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On Site: Reciprocal Powers between Architecture and Place

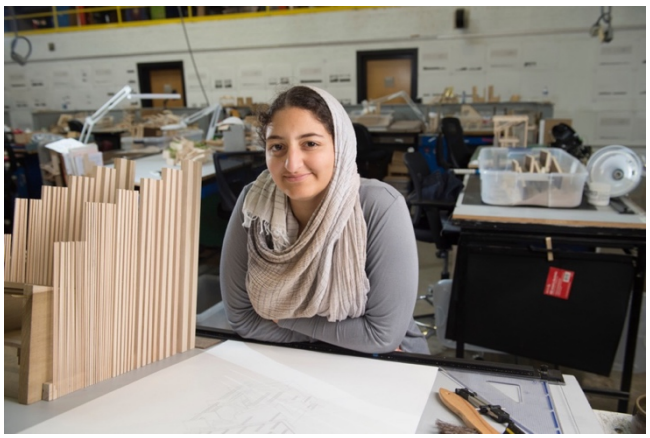
1 – National Museum of Roman Art, Merida, Spain

2 - Grand Mosque of Rome, Rome, Italy

3 - Sagrada Familia, Barcelona, Spain

4 – Igualada Cemetery, Igualada, Spain

Biographical Sketch



A Mississippi Delta native, Nada Abdel-Aziz is a fifth-year student in Mississippi State University's School of Architecture. She received the Aydelott award in her third year of school and was able to travel after the completion of her fourth year.

In her hometown of Greenwood, MS, she became interested in architecture due to an after-school carpentry program where she found passion and joy in designing and building for others. When she was young, she wanted to be a writer and some sort of maker, dabbling in the arts. Architecture school and research opportunities like the Aydelott have been a satisfying marriage of those early interests. In her time at MSU, Nada has been involved in design-build projects through collaborations with MSU's Department of Landscape Architecture, including an elementary school outdoor classroom and learning garden. Whether writing, drawing, or building, Nada appreciates the power of architecture and design to connect to our collective imaginations, identities, and histories to create environments where we feel we belong.

On Site: Reciprocal Powers between Architecture and Place

An Introduction

For my Aydelott research, I chose to investigate how architecture can draw from place, and its reciprocal relationship, how architecture can reveal and amplify the spirit of a place. I chose this topic on the belief that architecture should tell local and regional narratives, acting as a mirror for citizens to see themselves and their place, not just the contemporaneous global. Ideas of the spirit of place go far back in the professions of architecture and landscape architecture, from the Roman genius loci to contemporary theorists such as David Leatherbarrow advocating for an architecture that recalls "what a location has been while indicting what it is becoming".[1] These four case studies address place through landscape, tectonics, geometry, form, and typology, all engaging the spirit of the past and present identities.

In contemporary architectural theory, contextualism involves referencing specifics of local culture through tectonics, climate, topography, and landscape. For example, Carlo Scarpa is known for his work in the Veneto region where he utilized Venetian crafts with modern detailing and aesthetics. In the cemetery's mediation pavilion, the wood and steel ceiling structure is composed similar to a modernist De Stijl painting while Venetian crafts such as glass tile are worked into the surrounding brutal modern geometric forms. Kenneth Frampton uses the term "critical regionalism" to describe architecture that responds to the specifics of place while still engaging in global civilization such as modernity and technology. Frampton describes this

as a balancing act between global trends and local culture.[2] In addition to Frampton's concept of critical regionalism, I would argue that time is an added dimension of context that architecture should respond to and express. In his essay "Building In and Out of Place", David Leatherbarrow writes that architecture should indicate what a place has been but also what it is becoming.[3] When Gaudi practiced architecture in Barcelona, the Catalan region was in the midst of social and political upheaval, such as tensions between regionalist and nationalist identities amidst growing industrialization. Gaudi's architecture responded to that context of a changing society as well as the region's identity and architectural heritage. Gaudi's Sagrada Familia basilica draws from both to its place and time, creating an architecture that speaks to a modern Catalan identity. His basilica is an example of architecture that draws from how a place is changing and expresses what new identities are being formed from the old. These four case studies will elaborate how contextualism can be more than imitating the past.

In my travels, I found 4 lessons of how architecture can draw from place:

1 – National Museum of Roman Art, Rafael Moneo

Contextualism is more than kitsch imitations of the past or applied signs. The museum steals the haptics of historical tectonics and a local typology, borrowing the physical sensations of his references not just the visual image. The architecture's contextual references are not shallowly applied. Instead, the references are what

Pallasmaa calls “embodied images”, multi-sensory, materialized images that invoke an imagined memory.[4]

2 – Grand Mosque of Rome, Paolo Portoghesi

Moneo writes that the consistent aspects of typology act as “the frame within which change operates”.[5] Typology can be a consistent datum line, a frame of reference, against which changes in the typology speak to the particular character of place. The Grand Mosque of Rome is a new image of a mosque whose deviations from the mosque typology speak to the specific identity of modern Rome.

3 – Sagrada Familia, Antoni Gaudi

Architecture can draw from diverse and complex contexts, such as the quality of light in a region or the contemporary changes in society. Furthermore, contextualism can be progressing tradition forward rather than just preserving tradition.

4 – Igualada Cemetery, Enric Miralles and Carme Pinos

The cemetery is an outlier to the first three case studies in that the architecture responds to a natural context rather than cultural. The cemetery proves that contextualism can be more than blending in with the surroundings. Leatherbarrow criticizes contextualism where “designs that intend congeniality with place overlook opportunities for creative transformation”.[6] Instead, architecture can respond to place by creating dialogues between context and change that add to the identity of place. Architecture draws from place, but it also has the reciprocal power to define place.

These buildings are admittedly a limited perspective of how architecture can respond to contexts and communicate local identities. When I conducted my travels most of Asia, Africa, Central and South America were in crisis with the Delta variant or had closed their borders in precaution. Scandinavia, Oceania, and most of Europe had maintained closed borders for the majority of the summer. In the US, regionally sensitive architecture is associated primarily with residential architecture such as John Yeon, Richard Neutra, and Frank Llyod Wright. However, their works of architecture were managed by smaller institutions that were slower to reopen. This narrowed the diversity of cultures discussed in these essays to solely Western Europe. The fraction of Europe I travelled through opened its borders around early July, confining my timeline for travel to a month. Even with these constraints, I was still exposed to a variety of cultures and unique towns in my travels, from global cities like Barcelona to small villages atop obscure mountains like Sumvitg, Switzerland and Onati, Spain. Visiting Spain's Catalan, Andalusia, Iberian, and Basque regions was like experiencing four different countries. I charted out a course of ten works of architecture, expecting to find only half open with a scarcity of information online on their status regarding the pandemic. Instead, they were all open. There were many other struggles like the pandemic affecting rural bus lines and getting stranded twice as a result. However, even with the challenges of the pandemic, I had too many amazing experiences to recount here. I visited too many amazing precedents of architecture that drew from place. I saw Joze Plecnik's work in crafting the identity of

Ljubljana, Slovenia. In Italy, I saw Carlo Scarpa's works across the Veneto region and its integration of craft and modernity. In Switzerland, I experienced the strong haptics and sensory details of three of Peter Zumthor's masterpieces, the Therme Vals, St. Benedict Chapel, and Shelter for Roman Ruins. In Spain, I saw a variety of modern architecture in Barcelona, Igualada, Merida, Bilbao, and Onati, as well as detours to historical masterpieces such as the Alhambra. Even with the tight constraints of the pandemic, I am truly grateful for this larger-than-life opportunity. Likewise, despite the limited geographic range of my case studies, I believe that these four case studies have relevance to contemporary issues in architecture as they serve as examples of how and when architecture succeeded in its role of conveying local narratives and identities.

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[1] Leatherbarrow, David. 2015. "Building In and Out of Place." Architectural Design.

[2] Frampton, Kenneth. 1983. "Towards a Critical Regionalism: Six Points for an Architecture of Resistance." In *The Anti-Aesthetic: Essays on Postmodern Culture*, by Hal Foster, 16-30. Port Townsend, WA: Bay Press.

[3] Leatherbarrow, "Building In and Out of Place."

[4] Pallasmaa, Juhani. 2011. The Embodied Image: Imagination and Imagery in Architecture. West Sussex, UK: John Wiley & Sons Ltd.

[5] Moneo, Rafael. 1978. "On Typology." *Oppositions* 22-45.

[6] Leatherbarrow, "Building In and Out of Place."

1 - National Museum of Roman Art, Merida, Spain

Introduction

The National Museum of Roman Art, by Rafael Moneo is an unusual museum. It is designed as a modern basilica with a rigid formal organization, contrary to typical contemporary museums with open, flexible, nonspecific interiors. Why is a rigid basilica a good response to the project brief of a national museum? The museum is an illustrative example of drawing from the past by borrowing construction means and methods, building typology, and haptic experiences, and altering them to create exterior and interior journeys that speak to local narratives and identities. The museum is also a case study in how to draw from context at multiple scales, from relating to the urban environment, drawing from history, and responding to remaining physical vestiges of the past.

Context

Merida, Spain was once the great Roman colony Augusta Emerita, the ninth city of the Roman Empire. Now, it is a small, quiet provincial town in the Iberian region of Spain. The town's Roman ruins are exceptionally intact, with few similarly preserved examples outside of Asia Minor. The National Museum of Roman Art was intended to be the main museum of the Roman State in Spain, a nationally significant museum, rather than a small local museum. The museum was also intended to be the beginning of an archaeological path from the

town to the ruins, as the excavation sites continue to be unearthed between the town and the major ruins complex.[1]

Fig. 1 – Roman Aqueduct in Merida

Fig. 2, 3 – Roman amphitheater near the museum, still in use.

Fig. 4 – Exterior facades of museum

Urban scale

The museum at Merida marries multiple identities and contexts into a contemporary architecture that responds both to Merida's past and to its modern future. The museum was designed to tie the small town to the large-scale Roman ruins and mark the beginning of an axis of archaeological sites between the town and largest complex of ruins. The museum selectively draws from three conflicting contexts, the grand scale, mass and promenade of the Roman ruins, the smaller denser urban fabric, and modern architectural philosophy. The museum borrows the roman construction technology of brick and concrete arches and buttresses that can be seen in multiple archaeological sites across the city. The facades also carry the same verticality, ceaseless repetition, and sense of heavy mass of the aqueduct ruins. The

architect drew selectively from the past, borrowing the haptic sensations of the ruins, their mass, verticality, repetition. However, he does not imitate their original historically accurate state.[2] The museum does not copy the Roman ornament still visible in parts at the ruins. Roman architecture would have covered the brickwork and utilized the classical ornament orders. The amphitheater in Merida still shows fragments of the ruins with highly detailed ornament.

Fig. 5 – Brickwork arches and buttresses at aqueduct

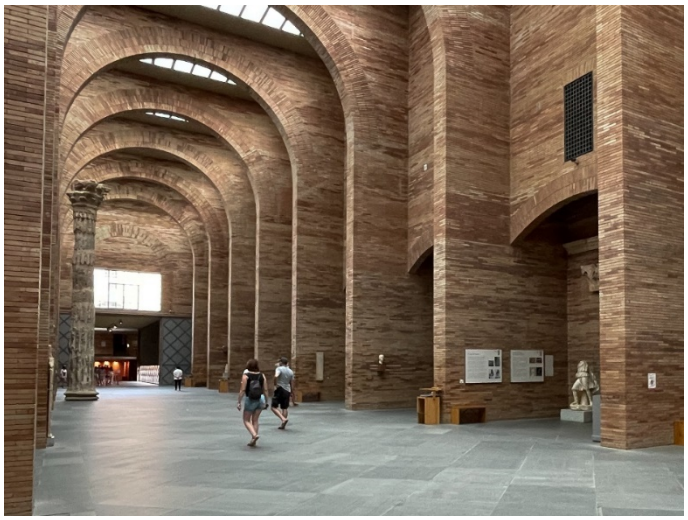

Fig. 6 – Brickwork arches and buttresses at museum

Fig. 7, 8 – Columns and cornice examples of roman ornament on display in museum

Moneo chooses to draw from the ruins in their present state. Their unadorned mass is how ruins reside in our collective imagination, unrefined but grand in scale. He takes parts of the Roman construction technology but not all. Combining contextual construction systems with modern detailing to connect a building to its context and to the present is a reoccurring theme in most of the buildings analyzed in these essays. Moneo draws from the roman brickwork, but the details are undeniably modern, clean and with an aura of newness. The rough bricks and unrefined mortarwork of the ruins are replaced with crisp precise edges of bricks and mortar, clear results of modern machinery. The heterogeneous colored surfaces of the ruins are replaced with a uniform surface. While the construction technology might be Roman inspired, Moneo uses the capacities of modern industry to produce perfect uniformity and homogenous planes, resulting in a building that simultaneously reads as of the past and of the present. The unadorned mass is a distinctly modern proposal and helps the building seem of our time. Moneo caries the past forward while being true to the present, rather than pure historical imitation. His drawing from the past and context is tempered by modern architectural aesthetics.

Even though the museum aspires to be more like the ruins in spirit, the building responds to conflicting contexts. It aspires to the grandeur of the freestanding large scale ruins regardless of being located in the dense small town. The museum does not share any visual resemblances to the street. However, the architecture draws from the

physical characteristics of the street so that the building seems to emerge from the street and belong there. The street is a continuously undulating but unbroken wall of small buildings with a mostly consistent vertical height. The museum matches the typical street building height on the front façade and hides in the back a six or seven story height. Likewise, the front façade is broken into bays that stagger to follow the street edge, mimicking the dense tight knit shifting piecemeal streets of Merida.

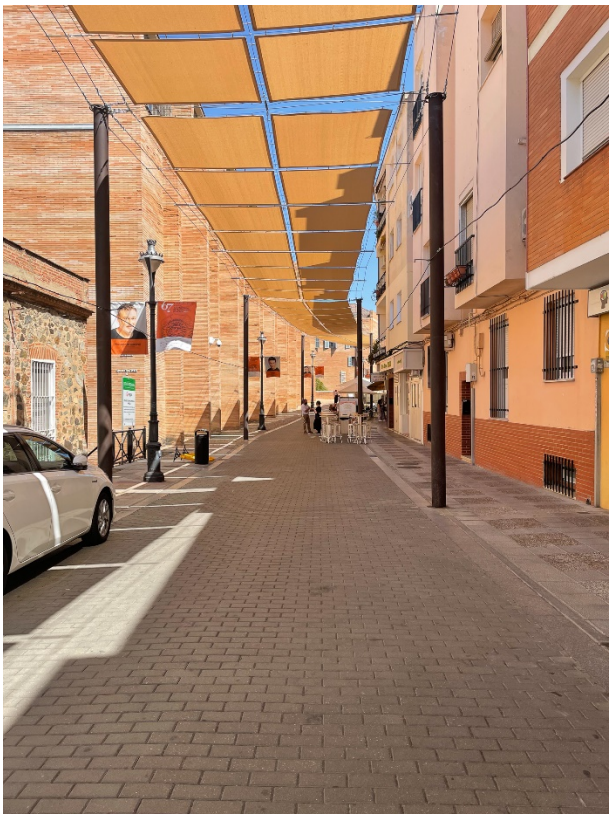

Fig. 9, 10 – Street perspectives

At an urban scale, the building facades present a dialectic identity of the old and new, seeing the Roman past, the present urban fabric of the town, counterbalanced against modern construction details and minimalist sensibilities of large unadorned surfaces. Moneo is selective with his imitation of the context. Every drawing from the context is counterbalanced by modern aesthetics. The result of Moneo's selective copying of the context is an architecture that is connected to the street fabric while bringing a sense of old and new into the town.

Building scale

The museum successfully contributes to the sense of place from a street passerby's perspective by responding to multiple contexts, but how can drawing from place affect the internal experience of the museum? How does drawing from context improve architecture for its inhabitants and visitors?

Each reference Moneo draws from the past improves a haptic experience of the building. Moneo borrowed from the typology of the Roman basilica but was willing to alter and transform the typology. The museum echoes the axis, mass, and promenade of the basilica type. From the basilica typology, he gains an organizing system of a major linear axis and a transverse series of exhibition bays attached to the main open exhibition space in the nave. An open, porous circulation system is atypical of museums. In the museum, no matter where you are, you can look back into nave and see the entirety of the museum while

simultaneously identifying specific exhibits. This allows easy spontaneous movement through exhibitions or a sequential path without any confusion as the whole of the architecture, is always apparent. While the building section resembles a basilica, it is altered to be more porous, where circulation is a multi-level journey up and down dark, enclosed bays and across the open, light-filled nave. The multilevel platforms allow multi-dimensional viewing of the artifacts, where the artifacts can be seen from below, at eye-level, and from above.

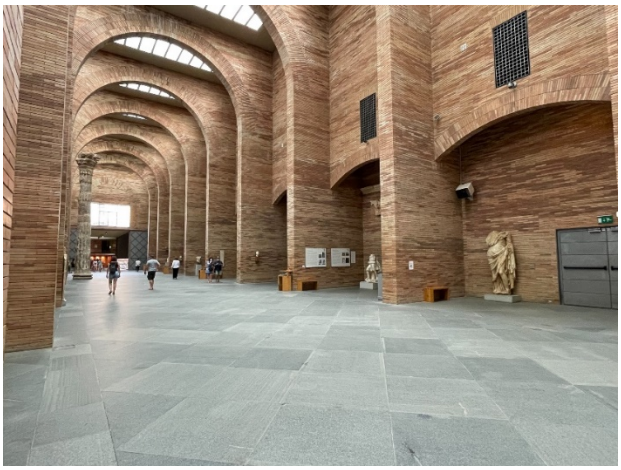

Fig. 11 - Nave space

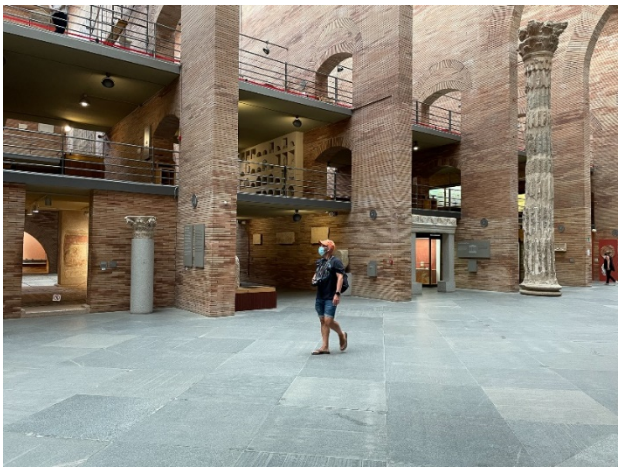

Fig. 12 - Deep multistory bays

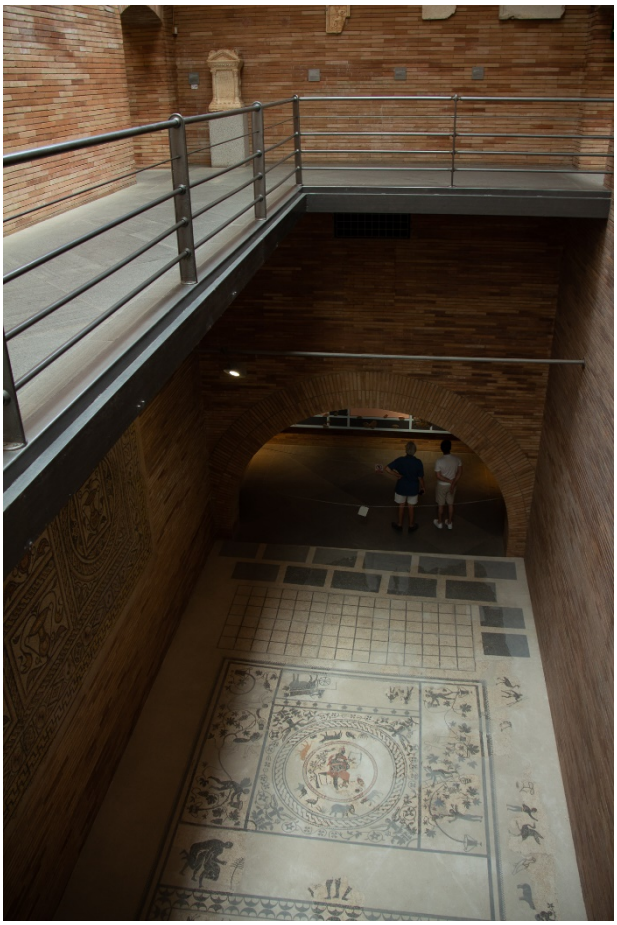

Fig. 13, 14, 15 - Floors and other artefacts viewable from multiple vantage points

Moneo also draws on the haptic experiences associated with the basilica. His imitation of the basilica's mass and promenade lends the architecture the monumentality of the ruins. Furthermore, Roman basilicas are typically dark, somber, candlelit spaces. In this case, the darkness of the basilica type is favorable to the museum. While some fragments are depicted in clear light, other ruins are bathed in shadow. Jun'ichirō Tanizaki, the Japanese novelist, wrote about lacquerware and other Japanese objects whose beauty was perceived better in darkness and dim light, where beauty was deepened by mystery and every flaw was not spotlighted by flood lamps of white light[3]. The darkness is complementary to the fragmentary nature of some artifacts where more is missing than remaining, lending mystery and drama to the ruin, like a side-lit painting, fig 15. Dimness helps form and basic character stand out, whereas in even lighting where every flaw and fragment is highlighted. In the even lighting, nothing is emphasized when everything is read clearly. The placement of some of the ruins in darkness creates a dramatic experience for the viewer, not unlike the experiences of the actual ruins just outside the museum, where there are enclosed cave like tunnels and bright open spaces. The haptics of mass, promenade and light and shadow Moneo stole lend the museum a dramatic narrative and identity.

Fig. 16, 17 Traditional dark, heavy Spanish basilica in Merida, image from Turismo Extremadura, another typical Spanish basilica, Basilica St. Maria del Mar, in Barcelona, image by author

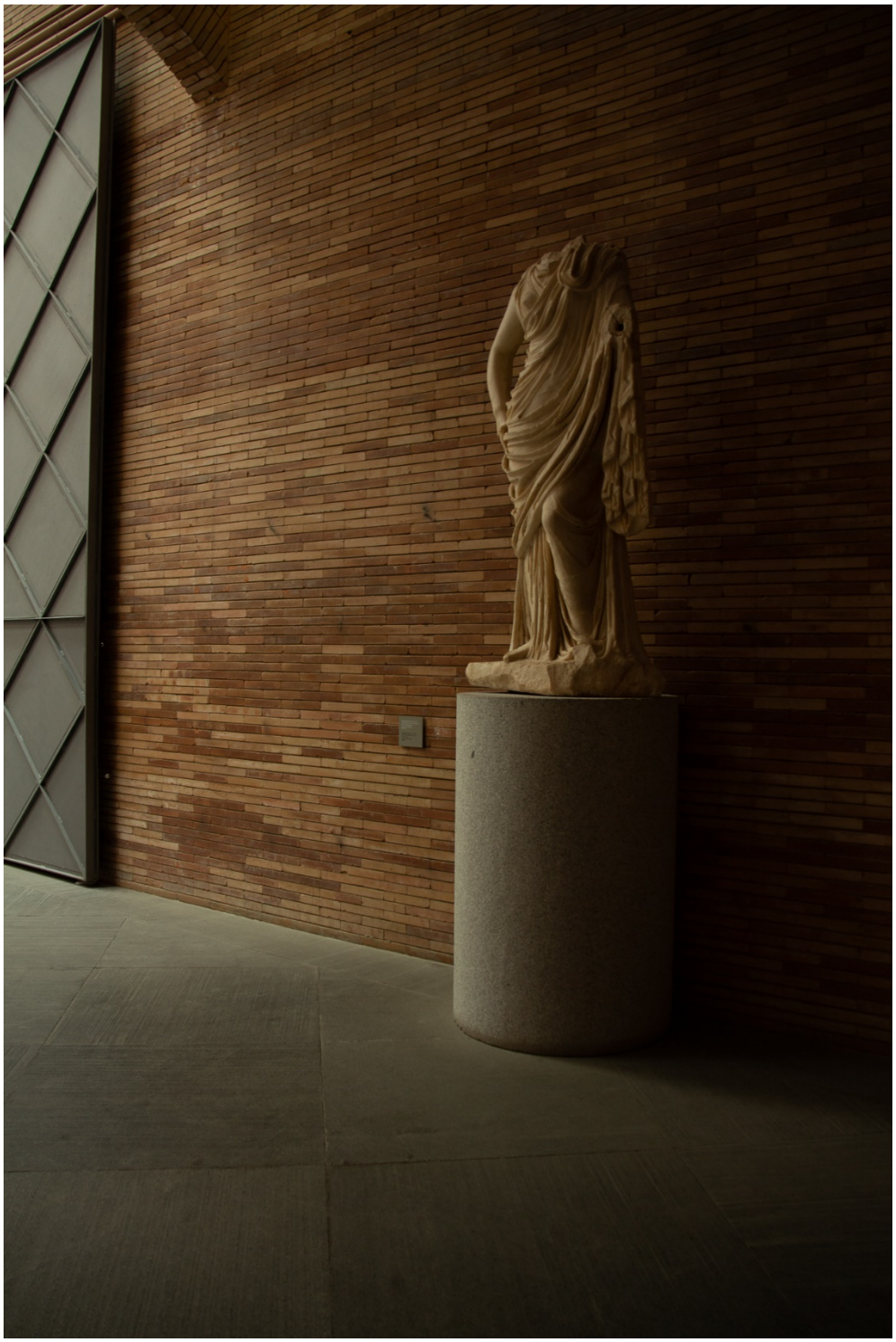

Fig. 18 - Ruins in shadow in side bays

Fig. 19 Benjamin-Constant - Les Chérifas

Moneo altered the basilica type at will and relentlessly. Basilicas gives the impression of weight, with heavy ceilings resting on repetitive massive structural elements. Moneo instead expresses brick as planar surfaces with a non-existent light airy ceiling. The dematerialization of the ceiling contradicts traditional construction where the ceiling has weight and mass. Instead, the lightness of the ceiling plane reads as entirely modern and contemporary. The dialectic between lightness and mass allows a simultaneous reading of old and new. The building seems old and monumental in its mass but modern in its lack of it. The use of deep baffles results in a consistent in-direct lighting condition throughout the building. The light ceiling is an example of using contemporary technology when it serves a purpose.

Fig. 20, 21 - light baffles, and dematerialized ceiling

Often, architecture that is inspired by vernacular or other historical architectural styles attempts to hide its use of modern technology. Moneo fully deploys and presents modern technology allowing a dialogue between past and present, between traditional massive Roman brick construction and modern light construction. The presence of both creates a dialectic identity of being steeped in the past and of being true to the present. Moneo does not fully imitate the technology of the past or hide modern construction capacities. The museum is an exceptional case study for the use of construction technology to communicate dialectic identities. The basement also serves as an example of the opposite approach, a discriminate approach to modern technology. The museum is constructed over an excavation site. It is becoming common practice for archaeological museums and exhibitions to not move artifacts from the locations where they were found, and instead exhibit artifacts where they were found, in situ, preserving their context. The museum is not a trailblazer in this aspect, which is slowly becoming the status quo for archaeological findings. However, the building's relationship with its excavation site is highly unusual. Modern construction technology allows these excavation systems to be fully preserved and negligibly impacted by new construction through minimal slender precise structural systems. However, Moneo felt that while structurally sound, holding up a massive brick building with slender steel columns would erode the haptic narratives of the museums and its communications of weight,

mass, and permanence[4]. Instead, the basement is designed similarly to traditional crypts, where the weight of the building is visibly transferred to the ground through a system of walls and arches.

Fig. 22 - The crypt

Fig. 23, 24 The crypt

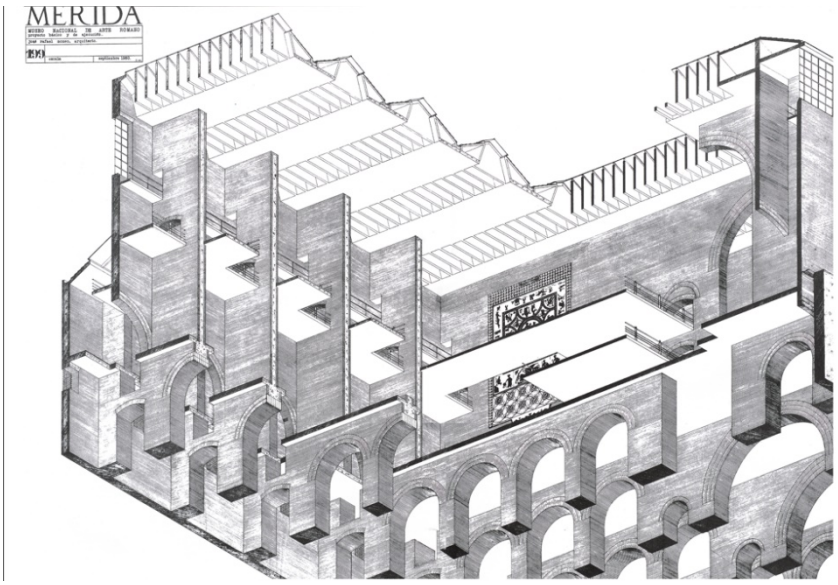

Fig. 25 - Axonometric drawing of construction system by the architects' office

Furthermore, Moneo draws on construction technology in a third distinct technique to draw out the perception of multiple identities in the building. The building is a contrast and dialogue between heavy, mass brickwork that Moneo describes as a "library of stone" and a series of light walkways[5]. The somber, permanent architecture is reinforced by its opposite, a series of walkways that are detailed to seem lighter and temporary. Even though the walkways are concrete, the lightness and thinness of the floors and railways give the sensation of moving across levels and heights of scaffolding. The two opposites of scaffolding and massive construction sound like inconsistent decisions. However, the lightness of the scaffolding-like system deepens the perception of a heavy, somber permanence in the brickwork.

William Curtis describes the presence of the two systems as creating a narrative of old and new, a transient light modern structure within an older, heavier structure, even though both were constructed at the same time[6]. For the museum, construction technology is a vehicle to connect the past and present into a dialectic identity, a vehicle for stealing the haptic experiences of traditional architecture, such as mass and promenade, and marrying them with modern architectural ideas and sensibilities, for example planarity and weightlessness, so that past and modernity read clearly and simultaneously.

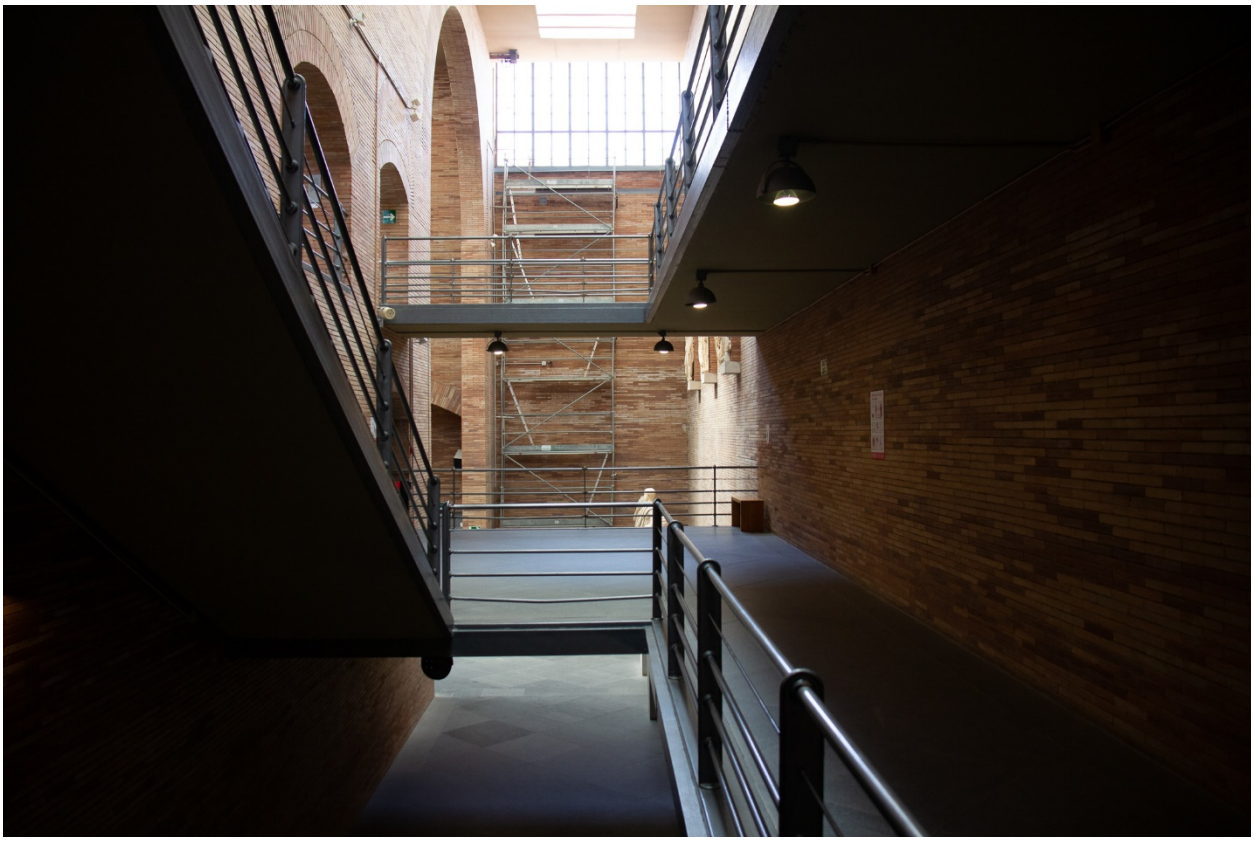

Fig. 26 - Brick bays and multi-level porous concrete walkways, with actual scaffolding for building repairs in background

Artifact scale

Previous sections discussed how the museum responds to the broader context and history of Merida. The National Roman Museum of Art is also a case study in how to respond to physical vestiges of the site history. The museum has an active relationship to physical remnants of its particular site's history, not just the history of Merida and the Roman Empire. The museum holds ruins found in its vicinity and encloses an archaeological excavation in its crypt. Contemporary archaeological philosophy has endorsed the concept of leaving artifacts in situ where they were found to be experienced and understood in their context. The museum is not unique in enclosing an excavation site. This practice is becoming more common, perhaps even status quo. Peter Zumthor's Shelter for Roman Ruins is another example of preserving archaeological sites that I encountered on my Aydelott sponsored travels, fig. 27. The museum is also not unique in maintaining the distinction between old and new. The Venice Charter established in 1964 that historical architecture and artifacts should not be imitated and that modern interventions should be clearly distinguishable as new construction. Carlo Scarpa's work seen in fig. 28 is the prime example of modern interventions being completely distinguishable from past constructions due to modern materials and detailing.

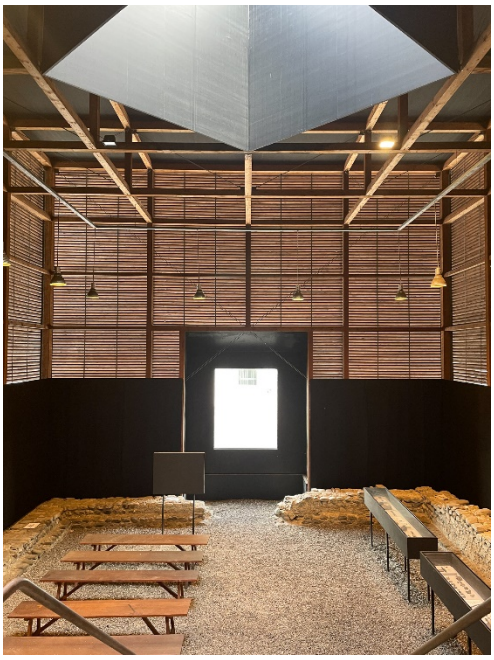

Fig. 27 - Shelter for Roman ruins, July 2021 photo by the author

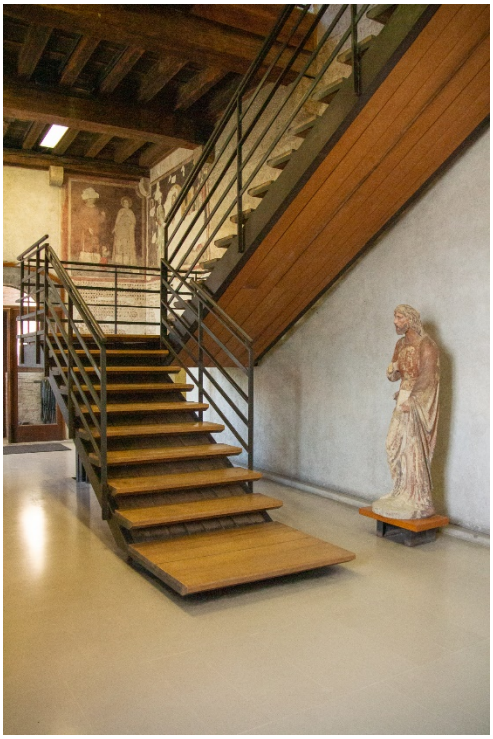

Fig. 28 - New steel staircase, clearly distinguished from existed building, Castelvecchio, Carlo Scarpa, Verona, Italy

The museum is unique in that the architecture creates a distinct field and ground for the perception of the artifacts. Sola-Morales points out in his discussion of the museum, that typical museums are blank canvases for the display of collections[7]. The National Museum of Roman Art is more similar to museums that are the product of adaptive reuse of historical buildings and less like contemporary museums that are constructed with the intent of becoming a museum. Castelvecchio or the Baths of Diocletian are two adaptive reuse museums that exemplify settings that provide a background that contributes to the perception of artifacts.

Fig. 29 - Baths of Diocletian courtyard, Rome, Italy

Fig. 30 - Sculpture against brick setting

The museum is unusual in that it provides a dissimilar background to deepen the perception of the ruins. The brickwork is a ground that aids the perception of the figures. The brickwork is a pure homogenous reddish texture. Bricks are uniform in color, with precise edges in clay and mortar. The ruins are various shades of ghastly off-white. Their textures change from inch to inch, smooth to dappled to eroded, with refined detail directly adjacent to broken off chunks as many busts with missing noses but clear faces will testify. In ruins, form is what remains after the passage of time erodes detail and clarity. Roman art reinforces form and multi-directionality through folds and contour lines as seen in the repetitive folds of the shawl in fig. 30. The brickwork in contrast holds a relentless horizontality through its lines. The clean, precise, unadorned brick holds modern aesthetics in direct contrast to the classical aesthetics. It is in contrast that the brick emphasizes the character of the ruins, like the presence of a large building next to a small church. Both draw out the character of the other more strongly than two similar buildings.

Moneo also imposes new environments and perceptions over the existing site artifacts. The excavation site is a haphazard collection of fragments with few clear narratives or relationships. The crypt could have easily been perceived as a dumping ground for ruins. Instead of respecting the existing character of the excavation site and leaving the crypt as an overwhelming sea of fragments, Moneo imposes a new vision and order over the past and its physical remnants. The crypt is a precedent for not complying with the past and

allowing for change and improvement. The grid of walls and arches instills a sense of order, allowing the sense of chaos of the ruins to be perceived second instead of the primary impression. Moving through the walls and arches feels like navigating an abandoned workshop, but the walls primarily provide a backdrop of consistency for the mix-match of ruins. The walls and openings also break up views so that a visitor only perceives a cluster of ruins at a time, slowing the experience to be digestible rather than overwhelming. The new order imposes a new environment that frames the perception of the past.

Fig. 31 - Crypt entry

Fig. 32, 33 - Crypt bays, roman house, and unknown collection

Similarly, the museum alters the perception of another vestige of history, the Roman road. The roman road is dug out to where the full

depth of its construction is visible. In its heyday, the road would have only been experienced as a surface. The visibility of its depth and immense scale of construction is a new and more relevant perception of the road to a present visitor. Through the architecture of the museum, Moneo redesigns how the past and its physical vestiges are perceived and amplified in character. The museum transcends the Venice Charter and its philosophy of distinction with a willingness to impose and change the past artifacts.

Fig. 34, 35 - Roman road surface and looking back at depth of Roman road under staircase

Conclusions

Museums often represent cities and serve as beacons of a city's identity. Architectural theorist David Leatherbarrow writes on the need for architecture to "recall what a location has been while indicating what it is becoming"[8]. The National Museum of Roman Art propagates a dialectic identity of Merida's past and future, by drawing on Merida's history as a Roman colony and reimagining that tradition into modern architectural detailing and aesthetics.

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[1] Moneo, Rafael, Fernado Marquez Cecilia, and Richard Levene. 2005. *Rafael Moneo: 1967 - 2004 Omnibus Volume.* Madrid: El Croquis.

[2] Curtis Jr, William, and Rafael Moneo. 2005. "Autumn 1999 Interview." In *Rafael Moneo: 1967 - 2004 Omnibus Volume*, by Rafael Moneo, Fernado Marquez Cecilia and Richard Levene. Madrid: El Croquis

[3] Tanizaki, Jun'ichiro. 1977. In Praise of Shadows. Stony Creek, CT: Leete's Island Books.

[4] Moneo, El Croquis Omnibus.

[5] Ibid.

[6] Curtis, El Croquis Omnibus.

[7] de Sola-Moreles, Ignasi. 2005. "Base, Surface." In Rafael Moneo: 1967 - 2004 Omnibus Volume, by Rafael Moneo, Fernado Marquez Cecilia and Richard Levene. Madrid: El Croquis.

[8] Leatherbarrow, David. 2015. "Building In and Out of Place." *Architectural Design.*

2 – Grand Mosque of Rome, Rome, Italy

Introduction

The Grand Mosque of Rome is a modern vision of a traditional typology, an image of a mosque specific to its place and time. The building clearly conveys a narrative of belonging simultaneously to Islamic tradition and the present times, of belonging to the minority community as well as the city of Rome and the surrounding Italian landscape. After visiting the mosque, I understood the need for architecture to clearly represent specific local identities and the resultant positive emotional wellbeing that comes from seeing your identity embodied in architecture. The architecture blends Roman and Islamic traditions seamlessly into a vision of a minority culture integrated into Rome. The use of typology, craft, materials, geometry, contextual and modern construction to convey local narratives is why the Grand Mosque of Rome is a relevant case study for practice today.

Fig. 1 – Mosque exterior perspective

Fig. 2 – Mosque interior

Fig. 3 – Arcade walkways leading to prayer hall

Context

The mosque is set near Mount Parioli in the suburban outskirts of the city. It was designed by Italian architects Paolo Portoghesi and Vittorio Gigliotti and Iraqi architect Sami Mousawi. Planning for the mosque began in 1974, but inauguration was more than two decades later in 1995.

Typology

The Grand Mosque of Rome is a unique vision of the mosque typology, one that is specific to Rome and to modernity. The building serves as a case study for collaging familiar archetypes, but also for deeply understanding the motives behind a building type and then reimagining how those motives can be achieved in a way that speaks to the present and to the local identities. The mosque reimagines the traditional mosque typology with a promenade that incorporates familiar spatial archetypes, modern form and geometry, and the Mount Parioli landscape into a dialectic narrative of Rome, Islam, and modernity. The same architectural decisions that promote the sense of place and identity in the mosque also serve a twofold purpose to further imbue the architecture with a sacred, meditative power.

The mosque is a collage of urban and architectural archetypes drawn from Rome and Islamic traditions. These exterior urban elements strengthen the promenade preluding prayer while embedding familiar icons of cultural memory across the site. The city's use of grand staircases as public exterior space is echoed into the twin monumental

stairs of the mosque, recalling Rome's iconic use of urban stairs such as the Spanish Steps, Palatine Hill, and Capitoline Hill. The addition of a vertical ascent along large scale staircases adds grandeur and importance to the procession preceding entry to the prayer hall. The city's insistence of a piazza, an open space around every basilica, and the subsequent plaza at the foot of the mosque balances the large mass and enclosure created by the building with a sense of vast openness. These staircases and plaza extend the public space used for festivities to the beginning and end of the site and allow for parade-like movements. The architects added a third exterior gathering space to the promenade of the mosque, a courtyard more inwardly focused and private at the heart of the exterior complex. The colonnaded courtyard creates a shaded, more enclosed exterior space for worshippers where attention is focused on the sky captured by the courtyard eaves and the water feature in the ground. The use of a colonnaded courtyard or cloister has a long history in Rome, even dating back to ancient Roman houses that featured an internal covered cloister. Likewise, the use of arcades and the resulting light and shadow patterns cast by the arcade is also an iconic feature of Islamic architecture.

Fig. 4 - One of twin monumental staircases of mosque

Fig. 5 - Entry plaza of mosque

Fig. 6 - Courtyard at mosque, adjacent to main prayer hall entry

Fig. 7 - Typical Italian cloister at the Baths of Diocletian in Rome

Fig. 8 - Moorish-Hispanic example of arcades in Islamic architecture at Alhambra, Grenada, Spain

The last urban archetype the mosque incorporates is the prolific use of water in the city of Rome and Islamic architecture. In Rome, fountains add definition to public spaces, such as adding a vertical element to a long horizontal open space such as in Piazza Navona or emphasizing the corners of a street intersection in Quattro Fontane, the four fountains. Fountains have been used as a meditative device in Islamic architecture and also as a climatic mediator, adding moisture to hot and dry climates. The water features at the mosque are individual fountains with water channels linking the fountains into a spatial chain that ties the different exterior spaces together where water moves from the elevated courtyard, down the central stairs into the fountain of entry plaza. This strengthens the order of the procession of entry into the complex to the prayer hall. Through the

exterior gathering spaces, the mosque gains recognition and familiarity through cultural memories of these archetypes. From these urban and architectural archetypes, the promenade of the mosque is composed of powerful exterior spaces with the plaza embodying vast openness and the courtyard adding an intimate experience with the sky. These archetypes create a progression from vast public open space to introverted enclosed space preluding the beginning of prayer. The progression moves attention from vast publicness to a private inward focus.

Fig. 9 - Linkage of water from plaza to inner court

Fig. 10 - Water feature in inner courtyard

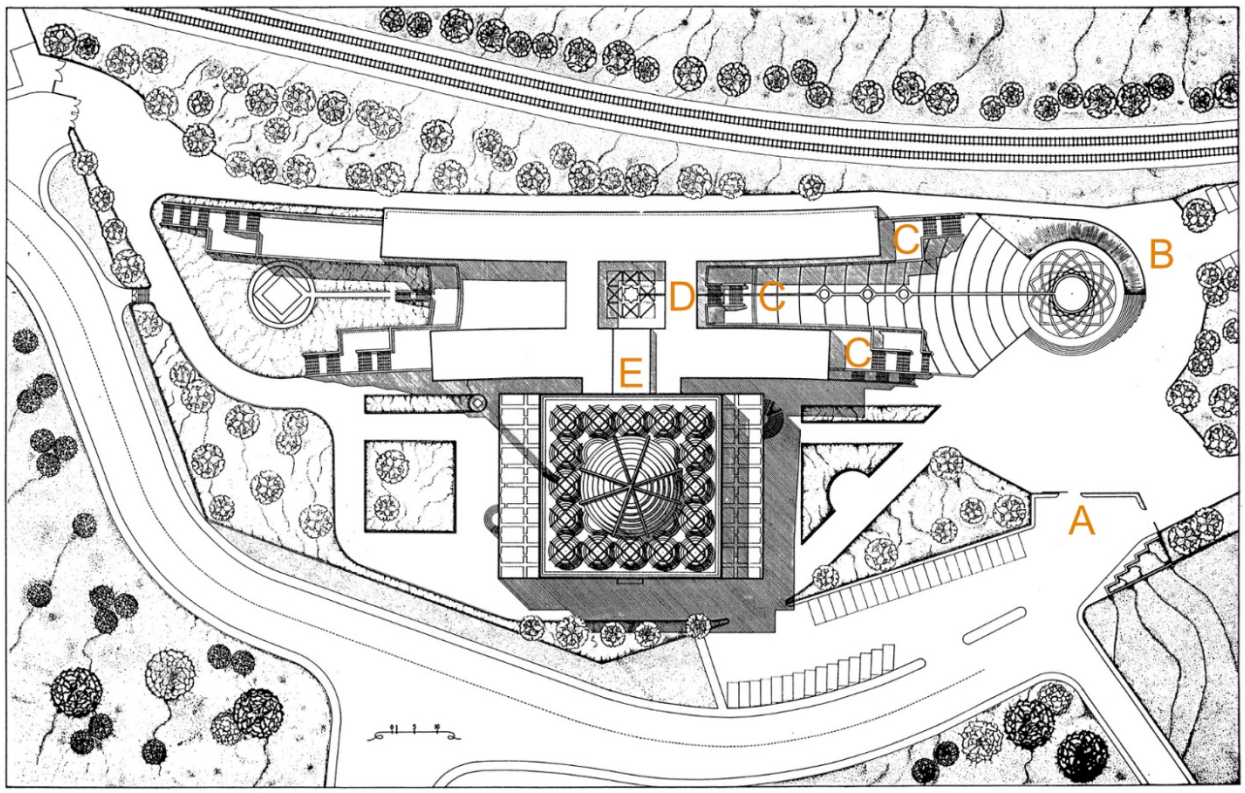

Fig. 11 - Site plan by the project architect, Portoghesi, with spaces labeled as the following:

A – Entry gate, B – Entry plaza, C – 3 Entry staircases

D – Courtyard, E – Primary prayer hall entry

The Grand Mosque of Rome respects and follows the intentions behind Islamic religious spaces, to induce meditative and serene states, often through light, geometry, and nature. The mosque is successful at achieving that intention with its own means and methods, incorporating form, geometry, promenade, and landscape. The goals of of the mosque typology are accomplished with a new modern tectonic and geometric language as well as a procession and siting that thrives off the landscape of Mount Parioli.

The arcades of the mosque are conceived in a new modern abstracted geometric language but still share the dramatic interplays

of light and shadows Islamic colonnades are known for. There's a horizontal pattern of light and shadow gradients between the tendril portions of each tree column. Light moves across each of the four tendrils differently, casting a variety of sharp and soft shadow gradients across the curved forms, rectilinear planes, and the crisp edges of the tree forms. The patterns of light and shadow across each column pull the eye down the perspective of the arcades. The shadow patterns in the individual column cluster and the patterns across the arcade create an atmosphere of serenity. Arcades in Islamic architecture are known for strong figural shadow patterns. This arcade of the Grand Mosque of Rome is a multidimensional painting of light and shadow in an abstract geometry that speaks to modernity.

Fig. 12, 13 - Interplay of shadow and light across one column group is echoed down a longitudinal axis.

Islamic art is often based on highly intricate and complex geometric patterns, echoing the religious idea of a complex unfathomable cosmos. The mosque's serene environment is amplified by its geometry that speaks to themes of complexity and infinity in a more modern graphic language. The surfaces of the mosque, its railings, ceilings, and paving propel the eye down repetitive patterns with various degrees of complexity and intricacy. These are modern patterns of infinity that create serenity with the aid of long perspectival views.

Fig. 14 - Railing and cladding pattern

Fig. 15, 16 - Arcade ceiling patterns

The geometry of the mosque is supplemented by a surprising procession that aids its mission of creating a meditative atmosphere. Once the visitor ascents the steps into the arcades, all paths frame the landscape, where the end of every perspective is the distant treetops. The entry façade of the prayer hall is discovered by accident by the visitor, almost hidden away. When walking down the arcades, the visitor's sights are focused out past the mosque to the landscape with the prayer hall entry is barely perceptible, see Fig. 17. Halfway down the arcade, the ceiling plane unexpectedly rises, and the visitor finds the entry to the prayer hall to the side of the long axis created by the arcade, see Fig. 18. Before the ceiling rises, the entry is almost imperceptible to a visitor. This tucked away entry is reminiscent of the Japanese novelist Tanizaki's descriptions of Japanese architecture of temples and houses; The deep shadows of the eaves make entryways, doors and other elements disappear into the dark.[1] The entry to the prayer hall invoked quiet awe and surprise when it was delicately revealed. The placement of the entry is recessed adjacent to the arcades rather than becoming the target of attention as the end of the arcade's long axis. Instead, the promenade of the arcades keeps attention focused out onto the landscape, where light, shadow and nature hold a visitor's attention rather than the final destination of the prayer hall. This makes the experience of the promenade more outwardly focused and meditative.

Fig. 17 - Arcade where prayer hall entry is almost imperceptible

Fig. 18 - View of entry to prayer hall from entry arcade

Fig. 19 - View of entry to prayer hall from more distant arcade and opposite side of courtyard. Visitors would come from entry arcade in the back left and unexpectedly find the large vestibule and entry.

The promenade of the mosque incorporates "landings" where there is a pause in the procession and the architecture reorients the visitor. David Leatherbarrow describes flow in space as an invention of modern architecture, where architectural spaces flow in a continuum in a building. Leatherbarrow defines landings as spaces where that flow is interrupted, a pause introduced, and space is reoriented. He describes landings as "serving as *clearings* by conferring orientation and giving the sense that something new is about to begin".[2] The mosque has three spaces where the viewer is reoriented towards the landscape. The entry plaza frames a brake of umbrella pines. The plaza marks a sense of arrival at the beginning of the promenade to the prayer hall. The ends of the arcade open onto a terrace overlooking the hilly

forested landscape after anticipation is built up from glimpses of the landscape along the arcades. The cloister reorients the visitor to the sky captured by the crisp roof edges and the figure ground relationship established between the sky and the minaret tower. The three spaces are pauses where the architecture redirects attention outwards onto the Mount Parioli landscape. These landings allow for reflection on nature, such as the muslim spiritual practice of reflecting on the beauty of creation and reciting praise for God. The architecture's capture of the Mount Parioli landscape deepens the insertion of the mosque into the landscape and the visitor's sense of place.

Fig. 20 - entry plaza

Fig. 21 - Sky against courtyard and minaret

Fig. 22 - End of arcades overlooking forests of Mount Parioli

Tectonics

The mosque utilizes craft, geometry, ornament, and construction technology to create a clear merged identity of Rome and Islam, as well as narratives of continued tradition transformed into modernity. The tectonics of the mosque tie the architecture back to the immediate landscape, to the city of Rome, to Islamic cultural traditions, Islamic art, and to visions of a modern future.

The structure, materials and construction technology of the mosque are in part how the architecture creates a dialectic identity of place. The mosque keeps traditional crafts such as the ceramic tile and Persian carpet traditionally associated with Islamic architecture. Some areas are predominantly clad in traditional crafts and patterns such as the women's area, while others are split with both traditional and modern ornament. On top of the Islamic crafts, the mosque reflects the building traditions of Rome, with the travertine and brick construction Rome has been known for pre-dating the Coliseum.

Fig. 23, 24 - Ceramic tile in interior of mosque

Fig. 25 - Carpet for prayer hall

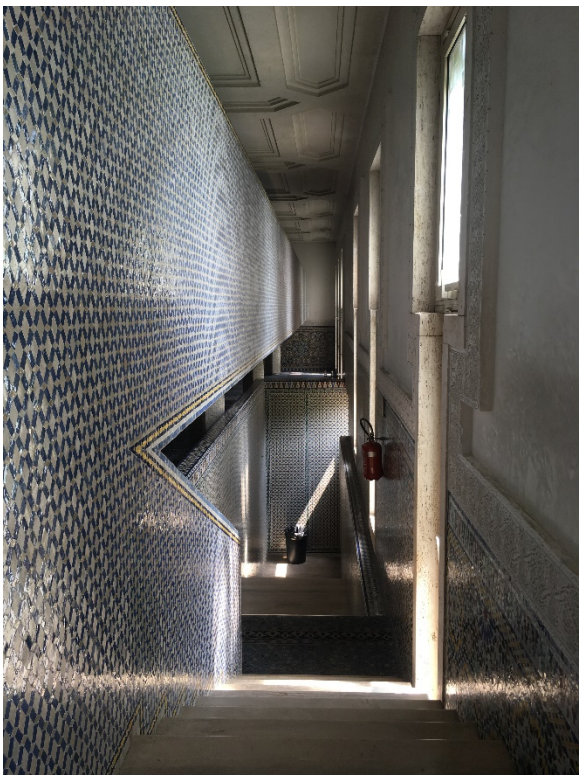

Fig. 26 - Stairway to women’s prayer area

Fig. 27 - Typical long and thin Roman brick and travertine (white limestone)

Fig. 28 - Travertine and brick cladding

The mosque creates a ground of both traditional Roman and Islamic materials to which it adds dynamic and sculptural figures of modern concrete technology, with the tree-like columns and complex dome structures. The continuity with traditional materials is counterbalanced against an expression of the capacities of modern technology, making new images of traditional elements of Islamic architecture such as domes and arcades.

The complex forms of the mosque ceiling might not seem modern to someone unfamiliar with Islamic architecture as the structure is incredibly intricate and detailed. The ceiling is 16 smaller domes circling one larger dome. The ceiling structure is more abstract in that its forms are sharp-edged rectilinear extrusions rather than organically inspired softer rounded extrusions. The ceiling lacks a secondary layer of smaller scale ornament typical to Islamic architecture, such as basketry patterns, latticework of vines, or other patterns forms of ceramic tile or wood carving that would have been applied over the white forms. Instead, the ceiling is a pure expression of geometric complexity.

Fig. 29 - Interior concrete sculptural ceiling

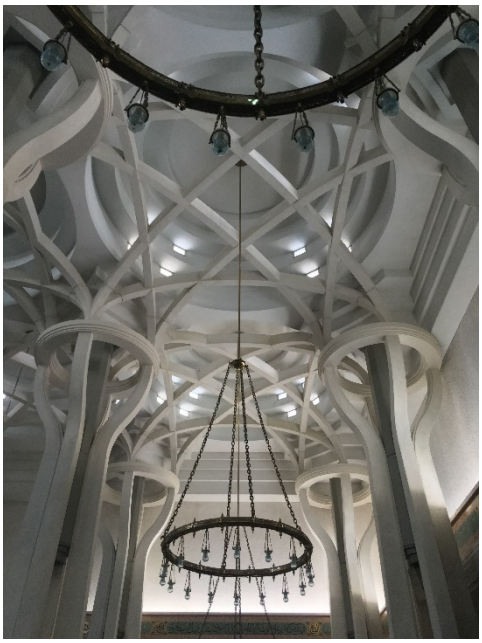

Fig. 30 – One of the 16 smaller domes in Fig. 29

Fig. 30 - Interior concrete sculptural ceiling

Fig. 31 - More traditional ornament on dome at Alhambra, Granada, Spain

The mosque also maintains the complexity and intricacy of Islamic graphic arts, but creates its own new modern patterns, as seen in the mosque ceiling and exterior cladding. The mosque ceiling structure resembles the vine patterns used in Islamic ornament, only reimagined into three dimensions. Architecture also has a long history of being a vessel for symbolism, cultural myths, and ideas. In the mosque, the ceiling reflects the belief of seven layers of sky, where the domes are created of seven stacked layers that filter light into the mosque.

The railings along the exterior walkways and the building cladding shares the same ideals of Islamic art, meditation through repetition, and an imitation of the complexity of the universe through art. The mosque incorporates surfaces that imitate the traditional

Islamic arts, such as the exterior ceilings, but these are paired with new modern, more abstract patterns such as the repetitive, concentric patterns of the railings and building cladding. Combining traditional patterns with new modern offshoots creates a dialogue with tradition, where principles remain, and the transfiguration from past to present is visible.

Fig. 32 - Typical complex geometry in minaret door and

Fig. 33 - detail of minaret door, shows typical vine ornament seen in Islamic architecture and graphic arts, from Met Museum collection[3],

Fig. 34 – New oscillating patterns

Fig. 35 - Seven layered dome and swirling patterns reminiscent of typical arabesque vine ornament patterns in Fig. 33.

Geometry of the mosque also relates to its siting in the Mount Parioli landscape of Rome. The city is known for its seven hills, where hills and their landscapes such as Palatine hill are iconic identifiers of the city. The mosque takes the landscape as a source of geometry for the building massing and column geometry. The building massing is built up into a ziggurat, a small mountain that sits beside Mount Parioli and frames and overlooks the treetops of the landscape. The mosque columns seem like abstracted umbrella pines, trees that are tall and slender with a high fan-like canopy. The umbrella pine tree is a symbol of Rome, covering the city and the direct surroundings of the mosque. References from the landscape become modern abstracted forms that tie the mosque to its context but also to an identity of modernity and the present.

Fig. 36 - Built up levels forming ziggurat building shape

Fig. 37 - Tree colonnade

Fig. 38 - Umbrella pine tree forest

Fig. 39 - Individual umbrella pine trees surrounding mosque

Conclusions

The mosque coneys a simultaneous identity of Rome and Islam. The architecture communicates that the mosque belongs to the present and ongoing future of the modernity but is still rooted in tradition. This dialectic identity is constructed with threads of continuity with the past and new contrasting elements of modernity. In the mosque, modern geometry and tradition crafts coexist, creating dialogues of a past and future in harmony. There is also an overlay of Roman and Islamic typologies that connect the mosque to the city. The typology has been reimagined for its time and place through modern construction technology and structural systems to create new images of traditional elements. Though these means, the mosque successfully marries sense of tradition with the particulars of place and time.

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[1] Tanizaki, Jun'ichiro. 1977. In Praise of Shadows. Stony Creek, CT: Leete's Island Books.

[2] Leatherbarrow, Architecture Oriented Otherwise

[3] Met Museum. n.d. Pair of Minbar Doors. Accessed Dec 18, 2021. https://www.metmuseum.org/art/collection/search/444812.

3 – Sagrada Familia, Barcelona, Spain

Introduction

The Sagrada Familia is a case study in how architecture can respond to present aspects of place, communicating what a place was and what it is becoming. The architecture speaks to tradition but also to the cultural and technological shifts of its time through art, ornament, geometry, and structure. The basilica draws from the Catalan identity, its light and colors, its traditional building crafts, to create an image of a basilica that speaks to local heritage but also how the identity of the region is evolving.

Fig. 1 – Apse of the Sagrada Familia

Context

The Sagrada Familia is under construction in Barcelona, the urban center of the Catalan region of Spain. The basilica has had at least 19 different architects since its first architect in 1882. The basilica, which is considered to be Antoni Gaudi's vision, is estimated to be completed by 2026. When Gaudi was working on the church, Barcelona was in the midst of social and cultural change. There were tensions between the Catalan regional identity and a desire for autonomy against Spanish nationalism. Modern art was charting new avant-garde courses at the turn of the century, including new movements of Impressionism and Cubism.

Reference and Invention in Typology and Tectonics

Gaudi respected facets of the gothic basilica typology but chose to progress the image of a Catalan gothic basilica into modernity. When construction on the basilica began, Gothic Revival was in full spring in Barcelona and across the globe. The Gothic style was seen as symbolic of the old city in Barcelona, where the Gothic quarter of the city was seen as local cultural wealth.[1] The tendency to recreate historical styles under the guise of local identity is still prevalent in the built environment today, like new houses built in the plantation style in the southeastern US. The Sagrada Familia's first architect initiated construction on the project as a Gothic revival church prior to Gaudi's involvement. What is remarkable about Gaudi's response to the trend of Gothic revival is that Gaudi drew selectively from the Catalan Gothic architecture unlike his predecessor's

imitation and cloning of the past. Gaudi was highly critical of the Gothic, seeing architectural problems left unsolved. He was also aware of the local building traditions and cultural wealth in the Catalan Gothic architecture that were distinct to the region, such as its attunement to the regional quality of light and color. He drew from the Catalan Gothic architecture principles that guided his modernist basilica rather than cloning the image of the Gothic basilica. In the Sagrada Familia, he rebuked revivalist trends as a means of connecting to regional identity. Gaudi recognized in the Gothic, a valuable progression of structural methods, seeing a foundation of knowledge to further progress, not imitate. He was highly critical of the structural problems remaining unsolved in the Gothic, seeing the use of flying buttresses as vulnerable crutches left exposed to the elements. One of his assistants said that building a Gothic cathedral with its flying buttresses in the age of the skyscraper would have little relevance, seeming antiquated.[2] Gaudi's era was the time of visible structural ingenuity and progress where methods like graphic statics were enabling new structural feats. Gaudi was not interested in blindly copying the Gothic, but he recognized within the Catalan Gothic aspects that were deeply rooted in place and identity beyond stylistic images: its attunement to the Mediterranean light, its polychromatic vibrance, the highly sophisticated geometries of local masonry crafts, and the didactic expressions of structure and their forces, and the use of structure as a space-making device.

The Catalan Gothic was designed for the light of its climate, a stark, strong light that illuminates forms and casts intense

contrasting shadows. Sweeny and Sert write of the distinguishing character of the Catalan variation of Gothic architecture:

> Catalan Gothic has special characteristics. It is a Mediterranean form of Gothic with small windows designed for a land of bright sunlight. It is flat roofed and uses sculptural details that are conceived with a view to their strong shadow effects. It is bold in its structural approach and has left its mark on churching building over a wide region from Southern France to those remote corners of the Eastern Mediterranean to which Crown of Aragon extended its influence. [3]

In Catalan, architectural skin was designed with a mind for sculptural effects, where masonry becomes chiaroscuro paintings of strong light but complex shadows as well. Gaudi believed throughout his career that the skin of his architecture should respond to the specific qualities of his region's light. He described the light in Catalan and the Mediterranean as in between the "blinding light of the tropics" and the "Northern lack of light which creates ghosts". This Mediterranean quality of light is neither blinding in its strength nor obscuring in its weak faintness. Gaudi spoke to the remarkable ability of Mediterranean light to clarify forms. He believed that the Sagrada Familia should respond to the Mediterranean light, instead of the misty light of the north that influenced the French basilicas.[4] To understand the attunement of architecture to regional light, looking at the misty light of Japanese climate in comparison to the bright Catalan climate can be illuminating. In an interview, Tadao Ando

describes the quality of Mediterranean light as exacting in comparison to the Japanese climate:

> At times the Inland Sea of Japan recalls features of the Mediterranean: the islands, the vegetation, the maritime trade routes, the ancient history. But it is, of course, on a smaller scale, and there is not the same sense of exactly delineated forms, for the light and atmosphere are different. Perhaps this is one of the essential qualities which makes Japanese architecture of the past so different from the architecture of Greece or Rome. For surely architecture responds in its origins to the natural characteristics of the given locality. In the Inland Sea everything exists in the mist. There is no clear outline as you might find in the Mediterranean… Anyway, in the Inland Sea water is everywhere, including the air, which is full of humidity. This affects the light which has a hazy, trembling quality. [5]

Tanizaki writes that Japanese architecture serves to capture rays of dying light.[6] Catalan architecture instead captures the strength of light by creating visual comparisons between where light is strong and fully visible and where light is absent in strong dark shadows. Stark strong light affords the opportunity to paint with darkness, as seen in the façade sculptures. The shadows in St. John statue and the bone-like elements are like brush strokes in ink painting, where the shadows are beautiful figures on the stone. Architecture is a means by which the character of light is made apparent. The stained glass shows the strength of the Mediterranean sun, as the glass colors how deep

light moves into the building, where light penetrates far past the side nave adjacent to the glass. This coloring makes the depth of the light's penetration visible and measurable, attesting to the strength of the light of the climate, bringing a latent characteristic of light into attention. Gaudi created circumstances where the local characteristics of light could be experienced strongly, reminiscent of Louis Kahn's statement, "The sunlight did not know what it was before it hit a wall". Architecture has a role in amplifying our experience of place, pulling out latent qualities of place and making them visible.

Fig. 2 – Distant elevated view of Passion façade overlooking park, photo not by the author, image by Basilica de la Sagrada Familia organization

Fig. 3 – St. John sculpture

Fig. 4,5,6 – Details of the Nativity façade

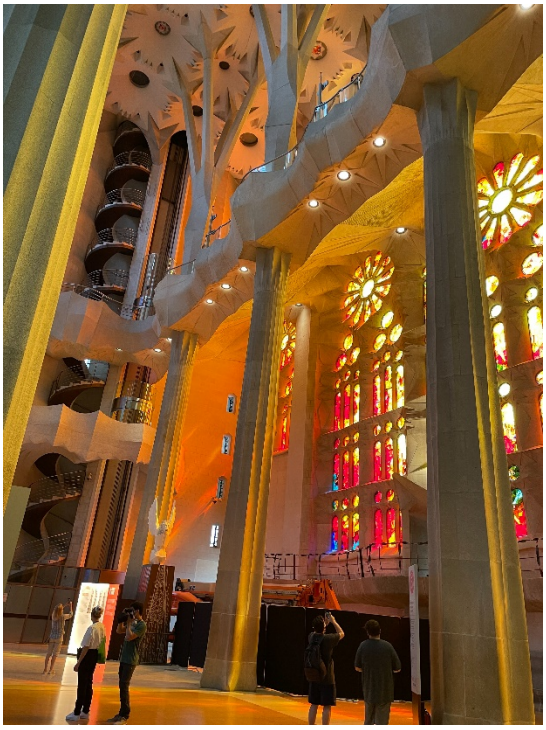
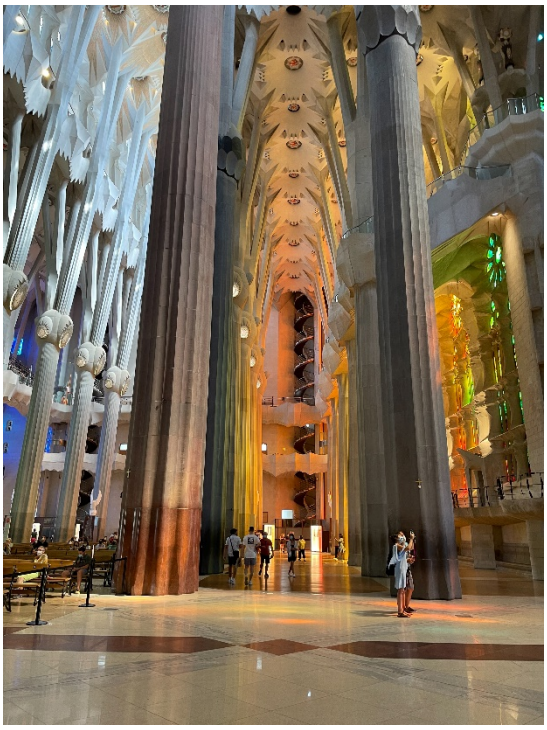
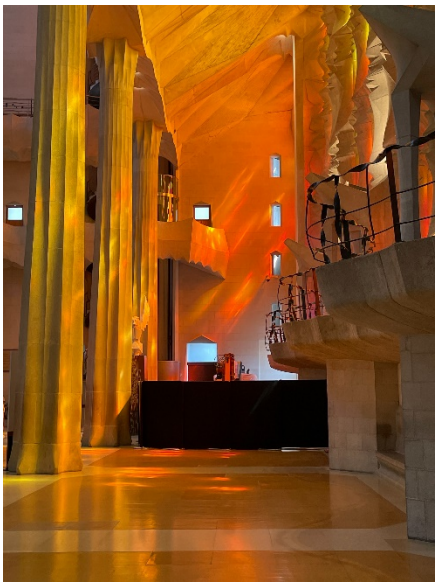



Fig. 7, 8 – Depth of light made apparent by stained glass

The use of a diverse, bright color palette is a hallmark of Catalan region. During the Arab occupation, Catalan and much of Spain gained a distinctive use of color in the exterior architectural skin and interiors through ceramic tile. Gaudi described a rich tonal palette as part of the regional identity, where a French impressionist painting would incorporate their misty colors of the north, and a Catalan impressionist painting would be bold, bright tones required by the brilliance of sun.[7] Gaudi is known for building skins that incorporate color through the local craft of colored mosaic tile. Gaudi was critical of his contemporaries' limited palette of color in basilicas, where color was restricted to different shades of stone. Catalan basilicas once used bright colors to bring attention to their structural members. Gaudi had planned to paint all the stone in the basilica interiors before his death.[8] Instead and perhaps more

meaningfully, the light of the stained glass windows paints the stone in colored light, an extraordinary engagement with color that changes with the movements of sun and climate outside.

Fig. 9 - Close up of colored mosaic tiles on pinnacle of towers, Photo from Basilica de la Sagrada Familia organization



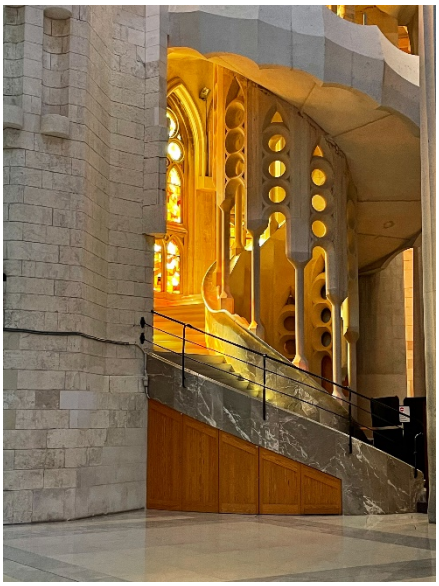


Fig. 10 – Painting of stone with colored light

Fig. 11 - Use of colored light with yellow toned staircases

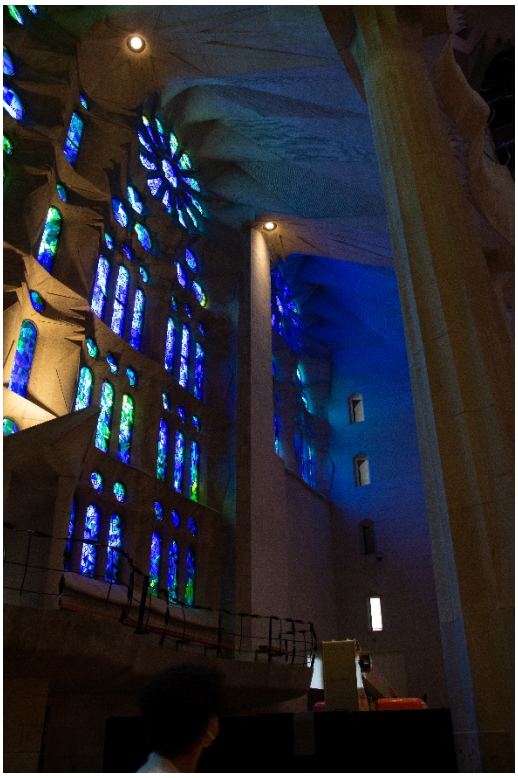


Fig. 12, 13 - Eastern side of basilica with blue and green hues

Fig. 8 - Western side of basilica with orange and red hues

Catalan Gothic architecture had standing worldwide for its structural expression, especially for the highly refined and complex masonry craft of the region. The Catalan region is still known for its mastery of "Catalan vaulting", highly skilled thin brick structures where parabolic forms draw strength from their geometry rather than mass. The parabolic curves in Catalan vaulting allow the masonry to loaded mostly in compression with reduced tension, matching masonry's strength in compression and its susceptibility to cracking under tension forces. The forms are self-supporting in construction, requiring little scaffolding[9]. The craft is iconic of the city of Barcelona. Gaudi spent his career working with the boveda tabicada and other elements of Catalan masonry. Even when working with stone instead of the unique Catalan thin bricks, he still designed in the same structural principles behind the Catalan brick masonry. The use of local tectonic and building traditions in modern architecture is not unique to Gaudi's work with Catalan masonry. There are diverse precedents for local building crafts reimagined with modern detailing across the world: Carlo Scarpa with Venetian craft, Balkrishna Doshi in India, and even in contemporary times with Wang Shu in China. Gaudi lends the stone and brick masonry crafts of Catalan new geometries of modernity. In the side sacristy halls of the basilica, the traditional doubly curved thin brick Catalan vaults are exposed and contrasted by faceted modern geometry in stone. Throughout the basilica, masonry was given a new diversity of modern geometries; At times the masonry is either faceted, muscular, or even primitive. The use of modern geometric language in traditional crafts is continued by successive

architects and artists after Gaudi's death, such as the faceted abstract geometries in the stained-glass windows of the Sagrada Familia. Gaudi gives the masonry new geometric languages to speak to modern values and identities, reimagining the regional craft for a modern age.

Fig. 11, 12 – Catalan brick vaulting and new faceted geometries

Fig. 13 – Stone in shape of abstract tree canopies

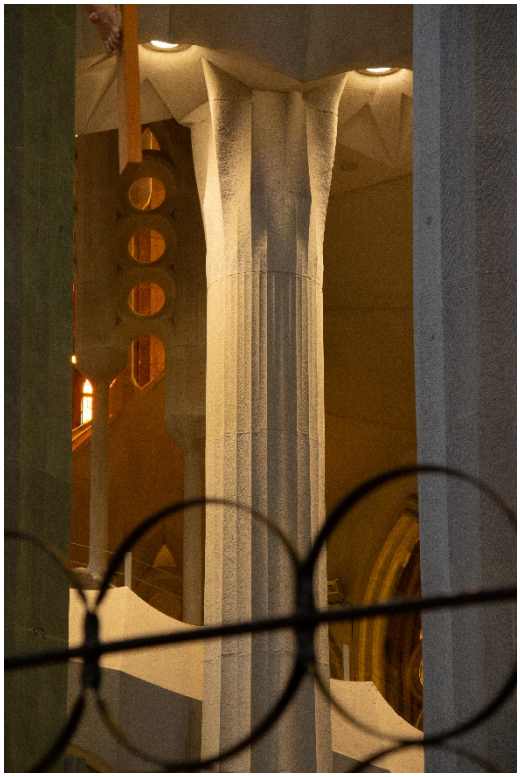


Fig. 14, 15, 16 – New column geometries and their plays of shadow and light

Fig. 17, 18 – New abstract geometry in stained glass and surrounding masonry

Gaudi does give a modern language to traditional crafts, like the aforementioned architects, but what is perhaps more unique is his invention and innovation with the building crafts of Catalan. He experimented for years with new forms and structural principles within the vocabulary of Catalan masonry. He utilized his chapel project at Colonia Guell as his testing ground for new masonry forms that combined new modern structural calculations with the masonry traditions that characterize the region. He worked with the unique cohesive nature of Catalan tile vaulting, where tiles are joined together in bonding patterns that resist gravity rather than depending on gravity.[10] Catalan vaulting is incredibly thin but strong due to its parabolic and doubly curved shapes. Gaudi borrowed the structural principles behind the geometry of Catalan vaults and used modern graphic calculations to create new column forms at Colonia Guell. His work at Colonia Guell spawned a geometry of tree-like columns where branches handle loads independently. Forces of thrust are mitigated by the tilted geometries that resemble the parabolic arches of Catalan masonry. He pioneered a system of modeling these complex geometries for Colonia Guell. These experimentations at Colonia Guell were translated into the stone masonry at the Sagrada Familia. The parabolic arches of the Catalan masonry, Fig. 19, are retained into the Sagrada Familia's branching patterns, Fig. 23, 24.

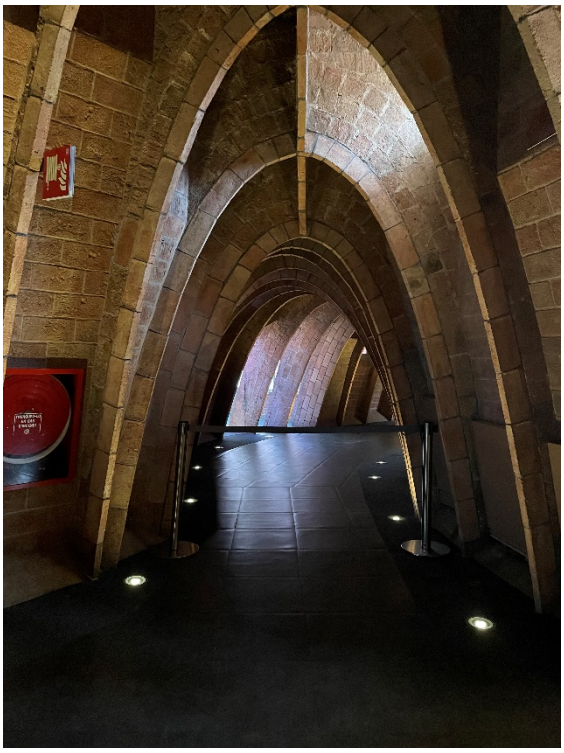


Fig. 19, 20, 21 – Ribbed vaults under Casa Mila's roof, attic is currently a museum.

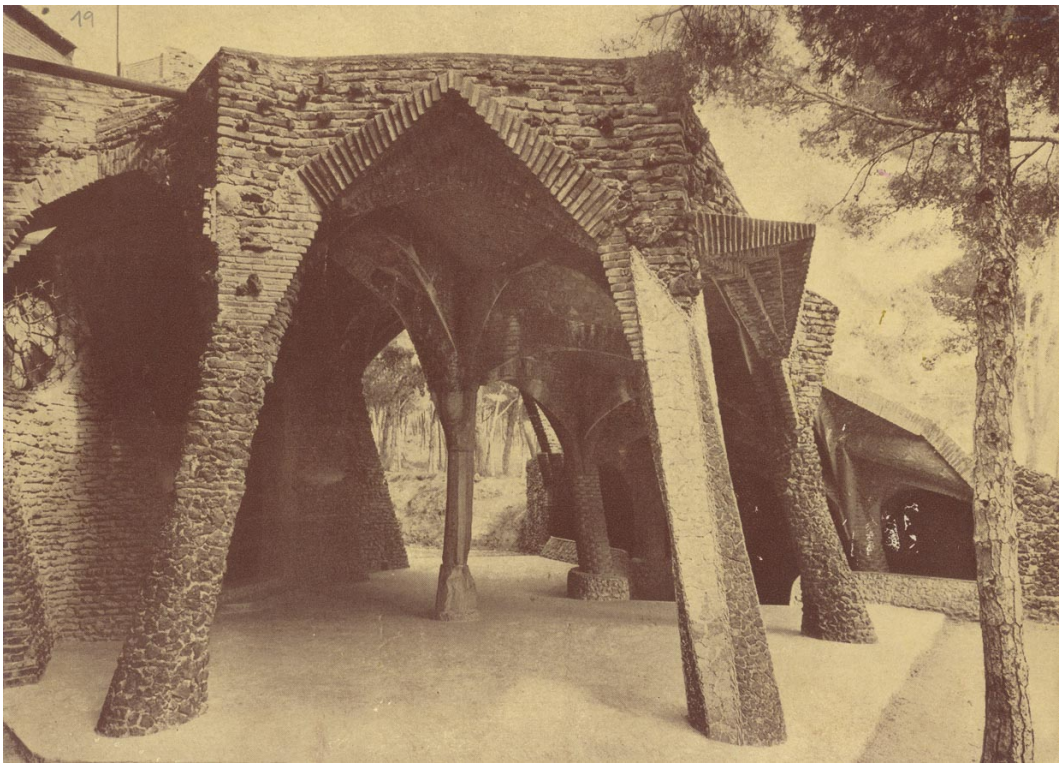


Fig. 22 - Colonia Guell tree columns, from Colònia Güell consortium

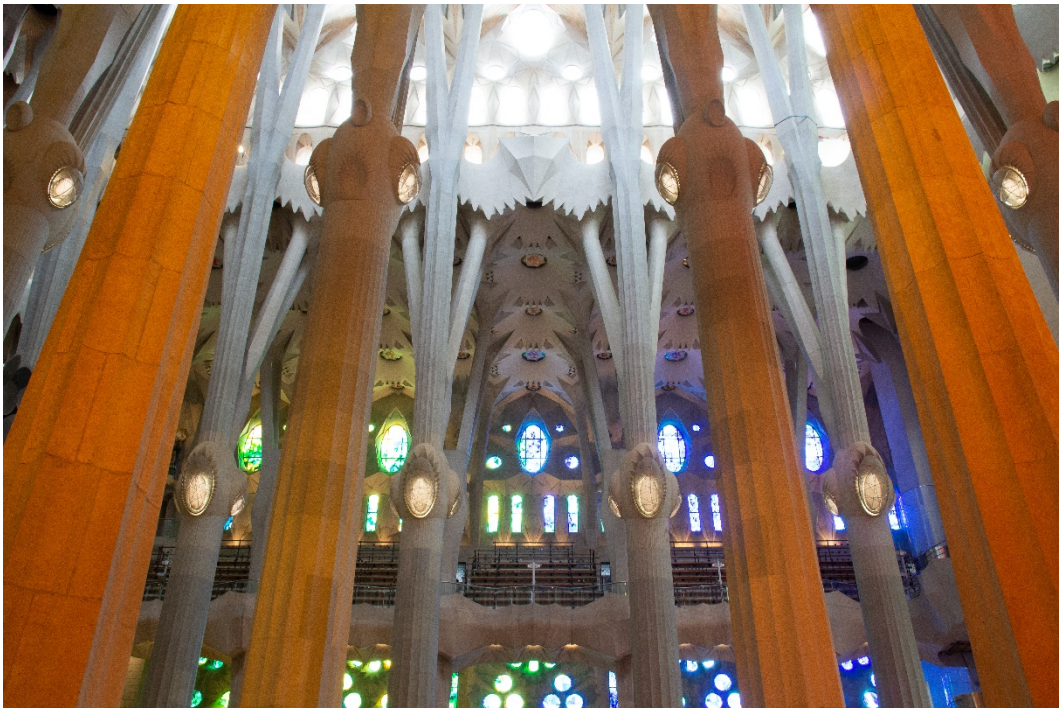


Fig. 23 - Arched branches of Sagrada Familia

Fig. 23 - Arched branches of Sagrada Familia that resemble parabolic arches of Catalan masonry

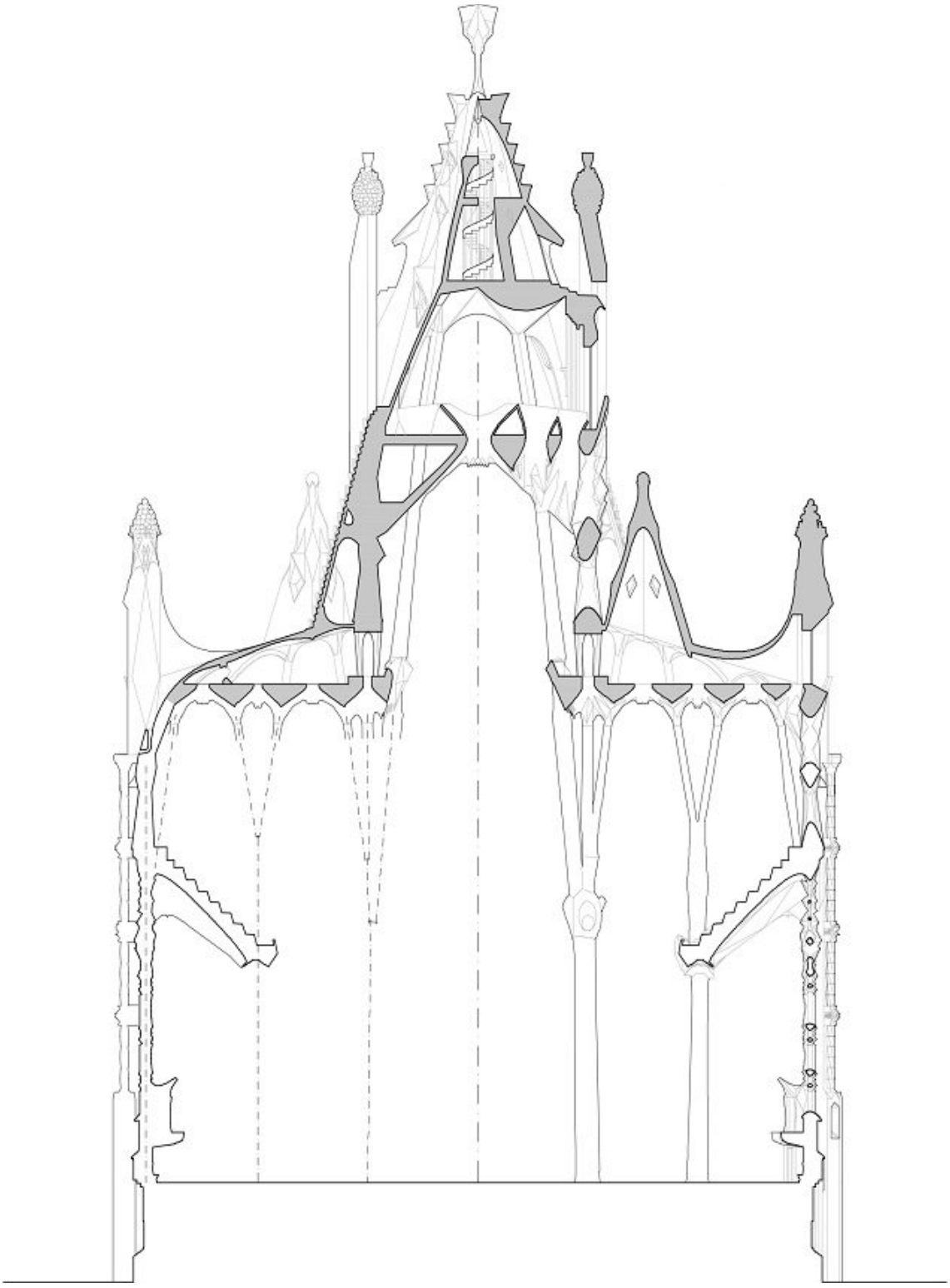


Fig. 24 - Section of Sagrada Familia from Basilica de la Sagrada Familia organization

Gaudi also brought to the Catalan brick masonry, new plastic geometric forms that brought out the abilities of the craft. Catalan masonry was already a vocabulary of double curvatures for rigidity. In the worker's children's schoolhouse at the Sagrada Familia, Gaudi uses the modern geometric principle of a ruled surface where curves are formed by the movement of a straight line. The complex curvature of the roof was particularly suitable to Catalan vaulting which is inherently organic in shape. The roof's geometry brought out what the Catalan masonry was renowned for, constructing complex curves relatively easily with laminated tile. The new oscillating edge of the roof geometry actually made the Catalan vaulting stronger than typical roofs made with the craft. The oscillating edge gave more rigidity to the structure and the shape provided easier drainage. The interiors were unfortunately closed during the pandemic due to inadequate floor area for social distancing. Gaudi had an intimate relationship with the craft and construction process that shows in his ability to create new forms that bring out capacities of the masonry tradition. He once made an assistant give bricks to masons all day in order to understand the mason's body [11]. Gaudi's technological progress stemmed from both new modern structural calculations and his deep understanding of traditional regional masonry.

Fig. 25 – Aerial photo of school building roof from Basilica de la Sagrada Familia organization

Fig 26 – Exterior of school building

Tanizaki, the Japanese novelist, once pondered what would have happened if the Orient had not taken up technology of the West, if the Orient only progressed with technology grown from its own culture. He asked if the fountain pen have a tufted end like a brush? Would they have own substitutes for radios and airplanes acting as "tools of our own culture, suited to us"? He described the value of home-grown technology through the phonograph:

> And had we invented the phonograph and the radio, how much more faithfully they would reproduce the special character of our voices and our music. Japanese music is above all a music of reticence, of atmosphere. When recorded, or amplified by a loud speaker, the greater part of its charm is lost… Most important of all are the pauses. Yet the phonograph and radio render these moments of silence utterly lifeless. And so, we distort the arts themselves to curry favor for them with the machines. These machines are the inventions of Westerners, and are, as we might expected, well suited to the Western arts.[12]

Tanizaki speaks to a conflict brought up by philosopher Paul Ricoeur, which has been appropriated by Kenneth Frampton into contemporary architectural theory.[13] Universal civilization and technology have an altering homogenizing effects that subdues local culture. Ricoeur uses the example of the same bad slot machines being in all the casinos globally. Another example would be the replacement of mud-brick construction by concrete globally. Ricoeur asks how we might participate in technology and other global innovations without throwing out local culture, such as Tanzaki's example of artful

moments of silence being eliminated for the radio. Gaudi's progression of Catalan masonry does not completely fulfill and answer Tanizaki's desire for a home-grown technology that is sculpted to particulars of place. Nor is Gaudi's adaptation of local craft and modern structural science an end-all answer to the questions posed by Ricoeur of the balancing of global technology and local culture. These questions of technology and place still haunt modern architecture today, driving architects to convene thrice internationally at the Jerusalem Seminars of Technology, Place and Time in the sixties and seventies. Gaudi's work with Catalan masonry is an interesting middle ground between Tanizaki's fantasy of having only technology directly derived from local culture and the jettisoning of local culture in favor of technology described by Ricoeur. His work is an interesting precedent in that it is a technical innovation that has roots in global modern innovations in structural science but also in the art and ideals behind a tradition craft. I would argue that Gaudi's work is valuable in that it is an early prototype from which we could start to imagine what technology could like when sculpted to place or derived in part by local culture. His work begets the question whether or not home-grown responses to modern technology could carry local identities of place and culture forward into the future.

Even if only a few look up at the forms of the basilica structure and recognize in it the parabolic forms of Catalan masonry, the new structure does not just draw from local tradition, but it is distinguished by it. Architecture, by drawing from place, conveys local identities, but architecture also has the power to define place,

adding to its identity. As Ricoeur said, everywhere in the world has the same slot machines, but no other basilica has the same structural language as the Sagrada Familia, one drawn from the particulars of the Catalan region.

Gaudi's progression of Catalan masonry indicates that local building traditions need not be kept pristine and unchanged. Creative transformation is the role of architect in connecting past identities of place to the future a place is becoming. Creative transformation in tectonics was the means by which Gaudi altered the basilica typology for relevance in the skyscraper age. The basilica has a new structural language that replaces the fan-vaults and flying buttresses of the Gothic, allowing the walls and ceiling to flood the interiors with light. Gaudi believed that the basilica of the skyscraper age would be light filled instead of typical dark basilicas:

> The Temple of the Sagrada Familia will be bright. Religious emotion will not come from the fear of shadows only just penetrated by a ray of light, but will be born from the bright mystery of the harmony of light, from sunlight filtering through a tree with the thousands of nuances of its leaves. It will, thus be the Temple of harmonious light.

Basilicas in Barcelona were rather dark spaces, such as Basiilica de St. Maria del Mar, in the below figure. The new structure allowed Gaudi to create a new image of the basilica, to connect to serenity as a light-filled forest. Every member of the tree-like columns expresses how force is channeled to the earth, giving new modern image to the structurally expressive nature of the Gothic. The new columns take up

the load of the roof and its thrust so that the walls are furthered opened up to light. Beddall describes the structure of the Sagrada Familia as fulfilling the search for "non-load-bearing walls and largely glazed walls with a perfected system of internally transmitted static forces derived from the Catalan tradition".[14] The roof of new hyperbolic vaults let in light through their oculi, having an open center instead of the Gothic vaults that needed to be closed with a keystone for their strength. The hyperbolic geometry of the roof and wall openings also disperse the light through the basilica. The new structure and its resulting light give a new image of the basilica. Where the Gothic basilicas of the past were defined by their darkness and unfinished search for light, the basilica of modernity is defined by its light. In reimagining the basilica typology, Gaudi takes a critical reoccurring component of the city fabric, one that is embedded in the identity of the city's past and progresses it to resonate with the philosophies and values of his contemporary Barcelona. In doing so, he avoids traps of revivalist thinking. He drew from the principles behind the Gothic cathedrals of the Catalan region, basilicas that were known for incredibly tall, slender structures that dramatized the feats of load bearing.[15] Drawing from those principles was enough to connect his modern image of a basilica to its past, instead of recreating the Gothic basilica in a kitsch reproduction of the past. Instead of cloning the past, his modernist basilica continues the principles of the past but also expresses the values of the present, an era where imagination and the rational pursuit of knowledge and ingenuity coexist.

Fig. 27 – Basilica de la St. Maria del Mar, Barcelona, Spain

Fig. 28, 29 – Light filled interior created by new structure

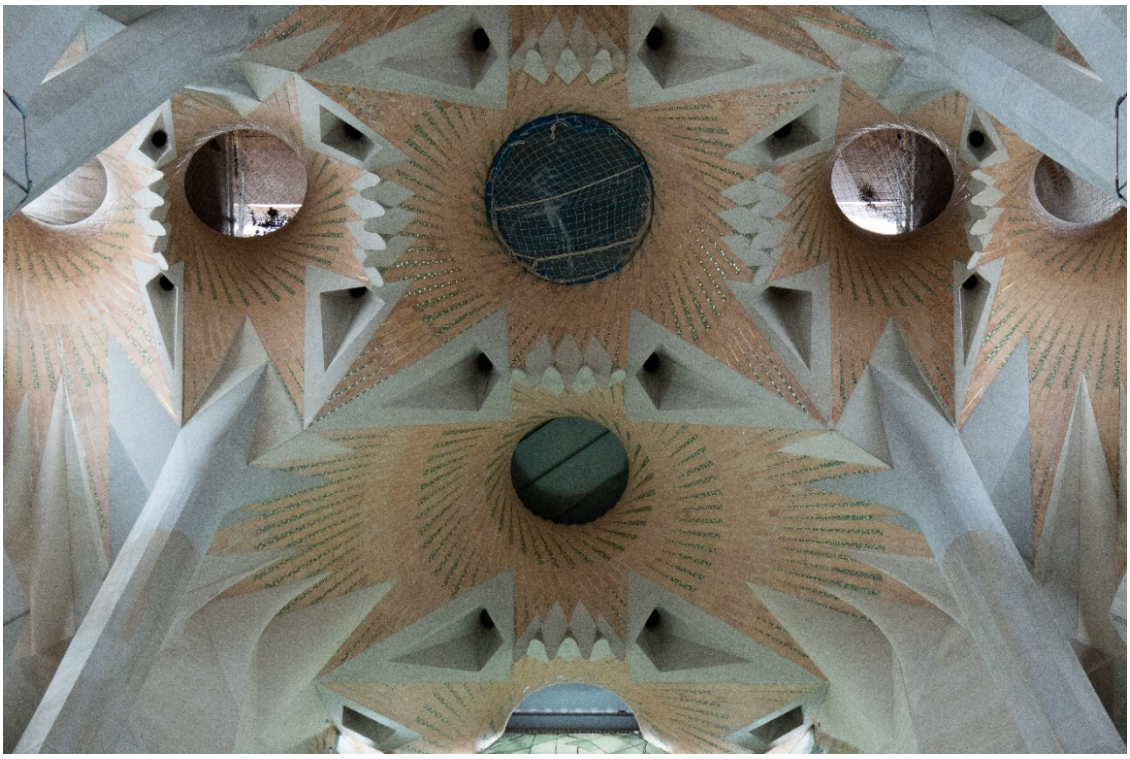


Fig. 30 - Oculi in hyperbolic roof vaults

Time

Victor Hugo called the Notre Dame Cathedral, a book of stone, because basilicas have historically served as a container of stories, religion, or other narratives. The sculptures, paintings and mosaics of churches have been used to issue ideas into society long before the printing press. Gaudi's Sagrada Familia continues this role, especially in its facades and interior elevations. The façade communicates the Catalan identity and the movement of time in the region alongside Catholic religious tenants. The facades reference the landscape of Montserrat, a monastery in the midst of mountains of strangely shaped pointy cliffs, along with other land and sea references to the Catalan landscape. Gaudi also replaces the pointed arch of the Gothic, with parabolic arch of the Catalan masonry, not

unlike how Moneo used the Roman arch as a symbol of Merida in the earlier essays. On my Aydelott-sponsored travels I saw another modernist interpretation of a basilica where the façade referenced the origin myth of the sanctuary. The Sanctuary of Arantzazu is covered in concrete thorns due to the discovery of a Virgin Mary in a thorny bush by a shepherd. It embeds a local narrative into its walls. These two buildings indicate that there might still be a role for architecture to be a book of stone and express local narratives through art.

Fig. 31 – Peaks of Nativity Façade

Fig. 32 - Montserrat mountains, photo not by the author

Fig. 33 - Parabolic arches in Nativity facade

Fig. 34 - Sanctuary of Arantzazu façade, Onati, Basque Country, Spain

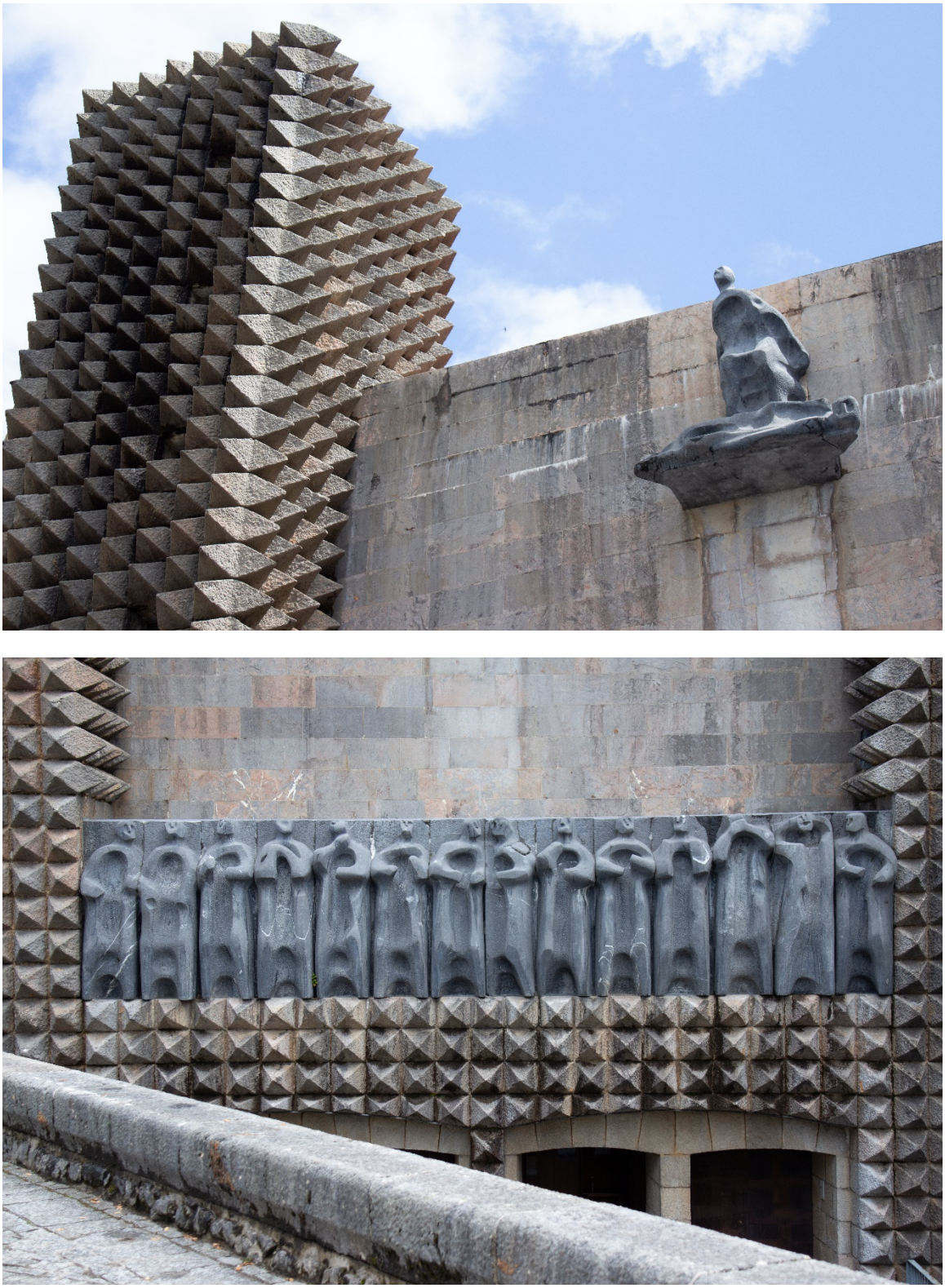


Fig. 35, 36 - Spikes at the sanctuary

Aside from the sculptural and visual motifs to the region, the church acts as a book of stone for the passage of time in Barcelona where the architecture shows the city moving into modernity. The overlay of old and modern layers of architecture in a building is not a unique idea in architecture. In Scarpa's work in Castelvecchio, you see different layers of time simultaneously and experience the passage of time in the place, where the medieval architecture is restored to different time periods and overlayed with modern architectural interventions. An overlay of old and new is common with adaptive reuse projects designed after the Venice Charter, which solidified the concept that new and old architecture can co-exist and speak to both our present age and the past. The Sagrada Familia has the same dynamic of seeing time passing through the architecture but not as adding layers to existing building. These layers are built in as construction commences. Different facades speak to Barcelona's past and to a new modern future. The Nativity façade shows the past of Barcelona, where sculptural arts aimed for realism. The Passion façade speaks to a modern identity, where sculptural arts have new abstracted geometries resembling the cubist arts. The eastern entry interior elevation shows the gothic language of the region, with its pointed arches. The western interior entry elevation shows a new muscular modern geometry. Sagrada Familia acts like a book of stone in that it narrates the movement of time through the place, connecting the visitor to past and present.

Fig. 37 – Modern versus Gothic geometries


Fig. 38, 39 – Nativity façade details


Fig. 40, 41 – Passion façade details

Fig. 42, 43 - Gothic interior facade

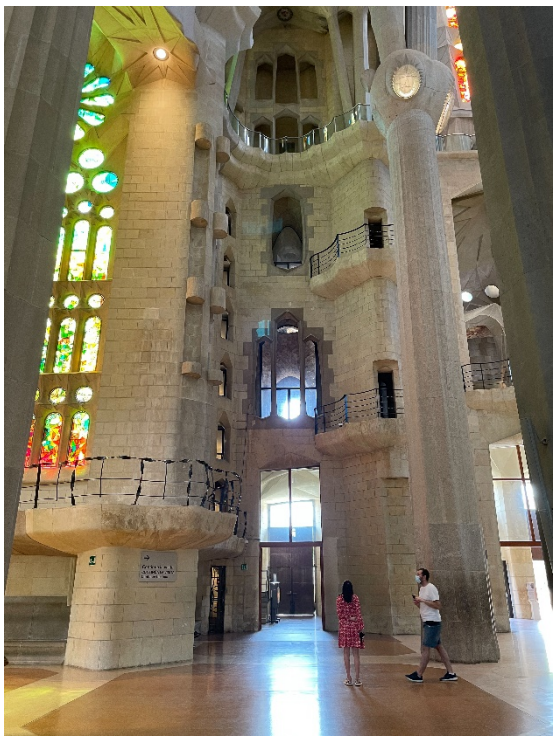


Fig. 44, 45 Modern interior façades

Conclusions

The Sagrada Familia is a dialogue between Catalan identity, heritage, and the region's evolving modern future. The architecture draws from its context more than just visual motifs, responding to the light of the region and continuing the colorful identity of the region. The architecture allows visitors to participate in the movement of time in Barcelona, seeing the change from one era to the next embodied in the different geometric languages in the building. Gaudi's work is also illustrative of the different possible relationships between modern architecture and local building traditions and arts. He utilized local arts in modern aesthetics and gave new geometric forms that drew out the unique abilities of the Catalan masons. Gaudi seized the opportunity to further local building craft, advancing the structural traditions he inherited from the Catalan Gothic to give a new modern image to the basilica typology. His work pioneering new structural forms was an act of creative transformation that drew from local masonry arts and modern sciences, giving a new image of the Catalan basilica in the skyscraper age.

I never intended to study the Sagrada Familia as part of my Aydelott-sponsored research. I had travelled to the Catalan region of Spain to visit another work of architecture, the Igualada cemetery, and stopped by the building for my own pleasure. I was struck by the image of tradition transformed into modernity, that the building spoke to its past but also how Barcelona was changing. On my Aydelott travels, I had visited around ten works of architecture that were illuminating precedents in how architecture can draw from place and

communicate local identities. I chose to include the Sagrada Familia because the architecture brought up just as many questions as it answered regarding the role of architecture in responding to and expressing the particulars of place. The basilica begets the question of whether there's still a role for art within architecture to express narratives of place even in our era of oversaturated images. Gaudi's structural innovations create questions of whether technology can be bred to adapt to place, and what we stand to gain by that adaptation.

There were challenges in using the Sagrada Familia as a case study. The building is unfinished, so aspects such as the use of color are still in progress and difficult to analyze. Gaudi's relationship to the local crafts and masonry traditions spanned his entire career and repeatedly progressed in sophistication. His innovations within the local building traditions are most comprehensible when analyzed as a progression from beginning to end, rather than a snapshot in time with his final building. Despite this, the Sagrada Familia is still relevant to discussions of local identity in architecture as it expresses the past and future of the Catalan identity, its heritage, and what the region is becoming as it moves into the future.

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[1] Sweeney, James Johnson, and Josep Lluis Sert. 1960. Antoni Gaudi. New York: Frederick A. Praeger, Inc., Publishers.

[2] Ibid.

[3] Ibid.

[4] Ibid.

[5] Ando, Tadao, and William J.R. Curtis. 2000. "A Conversation with Tadao Ando." In Tadao Ando 1983-2000. Madrid: El Croquis.

[6] Tanizaki, Jun'ichiro. 1977. *In Praise of Shadows.* Stony Creek, CT: Leete's Island Books.

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[8] Ibid.

[9] Collins, George R. 1963. "Antonio Gaudi: Structure and Form." Perspecta, 63-90.

[10] Ibid.

[11] Sweeney and Sert, Antoni Gaudi.

[12] Tanizaki, *In Praise of Shadows.*

[13] Frampton, Kenneth. 1983. "Towards a Critical Regionalism: Six Points for an Architecture of Resistance." In The Anti-Aesthetic: Essays on Postmodern Culture, by Hal Foster, 16-30. Port Townsend, WA: Bay Press.

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[15] Ibid.

4 – Igualada Cemetery, Igualada, Spain

Introduction

The new cemetery of Igualada is a city of the dead embedded into a unique geological complex. It is a work of architecture akin to site-specific sculpture. The cemetery uses contrasting dialogues to reveal and heighten the character of its context. The cemetery is relevant to contemporary issues of context-responsive design in that the cemetery is more similar to land art and site-specific sculpture than typical examples of contextualism in architecture. Richard Serra's land art works, the *Shift* and *Pulitzer* are examples of the essence of site-specific sculpture. These works by Serra feature a steady level concrete line that reveals and measures the almost invisible gentle rise and fall of the land. The Igualada Cemetery is similar to land art in that they are works that bring out and heighten the underlaying character of place.

Fig. 1 – *Pulitzer Piece*, land art by Richard Serra

Fig. 2 - *Shift*, land art by Richard Serra

Contextualism in architecture is typically associated with vernacular architecture or other local images, often with the objective of blending in with the context. Architecture has a long history of drawing from landscape as a means of tying architecture to place. Landscape and nature have long been a source of motif, ornament, and detail where the environmental character is echoed in building form and/or details. Even in classical architecture, a local plant, the Mediterranean acanthus was used to ornament the Corinthian capital. Landscape as source of motif was continued in modern architecture, as seen in the work of Frank Lloyd Wright. Abstracting landscape has also been used in modern architecture and landscape architecture as a source of form and geometry, inspiring structural design, building massing, and even the creation of artificial and abstract landscapes. Previous essays on the Grand Mosque of Rome and Sagrada Familia exemplified the use of landscape as motif and form giver. However, the Igualada Cemetery is a unique case study in drawing from landscape, but then also imbuing the landscape with new

identities and images. Miralles and Pinós created an artificial landscape within the broader geological region, a site with new collisions and harmonies between the man-made and natural. They also gave the site new narratives of modernity, ruin, aging and the passage of time. The cemetery does not just fit into the landscape, its architecture is often in dynamic opposition and tension with the landscape, heightening the character of the geological region. The cemetery is a case study in the use of harmony and opposition to heighten a sense of place within a landscape and to strengthen the connection of the manmade to its landscape.

Context

The cemetery is set in a sedimentary basin that is part of the Catalan Central Depression. The depression was once an inland sea that became a saltwater lake with conditions similar to the Dead Sea. What remains of this geological history is a distinctive gray and blue marls that indicates a deep-marine history. When the saltwater evaporated, it left gypsum and salt still visible.[1] The landscape has blue gray soils and cliffs, a cascading movement of natural earth terraces and deep gorges. The cemetery is set on the edge of the town of Igualada in a dried-up stream meander of the Igualada Basin. Igualada was once a small provincial town dating back to the 9th century. With its industrial boom and immigration growth, it required a new cemetery. The cemetery clears the images of that industry with an open plaza. Then the architects create their own site through a deep cut in the land within the vast landscape of the blue marls.

Fig. 3 – Landscape of blue marls

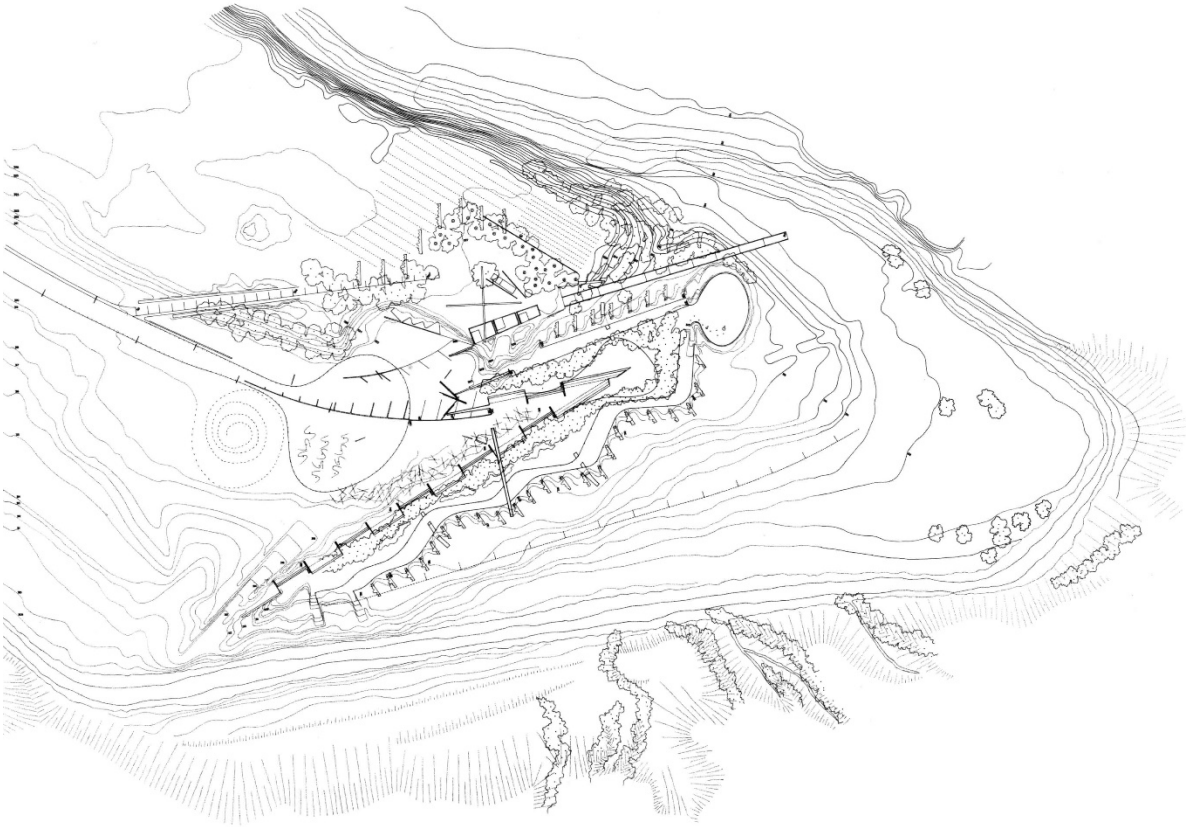

Fig. 4 – Site plan of Igualada cemetery

The new cemetery began with a competition won in 1984 by the husband-and-wife team of Enric Miralles and Carme Pinós, who practiced in the the Catalonia region of Spain, especially in Barcelona. Pinós is still practicing and is known for an "architecture of overlay", an architecture that responds to multiple layers of its environment, such as history and patterns of human movement and occupation.[2] The cemetery was slowly constructed in modular parts by demand. Its tombs are mostly full, but its chapel and service buildings remain unfinished.

Fig. 5 – Unfinished chapel and service buildings

Fig. 6 – Unfinished exterior court

Fig. 7 – Interior of unfinished service building

Landscape and Site scale

The cemetery ties the visitor to the Igualada basin landscape by abstracting the unique characteristics of that landscape and by creating different interactions between the manmade and natural throughout the cemetery. The architects created their own version of the cemetery typology to fit the landscape, carving into the site to create a long somber journey where different monolithic tombs and earthworks act in harmony and juxtaposition to the site.

Miralles and Pinós began by cutting a new site into the landscape. Within that cut, they created an artificial microcosm of the vast landscape. The Igualada basin landscape is composed of rolling terraces of earth, cliffs, and deeply eroded river gorges. The excavation into the land is broken into different strata of concrete roofs cascading down like the movements of the earth around the cemetery. The deepest cut into the earth is paved like a dried stream where swirling wood pavers indicate a river current long gone [3]. The steep walls of the excavation embody the image of a river gorge with deeply eroded banks. The thin layer of forest growing around the Igualada basin is continued into the artificial landscape, melding the manmade site into the greater whole. Miralles and Pinós' created a new site that exaggerates and amplifies the existing qualities of its surroundings.

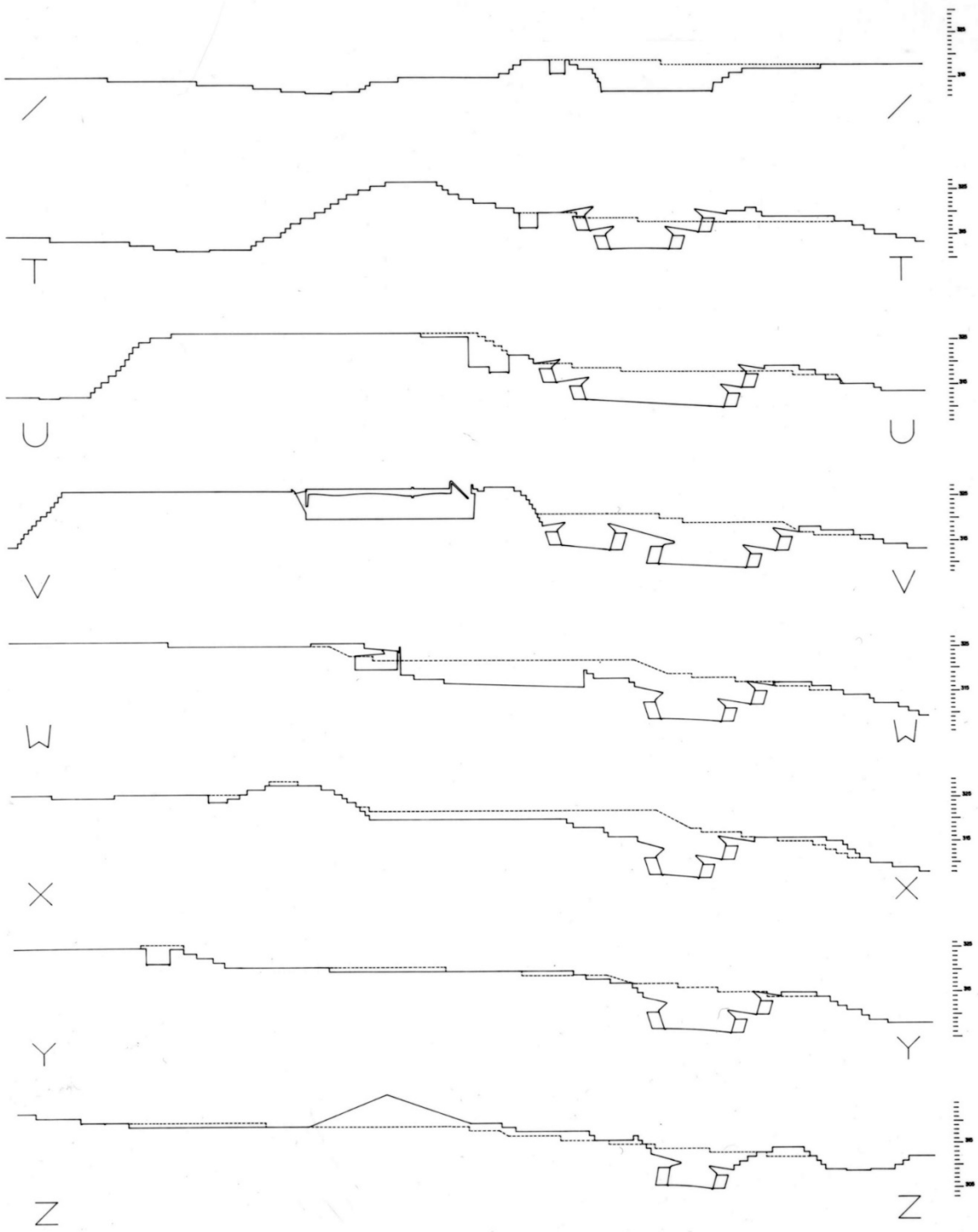

Fig. 8 – Sections of Igualada cemetery with pre-construction topography dashed

Fig. 9 – Cascade and cliffs of landscape

Fig. 10 – Cascade of earthworks

Fig. 11 – Terraces of concrete roofs

Fig. 12 - Artificial gorge, strewing patterns leave impression that a river once passed and disheveled the wood paving

The architecture of the cemetery also ties the visitor back to the greater landscape both by contrasting the landscape and dissolving into it. Sometimes the landscape is contained by the architecture before dissolving back to nature, such as the outside edges of the plaza. Other times, it is overrun by the blue marls of the landscape, becoming buried. Instead of dissolution, sometimes the artificial cut into the landscape seems almost seamless, becoming part of the cascading action of the landscape. The moments of dissolution and harmony with the landscape are heightened and contrasted by the moments of stark opposition when the man-made elements push and protrude out of the land.

Fig. 13 – Edges of cemetery held by retaining walls before the cemetery dissipates back into the landscape

Fig. 14 – Soils overtaking tomb

Fig. 15 – Overlooking final cemetery space whose soft cut mends into soft edges of landscape

Fig. 16 – Projection of tomb monolith out of the earth

Across the site, Miralles and Pinós build up a somber journey through manipulating the artificial and actual topography and landscape, utilizing movement and enclosure to create a promenade for grief. The entry begins with sharp definition, where the strange gate and act of sinking into the earth demarcates leaving town and entering a space for the dead. The journey is a set of distinct spaces and a winding movement between them, where tombs and retaining walls are arranged so that a viewer can not see around the corner. Each space is a surprise where the tombs define the enclosure of the space and frame glimpses between each segment of the journey. There are two forms of the movement through the site, a slower meander, similar to walking along an actual landscape trail, but also dramatic openings and staircases puncturing from one level to another. The secondary circulation system allows a vertical exploration of the site, allowing

a visitor to move between the vertical strata of the tombs and to look out over the cemetery complex.

Fig. 17 – Looking back at entry

Fig. 18 – Tombs and earth framing entry into next space

Fig. 19 – Dramatic stairway openings

Fig. 20 – Levitating stair

Fig. 21 - Protruding stairway opening

The tombs enclose each space, but also push and pull against the body. They protrude into space, pull back, tilt towards and away from visitors. They heighten the sense of one's body in space in relation to the movement of the tombs. The sensation of walking along the tombs was similar to that of an experience I had of visiting Richard Serra's *The Matter of Time* in Bilbao, Spain. Both works create a sense of being pushed upon and compressed along with strong sensations of opening up and release due to their tilting planes.

Fig. 22 - Tombs tilting forward and back

Fig. 23 – Tighter, more dramatic, and compressive space

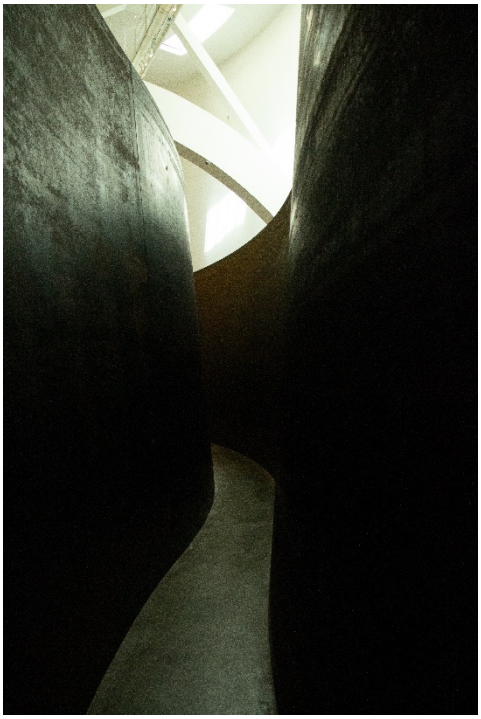

Fig. 24 – Tilting forms in Serra's *The Matter of Time*

Fig. 25 – Tighter tunnels in Serra's *The Matter of Time*

Tectonic scale

Miralles and Pinós created a cemetery specific to the Catalan landscape through a promenade defined and enclosed by the landscape, earthworks, and tombs. Their work resembles the ideas underpinning Asplund and Lewerentz's Woodland cemetery in Stockholm. Asplund and Lewerentz rejected the prevailing typologies of English garden and Islamic cemeteries of their time and embedded their cemetery in charged images of the Nordic forest.[4] Like Asplund and Lewerentz, Miralles and Pinós created own variation of the cemetery typology, a city of the dead that embodies images of its surrounding landscape but also tectonics of modernity, ruins, and ancient monumental complexes.

The stark modern concrete of the tombs is complemented with soft materials that blend into the landscape, such as wood, stones, and rusted gabion baskets. Modern construction paired with older, local materials invokes both the spirit of the contemporary modernity and a longer timeframe of the landscape, giving the cemetery a dialectic identity of being of its time and being ancient or timeless.

Fig. 26 – Rebar gabions blending into earth, alongside wood and pebble paving

Fig. 27 – Palette of materials at the cemetery, concrete and rusted gabions

The tectonics of the cemetery also mediate the relationship between the human scale and the larger scale of the landscape. Tombs are built piecemeal like ancient stoneworks, each single tomb piece relating to the human scale, but the whole connects to a much larger scale of the landscape. The tombs are like catacombs, where the walls and enclosure of the spaces are formed by individual tombs. The concrete module was cast on site, allowing the cemetery to build grand scale retaining walls out of small pieces cost-effectively. This also allowed for the slow growth of the cemetery.[5] This consistent module unifies the diversity and individuality of each tomb into a coherent whole. The human scale of the pebbles and wood paving complements the massive scale of the concrete monoliths. The mass and weight of the concrete monoliths brings a larger scale and sense of broader

perspectives beyond yourself or the individual visitor. Like ancient temples and pyramids, a sense of permanence beyond an individual lifetime can come from weight, mass, and scale.

Fig. 28 – Series of tombs

Architecture can allow a visitor to see and participate in the passage of time in a place, allowing a connection to a timeline beyond that of an individual and deepening the understanding of that place. Juhani Pallasmaa writes that architecture should "mediate human's relation with the fleeting element of time". He describes how Aalto's architecture collages multiple images to capture time in his architecture. In Villa Mairea, images of modernity and peasant traditions are juxtaposed, creating readings both of past and future. Pallasmaa also clarifies how Aalto also used the image of ruin to embed a sense of time in his architecture,

> An explicit device of Aalto's for capturing a sense of time is the image of a ruin. He utilizes explicit or subliminal images of ruins to evoke a melancholic experience of the past, and of the inevitability of erosion, decay, and death. Aalto juxtaposes images of permanence (stone, brick) with images of transitoriness and loss (erosion, climbing plants and the patina of mold).[6]

Pallasmaa's observations speak to the power of marrying decay with permanence and the resulting dialectic presence of time. The Igualada cemetery shows its own demise and its own passage through time. It is built as ruin, built as both new and falling apart at once. The cemetery shows its ruin and demise at its conception, such as the falling ceiling in its services building. The broken-up texture of monolithic concrete allows planting to overrun the concrete evoking the image of deserted temple or other old ruins covered in vegetation.

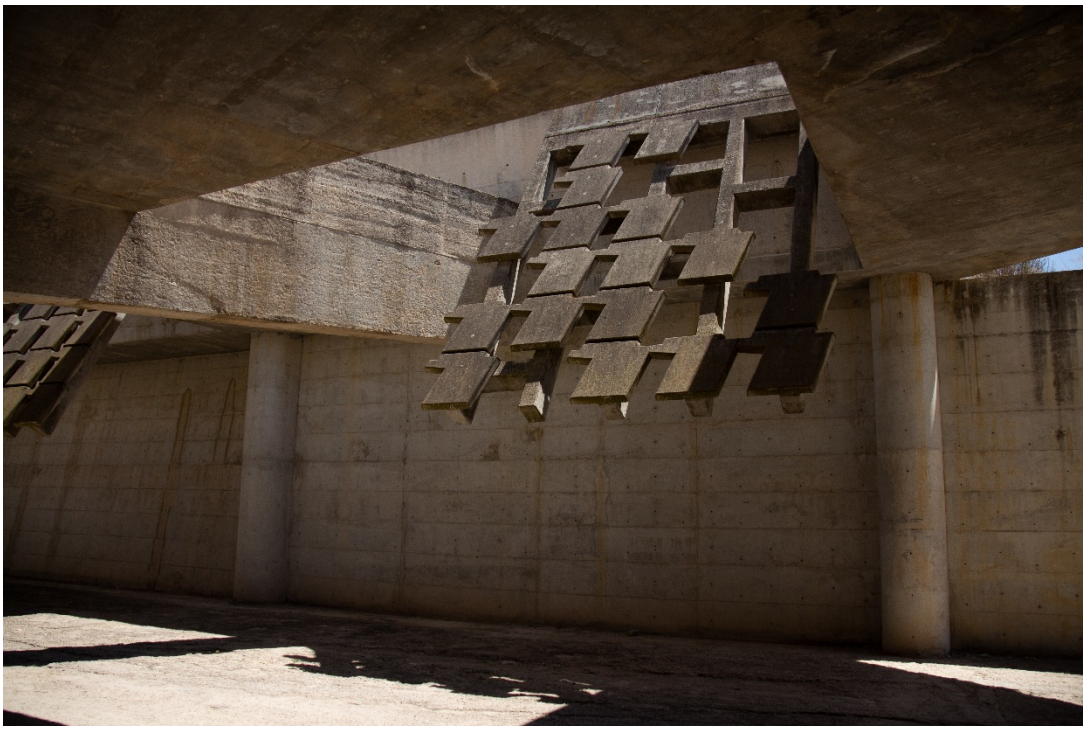

Fig. 29 – Dramatic falling ceiling planes

Fig. 30 – Vegetation on concrete

Fig. 31 - Modern monolith becoming ruin

There are two scales of weathering in the materials, a more permanent resistant set of materials that retain their newness and materials that aged and weathered quickly. The concrete tombs do not heavily show signs of age, remaining stark and clean. They are paired with wooden pavers and rusted gabions that aged quickly and are more transient than the concrete, leaving a juxtaposition of new and old, even through all was constructed simultaneously. The artist Rodin writes about how art holds multiple snapshots of time in a single image. When an artist draws a horse, you see in its legs the horse gearing up for action but then the rest of the body is drawn rearing up and kicking. When the eye passes over the drawn horse, it sees motion starting and passing, unlike a photo where motion is seized frozen in an awkward single state.[7] Combining permanent with transient materials invokes the cultural memory of monolithic ruins built and lasting through time with parts aging away. The weathering of materials and visible aging of surfaces connects viewers to the passage of time and sense of being part of a larger continuum. The Igualada cemetery is a work of architecture where the movement of time is visible, where the genesis is seen as well as the aging process.

Conclusions

The somber journey created by Miralles and Pinós is amplified by the cemetery's dialogues with its landscape. These dialogues of man-made versus natural, newness and the passage of time, human scale against monumental scale give the cemetery contrasting and dialectic narratives that intensify the relationship of the visitor to the

cemetery and its landscape. Miralles and Pinós heightened the existing character of the landscape by manipulating the site into an intense microcosm of the greater landscape. The cemetery is a long promenade of woven moments of sculptural forms acting in dramatic opposition to the landscape and moments where the cemetery melds into the landscape. The architecture also uses harmony and contrast in its materials and tectonics to heighten the experience of the natural environment. Miralles and Pinós formed a poetic language drawn from modernity and the geological region to create a cemetery grounded in the specifics of place.

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[1] Signage at the Igualada Cemetery, unknown author

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[6] Pallasmaa, Juhani. 1998. "The Space of Time." *Oz.*

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Conclusions - A Comparative Analysis

Motivations

My interests in contextualism in architecture began with a study abroad trip to Rome in the summer of my freshman year. I had ventured out to the suburbs and visited the Grand Mosque of Rome by Portoghesi, discussed in the earlier essays. I had never seen a mosque that clearly belonged to the present modern generation, my generation. With every step, I could see the continuation of the Islamic heritage preserved and remade into a modern image. The mosque also appeared to be distinctively Roman, made of the same materials and spatial archetypes that made up the city fabric. In the architecture, I saw a clear narrative of integration of the Islamic community into Roman culture. The mosque began my belief in architecture's power to speak local narratives and the resulting positive social and emotional impact. The mosque's integration of Rome's culture led me to believe drawing from place is critical to communicating local identities. The mosque's modern identity and aesthetics proved the need for architecture to speak to present generations and their values, not just the past.

In own education, I keep overhearing unresolved conversations across the university departments concerning the role of design in acknowledging and conveying local narratives. Conservations usually centered around designing for small towns with rich histories, especially civil rights histories. These conservations are indicative of current contemporary issues in architecture and other design

disciplines. How might we use design to communicate local identities? How might design speak to heritage but also the future of the community? Pallasmaa wrote that the great works of modern architecture reflected the optimism, hope, and beliefs of their era. It is my belief that architecture can communicate local culture, both its past and present values.

Elements and Techniques

In my four case studies, I identified reoccurring elements of architecture that the architects manipulated to express the particulars of place and time. These elements allow architecture to mediate visitors' relationships with between identity, cultural memory, and time. I will briefly reiterate the lessons found in the previous case studies below.

Tectonics

Materials, craft, and aesthetics were manipulated to connect past and present values across the four works. The case studies indicate two different possibilities for tectonics to express local identities, coexistence, and remaking.

Coexist

Gaudi and Portoghesi showed that traditional crafts can exist side by side with modern construction as long as both are distinct. The Sagrada Familia has traditional Gothic aesthetics in some facades and modern tectonics in other facades. The mosque has a structure of

modern concrete technology but wall and floor surfaces of traditional tile or brick. The tectonics are distinct and adjacent but not blended together. An analogous comparison would be the contrast between black and white as opposed to creating gray. The contrast between the two entities allows the character of each to be read more clearly. Miralles and Pinós used conflicting but coexistent tectonics to give their site new narratives. They had two sets of tectonics intertwining across the site, a pristine, monolithic, stark tectonic language and a more organic, curved tectonic language that weathered and dissolved into the landscape. Their tectonics gave the site new dialogues of artificial versus natural, monolith versus earth, aging ruin versus resistant permanence. These dialogues brought out the character of the landscape through contrasts and harmonies created by their tectonics. Moneo also had two coexisting tectonics, the heavy mass of brick construction he stole from the Romans and a modern light scaffolding-like steel structure. In doing so, he embodied the image of a ruin covered in scaffolding into his architecture. These contrasting tectonics created images and narratives within their architecture.

Remake

Moneo reimagined a historic tectonic with modern detailing, remaking the Roman brick construction into a contemporary image. The flaws and tool marks that would have characterized the past tectonics were replaced with the crisp edges and precision of the machine age. Though modern aesthetics of planarity, weightlessness, and unadornment, the tectonics of the museum seem both ancient and new.

Gaudi drew from local masonry traditions and progressed the craft further, giving the craft new geometric forms, such as the oscillating roof of the schoolhouse, and new aesthetics, as seen in the abstract faceted surfaces of the stone masonry. He remade the image of local building craft into the new scientific geometries, including hyperbolic forms and ruled surfaces, as well as the abstract language of the avant-garde arts springing forth at the time, such as cubism. Moneo and Gaudi remade the local building crafts into the image of modernity.

Geometry, Art, and Form

The same themes of coexisting with and remaking context were carried into the geometries of the case studies. The Sagrada Familia uses art to convey the movement of time, utilizing both the art of the past and the emerging avant-garde. Miralles used harsh monolithic forms to contrast with the landscape, creating dynamic tension through soft curvilinear forms and protruding brutal geometries. The cemetery is composed of forms that seem to have always lived in the land and forms aggressive in their intrusion. In the Sagrada Familia and Rome mosque, geometries of tradition coexist with modern geometries, with contrasts between Gothic versus modern geometries, and ornate Islamic graphic patterns versus new stark modern patterns. The coexistence of conflicting geometries gives the architecture a dialectic identity of new and old. Portoghesi and Gaudi remade tradition when they gave architectural elements such as columns new images made in geometries

that express modernity with their abstracted forms and precise sharp edges.

Landscape

The architects embodied images of the landscape into their works, connecting their architecture to its context. Miralles used a completely modern abstract geometry to echo the landscape, creating a microcosm of the site. Portoghesi and Gaudi used references to the landscape to generate building geometry. Local mountains and trees influenced both building's massing and column shapes. In their references to the landscape, they recreated the physical sensations of the landscape within the architecture, going beyond a decorative motif or other a flat symbol.

Typology

Typology was manipulated by collage, recycling, and progression throughout the case studies for different ends. Portoghesi collaged old familiar iconic archetypes that made up the city fabric to bring a Roman identity to the mosque, tying the architecture to the city. The recycling of typology was another means to connect to place for Moneo. He took a historical typology, a roman basilica, and placed it in a new unrelated program, a museum. Moneo stole the haptics and physical sensations of the old typology for a new purpose. Moneo and Portoghesi both brought in familiar archetypes to connect to place.

Miralles, Gaudi and Portoghesi took an existing typology and understood its intentions. They then created their own means and

methods to fulfill the agenda of the typology, giving the present generation their own version of the typology made in their own image.

Concluding Remarks

I believe that how these architects pulled together multilayered narratives of place into architecture has a relevance for contemporary practice. These case studies show that architecture can successfully respond to changes in society and technology while retaining local culture. This is especially clear in Gaudi's modernist vision of a Catalan Basilica. Miralles and Pinós show the complexity of dialogues architecture can bring forth from a landscape, cultivating new narratives into the site. Moneo proves that one can honor the history of a place without cloning the past, creating visions of what a place was and is becoming. Portoghesi's mosque reflects architecture's potential to convey the complex narratives and identities of a particular place. His mosque speaks to the integration of the minority culture, the city, the landscape and to a modern future of the religion. The four works of architecture prove that drawing from place brings resonance to cultural institutions and that architecture still has a role to play as a vessel for narratives and identity.

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