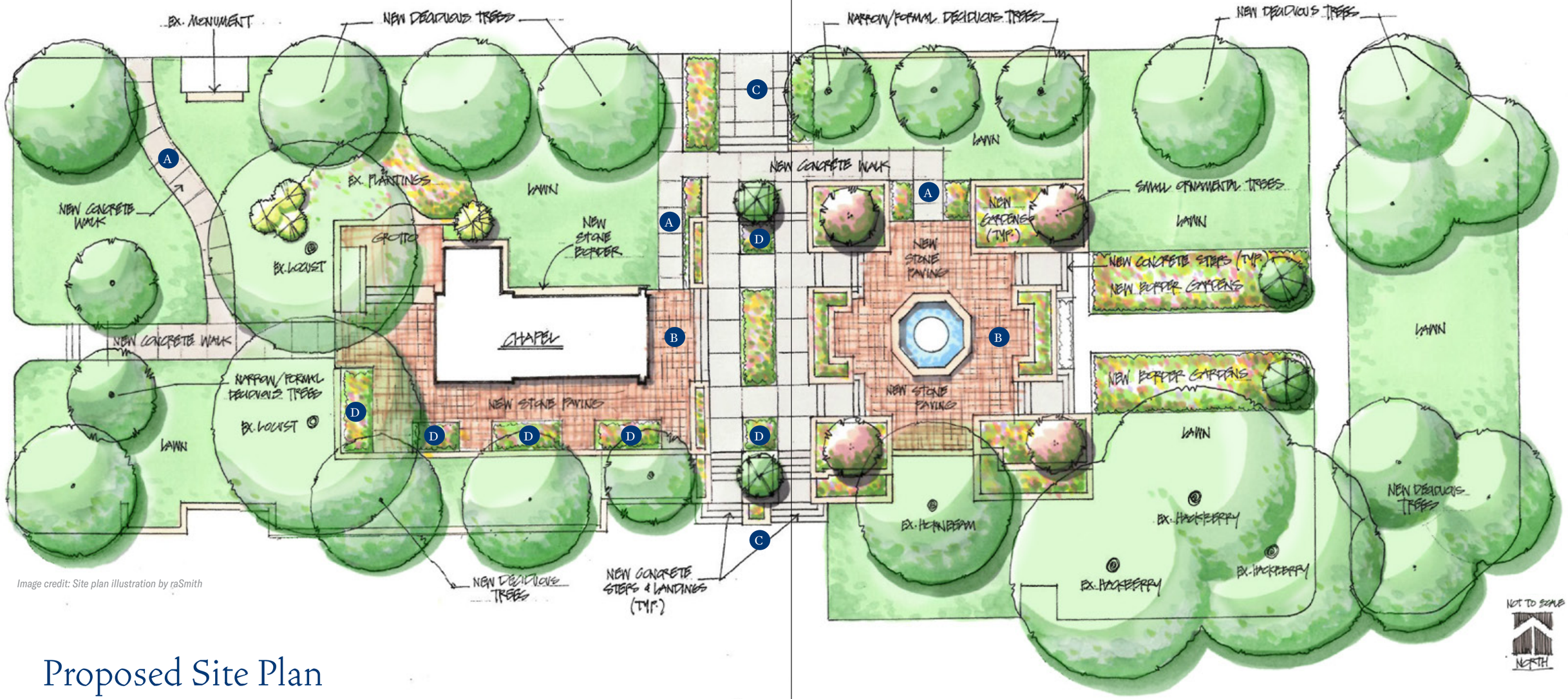
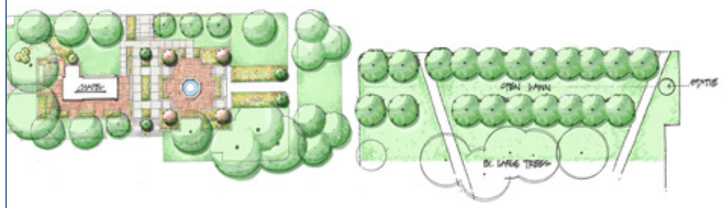


Image credit: Site plan illustration by raSmith

Proposed Site Plan

HIGHLIGHTS KEY

A. New ADA Accessible Ramp Areas
B. New Stone Paving
C. Repair/Replace Stone Steps
D. New Planter Beds



An eastward allee can be formed with additional tree plantings, establishing the Chapel Lawn described in the campus master plan. The Father Marquette statue, relocated to the east end of the Lawn, would look west towards the chapel.

Aerial View of Proposed Site Plan

New sloped walks elegantly connect the Chapel and all levels of the terraced landscape with accessible routes. Stone pavers - matching the recent work in the grotto - are extended around the Chapel and fountain to continue the aesthetic and address issues of site drainage and accessibilty. New native and resilient plantings support the formal character of the site.

Aerial view looking Northwest showing St. Joan of Arc Chapel and proposed site improvements.

Acknowledgements

MARQUETTE TEAM

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Office of Mission & Ministry

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CONSULTANT TEAM

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Roofing

Architectural Consulting Engineers
Mechanical & Electrical Engineering

raSmith
Landscape Architecture

CD Smith
General Contractor

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