

SOUTHERN ENTRY









LEVEL 3 🙏 1" = 8'



LEVEL 2 / ∧ 1" = 8'



COLD CLIMATE PEDAGOGUE ZONE

The cold climate pedagogical zone is designed with the intent to remain comfortable throughout the cold winter months in Fargo, North Dakota.

A series of passive practices utilized by cultures sharing similar climatic traits to that of Fargo's have been integrated into the space to ensure that it remains warm and well lit.



Insulated Louvres

Thick Walls and Floors

Minimal Prevailing

Wind Side Windows



LONGITUDINAL SECTION 1" = 8'



TRANSVERSE SECTION 1" = 8'



Compact Plan

The design calls for a compact plan. Tight floor plans allow for heat retention as well as the infiltration of light. The exterior surface area is kept minimal to reduce the exposure to cold winter winds.

Spatial Layout

The vertical progression of space is designed to follow the heat's path as it rises upward through the space. In this manner, each space retains heat as it rises through the design. The horizontal progression of space is designed to allow for maximum light within each individual space.

South Facing Windows

South facing windows throughout the space utilize the majority of the available light and heat from the winter sun.

Minimal Prevailing Wind Side Windows

The north and west facades contain few windows, keeping the harsh prevailing winter winds at bay.

Insulated Louvres

During the day, south facing windows are imperative to the gain of heat and the welcoming of light. When the available light has passed, insulated louvres are drawn to retain heat and to protect from the cold at night.

Protected Entry

A double entry is utilized to help protect from the winter winds. The entry is angled from the main space, helping to guard the interior. This 'snow porch' is positioned away from the prevailing winds and contains any cold that may otherwise enter the space.

Thick Walls and Floors

The design is constructed out of heavy materials that help to insulate the building. Heavy materials also store heat within the designacquiring heat during the day and heating the building at night.

Material Colors

A mix of dark and light colors are integrated into the design. Walls draped by the southern light are dark in color to absorb heat throughout the day. Nonsouth facing walls are light in color to help reflect natural light throughout the space.

Low Ceilings

The space is designed with ceiling height kept to a minimum to keep heat within reason of the human scale. The minimum height also allows for a slowed vertical progression of heat, letting each space retain warmth for longer durations of time.

Flat Roofs

Flat roofs are necessary for the accumulation of snowfall during the cold winter months. The build up of snow acts as an additiona insulator for the building and helps divert the winter wind away from the building facade. The surface of the lower roof in the design reflects additional light intr the upper level spaces.













LEVEL 4 / 1" = 25' ^N

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The hot climate pedagogical zone is designed with the intent to remain comfortable throughout the hot summer months in Fargo, North Dakota.

A series of passive practices utilized by cultures sharing similar climatic traits to that of Fargo's have been integrated into the space to ensure that it remains cool, ventilated, and well lit.



HOT CLIMATE PEDAGOGUE ZONE

Sun Shade Screen Wall

Raised Foundation





Verandah

Verandahs have been incorporated into the south and west sides of the design in order to shield the interior spaces from the hot afternoon sun. Direct heat gain is avoided while still allowing for diffused light.

Sun Shade

The south, west, and east sides of the interior courtyard are equipped with a series of sun shades that help to diffuse light and and provide shade. Windows on the west facade are also fashioned with sun shades to protect from the hot afternoon sun.

Screen Wall

The first floor verandah is wrapped with a screen wall to diffuse direct light. The screen will provide shade and also allow for the natural ventilation of cool air into the space and the expulsion of warm air from the space.

High Ceilings

The design calls for high ceilings in order to manage the distribution of cool and warm air. Warm air rises above human scale where it is than released into the interior courtyard. Cool air remains low at the level of the occupant.

Pitched Roof

The roof is pitched in an attempt to manage the flow of warm air from the space. The roof is left void in the center creating an open interior courtyard. This feature acts as a light well as well as a ventilation shaft for the space.

Interior Courtyard

Incorporating an interior courtyard within the design provides many benefits. The courtyard allows for the flow of cool air throughout the space while also providing an outlet for unwanted warm air. The courtyard also acts as a light well, providing diffused light to the interior spaces throughout the duration of the day. A stone floor is utilized for its inability to retain heat, further helping to keep the interior cool.

Wall Openings

Various wall openings have been placed within the design to allow for continuous ventilation. Second floor interior walls are left unconnected to the pitched roof to help avoid the entrapment of hot air.

Window Placement

Operable windows are strategically placed to guide the flow of air throughout the design.

Light Weight Construction/ Light Colored Materials

The design is constructed out of light weight materials to allow for adequate ventilation. Light weight materials also provide for minimum heat gain and retention. Light colored materials are used throughout the design to help reflect light, thus avoiding heat gain and providing an abundance of light throughout the spaces.

Building Orientation

The building is oriented to interact with both the summer sun and wind. The surface area of the south facing facade is kept to a minimum to avoid the direct heat of the southern sun. The building in plan stretches north to south to incorporate the prevailing summer winds, thus keeping the spaces well ventilated. The spatial layout is designed to welcome the morning sun and remain sheltered from the hot afternoon sun.

Raised Foundation

The southwest foundation of the design has been raised to allow for the flow of cool air into the interior courtyard space. The design has acknowledged the summer's prevailing wind as to acquire the maximum flow of ventilation throughout the space.





NORTH ENTRY / GATHERING SPACE



THIRD FLOOR STUDIO SPACE

