NURTURE well-being
The following research was compiled under the love and patience of an amazing wife and faithful God.
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[NURTURE] well-being
0.1 Introduction.
[NURTURE] well-being

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

By:

Tyler J. Brandriet

In Partial Fulfillment of the Requirements
for the Degree of
Master of Architecture

December 2011
Fargo, North Dakota
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INTRODUCTION

ABSTRACT: The project typology is a community center within an urban city master plan. The project is located in Aurora, Colorado and investigates the problem of disconnected neighborhoods. The theoretical premise claims the following: Architecture links isolated urban environments by developing points within a city for smaller communities to connect to one another. When architectural design strategies enhance the mission of the Church, the community’s physical, emotional, and spiritual well-being will be nurtured through the medium of architecture.

Key words: urban, master plan, community, center, centre, well-being, colorado, church, auditorium, track, gymnasium, recreational, nurture, isolation, religious architecture, spiritual, faith

PROBLEM STATEMENT: How does Architecture link disconnected communities within an urban environment to one another?
[NURTURE] well-being
1.0 Statement of Intent.
STATEMENT OF INTENT

TYPOLOGY:
Urban master plan, to include community center

CLAIM:
Architecture links isolated urban environments by developing points within a city for smaller communities to connect to one another. When architectural design strategies enhance the mission of the Church, the community’s physical, emotional, and spiritual well-being will be nurtured through the medium of architecture.

PREMISES:
Architecture is an instrument through which a person’s well-being is nurtured by engaging people in the community. It can enhance physical activity, emotional stability, and spiritual awareness.

To stabilize a community’s well-being, architecture nurtures community involvement, connections, relationships, and healthy environments.

An individual’s well-being is nurtured by architecture when existing design strategies are applied and new, innovative techniques are used. Well-being is directly influenced by exposure to both natural and manmade elements within the architecture itself or perhaps by an inherent connection to it.

THEORETICAL PREMISE:
Architecture nurtures a person’s physical, emotional, and spiritual well-being.

PROJECT JUSTIFICATION:
It is our responsibility as designers to look out for the “health, safety, and welfare” of society. “Intimate social ties—once seen as an integral part of daily life and associated with a host of psychological and civic benefits—are shrinking or nonexistent” (Vedantam, 2006). As we design for communities in growing urban neighborhoods, we must find ways to connect individuals to the larger community. Connecting these individuals will launch a network for social interaction within a city and establish an environment for healthy well-being.
STATEMENT OF INTENT
[NURTURE] well-being
2.0 Proposal.
THE NARRATIVE

A NEED FOR THE SPIRITUAL:
While there are many levels of well-being, I believe that architecture can express our need for spiritual well-being in a unique way. Buildings have become an iconic representation of society’s beliefs, trends, and goals. So what does that say about our society? I believe that it reveals the love of wealth, self, and consumerism. While we have become very fine tuned to understanding our physical and emotional needs, we seem to have lost regard for the spiritual. Architecture in itself will never satisfy a person’s spiritual needs; however, it has the potential to provide opportunities and spaces for people to have these encounters. When executed correctly, this sort of architecture will inspire and provide users with the resources for spiritual growth.

SPIRITUAL ARCHITECTURE:
What makes architecture spiritual, and what are the qualities desirable in religious buildings? During the Renaissance, church architecture was often ornate and large in scale to represent the majesty and glory of God. Tall steeples would reach toward the sky, as if trying to touch the heavens. The cross is a symbolic representation and reminder of Christ’s sacrifice. These crosses seem to mark the historical architecture of the early Church. It was not always like this. In fact, Christians first met in Jewish synagogues or in the homes of believers to avoid persecution. It has become a privilege to mark places of worship with this great symbol of salvation. Over time, the Church has grown comfortable displaying an outward expression of faith, while inwardly becoming complacent. According to Sovik (1997), religious architecture is classified under three common elements: the devotion to truth, an ethical commitment, and a recognition of that which is called the holy. These elements are recognized when displayed in the form of authenticity, hospitality and beauty. Although it can be recognized that these elements should be present in religious architecture, it is important to note that they could be present in other forms of architecture as well. The quality of selected materials, their placement, and stability within the structure are contributing factors, which demonstrate a commitment to truth. As the Church has moved from a traditional basilica floor plan into a two-space configuration, it has begun to facilitate a greater community experience. This is perhaps the most important change in recent Church design to create an atmosphere of hospitality and family. Finally, the visual impact that religious architecture makes on those who experience it will enrich their awareness of the Almighty. In conclusion, authenticity, hospitality, and beauty are expected from religious architecture, but it may also be present in other forms of architecture.
SPIRITUAL COMMUNITY:
As our society invents new methods for achieving spiritual equilibrium, anyone from the outside looking in could observe that we have become less happy, more busy, and more spiritually unstable than any generation from the past. Divorce rates have increased, families spend less time together, and health has declined. In order to get back to a healthy sense of community, it is important to first understand what exactly a community should look like. “The family is the basic unit of growth and experience, fulfillment, or failure. It is also the basic unit of illness and health” (Ackerman, 1958). In order to promote well-being in a community, we need to have healthy families. In order to have healthy families, we need to have healthy individuals. A community contains many individuals, much like a song is composed of many notes. When they each play his/her unique sound, the beautiful melody of community comes alive.
The urban master plan will become an amenity to serve over 200,000 residents with physical, emotional, educational, and spiritual needs at a variety of levels. The master plan will also address the facility needs for the School of Evangelism. The facility for the community center will serve approximately 5,000 residents.

Parking will be distributed throughout the urban master plan to ensure that the residents, students, and staff are able to adequately access each facility. Connections to public transit systems and residential neighborhood will also become an important part of the design solution. Some of the physical restraints on the site may include changes in topography and soil conditions.
## MAJOR PROJECT ELEMENTS

### MASTER PLAN:

01. Administration (SOE)
02. Church Facility
03. Community Center
04. Community Garden
05. Entry / Boulevard
06. Green Space
07. Landscape (Hardscape)
08. Landscape (Softscape)
09. Library (SOE)
10. Outdoor Amphitheater
11. Parking (Above Grade)
12. Parking (Below Grade)
13. Pedestrian / Bicycle Linkages
14. Prayer Pavilion
15. Recreational Areas (Active)
16. Recreational Areas (Passive)
17. School of Evangelism
18. Sports Facility
19. Student Housing (SOE)
20. Vehicle Circulation

### COMMUNITY CENTER:

1. Auditorium
2. Administration
3. Cafe / Coffee Shop
4. Childcare
5. Community Courtyard
6. Conference Room
7. Counseling
8. Entrance / Lobby
9. Exercise Studio
10. Fellowship Hall
11. Gymnasium
12. Kitchen
13. Mechanical / Electrical
14. Parking
15. Prayer Lounge
16. Private Toilets
17. Public Toilets
18. Storage / Custodial
19. Receptionist
20. Resource Center
MAJOR PROJECT ELEMENTS

CHURCH FACILITY:

01. Administration
02. Cafe / Coffee Shop
03. Childcare Center
04. Conference Room
05. Education Classrooms
06. Entrance / Lobby
07. Fellowship Hall
08. Gathering Space
09. Kitchen
10. Mechanical / Electrical
11. Meeting Rooms
12. Parking
13. Pastoral Resource Library
14. Prayer Lounge
15. Private Toilets
16. Public Toilets
17. Receptionist
18. Sanctuary
19. Storage / Custodial
20. Youth Fellowship
SITE INFORMATION

REGION: Rocky Mountain Region

CITY: Aurora, Colorado

SITE: Southeast Aurora, approximately 125 acres

NEARBY SITE AMENITIES:
Southlands Mall, Aurora Reservoir, residential, retail, elementary school, middle school, high school, library

TRANSPORTATION LINKS:
E-470, S Aurora Parkway, E Smoky Hill Road

NARRATIVE:
This particular site became an interest for me because of its size and central location within the developing Aurora community. The site is located close to a major highway with Southlands Mall adjacent on the west side. The surrounding properties have been quickly developed, making this site an ideal location for a community center within a rapidly growing neighborhood. The site is approximately 125 acres, covering open spaces, an existing residential development, and a Lowe’s Home Improvement store. The entire eastern border around the site is developed with residential housing.
SITE MAPPING INFORMATION

MAP: Macro Scale - Rocky Mountain Region
SITE MAPPING INFORMATION

MAP: Macro Scale - Aurora, Colorado
NURTURE well-being: PROPOSAL
MAP LEGEND

Aerial Photograph

*Produced in ArchGIS

[NURTURE] well-being: PROPOSAL
MAP LEGEND
Aerial Photograph
*Produced in ArchGIS
MAP LEGEND
Soil Types & Slope

- BuE
  9-20%
- BuD
  3-9%
- FoC
  3-5%
- SwE
  9-30%
- RfE
  9-30%
- Site
MAP LEGEND

- Topography
- 10’ Interval
- 50’ Index

Major Contour

Minor Contour
PROJECT EMPHASIS

ARCHITECTURE AND WELL-BEING:
My theoretical premise has led me to investigate the relationship between architecture and a person’s well-being. Three aspects that I have chosen to highlight include physical, emotional, and spiritual. The challenge to develop a community master plan that satisfies programmatic needs for a variety of clients will be discovered in the underlying mission of faith, which unites them. This community center will become the bridge which allows those from various faiths to meet in one place. Evangelical outreach will only be made possible when members from the Church community work together to provide community binding functions in respect to physical, emotional, and spiritual well-being. The architecture should enhance this connection and carefully establish the relationship between the community center and church.

PLAN FOR PROCEEDING

RESEARCH DIRECTION:
The direction my thesis research will be focused on a number of elements that will begin to determine a design direction for my problem statement. The project typology research will highlight urban master planning, with a focus on community centers and assembly spaces. As I research historical context, site analysis, and programmatic requirements, I will move forward to a final design solution, which carefully considers each of these topics.

DESIGN METHODOLOGY:
The design methodology for this project will follow a mixed method model under the Concurrent Transformative Strategy. I will be using interviews, graphics, and digital information to help format my method for proceeding with design decisions. Relating my research to the unifying idea will transform the qualitative/quantitative data into applicable techniques and informative paths for design application.

DOCUMENTATION:
As I move throughout the design process, documentation will be an important step from start to finish. I will need to develop a consistent method for gathering local or digital information to determine its role in my thesis. Failure to do so will result in a lack or loss of data, and could prevent me from presenting viewers with the necessary information to comprehend major project elements.
PREVIOUS STUDIO EXPERIENCE

SECOND YEAR
Fall 2008 - Darryl Booker
Tea House: Fargo, ND
Boat House: Minneapolis, MN

Spring 2009 - Mike Christenson
School of Dance: Fargo, ND
Mixed-use facility: Fargo, ND

THIRD YEAR
Fall 2009 - Cindy Urness
Wellness Center: Fargo, ND
Center of Excellence: Fargo, ND

Spring 2010 - Milton Yergens
Research Center: Stoneville, Mississippi
Business/Residential - Fargo, ND

FOURTH YEAR
Fall 2010 - David Crutchfield
High Rise: San Francisco, CA

Spring 2011 - Don Faulkner & Frank Kratky
Temporary Housing: Stanley, ND

FIFTH YEAR
Fall 2011 - Paul Gleye
Urban City Center: Fargo, ND
City Marketplace: Fargo, ND
SCHEDULE:

01. Project Documentation
02. Context Analysis
03. Conceptual Master plan Analysis
04. ECS Passive Master Plan Analysis
05. Spatial Master plan Analysis
06. Master plan Development
07. Conceptual Facility Analysis
08. ECS Passive Facility Analysis
09. Spatial Facility Analysis
10. Floor Plan Development
11. Structural Development
12. Materials Development
13. Section Development
14. Envelope Development
15. ECS Active Analysis
16. Preparation for Review
17. Midterm Review
18. Project Revisions
19. Context Redevelopment
20. Structural Redevelopment
21. Presentation Layout
22. CD Due to Thesis Advisers
23. Plotting and Model Building
24. All Exhibits installed on the 5th Floor
25. Thesis Exhibit
26. Preparation for Presentation
27. Final Thesis Reviews
28. Final Thesis Document Due
29. Commencement
[NURTURE] well-being
3.0 Program.
UNIFYING IDEA RESEARCH

INTRODUCTION
The research for this thesis will continue to develop elements of the theoretical premise, while focusing on five primary issues: well-being, community, sustainable design, social justice, and social architecture. Research developed in these areas will inform the early stages of design development and build the theoretical framework on which this design thesis rests. Buildings are places of work, play, and social interaction, the places we love or hate. When buildings fail to provide an environment for these three basic needs, our potential to perform well is limited. Buildings should likewise perform well.

DESIGNING FOR WELL-BEING
According to scientific research, people spend approximately 90 percent of their time indoors (EPA, 2012). This astonishing number makes a significant impact on a person’s physical, emotional, and spiritual well-being. Inadequate design solutions produce adverse results on the body, mind, and soul. Where are we currently seeing this outcome in our society, and how can designers reverse its effect? According to Schneekloth (1995) we all live in places, but without our attention our places are endangered. “And when our places are endangered, as revealed in the current ruins of our inner cities, our poisoned rivers, our inhospitable offices and our dilapidated houses, we are at risk”. Environmental psychologist, Dr. Judith H. Heerwagen, reasons that architects have the opportunity to create environments which enhance a
person’s quality of life by monitoring factors determined by the design of buildings: exposure to nature and daylight, air quality, temperature, noise, ergonomics, and opportunities for social gathering, relaxation, and exercise (Kolleeny, 2003).

Architects are responsible to protect the health, safety, and welfare of society. With an ever increasing awareness concerning issues of air quality, chemically hazardous building products, and the alarming rate at which the world is consuming its resources, it brings attention to the places in which we live. If advances in technology allowed for perfectly energy efficient architecture, part of the puzzle has been solved. Why? Designs affect not only the physical realm, but become a medium through which a community is able to nurture its emotional and spiritual well-being. So how do architects design for something that they can’t see? And what is a human’s greatest need?

In Norman’s (2004) book, Emotional Design, he suggests that human emotions “result from three different levels of the brain: the automatic, the prewired layer, called the visceral level; the part that contains the brain processes that control everyday behavior, known as the behavioral level; and the contemplative part of the brain, or the reflective level”. There is a correlation between human emotion and architectural design, where visceral design is a state of pre-consciousness where we make
impressions based on appearances. Behavioral design relates to our experience of a product and its performance. Reflective design is the highest level of our consciousness and the feelings or emotions ascribed to something (Norman, 2004). Based on these assertions, we can begin to formulate a design strategy that will meet the emotional needs of the community, while carefully considering visceral, behavioral, and reflective design principles. The community’s first impression of an architectural solution will be its appearance. Any previous experiences with or in a similar environment will then introduce preconceived notions or thoughts about a place. This, in turn, may affect someone’s feelings and their perception of a design.

PLACES OF COMMUNITY
Humans are social creatures. We have a need for community and we were designed to live life together. What sort of environments increase a sense of community? What are the qualities of these spaces? And, how can architecture actively engage the community?

Communities that adapt to sociological changes over time, make needed adjustments in order to respond to the needs of the people who live there (Hall, 2001). A community is built upon layers of information gathered from geographical, political, ethnic, and sociological backgrounds. The spaces we create should reflect this information and mod-
el the desired sense of place for its citizens. Unlike past generations in which communities progressed over the course of several centuries, today’s generation is rapidly developing, and significant changes to the community can be noticed in a matter of a single decade (Hall, 2001, 5). When cookie cutter design methods are developed to achieve these changes, we begin to lose the sense of authentic architecture, which once existed in the communities of old.

With recent trends in technology, construction processes move quickly, we have mistaken aggregation for community and curb appeal has replaced sense of place (Hall, 2001, 8). The primary difference between that of an aggregation and one of community is found in unity. The community is a place which binds individuals within a common location to a common interest. They are not simply individuals, but rather a cohesive unit. Many of the suburbs that were developed shortly after the second world war would likely not meet these same definitions for community (Hall, 2001, 9). Instead of valuing a home’s sense of place, our society has replaced these values with terms, such as curb appeal. Suburban neighborhoods often lack this sense of character and can become lifeless places with little or no inherent sense of community within them.

So how do we avoid creating places like this and what are some existing strategies that designers
are using to create inviting environments and thriving communities? According to Lynch (1960), there are five basic elements which form the image of the cities we live: paths, edges, districts, nodes, and landmarks. While Lynch refers to these elements as relating to the city, Hall (2001, 15) recognizes the universal importance and relevance they serve the designer at the community scale as well. When architects use these elements to create memorable places of habitation, people will be able to establish longlasting relationships and moments in architecture that will become centerpieces for the community. In addition to these elements, Hall recognizes concepts such as axial design, hierarchy, transition elements, dominant features and enclosure which make communities that are livable and dynamic (Hall, 2001, 20). Other spatial components which are subject to the control of the designer are circulation, open space, and structures. As this design thesis develops, these ideas will be very important to consider, especially when developing the master plan.

The medium through which these elements emerge in community design is creativity. And the most important step to creative thinking is just to begin (Hall, 2001, 61). Inspiration can come from a number of outside sources: the natural world, the manufactured world, and abstract thought (Hall, 2001, 64). Some of the strongest architectural solutions develop from these inspirations. The
design of the created world, built environment, and underlying abstract thoughts must be analyzed and extracted into some visual or conceptual idea. These ideas are further developed and manipulated to express architectural solutions for problems in the community. Finding inspiration from these three sources will help the designer relate his/her design to ideas or elements which are more familiar to the client. In many ways, community design is like problem solving. If we are able to push past the path of least resistance and mediocrity, the result will be valuable and insightful design solutions which nurture the well-being of the community.

“Communities of all kinds need to work together, thinking about the problems they face in holistic ways, and strengthen the fabric that binds them together” (Steffen, 2006). What exactly is that fabric? Perhaps only when we collaborate and analyze each situation will we be able to find what it is that is drawing a specific group together. Community design does not only involve the designer, but the community of individuals as well. As we lay the foundation for community design, we can begin to establish some sustainable standards communities can build upon.

**SEEKING SUSTAINABLE STRATEGIES**
In the past, humans may have been ignorant about the negative effects in which consumers have made
on the environment. Poor material selections and the pursuit of lavish lifestyles, which were harmful to the ecosystem, have greatly contributed. As leaders in the construction industry, designers must actively pursue sustainable design solutions and no longer play the card of ignorance. Architects need to develop new strategies which will encourage communities to develop alternative design methods. If mankind continues to ignore the warning signs, it may be impossible to reverse the effects that our decisions have on future generations. The time is now. To help understand the rate at which we are consuming, studies have been developed which compare average energy consumption at the global scale. In a study done by Global Footprint Network (2010), the average ecological footprint is 5.4 acres per person. The score indicates how many acres we will need to support our current lifestyle. The average American, for example, uses approximately 24 acres, the average Chinese person uses about 4 acres, while the average Pakistani uses 1.5 acres.

In Worldchanging: A user’s guide for the 21st century, Steffen (2006) states: “To use less of our planet and become responsible consumers, we have to ask ourselves the fundamental question, how much stuff do we need? The relationship between material wealth and well-being would seem to be a proportional one: when one increases, so does the other. But as it turns out, measures of wealth
and health rise together only to a point, and then the pattern shifts”. Sustainable design encourages consumers to even out the playing field and reduce energy consumption. Americans must make cautious consumer choices if serious about reducing its environmental impact. Around the world, the impact of global warming and harmful greenhouse gases has been seen. Designers have also responded to these changes in our environment and have already begun to make improvements in the built environment. William McDonough wrote an essay about his concept of cradle-to-cradle which originally appeared in Worldwatch Institute’s State of the World 2004: In that article he wrote, “good design—principled design based on the laws of nature—can transform the making and consumption of things into a regenerative force” (McDonough, 2003). Designers can likewise use this concept to become good stewards to the environment by using materials which will continue from “cradle-to-cradle.”

The semiarid climate of Colorado usually produces cold, windy winters with warm, dry summers. According to Lechner (2008), there are several climate design priorities which are important to consider for this region. In order of priority strategies include: keep the heat in and the cold temperatures out during the winter, let the winter sun in, protect from the cold winter winds and use thermal mass to reduce day-to-night temperature swings in the sum-
mer (Lechner, 2008, 94). There are additional design strategies included in Appendix D for achieving sustainable approaches to climate-related design.

When these passive strategies are implemented during site development, we can rest assured that the final solution will be one which is proactive instead of reactive. Instead of reacting to energy needs after a project is developed, those needs should be designed for first. As the designer, we are able to anticipate these energy requirements and plan accordingly to develop sustainable methods for conservative energy consumption. Our designs must adapt to the environment and the particular challenges each season brings with it. The first sustainable approach mentioned in Appendix D is keeping the heat in and the cold temperatures out during the winter. Many of the strategies which exist to regulate or modify thermal comfort can be understood from zones on a psychrometric chart (Lechner, 2008, 65). These zones help us to understand the human’s optimal comfort level in relation to a variety of other less comfortable levels: cold and humid, humid, hot and humid, hot and dry, dry, and cold and dry. This comfort zone may vary by culture, time of year, health, fat levels, amount of clothing, and physical activity (Lechner, 2008, 64). By properly insulating the building’s envelope, creating balanced surface-area-to-volume ratios, and adjusting the building’s orientation southward for maximal solar gain, the architect will minimize
heat loss and maximize heat retention during the winter months (Lechner, 2008, 153).

Another sustainable strategy that follows the principle of heat retention is passive solar heating, i.e., letting the winter sun in. Three main passive solar systems include direct gain, trombe wall and sunspaces (Lechner, 2008, 168). Determining which system will be most effective will vary from project to project and there are both advantages and disadvantages to each. According to Balcomb (1992), orientation is 80 percent of passive solar design. In some cases true south orientation is not possible due to existing grids or land patterns, but glazing 20° east or west of true south will still be effective (Lechner, 2008, 168).

Over time, the American culture has been transformed into a society of luxury and convenience. Americans have the ability to get whatever they want and when they want it. These readily available products include but are not limited to electronics, homes, vehicles, or entertainment. Perhaps the most discrete product we regularly enjoy is that of comfort. Some of these patterns can be observed as we look at daily living patterns: the hot shower, the air conditioned car ride, the air conditioned workplace, transportation, and many others. These pursuits of happiness surely are not inherently evil. After all, this freedom is the foundation of the American society. But if our own pursuit of hap-
piness affects the life, liberty, and pursuits of others, is this really justice?

SOCIAL JUSTICE

Wheaton (2008) describes three areas of social justice: economic justice, remedial justice, and distributive justice. While the first two focus on just procedures, distributive justice focuses on fair outcomes. That is, a “fair distribution of burdens and benefits among its citizens” (Wheaton, 2008). Does architecture respond to a community in such a way? Or do we primarily focus on economic and remedial justice? “The fundamental basis for pursuing social justice goes back to the fact that every human being is created in God’s image and thus has intrinsic value” (Wheaton, 2008).

Since there are many ideas and views about justice, it will be important to first consider the implications justice has on architecture. Architecture services a broad spectrum of clients with different needs, views and moral values. With this in mind, we may need to adjust our approach to design architecture which responds in a just way to the social needs of a community. Issues such as equality, rights, fairness, and liberty are tested as the come in contact with ethical, social, and political circumstances within a community (Palermo, 2001). As architects, we must maintain an individual’s ability to pursue personal interests without excluding those who are least advantaged.
Palermo (2001) introduces the idea that architecture is constructed ethics. This becomes the physical manifestation of earlier preconceived ideas. When we first start designing we dream and think about what could be. As our drawings become a reality, they define what ought to be (Palermo, 2001, 184). The judgements that we make as professionals and designers will in turn be evaluated and judged according to the project’s intentions or purpose. When we build a new place, we may have certain expectations of what that building should or should not be. Architecture should, of course, increase the quality of life for any client, but finding your client’s hidden agenda is what will really make a project successful. It is for that purpose that we strive to understand what expectations exist for a given client. When clients have expectations that conflict with our ethical role as an architect, we should use reasoning based on professional understanding to make informed decisions. Communicating these decisions, and the ethical reasoning for the client will help break any tension which has formed over a specific issue, but these are not always easy choices to make.

SOCIAL ARCHITECTURE

“Worship spaces are places of commitment, where individuals commit to a faith and join a community, where couples commit to one another, and where a family and the wider family of the church commit to the upbringing of a child” (Roberts, 2004). It is
important for the designer to develop spaces that will strengthen and encourage these commitments and form a sense of community. These places have a direct impact on social connections. If these connections are not made, or the architecture limits a person’s ability to have them, it could have a direct effect on the person’s physiological mind set.

CONCLUSION
The research for the unifying idea looked at five primary issues: well-being, community, sustainable design, social justice, and social architecture. As discussed more thoroughly in these sections, these topics are irreplaceable for community design. In particular, the community center becomes the place where these issues meet and it quickly becomes evident as we evaluate the constructed ethics. The elements of well-being: physical, intellectual, emotional, social, occupational, environmental, and spiritual all play an active role in the shaping of an individual’s body, soul, and mind.
[NURTURE] well-being: PROGRAM
HISTORICAL CONTEXT

AURORA: A BRIEF HISTORY
Aurora was first named Fletcher in the 1880s, when businessman Donald Fletcher saw the growing need for real estate. The town struggled soon after the Silver Crash in 1893, but later stabilized as a major suburb of the Denver metropolitan area. With a growing population of over 325,000 residents, Aurora complements Denver as one of the largest suburbs in the metropolis. The lack of a central business district is somewhat limiting to the city’s growth. It functions primarily as a suburb with the ability to grow in both area and density. Another interesting quality within this city is its elevation change of nearly 1000 feet. This change in elevation creates an interesting terrain and amazing views. With more than 1,800 acres of developed park land and over 6,000 acres of open landscape, Aurora truly is the “Gateway to the Rockies” (Wikipedia, 2012).

SITE BACKGROUND: RECENT HISTORY
According to an interview with Frank Shinnick (2011), Aurora First Assembly bought 55 acres of land near the intersection of South Aurora Parkway and East Smoky Hill Road in 1995. Their intentions were to relocate and build a new facility in order to meet the needs for the growing church and reach more people for Christ. Property towards the south end of the site was sold to a developer, which allowed the church to have utilities dug in by the city for a reduced cost. The South Southlands Parkway, which runs past the church facility site, was also constructed at this time. Meanwhile, the church developed a 29.5 acre master plan with
RNL Design for phase one of the church facility. The first phase would be about 48,000 SF, with about 150,000 SF in future phases. The construction cost was $11,500,000. Some of the property to the north of the site was to be sold to a medical development group, but their loans were denied after real estate value declined in 2009. This money was required to fund some of the construction costs for the church facility, which left the project unfinished and on hold (Shinnick, 2011).

The church is currently worshiping in Cherokee Trail High School, while they wait for the campus construction project to be finished. Although the church was trying to speed up the relocation process by moving ahead with construction, the required funds were not yet accounted for, resulting in major loss and a very painful two-year hold on the project. Bids for construction will go out in 2012 for construction that summer (Shinnick, 2011).
HISTORICAL CONTEXT

COMMUNITY AROUND THE WORLD
Since the beginning of time, humans have always been in community with one another. Communities are formed by geographic locations, similarities in cultural or ethnic backgrounds, religious affiliations, common purposes, interests, or understanding. Some of the images to the right show some of the earliest beginnings in what become known as the community center.
3.0 [program]

[NURTURE] well-being: PROGRAM
**HISTORICAL TIMELINE**

**AURORA AND COMMUNITY CENTER HISTORY**

1799 - Ebenezer Sheldon builds a cabin in Aurora on East Pioneer Trail.

1802 - The first regular church service was held in the Sheldon cabin.

1901 - In Thringstone, Leicestershire the oldest community center was established.

1909 - Edward J. Ward organized the Wisconsin Bureau of Civic and Social Development.

1911 - The Wisconsin Bureau of Civic and Social Development sponsored a national conference endorsing social / community centers as agencies of reform.

1915 - The name “social” center changed to “community”.

1916 - Establishment of the National Community Center Association.

1918 - Army Hospital #21 is constructed to treat WWI soldiers with lung problems. The hospital was renamed Fitzsimons Army Hospital two years later.

1919 - The National Council of Social Service was organized.
1920 - The Federation of Residential Settlements and Educational Settlements Association were organized.

1923 - There were community centers in 240 American cities.

1927 - There were 4000 institutes with 250,000 members.

1928 - Aurora’s population reaches 2,000.

1929 - The Pettits Farm Association was formed in Dagenham, London, with over 90,000 inhabitants.

1929 - Aurora’s first public library opens.

1930 - New York City has nearly 500 centers with a regular attendance of more than four million.

1939 - Aurora’s population reaches 3,494.

1947 - There were community centers in 300 British cities with 60 full-time workers.

1950 - Aurora’s population reaches 11,000.

1950 - Aurora’s population reaches 50,000.
HISTORICAL TIMELINE

1960 - There were community centers in 929 British cities with 221 full-time workers.

1972 - Aurora’s population reaches 100,000.

1978 - Aurora’s population reaches 150,000.

1990 - Aurora’s population reaches 224,000. The Aurora Reservoir was completed.

2000 - Construction begins at Fitzsimons for the campus development of medical research and studies.

2004 - Aurora’s population reaches 298,303. 72 languages are spoken, and Aurora is recognized as the most culturally integrated city in the nation.

2010 - Aurora’s population reaches 325,078. Aurora is the third largest city in Colorado and the 58th largest city in the U.S.
This timeline was compiled using the following sources:

(Wikipedia, 2011)

(Aurora Historical Society, 2011)

(City of Aurora, 2011)
THESIS GOALS

THE ACADEMIC

This thesis will demonstrate clear understanding and comprehensive knowledge of an architectural education. It will serve the university as a reference for community centers and religious buildings. As I work alongside faculty and peers, I hope to learn more about my typology through an interactive learning environment. Learning how to implement these findings into a reasonable and comprehensive design will be very important. I expect my project to highlight appropriate design strategies from previous studio experience, while clearly displaying an attention to detail and skills expected from a graduate student.

I believe that connecting with a variety of staff expertise and closely following project goals and deadlines will lead me to a final design solution with satisfying results. I hope to be intellectually challenged with expectations to learn each week. As I come with this anticipation, I think I will find that the tasks I am completing will be more enjoyable, and that my ideas will become more fluent. I also expect that, as I complete my own thesis, I will seek to understand and challenge my peers.

I hope to further my design proficiency as I come across new challenges or obstacles. I will respond to these opportunities with tact, thinking critically to best analyze each situation with a determination to find appropriate solutions.

THE PROFESSIONAL

As I transition from the educational environment into the professional, I will continue to refine my technical skills and critical thinking. Some of the skills I wish to further develop include: design and graphic abilities, communication, organization, writing, reasoning, task management, work efficiency, digital modeling, detailing, stress management, technical drawing, practical knowledge of codes and construction methods, space planning, computer proficiency, leadership, and material application.

The thesis will be a final opportunity to showcase the learned skills and abilities I have learned while attending North Dakota State University. It is a professional document, the highlight of my portfolio, and an opportunity to express ideas in a professional conduct.
THE PERSONAL

As I look forward to my final semester, I find that my personal goals usually outweigh my academic or professional goals, but I am determined that these captivate my heart and hold every other area of my life together. I will focus my attention to three areas: the Church, my wife, and my God.

To fall away from any of these three components will result in the failure of my thesis. No matter the cost, I will devote myself to serving and loving these three. I wish to further develop these goals by implementing the following: a more persistent prayer life, selfless attitude, servant leadership, fruits of the Spirit (love, joy, peace patience, kindness, goodness, faithfulness, gentleness and self-control), obedience, and passion.

The verse that I will be living by this semester comes from Psalm 127:1, “Unless the Lord builds the house, its builders labor in vain. Unless the Lord watches over the city, the watchman stand guard in vain” (NIV). If my goals for my thesis do not align with God’s purpose, my efforts or achievements will be futile, but if my labors are for His glory, surely my reward will be in full.
NURTURE well-being
4.0 Case Studies.
CASE STUDY INDEX

COMMUNITY CENTER

Case Study One:
  The Life Centre
  (1 of 3 Primary Case Studies)

Case Study Two:
  Surry Hills Library and Community Center
  (2 of 3 Primary Case Studies)

Case Study Three:
  Gleneagles Community Center
  (3 of 3 Primary Case Studies)

Case Study Four:
  West Vancouver Community Center
  (1 of 14 Secondary Case Studies)

Case Study Five:
  Sephardic Community Center
  (2 of 14 Secondary Case Studies)

RELIGIOUS ARCHITECTURE

Case Study Six:
  The Prayer Pavillion
  (3 of 14 Secondary Case Studies)

Case Study Seven:
  Tampa Covenant Church
  (4 of 14 Secondary Case Studies)

Case Study Eight:
  Mortensrud Church
  (5 of 14 Secondary Case Studies)
MASTER PLAN

Case Study Nine:
Dead Sea Master Plan
(6 of 14 Secondary Case Studies)

Case Study Ten:
Pier Escape
(7 of 14 Secondary Case Studies)

OTHER

Case Study Eleven:
Westside Bruennen
(8 of 14 Secondary Case Studies)

Case Study Twelve:
Empac
(9 of 14 Secondary Case Studies)

Case Study Thirteen:
NK’ MIP Desert Cultural Centre
(10 of 14 Secondary Case Studies)

Case Study Fourteen:
OÖ Science Center Wels I
(11 of 14 Secondary Case Studies)

Case Study Fifteen:
Myongji University Bangmok Library
(12 of 14 Secondary Case Studies)

Case Study Sixteen:
Liverpool University Information Centre
(13 of 14 Secondary Case Studies)

Case Study Seventeen:
Integrated Teaching Building
(14 of 14 Secondary Case Studies)
THE LIFE CENTRE. CASE STUDY ONE

Location: Melbourne, Australia
Architect: Alelier Wagner Architects
Typology: Community Center & Church
Size: 25,000 Square Feet
Client: Syndal Baptist Church
Program: Cafe, Coffee shop, Store, Kitchen, Playground, Office, Activity Center, Counseling Center, Auditorium, Audiovisual, Meeting Rooms, Community Hall
Cost: $6,500,000
IMAGE CREDITS. REFER TO 7.1 FOR ADDITIONAL INFORMATION

Photography by Rhiannon Slatter

www.architecturemedia.com
www.atelierwagner.com.au
www.rhiannonslatter.com.au
The Life Centre makes an excellent case study and has become a focal point for addressing a client’s image. While being regarded as a place of community, it still functions very much like a church. The client for this project actually preferred this method of disguise, but not because it was trying to hide something. The way this facility is used as a tool for evangelism is quite fascinating. When more and more people are beginning to harden their hearts against the Church because of a bad experience or spiritual apathy, the church may need to avoid the image of traditional methods for religious architecture. It is quite possible that someone may be less likely to visit a place because of its religious appearance. After all, it’s not the appearance of a place that will change lives, but rather the discipleship and fellowship that happens within.

With a facility that will attract the community around it for a number of reasons, it gives believers opportunities to meet community members and connect with them on a number of levels. Because the program is very diverse, I believe that Syndal Baptist Church sees a greater variety of people who stop in for a service because they have connected with someone in the Life Centre. The spaces that were included in this community center are really no different than other similar case studies, but their purpose is altogether different. Circulation has always seemed to be a place of human interaction and this project was no exception. In fact, the community hall becomes a perfect place for groups or individuals to study or meet with others from the community.

This new community center was constructed among two smaller church halls, one which is joined to the center and is being used as a separate hall. These existing structures were built in the 1970s and 1980s and representative of two distinct church generations. As the community center holds a distinct corner on this piece of property, it begins to envelop the existing church. As the new building has wrapped itself around those existing to create
a pleasing aesthetic, so new church methods and ideas have wrapped around those existing. The result is a project that captivates the attention and heart of the community. The contrast of concrete and glass material for this project creates interesting opportunities for light to enter the space; one of the best perhaps is within the community hall. The auditorium allows natural daylighting from the west, while the other sides are backed up against circulation on all sides. The auditorium may also be divided into several breakout spaces, when not being used as an assembly space for worship or public activities. Two stories of glazing, which makes up the lobby and cafe, are protected by sun control louvres which run the length of the site.

In conclusion, this case study justifies the purpose of the theoretical premise. It reminds us that architecture can serve as a medium through which a person’s well-being is serviced. This center not only becomes an asset to the community of Syndal, but it will continue to serve as an asset to Church com

[NURTURE] well-being: CASE STUDIES

77
FLOOR PLAN

01. Entry
02. North Terrace
03. Cafe
04. Coffee Shop
05. Meeting
06. Kitchen
07. Elevator
08. Store
09. Tea Station
10. Activity Center
11. Toddler and Babies’ Play
12. Playground
13. Information desk
14. Subfloor
15. Office
16. Counseling Center
17. Carpark
18. Community Lobby
19. Auditorium
20. Audiovisual
21. Dais
22. Parents’ and Children’s Room
23. Library
24. Community Hall
Figure 4.01 - First Floor Plan
Figure 4.02 - Ground Floor Plan
Figure 4.03 - Elevation from Street
Figure 4.04 - Site Plan
Figure 4.05 - Elevation from Street
Figure 4.06 - Site Plan
GRAPHIC ANALYSIS

THE LIFE CENTRE: Structure
GRAPHIC ANALYSIS

THE LIFE CENTRE: Natural Light
GRAPHIC ANALYSIS

THE LIFE CENTRE: Massing
GRAPHIC ANALYSIS

THE LIFE CENTRE: Circulation to Space
GRAPHIC ANALYSIS

THE LIFE CENTRE: Geometry
GRAPHIC ANALYSIS

THE LIFE CENTRE: Hierarchy
SURRY HILLS LIBRARY AND COMMUNITY CENTER. CASE STUDY TWO

Location: Sydney, Australia
Architect: Francis-Jones Morehen Thorp
Typology: Community Center & Library
Size: 22,800 Square Feet
Client: City of Sydney
Program: Library, Meeting Room, Cafe, Administration, Study Room, Computer Laboratory, Kitchen, Storeroom, Neighborhood Center, Language Laboratory, Children’s Play Space
Cost: $13,500,000
IMAGE CREDITS. REFER TO 7.1 FOR ADDITIONAL INFORMATION

Photography by John Gollings and Andrew Chung

www.archdaily.com
www.fjmt.com.au
www.gollings.com.au
www.iamandrewchan.com
This case certainly stands out among the selected case studies as a model for innovative sustainable design strategies. Working to minimize the carbon footprint was an important design decision, which has a large impact on the materials that were included throughout the project. While this building has made efforts to integrate itself into an urban environment, the city council has termed projects of similar urban scales as urban villages. This criticism may be unjustified as a city the size of Sydney can certainly accommodate a building of this scale.

The glass facade is supported by triangulated chimneys, which draw air from the top of the building and through a series of biofiltering and passive conditioning mechanisms. The glass skin will allow for spatial transparency to the site it surrounds. The air runs through a thermal labyrinth near the base of the building where the air is cooled and released inside the facility. The building is also equipped with automatic sunshading devices and passive technology. The roof is shaded by photovoltaic panels in order to reduce grid necessary grid power. Low-VOC materials, impressive passive and hybrid systems, and geothermal energy will increase energy conservation while creating an awareness of environmental initiatives used in this public facility.

While this building is by far more expensive when compared to the other case studies, it does offer environmental benefits. The lower level supports library functions and a computer laboratory, while the middle level provides spaces for community activities, such as a teaching kitchen and a language laboratory. Each community has different needs, and, depending on the client and functions required in a particular program, the results can differ dramatically. The focus for this community center was not centered around fellowship, and the results show it. But from an architectural standpoint, this project was a success. The design may limit social interaction, due to the fact that users are split into so many different levels. Because of the size
restriction of the site, the program was unable to accommodate such a space. But perhaps, a finely articulated floor plan, though much tighter than the other case studies, could generate opportunities for community members to have closer encounters with one another and chances for better interaction. The proportion and combination of materials used for this project creates a pleasant warm aesthetic. The wood finishes compliment the variety of neutral tones and metal finishes. The project cost was around $240/square foot. The budget covered primarily sustainability issues, but was criticized for its use of lavish finishes. The critical assessment of the budget raises an interesting issue. Should architecture, especially that which is being used for ministry, be simple or ornate, expensive or cheap, traditional or modern? Should it be a combination of one or all of the above?

In conclusion, there are some great spaces within this community center. The sustainable strategies that were implemented within this project suggest that the conditions of the inside and outside environment were very important to the client. We see an increase of indoor air quality by 5% and a substantial reduction in the facility’s carbon footprint. The building’s proportional design elements and its relationship to its urban context are other key factors that made its success.
**FLOOR PLAN**

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
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<tbody>
<tr>
<td>01.</td>
<td>Lobby</td>
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<td>02.</td>
<td>Library Collection</td>
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<tr>
<td>03.</td>
<td>Reading Room and Cafe</td>
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<td>04.</td>
<td>Children’s space</td>
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<td>05.</td>
<td>Administration</td>
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<td>06.</td>
<td>Void</td>
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<td>07.</td>
<td>Environmental Atrium</td>
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<td>08.</td>
<td>Water Storage Tank</td>
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<td>09.</td>
<td>Elevator</td>
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<td>10.</td>
<td>Local History Study Room</td>
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<td>11.</td>
<td>IT and Internet Access</td>
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<tr>
<td>12.</td>
<td>Meeting Room</td>
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<td>13.</td>
<td>Magazine and Newspaper Reading</td>
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<td>14.</td>
<td>Water Recycling Plant</td>
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<td>15.</td>
<td>Geothermal Bore Plant</td>
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<td>16.</td>
<td>Teaching Kitchen</td>
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<td>17.</td>
<td>Function room</td>
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<td>18.</td>
<td>Storeroom</td>
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<td>19.</td>
<td>Balcony</td>
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<td>20.</td>
<td>Neighborhood Center</td>
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<td>21.</td>
<td>Language Laboratory</td>
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<td>22.</td>
<td>Children’s Play Space</td>
</tr>
<tr>
<td>23.</td>
<td>Outdoor Play Space</td>
</tr>
<tr>
<td>24.</td>
<td>Sleeping Room</td>
</tr>
</tbody>
</table>
Figure 4.12 - First Floor Plan
Figure 4.09 - Ground Floor Plan
Figure 4.10 - Elevation from Street
Figure 4.11 - Site Plan
Figure 4.12 - Elevation from Street
Figure 4.13 - Site Plan
GRAPHIC ANALYSIS

SURREY HILLS LIBRARY AND COMMUNITY CENTER: Structure
SURRY HILLS LIBRARY AND COMMUNITY CENTER: Natural Light
GRAPHIC ANALYSIS

SURRY HILLS LIBRARY AND COMMUNITY CENTER: Massing
GRAPHIC ANALYSIS

SURRY HILLS LIBRARY AND COMMUNITY CENTER: Circulation to Space
GRAPHIC ANALYSIS

SURRY HILLS LIBRARY AND COMMUNITY CENTER: Geometry
GRAPHIC ANALYSIS

SURRY HILLS LIBRARY AND COMMUNITY CENTER: Hierarchy
GLENEAGLES COMMUNITY CENTER. CASE STUDY THREE

Location: West Vancouver, Canada
Architect: Patkau Architects
Typology: Community Center & Recreation
Size: 24,000 Square Feet
Client: District of West Vancouver
Program: Workshop, Art Studio, Courtyard, Kitchen, Youth Lounge, Gymnasium, Multipurpose, Fireplace Lounge, Meeting Room, Cafe, Administration, Child Care, Fitness, Training Studio, Counseling, Children’s Playground
Cost: $4,500,000
IMAGE CREDITS. REFER TO 7.1 FOR ADDITIONAL INFORMATION

Photography by James Dow

www.archdaily.com
www.architecturenewsplus.com
www.patkau.ca
www.jim-dow-american-studies.org
The Gleneagles Community Center stands out among the three case studies for its subtle gesture and unique geometry. The curved roof creates an interesting structural system, while defining the spaces within it. The community center is divided into three levels. The intermediate level opens onto the street with spaces for administration, childcare, community living room, and cafe. The lower level is accessible to an outdoor covered courtyard and has a gymnasium, multi-purpose, and arts room.

Unlike some of the other case studies, Gleneagles allows for an exceptional ceiling height in the gymnasium, which exposes the heavy timber structural ceiling for the roof and cast-in-place concrete structural system for the remainder of the building. The contrast between these different materials is stunning and creates a pleasant atmosphere with an abundance of glazing and natural light. The circulation corridor that runs along the gymnasium is also glazed, allowing light to reflect and refract from one side of the building to the other. The structural walls are integrated into the interior climate control system, providing constant temperatures for occupied spaces, while emitting or absorbing energy through concrete surfaces. Other sustainable strategies that were applied to the building design include roof overhangs, radiant heating, ground source heat exchanger, and operable windows. The integration between the mechanical and architectural systems were an important step in the design process to minimize required equipment and space allocation for mechanical. More often than not, we find that sustainable systems often require larger spaces than systems which are less eco-friendly. The new technology implemented in this project is low maintenance and provides user controlled strategies.

The successful sectional design for this building allowed Patkau Architects to incorporate the natural site grading for both landscape and building. This case study strongly relates to the selected site and has become a model for solving issues with
dramatic changes in elevation. This multi-level facility allows for users to smoothly transition from street level to the golf course, which connects to the lower level. Another strength in this case study would include its ability to visualize the landscape through framed views and different entry levels. This case study responds to the culture of West Vancouver by providing an environmentally friendly design solution through a socially responsive approach. The city of West Vancouver has developed an Official Community Plan for sustainability efforts which encourage citizens to develop efficient developments. It also engages the public through education and environmental policies already in effect. In conclusion, this project’s interesting material selection and use of new sustainable technology set it apart from other community centers in North America. Gleneagles was the first project in North America to use the Swiss Batiso System, decreasing maintenance and environmental impact. The community living room, which overlooks the gym
FLOOR PLAN

01. Workshop
02. Art Studio
03. Maintenance
04. Mechanical
05. Electrical
06. Office
07. Workshop Courtyard
08. Kitchen
09. Youth Lounge
10. Gymnasium
11. Storage
12. Multipurpose
13. Entry Patio
14. Fireplace Lounge
15. Meeting Room
16. Cafe
17. Reception
18. Administration
19. Child Care
20. Fitness
21. Training Studio
22. Counseling
23. Open to Below
24. Children’s Playground
Figure 4.14 - First Floor Plan
Figure 4.15 - Ground Floor Plan
Figure 4.16 - Elevation from Street
Figure 4.17 - Site Plan
GRAPHIC ANALYSIS

GLENEAGLES COMMUNITY CENTER: Structure
GRAPHIC ANALYSIS

GLENEAGLES COMMUNITY CENTER: Natural Light
GRAPHIC ANALYSIS

GLENEAGLES COMMUNITY CENTER: Massing
GRAPHIC ANALYSIS

GLENEAGLES COMMUNITY CENTER: Circulation to Space
GRAPHIC ANALYSIS

GLENEAGLES COMMUNITY CENTER: Geometry
GRAPHIC ANALYSIS

GLENEAGLES COMMUNITY CENTER: Hierarchy
TYPOLOGICAL SUMMARY

The Life Centre, Surry Hills Library and Community Center and Gleneagles Community Center take unique but also similar approaches for community center design. The case studies selected collectively display a number of qualities desirable for this typology and selected site, including: purpose driven design, sustainability, response to site, space configuration, material quality, level of detail, proportion, daylighting strategies, program, and response to community needs. The next level of design will take different aspects from these three case studies into one solution for a community center in Aurora. As these case studies were analyzed, their positive effect on the surrounding community was realized and supported of the theoretical premise. Architecture is able to nurture the community and can improve an individual’s physical, emotional and spiritual well-being.

The Life Centre in Melbourne, Australia most closely relates to the mission of Aurora First Assembly and is an excellent model and twist on the notion of a Christian community. Its openness to the community will not limit the variety of community members who will come in direct contact with the Church body, in a subtle yet effective way. The auditorium and community hall, in particular, offer alternative methods for Christians to connect and establish relationships with other members in the community. Like other selected case studies, this project provides spaces for child care services and community education. Reflecting a similar approach in this thesis will be an important step to its success.
The Surry Hills Library and Community Center located in Sydney, Australia, takes the gold star for its achievements in sustainable technology and reduced environmental impact. The small building imprint requires the facility to have more levels, which in turn decreases the amount of contact community members have with one another. This design solution was in response to certain site restrictions and could perhaps create opportunities for community members to have closer interactions at different levels within this building configuration.

Finally, the Gleneagles Community Center in West Vancouver, Canada was a noteworthy case study, especially in the area of physical well-being. This facility is more than a gym and more than a community center, it is both. Another positive result and observation is the building’s response to its site. The selected site for this thesis will need to overcome similar challenges and this case study will help understand possible solutions to those barriers. These barriers can also become opportunities, much like the solution at Gleneagles illustrates.
WEST VANCOUVER COMMUNITY CENTRE. CASE STUDY FOUR

Location: West Vancouver, Canada
Architect: Hughes Condon Marler Architects
Typology: Community & Aquatic Centre
Size: 86,000 Square Feet
Client: District of West Vancouver
Program: Gymasiums, Fitness Rooms, Wellness Clinics, Aquatic Spaces
IMAGE CREDITS. REFER TO 7.1 FOR ADDITIONAL INFORMATION

Photography by Hubert Kang and Nic Lehoux

www.archdaily.com
www.hcma.ca
www.hubertphoto.com
www.niclehoux.com
SEPHARDIC COMMUNITY CENTER. CASE STUDY FIVE

Location: Brooklyn, New York
Architect: BKSK Architects
Typology: Community Center
Size: 100,000 Square Feet, 50,000 Square Foot Addition
Client: Sephardic Synagogue
Program: Gym, Pool, Spa, Student Preschool Center, Meetings Spaces, Performance Space, Administrative Offices, Celebratory Space, Heritage Hall Entry Lobby
IMAGE CREDITS. REFER TO 7.1 FOR ADDITIONAL INFORMATION

Photography by Jonathan Wallen and Jeffrey Totaro

www.archdaily.com
www.bksk.com
www.jonathanwallen.com
www.jeffreytotaro.com
Figure 4.18 - Cellar Floor Plan
Figure 4.19 - Second Floor Plan
Figure 4.20 - Ground Floor Plan
Figure 4.21 - Third Floor Plan
Figure 4.22 - Fourth Floor Plan
THE PRAYER PAVILION OF LIGHT. CASE STUDY SIX

Location: Phoenix, Arizona
Architect: Debartolo Architects LTD.
Typology: Prayer Chapel, Master Plan (Final Phase)
Size: 4,500 Square Feet
Client: Phoenix First Assembly
Program: Chapel, Plaza
IMAGE CREDITS. REFER TO 7.1 FOR ADDITIONAL INFORMATION

Photography by Bill Timmerman

www.archdaily.com
www.debartoloarchitects.com
www.billtimmerman.com
Location: Tampa, Florida
Architect: Alfonso Architects
Typology: Church
Size: 25,000 Square Feet
Client: City of Sydney
Program: Worship Sanctuary, Administrative Offices, Classrooms, Exterior Courtyard
Cost: $2,600,000
IMAGE CREDITS. REFER TO 7.1 FOR ADDITIONAL INFORMATION

Photography by Al Hurley

www.archdaily.com
www.alfonsoarchitects.com
www.imagesbyalhurley.com
MORTENSRUD CHURCH. CASE STUDY EIGHT

**Location:** Mortensrud, Oslo  
**Architect:** Jensen & Skodvin Arkitektkontor  
**Typology:** Church  
**Size:** 23,600 Square Feet  
**Client:** Kirkelig Fellesråd i Oslo, Terje Oterholt  
**Program:** Sanctuary, Parish Hall, Gardens, Entrance Court, Kitchen, Fellowship Space  
**Cost:** $8,420,000
IMAGE CREDITS. REFER TO 7.1 FOR ADDITIONAL INFORMATION

Photography by Jan Olav Jensen and Per Berntsen

www.archdaily.com
www.jsa.no
www.perberntsen.com
[NURTURE] well-being: **CASE STUDIES**
DEAD SEA MASTER PLAN. CASE STUDY NINE

Location: Jordan  
Architect: Sasaki Associates  
Typology: Community Master Plan  
Size: 9,900 acres  
Client: Jordan Development Zones Company  
Program: Mixed-use Boulevard, Ecological Preserve, Hotels, Commercial, Cultural and Public Spaces
IMAGE CREDITS. REFER TO 7.1 FOR ADDITIONAL INFORMATION

Images by Sasaki Associates

www.archdaily.com
www.sasaki.com
www.dzc.jo
PIER ESCAPE.  CASE STUDY TEN

Location: Chicago, Illinois
Architects: Aedas Architects, Davis Brody Bond, Martha Schwarz Partners
Typology: Competition, Master Plan
Size: 9,900 Acres
Client: Navy Pier Centennial Vision
Program: Gateway Plaza, Bus Plaza, Wetland Garden
Cost: $85,000,000
IMAGE CREDITS. REFER TO 7.1 FOR ADDITIONAL INFORMATION

Images by Aedas Architects

www.archdaily.com
www.aedas.com
www.davisbrody.com
www.marthaschwartz.com
www.navypiervision.com
WESTSIDE BRUENNEN. CASE STUDY ELEVEN

**Location:** Bern, Switzerland

**Architect:** Daniel Libeskind

**Typology:** Urban Scale Shopping Center

**Size:** 1,500,000 Square Feet

**Client:** Neue Brunnen AG

**Program:** 55 shops, 10 restaurants, Hotel, Multiplex Cinema, Wellness Center and Housing
IMAGE CREDITS. REFER TO 7.1 FOR ADDITIONAL INFORMATION

Photography by Daniel Libeskind

www.archdaily.com
daniel-libeskind.com
www.perberntsen.com
[NURTURE] well-being: CASE STUDIES
EMPAC. CASE STUDY TWELVE

Location: Troy, New York
Architect: Grimshaw
Typology: Performing Arts Center
Size: 221,200 Square Feet
Client: Neue Brunnen AG
Program: Concert Hall, Theater, Black Box Studio, White Box Studio, Dance Studio, Atrium Space
IMAGE CREDITS. REFER TO 7.1 FOR ADDITIONAL INFORMATION

Photography by Paul Rivera

www.archdaily.com
grimshaw-architects.com
www.archphoto.com
[NUATURE] well-being: CASE STUDIES
**NK’MIP DESERT CULTURAL CENTRE.** CASE STUDY THIRTEEN

Location: Osoyoos, British Columbia  
Architect: Hotson Bakker Boniface Haden architects  
Typology: Cultural Center  
Size: 1,600 Acres  
Client: Osoyoos Indian Band  
Program: Interpretive Centre, Theatre, Exhibition Space, Outdoor Performance Area, Amphitheatre, Research Area, Demonstration Space
IMAGE CREDITS. REFER TO 7.1 FOR ADDITIONAL INFORMATION

Photography by Nic Lehoux

www.archdaily.com
www.designdialog.ca
www.niclehoux.com
[NURTURE] well-being: **CASE STUDIES**
ÖÖ SCIENCE CENTER WELS I.  CASE STUDY FOURTEEN

Location: Wels, Austria
Architect: Archinauten Dworschak, Mühlbachler ZT GmbH
Typology: Museum
Size: 53,800 Square Feet
Client: City of Wels
Program: Entrance Hall, Exhibition Spaces, Restaurant, Shop, Foyer, Public Garden,
IMAGE CREDITS. REFER TO 7.1 FOR ADDITIONAL INFORMATION

Photography by Dietmar Tolerian

www.archdaily.com
www.archinauten.com/
www.archipicture.at
[NUTURE] well-being: CASE STUDIES
MYONGJI UNIVERSITY BANGMOK LIBRARY. CASE STUDY FIFTEEN

Location: Seoul, Korea
Architect: Gansam Architects & Associates
Typology: Library
Size: 35,000 Square Feet
Client: Myongji University
Program: Lobby, Reading Area, Seminar Area, Memorial Exhibition, Study Rooms, Administration, Student Center, Auditorium, Educational Classrooms, Multi-Media Spaces
IMAGE CREDITS. REFER TO 7.1 FOR ADDITIONAL INFORMATION

Photography by Gansam Architects & Associates

www.archdaily.com
www.gansam.com
LIVERPOOL UNIVERSITY INFORMATION CENTRE. Case Study Sixteen

Location: Suzhou, PRC
Architect: Aedas Architects
Typology: Educational
Client: Xi’an Jiaotong-Liverpool University
Program: Administration Centre, Learning and Resources Centre, Training Centre, Student Activities Centre
IMAGE CREDITS. REFER TO 7.1 FOR ADDITIONAL INFORMATION

Images by Aedas Architects and Silkroad Digital Technology

www.archdaily.com
www.aedas.com
en.silkroadcg.com
Winter prevailing wind
冬季季候风
Solid on north-west facade blocks
cold wind during winter
建筑西北侧墙面挡冬季寒冷空气

Summer prevailing wind
夏季季候风
Void on south-east for
natural ventilation during
夏季通风洞
建筑东南侧开洞在夏季
Roof garden
屋頂花园

Horizontal Louvers provide diffused light and reduce solar heat gain
水平百叶提供漫反射自然光照并减少太阳热辐射

Roof terrace
屋顶平台

Green roof
绿化屋顶

Courtyard
庭院

Facad encourages during summer
加强自然通风

[NURTURE] well-being: CASE STUDIES
INTEGRATED TEACHING BUILDING. CASE STUDY SEVENTEEN

Location: Hong Kong, China
Architect: Urbanus
Typology: Educational
Size: 432,700 Square Feet
Client: Chinese University of Hong Kong
Program: Outdoor Areas, Academic Centers, Gathering Spaces,
IMAGE CREDITS. REFER TO 7.1 FOR ADDITIONAL INFORMATION

Images by Urbanus

www.archdaily.com
www.urbanus.com.cn
TYPOLOGICAL SUMMARY

West Vancouver Community Centre (57 & 58)

The design for the West Vancouver Community Centre linked a number of other disconnected facilities to a central “front door” to the community of West Vancouver. The project consists of a three-story atrium that connects different recreation levels along a circulation spine. The formal gathering spaces orient views to the Great Lawn and mountains beyond. The circulations spine features operable skylights which drive sunlight and fresh air into the building. These levels are broken into casual moments for “pause and opportunities for social interaction”.

Sephardic Community Center (65 & 66)

The Sephardic Community Center plays an interactive role in the community to preserve the history and culture of the Sephardic Community. The building’s program offers historical, educational, athletic, and social services for the community in a quiet community environment. The center hosts a variety of events and activities made known to the community in the Heritage Hall entry Lobby. The cultural aspect of this community is the unifying factor supporting this building’s “bold vision of a mutually supportive community.”
The Prayer Pavillion (72 & 73)

The Prayer Pavilion of Light is part of the Assembly of God’s 58-acre campus in Phoenix, Arizona. The landscape features a 600-foot-long processional walk to the chapel. Upon arrival, users are greeted by a welcoming plaza space, landscaped with desert trees and unique courtyard design. This chapel has been envisioned as a ‘lantern on a hill.’ Steel Framing supports the translucent panels above and frames the transparent glass below. The architecture is minimal with finely articulated details and a soft palette of earth tones which compliment the surrounding landscape.
TYPOLOGICAL SUMMARY

Tampa Covenant Church (78 & 79)

Tampa Covenant Church was developed using the Fibonacci sequence to establish scale derived from theological requirements. Other architectural elements from the project were based on numerical biblical importance. (i.e. 3 olive trees, 7 candle boxes, 12 office windows, 14 pendant lights, etc.). Another symbolic representation, which may or may not have been intended, was the church’s white exterior, because the Church is the bride of Christ, to be represented with absolute purity and holiness. This sanctuary space connects two existing church buildings by creating an exterior courtyard where these spaces meet.

Mortensrud Church (85 & 86)

The Mortensrud Church was carefully placed on its existing landscape, with special attention given to how it meets the ground. Only a thin layer of soil was excavated, allowing the church to preserve the natural habitat where it is located. Trees and rock formations are captured within the design of the building within atrium spaces and the concrete floor of the church. The structure is composed of a steel framework, stonewall, and glass facade, allowing light to stagger in through uneven joints in the stonework. Since traditional mortar joints were not used, steel plates were used to stiffen the stonewall construction in both horizontal and vertical planes.
Dead Sea Master Plan (92 & 93)

The master plan for the Jordan Development Zones Company is a planned community development along 40 kilometers of land north and east on coast of the historic Dead Sea. The proposed plan accommodates a site-specific approach, which balances design efforts to increase tourism and preserve existing cultural significance within the region. The master plan has set high standards for sustainable development to foster an increase in social infrastructure, while conserving nearby existing communities. The efforts that have been made to preserve the natural ecological environment with considerations for an improved road network, public transportation, fresh water supply, waste water treatment, and utilities within the proposed series of districts makes this an exceptional model for community design.
TYPOLOGICAL SUMMARY

Pier Escape (98 & 99)

The Pier Escape proposal “envisions Navy Pier as a world-class urban landscape that protects Lake Michigan, promotes economic growth and creates an escape for the people of Chicago”. The proposal offers an exciting list of activities to enrich the value of this destination to both residents and tourists alike. Spaces for play, culture, and relaxation make this venue an iconic landscape in the context of an urban recreational environment. An entry plaza will draw crowds into the interactive spaces while making subtle connections from the Chicago skyline to the shoreline of Lake Michigan.

Westside Bruennen (104 & 105)

Westside Bruennen has become the new center for leisure and shopping, while by recreating our traditional conception of these spaces. This project features a complex mixture of retail, residential, and recreational facilities that reinvent urban and social patterns typically developed in projects of similar scale. “The development creates an exciting gateway into the city of Bern as it dramatically positions itself over the major highway and is integrated into the city with its own highway exit and train stop”.

Empac (112 & 113)

The Experimental Media and Performing Arts Center implements “an ensemble of instrumental spaces defined by technology”. This case study creates an innovative example for performance spaces, featuring a 1,200-seat concert hall encased within a multi-layered shell within the building envelope. This solution provides a stunning atrium space leading up to the concert hall, which has been given special acoustical consideration to prevent interference between distinct activities within the center.
**TYPOLOGICAL SUMMARY**

**NK’ MIP Desert Cultural Centre (119 & 120)**

The NK’Mip Desert Cultural Centre is located adjacent to the Great Basin Desert in Canada and explores the relationship of aboriginal history in the context of this reservation land. The buildings acts as an extension of the site as the desert landscape seemingly flows over the building’s green roof, which is held in place by a rammed earth wall. Because of the fragile nature of the site and project, careful consideration was placed on sustainable design. The building’s orientation, large rammed earth wall, habitable green roof, water use management, mechanical features, and use of local materials are among the list of methods integrated within this project.

**ÖÖ Science Center Wels I (126 & 127)**

The ÖÖ Science-Center has become an iconic urban hub for Wels, presenting itself as an engaging case study in the field of science. The form itself is very artistic and it is an experiment of sloped landscapes, walls, and flowing line work. The site is located adjacent to the city hall with open public spaces flowing into the entrance for the museum and axis to the city center. The configuration of the building allows for a flexible arrangement of the thematic interior spaces. Line patterns over the metal curtain facade are made with steel bands, representing the project’s focus on renewable energy, while the LED strips behind them give this place a notable presence at night.
Myongji University Bangmok Library (133 & 134)

The Myongji University Bangmok Library matches its surrounding context in a residential and educational environment, welcoming the student body with the pull from its gently curved massing. The curvilinear outer skin is composed with U-Glass while the square form is expressed with wood. The glass will filter light gently into the library, creating a pleasant atmosphere without harming the books themselves. The interactive garden lobby is the hub, which merges the different zones within the library to a common place abundant with natural lighting and interesting interior architecture. The spatial diversity and staggered floor layouts create memorable views and spaces at each level.
TYPOLOGICAL SUMMARY

Liverpool University Information Centre (140 & 141)

The Administration & Information Centre is located in the Suzhou Industrial Park, surrounded by a quickly developing economy. The center is part of a master plan for Liverpool University incorporating an administrative center, learning and resource center, and student activities center. These centers are located within a square structure following the concept of Taihu stone, an ornamental stone used for decorating Chinese gardens. Much like the nature of this stone, this project will incorporate these spaces in natural connections using voids to create dynamic gathering places inside the building.
Integrated Teaching Building (145 & 146)

The Integrated Teaching Building proposal titled “Windows on Community” creates visual and physical connections between two parts of the campus, tying them together in the construction of this building. By implementing the concept of a Möbius strip, the design mixes interior and exterior circulation. This loop creates a lively community space that is diverse and filled with activity. Different paths to reach destinations are broken up leading to lobbies, outdoor settings, and different academic centers.
NURTURE well-being
5.0 Site Analysis.
THE MOUNTAIN STATE

Colorado is known for mountainous terrain, high plains, foothills, and desert lands. The variation in elevation and natural formations create a variety of climate changes. Natural formations and a semi-arid climate zones provide mild winters and average temperature summer conditions for the Denver-metropolitan area. Its location between the Rocky Mountains to the west and High Plains to the east can create rapid changing weather patterns. It has often been said among residents that if you don’t like the weather, just wait fifteen minutes. As you enter the metropolis from the High Plains, you drop over 1000 feet as you enter the foothills of the Rocky Mountains. Some of the cities that make up the Denver metropolis include: Aurora, Englewood, Lakewood, Parker, Arvada, Westminster, Highlands Ranch, Littleton, Centennial, Greenwood, Castle Rock, and Broomfield, among others. As this metropolis continues to steadily grow, new developments are added to the list. Existing cities are also caught up in the expansion, becoming suburbs themselves.

Aurora has a variety of open spaces where a master plan of this scale could be developed. While there are many community, recreational, and cultural centers within the Denver metro area, Aurora was in greatest need of a community center of this scale. The ratio of community centers to residential housing was much lower in this new development in comparison to some of the surrounding suburbs. It will be important for the city of Aurora to consid-
er a development like this to improve the sense of community and prevent isolation within this suburb. The location for this community center intersects major streets and is nearby an interstate, the E-470. This tollway is a fast alternative to congested highways and side streets which stretch along the eastern side of Aurora. The Regional Transportation District runs a bus route that stops at Southlands across the street from the site. According to the website, “Southlands is an outdoor lifestyle center with a four-block Main street and community plaza surrounded by additional retailers and restaurants.” As one leaves Southlands and merges onto E-470, you will notice amazing views looking west toward the foothills and surrounding city.

Issues that complicated other sites include: size limitations, location, community center ratio, street access, noise control, traffic, and visual limitations. Issues that will need to be resolved in the selected site include changes in elevation, soil conditions, irregular grid patterns, and pedestrian connections. The site presents itself along a pedestrian linkage in a residential neighborhood. Finding a proper balance or buffer distance between these two zones will be a necessary part of the solution. Perhaps one of the strongest components in this site are the existing vistas. The natural landscape should be incorporated into the design for the final master plan and provide its users with a sense of peace and tranquility.
QUALITATIVE ANALYSIS

SITE IMPRESSIONS: VISUAL AND SENSORY
As observations are made about the site, it will help determine creative design solutions and opportunities which lie within the site itself. While there is some recognition of a north / south orientation, the roadways curve back and forth. This inconsistent grid pattern may result from natural formations in the landscape. Some of the residential developments are likely planned like this to create interesting views and footprint patterns. Looking around the site reveals a variety of textures and patterns, most of which come from natural formations like plants, hills and streams.

This site is mostly open, with very little shade and shadow characteristics. However, the site slopes slightly towards the north and more abruptly towards the west making these two locations less preferable than those with leveled surfaces.

Some of the built features towards the south include: Wallgreens, Chick-fil-A, International Bank, and beyond this commercial development, residential. At the east side of the site, Southlands and one other small commercial development stretch along the entire S Aurora Parkway road, which runs alongside the site. The north is almost completely bare, while the east is covered densely with new residential housing. The site receives adequate lighting on all sides which can be quite powerful, even during the winter. The vegetation consists of native plants, such as switch grass, indian grass, little bluestem, and sideoats gamma. These plants can play an important role in erosion control when being introduced to areas once destroyed.

The church currently being constructed is the only sign of human activity and will be considered to
be null for the sake of this project. The site also has roads and power lines running through it. Large metal power lines run through the north and west sides of the site. Towards the east side, where the landscape begins to drop off, there is a small creek that runs north and south parallel to a pedestrian walkway. There is very little distress on the site, because of the lack of human presence. Some of the surrounding developments show signs of wear, which are likely the result of heavy machinery and continued construction. Preserving this natural landscape will need to be an initiative from the start, carefully planning project phases in an orderly and consistent manner.
[NURTURE] well-being: SITE ANALYSIS
QUANTITATIVE ANALYSIS

CLIMATE: Temperature
QUANTITATIVE ANALYSIS

CLIMATE: Humidity
QUANTITATIVE ANALYSIS

CLIMATE: Precipitation
QUANTITATIVE ANALYSIS

CLIMATE: Snowfall
QUANTITATIVE ANALYSIS

CLIMATE: Sunshine
QUANTITATIVE ANALYSIS

CLIMATE: Wind speed

![Graph showing wind speed over months]

[Average line] [US Average line]
QUANTITATIVE ANALYSIS

CLIMATE: Cloudiness
QUANTITATIVE ANALYSIS

CLIMATE: Sunpath Diagram
LATITUDE: 40° N
QUANTITATIVE ANALYSIS

CLIMATE: Spring Prevailing Winds
QUANTITATIVE ANALYSIS

CLIMATE: Summer Prevailing Winds
QUANTITATIVE ANALYSIS

CLIMATE: Autumn Prevailing Winds
QUANTITATIVE ANALYSIS

CLIMATE: Winter Prevailing Winds
[NUTURE] well-being
6.0 Programmatic Requirements.
PROGRAM REQUIREMENTS

INTERACTION MATRIX: Master Plan

- Essential
- Desirable
- Not Needed

Administration (SOE)
Church Facility
Community Center
Community Garden
Entry / Boulevard
Green Space
Landscape (Hardscape)
Landscape (Softscape)
Library (SOE)
Outdoor Amphitheater
Parking (Above Grade)
Parking (Below Grade)
Pedestrian / Bicycle Linkages
Prayer Pavilion
Recreational Areas (Active)
Recreational Areas (Passive)
School of Evangelism
Sports Facility
Student Housing (SOE)
Vehicle Circulation
PROGRAM DESCRIPTIONS

Church Facility
Like some of the other buildings on this campus, the facility for the church, may use less traditional methods for religious architecture, developing a modern architectural character throughout the master plan. This facility will require adequate parking for 1,500 members and will need to maintain a strong connection to the community center.

Community Center
This facility will become a metaphorical hand reaching out to the Aurora community. It will provide residents with a place to connect with others and to connect with God. The resource and counseling center will assist those in need throughout the community, providing them with hope and encouragement. The assembly and recreational facilities will be designed to nurture lasting relationships.

Community Garden
A community garden would create opportunities for outdoor fellowship and could be maintained by those in the community to serve those in need. In a fast paced world, this would give residents a chance to slow down and consider the needs of others before themselves.

Outdoor Amphitheater
An outdoor amphitheater would be a place for large assemblies to gather for retreats, concerts, and worship services. Developing a strong connection to some sort of active recreational area would be desirable.

Prayer Pavillion
The prayer pavilion is social gathering place for the assembling of God’s people. It serves as a connection link between the School of Evangelism and the Community Center. This facility may desire to be located some distance away from other facilities in order to provide a meditative journey as one approaches the building.

School of Evangelism
The school of Evangelism is a post-secondary educational facility, which equips students with the tools to reach a world in need. It will also be associated with the SOE Administration, SOE Library, and SOE Student Housing.

Sports Facility
The sports facility will equip this master plan with a large venue suitable for sporting events, concerts, conferences, and special services.
INTERACTION NET: Master Plan

INTERACTION NET: Master Plan
# PROGRAMMATIC REQUIREMENTS: Master Plan

## SCHOOL OF EVANGELISM

<table>
<thead>
<tr>
<th>Facility</th>
<th>Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administration</td>
<td>75,000 SF</td>
</tr>
<tr>
<td>School of Evangelism</td>
<td>400,000 SF</td>
</tr>
<tr>
<td>Library</td>
<td>50,000 SF</td>
</tr>
<tr>
<td>Sports Facility</td>
<td>100,000 SF</td>
</tr>
<tr>
<td>Student Housing</td>
<td>300,000 SF</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>925,000 SF</strong></td>
</tr>
</tbody>
</table>

## AURORA FIRST ASSEMBLY

<table>
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<tr>
<th>Facility</th>
<th>Area</th>
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</thead>
<tbody>
<tr>
<td>Church Facility</td>
<td>75,000 SF</td>
</tr>
<tr>
<td>Community Center</td>
<td>65,000 SF</td>
</tr>
<tr>
<td>Community Garden</td>
<td>2,500 SF</td>
</tr>
<tr>
<td>Outdoor Amphitheater</td>
<td>15,000 SF</td>
</tr>
<tr>
<td>Prayer Pavilion</td>
<td>5,000 SF</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>162,500 SF</strong></td>
</tr>
</tbody>
</table>

## LANDSCAPE / ROADWAY / PEDESTRIAN

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<thead>
<tr>
<th>Facility</th>
<th>Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entry / Boulevard</td>
<td>150,000 SF</td>
</tr>
<tr>
<td>Green Space</td>
<td>500,000 SF</td>
</tr>
<tr>
<td>Landscape (Hardscape)</td>
<td>100,000 SF</td>
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<tr>
<td>Landscape (Softscape)</td>
<td>500,000 SF</td>
</tr>
<tr>
<td>Pedestrian / Bicycle Linkages</td>
<td>300,000 SF</td>
</tr>
<tr>
<td>Recreational Areas (Active)</td>
<td>50,000 SF</td>
</tr>
<tr>
<td>Recreational Areas (Passive)</td>
<td>870,000 SF</td>
</tr>
<tr>
<td>Vehicle Circulation</td>
<td>1,100,000 SF</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>3,570,000 SF</strong></td>
</tr>
</tbody>
</table>

## PARKING: Above Grade

<table>
<thead>
<tr>
<th>Facility</th>
<th>Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administration</td>
<td>37,500 SF</td>
</tr>
<tr>
<td>Church Facility</td>
<td>50,000 SF</td>
</tr>
<tr>
<td>Community Center</td>
<td>75,000 SF</td>
</tr>
<tr>
<td>Library</td>
<td>25,000 SF</td>
</tr>
<tr>
<td>School of Evangelism</td>
<td>400,000 SF</td>
</tr>
<tr>
<td>Sports Facility</td>
<td>300,000 SF</td>
</tr>
<tr>
<td><strong>Total Area</strong></td>
<td><strong>887,500 SF</strong></td>
</tr>
</tbody>
</table>

## PARKING: Below Grade

<table>
<thead>
<tr>
<th>Facility</th>
<th>Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sports Facility</td>
<td>20,000 SF</td>
</tr>
<tr>
<td><strong>Total Area</strong></td>
<td><strong>20,000 SF</strong></td>
</tr>
</tbody>
</table>

## LOT AREA

<table>
<thead>
<tr>
<th>Area</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Area</td>
<td>125 ACRES or 5,545,000 SF</td>
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</table>
## PROGRAM REQUIREMENTS

### INTERACTION MATRIX: Community Center

<table>
<thead>
<tr>
<th>Essential</th>
<th>Desirable</th>
<th>Not Needed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auditorium</td>
<td>Administration</td>
<td>Cafe / Coffee Shop</td>
</tr>
<tr>
<td>Administration</td>
<td>Childcare Center</td>
<td>Community Courtyard</td>
</tr>
<tr>
<td>Conference Room</td>
<td>Counseling</td>
<td>Entrance / Lobby</td>
</tr>
<tr>
<td>Exercise Studio</td>
<td>Fellowship Hall</td>
<td>Gymnasium</td>
</tr>
<tr>
<td>Kitchen</td>
<td>Mechanical / Electrical</td>
<td>Parking</td>
</tr>
<tr>
<td>Prayer Lounge</td>
<td>Private Toilets</td>
<td>Public Toilets</td>
</tr>
<tr>
<td>Receptionist</td>
<td>Resource Center</td>
<td>Storage / Custodial</td>
</tr>
</tbody>
</table>

The interaction matrix above illustrates the essential, desirable, and not needed requirements for various spaces in the Community Center.
PROGRAM DESCRIPTIONS

Auditorium
The auditorium will be a multi-purpose space. It will function primarily as an assembly space for worship with moveable partitions that will form smaller rooms for meeting spaces and prayer. This space may require a stage of some sort that will be flexible to change as the venue itself does. Natural indirect lighting should a priority for this space.

Childcare Center
The childcare center will be an area where children three months to five years of age can be in a secure environment. It will include activities for fine and large motor skills, as well as cognitive development. The childcare center will be a safe location for children to be social, learn, and have fun. A drop off location for parents is desirable.

Community Courtyard
The community courtyard will be a central location that connects the main spaces. Within this space there should be a café with open seating. This space will have natural lighting and provide an environment for people to gather for conversation or lunch. It will also serve as a circulation spine for the building.

Fellowship Hall
The fellowship hall will be a community-gathering place. The space will be multi-purpose and within close proximity to the Auditorium. It could be used for meetings, receptions, and community potlucks or events. This space will need to have some sort of distinctive architectural character in order to create an atmosphere appropriate for social events or wedding receptions.

Gymnasium
The gymnasium will be a recreational space for basketball and other associated indoor activities. This space should have a tall ceiling, while revealing the architectural character of the structure. This space will require storage spaces for equipment. Located somewhere nearby should be family, and men’s and women’s locker rooms. This space will be the focal point for the recreational portion of the community center.

Prayer Lounge
The prayer lounge will be in a more private yet easily accessible location. The function of this space will be to allow individuals or small groups to seek the Lord in prayer. It should have comfortable seating and lighting to provide an environment that is inviting and suitable for prayer.

Resource Center
The resource center will be in an open area that is central to the building. It will have information and resources available to guests and first time users of the community center. It will be welcoming and inviting space with a central location within the Community Courtyard.
INTERACTION NET: Community Center

INTERACTION NET: Community Center
## PROGRAMMATIC REQUIREMENTS: Community Center

### ADMINISTRATION

<table>
<thead>
<tr>
<th>Facility</th>
<th>Square Feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Offices</td>
<td>1,250</td>
</tr>
<tr>
<td>Conference Room</td>
<td>500</td>
</tr>
<tr>
<td>Private Toilets</td>
<td>1,000</td>
</tr>
<tr>
<td>Staff Lounge</td>
<td>350</td>
</tr>
<tr>
<td>Counseling</td>
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### PUBLIC: Recreational

<table>
<thead>
<tr>
<th>Facility</th>
<th>Square Feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fitness Studio A</td>
<td>1,500</td>
</tr>
<tr>
<td>Fitness Studio B</td>
<td>1,500</td>
</tr>
<tr>
<td>Gymnasium</td>
<td>7,500</td>
</tr>
<tr>
<td>Men’s Lockers</td>
<td>2,500</td>
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<tr>
<td>Women’s Lockers</td>
<td>2,500</td>
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<tr>
<td>Family Lockers</td>
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</tr>
<tr>
<td>Racquetball Courts</td>
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<tr>
<td>Weight Training</td>
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### PUBLIC: Gathering

<table>
<thead>
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<tbody>
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<td>750</td>
</tr>
<tr>
<td>Childcare Center</td>
<td>2,500</td>
</tr>
<tr>
<td>Community Courtyard</td>
<td>4,000</td>
</tr>
<tr>
<td>Fellowship Hall</td>
<td>3,500</td>
</tr>
<tr>
<td>Kitchen</td>
<td>1,500</td>
</tr>
<tr>
<td>Prayer Lounge</td>
<td>500</td>
</tr>
<tr>
<td>Community Education</td>
<td>2,000</td>
</tr>
<tr>
<td><strong>Total Area</strong></td>
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### AUXILLARY

<table>
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<tr>
<th>Facility</th>
<th>Square Feet</th>
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</thead>
<tbody>
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<tr>
<td>Lobby / Reception</td>
<td>1,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>3,500</strong></td>
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</table>

### Total Area

- **Total Area:** 63,700 SF
INTERACTION MATRIX: Church Facility

PROGRAM REQUIREMENTS
PROGRAM DESCRIPTIONS

Administration
The administration wing for the church facility should be a welcoming place for pastors and members of the community to connect and meet together. This wing should be located in an area where the staff and community are not distracted by others, and feel safe to develop relationships and talk about private issues. These pastoral offices should be placed in close proximity to other administrative spaces with access to private restrooms and other staff amenities.

Cafe / Coffee Shop
The cafe and coffee shop will provide services for both the community center and church facility. It should be in a location close to the fellowship hall in case it will be used during social gatherings or larger events. The layout should be very open with tables for visitors to sit and grab lunch or coffee with one another.

Education Classrooms
The education wing for the church facility will be used for both church and community education. There will be dedicated rooms for church education and additional multipurpose spaces for community educational spaces.

Gathering Space
The gathering space for the sanctuary will become a place of transition, social interaction, and invitation. This space should be visually engaging with natural lighting and furnishings for people to interact and have relaxed conversations. The architecture should be stimulating and create an excitement for the worship experience.

Meeting Rooms
The meeting rooms should be in close proximity to the education wing and will be used for bible study, social, support, or community groups. These spaces should have close connection to both the community center and church facility. Meeting rooms may also be used for educational purposes.

Sanctuary
The sanctuary will become a focal point for both the community and church facility. Significant emphasis will be placed on both the interior and exterior portion of the design. The worship space will include area for a large platform and altar space. There should be seating for approximately 2000. Floor seating should dominate the majority of the area with some overflow seating in the balcony.

Youth Fellowship
The youth fellowship space should accommodate approximately 300 students with spaces for a small band, lounge area, and games. This room should be closely connected to the education wing and the architecture should be upbeat with modern influences to create a stimulating environment for both teens and young adults.
INTERACTION NET: Church Facility

INTERACTION NET: Church Facility
## PROGRAMMATIC REQUIREMENTS: Church Facility

### INTERACTION MATRIX: Church Facility

<table>
<thead>
<tr>
<th>Facility</th>
<th>SF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Offices</td>
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<tr>
<td>Conference Room</td>
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<tr>
<td>Private Toilets</td>
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<td>Pastoral Resource Library</td>
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<td>Receptionist</td>
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### AUXILLARY

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<td>Storage / Custodial</td>
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**Total Area:** **71,000 SF**

### PUBLIC: Educational

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<tr>
<td>Community Education</td>
<td>2,000</td>
</tr>
<tr>
<td>Meeting Rooms</td>
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<tr>
<td>Public Restroom</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>12,000</strong></td>
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**TOTAL AREA:** **85,200 SF**

### PUBLIC: Gathering

<table>
<thead>
<tr>
<th>Facility</th>
<th>SF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cafe / Coffee Shop</td>
<td>750</td>
</tr>
<tr>
<td>Childcare Center</td>
<td>2,500</td>
</tr>
<tr>
<td>Fellowship Hall</td>
<td>3,500</td>
</tr>
<tr>
<td>Gathering Space</td>
<td>2,500</td>
</tr>
<tr>
<td>Kitchen</td>
<td>1,500</td>
</tr>
<tr>
<td>Prayer Lounge</td>
<td>2,500</td>
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<tr>
<td>Public Restroom</td>
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<tr>
<td>Sanctuary</td>
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<td>Youth Fellowship</td>
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<td><strong>Total</strong></td>
<td><strong>43,750</strong></td>
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</tbody>
</table>

**Total Area:** **85,200 SF**
PROGRAMMATIC REQUIREMENTS

INTERACTION MATRIX: Combined Facility
SHARING SPACES

Administration
The administration wing for the church facility should be a welcoming place for pastors and members of the community to connect and meet together. This wing should be located in an area where the staff and community are not distracted by others, and feel safe to develop relationships and talk about private issues. These pastoral offices should be placed in close proximity to other administrative spaces with access to private restrooms and other staff amenities.

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INTERACTION NET: Combined Facility

INTERACTION NET: Combined Facility

The chart below represents relationships between the community center and church facility. The y-axis ranks spatial hierarchy while the x-axis displays the proposed reduction in square footage (in 1,000’s) in spaces of interest.
7.0 Design Solution.
PROCESS: SITE LAYOUT OPTIONS

OPTION A

OPTION B
OPTION C

OPTION D
PROCESS: SITE LAYOUT OPTIONS

OPTION E
[NUITRE] well-being: DESIGN SOLUTION
PROCESS: SKETCHES

CIRCULATION SPINE
PROCESS: MATERIAL SELECTION

METAL PANEL
SITECAST CONCRETE
WOOD VENEER
[NURTURE] well-being: DESIGN SOLUTION
UPPER FLOOR PLAN

01. Vestibule
02. Circulation Spine
03. Resource Center
04. Administration
05. Fitness Studio A
06. Fitness Studio B
07. Fitness Studio C
08. Fitness Studio D
09. Community Education
10. Community Education
11. Community Education
12. Community Education
13. Computer Lab
14. Stairs to Lower Level
15. Mechanical
16. Electrical
17. Office
18. Office
19. Office
20. Counseling
21. Counseling
22. Counseling
23. Custodial
24. Conference Room
25. Personal Training
26. Stretching
27. Women’s Locker Room
28. Men’s Locker Room
29. Cardio Area
30. Weight Training
31. Fitness Training
32. Meeting Room
33. Meeting Room
34. Meeting Room
35. Meeting Room
36. Community Lounge
37. Meeting Room
38. Office
39. Mechanical
40. Classroom
41. Elevator
42. Circulation Spine
43. Electrical
44. Warm-up Area
45. 200m Running Track
46. Cardio Area
47. Open to Gymnasium
48. Stairs to Exit
49. Cardio Area
50. Open to Fellowship Hall
51. Lounge
52. Upper Level Gathering
53. Balcony
54. Open to auditorium
55. Storage
56. Electrical
57. Women’s Restroom
58. Men’s Restroom
59. Equipment Storage
60. Open to Courtyard
LOWER FLOOR PLAN

61. Mechanical
62. Classroom
63. Classroom
64. Classroom
65. Classroom
66. Classroom
67. Classroom
68. Classroom
69. Classroom Setting A
70. Storage
71. Private Toilet
72. Mechanical
73. Women’s Locker Room
74. Men’s Locker Room
75. Storage
76. Youth Fellowship
77. Office
78. Office
79. Office
80. Multi-purpose Gymnasium
81. Childcare Center
82. Private Toilet
83. Storage
84. Prayer Lounge
85. Mechanical
86. Auditorium
87. Electrical
88. Stage
89. Resource Library
90. Administration
91. Copy Room
92. Conference Room
93. Meeting Room
94. Storage
95. Pastoral Offices
96. Women’s Restroom
97. Men’s Restroom
98. Fellowship Hall
99. Kitchen
FINAL DESIGN LAYOUT

DISPLAY & MODEL (Below)
BOARDS (Right)
LOBBY AT MAIN ENTRY. AURORA COMMUNITY CENTER

**Structure:** Glulam beams, sitecast waffle slab
**Ceiling:** Wood decking
**Flooring:** Sealed concrete
**Feature:** Southern facing clearstory window system & butterfly roof rain collection system
AUDITORIUM. AURORA FIRST ASSEMBLY OF GOD

**Structure:** Steel joists & composite metal deck  
**Ceiling:** Accoustical wood veneer panels  
**Flooring:** Carpet / sealed concrete  
**Feature:** Diffused lighting & offset accoustical wall panels
200 METER RUNNING TRACK. AURORA COMMUNITY CENTER

Structure: Cellular beams, steel columns
Ceiling: Exposed composite metal deck
Flooring: Synthetic flooring & hardwood flooring
Feature: Long span structural system & Mezzanine track overlooking gymnasium
FITNESS AREA. AURORA COMMUNITY CENTER

Structure: Sitecast HoleDECK concrete system
Ceiling: Exposed mechanical / electrical all-in-one system
Flooring: Hardwood flooring
Feature: Structure & exterior wood rain screen system
STAGE AT AUDITORIUM. AURORA FIRST ASSEMBLY OF GOD

Structure: Steel joists & composite metal deck  
Ceiling: Accoustical wood veneer panels & GWB soffit  
Flooring: Carpet / sealed concrete / hardwood flooring  
Feature: Multi purpose space to be utilized for church services and a variety of community events
BRIDGE CONNECTION. GATEWAY FROM SOUTHLANDS SHOPPING DISTRICT

Structure: Concrete pillars & steel construction
Facade: Wood rainscreen, metal panel & sitecase concrete
Landscape: Local & natural vegetation
Feature: Community space overlooking the road & woven facade design
WOOD RAINSCREEN SYSTEM. DAYTIME
WOOD RAINSCREEN SYSTEM. NIGHT TIME
[NURTURE] well-being: DESIGN SOLUTION
[NUTURE] well-being: DESIGN SOLUTION
7.0 [design solution]
STRUCTURAL DETAIL

MECHANICAL / ELECTRICAL / HVAC INTEGRATION
REDUCED MATERIAL
ARCHITECTURAL EXPRESSION
[NURTURE] well-being
7.1 Conclusion.
APPENDIX A:

ASSEMBLIES OF GOD: Fundamental Truths

1. WE BELIEVE...The Scriptures are Inspired by God and declare His design and plan for mankind.

2. WE BELIEVE...There is only One True God–revealed in three persons...Father, Son, and Holy Spirit (commonly known as the Trinity).

3. WE BELIEVE...In the Deity of the Lord Jesus Christ. As God’s son Jesus was both human and divine.

4. WE BELIEVE...though originally good, Man Willingly Fell to Sin–ushering evil and death, both physical and spiritual, into the world.

5. WE BELIEVE...Every Person Can Have Restored Fellowship with God Through ‘Salvation’ (trusting Christ, through faith and repentance, to be our personal Savior). [1 of 4 cardinal doctrines of the AG]

6. WE BELIEVE...and practice two ordinances—(1) Water Baptism by Immersion after repenting of one’s sins and receiving Christ’s gift of salvation, and (2) Holy Communion (the Lord’s Supper) as a symbolic remembrance of Christ’s suffering and death for our salvation.

7. WE BELIEVE...the Baptism in the Holy Spirit is a Special Experience Following Salvation that empowers believers for witnessing and effective service, just as it did in New Testament times. [1 of 4 cardinal doctrines of the AG]


9. WE BELIEVE...Sanctification Initially Occurs at Salvation and is not only a declaration that a believer is holy, but also a progressive lifelong process of separating from evil as believers continually draw closer to God and become more Christlike.

10. WE BELIEVE...The Church has a Mission to seek and save all who are lost in sin. We believe ‘the Church’ is the Body of Christ and consists of the people who, throughout time, have accepted God’s offer of redemption (regardless of religious denomination) through the sacrificial death of His son Jesus Christ.

11. WE BELIEVE...A Divinely Called and Scripturally Ordained Leadership Ministry Serves the Church. The Bible teaches that each of us under leadership must commit ourselves to reach others for Christ, to worship Him with other believers, to build up or edify the body of believers—the Church and to Meet human need with ministries of love and compassion.

12. WE BELIEVE...Divine Healing of the Sick is a Privilege for Christians Today and is provided for in Christ’s atonement (His sacrificial death on the cross for our sins). [1 of 4 cardinal doctrines of the AG]
13. WE BELIEVE...in The Blessed Hope—When Jesus Raptures His Church Prior to His Return to Earth (the second coming). At this future moment in time all believers who have died will rise from their graves and will meet the Lord in the air, and Christians who are alive will be caught up with them, to be with the Lord forever. [1 of 4 cardinal doctrines of the AG]

14. WE BELIEVE...in The Millennial Reign of Christ when Jesus returns with His saints at His second coming and begins His benevolent rule over earth for 1,000 years. This millennial reign will bring the salvation of national Israel and the establishment of universal peace.

15. WE BELIEVE...A Final Judgment Will Take Place for those who have rejected Christ. They will be judged for their sin and consigned to eternal punishment in a punishing lake of fire.

16. WE BELIEVE...and look forward to the perfect New Heavens and a New Earth that Christ is preparing for all people, of all time, who have accepted Him. We will live and dwell with Him there forever following His millennial reign on Earth. ‘And so shall we forever be with the Lord!’
APPENDIX B:

CHRISTIAN PHILOSOPHY

In order to develop a design philosophy that will carefully embrace the needs for the Colorado community, biblical principles will become the foundation for the design. “See to it that no one takes you captive through hollow and deceptive philosophy, which depends on human tradition and the basic principles of this world rather than on Christ” (Colossians 2:8, NIV).

SOCIAL JUSTICE

After establishing research objectives and laying the groundwork for design philosophy, psychological design strategies are investigated for architectural solutions. “It is evident that pursuing social justice is one of the highest moral responsibilities of the church and of the individual Christian. Recognizing that life can and should be just, though not necessarily fair, Christians should be at the forefront of the effort to pursue social justice through voluntary church and charitable social work. While it is important for every believer and church to practice private, voluntary acts of charity and social justice, it is also essential that every Christian develop sound convictions regarding social action by the state” (Wheaton, 2008). A person’s greatest need is to know God, and the greatest calling is to make Him known. Take for example the biblical narrative of social justice in the parable of the Good Samaritan:

“But he wanted to justify himself, so he asked Jesus, “And who is my neighbor?” In reply Jesus said: “A man was going down from Jerusalem to Jericho, when he fell into the hands of robbers. They stripped him of his clothes, beat him and went away, leaving him half dead. A priest happened to be going down the same road, and when he saw the man, he passed by on the other side. So too, a Levite, when he came to the place and saw him, passed by on the other side.”

“On one occasion an expert in the law stood up to test Jesus. “Teacher,” he asked, “what must I do to inherit eternal life?” “What is written in the Law?” he replied. “How do you read it?” He answered: “‘Love the Lord your God with all your heart and with all your soul and with all your strength and with all your mind’; and, ‘Love your neighbor as yourself.’ ” “You have answered correctly,” Jesus replied. “Do this and you will live.”
But a Samaritan, as he traveled, came where the man was; and when he saw him, he took pity on him. He went to him and bandaged his wounds, pouring on oil and wine. Then he put the man on his own donkey, took him to an inn and took care of him. The next day he took out two silver coins and gave them to the innkeeper. ‘Look after him,’ he said, ‘and when I return, I will reimburse you for any extra expense you may have.’ “Which of these three do you think was a neighbor to the man who fell into the hands of robbers?” The expert in the law replied, “The one who had mercy on him.” Jesus told him, “Go and do likewise” (Luke 10:25-37).

SOCIAL ARCHITECTURE
As visitors from the community approach the site, it is important to carefully consider the path a person will follow as they approach the building. The architecture should encourage the visitor to come inside, while engaging an individual’s curiosity and faith. The enhancement of their worship experience will prepare them for an encounter with the living God. This shift will draw the focus away from the building and will cause worshipers to evaluate their own hearts. “You do not delight in sacrifice, or I would bring it; you do not take pleasure in burnt offerings. The sacrifices of God are a broken spirit; a broken and contrite heart O God, you will not despise” (Psalm 51:16-17).

Clement from Alexandria once said, “It is not a place that is called church, nor a house made of stones and earth, it is the holy assembly of those that live in righteousness” (Roberts, 2004).
APPENDIX C:

THE CHURCH OF GOD

Since the beginning of time, the idea of community has always existed. In fact, it is God who created it. If indeed we hope to create worthwhile architecture, then we must first know the architect of the universe. For the builder of a house has greater honor than the house itself (Hebrews 3:3). In the New Testament, the Church is described not as a building, but rather as a community of believers. The hymn by Richard Avery reads “The Church is not a building, the Church is not a steeple, the Church is not a resting place, the Church is a people” (Hymnary.org). So as a community we come together to worship the God of creation. The history of God’s chosen people is a story of community and love. “Know therefore that the Lord your God is God; he is the faithful God, keeping his covenant of love to a thousand generations of those who love him and keep his commands” (Deuteronomy 7:9). If we receive this love and follow His commands, then we know that we are His children and that we have an inheritance with Him.

COMMUNITY OF THE TRINITY

Starting in Genesis, we read, “Let us make man in our image, in our likeness...” (Genesis 1:27). The Gospel of John tells us that Jesus was with God the Father from the beginning, and that the world was made through Him. We also see that the Holy Spirit or Spirit of God is present from the beginning. Understanding the Trinity’s purpose will help us better understand the character of God. A few of the notable characteristics of God: Transcendent (Acts 17:24-25), Unchangeable (Malachi 3:6), Eternal (Psalm 90:2), Wise (Romans 11:33), Knowable (Psalm 46:10), Omnipotent (Isaiah 14:27), Omnipresent (Psalm 139:7-10), Omniscient (Hebrews 4:13), Faithful (Isaiah 25:1), Truthful (Numbers 23:19), Good (James 1:17), Patient (2 Peter 3:9,15), Love (Romans 5:8), Gracious (1 Peter 5:10), Merciful (Titus 3:5), Holy (Leviticus 11:44-45), Peaceful (1 Corinthians 14:33), Righteous (Deuteronomy 32:4), Perfect (Psalm 18:30) and Glorious (Psalm 24:10). Despite man’s unfaithfulness throughout history, God’s just and compassionate character has always remained the same. The questions is, are people willing to humble themselves to know the God of the universe?

THE STORY OF SALVATION

From the Fall of Man, the Old Testament tells us of God’s saving deeds and stories of God’s people. “Since a good story is powerful and influential, stories were used to persuade God’s people to be faithful and to obey God. Stories of God’s saving deeds in times of distress for the faith community became important for the faithful person to hear. Hearing these stories made it possible for individual believers to place their little lives in God’s hands” (Fettke 18-19). Throughout biblical history we see God’s hand of direction and provision in the lives of his followers. These men and women were faithfully committed to this community no matter the cost. What would the Church look like if we did not
have this community with God? Needless to say, it would be a mess! In fact, sometimes it already is, but this is not the way it was intended.

The Greek word for Church, ekklesia, is used about 117 times in the New Testament (Strong’s concordance). It is defined as “the called out ones”. After Pentecost, the Early Church really lived up to this name. The question is, do we today? Does the Church look different or do we look like everyone else? The Early Church was persecuted for their faith, and because of this persecution, it forced believers to take a stance. One could not be on both sides of the fence. If one was, it could mean risking his/her life for something he/she was not sure about.

The Bible speaks about two types of communities, an earthly and a heavenly one. Failing to recognize the difference will result in a lifestyle of spiritual complacency and apathy. So what changed over the course of history that has brought this contentment into the Church? Let us take a closer look at these two types of communities and the differences between them.We are born into the earthly community, but invited into a heavenly one. The heavenly community is by invitation only, but the invitation is for all. The Word tells one that he/she must lose his/her life to gain it (Matthew 16:35) and to deny oneself (Luke 9:23-24). This is clearly not the same teaching that we learn in America.

How does our culture or society come to grip with these terms? As the conflict between the truth of God and the philosophy of this present world clash, Christians continue to put their hope in the

One who said that He will come again. Jesus himself said that no one would come to the Father except through Him (John 14:6). So when that day comes, he will gather together his “called out” faithful and chosen followers. Because we are born into a sinful world and are all sinners, we need a relationship with Jesus Christ to restore our relationship with God the Father. Jesus was sent from the Father, to die as a sacrifice for our sins.

Before this time, all sins that were previously committed were not yet accounted for, but only put off by another year. When Jesus sprinkled His blood in the perfect tabernacle in heaven, our sins were atoned for and we were able to access a right relationship with God our Father. “Just as man is destined to die once, and after that to face judgement, so Christ was sacrificed once to take away the sins of many people; and he will appear a second time, not to bear sin, but to bring salvation to those who are waiting for him (Hebrews 9:27-28), Christ impressed these truths to His disciples through the gift of the Holy Spirit and still teaches these truths to His disciples today.
APPENDIX D:

WINTER
A. Keep the heat in and the cold temperatures out during the winter.

01. Avoid building on cold northern slopes.
02. Build on the middle of slopes to avoid both the pools of cold air at the bottom and the high winds at the top of hills.
03. Use a compact design with minimum surface-area-to-volume ratio. For example, use two instead of one-story buildings.
04. Build attached or clustered buildings to minimize the number of exposed walls.
05. Use earth sheltering in the form of underground or bermed structures.
06. Place buffer spaces that have lower temperature such as stairs, garages, gymnasiums, heavy work areas, etc.) along the north wall. Place a sun-space buffer room on the south wall.
07. Use temperature zoning by both space and time since some spaces can be kept cooler than others at all times or at certain times. For example, bedrooms can be kept cooler during the day, and living rooms can be kept cooler at night when everyone is asleep.
08. Minimize window area on all orientations except south.
09. Use double or triple glazing, low-e coatings, and movable insulation on windows.
10. Use plentiful insulation in walls, roofs, under floors, over crawl spaces, on foundation walls, and around slab edges.
11. Insulation should be a continuous envelope to prevent heat bridges. Avoid structural elements that are exposed on the exterior, since they pierce the insulation. Avoid fireplaces and other masonry elements that penetrate the insulation layer.
12. Place doors on fireplaces to prevent heated room air from escaping through the chimney. Supply fireplaces and stoves with outdoor combustion air.
WINTER

B. Protect from the cold winter winds.

01. Avoid windy locations, such as hilltops.
02. Use evergreen vegetation to create wind breaks.
03. Use garden walls to protect the building and especially entrances from cold winds.
04. In very windy areas, keep the buildings close to the ground (one-story).
05. Use compact designs to minimize the surface area exposed to the wind.
06. Use streamlined shapes with rounded corners to both deflect the wind and minimize the surface-area-to-volume ratio.
07. Cluster buildings for mutual wind protection.
08. Use long sloping roofs, as in the New England saltbox houses, to deflect the wind over the building and to create sheltered zones on the sunny side.
09. Place garages and other utility spaces on the winter windward side. This is usually the north, northwest, and northeast side of the building.
10. Use sun spaces and glazed-in porches as wind breaks.
11. Use earth sheltering or build in hollows. Also, the wind can be deflected by earth berms built against the wall or by constructing protective earth banks a short distance from the building.
12. Minimize openings, especially on the side facing the winter winds, and place the main entry on the leeward size.
13. Use storm windows, storm doors, air locks, and revolving doors to minimize infiltration.
14. Close all attic and crawl-space vents.
15. Use tight construction, caulking, and weather stripping to minimize infiltration. Use high-quality operable windows and doors.
16. Place outdoor courtyards on the south side of the building.
17. In winter, even windows in freestanding garden walls should be closed to protect the enclosure from cold winds.
18. In snow country, use snow fences and wind screens to keep snow from blocking entries and south-facing windows.
APPENDIX D:

WINTER
C. Let the winter sun in.

01. Build on south, southeast, or southwest slopes.
02. Check for solar access that might be blocked by landforms, vegetation, and manmade structures.
03. Avoid trees on the south side of the building.
04. Use only deciduous trees on the southeast and southwest sides.
05. Also use deciduous trees on the east and west sides if winter is very long.
06. The long axis of the building should run east-west.
07. Most windows should face south.
08. Use south-facing clerestories and dormers in stead of sky-lights.
09. Place spaces that benefit the most from solar heating along the south wall. Spaces that benefit the least should be along the north wall (eg., storage rooms, garages).
10. Use an open floor plan to enable sun and sun-warmed air to penetrate throughout the building.
11. Use direct-gain, Trombe walls, and sunspaces for effective passive solar heating.
12. Use thermal mass on the interior to absorb and store solar radiation.
13. Use light-colored patios, pavements, or land surfaces to reflect additional sunlight through windows.
14. Use specular reflectors (polished aluminum) to reflect additional sunlight through windows.
15. Use active solar collectors for domestic hot water, swimming-pool heating, space heating, and process heat for industry.
16. If there is little or no summer overheating, use dark colors on exterior walls (especially the south wall).
17. Create sunny but wind protected outdoor spaces on the south side of the building.
SUMMER

D. Use thermal mass to reduce day-to-night temperature swings in the summer.

01. This cooling strategy is also known as “night flush cooling” because the thermal mass is usually cooled with night ventilation.
02. Use massive construction materials since they have a high heat capacity. Use materials such as brick, concrete, stone, and adobe.
03. Place insulation on the outside of the thermal mass.
04. If massive materials are also to be used on the outside, sandwich the insulation between the inside and outside walls.
05. Use earth or rock in direct contact with the uninsulated walls.
06. Keep daytime hot air out of the building by closing all openings.
07. Open the building at night to allow cool air to enter. Use the strategies of natural ventilation to maximize the night cooling of the thermal mass.
08. Use water as a thermal mass because of its very high heat capacity. Use containers that maximize heat transfer into and out of the water.
09. Use radiant or evaporative cooling for additional temperature drop in the thermal mass at night.
10. Use mechanical equipment at night when it is most efficient to create a heat sink. By cooling the building at night, the cool thermal mass can soak up heat the next day.
11. Use earth sheltering to maximize the benefits of mass.
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NDSU has allowed me to connect with other students, faculty, employers, lifelong friends, my wife and God.