

**Thesis submitted to the Faculty of the Virginia Polytechnic Institute  
and State University in partial fulfillment of the requirements of the  
degree of Master of Architecture .**

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**Chairman - Hans Rott**

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**Marcia Feuerstien**

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**Jim Jones**

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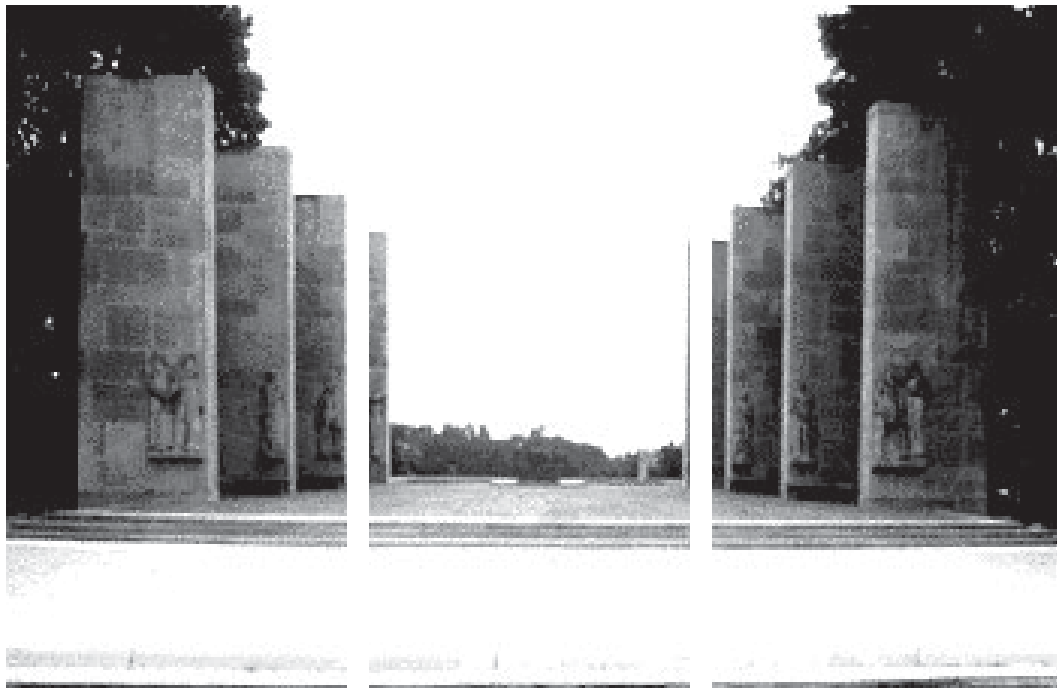
**May 11, 5pm - Room 305 - Cowgill Hall, Blacksburg, VA**

**Between Light and Man .**

**A Chapel for Virginia Tech**

**Matthew A. Plecity**

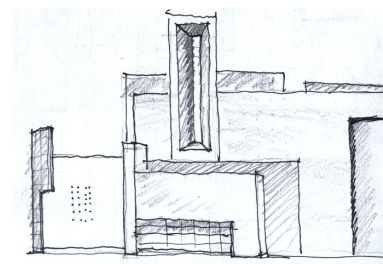
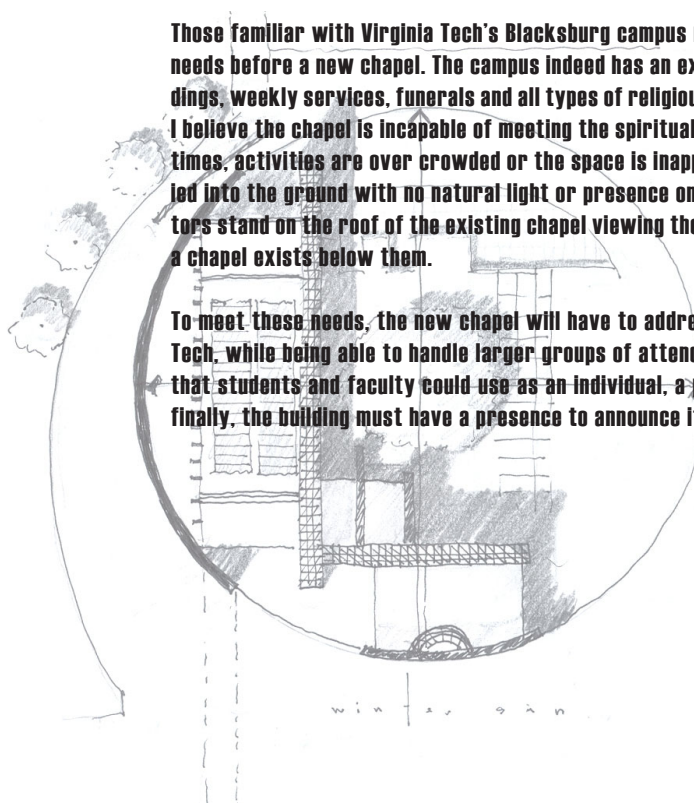


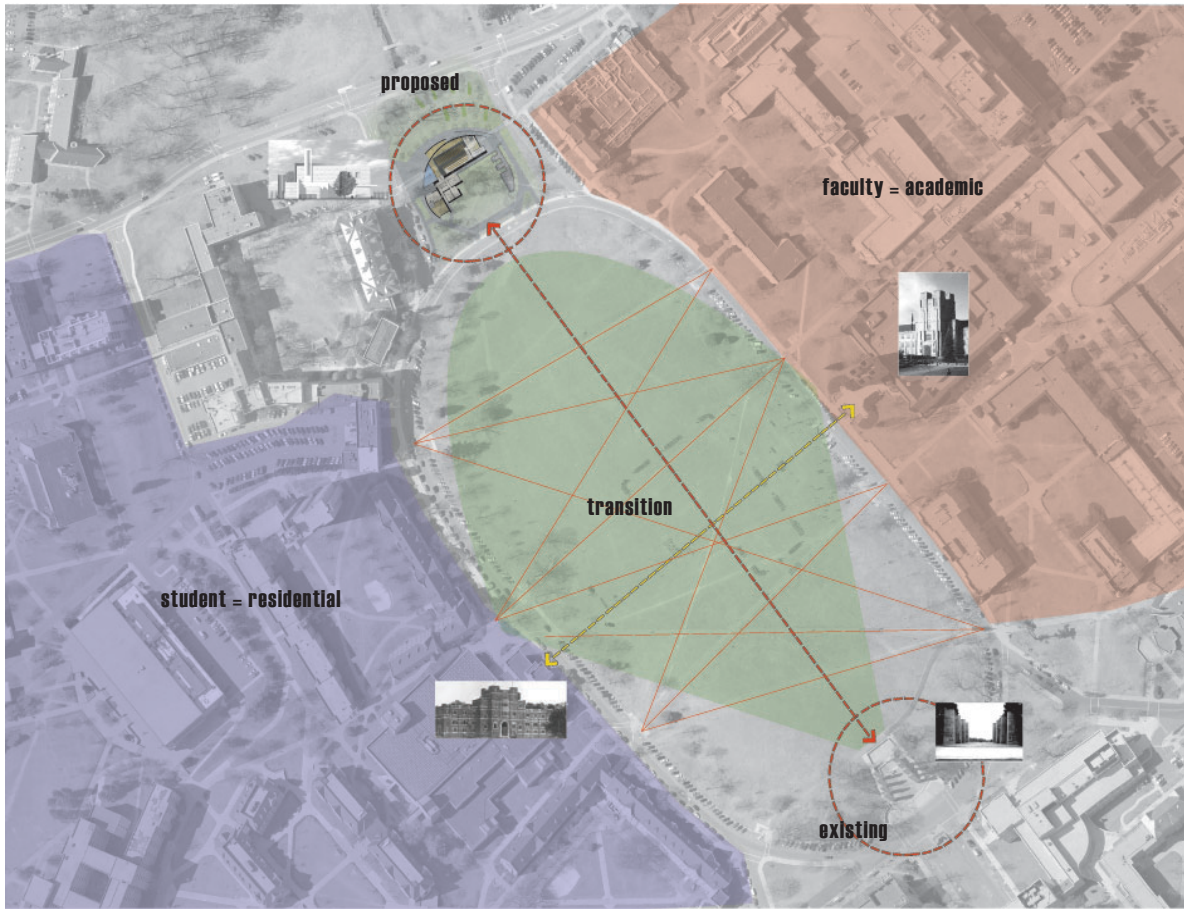


**War Memorial**

Those familiar with Virginia Tech's Blacksburg campus might suggest the campus has much more dire needs before a new chapel. The campus indeed has an existing chapel and it is used regularly for weddings, weekly services, funerals and all types of religious ceremonies. However as a long time student, I believe the chapel is incapable of meeting the spiritual needs of those who frequent the space. Often times, activities are over crowded or the space is inappropriate. In spatial terms, the building is buried into the ground with no natural light or presence on the drill field. In fact many students and visitors stand on the roof of the existing chapel viewing the War Memorial and pillars never knowing that a chapel exists below them.

To meet these needs, the new chapel will have to address the diverse religious population of Virginia Tech, while being able to handle larger groups of attendees. Also the chapel must incorporate spaces that students and faculty could use as an individual, a part of a small group or a large audience. And finally, the building must have a presence to announce its existence and role in campus life.





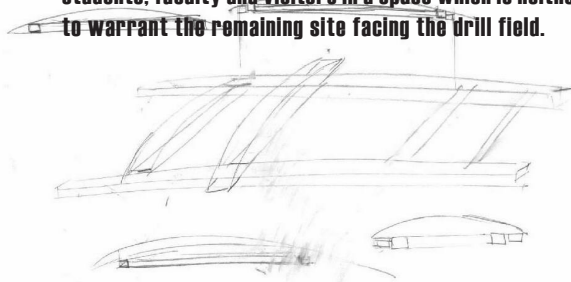
**Virginia Tech - Core Campus**

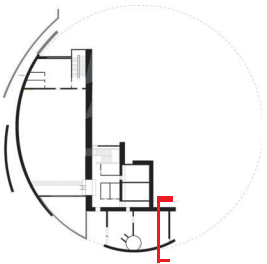
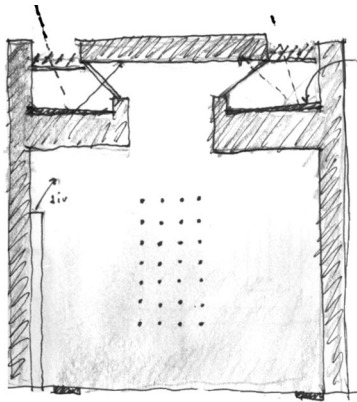
# site

The structure of the campus of Virginia Tech makes it both a fascinating place to study and a challenging place to work. The campus is primarily divided into an academic half and a residential half. Most dining, residential activities and leisure time is spent on the southern half of campus by on-campus residents, while parking and academic buildings are largely allocated to the northern half of campus. The two halves of campus are separated by a large drill field that served originally as a space for the military students to administer and participate in drill formations. Today this drill field is the center of campus used for a variety of activities including sports, rallies, demonstrations, and continued military formation practice.

The southwest end of the drill field remains open. Beyond this space is the duck pond and an amphitheater constructed as one of several of the campus renovation projects suggested by the Roosevelt Administration prior to World War II. This open end of the drill field is a controversial site to locate a new chapel for Virginia Tech, but I believe it is where such a chapel belongs.

The site connects the two differing halves of campus and encloses the drill field to capture the space and frame the view from the War Memorial at the opposing end. The spiritual draw of a chapel unites students, faculty and visitors in a space which is neither academic or residential - but prominent enough to warrant the remaining site facing the drill field.



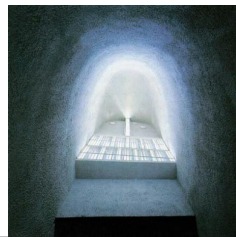
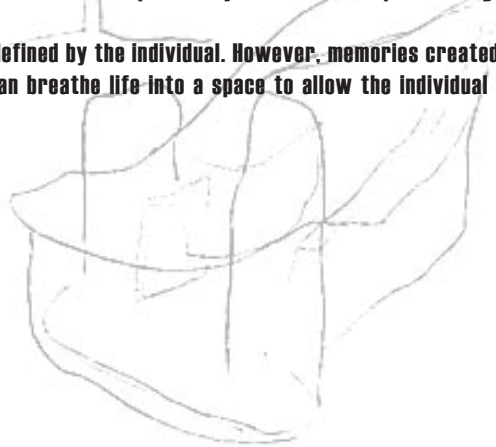


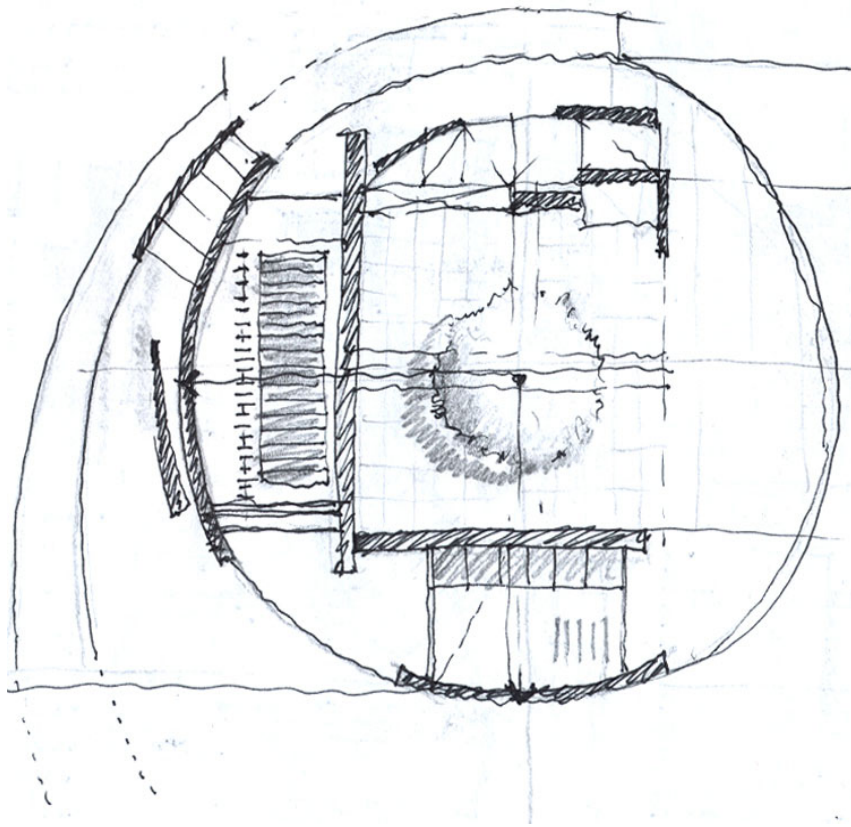
The notion of spirituality is central to all religions but is largely conjured in religious settings through the use of iconography. However, because this chapel has no specific religious affiliation, there can be no recognizable iconography. This brought my study to the Chapel at Ronchamp by Le Corbusier. In this case, Le Corbusier has chosen to use color, light and form to inspire spirituality without (primarily) the use of iconography.

The notion of spirituality is different for everyone and thus to specifically design a space that directly creates spirituality is not only difficult, it is impossible. Rather, I have chosen to focus on the universals of architecture that Le Corbusier uses to allow for spirituality without specifically attempting to create it.

Light and color in the context of formal elements allow for an ever changing experience where the user may visit the space several times and never see the same building. Primarily, the capturing of southern light and refracting of the light through several colored windows are the focus of the spatial experience to allow for moments of spirituality in this new chapel for Virginia Tech.

Ultimately, spirituality is defined by the individual. However, memories created by the careful use of light, color and material can breathe life into a space to allow the individual to feel the expressed emotion of the occasion.



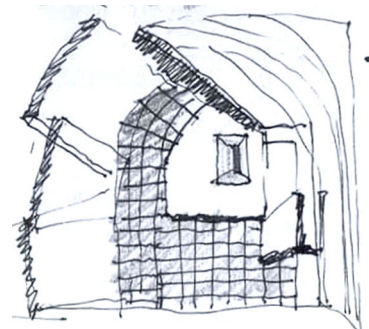


# vision

**Early ideas about the project focused primarily around the existing oak tree on the site. The tree appeared to be at least fifty years old and healthy. Its preservation and presence were crucial in the relationship between the new building and its surroundings. This oak tree invoked designs of radial patterns with the trunk of the tree at the center.**

**The situation of the site next to a major road also brought noise and visual factors into play. However, the relationship to the drill field and the connection of the new chapel to the important major buildings at the core of campus remained the single most influential issue in early design studies.**

**As the design progressed, it became clear that the chapel could not singularly be designed as a response to the site and external conditions. While the building's relationship to the core of campus was important, the internal structure of the building had to convey the spatial ideas that were central to the new chapel's program. In fact, if the chapel were just another building, without spatial significance, it clearly would be extraneous and unnecessary.**





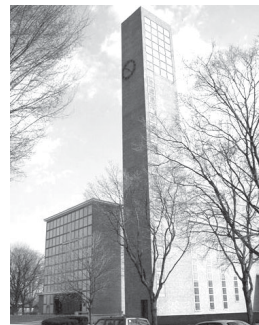
# vision

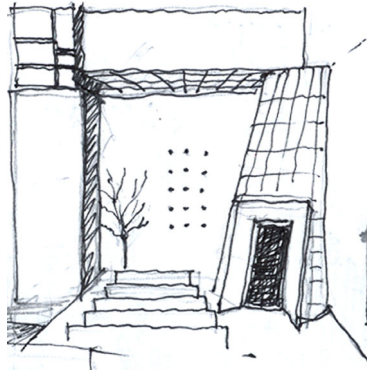
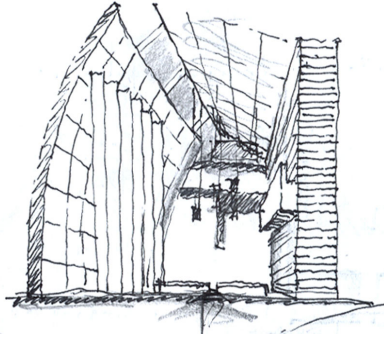
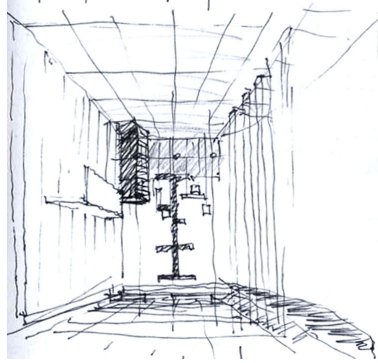
**Several projects have been critical to the formal understanding of this project. As stated previously, LeCorbusier's chapel at Ronchamp was central in my focus on a chapel for Virginia Tech. Visits to St. Ignatius Chapel and the Bellevue Art Museum provided contemporary interpretations of modernist principles of design. However, it was a trip to Columbus, Indiana that ultimately formalized my ideas for the campus chapel project. Saarinen's control of light silently conveyed the spirituality of the space and defined the presence of the project.**

**In addition to the color, light and material studies of Ronchamp, Saarinen's chapel brought about a new vision for the program. Spatial character would be informed directly from formal elements such as volume, reflections and elevation changes.**

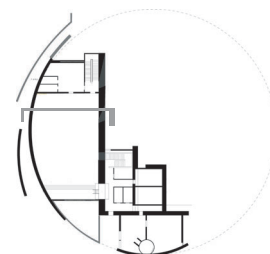
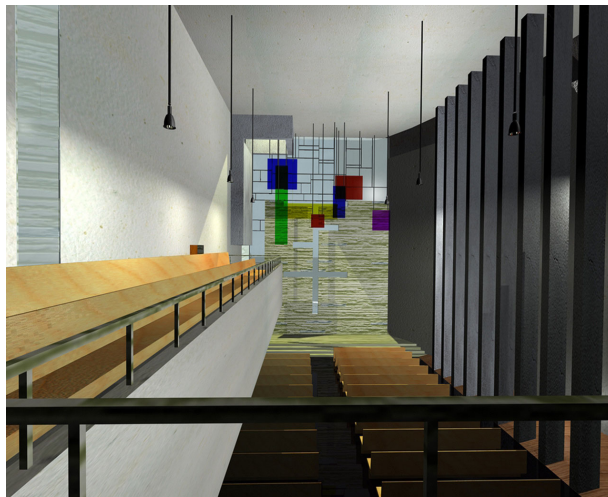
**A key to providing for multiple religious activities is to allow for several different sized spaces: an individual chapel for a single occupant, a secondary chapel to allow up to 30 to worship, and the main chapel which could hold up to 300.**

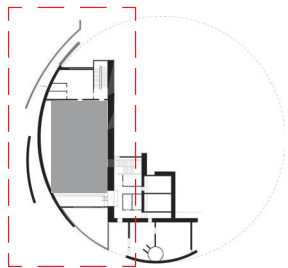
**Though declaring no religious preference, chapels at public universities must provide for nearly all religious services within their confines. In addition to the aforementioned spatial needs, an Islamic prayer space is needed at Virginia Tech to give students and faculty who work or live on campus a space that is accessible for the daily times of prayer. The defining characteristics of these differently sized spaces would be their individual day-light condition.**





# light

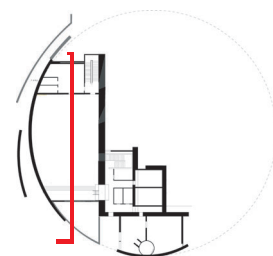
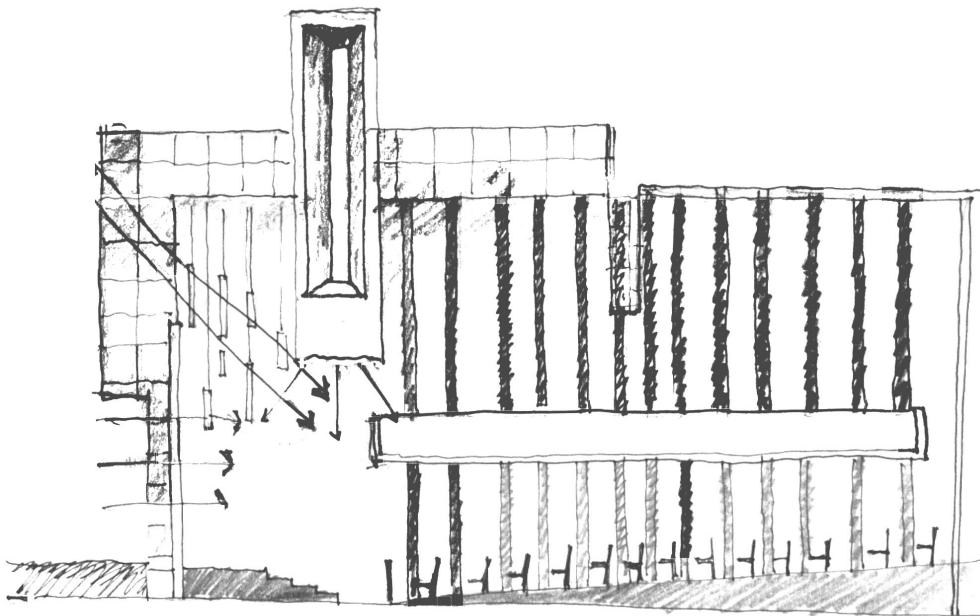


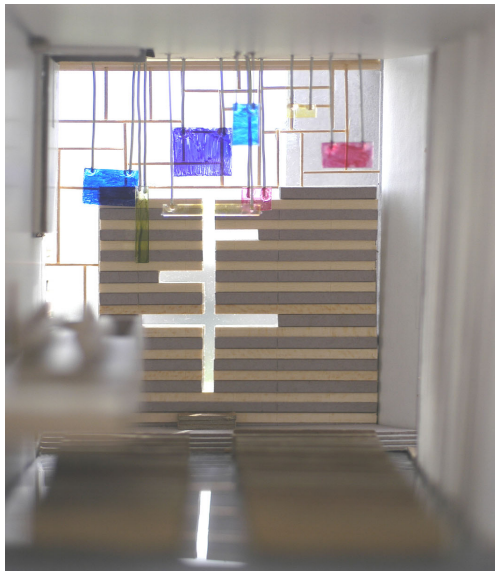


# light

The main chapel space of the project developed around the south facing back window and projection of light into the space. A series of hanging colored glass panes create an everchanging lighting condition throughout the day and year. The panes could be interchanged for different events or times of the year or removed entirely.

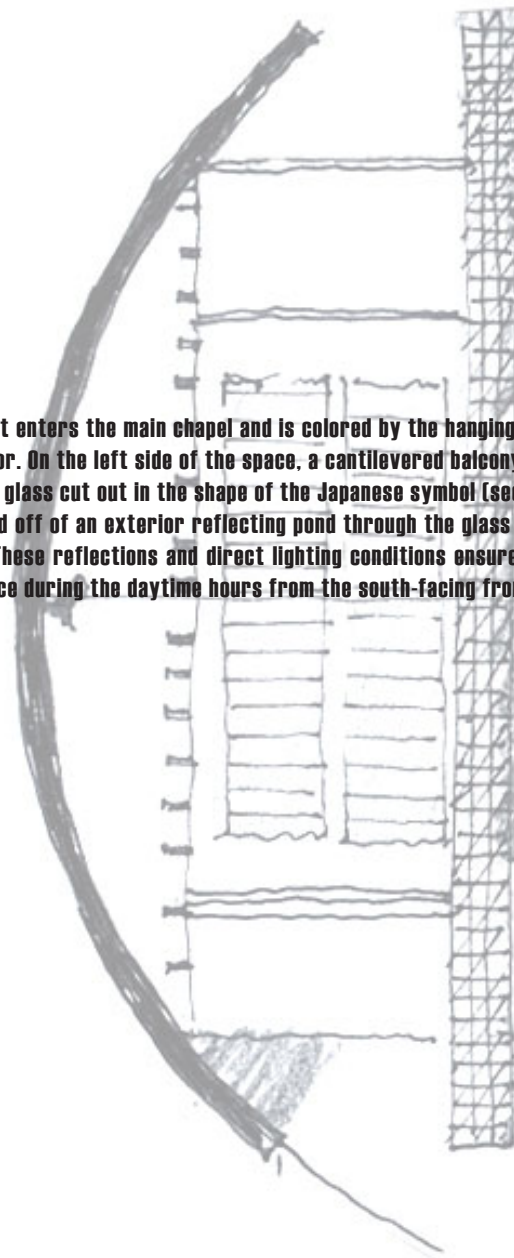
Separated by a series of fifteen columns is an Islamic prayer space. The floor of the prayer space is elevated 12 inches above the main chapel floor and overhead light washes the prayer wall. An additional prayer space is extended out to allow additional room and light to shower the platform.

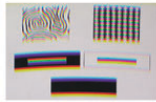
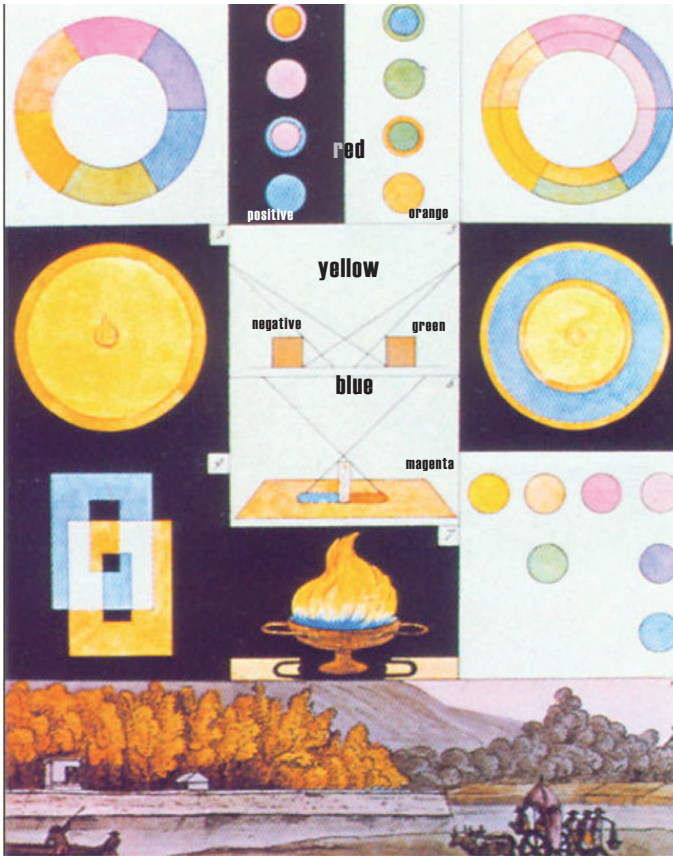




# light

**As the southern light enters the main chapel and is colored by the hanging glass, it is reflected off a glossy tile black floor. On the left side of the space, a cantilevered balcony allows additional seating. The front wall has a glass cut out in the shape of the Japanese symbol (see below at right) for peace and light is reflected off of an exterior reflecting pond through the glass as the sun light gets more directly overhead. These reflections and direct lighting conditions ensure that natural light will always have a presence during the daytime hours from the south-facing front of the chapel.**





**yellow is lighter than blue**

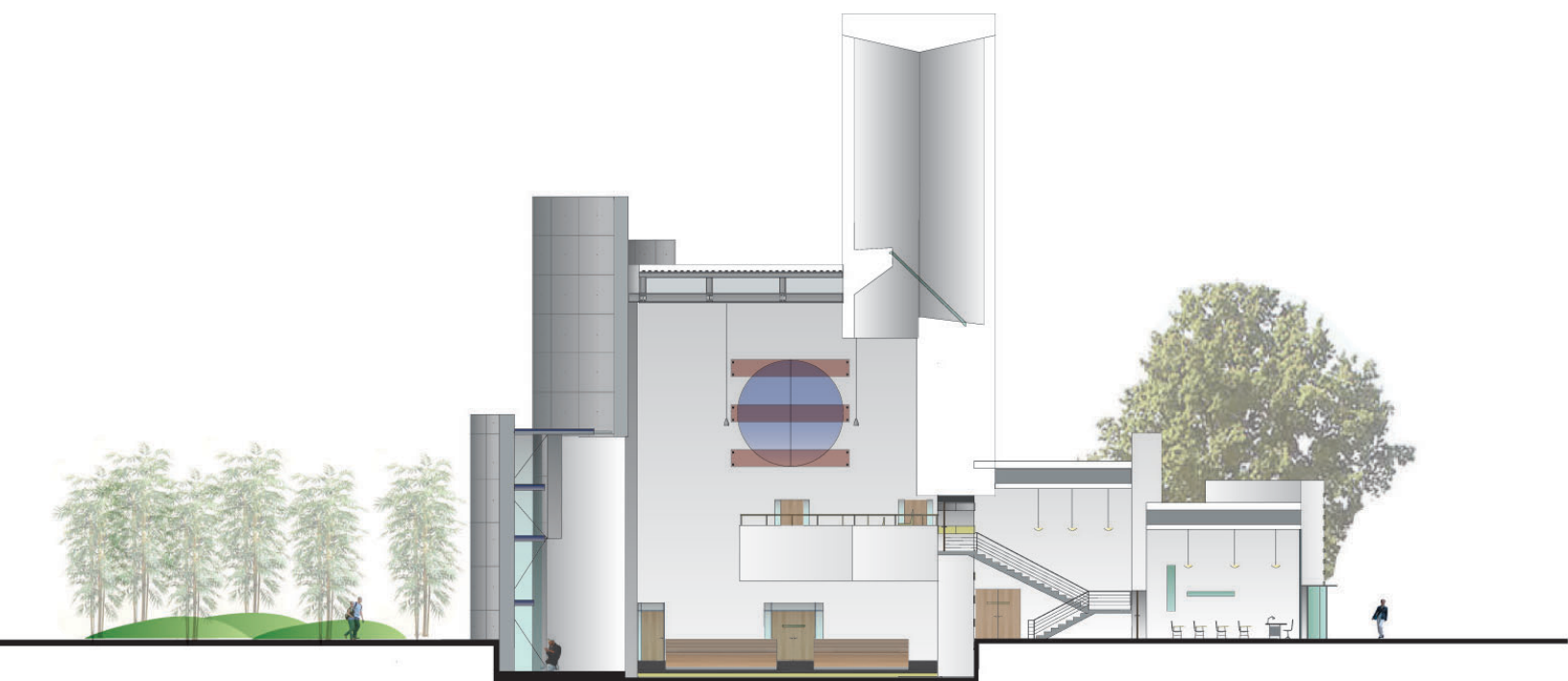
**red blends into yellow, but not into green**

**hence, there is yellowish red, but no greenish red**

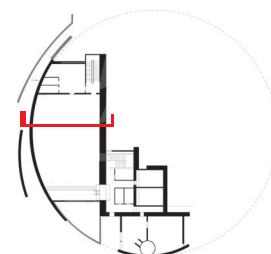
**there is brilliant red, but no brilliant brown**

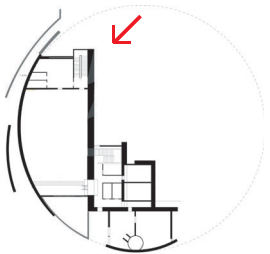
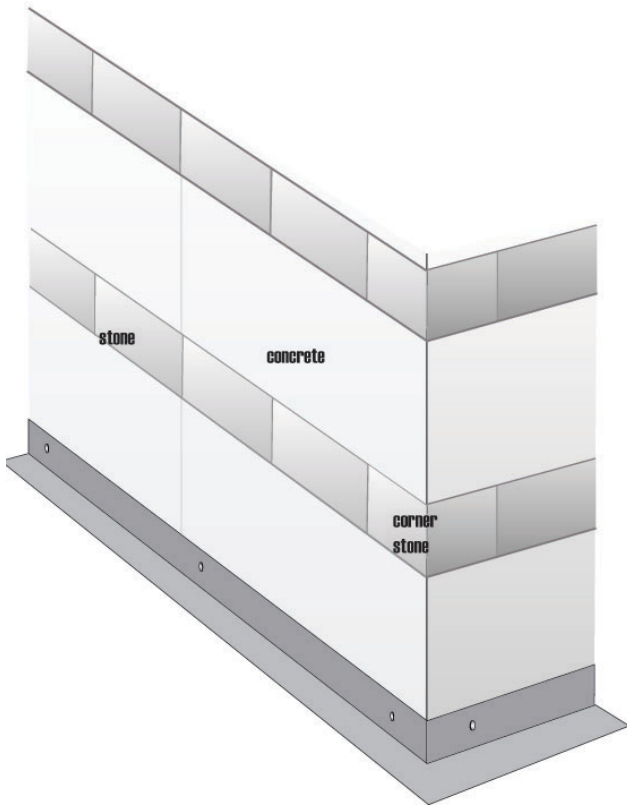
**the combination of yellow and green is pleasing**

**the combination of blue and green is unattractive**

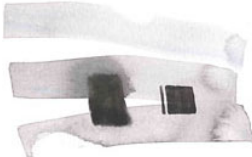
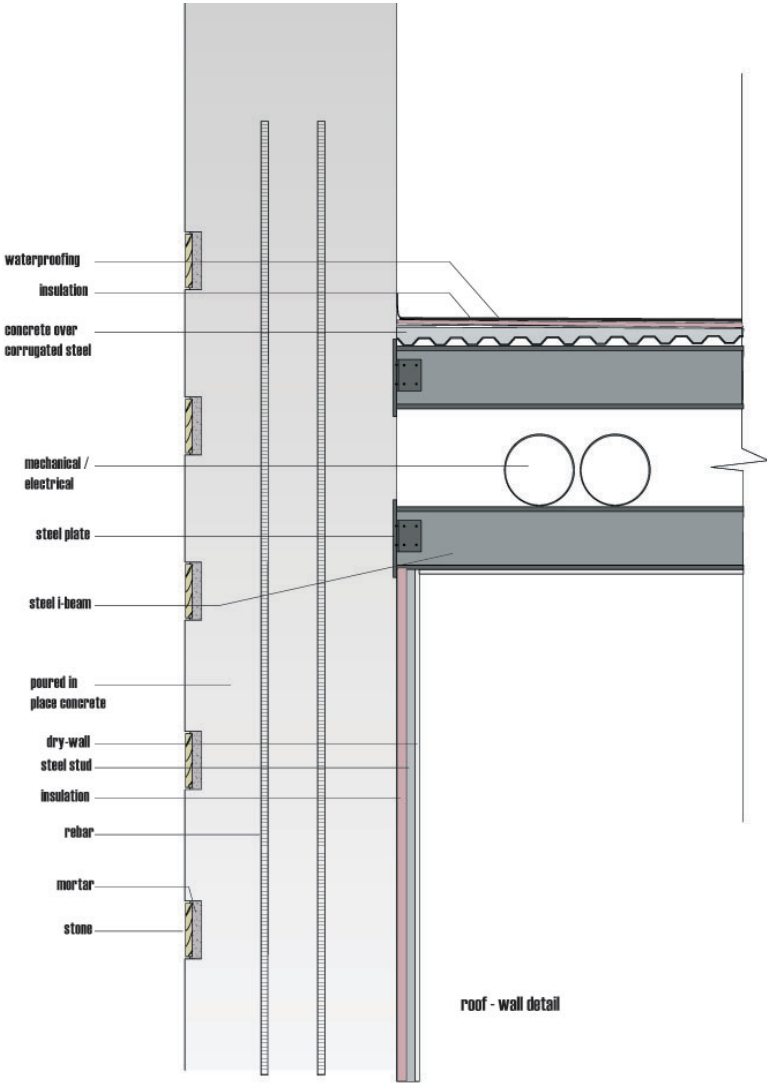


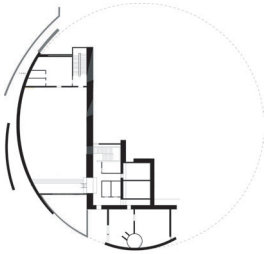
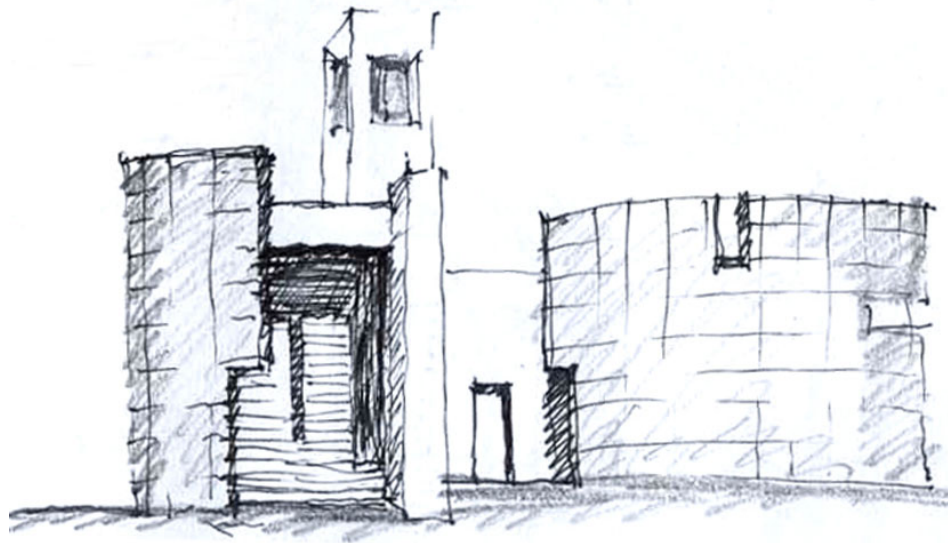
**For the arrangement of the hanging glass panes at the front of the chapel and the permanent window fixture at the back (shown above) Goethe's color theory has been used. The theory names certain combinations more pleasing than others and states that combinations of colors can morph and warp shapes. The rear window has a circular blue cut-out overlaid with three identical rectangular red windows. Because of the larger overlap with the central blue glass pane behind, it appears that the middle red glass pane is smaller than its top and bottom counterparts. However, in reality all three are the same size.**



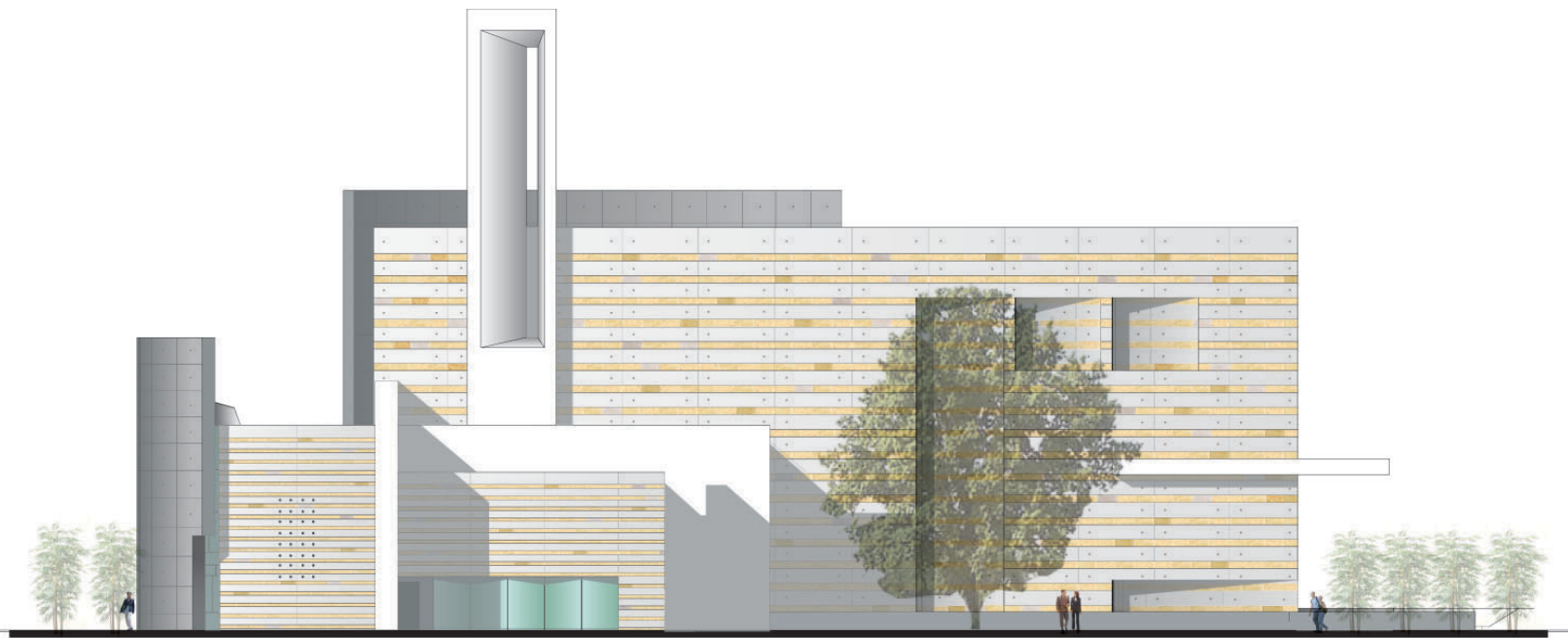


# material

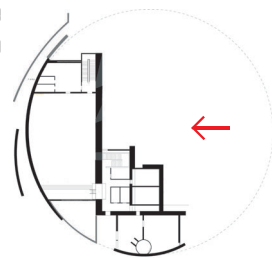


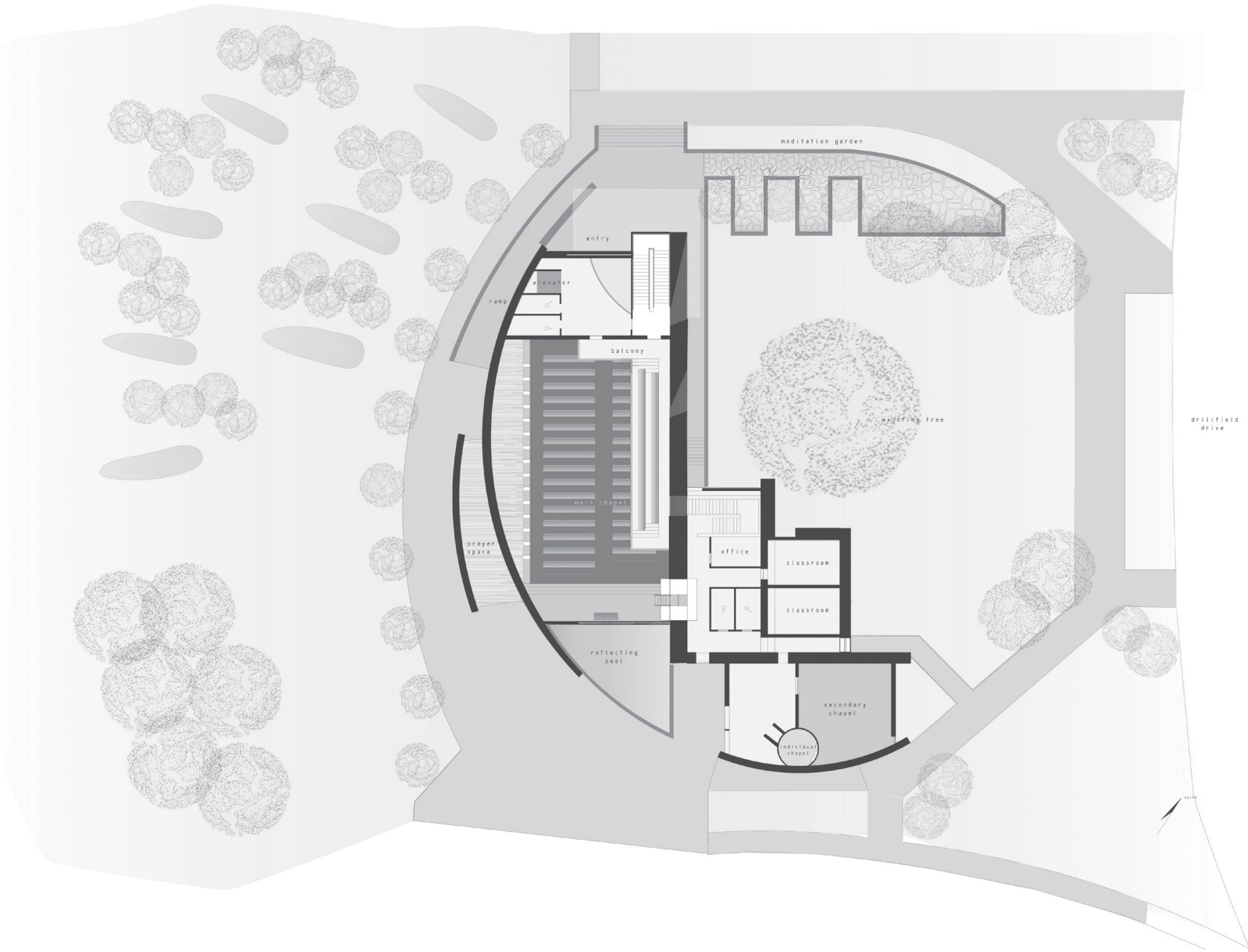


# material



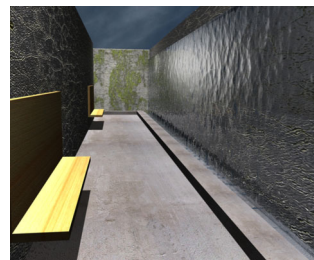
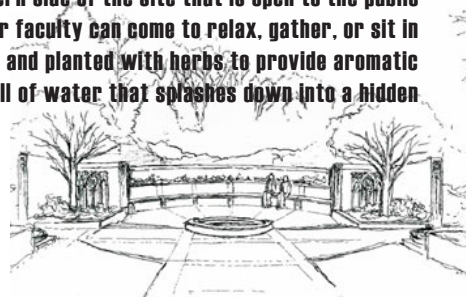
Because of the site's location on the drill field, hokie stone must be a prominent building material. However, the limestone can only be used as a veneer due to its brittle nature. The hokie stone has been inlaid and finished with a polishing process that creates horizontal banding across the building. The scale of the stone to poured in place concrete changes in smaller portions of the building but the ratio remains one part stone to two parts poured in place concrete.

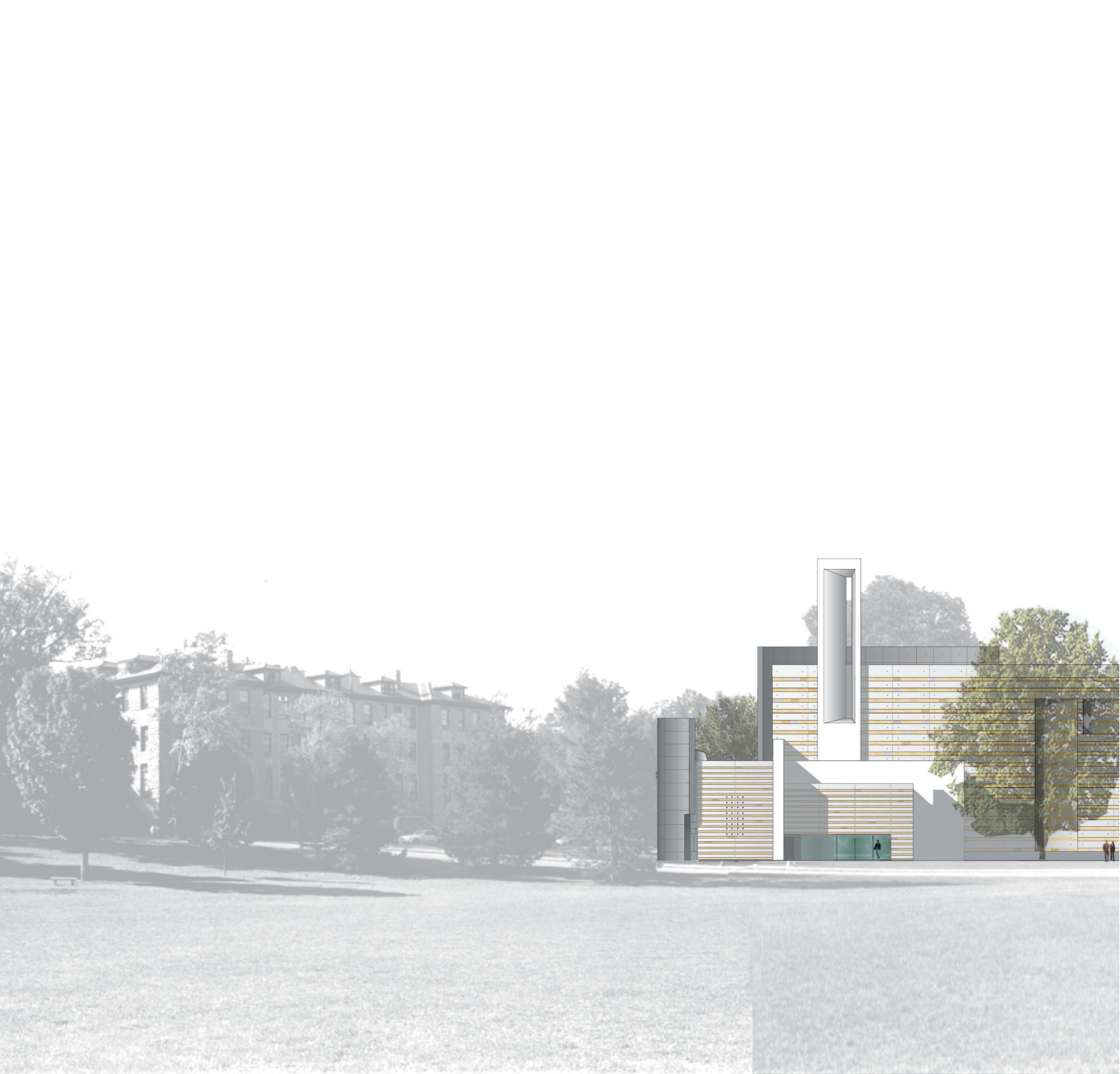




# form

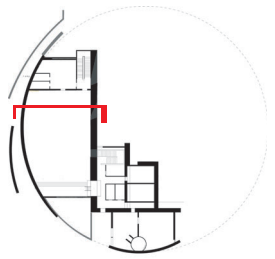
**In addition to the focal chapel spaces, the building incorporates spaces for offices and two classrooms. The classrooms are meant to house religion theory classes for the university. During ceremonies, they could be used as preparatory spaces along with the adjacent bathrooms. These additional spaces are single story and housed in the southeast wing of the building with the secondary chapel. Also, there is an outdoor meditation garden on the northern side of the site that is open to the public all day and all year. It provides a space where students or faculty can come to relax, gather, or sit in solitude. It has a stone walkway paved with loose stones and planted with herbs to provide aromatic therapy. The retaining wall creating the garden has a wall of water that splashes down into a hidden pump system.**



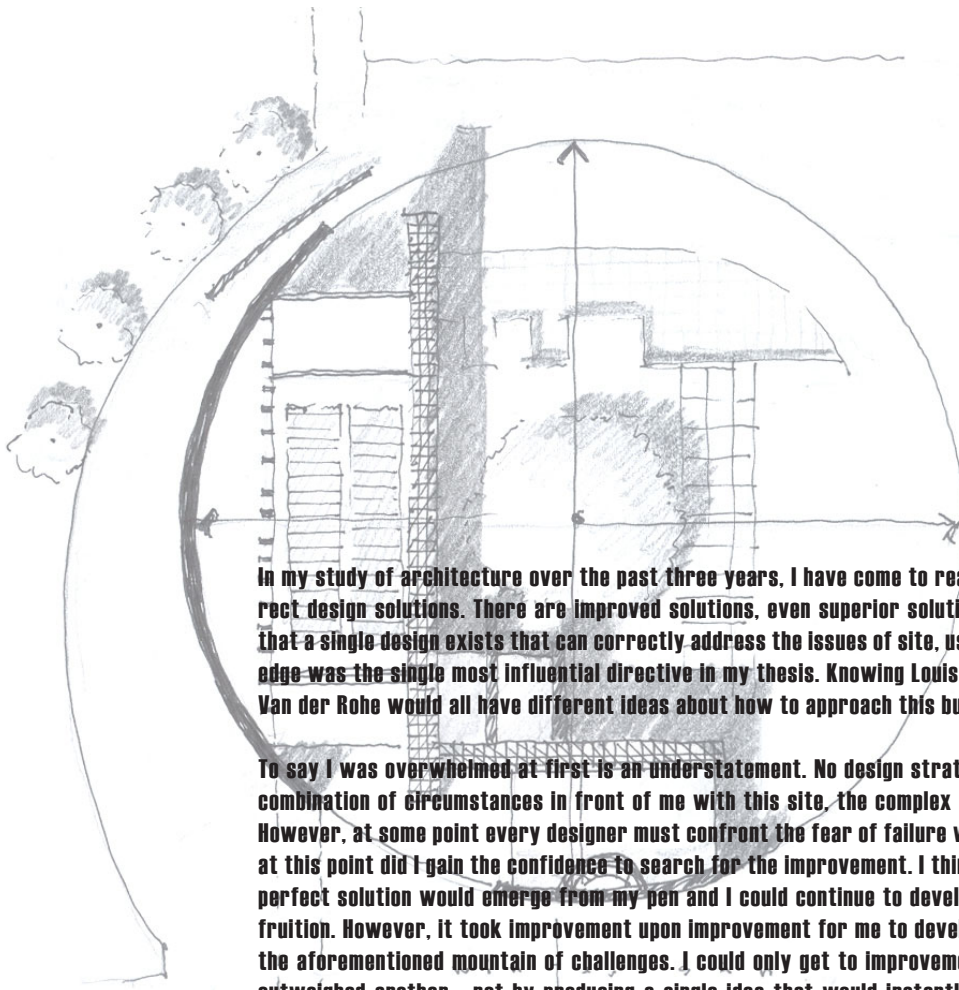




**The stone - concrete system also provides a scale to the chapel. The large drill field facing east side of the project needs a way to help translate its material scale to the adjacent buildings. Likewise, on the interior the reveal of the stone - concrete connection allows for shadows and brings a human scale to the focal front face of the main chapel space.**

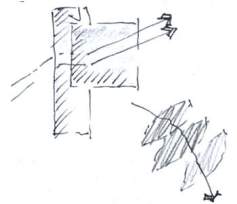


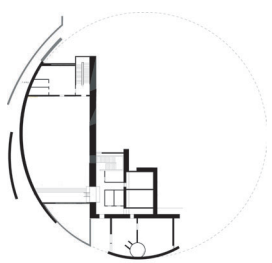
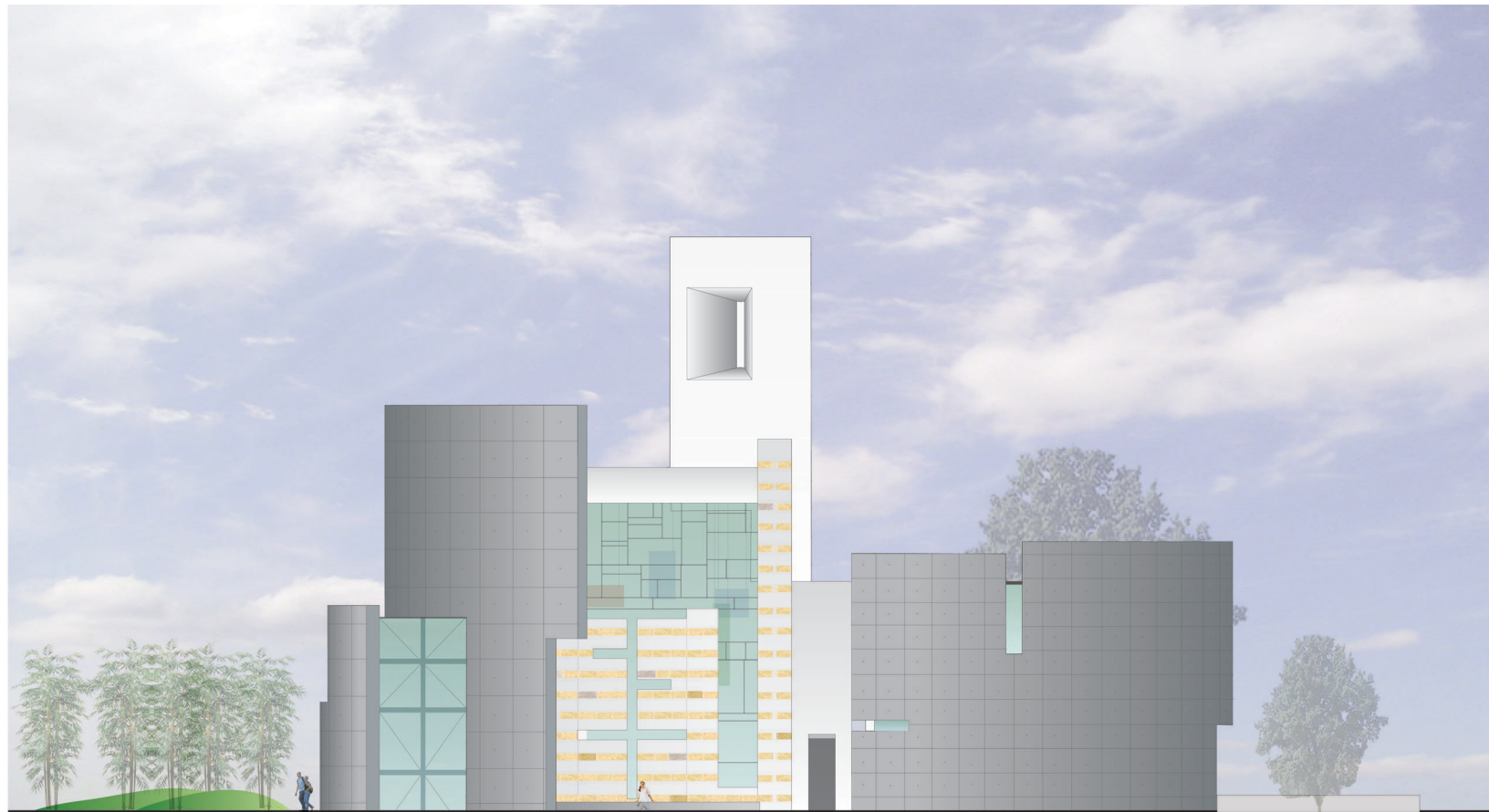
# conclusion



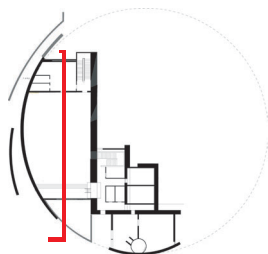
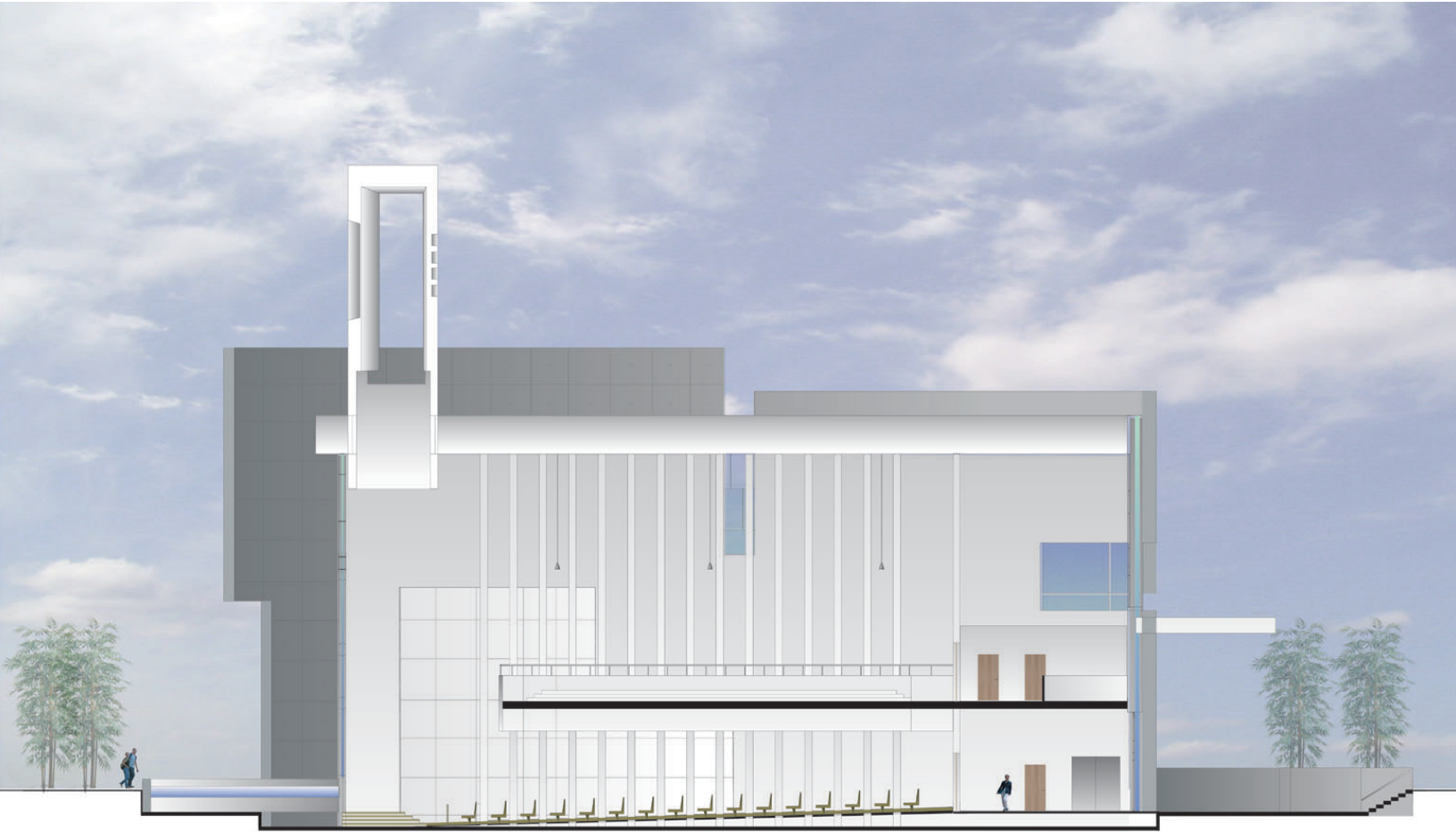
In my study of architecture over the past three years, I have come to realize that there are no correct design solutions. There are improved solutions, even superior solutions, but one can never say that a single design exists that can correctly address the issues of site, use and material. This knowledge was the single most influential directive in my thesis. Knowing Louis Kahn, Le Corbusier or Mies Van der Rohe would all have different ideas about how to approach this building gave me hope.

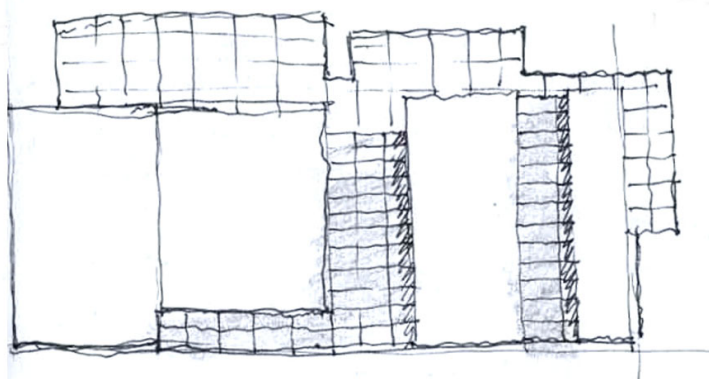
To say I was overwhelmed at first is an understatement. No design strategy seemed to address the combination of circumstances in front of me with this site, the complex program, and building type. However, at some point every designer must confront the fear of failure with complete abandon. Only at this point did I gain the confidence to search for the improvement. I think I hoped all along that the perfect solution would emerge from my pen and I could continue to develop the idea until it came to fruition. However, it took improvement upon improvement for me to develop an idea that stood up to the aforementioned mountain of challenges. I could only get to improvement by seeing that one idea outweighed another - not by producing a single idea that would instantly provide an encompassing solution. Nine months later, here I am, not like a father, but rather like a sculptor who has carved away the excess stone until all that remains is a vision. It is my vision, not the one I started with, but the one that after multiple refinements has been discovered lying deep beneath the unshaped stone .



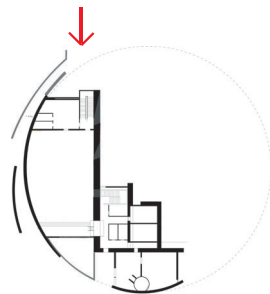
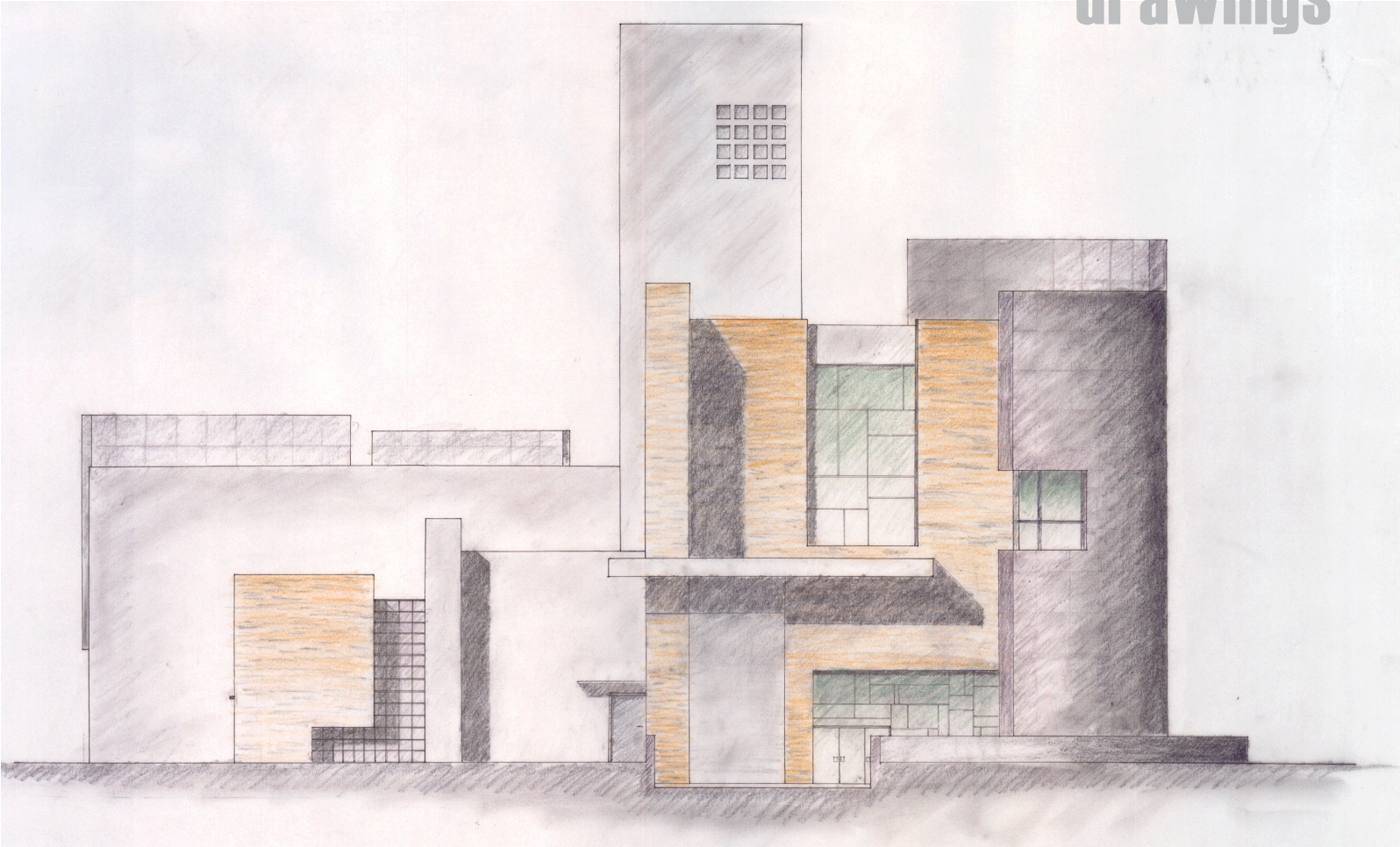


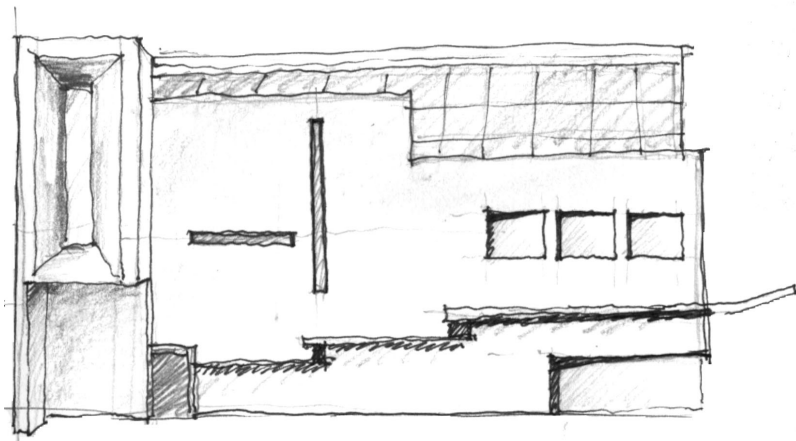
# drawings

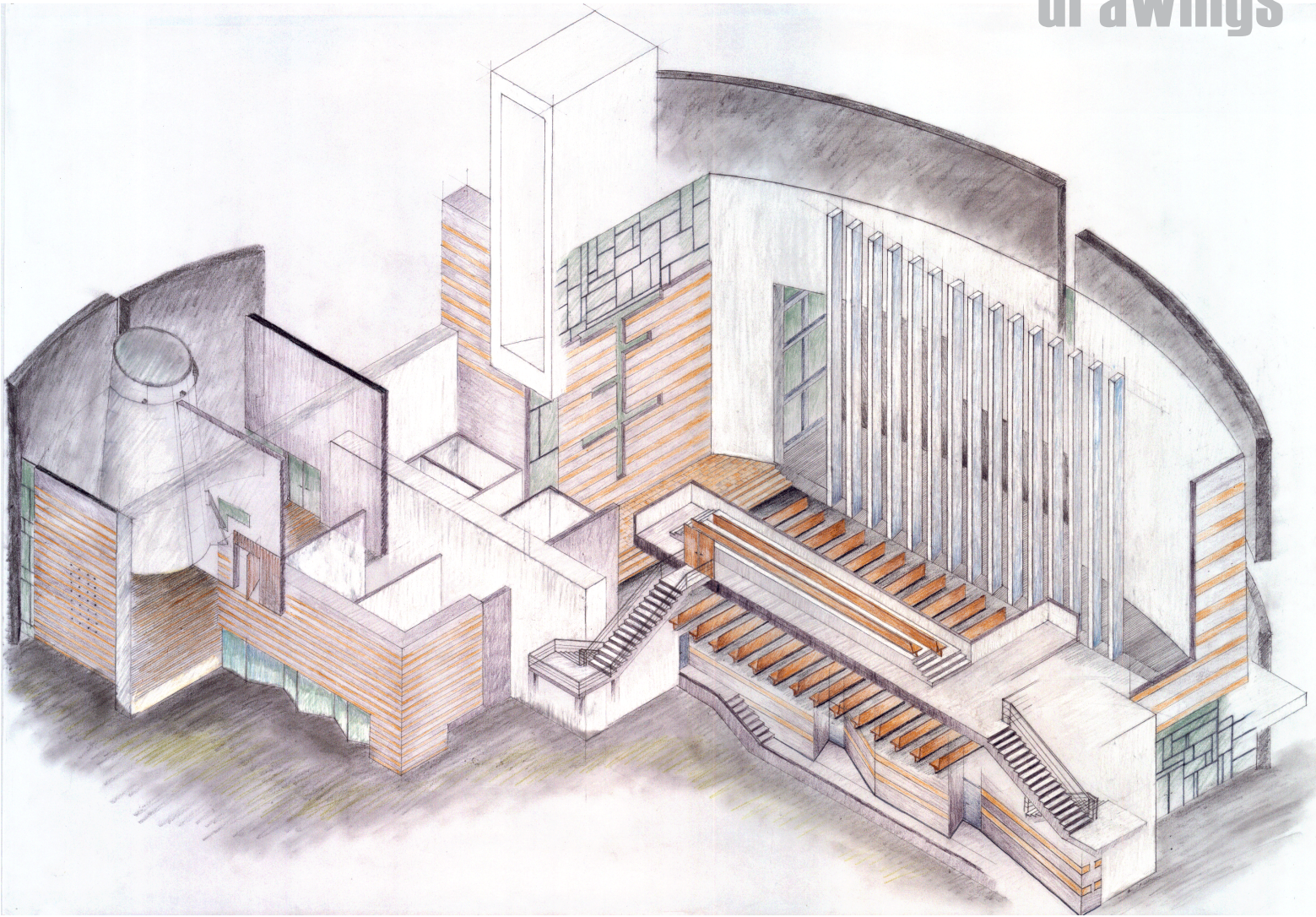




# drawings









# models

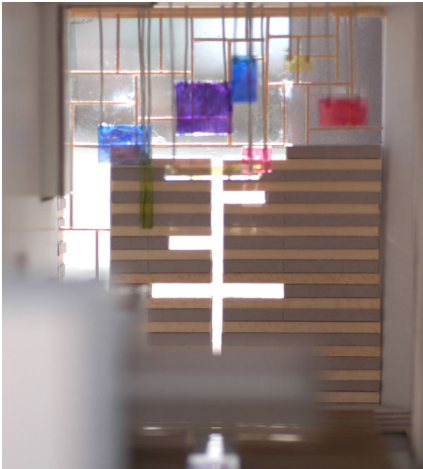
mid-day fall



mid-day summer



mid-day spring



late-day summer





# models



**Thanks... God, Natalie, Saundria and Frank Plecity, friends + family, Hans Rott, Marcia Feuerstein, Jim Jones, Terry Clements, Bill Galloway, Hunter Pittman, Mike O'Brien...**

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"Space and light and order, those are the things that men need just as much as they need bread or a place to sleep."

-Le Corbusier