THE EVOLUTION OF CONTEMPORARY WORSHIP

CONTEMPORARY PHILOSOPHIES OF INNOVATIVE RELIGIOUS ORGANIZATIONS CAN BE ENHANCED BY PROGRESSIVE ARCHITECTURAL THINKING

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The topic being addressed is the evolution of contemporary Christian organizations. It will focus on the innovative methods and practices which are used to communicate religious beliefs and seek to reinvent the manner in which architectural design is applied.
ABSTRACT

It has come to be that strictly formal Christian entities have become distant to a certain amount of the general public due to cultural interests. Thus a transformation has come about in the way Christian churches have conducted themselves to adapt with these cultural shifts. The design of religious architecture is beginning to take on a new aesthetic to cater to these changes. No longer are places of worship being identified by their steeple, stained glass or prominent religious symbolism they are beginning to inhabit the empty shells of existing architecture and are morphing into the everyday lives of the community they dwell within.

The model for this thesis is theoretically based on one such religious organization, Life Community Church. This organization, Located in Bluffton, IN, is one of many based on being an agent of change in their community and uses unique presentation methods to convey their beliefs to others. The congregation presently uses portions of the vacant Bluffton High School to conduct their social and private functions. This nondenominational church has reached a 40% growth rate annually since its dawn in 1997 (Life...).

The physical purpose of the project will be to successfully transform a vacant high school into an innovative religious community center. The primary goal of the design is to attract as many people as possible to this place in order for them to receive the message embodied by the organization. The long-term goal of the design is to create an environment in which the users will spiritually flourish.

The success of the project resides within the scope of the following six design principles.

1. Urban Evolution – Adaptive reuse provides a vital link to the past, celebrates contemporary achievements and provides a vision to the future. Thus retaining portions of the existing high school will enhance the richness of the design.

2. Community Outreach – Spatial interaction within a community is essential in strengthening the overall livelihood of those who dwell within it.

3. Blurring Boundaries – Merging nature and architecture creates a seamless experience between the user and the surrounding environment.

4. Collage of Forms and Functions – Layering spaces creates social interaction among varying users which is a vital component in community outreach.

5. Sacred Engagement – Stereotypical Christian architectural symbolism will not be boldly utilized so that no one will feel intimidated by the sacredness of the message being communicated within.

6. Flexibility – Designing for functional change over time utilizes the facilities maximum potential for use by the community.
The site is located in Bluffton, IN. The site's size is two city blocks, standard to this community. The four streets that create a boundary for the site include; South St. to the north, Wiley Ave. to the south, Oak St. to the east, Jersey St. to the west. The site is level, with little to no change in grade. There are only a few trees existing on the site and they are approximately 30-50 years of age. The ground cover is predominately a mix of asphalt and grass. The existing high school rests on the northern half of the site. The physical characteristics directly surrounding the site include one and two story residential homes ranging from 15–70 years in age. Many of the homes are in moderate condition and have 1-4 trees on their individual site. Slightly to the west of the site sits a railroad and a light industrial district. The downtown is approximately one half mile to the north of the site. The current developing district of the community is located in the northern part of the town, approximately 1.5-3 miles from the site. Young families, singles and elderly inhabit many of the homes adjacent to the site. The economic context ranges from low to moderate income levels within this region.

1. Existing Massing - The original building footprint is formed in such a way that it is overbearing in scale to the surrounding context.

2. Existing Parking - Vast amounts of hard surface blanket the site from edge to edge creating a baron uninviting space.

3. Existing Green Space - Small amounts of flora are dispersed around the site but hold little aesthetic or functional value.

4. Existing Circulation - The rigidity of the urban circulation carries through to the circulation of the site minimizing the richness of any procession.
5. Massing Concept - The portions of the existing building with the largest interior volumes will be retained for their functional potential.

6. Green Space Concept - The landscaping will create a community park like atmosphere which will be functional and aesthetically pleasing.

7. Circulation Concept - The rigidity of the urban circulation will be broken to enhance the functionality and the design of the site procession.

8. Vehicular Concept - Automobiles will be incorporated less significantly into the site being hidden by green space and design elements.

9. Linkage Concept - To embrace the principles of a community organization a correlation between all parts of the site must be made.

10. Educational Concept - Space for learning should connect to the exterior elements and the community it is lies within to prosper.

11. Sustainable Concept - The use of roof gardens and water collection systems can enhance the building's environmental characteristics.

12. Energy Concept - Solar collection implemented onto existing forms can produce power for the facility and even the surrounding community.
3. Cummins Inc. Corporate Office, Roche Dinkeloo Associates - This building incorporates the natural environment visually and physically to create a parklike atmosphere. Additionally, the building's footprint respects existing historic architecture and adaptively reuses this old warehouse as a restaurant.

4. North Christian Church, Eero Saarinen - This church engages the site with nature. It allows nature to capture the automobile and the pedestrian creating a smooth processional entry. Internally, the sanctuary forces the congregation to visually interact with one another creating a community awareness.

5. First Christian Church, Eiel Saarinen - This church features subtle Christian references and a public café to attract new members.

6. Irwin Union Bank, Roche Dinkeloo and Associates - This bank uses innovative glazing and natural growth as a protective skin.
7. Willow Creek Community Church - This facility located in South Barrington, Illinois, has a congregation exceeding 7,000 and houses its own food court (Lynn).

8. Saddleback Church - This mega-church rests on a 120-acre campus in Orange County, California (Lynn).

9. Buckhead Church - This church located in Atlanta, was a former Harris Teeter grocery store converted into a 48,250-square-foot complex with a movie theater and a teen center; worshipers watch video sermons on giant screens. Since the church opened in 2003, Sunday attendance has increased six fold (Lynn).

Fellowship Church - Located in Grapevine, Texas, this organization changed its name from Las Colinas Baptist Church to draw a larger crowd. It also throws Saturday socials for singles (Lynn).

Maple City Chapel - This Christian facility, located in Goshen, Indiana, was originally a Walmart before it was renovated.

The Bridge Community Church - This organization located in Anderson, Indiana uses the auditorium of a high school to facilitate their Sunday worship services.
OUTLINE OF PROGRAM

Existing space kept and adapted:

Auditorium - Retain the structure and systems while creating a sacred sanctuary space. Keep the choir room, rest rooms, teen room, mechanical space, storage space, circulation space and office space.

Gymnasium - Retain the structure and systems while creating a multifunctional space that can be used mainly for contemporary services but also concerts, basketball games, etc. The remaining rooms will be used for storage space or for a use to be determined later.

Materials - Reuse any leftover material from the classroom space if possible. This includes lockers, doors, flooring, windows, steel, concrete, copper, etc.

New spaces:

Cafe - The cafe will function during normal business hours. It will be oriented towards the youth of the community and will serve coffee, juice, pastries etc. It will feature Internet access and other services geared toward a youthful crowd.

Christian Book Store - This space will function as a public store but will be affiliated with the church and operated during normal business hours. It will sell Christian books and other related goods. It shall be adjacent to the cafe and the outdoors.

Classrooms - The classrooms shall be efficient, flexible, spacious and well lit. They should be designed in a manner that can be used by children, teens, young adults, adults and elders. The classrooms should be adjacent to one another to create multi-age interaction.

Day Care - This space should be well contained and safe for children. Amenities within the space should be scaled to that of a child. The space should also be flexible and feature connections to public space.

Entry Space - This transition shall be easily read and visually welcoming from the outside.

Kitchen - Space to prepare and store food. It should be able to produce enough food to feed the entire congregation and also have the ability to be operated during standard eating hours to accommodate a cafe and a meal delivery service.

Landscaping - These natural elements shall be utilized according to site placement. Flora will be used to create site transitions and interior to exterior transitions. Landscaping will also be used to create boundaries, blur unwanted views, form elegant views, designate exterior space, shade building components, insulate building facades, create points of interest and form backdrops.

Library - This space should offer a large array of reading material and educational resources geared toward a Christian lifestyle. The space shall be well lit primarily through natural lighting.

Meditation Space - Designated for private contemplation and prayer the space will be ergonomically comfortable, quiet and soothing.

Office - Adequate office space shall be provided for the church administrators and leaders. They shall be flexible to accommodate change and personal character.

Parking lots - Parking lots should be designed as parking gardens. They should efficiently maximize the number of spaces needed for the facility. Yet, they should be blurred by landscaping elements and take a secondary role in the aesthetics of the site.

Sidewalks - Pedestrian pathways should be efficient and pleasantly walked upon traversing the site and structure. Their paving patterns and materials should respond to the human scale, in size and texture.

Site Extension - As a way of embracing the community, elements from the site shall extend into the neighborhood. These may feature elements such as sound, signage, paving patterns, lighting, sculptural elements etc.

Social Space - Space for diners, receptions, bake sales, graduation parties, church meetings etc. This space is to function as the main area for diverse social interaction.

Rooftop Gardens - These gardens will first and foremost insulate the building and reduce the urban heat island effect. In addition they should be inhabitable to create observatories, environmentally educational hubs and unique gathering spaces.
### 1st Floor: Square Footage

<table>
<thead>
<tr>
<th>Room Description</th>
<th>Square Feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cafe / Bookstore</td>
<td>2,470 sq.ft.</td>
</tr>
<tr>
<td>Choir Room</td>
<td>870 sq.ft.</td>
</tr>
<tr>
<td>Contemporary Worship Space</td>
<td>17,194 sq.ft.</td>
</tr>
<tr>
<td>Formal Sanctuary</td>
<td>7,540 sq.ft.</td>
</tr>
<tr>
<td>Formal Social Space</td>
<td>1,622 sq.ft.</td>
</tr>
<tr>
<td>Kitchen</td>
<td>1,347 sq.ft.</td>
</tr>
<tr>
<td>Office 1</td>
<td>246 sq.ft.</td>
</tr>
<tr>
<td>Office 2</td>
<td>230 sq.ft.</td>
</tr>
<tr>
<td>Office 3</td>
<td>220 sq.ft.</td>
</tr>
<tr>
<td>Office 4</td>
<td>210 sq.ft.</td>
</tr>
<tr>
<td>Office 5</td>
<td>205 sq.ft.</td>
</tr>
<tr>
<td>Preschool / Day-care 01</td>
<td>1,184 sq.ft.</td>
</tr>
<tr>
<td>Preschool / Day-care 02</td>
<td>1,189 sq.ft.</td>
</tr>
<tr>
<td>Rest rooms</td>
<td>1,630 sq.ft.</td>
</tr>
<tr>
<td>Social Space</td>
<td>9,390 sq.ft.</td>
</tr>
<tr>
<td>Storage</td>
<td>4,340 sq.ft.</td>
</tr>
<tr>
<td>Teen Room</td>
<td>1,740 sq.ft.</td>
</tr>
</tbody>
</table>

### 2nd Floor: Square Footage

<table>
<thead>
<tr>
<th>Room Description</th>
<th>Square Feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classroom 1</td>
<td>636 sq.ft.</td>
</tr>
<tr>
<td>Classroom 2</td>
<td>700 sq.ft.</td>
</tr>
<tr>
<td>Classroom 3</td>
<td>1,189 sq.ft.</td>
</tr>
<tr>
<td>Classroom 4</td>
<td>1,140 sq.ft.</td>
</tr>
<tr>
<td>Classroom 5</td>
<td>874 sq.ft.</td>
</tr>
<tr>
<td>Classroom 6</td>
<td>888 sq.ft.</td>
</tr>
<tr>
<td>Classroom 7</td>
<td>1,092 sq.ft.</td>
</tr>
<tr>
<td>Office 6</td>
<td>541 sq.ft.</td>
</tr>
<tr>
<td>Office 7</td>
<td>564 sq.ft.</td>
</tr>
<tr>
<td>Rest rooms</td>
<td>1,239 sq.ft.</td>
</tr>
<tr>
<td>Roof Garden</td>
<td>4,050 sq.ft.</td>
</tr>
<tr>
<td>Storage</td>
<td>446 sq.ft.</td>
</tr>
<tr>
<td>Temporary Living Unit 1</td>
<td>294 sq.ft.</td>
</tr>
<tr>
<td>Temporary Living Unit 2</td>
<td>642 sq.ft.</td>
</tr>
<tr>
<td>Temporary Living Unit 3</td>
<td>425 sq.ft.</td>
</tr>
</tbody>
</table>

### 3rd Floor: Square Footage

<table>
<thead>
<tr>
<th>Room Description</th>
<th>Square Feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classroom 8</td>
<td>1,140 sq.ft.</td>
</tr>
<tr>
<td>Classroom 9</td>
<td>874 sq.ft.</td>
</tr>
<tr>
<td>Classroom 10</td>
<td>888 sq.ft.</td>
</tr>
<tr>
<td>Classroom 11</td>
<td>1,092 sq.ft.</td>
</tr>
<tr>
<td>Office 8</td>
<td>541 sq.ft.</td>
</tr>
<tr>
<td>Office 9</td>
<td>564 sq.ft.</td>
</tr>
<tr>
<td>Rest rooms</td>
<td>658 sq.ft.</td>
</tr>
<tr>
<td>Roof Garden</td>
<td>5,900 sq.ft.</td>
</tr>
<tr>
<td>Storage</td>
<td>90 sq.ft.</td>
</tr>
</tbody>
</table>

### Circulation (10%)

- Total Circulation: 1,067 sq.ft.
- HVAC (12%): 1,280 sq.ft.
- Walls & Columns (3%): 320 sq.ft.

**TOTAL NET AREA:** 95,128 sq.ft.
DESIGN PROCESS

- Contemporary Worship
  - Humane Materials
  - Modular Spirituality
  - Flexible
  - Vertical Integration

- ALTERNATIVE COMMUNITY
  - Entry
  - Entry Hall
  - Entry Dock
  - Formal Sanctoral
  - Formal Sanctoral

- PROTESTATION
  - Band
  - Pastor

- HEALTHY BUILDINGS: HEALTHY LIFE STYLES
  - PROGRESSION
  - Social Interaction
  - Mall Like
  - Atrium

- Traditional vs. Contemporary
- Smart Adjacencies
- Multiple Mediums
environmental embrace

inviting

community oriented

urban identity
DESIGN PROCESS

flexible volume

transparent socialization
- project to the outside visually
- interior & external relationships

historic adaptation
DESIGN PROCESS

transforming

visual interaction

installation
DESIGN PROCESS

iconographic failure

human scale

energy harness
symbolic orientation

social interaction

living facades

community park
The site rests on a two block site located in downtown Bluffton, Indiana. The building's facades and the site's circulation paths conform to street patterns creating a static environment with little connection with the neighborhood. The site lacks zones for public activity causing it to be uninviting to outsiders.
The evolved design enhances the two block site the contemporary Christian organization rests on. The facility and site merge into one seamless entity of community livelihood. The contrast between the existing masses and the new is made by a five degree shift, which theoretically aligns with the Christian Holy Land.
**Existing:**

This view depicts the original facility as it was when it functioned as a high school. The southern portion of the site provided conventional parking. The large volume anchoring the gymnasium is the original schoolhouse which is functionally outdated.

**Evolved:**

This view depicts the modernized facility as it has been reinvented. The large parking surface to the south has been transformed into a parking garden. The original schoolhouse has been eliminated and reconstructed with a site responsive architecture.
NORTH-WEST AERIAL VIEW

Existing:
This view depicts the original facility as it was when it functioned as a high school. The main entrance is visually undefined. The central portion of the arrangement features standardized plan which provides minimal linkage from the gym to the auditorium.

Evolved:
This view depicts the modernized facility as it has been reinvented. The entry has been defined through a series of design gestures that create a rich procession. The classrooms have been removed and transformed into a public realm of interaction.
This portion of the project focuses on community engagement by becoming a public park atmosphere which caters to the general public as well as the church member. The space creates a smooth transition from the adjacent parking lot. Sustainable features such as Pervious Paving Blocks and Pervious Concrete are used.

**Pervious Paving Blocks** - Pervious paving blocks for driveways, parking areas, walkways, and patios minimize runoff from those areas, as well as increase infiltration. Some pervious paving options can retain turf and carry autos and trucks evenly without creating tracks or other heavy traffic wear signs ("Pervious Paving...").

Paver complex at Wilderness Park, Hillsborough County, Florida
**Pervious Concrete** - Pervious pavement is a cement-based concrete product that has a porous structure which allows rainwater to pass directly through the pavement and into the soil naturally. This porosity is achieved without compromising the strength, durability or integrity of the concrete structure itself.

The pavement is comprised of a special blend of Portland Cement, coarse aggregate rock, and water. Once dried, the pavement has a porous texture that allows water to drain through it at the rate of 8 to 12 gallons per minute per square foot. For reference, tests conclude that a square foot of bahia sod drains at the rate of 2 1/2 to 3 gallons per minute. According to the manufacturer, this rapid flow-through ratio inspired the phrase “the pavement that drinks water (“Pervious Concrete”).”
SOCIAL SPACE

This space is designed to function as the social interactive core to the entire project. Physical forms and materials overlap, circulation patterns intertwine, existing structure and new structure mix, natural and man-made features combine and public and private functions collide to create an all encompassing collage of community livelihood. The elements which spatially enclose the area are visually light to create a seamless boundary between the community and the functions that reside within. The primary material chosen to achieve this effect is Light-Diffusing Glass. Anchored by the exterior courtyard, the contemporary sanctuary, the formal sanctuary and the cafe this space facilitates the interaction of varying users at varying times of the day. The primary purpose of this space is to generate interaction among those who would attend the formal church service and those who would attend the contemporary church service.

Light-Diffusing Glass - OKALUX produces even room illumination without hard shadows. The light-diffusing property of OKALUX is based on a light-fast capillary plate located in the space between the panes. OKALUX can also be produced as curved glass or as OKALUX look-alike opaque panels (“Light...”).

The Metropolitan Museum of Art New York / USA >
View from floor level of reception option

West to East section showing the combination of natural and man-made features
Theoretically roof gardens replace the ecology destroyed at grade and they physically create inhabitable natural spaces for humans and wildlife to enjoy. Furthermore, activities can take place on the ground plane while other functions occur above generating a flourishing social dynamism within the facility and the community.

**Green Roof** - The term “green roof” is used to describe a roof that is substantially covered by vegetation. This covering provides many environmental and economic benefits characteristic of sustainable building principles. Green roofs help combat the urban “heat island” effect and detain storm water. The shading and evapotranspirative cooling value of the vegetative cover provided by green roofs can reduce building energy consumption and protect the roof surface, thereby extending its useful life. Many environmentally responsible building owners have capitalized on the benefits of green roofs and have begun to enhance the urban landscape (Markham).
Solar PV Technology - This facility has solar PV technology retrofitted onto its large scale existing roofs. Solar PV generates electricity directly from light, whatever the weather. All PV cells have at least two layers of such semiconductors: one that is positively charged and one that is negatively charged. When light shines on the semi-conductor, the electric field across the junction between these two layers causes electricity to flow - the greater the intensity of the light, the greater the flow of electricity. If every suitable roof had PV, we could generate 10,000 times more energy than the world currently uses. If we covered a small part of the Sahara desert with PV, we could generate all the world's electricity requirements. The earth receives a free power input from the sun of 200 x 1015 Watts - an unimaginably huge amount of energy which completely dwarfs the capabilities of fossil fuels or nuclear fission (“About PV”).
The wall system used on the facades of the daycare/preschool and offices creates a veil between the interior and exterior spaces. Views made from the inside are primarily clear while views in from the outside are subtly blurred by louvers and natural growth which cascades up from the ground plain. This effect creates an elegant barrier between public and private spaces thus evoking outside curiosity.

**Solar Shading** - The intensity of direct sunlight through windows can reach 700 watts/m² of glass area, causing overheating and affecting building occupants' comfort level, which can lead to reduced productivity as well as higher mechanical operating costs ("Solar..."). The shading device on this project uses vertical louvers to shade eastern and western sunlight, and horizontal louvers to maximize views.

1. Green Roof
2. Adaptable Wood Louvers / Climbing Medium
3. Poly-carbonate
4. Climbing Vegetation
5. Exterior Glazing
6. Aluminum Support
Rain Water Harvesting - When it rains water flows from the roof and into the cisterns, where it is stored and later used to water the landscape. It also often has a nitrogen content which provides a slight fertilizing effect. In addition, rainwater harvesting saves energy requiring only a small pump or gravity flow. Rainwater harvesting promotes self-sufficiency and an appreciation for water resources (Mecke).
CONTEMPORARY
WORSHIP SPACE

This is a visually interactive and inspiring environment designed to function in a variety of unique ways. The scheme primarily focuses on manner in which contemporary religious organizations display their beliefs and convey their messages. This strategy includes flexible seating arrangements, flexible staging platforms and adaptive lighting, all of which enhance the innovative presentation methods of the organization. These methods include and are not limited to live bands, skits, movies and personal testimonies. Furthermore, by adaptively reusing the existing gymnasium a wide range of building materials are retained and the sense of place once familiar to many members of the community is preserved. Aside from the spiritual functions the space can also facilitate sporting events, concerts and movies, which would be directed toward the general public. This space physically changes which allows the organization to evolve with changing times.
**Lightblocks** - This material creates the adaptable lighting desired for this portion of the design. Lightblocks are high-strength, integral-color acrylic and poly-carbonate panels which can be used in interior and exterior applications. Lightblocks have been shown to withstand impacts approximately three times greater than laminated safety glass. Moreover, Lightblocks are 50% lighter than glass. Lightblocks are available in unlimited translucent or opaque colors, and have been proven to withstand weather and sun exposure for long periods without any deterioration. The material can be molded, curved, cut, drilled, and carved, and surfaces can be smooth, textured, glossy or matte (Wellington).

This space is designed to change functionally to accommodate various activities unrelated to contemporary worship to gain a broader range of community outreach. Examples of these activities include, but are not limited to, athletic events and movie nights. The space's primary purpose of providing a means of contemporary worship would not be jeopardized for the fact that the time in the space is sacred not the physical place.
The formal sanctuary is housed within the existing shell of the former auditorium. Unlike the contemporary worship space which is in constant transformation this space will retain the historic setting of the Christian faith. The space is primarily designed for Sunday worship services that would be directed by a pastor, a song leader and small group parishioners. The horizontal patterns on the walls force the audience to focus on the message being presented. Light emits from classical overhead fixtures to create a rich secondary pattern on the horizontal and vertical surfaces of the space. Wood finishes are applied to existing surfaces to create and atmosphere of harmony and warmth. Ideally the message being presented here would be the same as the message being presented in the contemporary space.

**Acoustic Wood Panels** - These acoustic panels, developed by Ceilings Plus under the name Arboreal®, are designed to reduce the noise reduction coefficient of wood through the implementation of small openings that allow sound waves to pass throw. When perforation are minimally 10% or greater a NRC rating of .80 can be achieved with sound absorbing materials ("Arboreal").
LIGHT MODEL

This model conceptually displays the qualities harbored by the design. The pure light symbolizes the Christian ideals being transmitted by the organization and the green light source symbolizes the site's natural features. Green light cascades onto the building form to reveal the sustainable aspects of the project.


**Computer Programs:**

Adobe InDesign 2.0

Adobe Photoshop 6.0

AutoCAD 2004

FormZ 4.0