



Transcultural Education:
Building Understanding through Architecture

Transcultural Education: Building Understanding Through Architecture

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

by

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Thesis Abstract

Architecture has the innate ability to control the environment in which it creates, so it presents itself as a tool for creating desired outcomes. This desired outcome is the change of social climate through Transcultural Understanding. With the use of qualitative observation analyses, methods of influencing cultural perception will be studied and applied to the project. Children's minds are at a malleable state, so creating an educational center which emphasizes activities and interactions to promote inter-cultural interactions can result in transcultural Understanding as a learned social practice.

Narrative of the Theoretical Aspect of the Thesis

As the world population grows, so does the amount of diversity in many places, especially the US. As a land that is run on the American Dream, many Americans are not so keen on sharing this idea with those who are dissimilar to themselves. This issue derives from the Creation invisible barriers between different culture groups. The disconnect has created a world where neighbors hate or fear one another simply because they do not understand each other.

Transcultural understanding is allowing oneself to find the similarities in others culture to their own. Through this discovery comes understanding for others motives, feelings, and customs. The barrier comes down, the fear and hatred are stripped away.



This social practice is only as widespread as those who choose to participate. As the idea begins to grow in momentum, how can it become an ingrained social practice? The answer is simple: teach it while we are young. If the places where children are taught basic topics such as sharing, reading, and math also include lessons on how to gain insight of other cultures, they would produce generations of open mind individuals. The world would be filled with that much less hate and fear only to be replaced with acceptance and understanding. So, if I may ask, how can architecture facilitate transcultural understanding?

The Project Typology

The design will be a children's education center. This may be broad, but it leaves an open end for the influence of research. An education center could be anything from a school, to a library, to a summer program facility, to a cultural center. Or, it could be a combination of these. Children have the most moldable minds, so this project would set them up through their learning environment to have transcultural understanding ingrained in their social behavior.

Major Project Elements

- Classrooms** for general learning
- Common Space** for eating and gathering
- Hallways** for passage, storage, and gathering
- Library** for reading
- Restrooms** for separate children and teacher use
- Gymnasium** for physical education
- Auditorium** for gathering and artistic displays
- Administration Offices** for running of school
- Music Room** for musical education
- Kitchen** for food preparation and health education
- Health Services** for keeping users healthy
- Art Room** for creating and exploring artistic ideas

Client/User Description

Client

Magnet Elementary School for Cultural Studies

This School type is a charter school within the St. Paul School District. It leaves room for open enrollment for students within the neighborhood and outside.

User

Children

Spaces to be educated

Teachers

Spaces to educate

Children's Parents / Guardians

Spaces to participate and encourage education

School Administrators

Spaces to ensure proper running of school

Janitors

Spaces to ensure other spaces are clean and presentable for education.

The Site

St. Paul, Minnesota

The site is to be found in the Payne-Phalen neighborhood of St. Paul, MN. The proposed site is just south of Lake Phalen. It is currently an empty lot at the junctions of Wheelock Parkway, East Shore Drive and Johnson Parkway, and Maryland Avenue and Johnson Parkway.

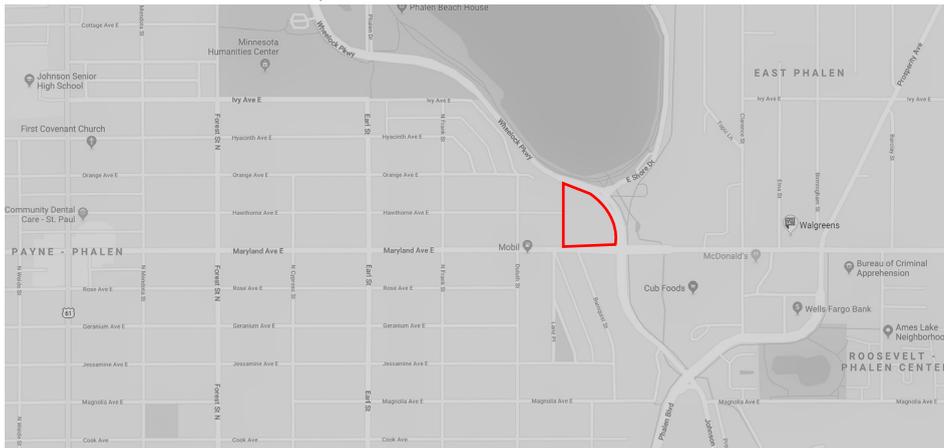


Figure 1 | Map of Site | Google Maps

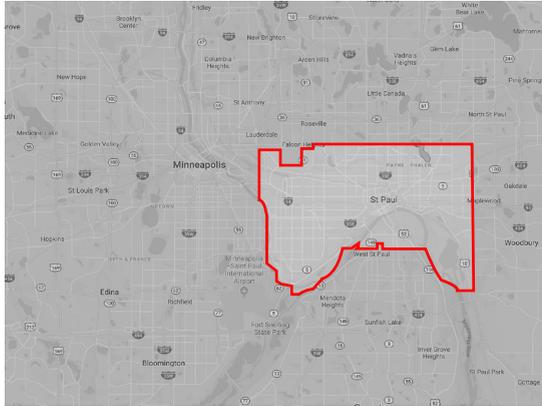


Figure 2 | Map of St. Paul | Google Maps



Figure 3 | Map of Payne-Phalen | Google Maps



Site Selection

This site was selected due to several key factors. First, the neighborhoods of St. Paul were evaluated for diversity. While race is not the only signifier of differing cultures, it is one of the most obvious and dividing. According to mncompass.org (n.d.), the population percentage by race is relatively even compared to other neighborhoods in the St. Paul-Minneapolis area. Age of the population is another important factor when selecting the site for a children's education center. mncompass.org also shows in Payne-Phalen Neighborhood, over a quarter of the population is under the age of 17.



Qualitative Aspects

The typical rectilinear grid of the city is interrupted by the curving shape of Lake Phalen. As the two opposing geometries meet, a small triangular shape is formed near the Southern end of the lake. The rounded extents of Wheelock Parkway curve off of lake Phalen and continue their organic arcs to meet with the regular framed streets later on.

The soft grassy field rolls through the site creating an inviting entrance from the surrounding housing to the park trails around Lake Phalen. Large deciduous trees line the busy streets giving the site a buffer as well as shading. The large billowing leaves create a sense of serenity and close sure from the city surrounding. Coniferous trees hide within the site behind their leafy cousins. The spiked needles create nooks of the site which are less inviting and space to stay clear of.



The surrounding houses are Sears Catalogue Kit house styles giving the neighborhood a lived in and loved on feel. It is an established area with pride in its appearance and community. Additionally, Lake Phalen has walking paths around its perimeter in tandem with its shoreline. These trails meet with the edge of the site giving opportunity to continue the extent and prized nature of the lake through or around the site and farther into the community.

Natural bodies of water are welcome additions to most sites and Lake Phalen is no different. Though not directly on the site, the lake still has many benefits to being nearby. First, it currently provides views of its calm waters or crashing waves from almost any point on the site. This connects people to nature and gives the illusion of not being in the middle of a large bustling city. The views have



created a natural orientation of paths near the site to lead towards the shores. The sound of water can also bring a sense of ambiance to the site. Of course, this depends on weather and season. A windier day will create more sounds from the water than a calm day or a winter day when the ice is frozen.

The existing vegetation acts as a barrier from most of the winds entering the site. While the trees lined up along the Northeast edge seem to be in place as a neat lining of Wheelock Parkway to keep the repetitious pseudo façade, they also protect the site from winds swooping in from the lake's open waters. Breezes are welcome on hot, sultry summer days, but the remainder of the year is frigid, so the built in protection is essential.

Climate

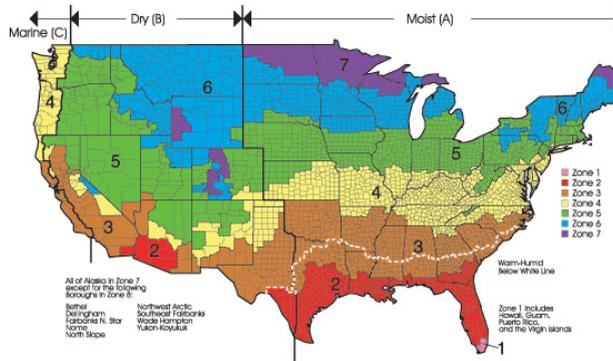


Figure 4 | Climate Map | Energy.gov

The site is located in Zone 6, Moist (A) region. It can be described as a cold-humid climate. Simply this means the region has extremely cold, snowy winters and hot, humid summers. The broad changes in seasons means the building will have to be equipped to handle both sides of extreme weather and the seasons between.

Sun Studies

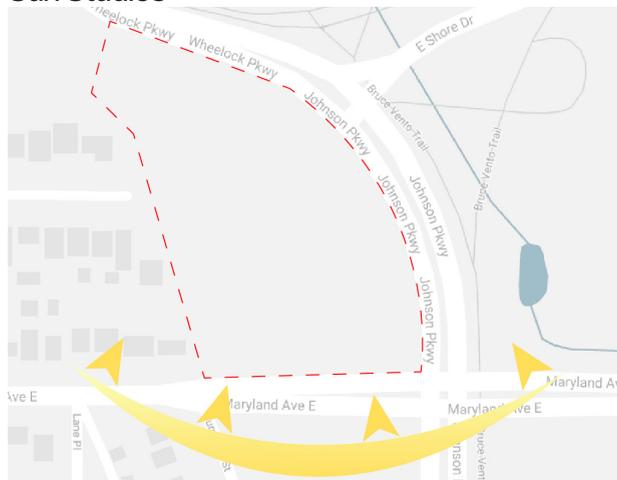


Figure 5 | Sun Studies Map

Due to the shape of the site, the strongest axis of the site runs in a Northwest-Southeast direction, so the most access to sunlight will be on the Southwest facade. Therefore, when deciding the spatial layout of the interior spaces, the spaces requiring the most light should be located on this side, while spaces requiring less or even lighting will be located closer to the North side. Additionally, this will need to be considered for building efficiency for heating and cooling of the building.

Wind Rose

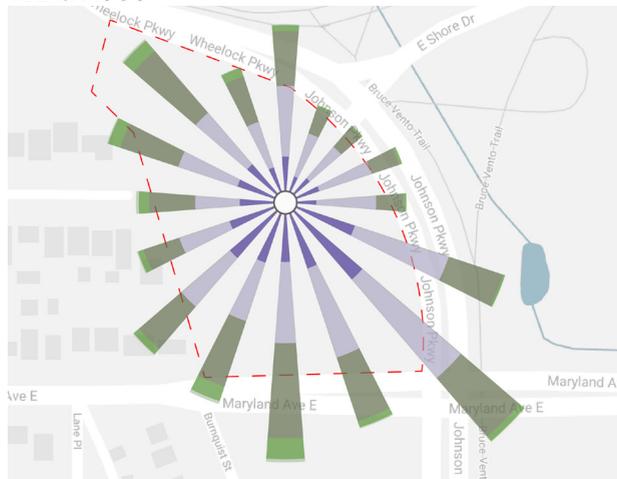


Figure 6 | Wind Rose Map

The Wind Rose map shows the greatest winds coming from the Northwest direction, however, there are strong winds coming from most directions except the Southwest. This is ideal, considering there is tree coverage around most of the site except the Southwest to shelter from winds. This will be useful when design to keep in mind building orientation: welcoming the summer winds from the Southeast to help cooling and turning away from winter winds from the Northwest to help with heating.

Soils

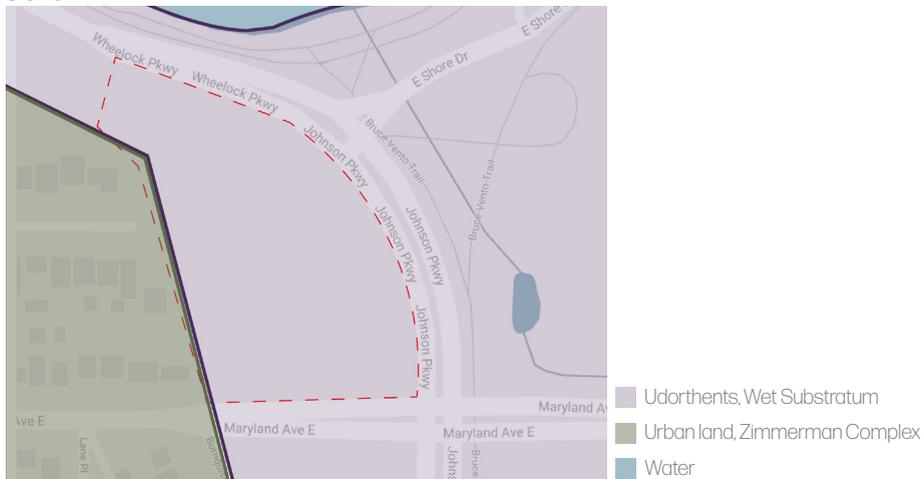


Figure 7 | Soils Map

The soil of the site is almost completely Udorthents, wet substratum soil. This means the top soil is infill material in a normally wet, depressed area (Steffen, 2001). Drainage will be especially important in this area to make sure the adjusted topsoil is not washed away and does not become a marsh-like consistency. Additional infill may be required to bring the site closer to road level and away from becoming a drainage ditch.

Site Vegetation



Figure 8 | Vegetation Map

The site is currently on open, grassy field. The North-East side is shielded by trees from the busy street. These trees provide a noise buffer from the busy street, which would likely need to be added had it not already been in place. The open field leaves much possibility of spaces to place a building.

Vehicle + Pedestrian Traffic

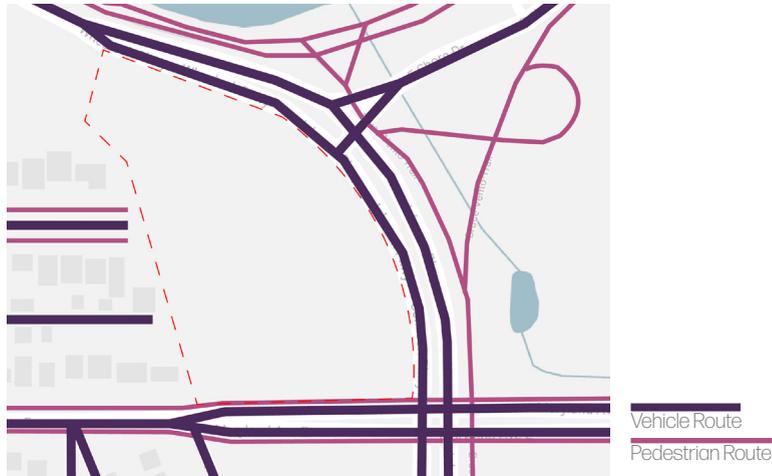


Figure 10 | Circulation Map

The site is surrounded by busy roads on its northeast and south boundaries. These roads include two busy intersections. One residential street and an alleyway end at the site's western boundary. The roads indicate easy access to the site, and many opportunities for site entrance/exits, but also bring up safety issues to pedestrians moving to and from the site. The northeast street only has pedestrian walkways on the side opposite to the site which leads into a larger path system around Lake Phalen. The southern street does include sidewalks on either side of the street. The pedestrian routes will aid in deciding where to place main entrances to the building so that it is easily connected to the cities, but also keeping safety in mind.

The Project Emphasis

1. The major emphasis of this project will focus on **specific spaces to facilitate transcultural understanding**. While it can and should be able to take place in most settings, a few major areas will be addressed as especially likely to encourage intersection between cultures.

Storytelling

This space will manifest where stories can be told and heard. A library is an example as it is filled with stories of similar and differing cultures. The quality of a space for storytelling is described by Christopher Alexander in *A Pattern Language : Towns, Buildings Construction* (1973) under the section detailing sitting circles.



Food Making/ Experiencing

People tend to be drawn in by foods of other cultures as it is a safe way to experience them. A space to teach and allow sampling of other foods will benefit children with not only greater cultural understanding, but valuable life skills as well.

Music/ Dancing

Music and dance are a prominent fixture in society, so creating a space or spaces to allow for the best quality of experience is crucial. This space can serve as a means to experience and teach about the origins of much of music and dance.

Creating Artifacts

Artistic expression is a simple and easy way for children to share their own culture with peers. This space must not only inspire creativity, but allow for it to be celebrated by others.



2. In creating spaces revolving around interaction, it is important to create details of these spaces that cater to those within the interaction. Encouraging **child scale** throughout the design will accentuate the personalization of space for the primary users which will encourage interactions with the building to increase learning and education. This personalized feeling will create more open minds to exploration of traditional and cultural education. These elements may include details such as child size tables, chairs, sinks, and other elements to be defined as beneficial in increasing transcultural understanding.



3. To show children that cultures and understanding of other cultures can exist outside of the educational centers walls, **connection to the surrounding community** is integral. This will be a way to fully immerse students into using transcultural understanding as a standard social practice. Site selection will be a large portion of this element as it allows the opportunity to choose an area that is a cross roads of multiple cultures. Through this can arise issues of safety when addressing how to allow community access while still providing a secure learning environment for children.

Goals for the Thesis Project

The Academic

Successfully create architecture to facilitate trans-cultural understanding.

Identify the type of educational facility which has the most opportunities to encounter transcultural understanding.

Establish an educational center accessible to children of all backgrounds around the chosen site.



The Professional

Improve technical skills in programs such as Revit and Photoshop.

Grow my ability to communicate my ideas in written and verbal formats.

The Personal

Understand and participate in situations where transcultural understanding happens.

Improve my time management skills.

Change the world!!!

Definition of Research Direction

Research of the unifying idea must take place through observation of spaces and how the architectural environment impacts Transcultural Understanding. Case Studies and precedent studies must be done to understand the scope of education centers and what different design decisions can offer an educational setting. Education is an evolving practice, so it must be evaluated in terms of what it was at the beginning and what it is heading towards. The site is to be visited and analyzed to determine the opportunities and challenges it has to offer. The other areas of research will inform the program of the project. Case studies and precedent studies will inform the fundamental requirements for education facilities while the research on the unifying idea will inform most of the project emphasis elements for the program.

Design Methodology

Case Studies and precedent studies will be an role within the research for the design. Of course, they will be used for research on the typology. Another layer will be added through the use of observational analysis of the unifying idea to inform the design. Using an ethnographic approach, different settings will be observed in their ability to facilitate transcultural understanding. Geertz (1973) describes the use of thick description as a means of fully observe a situation while recording all details observed, even if they seem irrelevant (pg 10).

Documentation of the Design Process

The design process will be documented in many ways. The documentation will help not only in keeping record of the work already done, but serve as a guide and a way to inform the design as it moves forward.

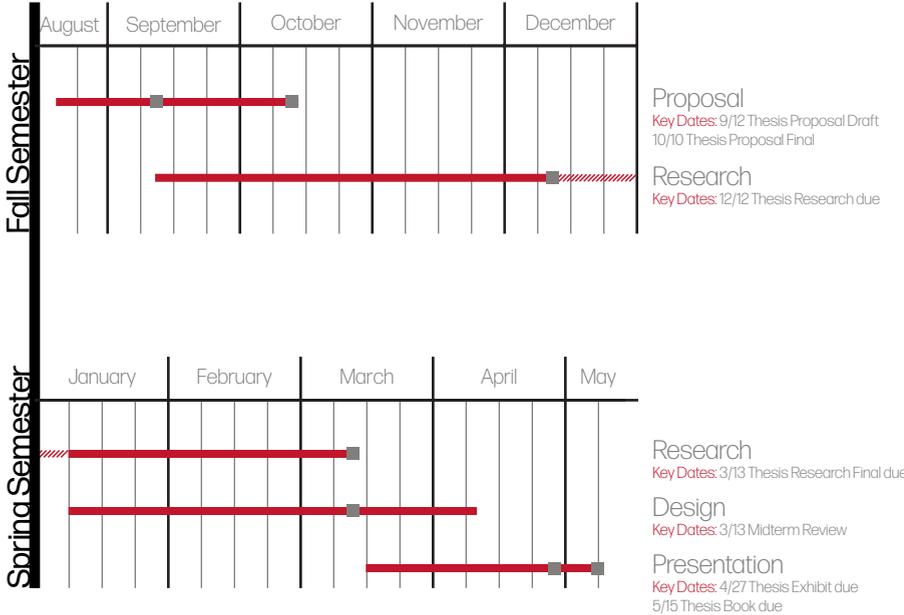
Mediums

- Hand sketches
- Hand modeling
- Digital modeling
- Written documentation

Digital Tools

- Revit
- Rhino
- Sketchup
- Adobe Photoshop
- Adobe Illustrator
- Adobe InDesign

Project Schedule



Results from Theoretical Premise Research

Literary Review

[A Pattern Language](#) by Christopher Alexander

Christopher Alexander puts together a kit of parts for designing spaces with people in mind in his book *A Pattern Language*. The parts create a language to assemble in any order desired or required. Over 250 different patterns are described as ways in which people use and react to common architectural spaces with each pattern being organized in the same format to give clear explanation and instruction. These patterns are extremely valuable when thinking about how people tend to use space, but this piece is also a bit dated when referencing some social norms and expectations of people which may have changed since publication in the 70s.



The sequence in which the patterns are listed are intentional and necessary for understanding the created language. It starts with large scale (towns), to intermediate scale (buildings), to small detail scale (construction). Each pattern down the list adds to what is above it to build into the larger scale patterns. I will briefly describe some settings for each scale and investigate how the patterns could be useful when creating spaces for trans-cultural understanding. The discussion will highlight the building nature of each pattern.

Patterns 1-94 are focused on elements of a town. It works in succession from the largest aspect of a city, Independent Regions, to the smallest before becoming individual buildings, Sleeping in Public. This section includes more abstract ideas of what patterns impact the physical realm of the city. Many of these patterns reference societal groups such as teenagers and master-apprentice relationships. It's important to honestly describe who is living within the city in more complex layers than what we normally think about. It is common to reference cities as filled with different age groups, cultural group, etc. and consider the relationships between those groups, but it is less common to consider how within the subcultural groups social dynamics work and impact how they use a city.

Alexander also explores the important physical



spaces within a city, like The Eccentric Nucleus, and Public Outdoor Room. These patterns seem like they would be a reaction to the social patterns, when in fact they work side by side to form one another. This furthers the author's intention to have each pattern build upon the last.

Patterns 95-204 are in reference to in and around buildings. Again, the social make up of who is in these buildings, particularly houses is examined. Many of the patterns have to do with different activities taking place within a home, almost as if to dissect each room piece by piece to create a collage that is the room, such as bedroom or kitchen. These patterns are important to reference for designing intimate interior spaces. One pattern, Intimacy Gradient discusses the importance of keeping the most public spaces in a house towards the entrance and the most private as far from the entrance as possible. This concept creates a fission between Town patterns and Building patterns.

Patterns 205-252 are considerations of how to mindfully construct details of a building to fit the typical human pattern. Much of this book takes a top down approach to designing for human patterns, but this section seems to be a god suggestion to approach design in the opposite manner.



If these specific details are not considered right away, it could change the trajectory of your spaces and impact them in a way that is not conducive to human patterns.

A Pattern Language provides crucial insight to how humans tend to use the spaces of their world. Starting from a broad view of towns and cities, building blocks are created to expose the many layers of patterns in buildings and how they are put together. These analyses of pattern elements will become a valuable source for designing and a reminder to always assure you are designing for how it will be used: by people.



Multiculturalism or Transculturalism: Towards a Cosmopolitan Citizenship by Donald Cuccioletta

In Donald Cuccioletta's article Multiculturalism or Transculturalism: Towards a Cosmopolitan Citizenship, he discusses the advantages and disadvantages of multiculturalism and transculturalism in Canada. This comes as an important resource for my theoretical premise as it gives deep insight to the differences of the two and why transculturalism is an important philosophy to incorporate into society today.

Cuccioletta take the stance that multiculturalism is a divisive tool that does not accomplish its goal of creating a more tight knit community. He explains how it has become a democratic process in Canada due to the 1971 Multiculturalism policy. What was put into place as a way of increasing



Canadian identity to immigrants only has created a larger divide and emphasizes an us versus the other ideation. His suggestion for changing the multicultural policy is to switch to a practice less rooted in emphasizing the differences between cultures.

An alternate solution to multiculturalism is transculturalism, according to Cuccioletta. Transculturalism attempts to eliminate the concept of the other in society by allowing people to relate with people from different cultures. This, he claims, is how to create the cosmopolitan citizen in Canada as someone shares social idealizations instead of political. Transculturalism should be a social issue, not a political one as multiculturalism has become.

According to Cuccioletta, multiculturalism is ingrained into society due to the presence of immigrants. This is especially present in countries like Canada or the US where the majority of its citizens are not original, genealogically, to the geographic area. Multiculturalism recognizes the differences and diversity of cultures and allows them to continue existing as their own identities. It negates movement towards assimilating to one culture. However, Cuccioletta seems to point the largest error of multiculturalism as stemming from enacting it as a political policy.

In 1971, Canada's prime minister promised a Multi



cultural policy would be put into place to recognize and respect diversity of citizens within the country. One of the more significant outcomes from the policy was the Canadian Multicultural Act in 1988. This Act declared that people were allowed to practice their desired religions and upkeep their cultures without fear of prosecution. The Canadian government hoped this Act would remove fear and increase mutual respect between different cultures. Cuccioletta believed this act only caused a greater divide between cultures due to solidifying barriers and cultural differences.

Throughout the article, several examples of how multiculturalism as a political policy has reinforced separation of cultures. Cuccioletta claims this is the source of “Ghetto nature” in cities around Canada. Multiculturalism relies on stereotypes, and people are being reduced to caricatures of their cultures. He identifies multiculturalism in Canada as a legalization of social interaction and the creation of hyphenated citizens (think describing someone as African-Canadian, or Serbian-Canadian). This shows people as being sectioned into increasingly further culture groups: greater social divisions are enacted.

Cuccioletta explains how transculturalism is a fairly new idea within the last century or so. Early



thoughts on transculturalism give it two phases occurring in parallel: deculturizing your identity of the past while understanding that you are currently a part of the other in society. It is stated that transculturalism expects one to relinquish their strong ties to a specific culture for a more universal culture of the present, but that seems counterproductive of nourishing cultures of origins. Cuccioletta seems to imply that cosmopolitan citizenship and transculturalism produces the same impact: recognizing oneself in the other. This is a fuzzy understand, though, as transculturalism is understood as a process while cosmopolitan citizenship seems more like an alliance for nationalism.

Cuccioletta interprets multiculturalism as a threat to national unity since it suggests people's identity to their culture of origin or heritage is greater than to their current residence by bringing about greater divisions between different cultural groups. He views the issue of culture should never have been brought into the political realms and has now lost contact with the actual people living within the cultures. Society should be able to fix cultural wounds without government interference. Cuccioletta argues for transculturalism to replace multicultural efforts so that Canadian Citizen subscribe to a singular shared culture. He misses the fact that cultures can remain separate entities while relating to one another.



Settings which Facilitate Transcultural Understanding

In order to create spaces which allow for transcultural understanding, I must first understand how architecture impacts people's interactions with unfamiliar cultures and determine which architectural elements help or hinder this process of creating understanding.

Transcultural Understanding is defined as seeing one's self in the other (Cuccioletta, 2002). This means finding aspects similar to, one's own culture in a different culture. Transculturalism is a tool for creating understanding, and therefore bridging cultural gaps. Transculturalism seeks to remove the us versus them attitude by eliminating the concept of the other.



There is an important distinction to make between the ideas of transculturalism and multiculturalism. They are parallel ideas, encouraging the mixing of cultures, but in differing applications. Multiculturalism seeks to identify and celebrate the differences of cultures. Often, multicultural is commonly used to discuss diversity. A culture's unique identity creates unique individuals within the culture and forms stronger bonds between members.

In the study, each setting has been categorized into one of five culture sharing applications: Storytelling, Food, Music and Dance, Market Place, and Artifacts. Additionally, each setting is given a Transcultural Understanding score to quantify its ability to create understanding. The score maximum is 45 with ranges 36-45 being good, 35-27 being moderate, and 26 and below being poor.

Storytelling

Public Library

This setting received a score of 39. It is easily accessible to the public due to its proximity to other busy areas. It offers a wide variety of gathering spaces within community rooms and large tables with appropriate seating. It has clearly marked entrances and large displays of transparent outer walls (windows) allowing people to view into the setting before entering. It negates culture sharing due to the majority of small cluster or singular seating due to typical use of a library (individual reading).



Figure 11 | Public Library

Hostel Community Kitchen

This setting has been given a score of 32. It appropriately creates spaces for people to gather and communicate in the several alcoves created by the various seating options: high top tables, bean bag clusters, and a counter top peninsula. It is restrictive in that it is not open to anyone but those staying at the hostel, and within the hostel it is far from the rooms, and lacks a line of sight into or out of the setting.



Figure 12 | Hostel Community Kitchen | Hotels-warsaw.net

Summer Camp Cabin

This setting received a score of 30. It provides a natural gathering space between the bunk beds, as well as a semi-sharing circle with the bunks themselves. The main hindrance of this setting is the exclusivity of access. While necessary for its use, only a select number of people will enter and communicate within the cabin each camp week.



Figure 13 | Summer Camp Cabin | Campcormorant.org

Food

Tea Tasting

This setting received a score of 36. This setting provided broken down spaces to interact with others present due to the multiple tables with limited number of seats available. While the room was open to the public, it was obscured from those wandering through creating a more intimate level of interpersonal communication within each table cluster.



Figure 14 | Tea Tasting

Hmong Village: Restaurants

This setting received a score of 41. It was easily accessible to people outside of the setting due to multiple open entrances on either end of the aisle. There are also sight line views into the food court area from other parts of the market. The counters of each restaurant give clear indication of where to go to order and receive food as well as bright signage for menus which are eye catching.



Figure 15 | Hmong Village: Restaurants

East African Restaurant

This setting received a score of 36. It provides large, pictorial menus to communicate the food being served and ordered. The open kitchen provided a sense of connectivity between customers and workers due to easier possibility of interaction. The setting had mostly covered windows leaving it ambiguous of whether it was open and gave no indication of what the inside would be like.



Figure 16 | Rugsan Restaurant

Music and Dance

Polka Music Band

This setting received a score of 34. Many people were able to gather and listen to the band play due to the number of tables in an area, but strangers were not compelled into conversation due to the size of the tables which allowed group separation. The amount of people seemed to create more anonymity between festivalgoers. The space in front of the stage was too tight compared to the seating and number of people. It dissuaded people from dancing in front of such a large crowd. The stage at front and center did create a focal point for attendees.



Figure 17 | Polka Band

Indian Dance Demonstration

This setting received a score of 34. The orientation surrounds the stage allowed for many people to view the performance from directly within the setting space, and outside of it. The depressed nature of the space allowed for sight views into the performance. The stage created a barrier for interaction other than observation between performers and audience.



Figure 18 | Indian Dance Demonstration

Silent Disco

This setting received a score of 32. The tight spaces of the Metromover created intimate links between participants. Personal space bubbles became nonexistent. People become both more connected to those around them when being confined to such a tight space with other and they become one in a mass in the context as well. There is high visibility of the setting as the track takes people around downtown Miami and other densely populated neighborhoods.



Figure 19 | Silent Disco | Monica McGivern

Market Place

Red River Farmer's Market

This setting received a score of 42. The chosen sight of the market is in the heart of downtown and easily visible from Broadway. The temporary quality of the market gives a sense of urgency to visit the setting and participate in it. The booths themselves are small creating intimate spaces for interactions between shop owners and shoppers. The aisles of the market give a clear sense of direction of how to navigate the setting and where to find certain goods.



Figure 20 | Red River Farmer's Market

Asian & American Market

This setting received a score of 36. The narrow aisle creates situations where shoppers must interact with each other, but these instances are quick and without substance. The shelves display a multitude of culture specific goods. The Market is located on a busy street, with clear signage. There was a lack of opportunity and location to discuss products unfamiliar to shoppers.



Figure 21 | Asian & American Market

Hmong Village: Shops

This setting received a score of 38. Open shops are overflowing with the goods they are selling often with bright colors and interesting texture. Cash registers were often located in a back corner, causing shoppers to have to go through the entire shop to find it, and experiencing more of the goods available. When some of the shops are closed, aisles start to feel like a cold storage unit facility instead of the vibrant market it is when open.



Figure 22 | Hmong Village: Shops

Artifacts

Ukrainian Egg Decorating

This setting received a score of 34. The intimacy of a single table for the setting created meaningful conversation about the artifact and how/why it is created. A limited number of people can surround the table at once, so it was not widely shared, but was deeply understood once visited. It included a small sign to indicate the demonstration taking place but was not obvious, especially when people were already at the table.



Figure 23 | Ukrainian Egg Decorating

Craft Fair

This setting received a score of 39. Similar to the Red River Farmer's Market, this setting thrives due to its temporary status. More people are visiting the setting before the event is over. The booths of each craft display the cultural artifacts which sparks interest to attendees. The booths are only large enough for a few people to surround it at once, so more meaningful interactions can take place over the artifacts. The space for the Craft Fair was well defined while being open to the remainder of the building, so visitors present for the venue rather than the event automatically engage with the artifacts.



Figure 24 | Unglued Craft Fair | [Instagram.com/ungluedmarket](https://www.instagram.com/ungluedmarket)

Art Gallery

This setting received a score of 25. There were vast sight lines into the space, as well as a transparent entry space allowing people to preview the space before entering. The large amounts of space allow for gathering, but the purpose of the setting negated the gesture. Each art piece created micro-spaces for viewing which allowed people to isolate their experiences from one another.



Figure 25 | Memorial Union Gallery

Ama'r Children's Culture House

Dorte Mandrup Arkitekter



Figure 26 | Ama'r Children's House | Jens Lindhe

Location

Copenhagen, Denmark

Typology

Kindergarten

Size

11680 sf

Major Design Elements

The facade and roof share the same articulation of an aluminum skin punctured by square window openings. The interior organization is described as a mountain village, according to Sanchez (2013), to connect spaces through interactive and interesting visual and physical experiences. The building incorporates many strategies to increase sustainability. It has a highly insulated envelope, double glazed windows, artificial lighting with motion and light sensors, and skylights (Sanchez, 2013).



Figure 27 | Stairway | Jens Lindhe



Figure 28 | Climbing Wall | Torben Eskerod



Figure 29 | Play | Torben Eskerod



Figure 30 | Building Section | | Dorte Mandrup Arkitekter

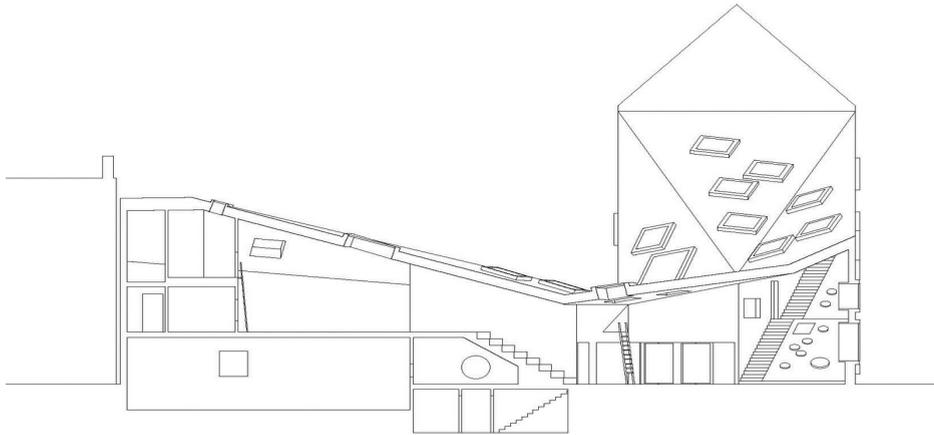


Figure 31 | Building Section | | Dorte Mandrup Arkitekter

The sections illustrate the idea of a mountain village organization. The shows the many changing levels with different slopes to climb, small pocket spaces and large spaces alike.

Unique Design Process

According to architonic.com (2016), From 2006 - 2007, the architect held a series of workshops in which children and their parents would draw, model and describe their view on different topics such as experience and adventure with space, the ideal play to play, and places with importance to the individual. Through the workshop, the firms was able to identify nine principles for their design.

1. **The beach:** Flexible spaces situated tandem to one another
2. **Bubbles:** Space to create room for random, unpredictable events or gatherings
3. **The attentive eye:** Surfaces which inspire children to play
4. **Changing skin: Surface 1:** Flexible spaces usable for many functions
5. **Changing skin: Surface 2:** Furnishing which spark creativity
6. **Changing skin: Surface 3:** unpredictable or unexpected elements to the architecture
7. **The fantastic space 1:** The combination of spaces through the use of complex forms
8. **The fantastic space 2:** Open or partially open spaces which are unpredictable and inspiring
9. **Being alone with someone:** Areas for small groups to play which are semi contained



Figure 32 | Grand Stair | Jens Lindhe

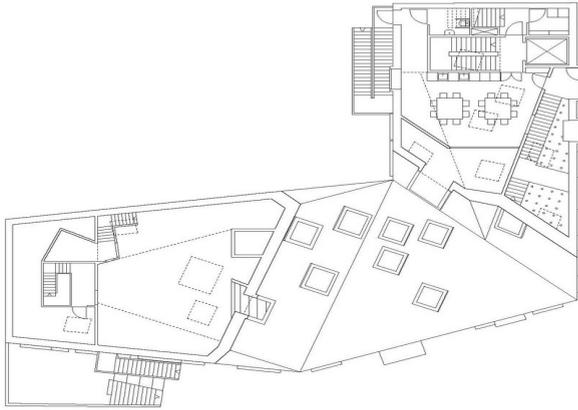


Figure 33 | Second Floor | Dorte Mandrup Arkitekter

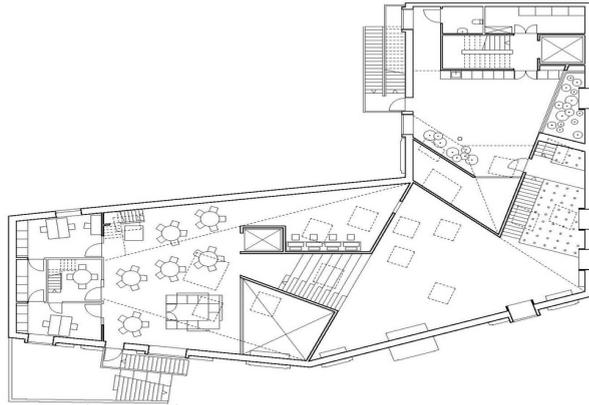


Figure 34 | First Floor | Dorte Mandrup Arkitekter

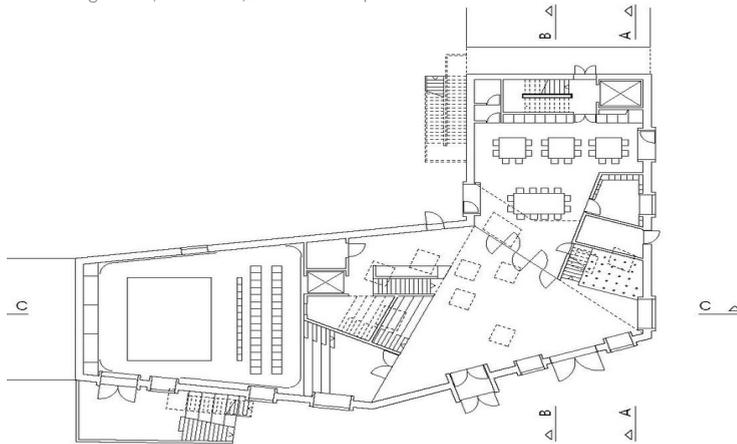


Figure 35 | Ground Floor | Dorte Mandrup Arkitekter



Figure 36 | Exterior Articulation | Jens Lindhe

Wish School

Garoa



Figure 37 | Wish School | Pedro Napolitano Prata

Location

Tatuapé, Brazil

Typology

Adaptive Reuse / Elementary School

Size

12550 sf

Major Design Elements

The main idea behind the design was to create classrooms which serve as a point of support for students' education instead of a container of it (Tapia, 2013). Space have been created to be multi functional and adaptive. There are no traditional hallways; interior walls can move to create greater spaces to learn outside of the traditionally define classroom.



Figure 38 | Closed Hallway | Pedro Napolitano Prata



Figure 39 | Open Hallway | Pedro Napolitano Prata

Pedagogical environments continues the idea of learning without bounds because each surface or space generates an opportunity for learning through how children interact with each element. Configuring these space also stimulates the mind when space delineates from the typical boxed lines that rules much of the man made world. The organization of space allow for complex cuts through spaces which permit natural light into the innermost spaces of the building (Tapia, 2013). These areas of flow are also used and visual and physical navigation through the space. This increases the ambiguity of space definition as does the moving walls.

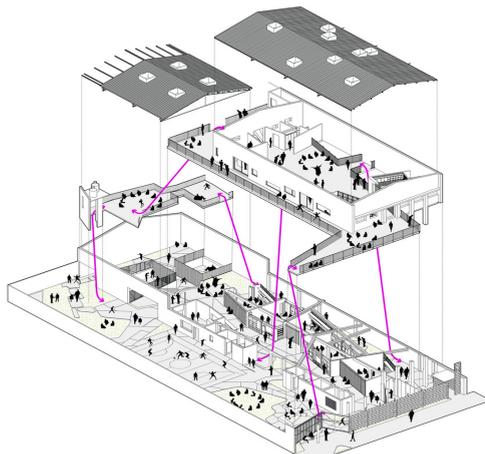


Figure 40 | Exploded Axonometric | Garoa



Figure 41 | Translucent Walls | Pedro Napolitano Prata

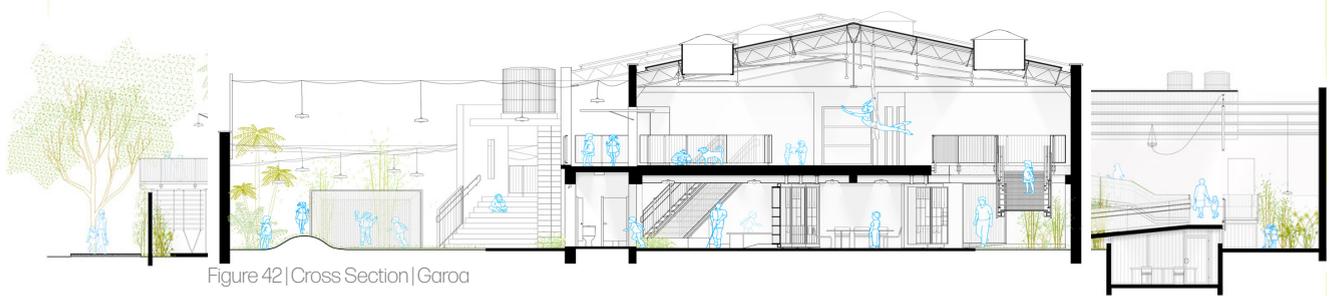


Figure 42 | Cross Section | Garoa

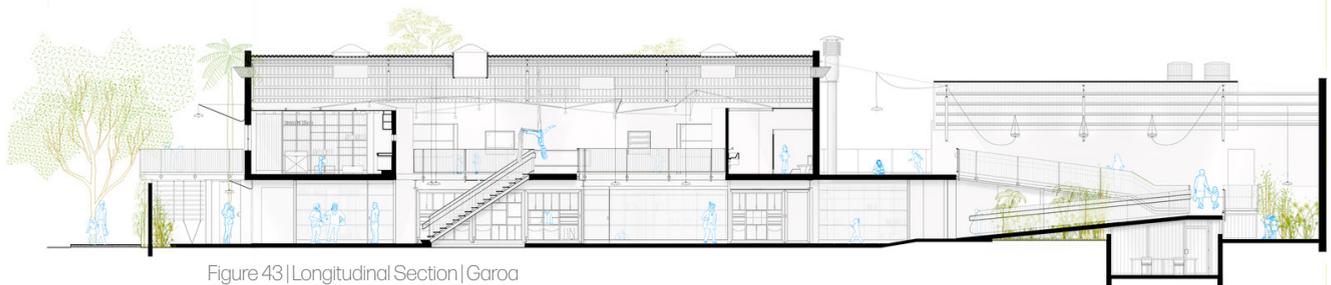


Figure 43 | Longitudinal Section | Garoa

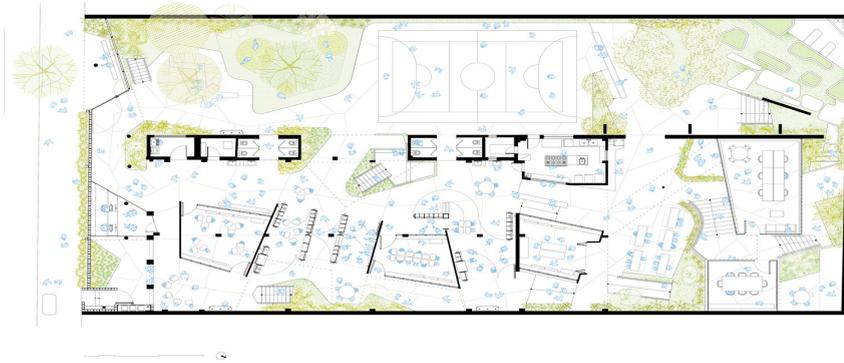


Figure 44 | Ground Floor | Garoa

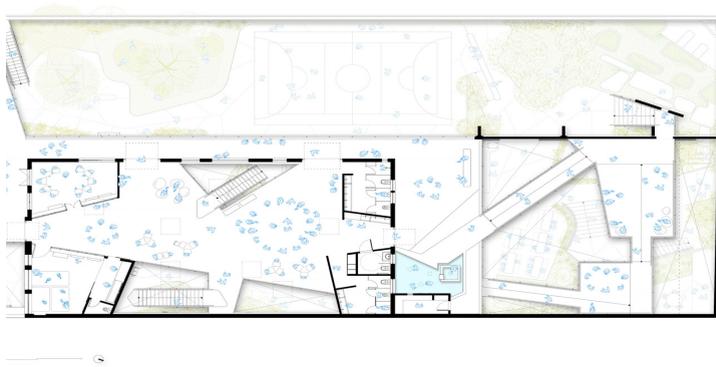


Figure 45 | Second Floor | Garoa



Figure 46 | Gymnasium | Pedro Napolitano Prata

Family Box

Crossboundaries



Figure 32 | Family Box | Chaoying Yang

Location

Beijing, China

Typology

Indoor Playground / Kindergarten

Size

24760 sf

Major Design Elements

A main design concern was how to maintain both child and parent scale (Vera, 2019). The solution was to design rooms as individual floating boxes parallel to one another to create different environments. These between floor spaces utilize small openings to allow parents to look in and maintain connection to their children as they play. The program includes spaces for children to learn valuable social skills and life skills with the help of their parents through play with spaces such as Kitchen, supermarket, and music and dance room (Vera, 2019).



Figure 48 | Child Scale | Chaoying Yang



Figure 49 | Play Market | Chaoying Yang

The exterior articulation is derived from a child's drawing. Starting at most obscured, the glass uses two sizes of squares to make up the child's drawing to the point of transparency. The entire exterior includes the squares which leaves soft, shadows and complete access to natural light. The glass facade also can as a sort of signage to indicate the buildings use as related to children from the outside perspective.

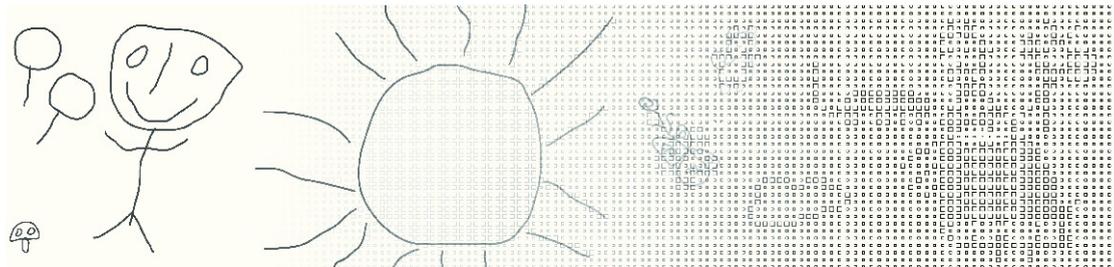


Figure 50 | Facade Diagram | Chaoying Yang

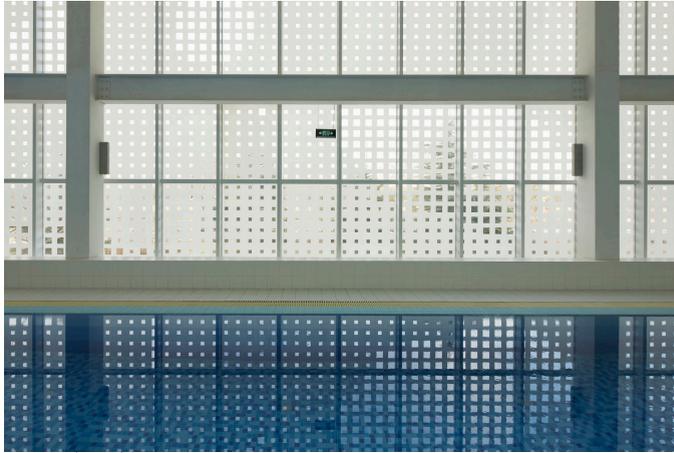


Figure 51 | Pool | Chaoying Yang



Figure 52 | Shadows I | Chaoying Yang



Figure 56 | Gathering Space | Pedro Napolitano Prata

Children's Library Discovery Center

1100 Architect



Figure 57 | Children's Library Discovery Center | Micheal Moran -
ottoarchive

Location

Jamaica, NY

Typology

Library

Size

14000 sf

Major Design Elements

This building is an addition to the existing Queens Central Library. It is focused toward children and toddlers with a play sections, reading lounges and cyber centers between its two floors (Cifuentes, 2018). The stairs bridge between the two spaces and is treated as a sculptural element opposite the entrance. While scale child scale isn't a driving force to the design, the articulation of the acoustic plaster ceilings bring down the scale to a more personal level.

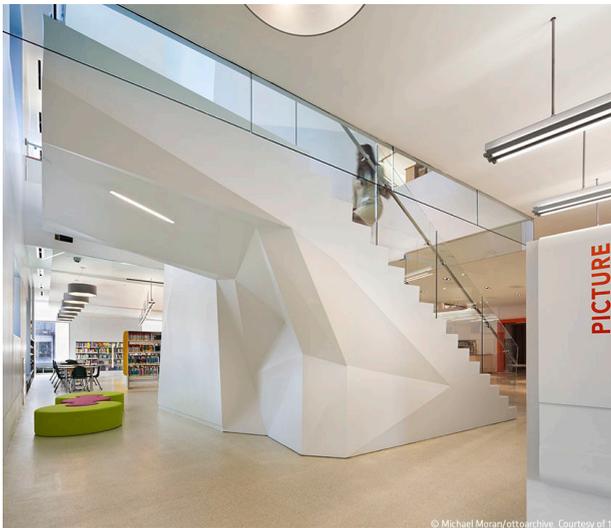


Figure 58 | Sculpture Stair | Micheal Moran - ottoarchive

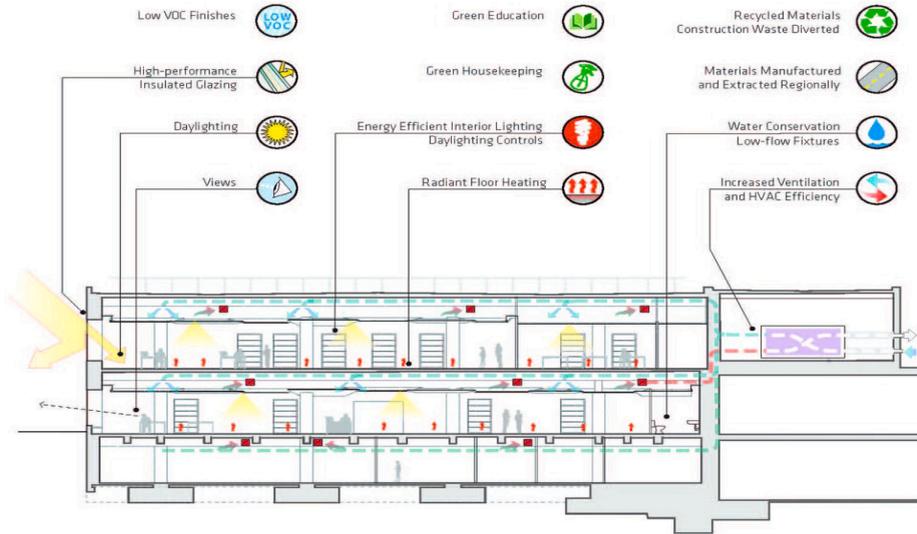


Figure 59 | Building Section | 1100 Architect

The building has obtained LEED Gold Certification according to 1100architect.com (2018). Strategies incorporated to increase sustainability are radiant floor heating, high-performance glazing, and daylight access.

The facade articulation impacts several areas of the building. It features four types of glass: Transparent, translucent, opaque, and textured (Cifuentes, 2018). The result is a glowing box to serve as a guide to the community to entice member to come an enjoy the library as a destination. The thickness of the facade, depending on glass transparency, create small intimate nooks for readers and alike.



Figure 60 | Nook | Micheal Moran - ottoarchive



Figure 61 | Facade | Micheal Moran - ottoarchive



Figure 62 | Second Floor | 1100 Architect



Figure 63 | First Floor | 1100 Architect

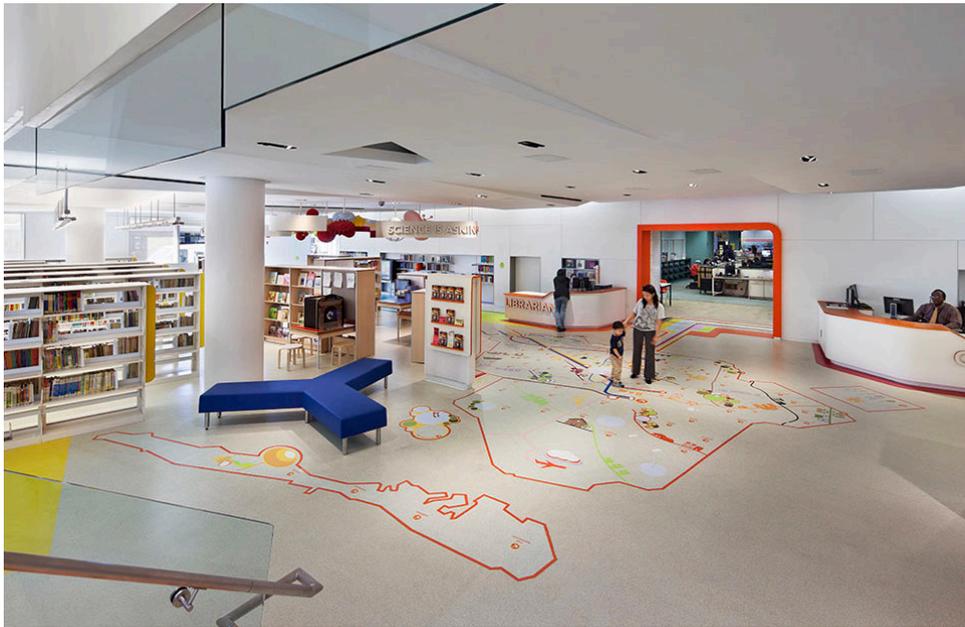


Figure 64 | Entrance | Micheal Moran - ottoarchive

Precedent Research Summary

These studies have brought to light many design decisions which create more thoughtful, useful, and innovative spaces to encourage and facilitate children's education. Using child scale personalizes and increases access to the primary users of the space. More and interesting spaces can be defined specifically for children reducing the typical size of objects and spaces. Flexibility in of rooms and spaces increases the scope of where learning can take place by taking away barriers of learning spaces. Additionally, unexpected articulations of space can spark creativity and organize a buildings program in unique ways.

Project Justification

Increasingly prevalent in society today is the growing amount of cultures which we are surrounded. While, for the most part, we have learned to coexist with cultures different from our own, there is still an ingrown distrust for those whom we perceive as different from ourselves. This distrust can then manifest as hatred and prejudice. I am seeking to create a place to allow cultures to learn about cultures and people to learn about people. For people to live with and alongside those they are unfamiliar, it is imperative to have growth in understanding. It's not that everyone must agree or learn to do and think in the same way, but to create understanding is to create an ingrained depth of respect for your friends, neighbors, coworkers, fellow citizens, and other humans.

Architecture has the innate ability to control the environment in which it creates, so it presents



itself as a tool creating desired outcomes. This can be anything from mood, to feeling, to use, and so on. A major activity which almost all architecture houses is interpersonal interaction which is a way which people learn from one another. Transcultural understanding is a way people learn about cultures through aspects similar in their own. This gain of awareness takes place often, but what is left to be defined is how the architecture can facilitate the interactions leading to wider understanding of cultures. This thesis seeks to learn how transcultural supporting elements can be defined and implemented into buildings.

While people can be taught new ways of thinking as adults, it is much easier for children to adapt to new social structures. Throughout their education, they are also learning social patterns as well. If Transcultural Understanding is taught to them early in their social education, it is likely to stick in adulthood as well. If the place in which they learn supports and encourages them to learn about and understand people who are different from them, it will become a normal social practice in their day to day life. If a generation of children grow up thinking this way, eventually they will grow to be the adults who then continue to pass this social process on. Eventually, the world could be full of people open to understanding and respecting others for their differences.

Historical, Social, and Cultural Context of the Thesis

Historic Context

Throughout history, people have been sharing aspects of culture with one another in order to advance or change their society. This could have been intentional exploration of new places and ideas, claiming stake over specific lands, or even creating conflict out of fear of unfamiliar cultures. While these examples are in no way an exhaustive list, they give an idea of how culture was shared and often feared in history.



114 BCE The Silk Road was an important route of trade between Europe and China until around 1450 AD. The route brought mostly silk from the east to west, but also transported goods such as spices, tea and paper, and ideas on politics, sciences and more. This was truly the first instant of large parts of the globe sharing cultural elements to better and change their societies.





1096 AD

The crusades were a series of eight wars fought between Christian and Muslims in the 9th to 11th centuries. These wars between the Byzantine Empire and the Islamic Empire were for control over land considered holy by both groups. These wars were notoriously bloody and ended in western defeat. To many in the Middle East, conflict taking place there today is viewed as modern crusades.



1492 AD

It is well known that the Americas were first “discovered” by Christopher Columbus in 1492, and the subsequent colonization of the New World took place in years following. This displaced and forced suppression upon the Natives already living and thriving here. The Natives were viewed as savages and were killed, banished or forced to assimilate with the brought in European culture normatives.



1939AD

In World War II, the Jews were persecuted by the Nazis and murdered by the millions. This horrific event happened because the Nazis decided to deem Jewish people as less than people, and blaming them for economic and social problems in Germany at the time. This senseless extinction of people happened due to fear and ignorance.



1991AD

The World Wide Web was launched for public use, and the way in which people have communicated has never been the same. Granted, the use of the Internet today took several years to develop into what we know as it now. At the touch of our finger tips, the Internet has allowed for us to communicate with other from all over the world as well as an endless supply of knowledge about cultures of yesterday and today. There has never been as quick an opportunity for knowledge of cultures to be shared.



Social Context

In society today there is a large amount of tension between cultures. This comes from a multitude of sources past and present. As shown in the history section, cultural tension is not a new phenomenon by any means, but through the spreadability of media through technology, biased news and propaganda is relayed to the population quicker than ever before causing heightened amounts of tension. Especially in years leading up to a presidential election, many of the hot button issues are about matters which are culturally dependent.

A big issue causing animosity between Americans is immigration. Though our country is built on people leaving their home to receive the promise of the American Dream, people have taken issue with people doing the same now. People are arriving in the U.S. in search of opportunity to better themselves and their families, but citizens are uncomfortable with new cultures being brought in with them. It is feared that exposure to different cultures will transform ours into the culture being left behind.



Another example is the stigma between wealth classes. Growing up in a well-to-do family is a different experience to growing up in a poor family. There are more opportunities for children of the wealthy or middle class, and an ingrained attitude toward those without these same opportunities has formed. Much of it has to do with people and families who receive government assistance for a variety of reasons. These people are viewed as lazy and freeloaders to some, while all they are receiving is enough to get by. This is due to the understanding of equality versus equity. Where equality means just giving everyone the same opportunities, equity recognizes the setbacks some may have and brings them up to the same starting level as the rest. Giving people similar opportunity also provides the chance to learn more about the people at the different starting points.

Culture is constantly changing. There is not way to stop change: that is what happens when new ideas are shared and a society advances. This country is one of cultural diffusion, so why does creating a more diversely rich culture pose a threat to our way of life? If culture stayed stagnant, people would still be living in cities like the first ever civilization. It is human nature to adapt and change, so welcome it.



Cultural Context

The United States is considered a melting pot of cultures, and this is largely true. Much of what we consider American culture is a composite of cultural elements of other places. Considering the vast majority of the population are or are descendants of immigrants this is not surprising. Some aspects are deeply ingrained into our culture, while others are novelty in sense while still expected to be found in every city.

While we have no official language, the most predominantly spoken language is English due to the original colonization by Brittan; however, as we increase the number of immigrants entering the U.S., Spanish is becoming increasingly prevalent, especially in southern states. In many large cities, neighborhoods can be found with identities surrounding the inhabitant's origins. Chinatown in New York has the largest number of people of Chinese descent in the western hemisphere. It has created a community rich in Chinese tradition. This is especially popular with tourists visiting looking for a plate of authentic Chinese food.

The U.S. has, like many places in the world, adopted the



German concept of Kindergarten as a preliminary step in early childhood education. This education level focuses on children under 6 years old and uses children's play and exploration to create a transitional period for children to become accustomed to school versus home. In the U.S. we have adapted the program to teach children the basics of the English, mathematics and social skills (Olito, 2019).

An architectural example of incorporating other cultures to enhance our own is the work of Frank Lloyd Wright. After visiting Japan in 1905, much of his work became heavily influenced by their design principles for buildings and landscapes. It's ironic as the prairie style of Wright is considered one of the most All-American architectural styles.

Performance Criteria for the Thesis Project

1. **Space Allocation**

The spaces included in the final design must be conducive to Children's basic education. Required spaces will be sampled from case studies and personal knowledge of what types of spaces are needed for a child's education. The project will be judged based on fulfilling these basic spaces and how architectural elements from my study about trans-cultural understanding in specific spaces are incorporated.

2. **Energy Consumption**

While sustainability is not a key element of my final design, it still is important to incorporate into the design. Due to the extreme seasonal changes, the building will benefit from incorporating passive heating and cooling elements into the design. Additionally, due to the orientation of the likely axis of the building on the site, including natural daylighting as a design feature will be possible.



3. Environmental Performance

Again, while not a primary focus of my thesis, it is still important to consider the environmental performance implications of the project. The building should include locally sourced materials and materials with low embodied energy when possible.

4. Behavioral Performance

This is a critical aspect to my thesis as one of the main goals is to inspire intercultural interactions between people. This ties back into the space allocation aspect of the project and how well executed architectural elements which facilitate Transcultural Understanding are incorporated into the spaces. Additionally, it is important that the spaces are conducive to children learning since the building typology is a children's education center.



6. Psychological Impact

Another important aspect of my thesis is the desired psychological impact. As discussed, Transcultural Understanding is a social process which takes place between people. This thesis should instilling transcultural understanding as a regular act in everyday life through the introduction and encouragement in one's childhood education setting.

7. Environmental Impact

This criteria goes hand in hand with Energy Consumption and Environmental Performance. Incorporating systems and strategies mentioned in the two previous categories will minimize the environmental footprint of the building.



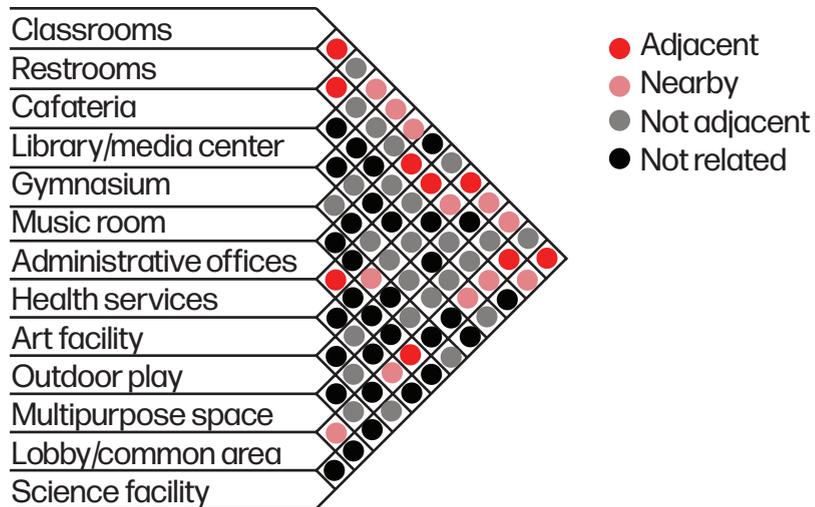
8. Code Compliance

The building will follow all codes and meet ADA standards to ensure a safe and accessible building to all.

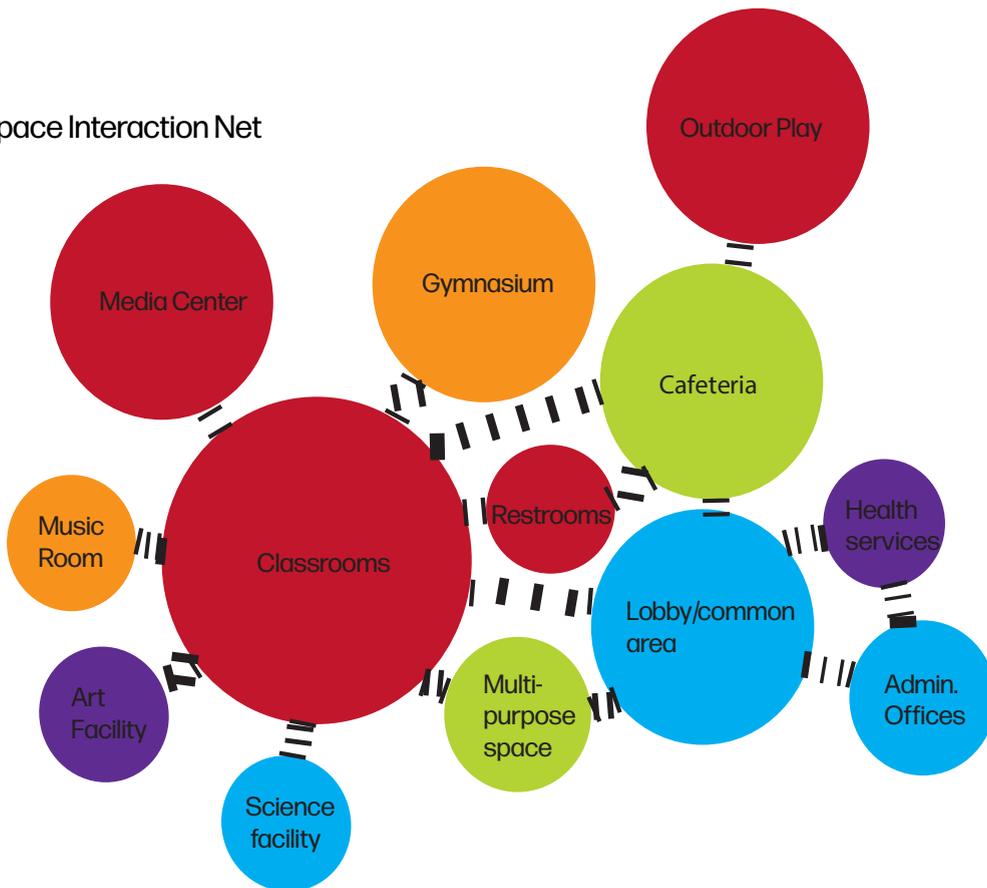
9. Cost

The cost of the building will be considered when picking materials and construction systems. Again, locally sourced materials will be one strategy to keep costs affordable. Additionally, lower cost in the building would likely indicate lower cost for children to attend the school which allows for a greater amount of diversity in terms of socioeconomics to attend the school.

Space Interaction Matrix



Space Interaction Net



Process Documentation

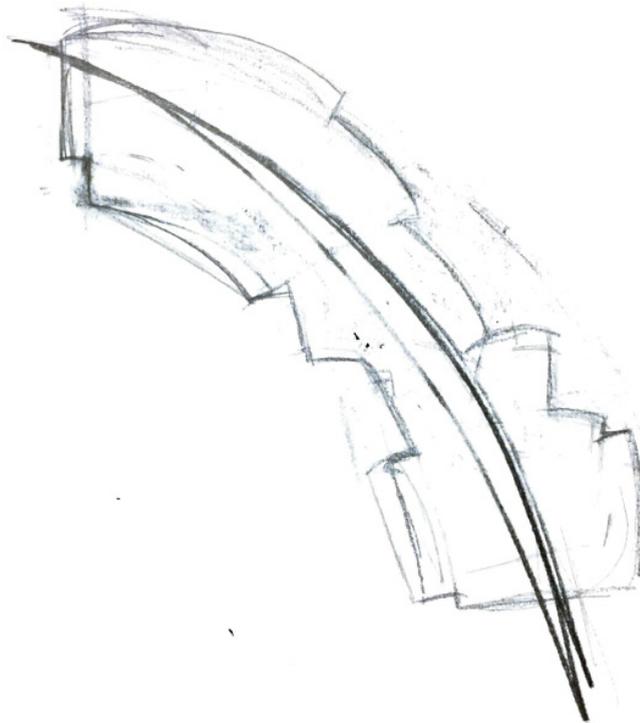
Programmatic Spaces and the Five Methods of Transcultural Understanding

Five main methods are used to gain transcultural understanding: Storytelling, Music and Dance, Food, Marketplace, and Artifacts. Storytelling is wide in how it can be enacted. It can be telling of culture specific stories, or simply a personal story which include culture specific knowledge or information. Food references the physical food which a culture eats, how it is prepared, and the context in which it is consumed. Music and Dance are paired as they tend to be reliant on each other. It can be either for ceremony or entertainment. Marketplace is where goods, services, and ideas are exchanged and commerce takes place. Artifacts are anything from art, to clothing, to religious objects, and more. These are represented throughout the project using the colors found in this diagram to signify spaces where each take place.

Each space of the building, even if they seemed without much cultural uniqueness is included within the Venn Diagram. This is where the method overlap begins to be apparent. Almost none of these spaces belong to a single method. Spaces were originally chosen to fit and fulfill the requirement for each method, only to realize later on that there is not much separation.



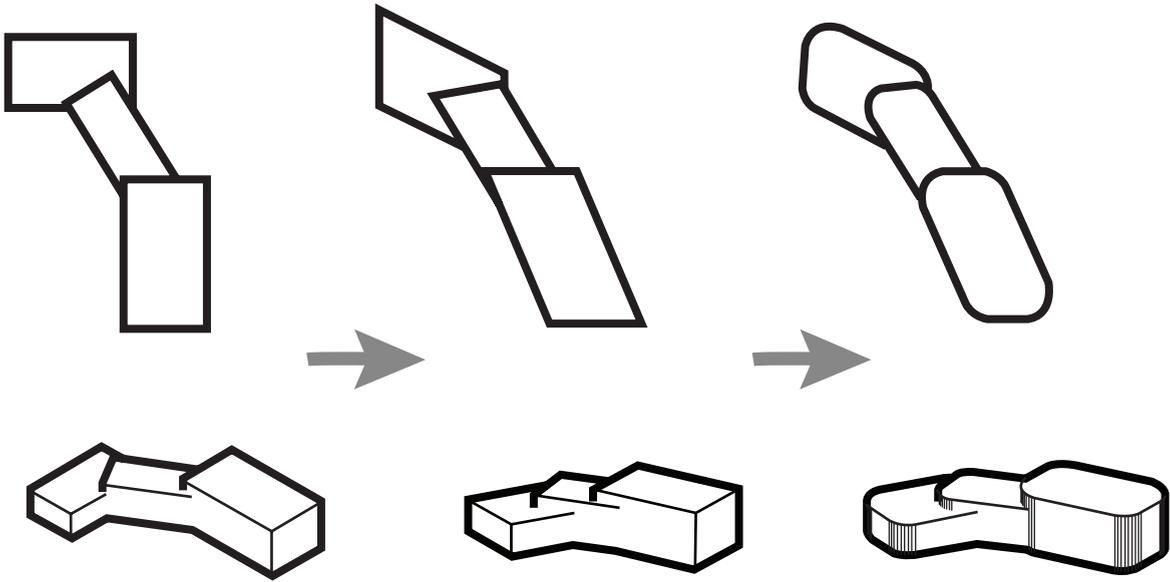
■ Process Drawings/ Building Iterations





Form Development

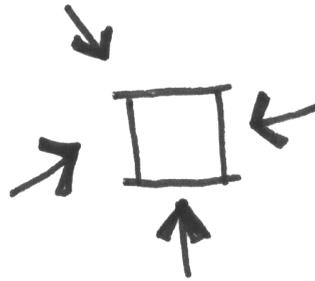
The form of the building is heavily influenced by the site. The three masses are rotated to follow the curve along Wheelock Parkway. Each of the three masses were converted into parallelograms to better fit the existing geometries from the surrounding streets. Then, the corners were rounded off to mimic the curves from Wheelock Parkway and Lake Phalen. Finally, each mass was stepped upwards, creating a crescendo away from the lake.



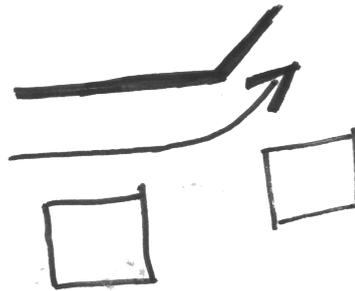
Transcultural Interaction Patterns

The main conclusions drawn were simple. Three basic ideas were found in most of the settings, and the more prevalent they were, the better the score was. Gathering points include tables, seating, and small slightly confined spaces to create small group settings with the optimal amount of people for intercultural interactions around four people. Key elements are needing an anchor point to draw attention through physical elements to keep the space as at least partially contained such as walls, columns, and windows. It is of high importance that spaces having loose, informal arrangements. The next Transcultural Interaction Pattern is Suggested Pathways which intentionally lead people through a space or to a desired point. When one approaches a landscape, they scan for a goal to approach and try to take the most direct route, often cutting corners. Additionally, intermediate goals are identified throughout the journey to keep on the most direct path. The final Transcultural Interaction Pattern is Area Distinction which gives users a clear idea of what will happen in a space or what it will be like. The geometries of space impact both physical use as well mental use of a space. Too Rigid and too organic geometries don't make sense to the user and spaces should be created while being aware of what is on the other side of the wall.

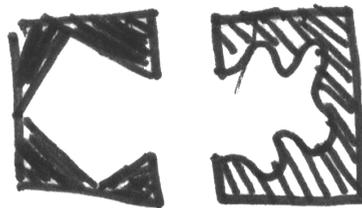
Gathering Points



Suggested Pathways



Area Distinction



Performance Analysis

Response to Site, Precedent Research, Goals, and Project Emphasis

The school has two levels of educational space, and one basement level for mechanical and additional storage which is not pictured. The curve motif is continued inside with several sweeping curves defining spaces. The north end of the building has more large gathering spaces including gymnasium, music room, cafeteria, and auditorium. The south end is two stacked levels of individual classroom sized spaces and smaller breakout spaces. As seen on the plan, there are pops and ribbons of color. These are derived from two of the Transcultural Interaction Patterns: Suggested Pathways and area distinction. The flowing ribbons on the floor are corresponding to the colors of the Five method Venn Diagram. They lead students through the building and give indication of where certain types of space are found. Children can be informed they are about to head to music class and know they are to follow the orange line until they reach the music room. The ribbons flow whimsically and softly through the hallways as they cross over one another. The pops of color around the outer edges are actually circular windows of varying sizes. Again each color indicates what is happening within the space from the outside and creates a level of transparency from outside in through a colorful and playful facade. Inside, many of these windows are wide and low enough for children to sit in.




 Site Plan | Climate Response


 Summer Winds

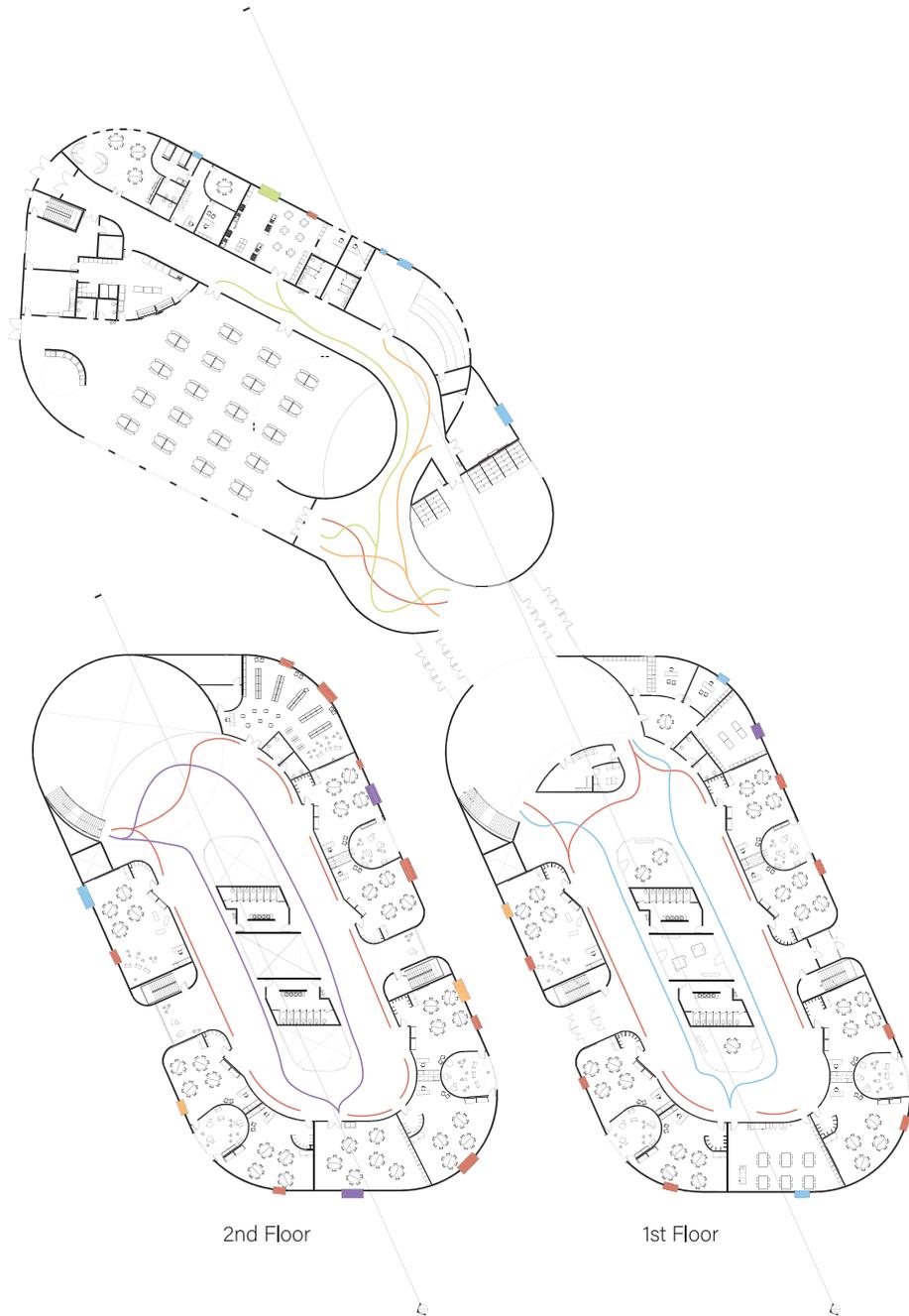

 Winter Winds


 Sun Path



Site Plan | Access to Site

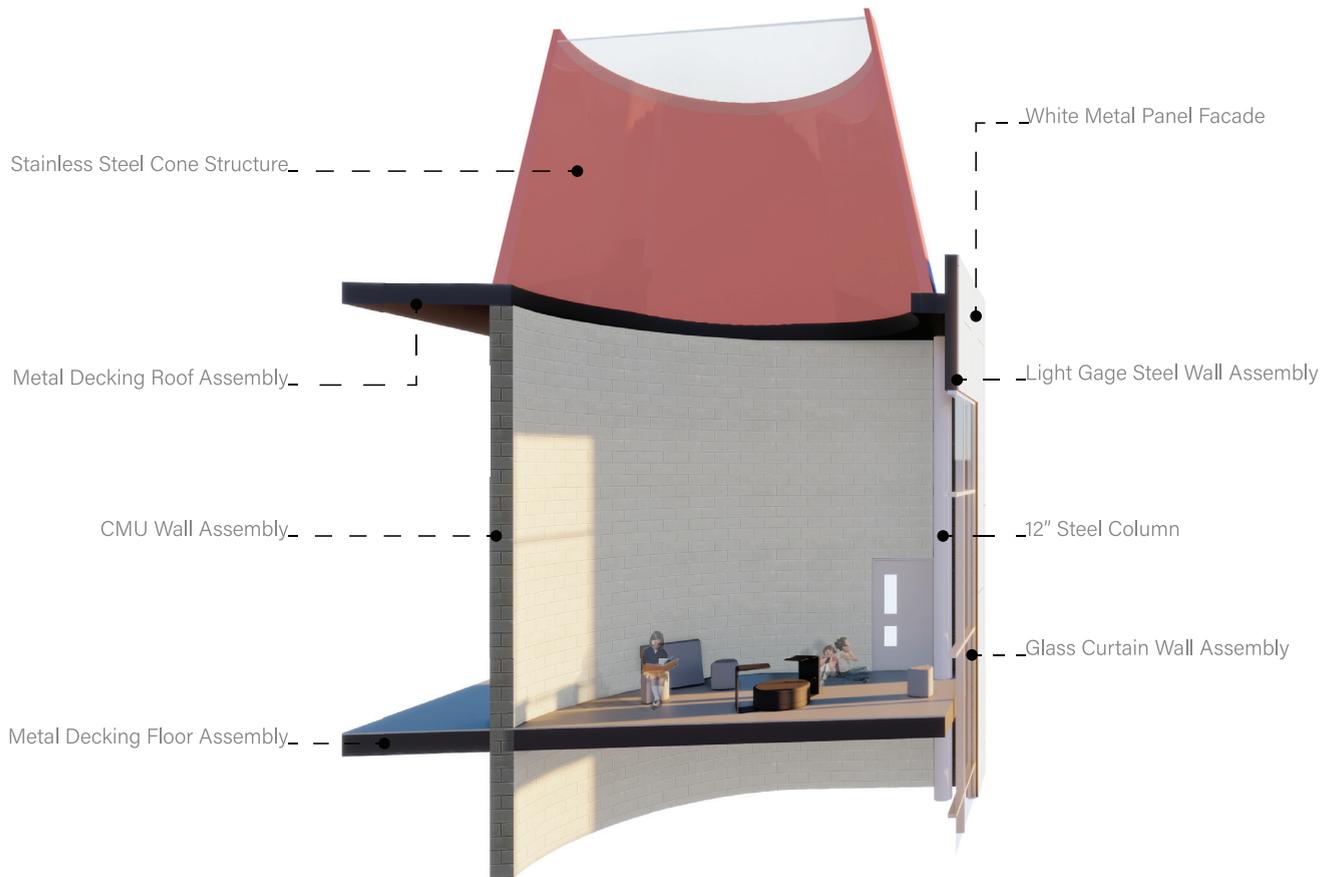
-  Main Entrances
-  Emergency Exits/Staff Entrance
-  Pedestrian Entrance
-  Parent Drop-Off
-  Staff Vehicle Entrance
-  Bus Drop-Off





Building Section

A major feature of the building is the conical light wells scattered across the roof. They have the same impact as the circle windows for space indication. Each light cone is angled differently to provide daylighting to reach inner interior spaces at different times of the day. This section also illustrates the connection from cone to floor creating visual links for students and faculty as they navigate through the hallways.

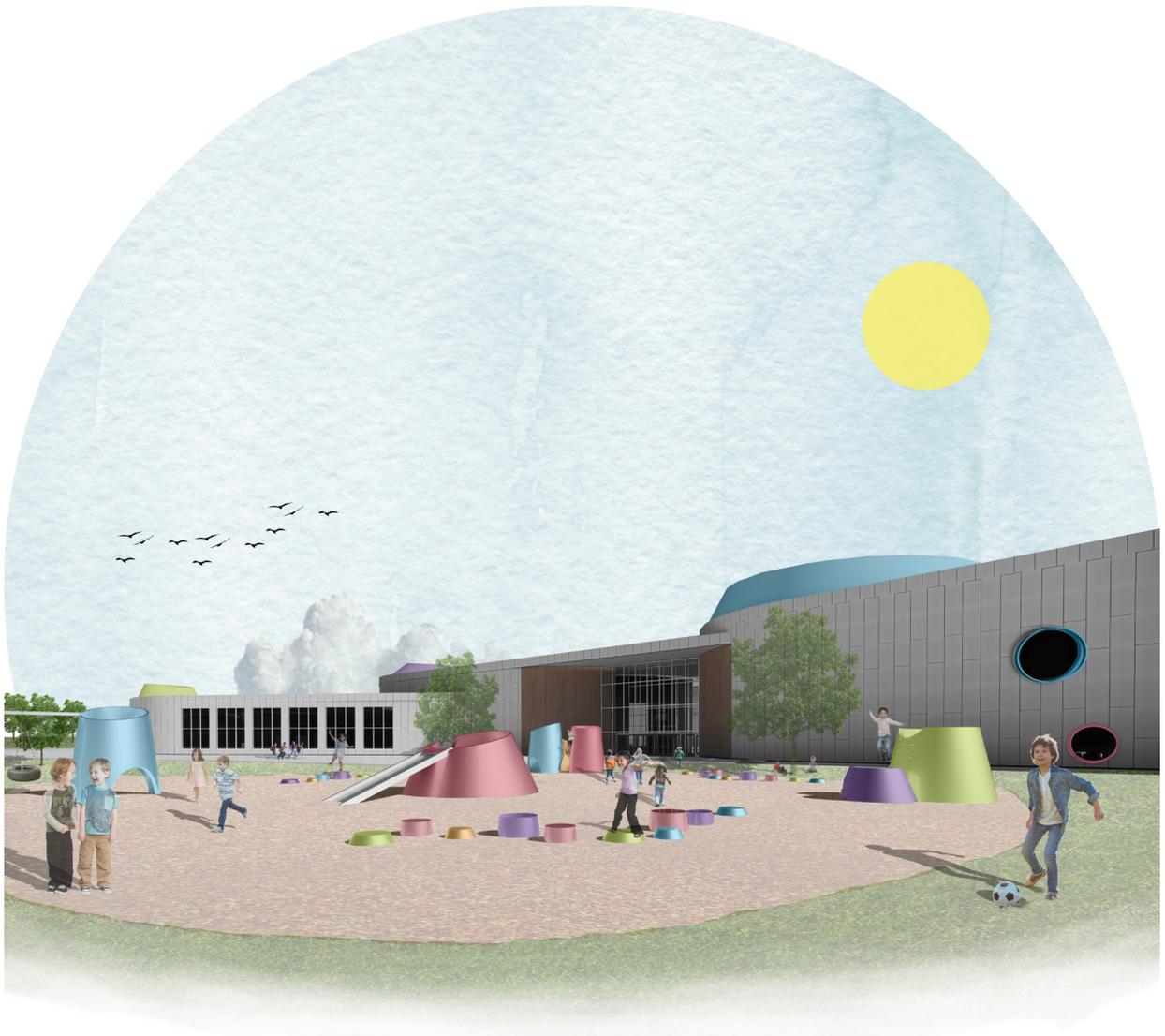


Wall Section Perspective

The wall section perspective is located through the Co-classroom Space on the northeast side of the building. It demonstrates how the large conical lightwells are structurally in place. The Co-Classroom Spaces and Learning Lightwells use a combination CMU walls and steel columns to support the stainless-steel structures. Other areas with lightwells only use steel columns to allow for more open spaces beyond the circle of the lightwell. The rest of the building uses light steel construction.



Exterior Perspective | Northeast Entrance



Exterior Perspective | Southwest Entrance and Playground



Interior Perspective | Classroom



Interior Perspective | Learning Lightwell



Interior Perspective | Main Commons



Interior Perspective | Music Room



Interior Perspective | Auditorium/Cafeteria



Interior Perspective | Teaching Kitchen



Interior Perspective | Art Room



Interior Perspective | Gymnasium

Project Installation



This project board installation is intended to showcase my Thesis along with the rest of my classmates' project. It was intended to be displayed in the fifth floor of Renaissance Hall pre COVID-19 pandemic, however the entire thesis display was not able to take place.

Transcultural Education: Building Understanding through Architecture

In a world where cities are continuing to rapidly diversify, there is still a great division between cultural groups. It machines as fact and hatred for those of different backgrounds. This project seeks to create spaces that bring people together and foster understanding of different cultures.

In an effort to negate the tension and encourage understanding, this major elementary school for cultural studies in St. Paul, Minnesota provides a platform to learn transcultural history in the so-called immigrant neighborhood. Architectural elements which facilitate transcultural understanding are woven into the design to create a close relationship between a child's standard education and cultural education. Children who learn to be open and understanding of different cultures gain not only the use and understanding of different cultures.

Transcultural understanding is allowing oneself to find similarities of other cultures within their own. Through this discovery comes understanding for other's history, feelings, and customs. The barrier between, the fear and hatred is eroded away.



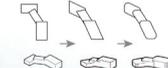
Methods of Transcultural Understanding

Four main methods are used to gain transcultural understanding: Storytelling, Music and Dance, Food, Memorabilia, and Artifacts. Storytelling is a way in which it can be related. It can be telling of culture specific stories, or simply a personal story which includes culture specific knowledge or experience. Food often reflects the people who eat it in a direct way, how it is prepared, and the context in which it is consumed. Music and Dance are passed on they tend to be used in each other. It can be either for ceremony or entertainment. Memorabilia is when people, objects, and items are exchanged and commerce takes place. Artifacts are anything from art to clothing to religious objects, and more. These are represented throughout the project using the colors found in this diagram to signify spaces where each take place. The diagram also illustrates the nature of overlap between methods.



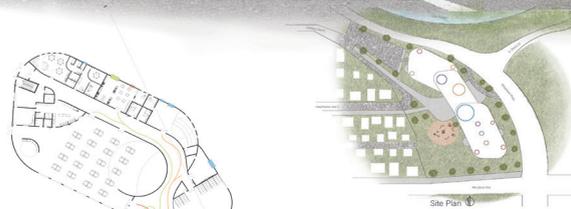
Transcultural Interaction Patterns

Research of settings in which intercultural interactions take place revealed three primary patterns to encourage transcultural understanding in architecture. These patterns are found throughout the school to encourage organic interactions between students. Creating Physical Spaces for groups of around four people to interact. More or fewer amount of people begin to begin connections and fosters transcultural understanding. Suggested Pathways are a visual physical way to draw people into a space where the interactions would take place. Area distinction allows people to know what use a space has before entering.

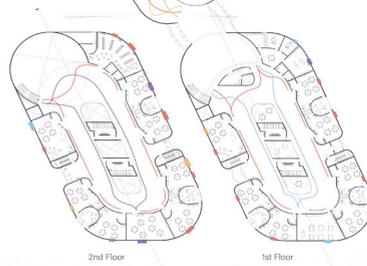


Form Development

The form of this building is heavily influenced by the site. The three masses are related to follow the curve along Whiteblock Parkway. Each of the three masses are connected to one another by paths in the middle, generated from the site's surrounding terrain. Then, the masses were rounded off to mirror the curve from Whiteblock Parkway and Lake Park. Finally, each mass was stepped upwards, creating a cascading effect from the lake.



Site Plan



2nd Floor

1st Floor



Wall Section Perspective

The wall section perspective is located through the Co-Classroom Space on the northeast side of the building. It demonstrates how the large central lightwell are situated in place. The Co-Classroom, Science and Learning Lightwells use a combination of steel and steel columns to support the different steel structures. Other areas with lightwells only use steel columns to allow for more open spaces toward the ends of the lightwell. The rest of the building uses light steel construction.



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Previous Studio Experience

2nd Year

Fall 2016 : Darryl Booker
Tea House
Montessori School
Spring 2017: Charlott Greub
Dance School
Dwelling

3rd Year

Fall 2017: Mike Christensen
Art Gallery
Boarder Station
Spring 2018: Regin Schwean
Information Box
Mixed Use Development

4th Year

Fall 2018: Don Faulkner
Capstone High Rise
Spring 2019: Paul Gleye
Abroad Urban Design

5th Year

Fall 2019: Ganapathy Mahalingam
Research Studio
Spring 2020: Ganapathy Mahalingam
Design Thesis Studio