

# The Corner: Tectonic Intersections of the Architectural Environment

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## Abstract

Architectural corners serve as nodes of constructional shifting, of structural logistics, of environmental control emphasis, of spatial experience, and of aesthetic considerations and it is in these particular building intersections that our greatest architects have excelled. Despite the importance of the corner, most architectural software introduces generalizations into design work that all but assures improper understanding of a building's corners, especially for students and those novice to the profession. The transformations undertaken in the computer rarely reflect the strategies used to create physical, occupiable space. For instance, when working in building information modeling software, walls intersect via "butt" or "miter" techniques regardless of the materiality of the components. Any system can turn the corner with perfect resolution, without the need for additional components or finishes typically used to resolve aesthetic and performance issues. From this technical perspective, what is possible in the computer is often impossible in reality.

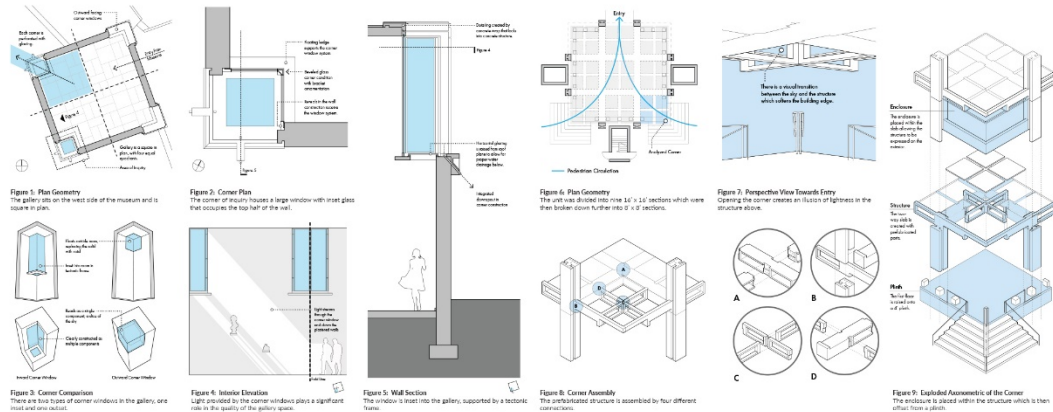
This presentation centers on a recently initiated, seminar-based research project through which a group of upper

division and graduate architecture students are rigorously examining a set of precedents in an effort to better understand how significant architects of the 20th and 21st centuries treated or continue to treat, as the case may be, the architectural corner in their critically acclaimed works. The primary goals of this study are to absorb for configuring these junctures of construction, tectonics, and design potential and to create a framework of lessons, which students can use in the development of their own design work moving forward both in the academy and in the professional world.

Keywords: Materials + Construction Techniques; Architectural Tectonics; Architectural Detail

## Acknowledgements

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**Addition to the Gipsoteca Canoviano**  
Carlo Scarpa | 1955-1957

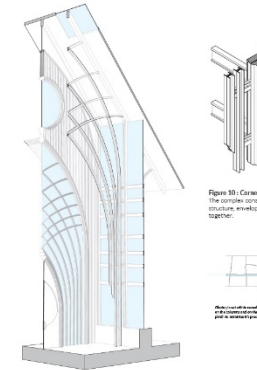
In 1975, Carlo Scarpa was commissioned to design an extension to an existing 19th-century gallery space housing a collection of work by late 18th-century Italian sculptor Antonio Canova. The museum had undergone its last renovation in 1934, but Scarpa's intervention was a radical re-orientation of the space. The new extension was designed to be a "bridge" between the old and the new, creating a space that was both a continuation of the original and a new statement in its own right. Scarpa's design was a masterclass in the use of materials and light, creating a space that was both a continuation of the original and a new statement in its own right.

In two matching plans along the sky with its moving clouds to illuminate the gleaming white volume of the gallery? Our study focuses on the subtle pair of windows, those located into the gallery? The theme of the window is not the window, but the space it creates and the way it is perceived. The window is not the window, but the space it creates and the way it is perceived. The window is not the window, but the space it creates and the way it is perceived.

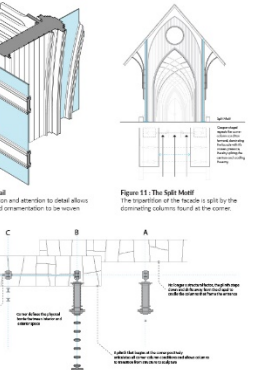
**Richard's Medical Research Laboratory**  
Louis Kahn | 1957-1961

Richard's Medical Research Laboratory is located in Philadelphia, Pennsylvania and was completed in 1961. This building was intended to house biology laboratories for the University of Pennsylvania. It was one of Kahn's first projects, which provided him with the opportunity to work with a client who was not a traditional architectural client. Kahn's design was a masterclass in the use of materials and light, creating a space that was both a continuation of the original and a new statement in its own right.

The entry sequence of Richard's Medical Research Laboratory is unique. Kahn intended for users to enter on the corner, facing users between the brick towers. People thus walk up the stairs, enter a plaza, and are invited to enter the exhibition of the structure of the corner. Kahn chose a prefabricated concrete structure which is composed of four different units. This strategy allowed the building to be built efficiently, to support the flow of lightness in the composition. Kahn opened the corner, creating a reinforced structure. The floor plate terminates just inside the corner to reduce visual bulk.



**Figure 12: Corner Perspectives**  
View of corner from interior of vault.



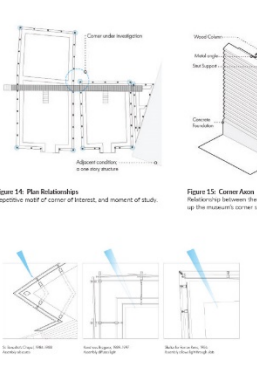
**Figure 13: Plan Relationships**  
Details of the corner's plan geometry and the engagement of its tectonic components.

**Mildred B. Cooper Memorial Chapel**  
Fay Jones | 1986-1987

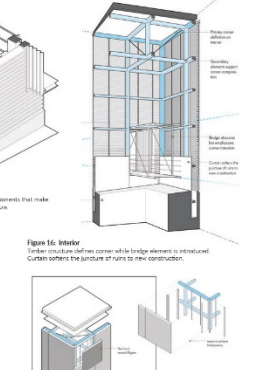
As two Masonic temples may share a three-part framework yet vary in key and ultimately find the Mildred B. Cooper Memorial Chapel unique, so too may the Gothic dome (reminiscent of the dome of the Hagia Sophia) and the dome of the Mildred B. Cooper Memorial Chapel. The dome of the Mildred B. Cooper Memorial Chapel is a unique statement in its own right, creating a space that was both a continuation of the original and a new statement in its own right.

**Shelter For Roman Ruins**  
Peter Zumthor | 1986

There was an almost incomprehensible desire to preserve all that was left of two Roman domes situated in the town of Tübingen, Germany. The ruins of the domes were in a state of disrepair and the town of Tübingen was in need of a new shelter for the ruins. Zumthor's design was a masterclass in the use of materials and light, creating a space that was both a continuation of the original and a new statement in its own right.



**Figure 14: Plan Relationships**  
Relative massing of corner, interior, and moment of study.



**Figure 16: Interior**  
Interior structure of the corner which bridge element is introduced. Curtain softens the picture of ruins to new construction.

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"...corners and walls are mutually dependent on each other for the definition of a space. It is the corners which make the space a figure; it is the corners which tell us where we are."<sup>1</sup>

In order to create enclosure, and architectural space in general, the primary systems of a building must turn, they must wrap, and eventually they must return to where they began. This fundamental concept of building is essential to the creation of space, but the moments of change, of intersection, of shifting that we define as corners are often overlooked – especially in academia – as critical to the functional performance, aesthetic appearance, and conceptual understanding of the built environment. When a wall, or any other construction system, turns and a corner is formed and a complex (sometimes significantly complex) situation is created, corners serve as nodes of construction, shifting, of structural logic, of environmental control, emphasis, of spatial experience, and of aesthetic considerations and it is in these particular building intersections that our greatest architects have excelled.

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works. Each student participating in the seminar selected an architect to spend the semester examining and, from this particular architect, three corners from three different buildings to be the focus of the study. The semester was then spent creating an analysis of each of these three corners. From this analysis, the students produced a series of diagrams and other drawings that demonstrate how the corners of the buildings work with respect to structural, construction, assembly, enclosure, performance, aesthetic, spatial, and conceptual considerations. A model of one corner was created as a final course submission. Components of four of these corner analyses are presented above.

The catalyst for this examination of the architectural corner is found embedded in the contemporary design process of the vast majority of those in the architectural profession. Utilized both in academia and in the professional world, most architectural software introduces generalizations into design work that all but assures improper understanding of a building's corners, especially for students and those novice to the profession. Although encountered in a large number of ways, the generalizations of architectural schemes, we utilize modeling programs that require us to shift from point, to line, to plane, and to volume, but the transformations undertaken in the computer rarely reflect the strategies used to create physical, occupiable space. When working in building information modeling software, walls intersect via "butt" or "miter" techniques regardless of the materiality of the components. Layers of walls can be "wrapped" at the ends, again regardless of material or structural makeup. Any system can turn the corner with perfect resolution, without the need for additional components or finishes typically used to resolve aesthetic and performance issues. From this technical perspective, what is possible in the computer is often impossible in reality, potentially leading the novice student or architect to improperly consider a building's corners, satisfied with the level of resolution provided by the computer.

This presentation centers on a recently initiated, seminar-based research project through which a group of upper division and graduate architecture students are rigorously examining a set of problems in an effort to better understand how significant architects of the 20th and 21st centuries treated or continue to treat, as the case may be, the architectural corner in their critically acclaimed

<sup>1</sup> Thomas, *This Corner, Architecture* (Oslo, Norway: Scandinavian University Press, 1997), 121.

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