



saudade

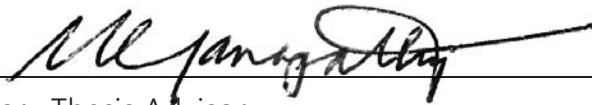


**Saudade** Architecture of 21st  
Century Bereavement

A Design Thesis submitted to the Department of Architecture  
and Landscape Architecture of North Dakota State University

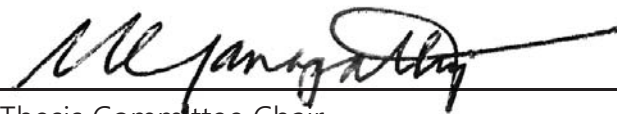
by **Alex Schrader**

in partial fulfillment of the requirements for the degree of  
Masters of Architecture.



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Primary Thesis Advisor



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Thesis Committee Chair

May 2015  
Fargo, North Dakota, USA

## Contents

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### THE PROPOSAL

Tables and figures	6
Abstract	8
Theoretical aspect	10
Typology	14
Case studies	14
Case studies summary	32
Major project elements	34
User/client description	35
Site information	38
Emphases	40
Goals	41
Plan for proceeding	44
Schedule	48

### THE PROGRAM

Theoretical aspect research	56
Theoretical research summary and results	64
Project justification	66
History	68
Site narrative	80
Qualitative site conditions	83
Site information	84
Interior character	86
Quantitative site conditions	88
Traffic maps	89
Area topography	91
Soils and bodies of water	92
Minneapolis climate	93
Site shadows	96
Space interaction matrix	97
Spatial allocation	98
Space interaction diagram	99

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**THESIS APPENDIX**

References	102
Previous studio experience	106
Personal information	107

## Tables and figures

Figure 1   Pontiac Cemetery, North Dakota   Alex Schrader	9
Figure 2   Welkenraedt Funeral Centre exterior   archdaily.com	16
Figure 3   WFC Main chapel   archdaily.com	16
Figure 4   WFC chapel   archdaily.com	17
Figure 5   WFC entry   archdaily.com	19
Figure 6   Floor plan 1   archdaily.com	20
Figure 7   Spatial enclosure plan diagram   Alex Schrader	20
Figure 8   Structure plan diagram   Alex Schrader	20
Figure 9   Ventilation plan diagram   Alex Schrader	20
Figure 9   Ventilation diagram   Alex Schrader	20
Figure 10   WFC section   archdaily.com	21
Figure 11   Lighting section diagram   Alex Schrader	21
Figure 12   Structure section diagram   Alex Schrader	21
Figure 13   Ventilation section diagram   Alex Schrader	21
Figure 14   Approach   dezeen.com	22
Figure 15   Atrium   dezeen.com	23
Figure 16   Entry   archdaily.com	24
Figure 17   Interior   archdaily.com	25
Figure 18   Building and site plan   archdaily.com	26
Figure 19   Spatial plan diagram   Alex Schrader	27
Figure 20   Views plan diagram   Alex Schrader	27
Figure 21   Open-air plan diagram   Alex Schrader	27
Figure 22   Rennes Section   archdaily.com	27
Figure 24   Lighting section diagram   Alex Schrader	27
Figure 25   Structure section diagram   Alex Schrader	27
Figure 23   Horizontality section diagram   Alex Schrader	27
Figure 26   Brihuega exterior   archdaily.com	28
Figure 27   Brihuega interior retrofit   archdaily.com	29
Figure 28   Brihuega interior   archdaily.com	30
Figure 30   Brihuega interior with addition   archdaily.com	31
Figure 32   Circulation plan diagram   Alex Schrader	32
Figure 33   Interior volume plan diagram   Alex Schrader	32
Figure 34   Symmetry plan diagram   Alex Schrader	32
Figure 31   Brihuega plan diagram   dezeen.com	32
Figure 35   Brihuega section diagram   dezeen.com	33
Figure 36   Construction section diagram   Alex Schrader	33
Figure 37   Geometry section diagram   Alex Schrader	33
Figure 38   Natural light section diagram   Alex Schrader	33
Figure 39   109 E 26 St   Alex Schrader	39

Figure 40   Lakewood Garden Masoleum Interior   Cole Strombeck	49
Figure 41   Exedra   gravelyspeaking.wordpress.com	61
Figure 42   Canadian War Museum   Moriyama & Teshima Architects	62
Figure 43   Lakewood Garden Masoleum   HGA.com	62
Figure 44   Pantheon   History.com	63
Figure 45   109 E 26th Street   Gemini Research	70
Figure 46   109 E 26th Street   Alex Schrader	70
Figure 47   109 E 26th Street   Alex Schrader	73
Figure 48   St Louis Cemetery   Jason Phillip Reeser	75
Figure 49   109 E 26th St Front   Alex Schrader	80
Figure 50   109 E 26th St Side   Alex Schrader	81
Figure 51   109 E 26th St Side   Alex Schrader	81
Figure 52   Legal site information   Hennepin.mn.us	84
Figures 53 - 59   109 E 26th Street   Alex Schrader	85
Figures 60 - 63   Floor plan vignettes   Alex Schrader	86
Figures 64 - 68   Interior photographs   Alex Schrader	87
Figures 69 - 71   Traffic maps   Maps.google.com	89
Figures 72 - 74   Metro maps   Metrotransit.org	90
Figures 75   Topography map   Maps.Google.com	91
Figure 76   Soils map   Hydro_bm.esri.com	92
Figure 77   Precipitation   Weatherspark.com	93
Figure 78   Temperature   Weatherspark.com	93
Figure 79   Wind   Weatherspark.com	94
Figure 80   Wind speed   Weatherspark.com	94
Figure 81   Sun path   Gaisma.com	95
Figure 82   Relative humidity   Weatherspark.com	95
Figures 83 - 85   Shadows   Alex Schrader	96
Figure 86   Spatial matrix   Alex Schrader	97
Figure 87   Spatial interaction   Alex Schrader	99
Figure 89   Site planning   Alex Schrader	102
Figure 90 - 94   Space planning   Alex Schrader	102
Figure 95   Elevation planning   Alex Schrader	103
Figure 97   Conservatory massing   Alex Schrader	104
Figure 98   Elevation studies   Alex Schrader	104
Figure 99   Material study   Alex Schrader	105
Figure 100   Conceptual site   Alex Schrader	105
Figure 101   Site plan   Alex Schrader	114
Figure 102 - 105   Floor plans   Alex Schrader	116
Figure 106   Exterior technology   Alex Schrader	118
Figure 107   Seminar in medium gathering space   Alex Schrader	120
Figure 108   Gallery service in medium gathering space   Alex Schrader	120
Figure 109   Conservatory interior   Alex Schrader	122
Figure 110   Informal gathering   Alex Schrader	123
Figure 111   Section / non-traditional services   Alex Schrader	124
Figure 112   Personal photo   Luke Diekman	133

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## **Abstract**

This thesis explores the manner in which architecture can more sympathetically respond to people in a time of loss and grievance. Through adaptively repurposing a historic structure in Minneapolis, MN, a non-profit crematory and funeral home can show an alternative to the current deathcare industry. This alternative is more environmentally sustainable by providing alternatives to harmful cremation and embalming processes, emotionally responsive by creating spaces that encourage the grieving process, and user-focused by providing flexible and innovative spaces which allow for many types of ceremonies.





Figure 1 | Pontiac Cemetery, North Dakota | Alex Schrader





## Theoretical aspect

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**Saudade** (n.) - *a deep nostalgia or longing for someone, someplace, or something that one loves.*  
-- Portuguese, Galician

The cycle of death and life is inescapable. It's impactful, it's powerful, and it's an important moment in a person's life. Why, then, are we faced with facilities that don't seem to understand the emotional state of their users or the consequences of their actions on the environment? The standard funeral home is grim and employs a calculated process for making decisions about the service and interment, many of which are hurtful to the environment. This project will explore the ways in which funeral homes and mortuary centers can reduce their environmental harm while providing facilities and processes that lessen the emotional strain and instead allow users to celebrate and rejoice in the process of celebrating a life that is lost. Sustainable memorialization as a facility commitment is paralleled in the adaptive repurpose of the historic McCullough Building in Minneapolis, Minnesota, solidifying the pledge to preserve the memory of those passed in a responsible way.

**Claim** The American deathcare industry as we know it today is an unsustainable and troubled sector.

**Premise 1** Common funeral and mortuary practices harm the environment through irresponsible embalming processes and wasteful land use.

**Premise 2** Flexibility, freedom, and autonomy within the funeral planning process is a major factor in assuring personal significance and relevancy. Each service should have the potential to be as unique as the person being celebrated.

**Premise 3** The architecture supporting funeral and mortuary services is required to address the emotional impact of the processes in a meaningful way.

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1 The standard American interment process, though harmful in many ways, remains largely unchanged. Dangerous chemicals are used, non-decomposing materials are buried underground, and open land is forever claimed by individual graves and grave markers. Formaldehyde, a known carcinogen and commonly composing 2% of typical embalming fluid, is a major health and environmental threat (Chan, 1992). Studies show that embalmers, pathologists, and various funeral industry workers have higher mortality rates from certain cancers, including myeloid leukemia, nasopharyngeal cancer, and brain cancer (Hauptmann, 2009). Formaldehyde continues to wreak havoc even as the bodies are buried as the dangerous chemical leaks into the soil, killing decomposing microorganisms. Fortunately, no US state requires bodies to be embalmed, even those to be buried as long as certain time restraints are observed (Irving). While cemeteries may have rules regarding the necessity of embalming and casket structure, a growing trend is the natural or green burial. The movement is lead by the Green Burial Council, founded in 2005, who aim to lay the dead to rest in a way that affects the environment in a positive way by contributing to the cycle of death, natural fertilization, and regrowth. This non-profit organization is a resource for those seeking information about more natural burial processes as well as a certification board for cemeteries that wish to commit to sustainable practices as outlined by the GBC (Raymond, 2014). These facilities typically pair natural burials (unembalmed bodies wrapped in a biodegradable cloth or wicker) with natural conservation efforts as well as ecological restoration, showing the ways in which death can connect and encourage life (Raymond). Specific graves are omitted; rather, bodies are placed where the decomposing process may benefit the natural landscape (Raymond). A funeral home's commitment to a green burial from the start can eliminate the need for the carcinogenic embalming fluid and can avoid the practice of claiming

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gravesites in perpetuity.

Though cremation has been looked upon as the more environmentally friendly alternative to embalming (as well as less expensive and efficient), it is not without its own risks and concerns. The process is quite energy-intensive, using fossil fuels, and also releases toxic gasses like mercury and carbon dioxide into the atmosphere (Love Huffman, 2009). In the United States, the percentage of cremations are growing, topping out at 42% in 2011 (“Statistics”, 2013). Alternatives to burial and heat cremation include new technologies that instead utilize water and alkali solutions, called Bio Cremation (“What”).

Clearly, whatever preference a person has after they have passed, whether it entails burial or cremation, there is a more environmentally-friendly alternative.

2

The deathcare industry’s chain to the past is not limited to disposal practices. In my personal experience that I have had with many funeral homes in the Midwest, the facilities and the services they provide are very predictable. Every person is different, yet funeral homes’ gathering spaces are typically designed in a chapel-like arrangement for pre-funeral vigils or wakes. The funeral or memorial itself, usually held at a church, typically accommodates more visitors yet relies upon the same arrangement of seats facing forward to a central focus. Instead of forcing people into such a standardized routine, autonomy should be available to planners and those preparing for their own funeral by providing flexible spaces, both large and small, that can accommodate many different formats. Outdoor services, services that rely upon technology, services that omit a single speaker, and services that may center around a different activity, like sharing a meal, can make the process of laying a loved one to rest more personal and relevant for all personalities, wishes, and budgets. The

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architecture of the funeral home can provide the potential for many different types of services and can continue to flex for families preferences and financial restraints while still allowing for a service that is fulfilling and appropriate.

3

With the understanding that architecture has an impact on the way its inhabitants feel and react to situations, it should be obvious that funeral homes have the responsibility to respond in a significant way to the emotions that its users likely feel. The funeral homes that I have experienced can all be characterized as outdated, gloomy, cramped, and stuffy. On the contrary, nationally celebrated funeral homes utilize natural light, views to outside, landscape, and materiality to provide a sense of comfort and community. These funeral homes should not be the minority, they should be baseline. This project will show ways that even modest funeral centers can provide environments that are comforting and inspiring to those who use them.

## **Typology**

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This thesis project is most aptly characterized as a funeral home and crematory. However, unlike a typical funeral home, this project will provide large-scale gathering spaces that dismiss the need to go to a church or larger event center to host all ceremony invitees.

## **Case studies**

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Case studies are useful in that they draw from the particular to the general. With a collection of well-analyzed case studies that have certain similarities with the thesis proposal, innovative design solutions and real-world examples of performance can be acquired.

Potential precedents were chosen based on a collection of qualifications, which would assure that the precedent would afford logical design guidance. Building size and setting are included on this list, along with the inner social workings of the building and its internal philosophy. The list of characteristics can be found on the facing page with indication of how closely the precedent aligns itself to the design proposal.

Following the tables, an in-depth study of each case is outlined which will provide detailed information about each precedent and analyses of the different elements. Graphical diagrams of each case are also included which show information about the design in regards to plan, section, and elevation.



### Welkenraedt

Likeness to thesis	same	similar	dissimilar
TYPOLOGY		■	
SCALE			■
CONTEXT			■
CLIMATE ZONE			■
PROJECT ELEMENTS		■	
USER BASE		■	
GOALS		■	

Relevant to proposal	yes	neutral	no
MATERIALITY		■	
ECS		■	
STRUCTURE			■

### Rennes Metropole

Likeness to thesis	same	similar	dissimilar
TYPOLOGY			■
SCALE			■
CONTEXT			■
CLIMATE ZONE			■
PROJECT ELEMENTS		■	
USER BASE		■	
GOALS		■	

Relevant to proposal?	yes	neutral	no
MATERIALITY			■
ECS		■	
STRUCTURE			■

### Chapel Brihuega

Likeness to thesis	same	similar	dissimilar
TYPOLOGY			■
SCALE			■
CONTEXT			■
CLIMATE ZONE			■
PROJECT ELEMENTS		■	
USER BASE			■
GOALS		■	

Relevant to proposal	yes	neutral	no
MATERIALITY		■	
ECS			not covered
STRUCTURE		■	

## Case study 01 · Welkenraedt Funeral Centre

**Architects** Dethier Architectures  
**Location** Welkenraedt, Belgium  
**Typology** Funeral home, crematory, cemetery  
**Year** 2010  
**Size** 10,794 square feet  
**Source** [archdaily.com/375553/welkenraedt-funeral-centre-dethier-architectures](http://archdaily.com/375553/welkenraedt-funeral-centre-dethier-architectures)

The Welkenraedt Funeral Centre (WFC) is a powerful project that utilizes views of the site, interior texture, natural lighting, and artistic installations to provide patrons a calming sense of tranquility and oneness with nature and each other. The form of the building is comprised of two parts: the smaller is home to cafeteria and dining spaces, the larger dedicated to a chapel and second story office space, with the basement housing cremation-related equipment. These spaces are anchored on the middle tower, which provides an outlet for the crematory exhaust, a light well to the building core, and natural ventilation intake.

Throughout the building is a carefully curated concept of balance and organicism. Connection with the large site is maintained from the visitor's first approach: the building seems to grow from the earth, and is capped with a "floating" roof plane that mimics the topography. Upon closer interaction and also from the interior, the large floor-to-ceiling glass expanses are a permeable barrier that blur the environmental distinction. A commissioned art installation contributes to

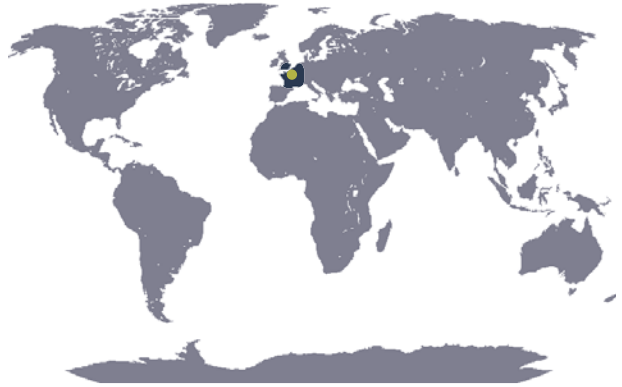


Figure 2 | Welkenraedt Funeral Centre exterior | [archdaily.com](http://archdaily.com)



Figure 3 | WFC Main chapel | [archdaily.com](http://archdaily.com)

this motif by spreading throughout spaces, unbounded by partitions, and carrying the eye upwards and outwards. Open-air spaces allow for gathering in the indoor-outdoor transition.

This case is a valuable area of study because it is similar in scale, contains many of the same project elements, aligns closely with many of the goals of this thesis, and provides inspirational examples of the use of materials, spatial volume, and environmental control systems.

**SCALE** between the proposed thesis and this building precedent are similar. The WFC measures at 10,794 square feet, while the historic Minot Grocery Building is around 6,600. Both buildings are medium sized. Their footprint, however, is quite different, with the Minot Grocery Building being a more compact four story building and square configuration compared to the WFC's more polygonal, sprawling, and horizontal form. This distinction is not considered a fault in the case study. The WFC's form is a poetic and graceful design that encourages looking outward and appreciating the natural views. These values are still true with the proposed thesis, and with a more constrictive building footprint to work with, inspiration from the WFC is beneficial to mimicking the grace and beauty of the building.



Figure 4 | WFC chapel | [archdaily.com](http://archdaily.com)

## Case study 01 · Welkenraedt Funeral Centre

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**PROJECT ELEMENTS** that are similar to the thesis proposal include the flexibility within spatial configuration as well as use. Large gathering spaces are dramatic, but are accompanied by smaller gathering spaces that have available partitions. Three rooms have a rotating partition system, providing the potential for many sizes of receptions. Some of these rooms even have the ability to open to the outside, making reality of the poetic theme throughout the interior. The availability of a cafeteria makes for even more options, also with the ability to be partitioned into sections.

The **GOALS** of the designers and client are closely aligned with those outlined in this thesis proposal. The architect employed an artistic theme throughout the interior that is explicitly non-religious and not culture-specific, but allows for users to extrapolate from the starry images their own meaning. The configuration of spaces as well as materiality was also designed to foster a sense of togetherness, intimacy, and comfort. The constant connection to nature is also a motif that coincides with this thesis, as it is a design element that aims to provide tranquility to the patrons.

The **USE OF MATERIALS** in the WFC is a large source of inspiration, though the palette of glass, wood, and concrete is not strictly in line with the available materials at the McCullough Building. The graceful

organicism of these materials is what is most prominent. They create clean lines, soothing textures, and provide a warm atmosphere while remaining minimal and architecturally dominant in regards to decoration. The use of heavy monolithic concrete is perhaps most similar with the condition of the McCullough, however the modernist tendency of the designers to use materials modularly (unfinished plywood furniture, raw concrete, natural wood panelling) is quite akin to the prominent brick structure in the interior and exterior of the thesis site.

**ENVIRONMENTAL CONTROLS** in use at the WFC are a valuable area of study because they use passive techniques to cool the two segments of the building. In commitment of the thesis design to sustainability of interment and burial practices, every effort must be made to mirror this goal architecturally. These green methods are more easily implemented in new construction, however the case study can be used as an example of ways to ventilate between crematory spaces.

The **STRUCTURE** may be one of the most outright differences between the thesis proposal and the case study. The young nature of the WFC means that many structural and material applications could be made to give the building a larger span and a sense of weightlessness that is restricted in the masonry bearing wall construction of the McCullough Building. Though assembly

details of the two will remain largely exclusive, the WFC is still an inspirational example of how the structural assemblies have created a strong graceful expression.

**THE MAIN TAKEAWAYS** from this project include:

The materiality that creates clean, bright, airy, yet beautiful and warm interiors. This is a priority because it creates a calming atmosphere that is important for a space that will house such emotional strife.

The method of decorating the spaces without relying on religious iconography or culture-specific symbols, yet still providing a theme that carries between spaces and creates unity. These types of applications include all users and allow for diversity and practicality between many different groups. Not only will the clients of the funeral home have different belief systems and cultural backgrounds, the guests of the ceremonies will likely differ from each other as well.



Figure 5 | WFC entry | [archdaily.com](http://archdaily.com)

Figure 6 | Floor plan 1 | archdaily.com

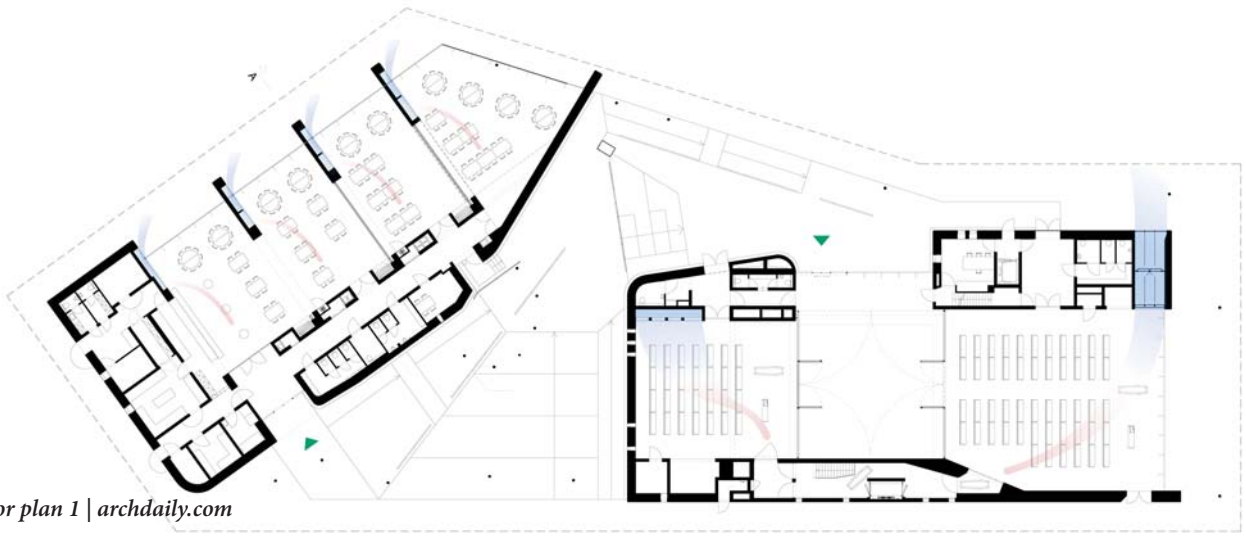
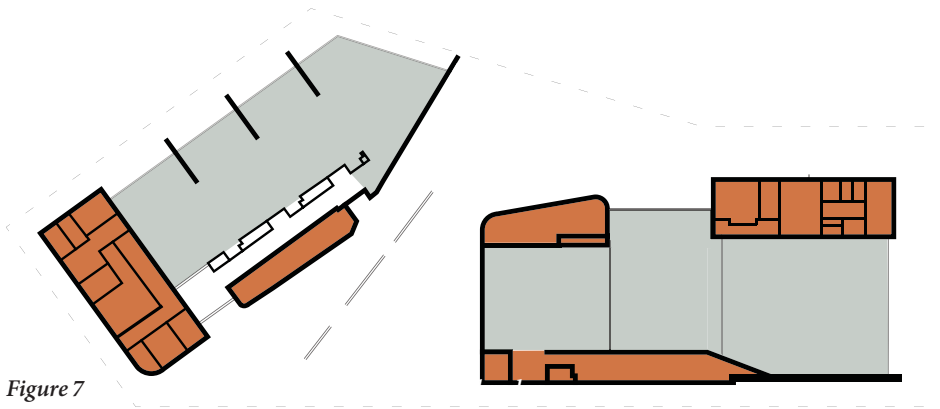
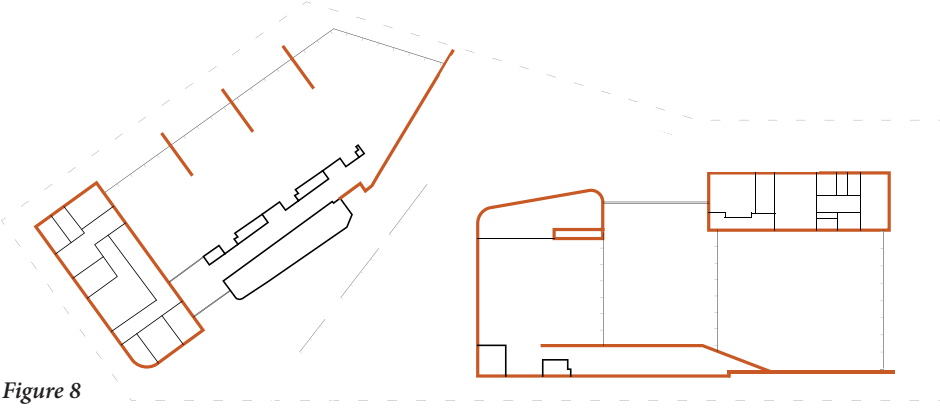


Figure 7



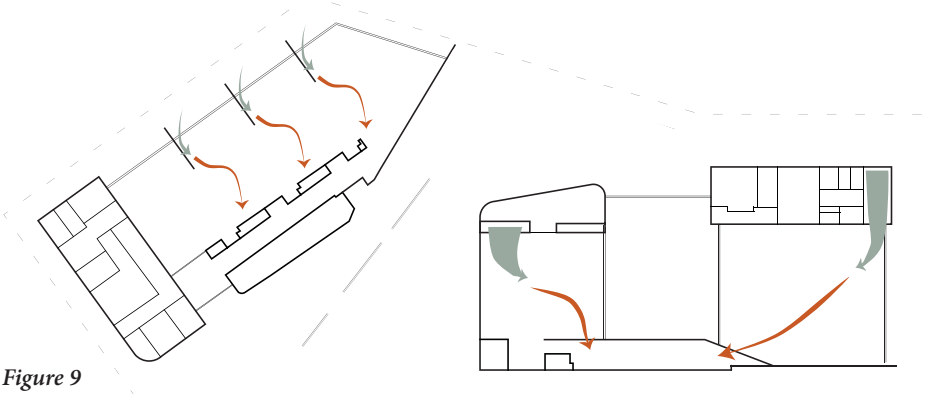
spatial enclosure diagram  
**concrete** glass

Figure 8



structure diagram  
**heavy masonry** curtain wall

Figure 9



ventilation diagram  
**warm outtake** cool intake

Figure 9

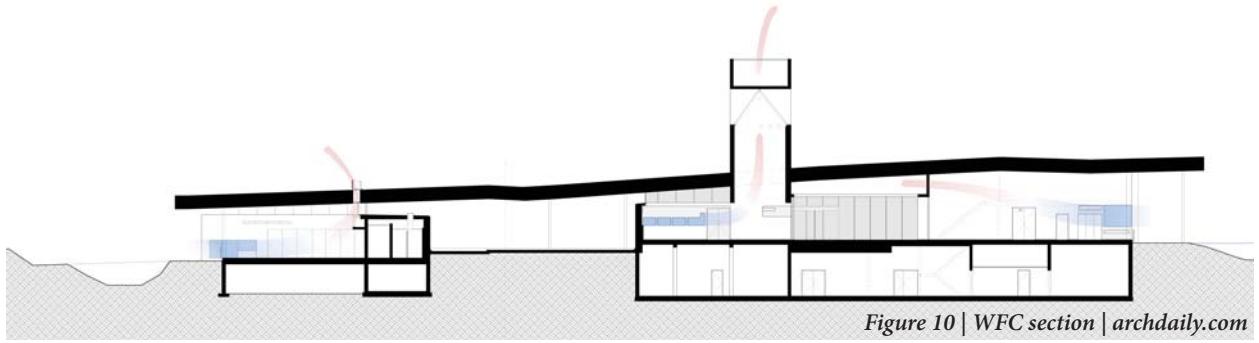
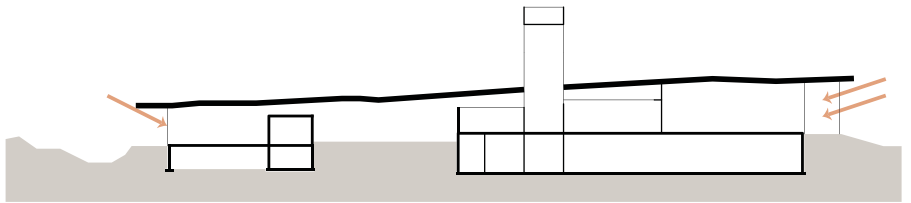
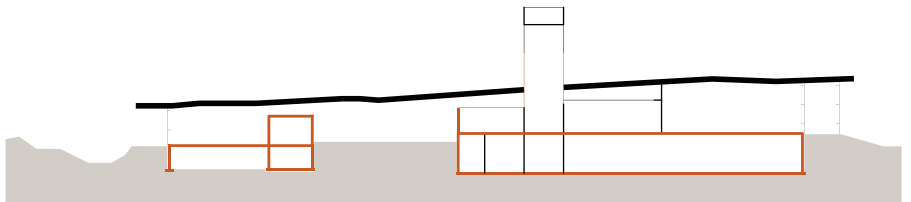


Figure 10 | WFC section | archdaily.com

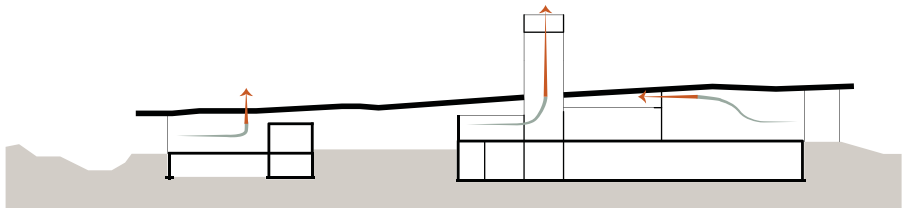
natural lighting diagram  
**average sunlight**



structure diagram  
**heavy masonry curtain wall**

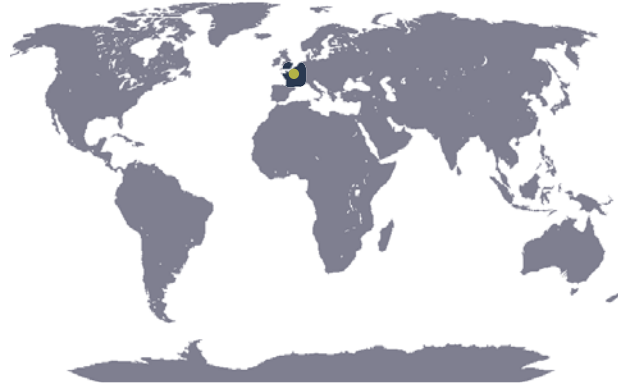


ventilation diagram  
**warm outtake cool intake**



## Case study 02 · Rennes Metropole Crematorium

**Architects** Plan01  
**Location** Vern-sur-Seiche, France  
**Typology** Crematorium  
**Year** 2014  
**Size** 3,608 square feet  
**Source** [archdaily.com/375553/welkenraedt-funeral-centre-dethier-architectures](http://archdaily.com/375553/welkenraedt-funeral-centre-dethier-architectures)



The French architecture firm of Plan01 has done several crematoriums, and they are all philosophically rich and architecturally intriguing. The Rennes Metropole Crematorium is no exception. The building is situated on a large lot with a long approach that allows for a personal detachment from the outside world. The project is meant to envelop the user from the beginning; to transport them into a world that embodies dignity, serenity, peace, and tranquility. As the architects said, "a sensitive subject deserves sensitive treatment" ("Welkenraedt"). With the architecture inviting the user to seek a sense of internal intimacy, the site can become a place that allows and even encourages a period of grievance and healing.

The most obvious design motif is the reliance on circles. This shape was derived as a multi-faceted symbol and spatial element. Symbolically, the architects say it can represent the beginning and the end; a complete and natural cycle. It can also represent a biological cell or a constellation. These meanings, as intended by the designers but entirely open-ended to personal



Figure 14 | Approach | [dezeen.com](http://dezeen.com)



interpretation, allow for the site to become both spiritual and secular and free from distinct religious, philosophical, and cultural definition. The circular spaces converge together to create a feeling of participation, community, and togetherness. The spatial arrangement is also interesting in that circulation patterns are not strictly defined, and are instead arranged so that visitors may meander. This concept was implemented because it prevents users from being forced into a set routine and allows them to set their own pace and process. The main ceremonial spaces are large, dark, and intimate. The focused light source in the ceiling provides an clear user focus, and seems to claim a piece of the sky that “belongs to the mourners.” Supporting spaces closer to the perimeter typically feature glass and meld the outside and inside, reducing the feeling of being shut in. The dichotomy of these two spaces shows the contradictory need in a crematorium for openness and intimacy.

**SCALE**, in comparison with the proposed thesis site, is similar. The Rennes Metropole Crematorium (RMC) is 3,608 square feet while the McCullough building is 7,744 square feet of built structure with 4,700 square feet of buildable surface. Like the Welkenraedt Funeral Center, the footprints are quite dissimilar. The organic arrangement of spaces and large site is antithetical to the rectilinear and standardized structure of the thesis site.



Figure 15 | Atrium | [dezeen.com](http://dezeen.com)

## Case study 02 · Rennes Metropole Crematorium

Comparing the **PROJECT ELEMENTS** of the two buildings, there are several that coincide. The crematorium is a clear match, and the availability of flexible spaces for users to wander is also similar. The large site and availability to connect spaces organically is lost in the GMB, but the importance of nature in the RMC is mirrored in the thesis proposal. Flexibility is also an element of both, as the ceremonial spaces are able to be configured for more or less privacy and square footage.

**GOALS** of the Rennes are closely in line with the thesis as well as the Welkenraedt in the attempt to facilitate any mode of grievance or belief system that the user finds most appropriate. The use of circles as an open symbol readily available for interpretation is a

strong motif, as well as the designer's reliance upon nature as a main focal element. The reasoning for the configuration of spaces, and the explicit intention for an environment of togetherness and community is mirrored in the thesis proposal.

The **USE OF MATERIALS** in the Rennes is more similar to the Welkenraedt Funeral Center case study than to the available materials in the Minot Grocery Building. Like the WFC, the materiality is quite well done and does can still impact the design solution in smaller-scale applications. The use of glass to connect indoors and outdoors, the heavy concrete roof to provide a sense of protection, and the organic materials provide a sense of familiarity and texture. These elements



Figure 16 | Entry | [archdaily.com](http://archdaily.com)

prevents the site from becoming stark within the restrained building materiality and color pallet.

**STRUCTURE** of the Rennes is similar to the Welkenraedt in that they are both mixed materials with heavy glass usage, plus concrete and wood. Both of the case studies are product of an era of construction practices that are wildly futuristic compared to the MGB. The structural solution may be possible to deconstruct to apply to the thesis project in small-scale applications, however it will be more useful to subtract the structural ideas and implications than the specific techniques.

The **MAIN TAKEAWAYS** from this project include:

The linkage between interior and exterior, and the way in which the designers rely upon nature to provide emotional support for users on the interior. Directive skylights, curtain walls, and water features all contribute to this effect.

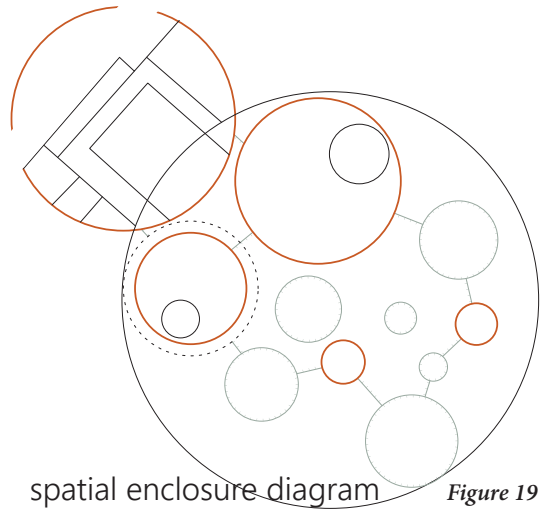
The commitment to allowing guests to meander. This concept is important in allowing the users to control their own experience of the building and falls closely in line with the proposal's goals.



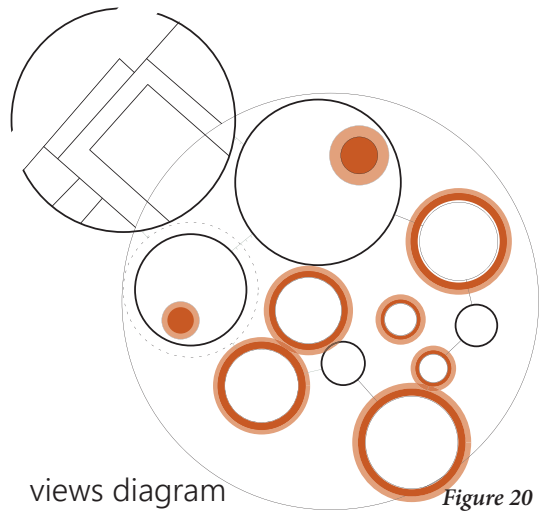
Figure 17 | Interior | [archdaily.com](http://archdaily.com)



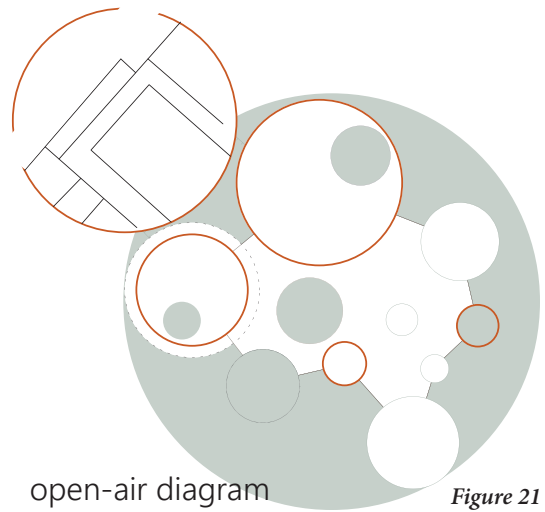
Figure 18 | Building and site plan | archdaily.com



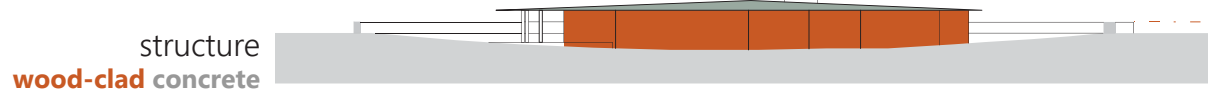
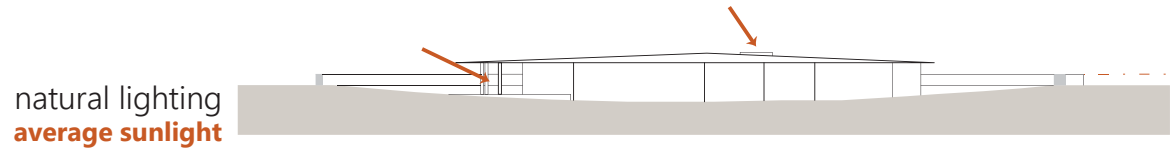
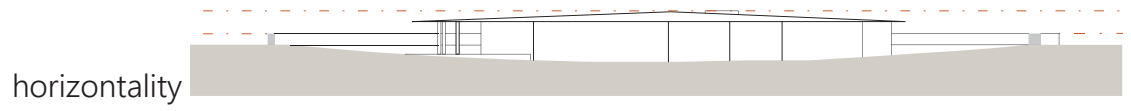
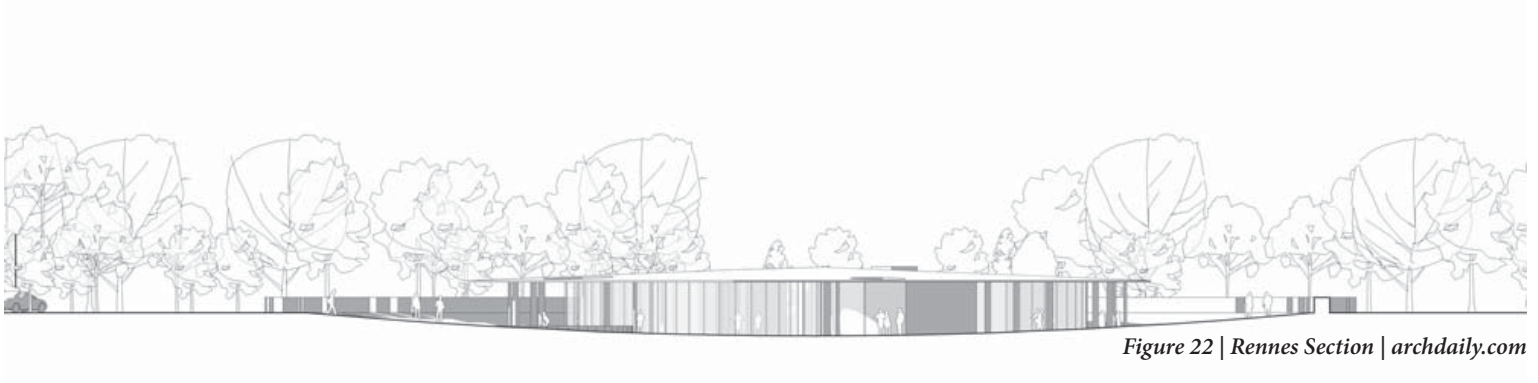
spatial enclosure diagram  
wood glass Figure 19



views diagram Figure 20

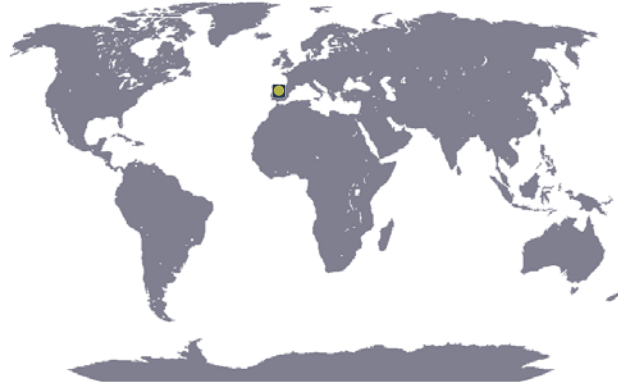


open-air diagram  
solid exterior boundary green space Figure 21



## Case study 03 · Brihuega Chapel

**Architects** Adam Bresnick  
**Location** Brihuega, Guadalajara, Spain  
**Typology** Event center  
**Year** 2012, late 16th century  
**Size** 1,048 square feet



While this project shares less in the specific typology with the thesis proposal, it is a useful precedent in careful historic restoration and still shares similarities in many of the uses of space. The flexible gathering spaces coincide with part of the building program, and provide examples of modern interior integration of a historic space. The building was originally built in the 16th century, and the intervention is meant to be minimally invasive on the remaining historic elements, supportive of elements that have been lost, and restorative of parts of the building that have undergone damage.

The **SCALE** of the building is fairly similar between the proposed site and the case study project, with the thesis site containing 7,744 square feet of historic structure and the chapel comprised of 1,048 square feet. They are both fairly small buildings with large interior spaces and multiple stories.

The **CONTEXT** of the two are different in many ways, however share an important foundational similarity: the historic implications of both are major tenants of the



Figure 26 | Brihuega exterior | [archdaily.com](http://archdaily.com)

future design direction. The setting in which these are placed are quite dissimilar, with the chapel in a small town in Spain, locked by surrounding buildings, and located in a dense built environment. And, while they can both be considered historic, they are still nearly 300 years apart in age. Materials, construction technology, and systems between the two buildings will vary greatly.

The chapel is a modest project. The designer doesn't indicate many **GOALS** of the space, however an onlooker can clearly see that the architect prioritizes both the building's original condition as well as the scars of its long life. Much of the interior and exterior was restored if in poor condition, and a collapsed dome was reinstated. A new vault system was installed that is paired with stucco remnants of the old structure.

Observing the **USE OF MATERIALS** for the chapel is one of the more significant studies for this project, as it provides an interesting architectural treatment of the old and new. The new vault was built out of wooden planks, providing a clean and non-distracting element that is not deceptive of historicism. The interior elements that could be salvaged were cleaned and treated to regain their white finish, with an interior that is clean and bright. The exterior, while restored where necessary, retains its charmingly rustic character and small scale of material components. The entry is an important feature in this regard, as the



Figure 27 | Brihuega interior retrofit | [archdaily.com](http://archdaily.com)

## Case study 03 · Brihuega Chapel

stonework has some chips and other obvious wear. All these details help to maintain the historic neighborhood characteristic, but also provides one last vintage element to juxtapose on the fresh interior space and large volume. Juxtapositions like these make each feature—the decidedly old-world and the restored-classic-meets-modern—more poignant.



Figure 28 | Brihuega interior | [archdaily.com](http://archdaily.com)



Study of **STRUCTURE** is also very useful in understanding the architect's method of linking old and new for a cohesive design. The designer's interior remodel features a box that seems to float over the existing chapel space, with an impressively minimal structural system.

The **MAIN TAKEAWAY** from this building includes:

The way the historic and modern elements enhance each other yet retain their own identities.



Figure 30 | Brihuega interior with addition | [archdaily.com](http://archdaily.com)

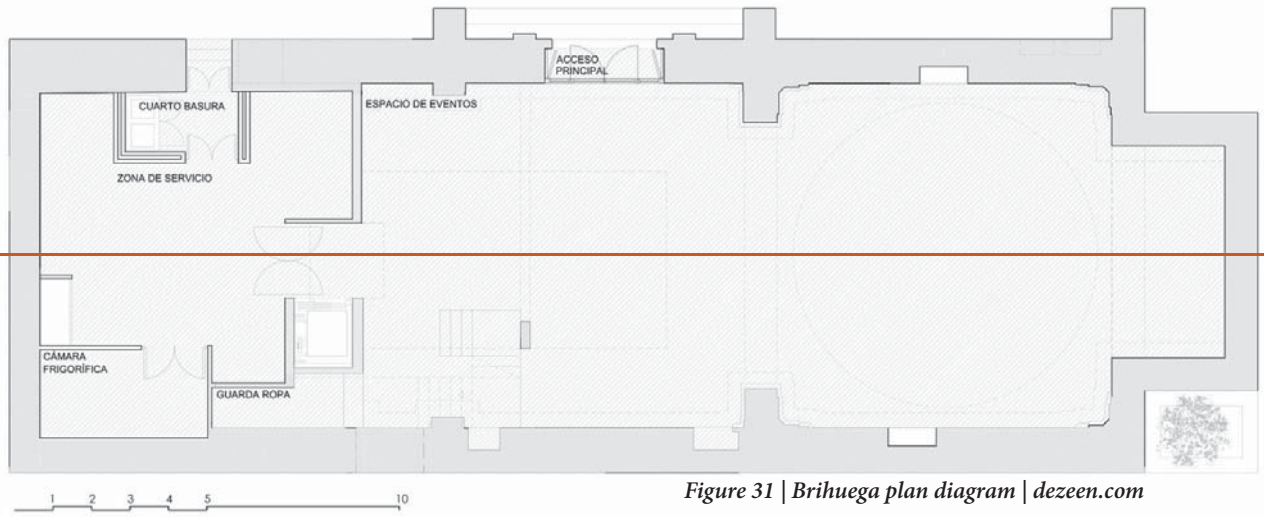


Figure 31 | Brihuega plan diagram | dezeen.com



Figure 32

circulation diagram  
public facility support

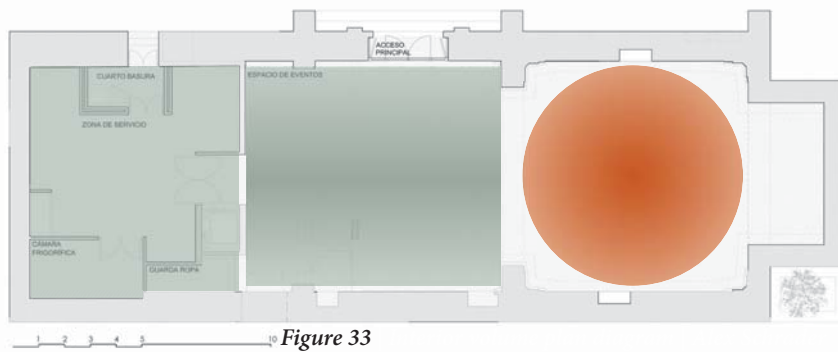


Figure 33

interior volume diagram  
multi-story single story

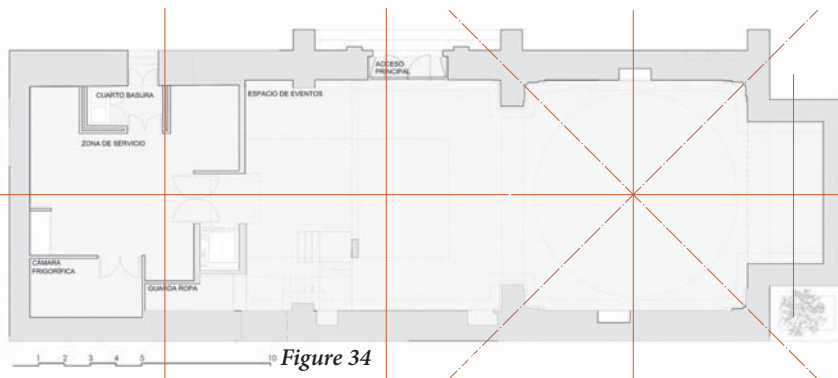
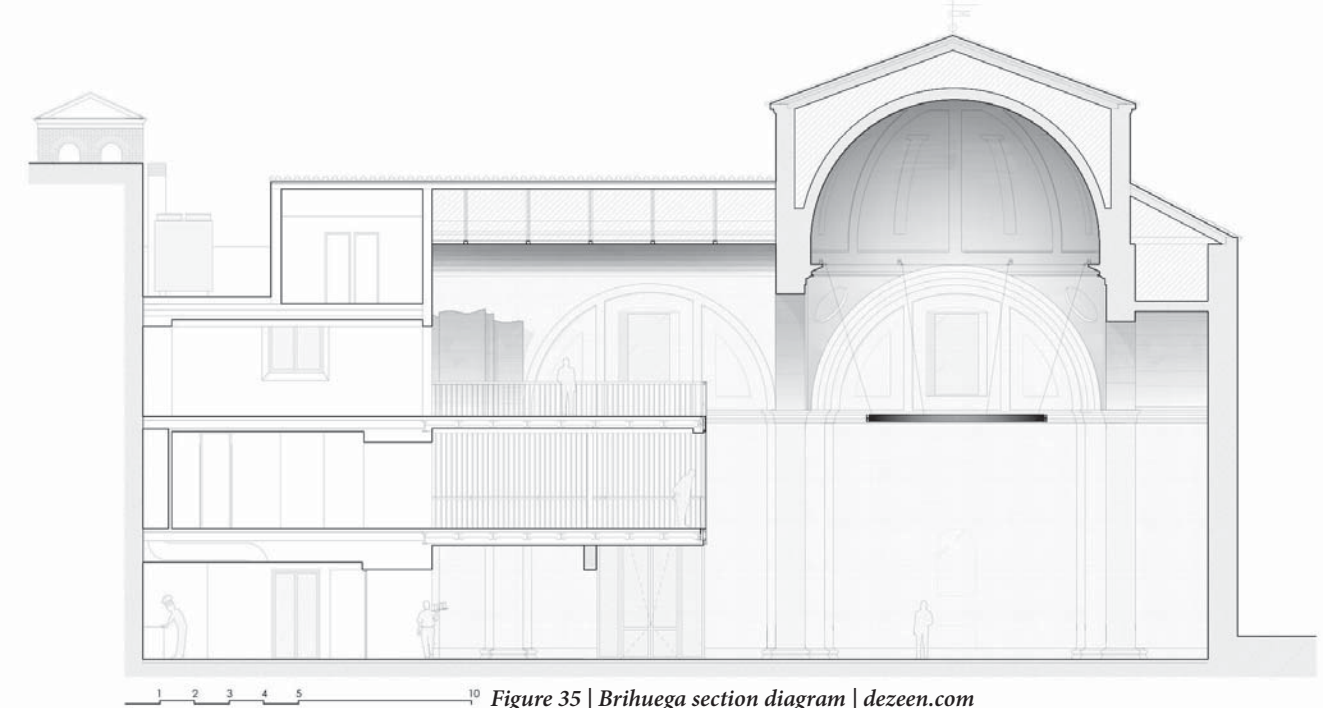


Figure 34

symmetry diagram



10 Figure 35 | Brihuega section diagram | dezeen.com

structure diagram  
**new construction** historic major repairs

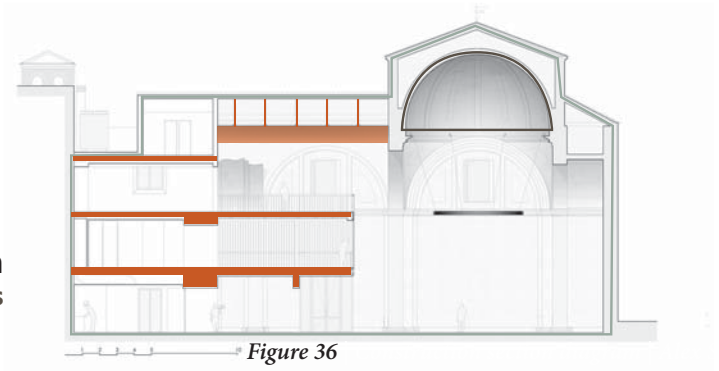


Figure 36

geometry diagram  
**scheme one** scheme two

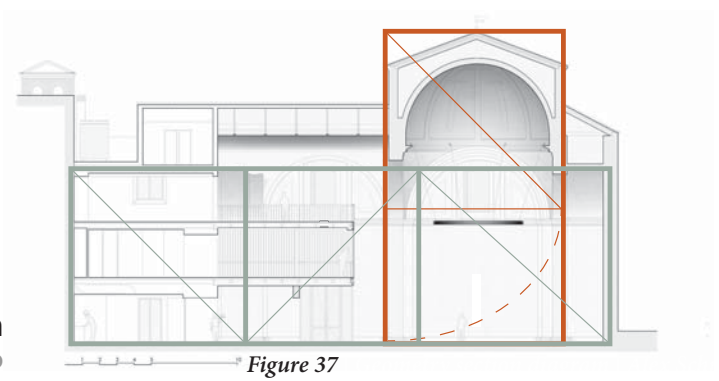


Figure 37

natural light diagram

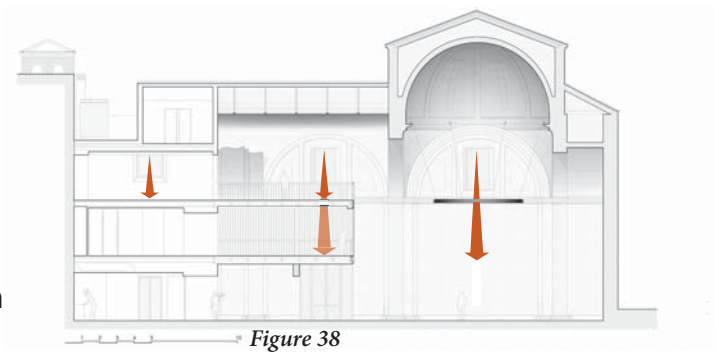


Figure 38

## **Case studies summary**

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The case studies analyzed in this series were chosen based on their similarity to the proposed thesis project, cultural significance, and their poetic and architectural success.

Two of the three case studies, the Welkenraedt Funeral Home and the Rennes Metropole Crematory, are crematories and funeral centers, providing the interment process as well as space for ceremonies. These were both new construction, which is a major difference from the thesis proposal. Analyzing a historic restoration project is important for future design direction so a project was chosen that did not match the thesis typology but was a significant example of adaptive reuse. The Chapel Brihuega was turned into an event center with flexible gathering spaces which was a similarity with the thesis project's programmatic elements. The Chapel is a project that utilized a beautiful classical building yet incorporated modernistic aesthetic for a clean, airy and contemporary interior. This method was important to study as it shows an example of how and why these minimal additions enhanced the historic ones, with both eras of architecture remaining strong yet codependent in creating the warm and airy interior.

The cases shared a contemporary design aesthetic. This similarity was intentional because of the thesis' preferred use of clean lines, openness, and how these elements tend to inspire a sense of something greater than oneself. Studying these cases solidified this design direction by showing that the restrained style allows chosen materials and elements to have more impact in their undecorated state, finding the beauty in natural wood hues and concrete textures. The cases also made clear the necessity for views to the outdoors when designing for funerary services, and the importance of a site that allows transitional space from indoors and outdoors, from reality to a more personal world temporarily.

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The funeral center cases provided insight into ways that secularism can be incorporated into the building and inclusiveness of all bereavement processes can be obtained. The Welkenraedt used a celestial art installation throughout all the spaces while the Rennes Metropole used a circle motif. Both are subject to interpretation and were not culturally nor religiously distinctive. The Brihuega provided innovative examples of how to least intrude upon important historic elements within the space. The architect's solution for the interior did not make the new and old construction dichotomous nor mutually exclusive; instead each era of construction celebrated and was made stronger and more appealing by the other.

An important characteristic of the Welkenraedt and the Rennes Metropole was the idea of loose circulation structure. Both buildings had fluid spatial relationships that promoted a user's personal rhythm and circulation pattern. The architects of the Rennes Metropole highlighted the importance of this element in the building description because the meandering spatial arrangement was a source of autonomy--a very important aspect of the thesis project. The designers did not decide how fast or in what manner users were to experience the space, and when left up to the users themselves it helped to provide a sense of control over the funerary and memorial process.

The way in which the designers of the Welkenraedt utilized the cremation chimney is a significant design element that can be carried into the design exploration of the thesis project. The exhaust of the cremation equipment is a major element, and in using it as a spatial backbone onto which the other spaces could anchor, a sense of order could be maintained within the building's otherwise fluid spatial pattern.

## Major project elements

	<b>Supporting people</b>
<b>Flexible gathering spaces</b>	
Small open	20 - 40
Large open	150
Small, furniture-centric	15
Outdoor	40
<b>Administration</b>	
Client meeting rooms (2)	10
Employee workspace	
Coordinator desks	3
Administrative desks	4
Non-assigned workspace	1
Office support	
Secretarial desk	1
Copy/print area	4
Break/leisure room	6
<b>Event support</b>	
Parking	100
Food prep	6
Storage	
<b>Deathcare</b>	
Refrigerated storage	3
Crematory	1
Transportation parking	

## User/client description

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### **Employees** Funeral coordinators

Work with clients to handle logistics and funeral options. May be coordination of services for the recently deceased for pre-planning of funerals.

Three full-time coordinators.

### Workshop leaders

Lead workshops on topics like at-home funerals, how to plan or pre-plan a funeral, what sustainable alternatives exist to common mortuary practices, etc.

One part-time workshop leader.

### Morticians

Coordinate and service the incoming corpses for cremation or burial. One full time mortician.

### Administration

Handle day-to-day business, including accounting, grant writing, marketing and outreach, and managerial tasks.

Four full-time administration personnel.

### Building and grounds caretaker

Maintain facility and grounds for day-to-day cleanliness as well as upkeep and repairs. Also involved in equipment and furniture set-up as needed for ceremonies and events.

Two full-time employees, one seasonal employee for outdoor maintenance.

### **Clients** Pre-planners

Clients who prefer to make funeral arrangements before they have passed.

### Planners - billed

Clients paying to make funeral arrangements and use the facility for a person who has passed away.

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#### Planners - unbilled

Clients who fall into a certain financial bracket that have coordination and facility usage costs covered by grants. Per the different spaces available, a maximum of 3 planners using facility at a time, either billed or unbilled.

#### Workshop attendees

Members of the public who wish to learn more about the topics offered.

Usage will depend on the course offered. If the course is better suited to small groups, there may be a maximum of 15 attendees for a certain workshop. If the course can accommodate a large room of people, then a maximum of 150 people will be in attendance.

#### Visitors Guests

Guests of the funeral or ceremony

Per the different spaces available, up to three different groups may be in attendance, from 15 - 150 people.

#### Outside hires

Provide catering or outside services for different events, per planner's wishes. May include food caterers, speakers, or special transportation.

While these numbers have been estimated to the best of my ability based on studied funeral and crematories, the intended flexible nature of the gathering spaces creates difficulty in accurately predicting occupancy.





Figure 39 | 109 E 26 St | Alex Schrader

## Site information

The subject of this thesis is located in Whittier neighborhood in Minneapolis, Hennepin County, Minnesota, United States. The population of the city is 400,070 people with 3.5 million people in the Metro area.

**Address** 109 East Twenty-Sixth Street

**Building origin** 1887, known historically as McCullough Hall (Pearson 26).

**Past uses** Ground-story storefronts; upper apartments (Pearson 26).

**Current use and zoning** Undergoing remodeling for apartment units & possible art gallery per Whittier Neighborhood Alliance suggestion.

**Area** 7,744 square feet of existing construction, 4,700 square feet of parking surface, and 29,045 green space





This site is an excellent opportunity for this project in that it has both a blank canvas quality as well as a historic building ready for a sympathetic adaptive reuse treatment.

The **PARKING SURFACE** as a corner lot is ripe for urban infill. It sits as a sore “missing tooth” on an otherwise dense road.

The **VACANT LOT** is overgrown and fenced off. This area would benefit from a subdivision, with southern plots sold for residential construction and the north half, closest to the building, used for a therapeutic landscape treatment for funeral-goers.

The **BUILDING** is underutilized. It’s historically and culturally significant, surviving nearly 130 years of change. It deserves to be celebrated and to reach its full potential as a message of beautiful memorialization and environmental stewardship.



Stevens Avenue

East 26th Street

Interstate I-35

## Emphases

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**Arranging a loved one's funeral should not be made more grim by the architecture in which it takes place.** This thesis will research environments which can psychologically affect a person's mood for the better and explore ways in which spaces effect the mentality of grief and may encourage the coping process.

**Celebrating a person's life should not be trapped in tradition.** The spatial arrangement of a funeral home can provide a wide variety of options that allow all budgets, beliefs, and wishes to celebrate the passing of a loved one in the way that is most appropriate to the unique individual.

**Mortuary practices should not harm the environment.** A funeral home committed to sustainably accommodating the deceased can provide the technology and equipment needed to avoid harmful cremation and embalming practices, while still preserving the body for the family if desired.

## Goals

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**Academic** Academically this project will afford understanding to an industry of which I have had little scholastic exposure. I will learn about the processes of burials, cremations, and funerals, plus motives behind them and reasons why it exists in its current state. These studies will be expanded into how the human condition intersects with this industry in a vulnerable period of life. The resulting project will be as much a work of architecture as a business plan, with intentions on how the facility will run to meet high expectations in environmental, humanistic, and historical frameworks. Environmentally, the building is at a disadvantage for seeking high LEED rating since it was built more than 100 years ago with little passive ideals currently in place. However, baseline LEED certification is a realistic goal for the building and can be met through innovative solutions to environmental controls in the existing building and passive design in any new construction. Humanistically, exploration into the bereavement process and how it is affected by architecture will provide insight into the most comforting and healthy environment to mourn and spend time immediately following the death of a loved one. Historically, it will be a fascinating experience into the intricacies of designing within the parameters of a historic building. Previous studio experience with this type of project revolved around a building listed to the Historic Register, which, along with the benefits of tax exemptions and bona fide significance, came with certain guidelines and limitations. The building that will be explored for the thesis project is without this recognition, which allows for more freedom and experimentation. Historic considerations are also heavily linked to professional growth, as this is the area of architecture in which I would like to find a career.

## Goals

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**Professional** My work experience has included nomination of a building to the National Register of Historic Places. A historic context study of the neighborhood listed the building as a recognized historic resource, however a study from the 1990s concluded that it was ineligible for the National Register (Pearson, 2009). This is likely due to the building's setting, condition, and competition with so many other nearby historic buildings, and its inability to retain its historic storefront and window aesthetic (Pearson, 2009). However, with the freedom that this provides, more discovery of innovative structural, systems, and materiality can be implemented to serve the historic building best. While it is important to honor the historic condition, including the exterior elevations, interior spaces, and materiality, I would make the argument that the appropriate course of action for the building is to return its sense of importance to the community; give it something to offer its neighbors and passers by. I will use these goals of historic sensitivity as a priority but not a constraint. Celebrate the building's past life, and show how it is translated into a new one that is relevant to today's needs. Only this way will the commitment to sustainable memorialization be truly paralleled in the building itself. From the first glance, the building will show that past lives do not need to be forgotten and do not need to be only thought of in sadness and grief. They can be inspiring, useful, and they can give back.

Another outlet of professional development will be interacting with real people outside of the university. The client is currently owned by a member of the Minneapolis community, and communication with him will be necessary to take site visits and to learn about the building's condition and proposed future. It is especially important that communication remain professional and polite, as any help rendered from the owner is entirely voluntary and is essentially as a favor.

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**Personal** This project was inspired by very personal reasons. After the passing of a loved one, planning a funeral became all too real. The process was long and painful. As most funerals do, the planning took place immediately after she passed, and grief took a backseat to meeting with a director, picking out an urn, putting a notice in the paper, planning the ceremony, and collecting the proper paperwork for banks. While most of the planning was governed by a list that we were to pick from, the joy in remembering her life came from when the family held the reins. A party was hosted the day before the official funeral, and the family came together to look at pictures and pick out music for a slide show. Her children's artistic skill was put to use by designing and producing all the funeral programs, with each picture hand selected and each paragraph honest to her real personality. The opportunity and benefits of personalizing the tasks made the outdated and grim funeral process seem that much more unintuitive. This thesis will not abandon hired funeral coordinators altogether, but it will provide resources that allow for the survivors to personalize the processes to fuller extents than what is current practice, striving to make it fulfilling from beginning to end.

## Plan for proceeding

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**Theoretical premise** Through the lens of the previously-defined theoretical aspect, research that will still need to be completed to assist in solving the design problem and addressing the three premises will lie in many different fields and areas. These include exploring in greater depth the practices and norms surrounding green burials and alternatives to current mortuary practices. The study of neuroscience and architecture will provide insight as to how to design environments that best reflect the emotional processes of the users, plus research of local and global traditions around death and dying will provide a greater scope of understanding of how different cultures and groups handle those events.

**Project typology** As a non-profit funeral home and cremation service, research into the logistics of running as a non-profit will need to be completed. These findings may have an effect on the number of staffing and the ceremonial spaces provided and their allowed occupancy. In establishing a non-profit facility, it may broaden the number of people that the center can service which may affect the preferred size and arrangement of project elements.

**Historical context** As an adaptive reuse project, the history of the building is paramount. Finding out the building's original use and role in the community, plus its historic appearance and the changes that occur, will have a great effect on the design of the interior and exterior. Plus, any urban infill component will need to have a strong understanding of what the site used to be and how the history can be translated appropriately into the future.

**Site analysis** All of the research completed for the various areas will have an effect on the programming that is conducted. By understanding the site limitations and opportunities, a more realistic sense of sizing and space will follow. By understanding



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the historic and cultural context of the building, any spaces that need to provide more community involvement will be discovered. By understanding the intricacies and specifics of a crematory and funeral home, spatial estimations can be made more final. By researching into the three theoretical premises and the theoretical claim, the project's direction can be strengthened and the goals and elements that the project will include will emerge.

**Design methodology** The design methodology that will be employed will rely heavily on the established qualitative and quantitative system proposed by Julia Robinson in the Journal of Architectural Research (Groat). This method recognizes that architecture is a field that brings together many areas of study, some based in "science" and some based in "myth" (Groat). The important aspect of this methodology is recognizing the dichotomous nature of the findings and how they can contribute to a richer and deeper understanding of the issues. For example, qualitative findings gathered through personal accounts, interviews, and archives afford an exploratory outlook on the design problem and can help in refining the goals and deciding the mission of the facility. Quantitative research will provide hard numbers and data which can guide space planning and other technical issues. In regards to Vitruvius's "firmness, commodity, and delight", qualitative research will produce information about the project's firmness while quantitative research will lend itself to the delight. The commodity of the project will be where qualitative and quantitative findings can work together. Though qualitative and quantitative findings will be collected jointly, other research methods will also be employed to maximize efforts and exhaust all areas of study. These tactics include including graphic analysis, digital analysis, and interviews:

- Graphic analysis of case studies and design diagrams
- Digital analysis using BIM software and simulations of

- 
- natural lighting, ventilation, acoustics, and more
  - Interviews with the building owner to discover important historical information, current building deficiencies
  - Interviews with real funeral coordinators to understand the typical process in the Midwest, average prices, and how to coordinate with cemeteries

All research findings and analysis will be compiled in a timely, ongoing manner so that new discoveries can influence further design direction as well as refine past design decisions and stages. These will be presented in both graphic and textual format, and the defined theoretical aspect will assist in filtering and prioritizing findings for further use.

**Documentation** Documentation will be in the form of sketches, computer aided digital representation, physical models, BIM and digital models, and note-taking and writing. These will all be kept in their respective central locations, with physical documentation like sketches and models kept at the studio desk. Digital files will be backed up into an external hard drive. All pertinent design documentation will be uploaded on to the North Dakota State University Library's Digital Colection's Institutional Repository at the end of the year with the resulting comprehensive thesis book, presentation, and slideshow in PDF format.



Figure 40 | Lakewood Garden Mausoleum  
Interior | Cole Strombeck

## Schedule

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<b>DESIGN DOCUMENTATION</b>	88 DAYS
<b>CONTEXT ANALYSIS</b>	45 DAYS
<b>CONCEPTUAL ANALYSIS</b>	20 DAYS
<b>PARTI DEVELOPMENT</b>	7 DAYS
<b>SPATIAL &amp; STRUCTURAL ANALYSIS</b>	15 DAYS
<b>ECS PASSIVE SYSTEMS ANALYSIS</b>	20 DAYS
<b>ECS ACTIVE SYSTEMS ANALYSIS</b>	28 DAYS
<b>STRUCTURAL DEVELOPMENT</b>	7 DAYS
<b>CONTEXT REDEVELOPMENT</b>	12 DAYS
<b>SCHEMATIC FLOOR PLANS</b>	25 DAYS
<b>ENVELOPE REDEVELOPMENT</b>	13 DAYS
<b>MATERIALS SELECTION</b>	7 DAYS
<b>STRUCTURAL REDESIGN</b>	5 DAYS
<b>MIDTERM REVIEW</b>	5 DAYS
<b>FINAL THESIS PROGRAM DUE</b>	1 DAY
<b>PROJECT REVISIONS</b>	7 DAYS
<b>ENERGY MODELING</b>	7 DAYS
<b>RENDERINGS</b>	21 DAYS
<b>PREPARATION FOR PRESENTATION</b>	8 DAYS
<b>PRESENTATION LAYOUT</b>	5 DAYS
<b>CD OF EXHIBIT DUE TO ADVISOR</b>	1 DAY
<b>PLOTTING AND MODEL BUILDING</b>	7 DAYS
<b>DISPLAY OF EXHIBIT DUE</b>	1 DAY
<b>THESIS SHOW</b>	3 DAYS
<b>FINAL THESIS REVIEWS</b>	6 DAYS
<b>CD OF BOOD DUE TO ADVISOR</b>	1 DAY
<b>THESIS MATERIAL DUE IN I.R.</b>	1 DAY
<b>COMMENCEMENT</b>	1 DAY

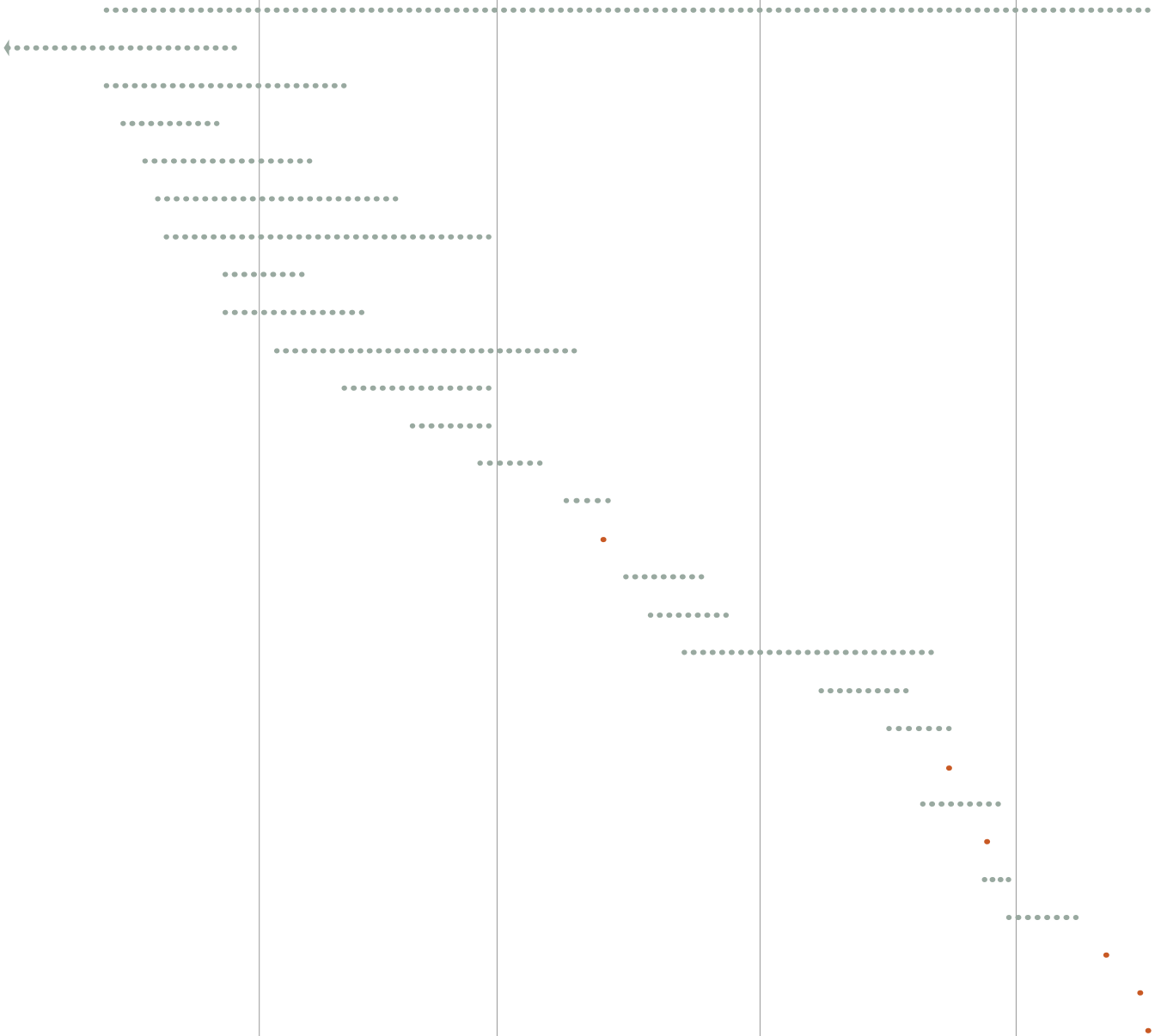
JAN

FEB

MAR

APR

MAY







# LITERATURE REVIEW

## **Theoretical aspect research**

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The original theoretical aspects of the thesis project are as follows:

Common funeral and mortuary practices harm the environment through irresponsible embalming processes and wasteful land use.

Flexibility, freedom, and autonomy within the funeral planning process is a major factor in assuring personal significance and relevancy. Each service should have the potential to be as unique as the person being celebrated.

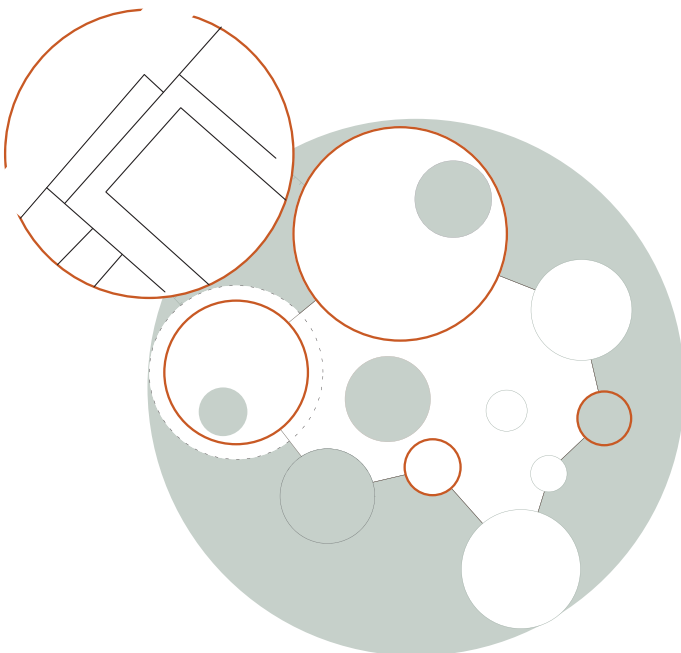
The architecture supporting funeral and mortuary services is required to address the emotional impact of the processes in a meaningful way.

All the premises have a large dependency on human interaction within the space, and an element of control. Control was originally framed as corrective measure against the trap of tradition formulaicness of funeral planning, however the idea of control has many more wide-spreading roles when considering death and funerals.

Firstly, and most obvious, control (or lack of) relates to death because it is typically one of the biggest things that humans have no control over. Martin Heidegger, the German philosopher from the middle of the 20th Century, wrote in his paper "The Thing" about the way that feelings of powerlessness can be focused sharply when faced with situations like dealing with time, falling in love, and death (Sharr 8). He describes that there many insignificant preoccupations of a person's daily life that are thought to provide us with sense of control, but he asserts that these are rarely comforting. Comfort, then, comes in having a sense of control amongst a situation of "emotional intensity" (Sharr 9). For many, this is the function of their religious dispositions.



There are a wide variety of theories regarding the function and origin of religion, but most believe at its base it provides a sense of structure (Ladd). Religion has a special focus in this thesis project, as part of the reason for picking such typology was my experience with many Midwestern funeral homes and their clear focus on Christianity. As America diversifies, Christianity is losing its dominance in the United States to nonbelief and to other religions. The number of Americans identifying as non-religious has grown steadily, with 8.2% of adults identifying themselves as such in 1990, 14.2% in 2001, and 16% in 2013 (Werleman). This trend, and personal experience, makes a goal of the project to find ways in which to secularly provide all necessary funerary resources to the public. These resources can be linked to the architecture itself, attitudes of users pre-death, and attitudes of users post-death, like during and planning services.



There are a variety of ways that control could be implemented within the design, such as the idea of wandering. This was a factor in the crematorium Rennes Metropole, as a distinct circulation route was omitted in the complex of circular spaces (shown left). This design is meant to allow for users to wander; finding the path that is most comforting and following their own preferred timetable. The idea of wandering is further paralleled in Heidegger's reading "The Thing". He states that thinking cannot be systemized, and in that was it like wandering (Sharr 11). It includes getting lost, moments of clarity presented as sorts of gifts to the thinker, dead ends,

Figure 21

## Theoretical aspect research

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and uncertainty.

Tackling funerary arrangements pre-death provides an opportunity for control that is otherwise left to survivors. Some of the more common pre-death arrangements made are decisions concerning organ donation, viewing of remains, cremation or burial, final services and rites, and grave sites and grave markers (Ladd 2007). A study conducted found that 80% of adults feel that pre-planning is a good idea, however only 20% of Americans actually make arrangements (Ladd). Many feel that arrangements lessen the burden on their family, but it also functions as a way to establish an after-death identity (Exely 1999). These final decisions people make about their bodies are examples of last efforts of maintaining structure of their future and leaving an imprint on their world (Ladd).

After death, control has a role in the way people interact with funerals and funeral arrangements. Some of the functions of a funeral are to maintain social order, support belief in afterlife, help in grief processing, and provide an opportunity to express emotions and pay respects to the dead (O'Rourke 2011). Within these functions, and the coordination behind the services themselves, lie opportunities for involvement and making decisions. A 2009 study found that funeral attendee satisfaction was heavily linked to involvement in the service (O'Rourke). The main ways of involving oneself that provided the most satisfaction related heavily to the social nature of funerals. This places high focus on the social structure that funerals provide, in particular the opportunity to express emotions of sorrow and sadness in a public setting (O'Rourke).

When looking back to Heidegger's thoughts on control, one may consider the implications of non-control within

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death and funeral planning. Heidegger explains in "Building Dwelling Thinking" that building and dwelling have become disconnected. The building should respond to the dweller in a nurturing way, but instead is reliant upon factors like economics (Sharr 2007). This is paralleled within the thesis theoretical research in that the funeral industry has also become hugely disconnected from its personal, family-rooted history. Perceptions of death changed greatly in the 20th Century, and it transitioned the act of dying from an intimate process inside the home to taking place surrounded by doctors in a medical facility. This changed public perception of death into a medico-scientific and clinical view of the end-of-life (Laderman 2003). As people died more frequently within hospital facilities rather than around family, the following arrangements became systematic as well and were left to undertakers and morticians. Social, healthcare, and architectural changes beginning in the early 1900s continued to decrease family involvement in death and has greatly removed and has altered the fundamental relationship between the dead and the living (Laderman 2003). Restoring this connection by allowing the survivors more interaction with the process reinstates an aspect of control that has been lost for a century.

Calling upon Heidegger's fourfold model may be a relevant guide when finding ways that users can find order and control while using the building. His fourfold model contains the earth, sky, divinities, and mortals. The earth is the ground; the sky determines how people live, though outside forces like weather; divinities are forces of nature and shape daily life; and mortals are the humans who occupy, interact, and are shaped by the other three components (Sharr 2007). Mortals is Heidegger's word choice for humans because he believes that mortality should be celebrated and respected, and should not be looked upon as an inconvenience. The

## Theoretical aspect research

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way that the fourfold is in harmony is by saving or setting free the earth: mortals receive the sky, they await the divinities, and they initiate their own being (Sharr). This, Heidegger holds in his essay "Building Dwelling Thinking", is the essence of dwelling; a grander state of existing with the environment peacefully. An important connection to the thesis' goal of responsible interment lies here. Instead of pumping a body full of chemicals, sealing it in a gasket-locked casket, and sealing the casket in a concrete tomb to simply prevent the natural process of decomposition, a more hands-off approach would benefit the soil, the environment, and, according to Heidegger, the people involved.

Aspects of deathcare, like burial in a cemetery, is largely dependent on the religiosity of the person. It also impacts things like viewing the body, the formality of the service, and the tone of the service. Likewise, people who haven't committed to the structure of a certain religion tend to be open to a broader set of funeral options and may adopt a wider range of nontraditional attitudes (O'Rourke 2011). This predisposition affects expectations of a funeral service and ultimately affects satisfaction. While there are many factors that go into the expectations one feels towards a funeral ceremony, some major topics include social support, the ability to express emotion, and traditionalism and rites (O'Rourke 2011). These topics and their connection to attendee satisfaction will be discussed.

Grief is a social emotion (O'Rourke 2011, Parkes 2009, Jakoby 2012). This classification contradicts the view that grief is a medical disorder, as recently listed in the Diagnostic and Statistical Manual version five, or more commonly known as the DSM-V. In the version released in 2013, normal grief will become Major Depressive Disorder which medicalizes the normal emotions spurred from loss. There are many theories

as to why the DSM continues to grow with each new addition since the 1950s, and some believe that, in regards to grief and other additions, doctors are too willing to over-exert their diagnostic power (Frances 2012). The ways in which grief does behave as a medical disorder is that it, like other ailments, affects the judgement, memory, and the body (Parkes 2009). However, classification of normal grief as an illness stigmatizes the occurrence, complicates insurance and work absences (Parkes 2009). When looking across cultural and geographical distinctions, we easily see that the line between wellness and health is socially contrived. In the United States, society does not view mourners as mentally ill. By classifying grief as a mental disorder in the DSM-V and perpetuating this view through doctors and grief workers, many are trying to normalize and standardize grief, providing frames, rules, and scripts of how grief should be expressed and how grievers should behave (Jakoby 2009). Many psychologists and physicians maintain that though grief is an intense emotion, it is still a normal and expected sadness and should be thought of as a process instead of a single emotional event (Jakoby 2009, O'Rourke 2012). It is considered a social emotion because it "directly touches on the interdependence of self and societies" (Jakoby 2009).



Figure 41 | Exedra | [gravelyspeaking.wordpress.com](http://gravelyspeaking.wordpress.com)

## Theoretical aspect research

Funerals therefore have a purpose of allowing reconnection with others who knew the deceased, finding support through those people, and the expression of grief publicly (O'Rourke 2012). Spaces designed for bereavement have the unique and complex task of providing an environment that allows for this connection with others and ability to express oneself, however must also provide spaces that are more intimate.

Contemplation within memorial architecture is no new idea, and many religious and ceremonial spaces use light to evoke a sense of introspection. The Lakewood Garden Masoleum (figure 43) uses plentiful glazing for ambient natural lighting as well skylights to cast light onto important surfaces. This technique is powerful in the movement and shapes created, especially when used contrastingly with otherwise dark spaces. This method can be quite architecturally subtle, with many examples of simple skylights or tucked-away shade devices, making it a favorite among contemporary architectural works. The photo above is from the Canadian War Museum, in a large space outside the main Memorial. But the technique has been used since antiquity, with the notable example of the Pantheon in Rome, Italy. Early examples are crafted with religious notions, which are common to employ in today's examples as well, as a humanly way to capture an otherworldly divinity (or in the Pantheon's case, divinities).



Figure 42 | Canadian War Museum | Moriyama & Teshima Architects



Figure 43 | Lakewood Garden Masoleum | HGA.com



Figure 44 | Pantheon | History.com

Spiritually, these celestial invocations may provide comfort or direction, that the predictable and constant flow of light is part of a greater plan where life's happenings are not random and chaotic. For users who do seek religion in such a time, light can still provide a sense of comfort in its connection to an environment greater than oneself, a connection to nature, or a sense of optimism.

There are a multitude of ways in which architecture can evoke an emotional response from a user. These responses are further influenced by user preference, experience, demography, and other characteristics. Studying of specific emotional effects is a fairly rarely-trodden field scientifically, as it's difficult to measure emotional responses across a group and pinpoint the cause in an objective way. Scientists in the emerging field of the Neuroscience of Architecture conducted a survey seeking architecture that altered a person's normal state of being. The survey found that "buildings may induce insightful, profound, and transformative contemplative states, [and] buildings designed to provoke contemplation seem to be succeeding" (Hoffman 2014). The study conducted by the team subjected photos of beautiful buildings to 12 people, and measured their brain activity to find the emotional responses of the photographs. The fMRIs recorded different brain behavior when exposed to contemplative and non-contemplative buildings, and the effects were even comparable to traditional meditation. The contemplative spaces revealed brain patterns associated with peacefulness, relaxation, deepened experience, and increased attention (Hoffman). By studying deeper the historically, socially, and critically celebrated contemplative spaces, a set of tools can be developed that guide designers in building phenomenology of profound spaces.

## **Theoretical research summary and results**

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Translating this research of philosophical, theoretical and scientific discussion into an architectural framework is not a straightforward task, especially considering the many different schools of thought that continually change. This uncertainty can be used as a positive design challenge in the building as it necessitates a level of flexibility and adaptability within the walls that can respond to emerging philosophical views, scientific theories, as well as user preferences.

Creating flexibility for future adaptability and user preference extends into the topics of control within grief. Dealing with grief requires the bereaved to reconstruct their selves. Their lives are being reshaped, and this can be physically manifested in the building itself. Rooms that house ceremonies can be equipped with ways to personalize them with mementos, changing layouts, or flexible lighting systems. The different types of spaces listed in the Major Project Elements and later in this text include rooms that are open and flexible, ones that have movable lounge-type furniture, and ones that are equipped with various media devices. These options give an initial foundation of personalization, and each grant branching choices for unique services and events. This solution can be therapeutic in providing that important sense of control and jurisdiction in the planning process, but also an outlet to work through the grief, call upon memories of the deceased, and arrange them in a meaningful way to share with others.

No matter how flexible and easy a facility may try and make the process of planning a funeral, the time in which it is done is typically very rapid. Grief counselors may be a valuable asset in the facility for clients in dealing with the process of grief and reconstruction. Having professionals trained in grief management can be beneficial in the early period of funeral planning when users are vulnerable and at high emotional intensity.



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Emotions in architecture was also discussed with research based in neuroscience as well as quantitative discussion. Light is a major method in providing a sense of hope, continuity, and a higher power in memorial and ceremonial spaces. Using ample daylighting in all the spaces, especially with views of the garden to the east, can create an intimate space that provides a sense of comfort. These spaces may be used for planning and coordination purposes, but they might also be useful for people who are not yet willing to share socially the experience of mourning. Though there is much work to be done in finding the specific ways in which architecture provides an emotional response, it was discussed how spaces designed to be contemplative can truly alter the user's state of being and can prompt feelings of peacefulness, reduce anxiety, and increased attention. It is important to note that while scientists are working to compile a definitive list of specific attributes that prompt a certain response, we must be wary to rely too heavily on the data and hard numbers. There is still something to be said about designing based on the human experience; on commodity, firmness, and delight.

It is clear, by the many different medical perspectives and philosophical views of grief and bereavement, that the experience of grief and the process of mourning is not a standard and predictable routine and varies, through large or small degrees, from person to person and culture to culture. These complexities of users gravitate once again towards the topics of structure and control, making a convincing argument that the accommodation of all users is highly inclined to a less formal arrangement of spaces and structure; providing the resources for users to experience the space in solidarity and in groups. By making emotional issues a priority throughout the facility, many opportunities arise that allow users to interact with mourning in different ways thanks to the combination of a funeral home, undertaking, and crematory spaces.

## **Project justification**

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As has been previously discussed, the popular views and theories about grief and grief management are continually changing and being revised, sometimes in rapid succession. Many funeral homes that are found in cities are long established and are not flexible in these new findings. Since funeral homes are for the survivors, it is important to commit to spaces that best serve them instead of committing to outdated ways of thinking. This project will take great influence by current research of grief, grief management, and funeral satisfaction, but will take precautions from being overly specific in intended use and future abilities.

The diversification of the United States, and Minneapolis in general, means that spaces that wish to provide services to all must be readily adaptable to new ideas and customs. These factors include religious outlooks or lack thereof, monetary ability, cultural practices, and personal preferences. Flexible interiors and organizational philosophies that embrace change assist in creating a facility that can be useful by all people.

As the world becomes more aware of the interconnectedness of systems, people, and the environment, it becomes increasingly clear that we cannot make reckless decisions and expect no consequences. The previous practices in this country of claiming land in perpetuity for over-compensating materials, pumping corpses full of volatile chemicals, and releasing toxic fumes into the atmosphere must be reconsidered. Sustainable alternatives must be found and prioritized. By introducing a memorial garden rather than separate cemetery plots, bio-cremation, and the knowledge about burials that contribute to the natural cycles of decomposition and growth, the importance of making smart end-of-life decisions can enter the conversation in Minneapolis.

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The building itself is worth restoring. It has promising construction, with solid masonry walls and a stone foundation, and has many ornate Victorian details on the facade that are rare for the neighborhood. However, with its many years of deferred maintenance, an intervention is necessary to allow another 100 years of useful life.

The eclectic neighborhood that appreciates historicism and celebrating the aspects that make it unique will benefit from a rejuvenated long-time figure. The flat parking next door is an opportunity for urban infill and connection to modern-day, especially with its corner presence. The immediate vicinity is lacking in a defined character, but its very near popular "Eat Street" (Nicolette Avenue) that has no shortage of pedestrians and vehicular traffic just begging to be drawn into a new part of the neighborhood.

The adjacent fenced-off empty lot is an opportunity to provide useable greenspace for the neighborhood and a therapeutic outlet for the users of the space. This greenspace can also be an example of a memorial garden that does not need to be manicured or claimed like the common cemetery.

## History

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History is a significant part of this project in both the architecture and typology. Funeral homes and undertakers have been in the public eye both negatively and positively since the industry emerged. The thesis site itself is over 120 years old, contributing a history and legacy to the new use that must be understood and celebrated.

**History : setting** The building is situated in the Whittier neighborhood of Minneapolis, Minnesota. The land itself was originally part of the Fort Snelling Military Base, established in 1819 and surviving until 1853. Hennepin County was not established until 1852, with its southern boundary the north edge of today's Whittier neighborhood. By 1867, more of Minneapolis was annexed, reaching as far south as 26th Street. The early years of the area reached towards the site of 106 East 26th Street ever so slowly, though the immediate surroundings did not see much activity until the great urbanization that began around 1880 largely due to streetcar lines. Bridges crossing the Mississippi helped move people to and from the area, with two major bridges providing prominent east-west corridors. The Franklin Avenue Bridge (four blocks north of the site) and the Lake Street Bridge (four blocks south of the site) framed the neighborhood nicely and, along with its proximity to downtown Minneapolis, made it sought after for many of the area's elite to establish large estates while the land was still available and easily accessible. Many impressive mansions were built nearby following the turn of the 20th Century, in Queen Anne styles, Beaux Arts, Georgian and Classical Revival, Tudor, and many more which created an impressive spread of significant residential architectural works. Many are in tact, prompting city historic distinction in a four-block by four-block area directly north of the thesis site. Within this area is a smaller district listed on the National Register of Historic Places which includes several mansions near and along East 22nd Street.

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Commercial development, though not as famous in Whittier, still have a long history and significant character and role in the evolution of the area. They developed largely around streetcar lines, especially at nodes. Most of the buildings built in the late 19th and early 20th Century as commercial development were two to three stories and still featured residential units on the upper floors (Pearson 2009).

The real estate in Whittier's early days was highly coveted by the wealthier residents and resulted in the many mansions and manors previously discussed, but by the 1960s many of the wealthy tended to move away to the suburbs, marking the beginning of a decline in the neighborhood. Construction of I-35W in the 1970s accelerated this decline by forcing more residents out, which raised the crime rate and created a serious downward spiral. In 1977, the Whittier Alliance was formed by residents and businesses with the successful goal of reducing crime, establishing a neighborhood identity, and promoting the local community.

Today the neighborhood is a lively, thriving, and culturally rich part of the city. There are many celebrated historic works, ethnic businesses, and smaller offices, and is home to the locally famous "Eat Street". Eat Street was established in 1990 by the Whittier Alliance and includes 13 blocks of diverse restaurant and food market options (James).

The neighborhood has certainly turned a new leaf since the 1970s, but there is still a fair amount of crime and some homelessness. Crime statistics from the City of Minneapolis reports the second most crimes out of all the Minneapolis neighborhoods, though quite far behind Downtown West. Demographics from 2012 show that 32.2% of residents below the poverty line (an increase of 7% since 2008), compared to 22.5% in Minneapolis as a whole which was an increase of 1%

## History

since the 2008 data. The majority of occupants are renters, with 83.4% of residents as tenants. Diversity of residents is significant, as it leads to the medley of shops, markets, and restaurants that contributes to the area's unique and proud identity. 54% of residents are white, compared to Minneapolis' 62.2% in 2012, 46% are black, compared to 37.8% in the greater Minneapolis, 18.1% are Hispanic or Latino, which is double the ratio for Minneapolis, and 22% identify as foreign born, compared to 14.5% in Minneapolis proper (Wilder 2014).

**History : building** Little is recorded about the origin of the building itself or the architects, McEachern and Tomlinson, who designed and built it in 1887. The building is one of the few surviving examples in the area of commercial Victorian, but has lost much of its historic integrity in its long 120+ year life making it ineligible for the National Register for Historic Places (Gemini 1991). The building suffered years of neglect but has recently begun a long restoration that will combat the damaged brick, the historically unsympathetic repairs, and bring the building back into use and area significance.

The two photos below show some of the changes it has gone through in the last few decades of its life. The photo on the l



Figure 45 | 109 E 26th Street | Gemini Research



Figure 46 | 109 E 26th Street | Alex Schrader

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left was taken in 1990 and the photo on the left was taken in 2014.

**1887** 109 East 26th Street was built

**1908** A permit was taken out to alter two of the apartment units for a real estate agent and an inspector (Gemini 1990).

**1912** Sanborn Fire Insurance maps show the building with two bay windows, stores, and units. The building was also shown as two separated addresses, with the existing center staircase separating the western 109 and eastern 111. These maps also show the currently vacant lot at 103-107 filled with 8 shops, and the large lot to the east occupied by a garage, a large laundry facility, and various other small buildings (Sanborn-Perris 1912).

**1930** By 1930 the building had eight residential tenant spaces that were home to clerks, painters, and salesman. The early commercial tenants are not known (Gemini 1990).

**1990** The National Register of Historic Places eligibility form from 1990 shows a photo of the building with two bay windows on the second floor as well as single-story businesses next door on each side. The storefront had already been drastically altered into a flat CMU facade and with windows to serve the walk-up restaurant.

**2001** A permit from the City of Minneapolis online records showed fire damage on the third floor prompting the replacement of 3 windows.

**2005** A permit for the replacement of 20 windows was filed, which marks the general time of which the building was transferred to the current owner with the intention of restoring the

## History

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historic elevation and renovating the interior.

**2011** A permit marked more window replacements, demolition of the damaged third floor for future remodel, and some spot tucking.

**2014** A permit for September of this year was filed for more third floor demolition, tuckpointing of the exterior brick, and removal of more windows. A site visit in December of this year with a tour given by the masons subcontracted to the project found all windows replaced or in the process of replacement, third floor completely cleared out of any interior partitions, and work being done on the center masonry party wall. The middle portion of the party wall has been removed and replaced with a steel column and beam. The basement was not able to be visited, however it was reported that the foundation was an unusual stone that was in poor shape and would need to be braced. The masons also recounted the unexpected issues that resulted from the large front windows that spanned from the third to the second floor. Because of deferred maintenance, the walls cracked during placement of the large windows across the north wall. The masonry is currently braced with steel clamps and tie rods from the west to the east exterior wall.

**Beyond** The original design intention of commercial space on the main floor and apartments on the upper two floors survived throughout the building's useful life, with most recently three units on the second floor. The future plans for the building will keep this mixed use, but will lower the density. The third floor will be one large penthouse apartment and three units will remain on the second floor. Commercial leasing space will be available on street level.







Figure 47 | 109 E 26th Street | Alex Schrader

## History

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**History : burials** Modern American burial methods are usually credited to the early Christians who adapted existing Pagan and Roman practices. Initially, early Christians complied with Roman burials by keeping their dead in underground catacombs (Curl 1993). Burial within cities was forbidden by early Roman law, with some exceptions made by Christians prior to 300 AD (Ziemssen 1879). In the recommitted goal of preventing disease, the law was again strictly enforced in from 300 to 500 AD, even requiring previously-buried bodies to be removed from the city (Curl 1993). By 600 AD, intramural interment was no longer prohibited, and the custom of churchyards with cemeteries began (Ziemssen 1879, Curl 1993). Cemeteries in these churchyards were highly protected and were mandated for many years to have full walls that kept animals and evil spirits out (Curl 1993). With this arrangement, the Church had a high level of control of how people were buried, as well as financial stakes in the process. This power structure remained in tact for many centuries, but was tested in London after the Great Fire of 1666. Christopher Wren and John Evelyn proposed rural cemeteries, aka "Dissenter's Westminster Abbey" that was not church-owned, preventing the rejection of burials that was common for the Church to make (Curl 1993). These ideas were not carried through, as the financial stakes were too high for the church. Europeans who settled elsewhere in Asia (especially the Dutch in India) were some of the first to build what we can consider a modern-day cemetery: set apart from a church, with plots laid out in spacious rows (Curl 1993).

The St Louis Cemetery in New Orleans built in 1788 was product of flood, fire, and epidemic. The flooding and fire prompted above-ground crypts, and the epidemics of the time placed the cemeteries far away from the city itself. When the bodies inside the tombs had decayed, the bones would be swept into a hole in the tomb into a pile of the other

deceased family members' bones (Curl 1993).

**History : undertakers** The catalyst for the emergence of the undertakers, the grief counselors, the funeral coordinators, the morticians, and the other roles that came with the funeral industry in the 20th Century was the change in the relationship between the dead and the living. Development of medicinal sciences meant that people were living longer, infant mortality shrunk, and hospital staff became primary caregivers for the dead and dying. End-of-life was becoming increasingly systemized which made after-life arrangements systematic as well. Undertakers and morticians were called upon to make arrangements for the dead on behalf of the survivors, a service that was previously only reserved for the wealthy (Laderman 2003).



Figure 48 | St Louis Cemetery | Jason Phillip Reeser

## History

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**History : funeral homes** Funeral homes were the result of the previous shifts in American attitudes and medicine, but was also thanks to changes in architectural tastes. Parlors, the rooms that typically held at-home funerals, became less stylish, requiring a place outside of the home to hold the services. Embalming was also growing in popularity, especially after the death of Abraham Lincoln and the tour that his corpse made through the country that would have been impossible without being first embalmed. Prior to the Civil War, embalming was typically looked upon as desecration. The emerging medico-centric view of end of life and other factors necessitated a mediator between the dead and the living: the undertaker (Laderman 2003).

Undertakers had a poor reputation within American society as a creepy profiteer. Authors like Mark Twain perpetuated this stereotype early on, but from the 1900s to 1920s, most of society saw the profession as salesman who were opportunistic and trying to make a quick buck. An overall resentment towards the industry grew for several decades as people saw them as manipulative of a difficult and emotionally-driven situation. By the 1960s, this stereotype had become a cliché and the funerary professionals likely thought they were finally about to gain the trust of the American people. A book by Jessica Mitford was a major setback in the funeral workers' attempts to gain public trust and exposed corrupt undertakers, death workers, morticians, and funeral home directors as social pariahs and exploitative. She referred to that era as having a "high cost of dying", pointing out that people don't bargain when picking out caskets and making funeral arrangements, a tendency that had been abused by the industry. Though many believe her book had been based on outliers, it was nonetheless damning to the profession and left those in the industry struggling to humanize their profession and gain society's trust. One way in which this was attempted was by

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changing the role of funeral directors from just coordinators to grief specialists; people who truly care about the well-being of the clients. Still, the public was reminded, they were just clients, and money was not taken out of the equation. Many journalistic exposes targeted funeral homes, especially the price of funerals, finding them unwarrantingly high (Laderman 2003).

Undertakers, morticians, funeral workers, and others in the industry had been relentlessly victimized by the media, literature, and the public through the 20th Century. Some theorize that these workers were merely a scapegoat for American's fears and long-held issues about death and dying (Laderman 2003).





# SITE INFORMATION

## Site narrative

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From any angle the building is intriguing; and each view tells a different side of a complex story.

From the front one is struck by the ornate Victorian details on the entry and upper floors contrasted by the minimal CMU facade replacement and abandoned signage for a take-out chicken shack. The building's 120 year life has seen abuse, but it has also seen redemption. The windows on the front are clearly new, and clearly chosen with care in regards to its original character. Its two next door neighbors are both empty, and likely have not seen activity in many years. In this light it stands strong as a survivor of change, time, and human neglect. The potential is clear.



Figure 49 | 109 E 26th St Front | Alex Schrader

From the east, a large colorful mural with a skyline, poems, characters, and other spirited artwork grabs attention and shows neighborhood pride. Its backdrop is Nicolette Avenue,



teeming with life and activity. It belongs.



Figure 50 | 109 E 26th St Side | Alex Schrader

The west view is perhaps showing its more lonely side of its identity, with the empty gravel parking lot, some boarded-up fenestration, remnants of neighbors, and a large vacant grass lot behind. There is little indication of life, and the view is dismal.



Figure 51 | 109 E 26th St Side | Alex Schrader

## Site narrative

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All three of these perspectives are valid when considering the building's history and future. It is indeed part of a greater community, one that was built from the ground up, just like the mural was. And one that values the unique components that make it special. It is also a symbol of revitalization and endurance, having survived economic downturns, fires, deferred maintenance, and community decline yet remaining an example of the way that these old places can have purpose as long as someone is willing to put in the time. But it remains a relic of times of decay and of destruction, and how easy it can be to forget about what once was there, or even still is.

It's a site that is just far enough off the main drag of Eat Street (Nicolette Avenue) to escape the bustle but retains connection. Sometimes, it's only noticed when a lack of parking prompts a driver to veer off the main arterial into the quieter side streets. But it has a complexity, a presence, and a intriguing collection of artifacts from a past life that, when it finally achieves a glance from a passers-by, is bound to stick with them.

## Qualitative site conditions

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**Building features** The building, as previously mentioned, has suffered from some years of neglect from a previous owner. Some major repointing on the exterior and interior brick is under way, the foundation is reportedly in bad shape, and building cracking in 2010 forced steel brackets and cables to tie the east and west walls together. Most of the windows are in the process of being replaced, with the most notable being the two-story installation on the front facade, however some small windows and old fire escape doors remain boarded up. The west exterior wall shows remnants of past neighbors, with paint marking the top of its roof and dents showing old roof girder supports. The top of the west wall has faded paint advertisement, one which says "seller of real estate and loans," likely product of the tenant who was a real estate agent circa 1912. There is no perceivable grade changes on the flat parking at the corner of 1st and 26th Avenue, and the gravel lot is typically void of parkers. The for sale sign at the corner appears quite old and has fallen victim to slight graffiti.

**Vegetation** The empty grass lot next door, separated by the alley, is overgrown and fenced off. It was likely cleaned out before being barricaded, but the time without intervention has it looking rough and disheveled. The plants that make their home there for the time being are likely native grasses and weeds blown in from nearby land. In the time the lot has been empty, no trees have been established in a significant way.

**Wind** At the time of the site visit in December, the wind was a standard Midwestern north wind. The low density of the area meant that there was little to affect the wind flow or velocity.

### Site information

The building and lot are located in Corson's Addition, Block 3. There is very little perceivable grade change. The lot is fenced off with overgrown grass and weeds. Photos are shown on the facing page corresponding with blue arrows.

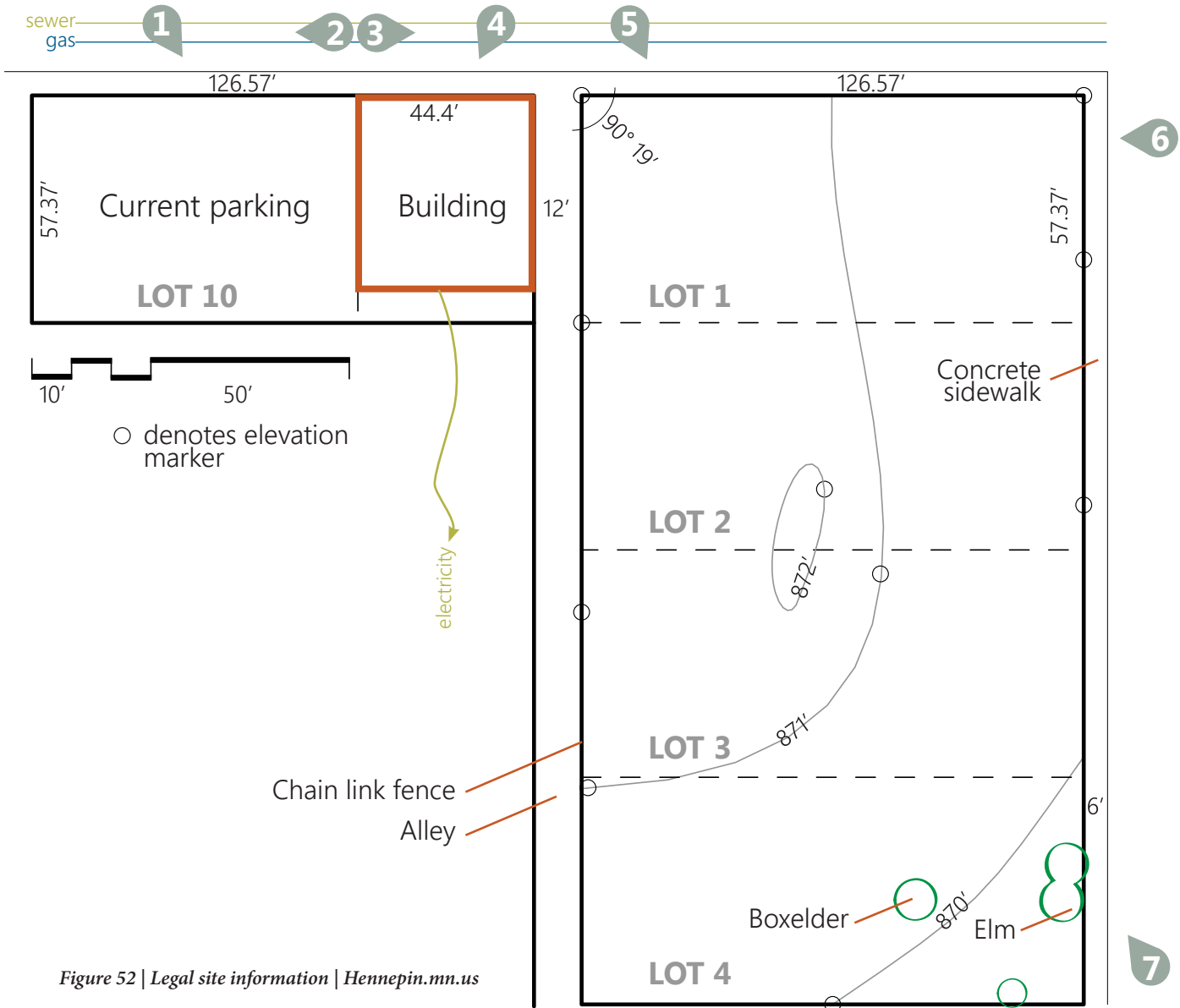
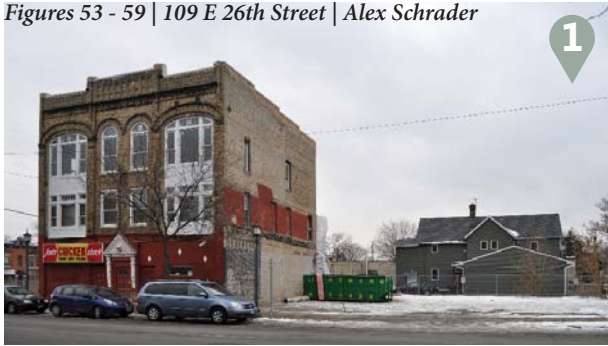


Figure 52 | Legal site information | Hennepin.mn.us

Figures 53 - 59 | 109 E 26th Street | Alex Schrader

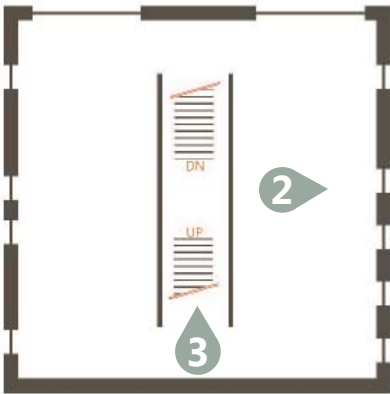


# Interior character



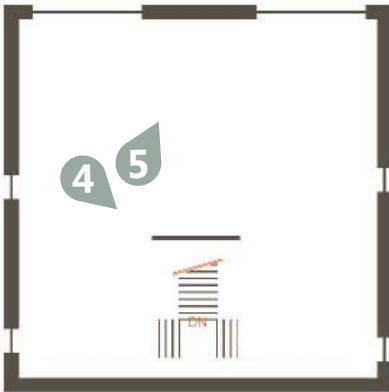
## Main floor

Stairs from the interior lead to the basement, and a door from the sidewalk leads upstairs. Two large masonry bearing walls run parallel along the center, recently replaced with steel post and beam behind the staircase.



## Second floor

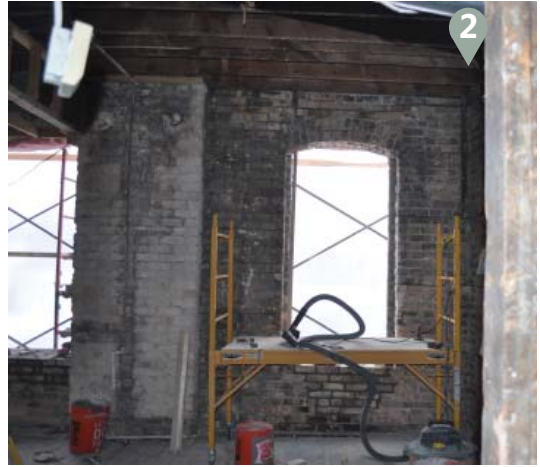
Now stripped down to its bones, the second floor was all wood framing with the staircase leading up and splitting into two before reaching the third floor.



## Third floor

The third floor is the most open and breathtaking. Two skylights were recently replaced but were reportedly an original feature.

Figures 60 - 63 | Floor plan vignettes | Alex Schrader



Figures 64 - 68 | Interior photographs | Alex Schrader

## Quantitative site conditions

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**Water** Groundwater in the state of Minnesota is typically abundant, and in the Minneapolis-St Paul area, the aquifers are generally clayey and sandy above thick sandstone and limestone aquifers. The water from these aquifers are plentiful ("Ground").

**Soil** Like most of the soil in Minneapolis, the ground surface is considered outwash soil. This soil is sand, loamy sand, and gravel (Balaban 1989). Further diagrams are later in the text with specific outwash classification.

**Bedrock** Bedrock in the area is of sedimentary origin and consists of limestone, sandstone, and dolostone layers. In the city it ranges from 0 - 400 feet in depth, but at the site it is 250 - 300 feet deep (Balaban 1989).

**Utilities** Because the building is still standing and in working order, it is fully connected to the city's water and electricity lines.

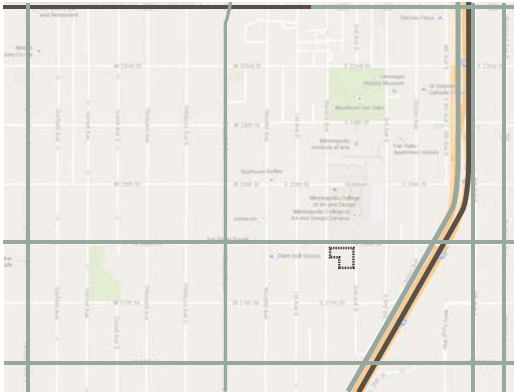
**Traffic** According to a study conducted in 2014, the city of Minneapolis was deemed the 16th most congested city in the United States (Scullin 2014). Interstate 35W is nearby, but the traffic within the vicinity itself seems to remain fairly well controlled and free from major congestion. The various one-way streets may aid in the flow of cars and bikes, including 26th Street running west, 28th Street running east, and Blaisdell Ave (two blocks east) running south. Traffic diagrams showing various circulation routes are on the facing page.



# Traffic maps

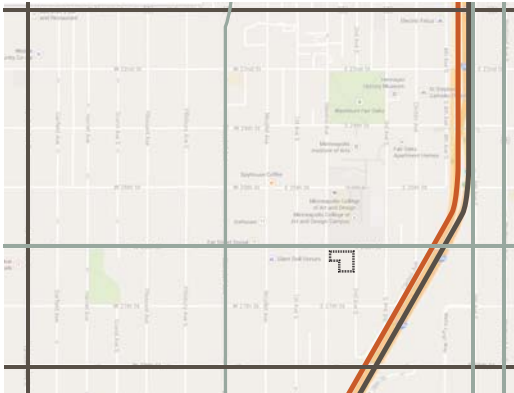
Typical traffic  
8am | Monday

**FAST**  
**MEDIUM**  
**SLOW**



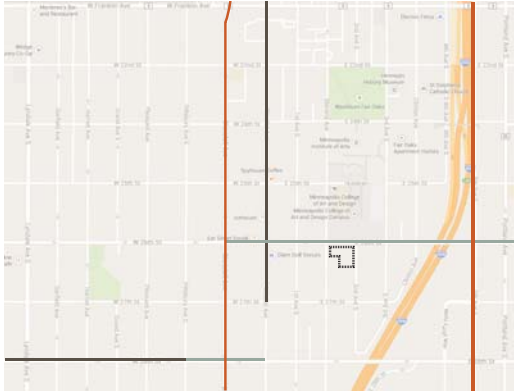
Typical traffic  
5pm | Monday

**FAST**  
**MEDIUM**  
**SLOW**



Biking

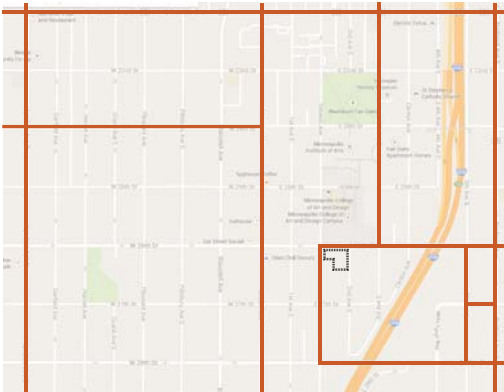
**TRAILS**  
**BIKE-FRIENDLY ROADS**  
**DEDICATED LANES**



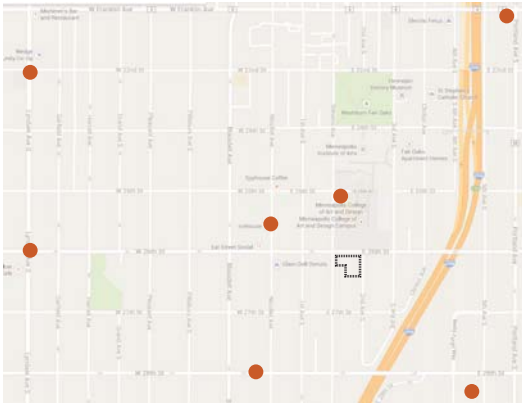
Figures 69 - 71 | Traffic maps | Maps.google.com

# Traffic maps

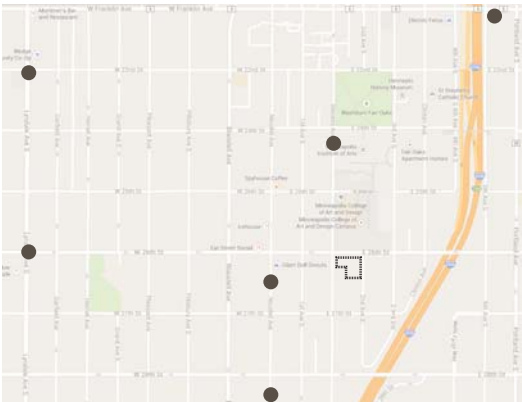
Metro Transit Bus  
**TRANSIT ROUTE**



Nice Ride stations  
**SEASONAL LOCATION**



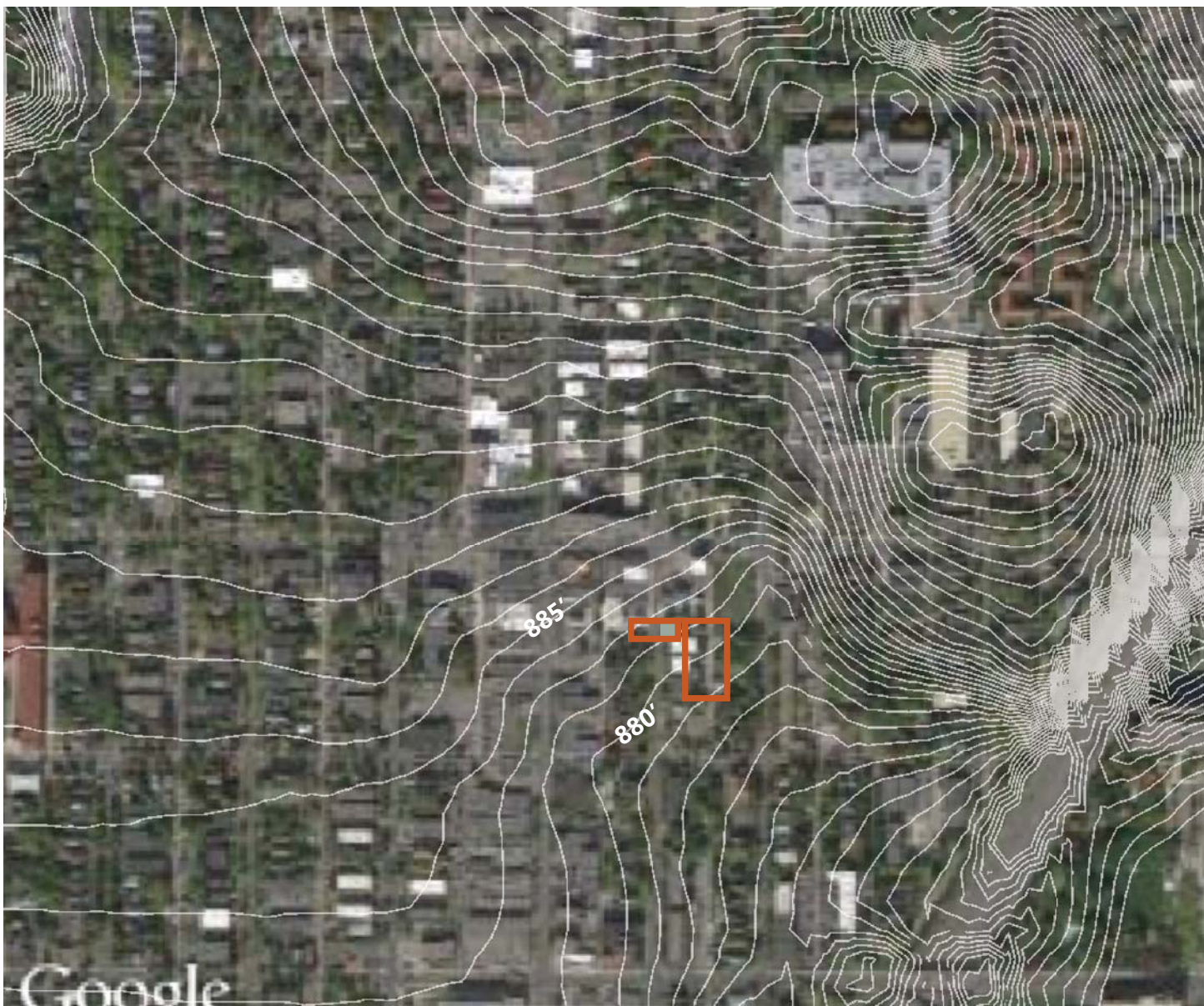
Car rental  
**HOUR CAR HUB**



Figures 72 - 74 | Metro maps | Metrotransit.org

## Area topography

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Figures 75 | Topography map | Maps.Google.com

Soils and bodies of water



Figure 76 | Soils map | Hydro\_bm.esri.com

# Minneapolis climate

Type of precipitation

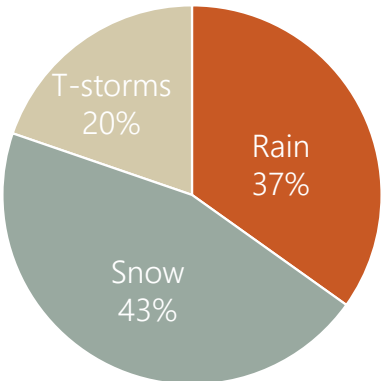


Figure 77 | Precipitation | Weatherspark.com

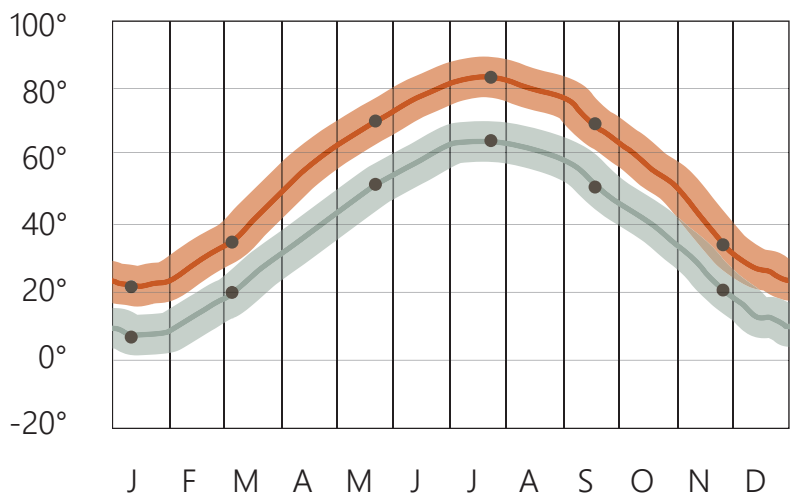


Figure 78 | Temperature | Weatherspark.com

Temperature

# Minneapolis climate

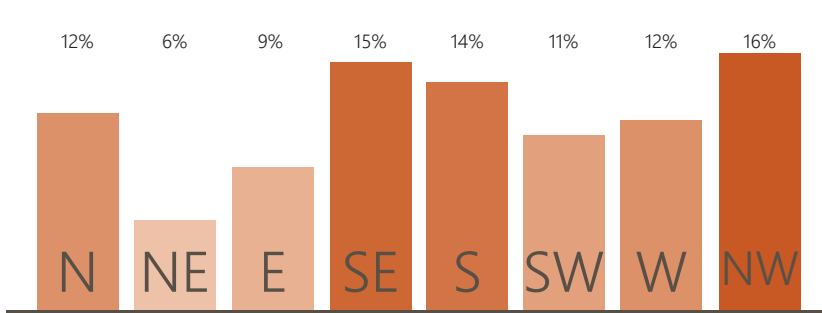


Figure 79 | Wind | Weatherspark.com

## Wind direction

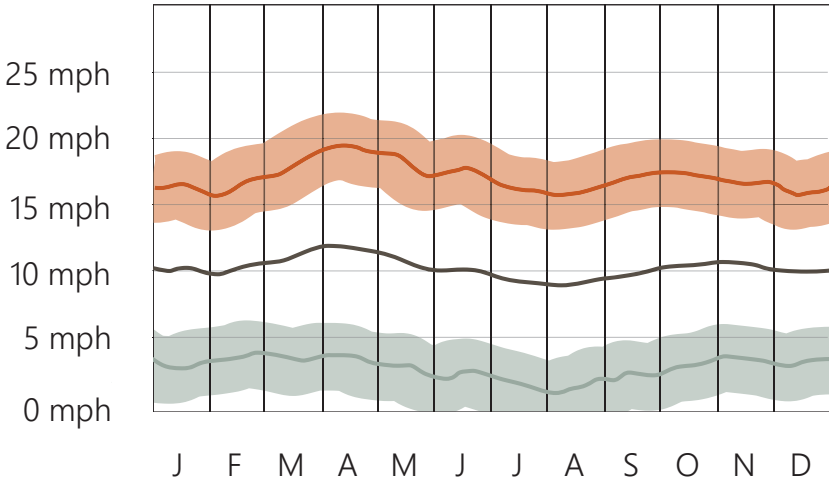


Figure 80 | Wind speed | Weatherspark.com



### Sun path

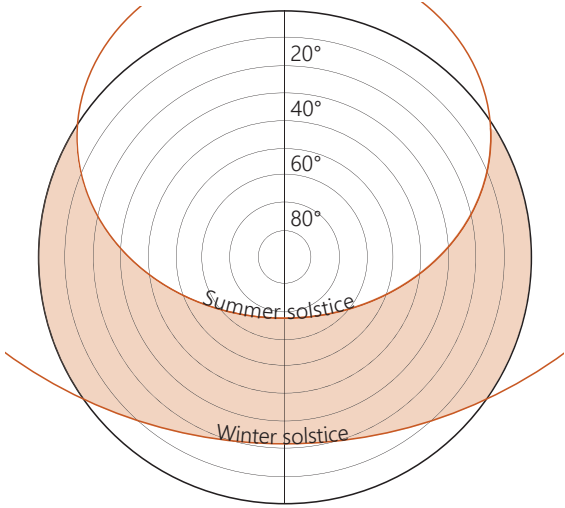


Figure 81 | Sun path | Gaisma.com

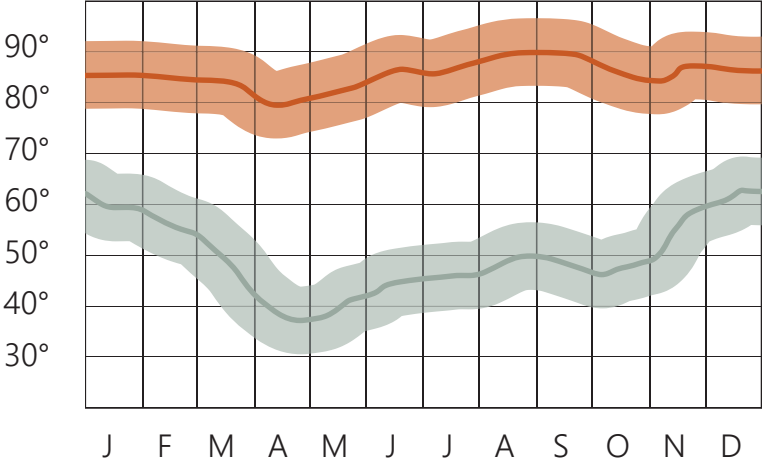
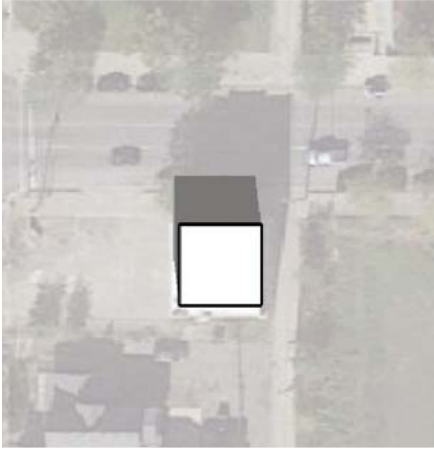


Figure 82 | Relative humidity | Weatherspark.com

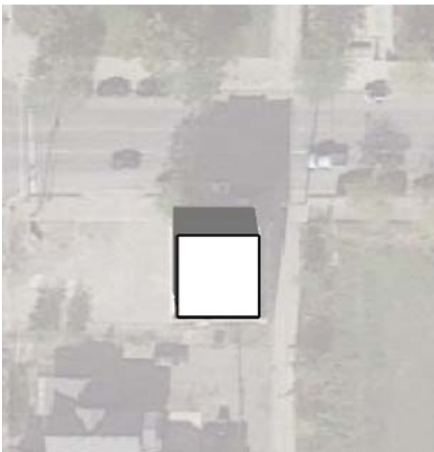
Relative humidity — Average daily high  
 — Average daily low

# Site shadows

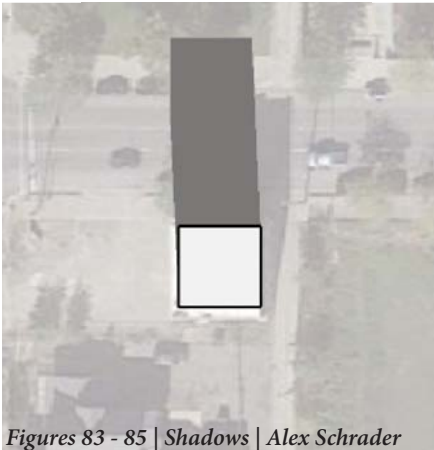
Spring & vernal equinox  
March 21, September 21



Summer solstice  
August 21



Winter solstice  
December 21



*Figures 83 - 85 | Shadows | Alex Schrader*



# Space interaction matrix

This diagram shows the connection between spaces and the people who use them.

- essential
- desirable
- necessary

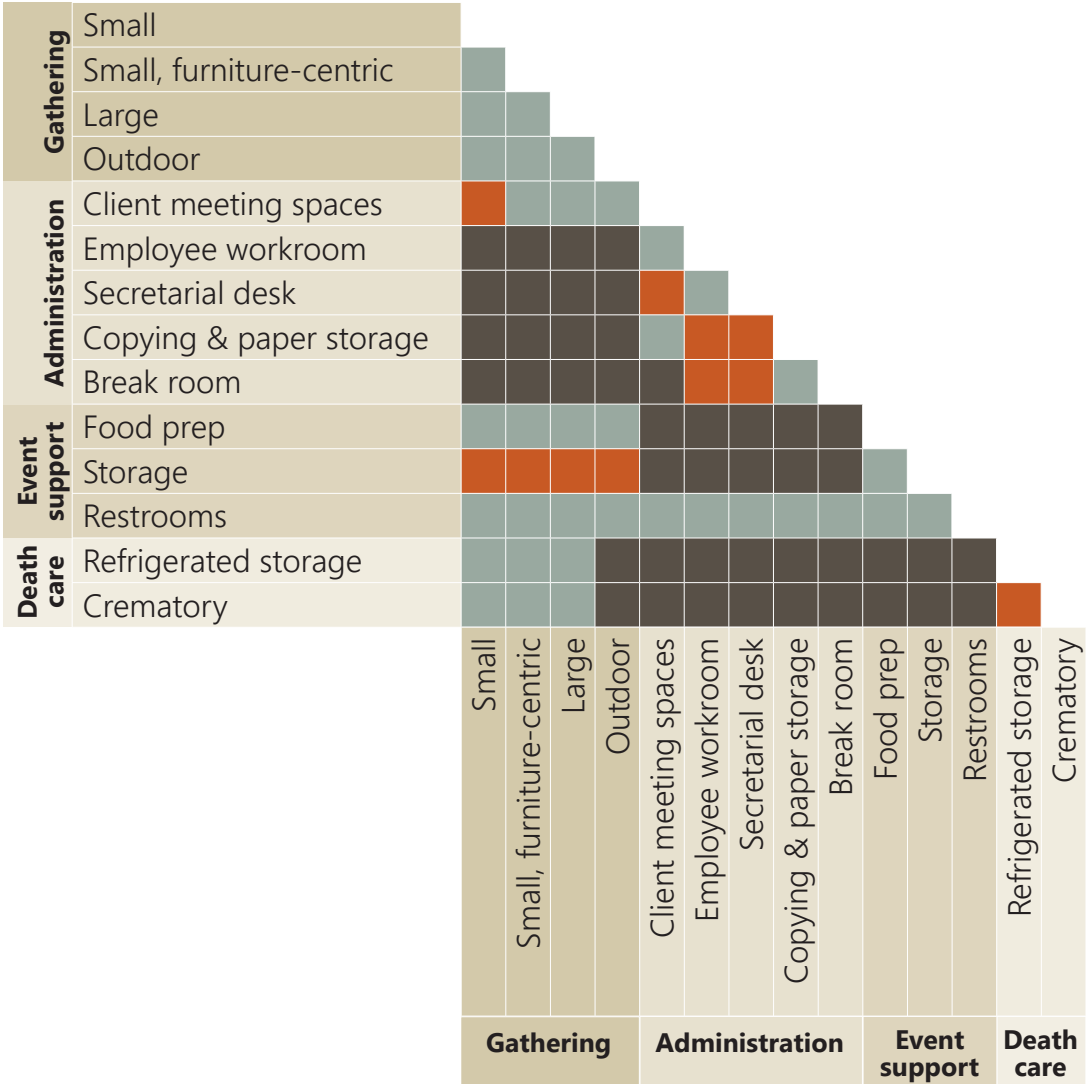


Figure 86 | Spatial matrix | Alex Schrader

## Spatial allocation

		SF	Addition/ existing const.	Floor
<b>Gathering &amp; celebration spaces</b>	Rooftop	2500	E	R
	Small, furniture-centric	1200	E	2
	Small	1200	E	2
	Large	2500	E	3
	Multi-purpose media room	2400	N	2
<b>Coordination</b>	Client meeting spaces (2)	1600	E	1
<b>Employee workspaces</b>	Coordinator desks (3)	300	A	2
	Administrative desks (4)	400	A	2
	Non-assigned desk	100	A	2
<b>Administration</b>	Secretarial desk	200	A	2
	Copier/printer	200	A	2
	Break room	400	A	2
<b>Event support</b>	Food prep kitchen	1500	A	3
	Storage	1000	A	R
<b>Deathcare</b>	Refrigerated storage	2800	A	LL
	Crematory	2500	E	LL
<b>Parking</b>	Facility parking	4800	A	1

# Space interaction diagram

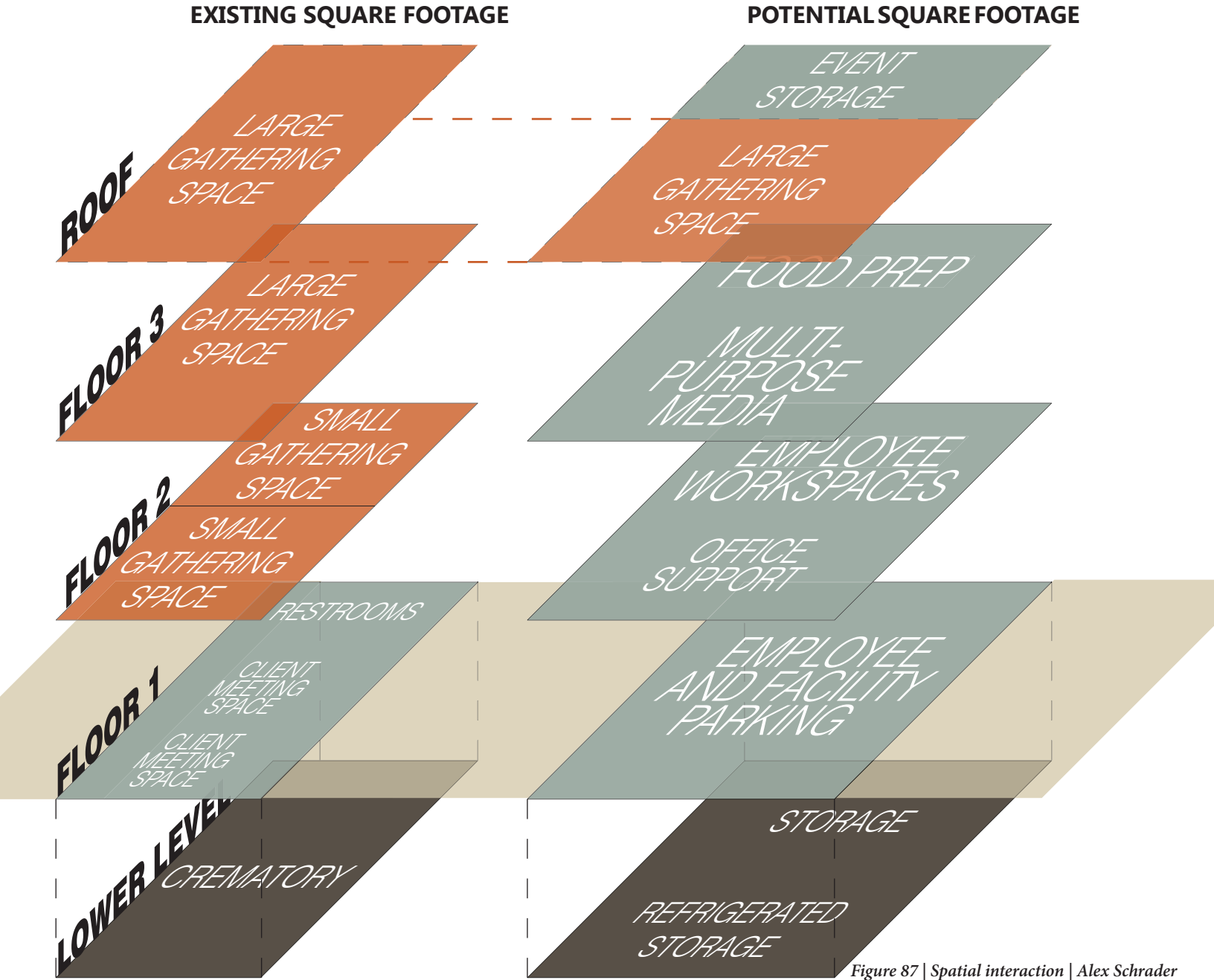


Figure 87 | Spatial interaction | Alex Schrader





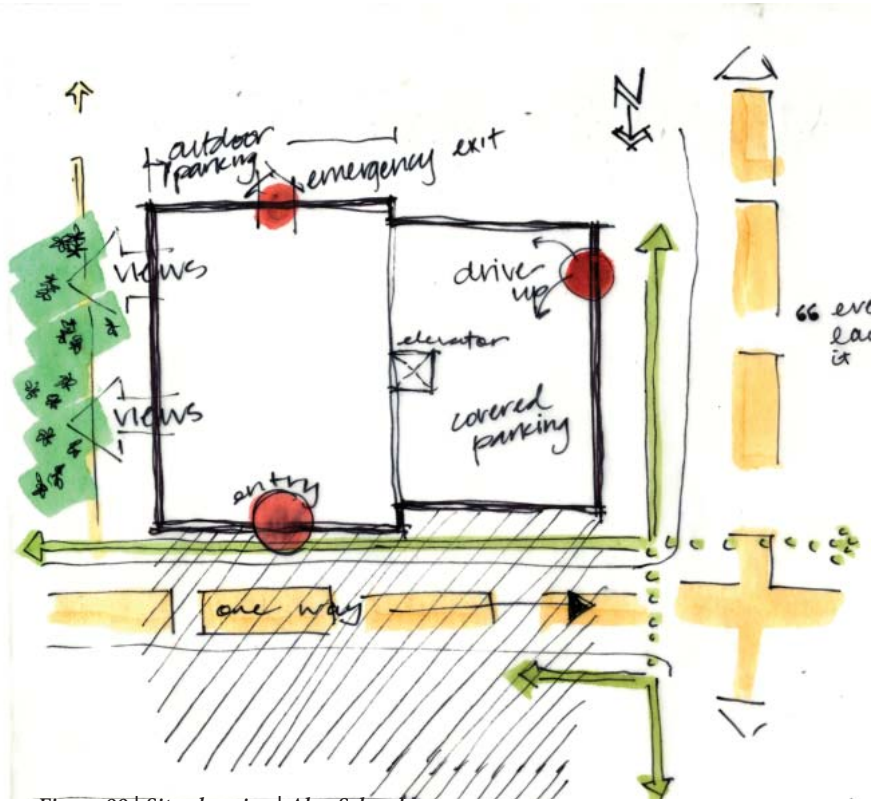
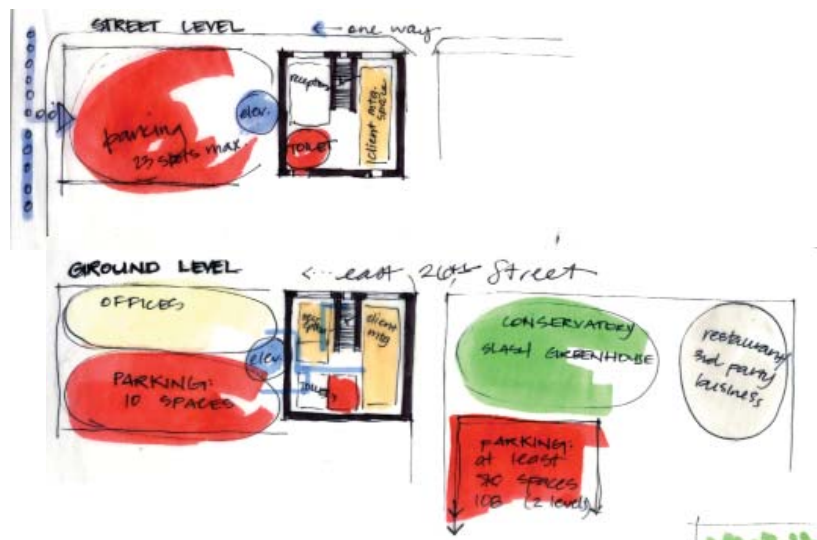
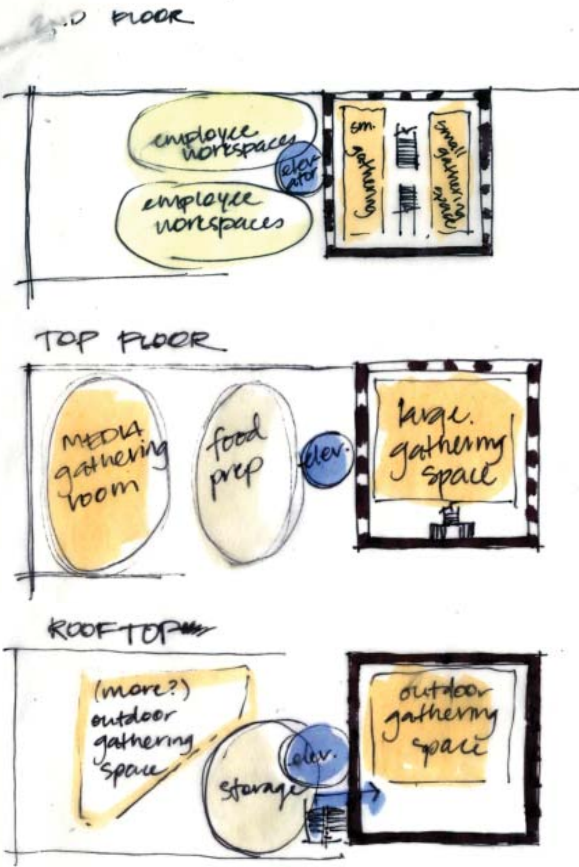


Figure 89 | Site planning | Alex Schrader





Early schematic design shows spatial planning prioritizing assembly spaces in the historic building. The existing materiality of warm brick and wood with high ceilings is an appropriate atmosphere in which to hold funerary services, and provides texture and warmth that can not be replicated in new materials—one of the benefits of working with an existing masonry structure. Placing the assembly spaces on this side of the facility also allows the users inside to look out the plentiful windows on the eastern wall into the conservatory.

The addition is able to more easily house spaces that require new equipment like the crematory equipment and chases, new plumbing for restrooms and the kitchen, and more ductwork for the smaller administration spaces that need individual controls.

Code research prompted a switch from an open park to an enclosed conservatory, which also allows for the users to be amidst the plant life all year.

Figure 90 - 94 | Space planning | Alex Schrader

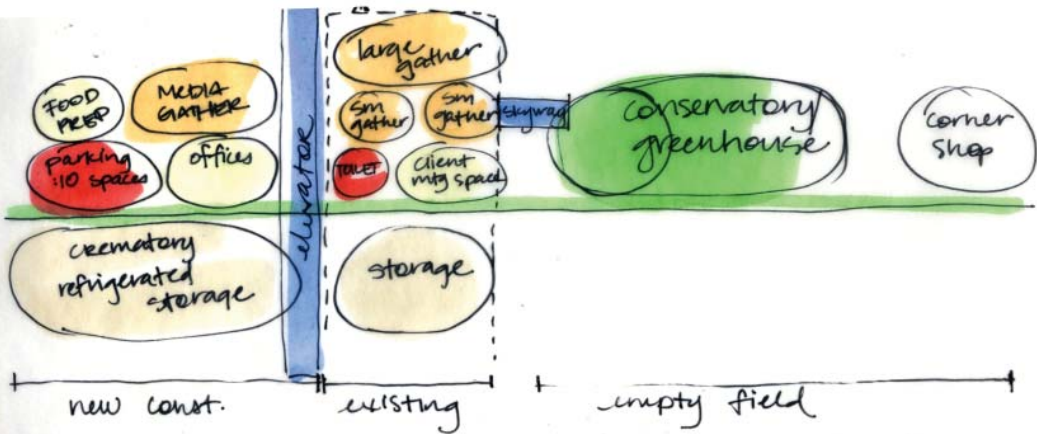


Figure 95 | Elevation planning | Alex Schrader

Massing and elevation studies of the building explore ways in which the new construction can be subordinate to the historic building. The building addition and enclosed conservatory frame the existing building in a way that builds up towards the center, and also are a kind of green, leafy “bookend” with the conservatory plant life and exterior green screen and vertical garden on the building addition.

The elevator core is used as a bridge or bind between the new and old construction. It can also serve as a hyphen, which is a crucial element when designing to comply with National Register of Historic Places standards. A hyphen provides a clear distinction on new and old construction and allows viewers a clear break to avoid confusion about what part of the building is historic.

The historic building also provided proportioning systems and horizontal lines to carry throughout the facility elevation as seen below (figure 98).

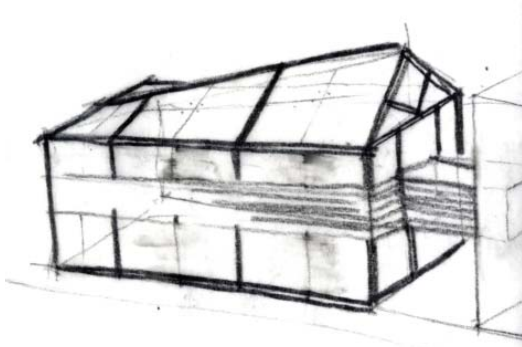


Figure 97 | Conservatory massing | Alex Schrader

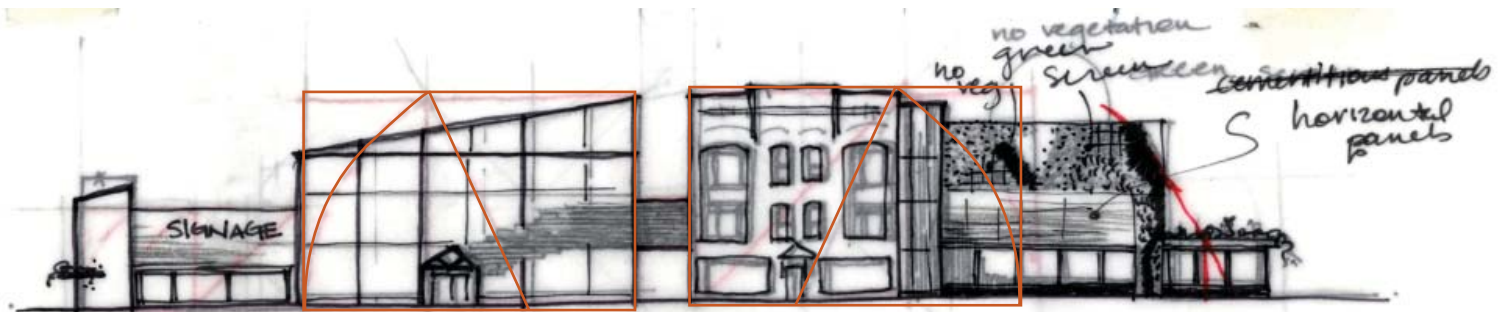


Figure 98 | Elevation studies | Alex Schrader





When considering materiality, textures and materials were chosen that would compliment the existing yellow common brick and show cycles of time and age.



Wood, especially left untreated, shows a dignified weathering. Glass is a necessary component of a conservatory and is also a go-to material when designing additions for historic buildings because it shows clear modernity without overshadowing the historic features. Corten or weathering steel patinas into a deep rust color over time, while copper patinas into a beautiful teal. Natural and honest materials in a variety of textures will provide a facade that is warm, accessible, and elegant as time and seasons pass.

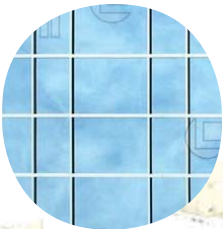
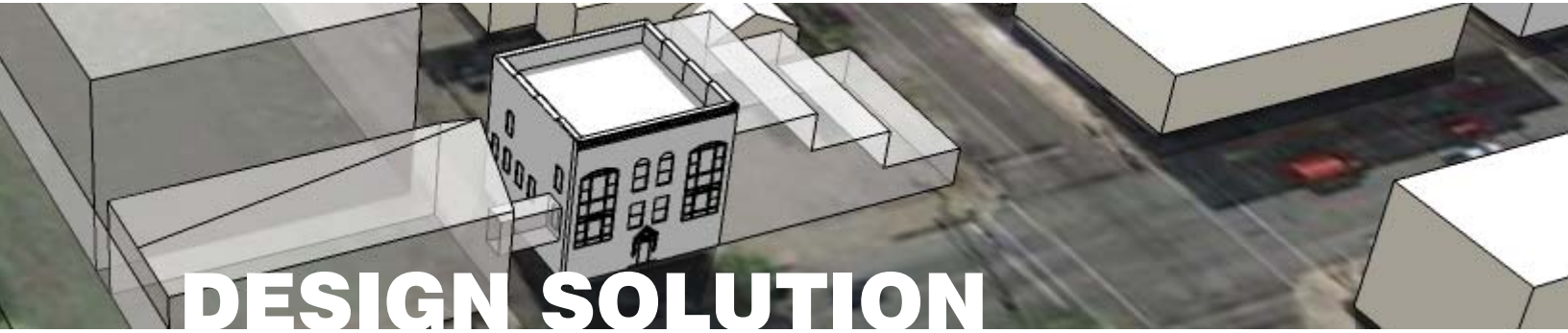


Figure 99 | Material study | Alex Schrader

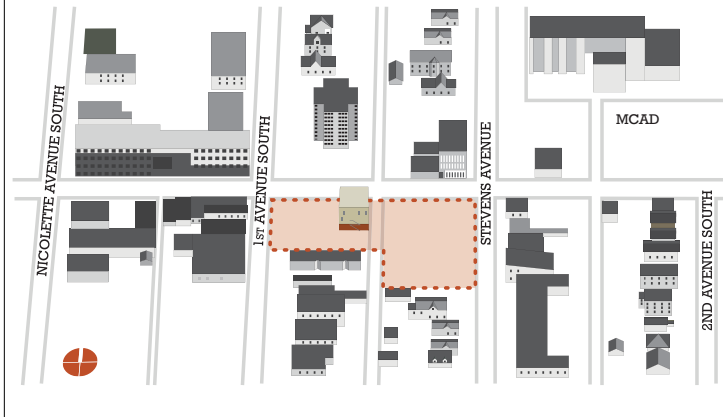
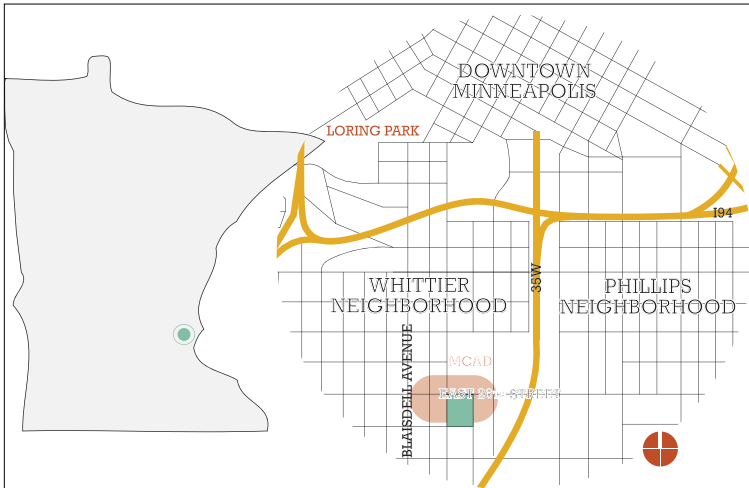


Figure 100 | Conceptual site | Alex Schrader





# DESIGN SOLUTION



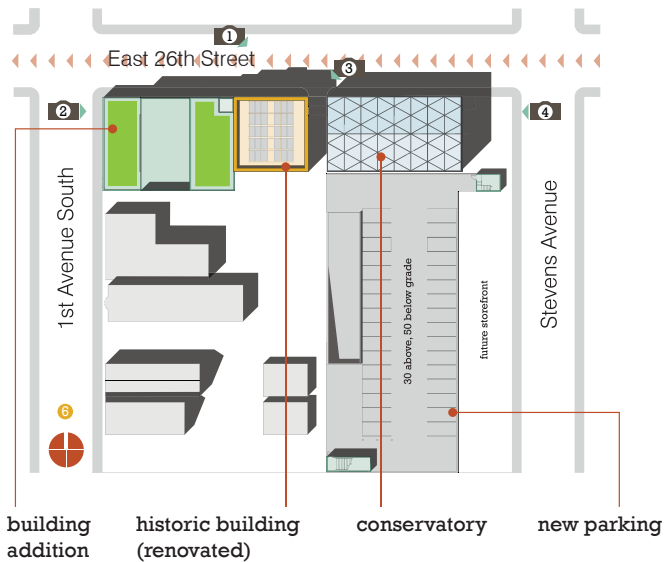

## environmental stewardship

Burying 30 million feet of hardwood caskets and 1.6 million tons of concrete in vaults each year to sit indefinitely is not an acceptable use of resources or open space. The facility will connect users to green burial sites, will provide interment alternatives, will educate on sustainable funeral options, and will utilize natural energy flows in building operation and design.

- ① Alkaline hydrolysis cremation equipment
- ② Composting
- ③ Vegetation as insulation and sun shades
- ④ Material selection
- ⑤ Material reuse
- ⑥ Site selection - existing building, local infrastructure, and mass transit

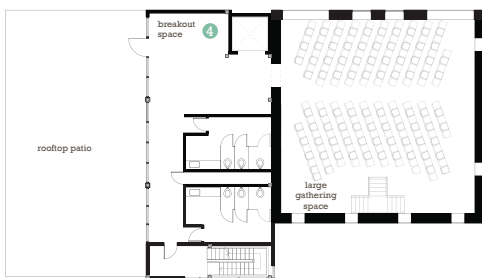
# Thinking ncare

A plea for funeral homes and crematories to recognize the impact that the industry has on the environment and the user.

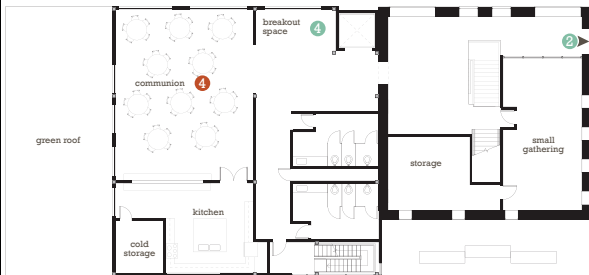


Repurposing an under utilized historic structure taps into the potential for beauty, elegance, and timelessness within the cycles of life and death; of growth and decline.

The building is located at 109 East 26th Street in Minneapolis, Minnesota. It was built in 1888 in a commercial Gothic style. Some sources refer to it as the McCullough building, but information about its early uses and architect are scarce.



Third floor plan  
1/8" = 1'-0"



Second floor plan  
1/8" = 1'-0"

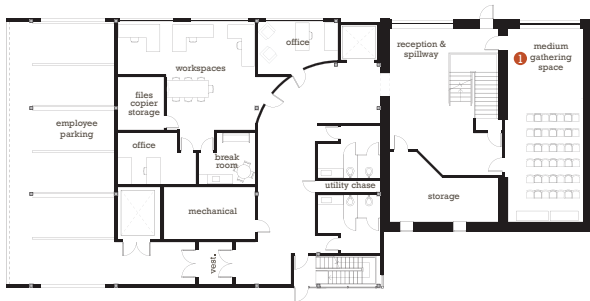


## individuality

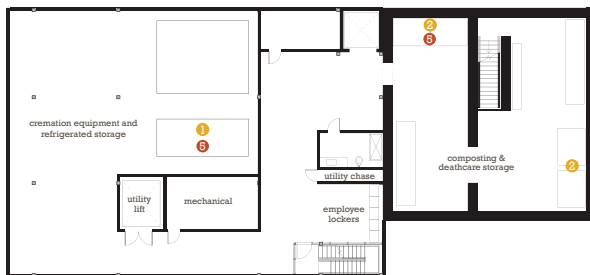
Especially as our world expands and diversifies, the funeral planning process can be more fulfilling and meaningful if users are given the ability to choose beyond a small set of traditional options. The facility features flexible architecture that allows for celebrations to take any shape.

- ① Gathering room as an at-home funeral training workshop
- ② Gathering room as a gallery full of the loved one's photos and mementos
- ③ Gathering room as a small, intimate and informal service
- ④ Sharing a memorial group meal
- ⑤ Interment options - green burial, biocremation, and composting

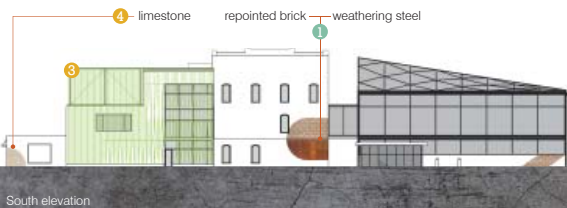




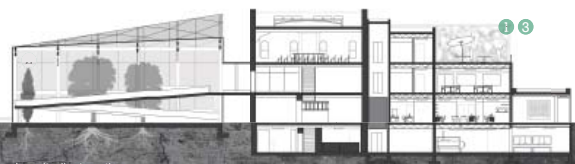
1 Main floor plan  
1/8" = 1'-0"



1 Lower level floor plan  
1/8" = 1'-0"



South elevation



Longitudinal section



## emotional responsiveness

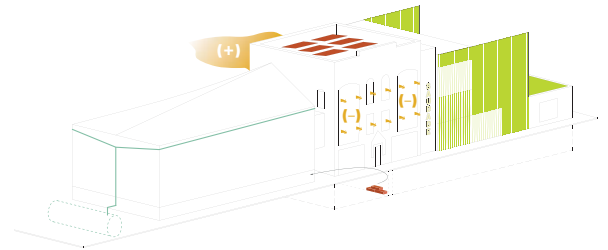
How can a building make a person feel better? Historically, buildings that utilize light, shadow, and views to nature have elicited a calming and introspective feeling. The facility recognizes the emotional impact of funeral planning and will strive to provide a place of reflection and healing.

- 1 Witnessing natural cycles | changing leaves, light & shadow, material age
- 2 Year-round garden conservatory
- 3 Views to natural and soft textures
- 4 Breakout spaces for quiet thought or an impromptu gathering





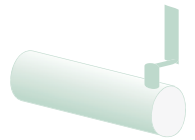
Conservatory interior



## water collection

MSP annual rainfall: 28.8"      Catchment area: 2,184 ft<sup>2</sup>  
 August average rainfall: 4.8"      Conversion factor: .623  
 Harvested water = (2184)(4.8)(.623) = 6531 gallons

10,000 underground tank collects water for conservatory plant life



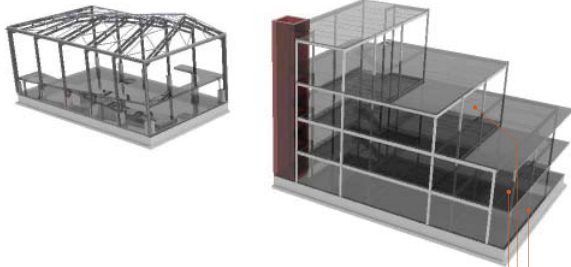
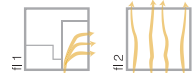
## brick reuse

24" thick interior bearing wall is opened for a 8' wide and 9' high opening.

Displaced bricks = 2,232  
 Curbside facade of conservatory = 413 ft<sup>2</sup>  
 Bricks needed for conservatory = 2,100

## ventilation

Operable Chicago style and double hung windows utilize prevailing southern breezes to cool the interior spaces in the summer, especially the high occupancy spaces.



Structure diagram

**CONSERVATORY**  
 Heavy timber frame | 12" x 12"  
 Diagrid glass roof  
 Steel storefront mullions  
 Concrete slab  
 Slab punctured for tree root growth

**BUILDING ADDITION**  
 Steel square columns | 8" x 8"  
 Wide flange girder | 12" x 26"  
 Open bar joist | 10" depth  
 Open bar joist | 20" depth  
 Concrete slab over metal form | 6"  
 CMU elevator shaft

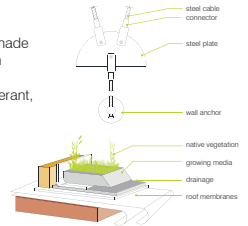
## vegetation

### TRELLISES:

**SOUTH - HARDY KIWI:** full sun, 35' high, twining, berries, flowers | sun shade  
**WEST - HONEYSUCKLE:** full sun, 10' high, twining, berries, flowers, | sun shade, attract hummingbirds & butterflies  
**NORTH - ALGERIAN IVY:** shade tolerant, 50' high, aerial rootsn shade tolerant, less dense foliage | exterior views

### GREEN ROOF:

Prairie grasses and perennials. Excellent water retention, little maintenance, and no irrigation needed



## harvest sunlight

Sun hours/day: 4.74 yearly average  
 Tilt: 5°  
 Panel manufacturer: Sunpower      Nominal power: 435W  
 Panel efficiency: 20%      Array: 36 panels  
 Output per day: 15 kW

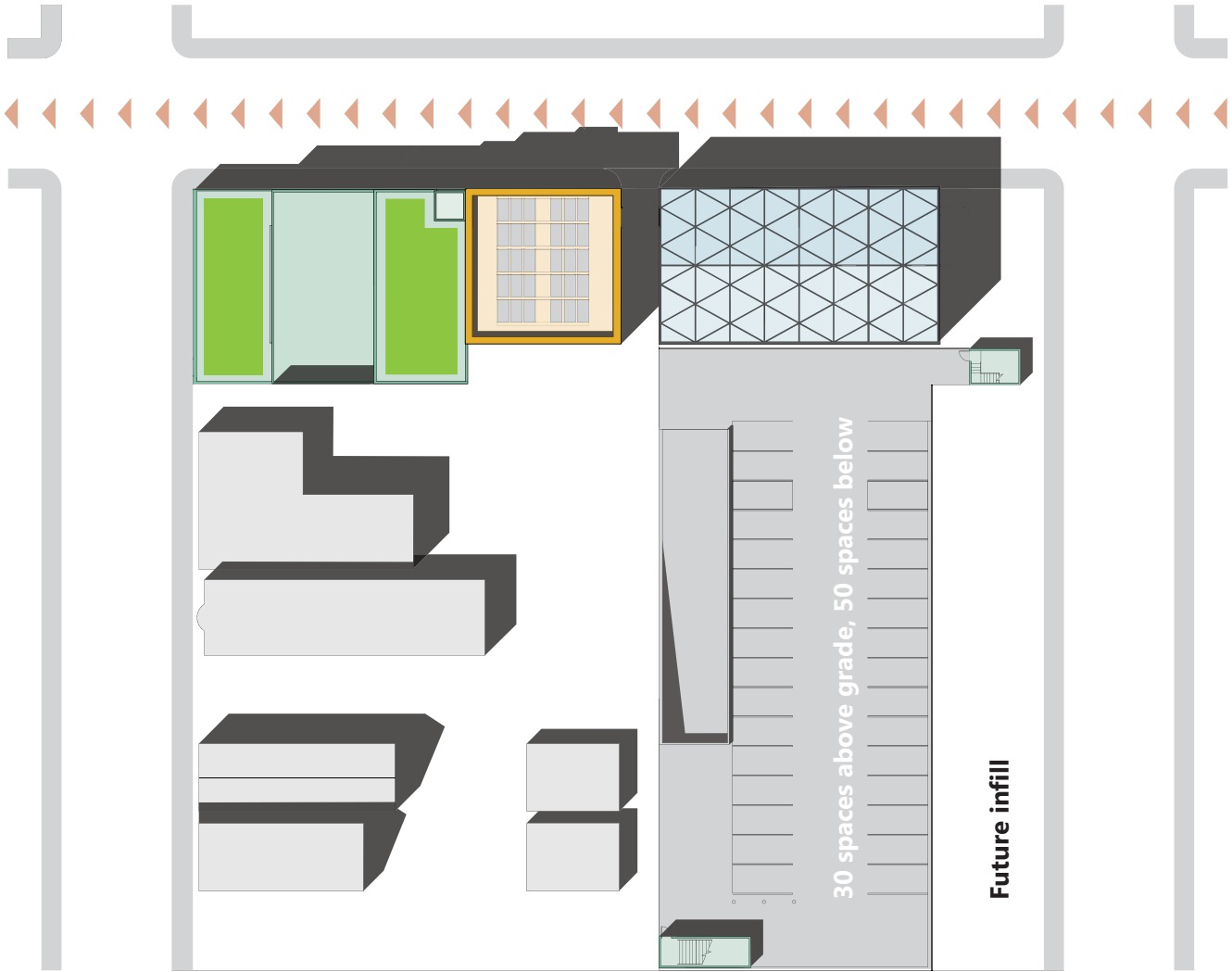


Figure 101 | Site plan | Alex Schrader

## **Performance analysis: Response to the site**

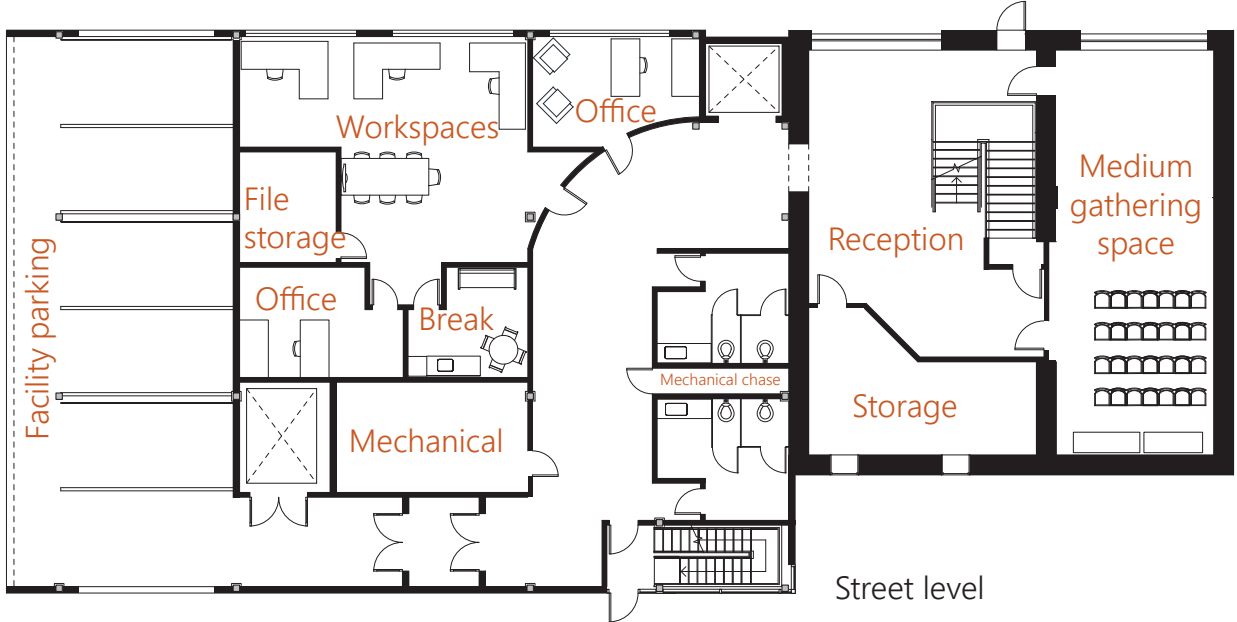
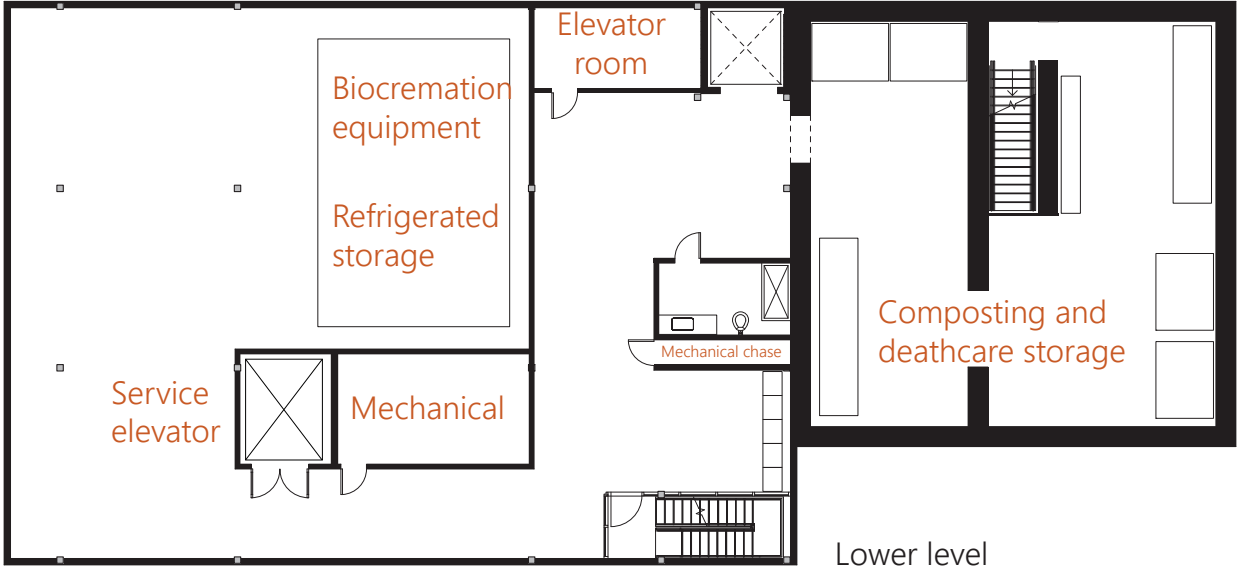
The design solution features a glass conservatory with a diagrid roof, a skywalk connecting it to the historic building on the second floor, a revitalized historic building exterior and interior, a building addition, and surface parking with below-grade parking.

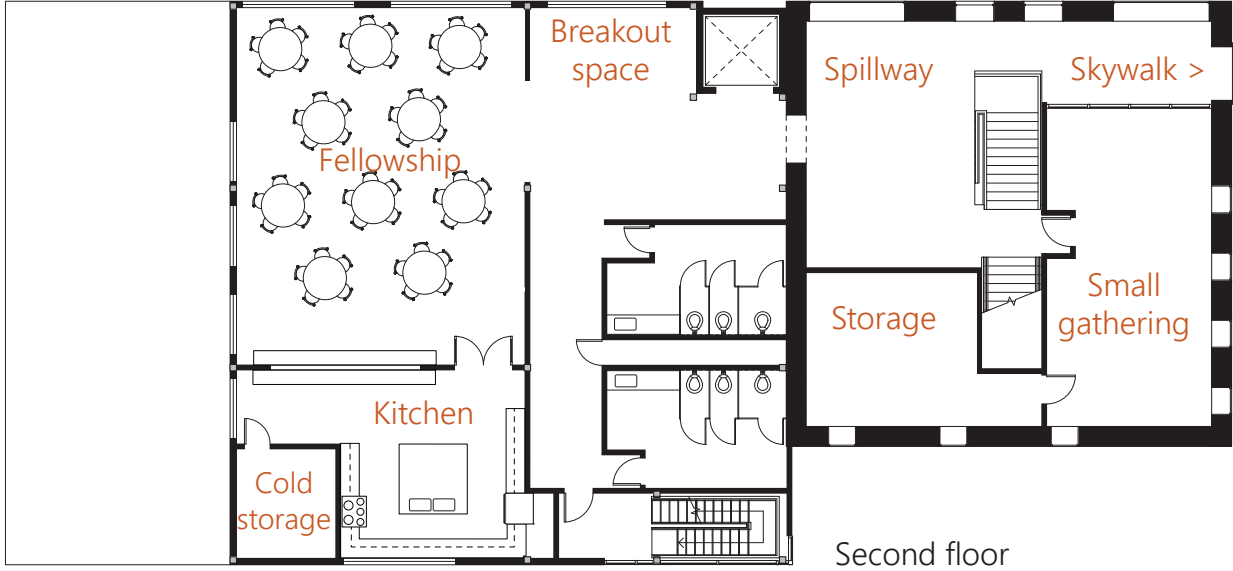
City Zoning Ordinances and IBC research provided a threshold of 43 to 85 parking spaces on site, and the design provides 80 which allows for the future infill storefronts to utilize existing parking.

The site is in a Pedestrian Oriented Overlay zone, meaning the City of Minneapolis envisions this area to have a solid sidewalk frontage that is appealing to pedestrians. These code issues prompted a change from an open park where the grass field currently is into a glass-walled conservatory.

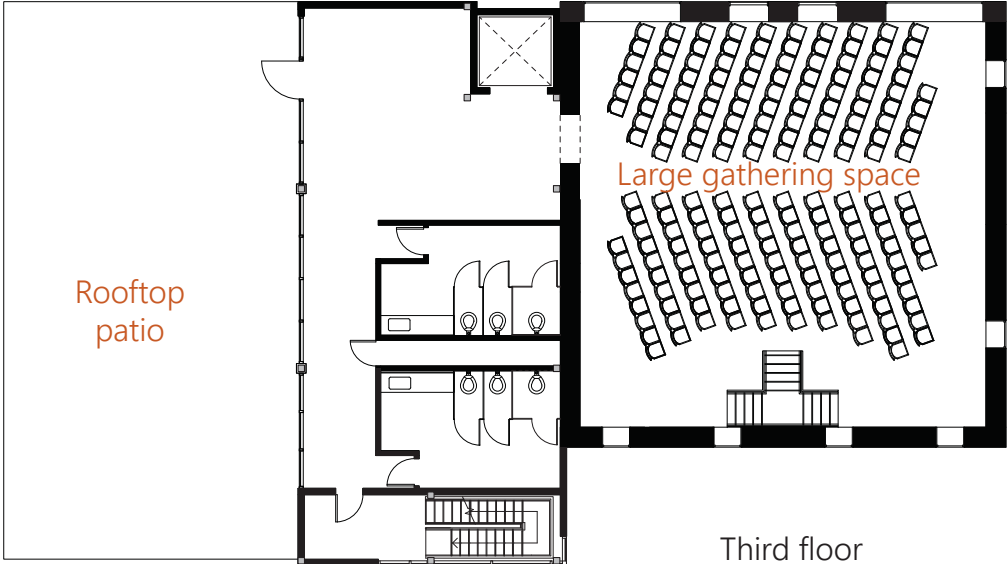


*Figure 102 | Overall perspective | Alex Schrader*



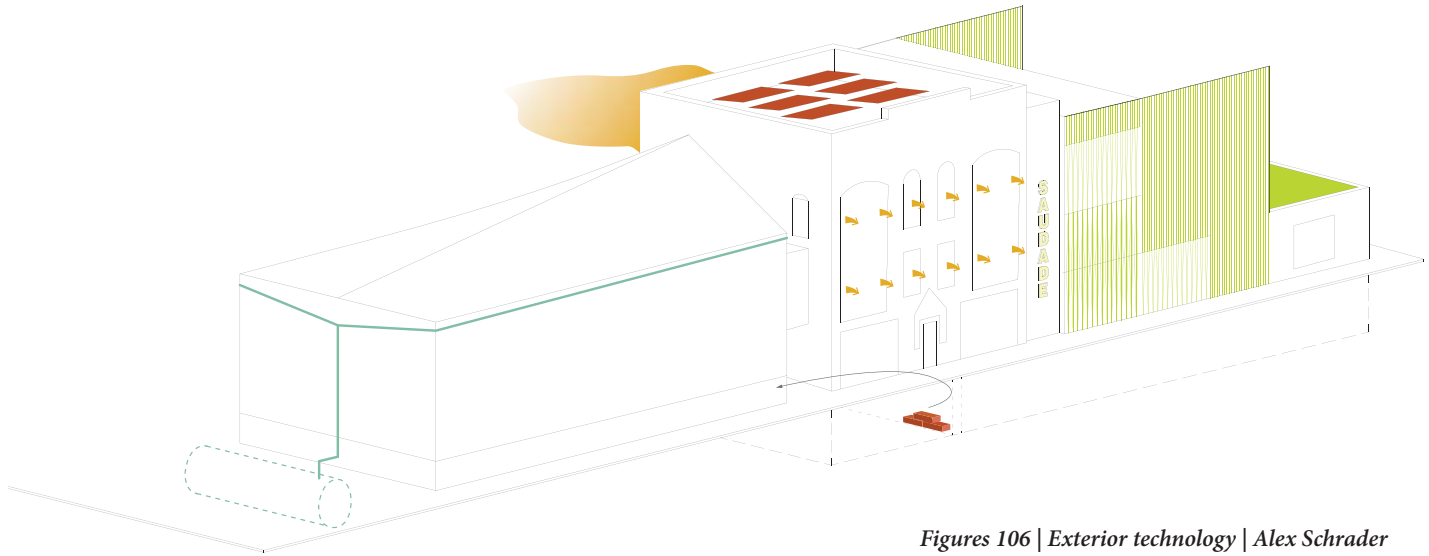


Second floor



Third floor

Figures 102 - 105 | Floor plans | Alex Schrader



Figures 106 | Exterior technology | Alex Schrader

### Water collection

MSP annual rainfall: 28.8"

Catchment area: 2,184 ft<sup>2</sup>

August average rainfall: 4.8"

Conversion factor: .623

Harvested water = (2184)(4.8)(.623) = 6531 gallons

10,000 underground tank collects water for conservatory plant life

### Brick reuse

24" thick interior bearing wall is opened for a 8' wide and 9' high opening.

Displaced bricks = 2,232

Curbside facade of conservatory = 413 ft<sup>2</sup>

Bricks needed for conservatory = 2,100

### Natural ventilation

Operable Chicago style and double hung windows utilize prevailing southern breezes to cool the interior

spaces in the summer, especially the high occupancy spaces.

### Trellises

South: Hardy Kiwi: full sun, 35' high, twining, berries, flowers; works as sun shade

West: Honeysuckle: full sun, 10' high, twining, berries, flowers, | sun shade, attract hummingbirds & butterflies

North: Alergian Ivy: shade tolerant, 50' high, aerial roots, shade tolerant, less dense foilage; works as facade treatment and exterior views

Green roof: Prairie grasses and perennials. Excellent water retention, little maintenance, and no irrigation needed

### Sunlight collection

Sun hours/day:	4.74 yearly average
Tilt:	5°
Panel manufacturer:	Sunpower Nominal power: 435W
Panel efficiency:	20%
Array:	36 panels
Output per day:	15 kW



Figures 107 | Seminar in medium gathering space | Alex Schrader



Figures 108 | Gallery service in medium gathering space | Alex Schrader



## **Performance analysis: Response to TP/UI**

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The three theoretical aspects were always kept as driving factors in design decisions.

**Environmental stewardship** From the beginning, the adaptive reuse of a historic building in a downtown setting is one that is an environmentally friendly alternative to building a new building without existing infrastructure. Energy efficient technology, like utilizing natural ventilation, harvesting rainwater, converting energy from the sun, recycling brick from the interior (figure 106), high-efficiency appliances including BioCremation machines, high-performance windows and glazing, and using vegetation as a sun shade on the south facade.

**Individuality** Providing choices in the facility for users to make services unique and significant was a major driving force in the spatial planning. Assembly spaces of different sizes are stacked throughout the historic building, with a blank canvas quality that allows the spaces to be used for a variety of services or celebrations. Figures 107 and 108 to the right show the same room, the medium gathering space on the main level, hosting two different events. Figure 107 depicts a seminar-type meeting where interested individuals could attend a workshop to learn how to pre-plan a funeral, or could learn how to host an at-home funeral. Figure 108 uses the long space as a setting for a gallery-type funeral service, where photographs and memorabilia from the deceased person is shared with mourners in a casual setting, allowing stories, laughs, and tears to flow naturally.

The conservatory allows for the greatest deviation from the normal funeral service offered in most funeral homes. It allows the patrons to be immersed into a natural atmosphere. In the conservatory, a service could be set up with chairs to listen to a central speaker, or the participants could have a gardening session and take home small tomato plants.

**Emotional responsiveness** The conservatory is also a direct response to the need for emotional comfort within the facility. The conservatory provides a place for natural lighting and natural features to coexist with funeral services, but it also hosts views for users that are inside the assembly spaces in the historic building itself. When views to the conservatory are not available, trellises of vines with fruit-bearing, flowering, or otherwise plush vines show through the ample windows; filtering the sunlight and softening the views.



## Performance analysis: Response to Project Goals

The academic, professional, and personal goals of this project were all accomplished.

**Academic** I learned about the deathcare and funerary industry that allowed me to design and present a funeral home and cremation service that I am confident is realistic and a necessary alternative to the majority of the facilities seen today. I was able to present and answer questions about the industry and the facility confidently by understanding why people prefer certain deathcare rituals, the motives behind the industry's processes. With a well-rounded understanding of these issues, an appropriate design solution can be developed.

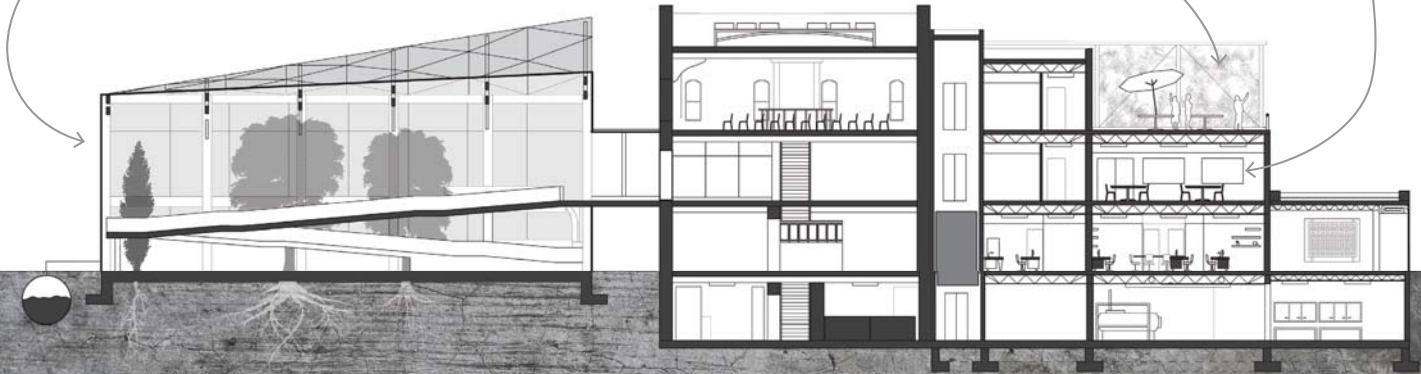
**Professional** Working with a historic building that was under constraints of the National Register of Historic Places was both a positive and negative aspect. There is a degree of liberty allowed when doing a redesign and addition when the building is not considered historically significant, however one must be cautious to stay within the threshold of what is appropriate



*Figures 110 | Informal gathering | Alex Schrad*

for a historic building. I believe I succeeded in designing a building addition that is not deceitful and is subordinate to the historic building through the use of a hyphen, carrying proportioning systems and window styles through the new design, and drawing facade materials from the existing pallet.

**Professional** Personal goals for this project were rooted in the recent experience of planning a funeral for a loved one that seemed rushed, calculated, and somewhat impersonal. The design of the facility was rooted in the spirit of creating spaces that would do justice in celebrating loved ones' legacy. Spaces that are inspiring, or peaceful; that allow patrons to laugh or permit them to cry. Spaces that bring back memories of that person's favorite pastimes. In this endeavor I was successful.



Figures 111 | Section / non-traditional services | Alex Schrader







## References

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## Previous studio experience

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<b>2nd year   F 2011</b>	Teahouse, Birdhouse	Joan Vorderbruggen
<b>2nd year   S 2012</b>	Dance Studio, Small Dwelling	Darryl Booker
<b>3rd year   F 2012</b>	United Methodist Redesign	Frank Kratky
<b>3rd year   S 2013</b>	Wintergarden/Curling Club, Dinosaur Fossil Laboratory	Steve Martens
<b>4th year   F 2013</b>	San Francisco High Rise	Bakr Aly Ahmed
<b>4th year   S 2014</b>	Historic Preservation Studio	Steve Martens

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“ ” I bequeath myself to the dirt to grow the grass I love. If you  
want me again look for me under your bootsoles.  
- Walt Whitman



*Figure 112 | Personal photo | Luke Diekman*