

**Provost Immersive Learning Grant
Using Nature to Redesign Places of Worship in Muncie, IN
Spring 2021: Post Occupancy Evaluation
Islamic Center of Muncie: 5141 Hessler Rd, Muncie, IN 47203**

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Project Information:

This project integrates the environment, economy, and society to develop more sustainable and healthy places of community worship. Adhering to the professional code of ethics for interior design and construction management (health, safety, and welfare), This team of designers and construction manager s observed a space in their community and its limitations in order to begin the process of rejuvenating and elivening the space with elements of biophilia.



Redesign Priorities:

Overall: Biophilia

- Green wall and groupings of potted plants in both entrances
 - Covering the columns in the basement with stone or another natural material
 - Stained glass and plants on the ledge near main staircase
 - Window coverings in the worship space
-
1. Insulation in the Basement
 2. Accessibility (exterior ramps/ interior elevator)
 3. Air circulation/quality upstairs
 4. More solar panels
 5. Fixing water damaged areas
 6. Fixing broken elements throughout
 7. Lighting (more consistent/ better)
 8. Wayfinding
 9. Circulation through the children's area/ bathroom
 10. Acoustics (prayer room but also throughout)

Other Focuses/Ideas:

- History wall in entrance area
-


Physical: Thermal Comfort, Acoustic Quality, Air Quality, Lighting, Light Type, Waste, Water:

Overall:

- Either too much lighting or inadequate lighting
- Level one thermal comfort is alright while basement the thermal comfort is cold with a draft
- Air quality appears alright with no vents covered and many ceiling fans in prayer space.

Entry: refer to photo #1

Lighting:

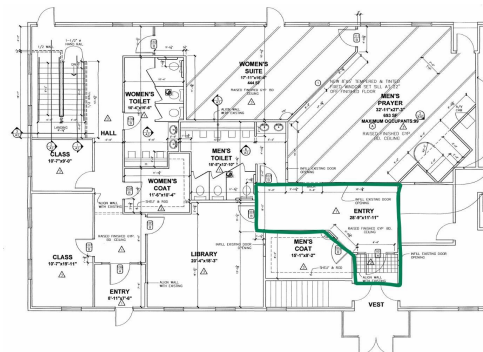
- Fluorescent lighting used in this space
- Natural lighting coming from large curtain wall- brightening the interior space
- One ambient can light in vestibule 

Thermal Comfort:

- Cold in the entry with both doors propped open
- Vestibule does not do great separating cold outdoor air from interior

Acoustics:

- Could hear voices from the entrance when in the prayer room no door to blocking noise between these two spaces.
- Slight echo in entrance with higher ceiling



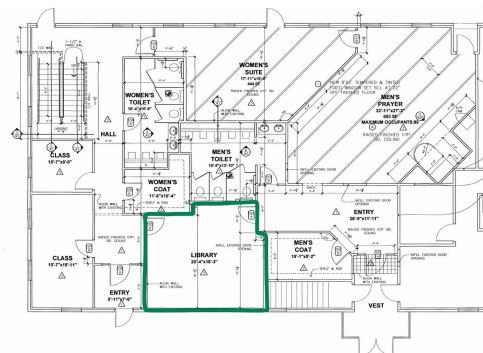
Library: refer to photo #2

Lighting:

- Fluorescent lighting 2'x4' work as ambient lighting for space
- Windows
- provide some natural lighting
- Possible Dimmer to control lights and lights appear motion sensed

Air Quality and Thermal:

- Air quality and thermal comfort appears sufficient, no draft



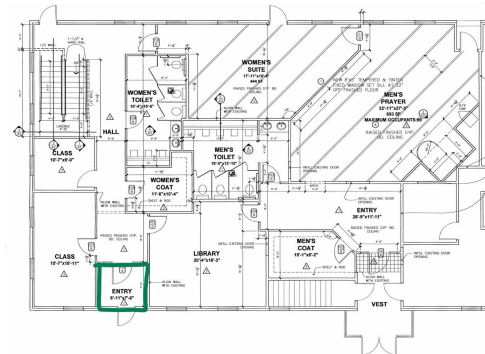
Second Entrance (enters into women's space): refer to photo #3 & 4

Lighting:

- lighting is dim in this space
- An artificial light created hot spots on the ceiling. This lighting is a residential style luminaire
- One ambient can light in vestibule

Thermal Comfort:

- This vestibule space did not have a draft

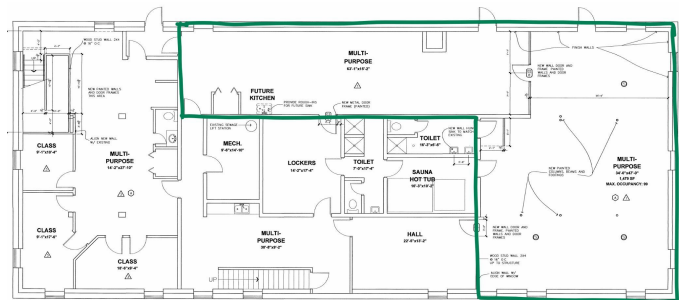


Basement:

Kitchen/2 Dining Areas: refer to photo #5 & 6

Lighting:

- Uneven lighting with 2' x4' fluorescent lighting next to each other above the island in kitchen space.
- 2'x4' fluorescent lights are also used in larger and smaller dining areas. In the larger dining areas there are dark corners.
- A number of clerestory or awning windows provide some natural lighting throughout the basement.



Thermal Comfort:

- All the spaces in the basement were very cold due to the lack of insulation.
- Holes in ceiling allowing air flow into the breaker room which is connected to the smaller dining area and classrooms communal space.

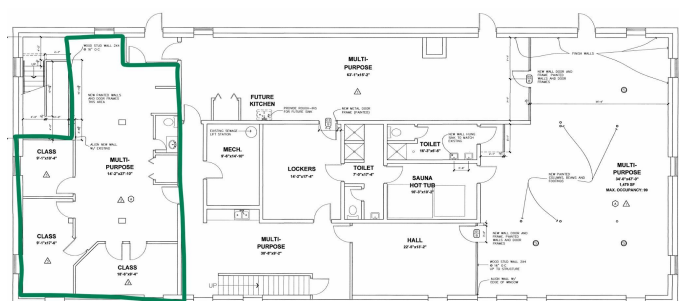
Acoustics:

- Blue acoustic material on walls of larger dining space

Classrooms: refer to photo #7, 8 & 9

Light:

- Communal area between classrooms has



ineffective lighting with 2'x 4' fluorescent lights butting next to each other so no lights close to or near walls.

- Yellow room 2 clerestory windows
- The yellow room paint was causing natural light from the windows to reflect off forming glares.
- Blue room 1 clearstory window
- Orange room 1 clearstory window

Thermal Comfort:

- The temperature in each room was cold most likely due to the lack of insulation.

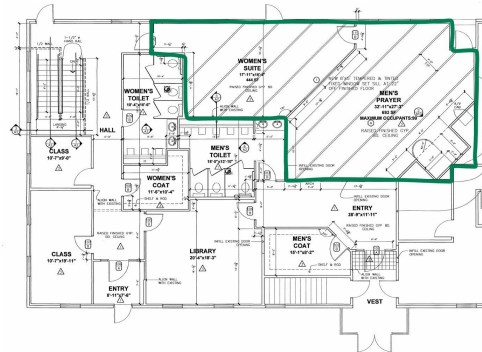
Prayer Room: refer to photo #10 & 11

Lighting:

- Poor lighting with ceiling fans have four luminare built into them projecting light up and to the side rather than down.
- Two windows in each prayer room bring in some but limited natural light.
- Many dark corners in both of the two prayer spaces due to the uneven natural and ambient light.

Air Quality:

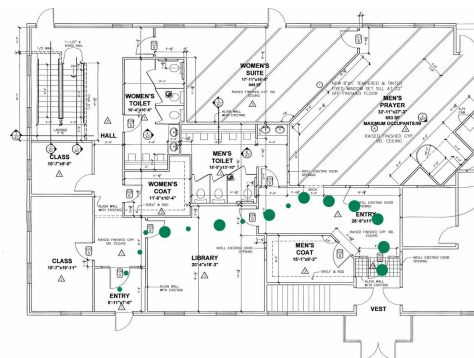
- There were many ceiling fans in the two prayer rooms for air circulation
- Multiple vents; none of them were covered.



Space: Floor Plan/Layout, Circulation and Flow, Behavior Patterns, Spaces Clearly Being Used, Amount of Space, Private, Semi-Private, Public Spaces, Accessibility, Safety, Wayfinding

Overall:

- No wayfinding (only a few exit signs in the basement)
- No accessible access in areas to congregate upstairs or in the basement.
- Safety is questionable with water damage to basement ceiling, lack of signage, and steep staircases throughout the building.
- Layout of the space meets the needs of the users with a divided space for women to move about freely.



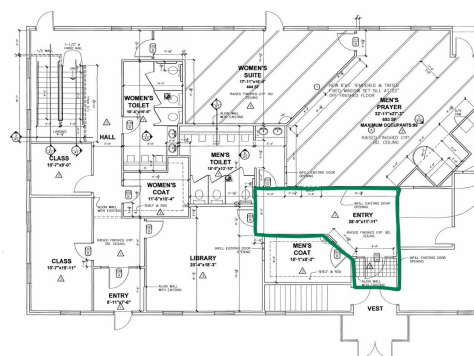
Entry: refer to photo #12, 13 & 14

Circulation/layout:

- Good circulation from entrance to the men's coat room/restroom and throughout the foyer area.
- Separate women and mens closets. Women's closet and restroom near entrance for only female users.

Accessibility:

- This entrance or all other entrance into the building are not accessible. As there is no ramp for easy access and all basement exits are below ground level.
 - Ramp in the rear of the building but it is not accessible (does not meet ADA)
 - Appearance to be only an emergency exit as there is no place to remove shoes if the ramp is used
- Front entrance only accessible by using steep stairs at a slight slope.
- There is a lack of signage throughout the building so the space is not easy to navigate. Including a lack of emergency exit signs.

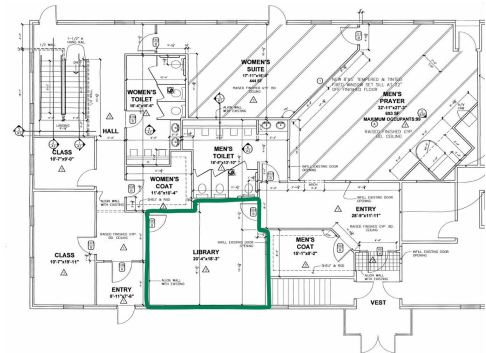


Amount of space and use:

- The entrance is small and narrow for a public space. Once past the vestibule the space widens.
- The entrance is clearly being used with marks on the painted wall and use of a high traffic entry rug.

Library:**Circulation/ Layout:**

- This space has good circulation because of multiple entrances. Also enough room to move in between furniture and around the space.
- If women use the main entrance however they must pass through the library to access the women's coat closet and restroom. No signage pointing that the women's restroom is in a separate location to the mens.

**Amount of space:**

- The library is a semi-private space meant for 8 users to sit.

Second Entrance:**Circulation:**

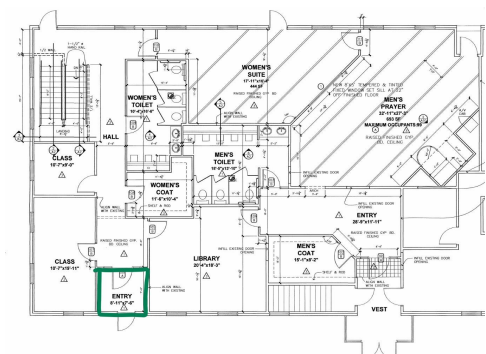
- Separate entrances for women to use if needed creates nice circulation when moving to womens' coat closet and restroom.

Amount of space and accessibility:

- This entrance is smaller and less noticeable, semi-private
- This entrance is not ADA accessible with only stairs. The stairs are also steep just less wide as the main entrance so easier access to hand railing.

Wayfinding:

- Paint used in the entrance and women's closet, bathroom, and entrance to women's prayer space creating a visual separation between space for women. This use of paint to create separation works slightly as wayfinding.

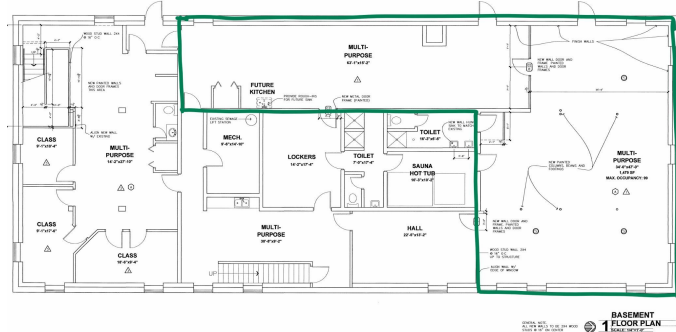


Basement:

Kitchen/2 Dining Areas: refer to photo #15, 16 & 17

Circulation/layout:

- Open floor plan in the two dining areas.
- 6 Structure columns in the large dining space divides the room.
- There is a lack of storage to store foldable chairs and tables in the small and large dining space.
- Larger and smaller dining areas separated by kitchen. Users of the space must go through the kitchen to get to the larger dining area.
- Small island in the center of the kitchen
- Appliances are not built in



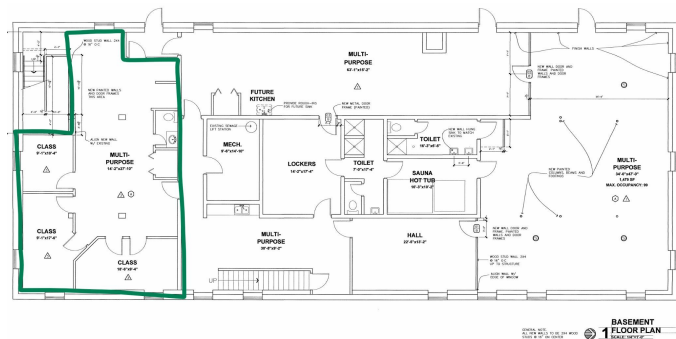
Wayfinding:

- There is no use of wayfinding so the basement can become confusing with many doors and corridors.
- There are few signs and no signs marking emergency exits

Classrooms: refer to photo #18, 19 & 20

Circulation/Layout:

- Small Bathrooms with child size toilets placed in the center of one person restroom cause space on the one side of the toilet to be useless. small non accessible door
- Stairs in communal classroom space lead up to the female side of level one resulting in a circulation path for the children to cut through the women's space.



- Communal classroom space for playing connects the three classrooms and the children's restroom.
- Awkward rooms shapes and two doors to access blue and yellow rooms.
- A lack of storage for storing toys and supplies

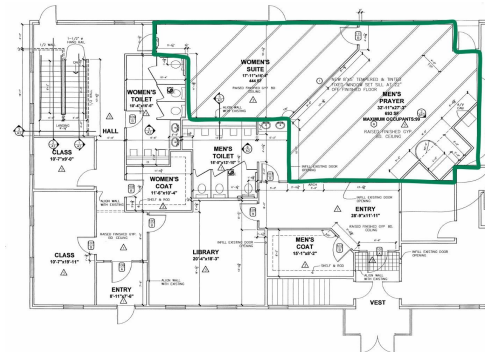
Accessible:

- Signage marking classroom doors with colorful letters
- The children's bathroom does not have an accessible door with the doorway width mostly likely less than 32" and little room if an adult is needed to be present.

Prayer Room: refer to photo #10 & 11

Circulation:

- The space has good circulation with separate rooms for men and women. A door is accessible between the spaces which allows access from one room to another.
- The doorway into the men's prayer space leads from the men's closet and restroom. The door into the women's prayer space leads from the women's closet and restroom so easy access for all users.



Wayfinding:

-The mens and womens prayer rooms are visually separated by different finishes including paint color and carpet.

Exterior: refer to photo #21

- The building is not accessible to all users because there is no ramp. A U shaped ramp or a L shaped ramp could easily be added to the front exterior.

Ergonomics: Work Stations, Physical Effect and Employees, Physical Effect on Staff on the Public, Seating

Overall:

- Limited comfortable seating
- Effective division of private spaces for employees

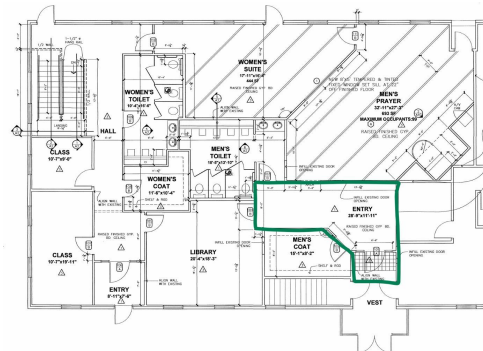
Entry: refer to photo #13, 14 & 21

Physical effect:

- Steep Stairs could be physically challenging to employees and staff
- The male and female closet has a low height coat rack and shelves which are easy to access for most individuals.

Inefficient furniture:

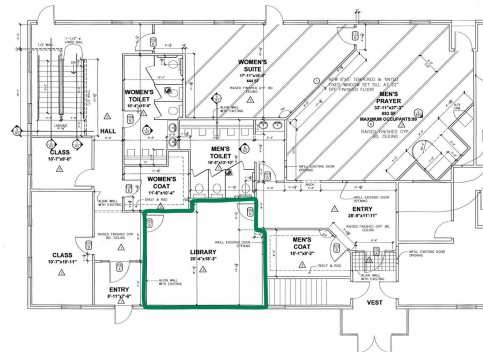
- Bench under prayer times is unusable because if used the clocks would most likely be knotted down.
- Information table is plain and looks out of place and is an obstacle in the circulation space.



Library: refer to photo #2

Physical effect:

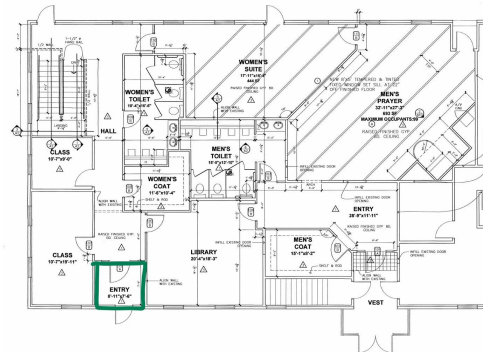
- Enough seating for multiple people around the table and extra people if needed
- Bookcases built in casework goes up to eight foot ceilings. Books on the top shelf may not be reachable to all users.



Second Entrance:

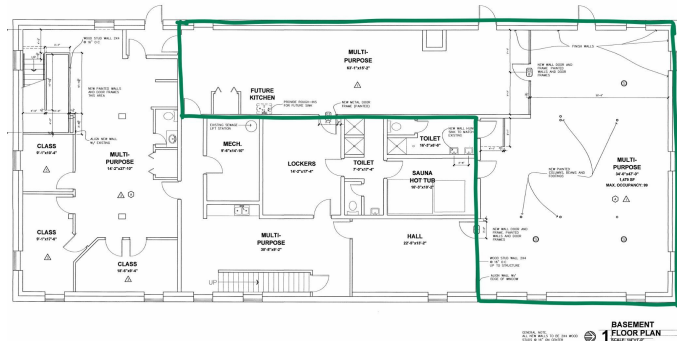
Physical effect:

- Stairs are the only way to use this entrance
- One residential style chair in the vestibule provides a space for users to sit and wait.

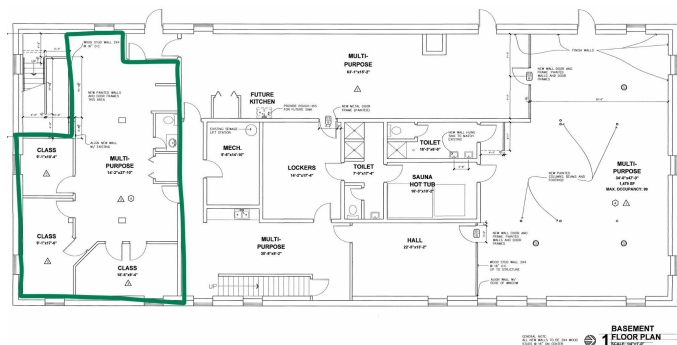


Basement:Kitchen/2 Dining Areas:**Physical effect:**

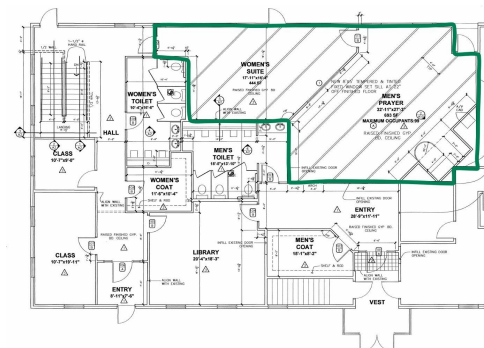
- Maneuverable foldable tables and chairs for community events.
- Moving and serving food between the two dining areas if they are both in use.

Classrooms: refer to photo #18, 19 & 20**Physical effects:**

- Only kid-sized tables and seating which are not very comfortable for adult staff.
- Little open space to walk and move around in classrooms.
- Small kids bathroom little space to move around in and vanity may be too tall for younger children.
- The bathroom door is also clearly not 32" wide.

Prayer Room: refer to photo #10**Limited seating:**

- Mismatched chairs unfit for large gatherings
- The chairs are also lined up against



Aesthetics: Quality and Wear of Furniture, Cleanability/Maintenance of Furniture, Quality and Wear of Finishes, Floor, Walls, Ceiling, Colors and Patterns, Equipment uses in Spaces

Overall:

- Finishes on level one appear to separate male and female spaces
- Neutral colors except for blue dining space and kids classrooms.

Entry: refer to photo #1, 12, 13 & 14

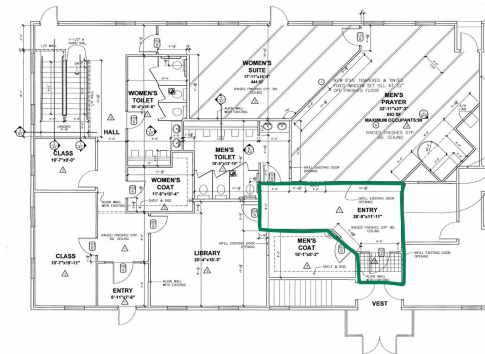
- **Wall:** beige paint with rubber base
- **Floor:** vinyl mimicking wood and brown short ceramic tile
- **Ceiling:** popcorn ceiling

Quality:

- The finishes are easily cleanability
- No slip resistant flooring or walk off carpet.
- No transition strip between tile and vinyl flooring leaving a slight height difference between the two.

Wear:

- Wall next to final entrance door is beat up slightly
- Floor good quality and little wear

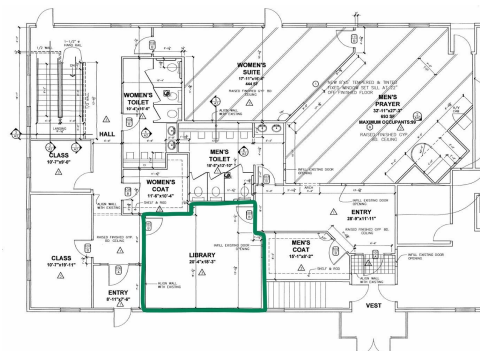


Library: refer to photo #22

- **Wall:** same paint as the entrance beige and same rubber base in entry
- **Floor:** vinyl mimicking wood (different from entrance)
- **Ceiling:** ACT ceiling 2' x 2'
- **Other furniture:** table, chairs, built in bookcase

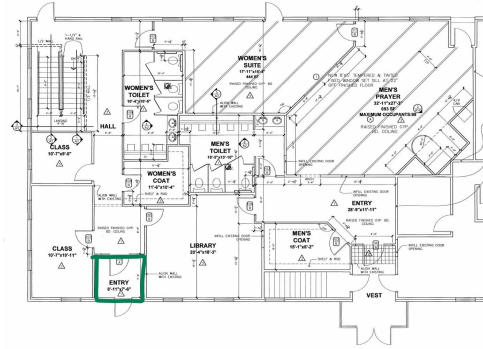
Quality:

- Finishes in this space show little wear.
- The quality of furniture is in good condition and appearance to be sturdy.
- One cabinet door by the far wall on the lower case work of the book case is slightly beat up.



Second Entrance: refer to photo #3

- **Wall:** lighter paint then paint used in entrance and men's spaces (lighter beige)
- **Floor:** vinyl tile probably 1' x 1' flooring (different from other spaces)
- **Ceiling:** white painted popcorn ceiling texture.



Basement:

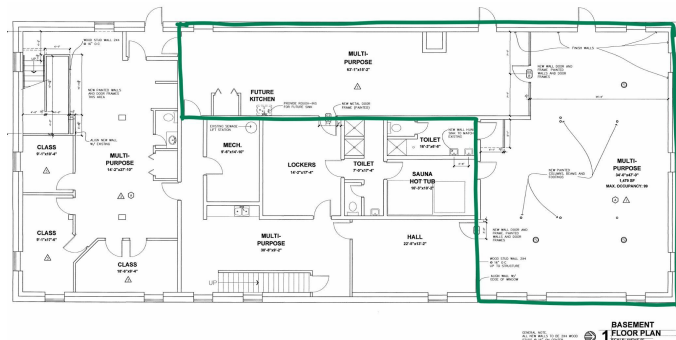
- **Ceiling:** 2' x 4' ceiling ATC
- **Floor:** Vinyl 1' x 1' tile
- **Walls:** concrete block and drywall with lighter beige paint

Quality and wear:

- Breaker room insulation and ductwork is visible, no ceiling
- Many ceiling tiles are stained and warping

Kitchen/2 Dining Areas: refer to photo #6, 15, 16 & 17

- **Wall:** Walls in larger dining areas are covered with acoustical wall cover material. The baseboard used in the large dining space is blue and rubber.
- **Floor:** vinyl
- **Ceiling:** 2x4 ACT ceiling, light fixtures dispersed unevenly
- **Older appliances:** 2 sinks, Dishwasher, refrigerator, oven/stove
- **Furniture:** Non permanent foldable tables and chairs
- **Appliances in Second kitchen/kitchenette area:** dishwasher, ice maker, microwave, and sink
- Exposed concrete support columns

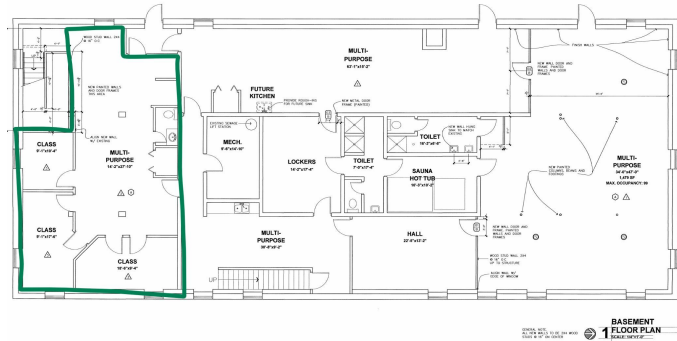


Quality:

- Some drywall and paint beat up throughout basement
- Ceiling tiles have water stains and warping

Classrooms: refer to photo #7, 8, 9, 19 & 23

- **Wall:** vibrant paint color rooms (orange, yellow, blue) outdoor communal space is light beige paint
 - **Floor:** vinyl
 - **Ceiling:** 2' x 4' ACT ceiling
- Quality:**
- Water heater/furnace equipment open to children
 - Many ceiling tiles have stains and are warping

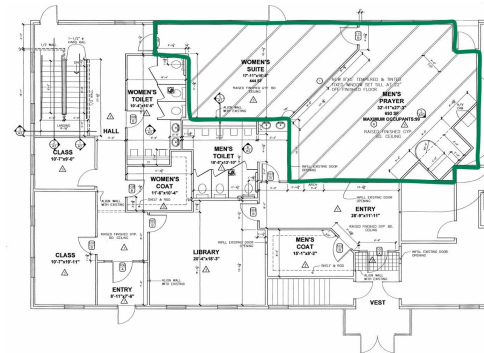


Prayer Room: refer to photo #10 & 11

- **Wall:** paint with wood detailing, wood base
- **Ceiling:** white painted popcorn ceiling texture
- **Floor:** 2 different striped carpet in 2 prayer space with wood base
- 2 way glass in between prayer spaces
- Arched doorway
- Arched with wood details around it in prayer space
- Bookcase

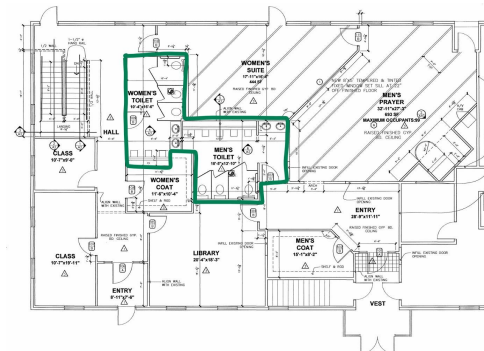
Quality and wear:

- The quality of finishes and furniture is in good condition.



Bathrooms: refer to photo #24, 25 & 26

- Women 3 stalls, 1 is ADA accessible, washing/cleansing space
- Mens 3 stalls, 1 is ADA accessible, larger washing/cleansing space



Exterior: refer to photo #27, 28, 29, 31 & 32

- brick exterior
 - 5 back staircases
 - 3 front entrance
 - Main sign is difficult to see until you are already passed where you need to turn
 - Rear ramp is rotting and doesn't seem safe to be used
-

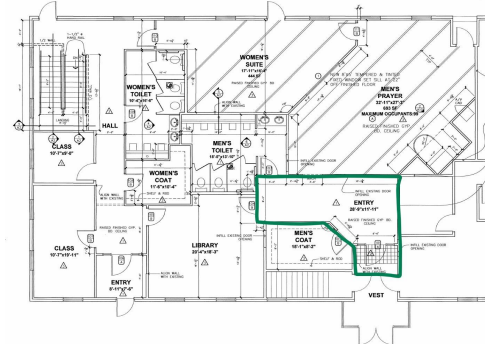
Biophilia: Window Location and Lighting/View, Connection to Nature, Natural Materials

Overall:

- 15 solar panels (wants to expand)
- Plant-life is valued throughout entire space

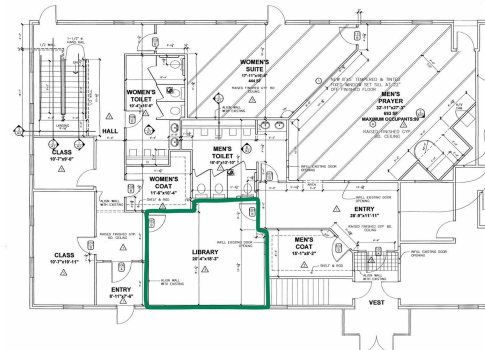
Entry: refer to photo #1

- A lot of natural light
- Connection to nature through the views
- Ineffective use of potted plants



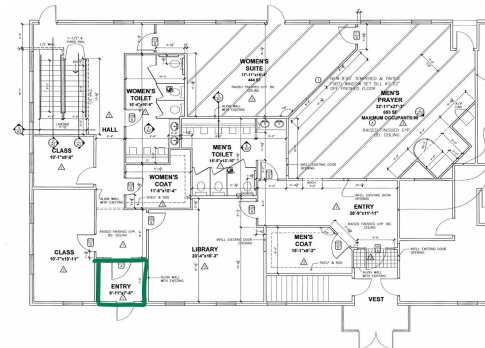
Library: refer to photo #2 & 22

- Some natural light
- Large window to add more light



Second Entrance: refer to photo #3

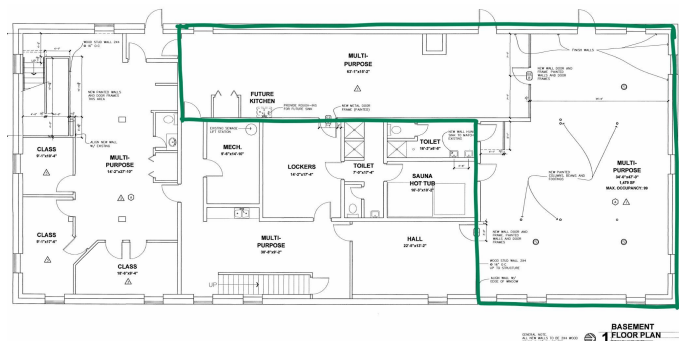
- Some natural lighting



Basement:

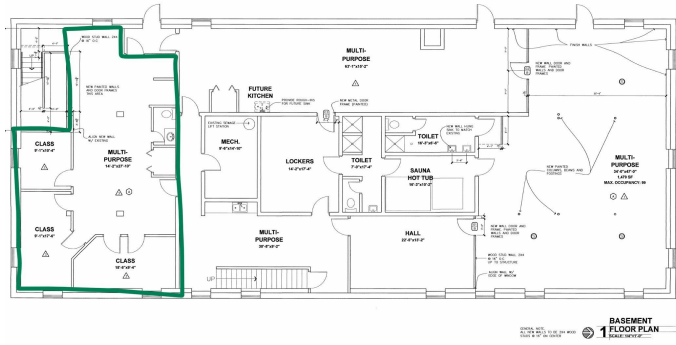
Kitchen/2 Dining Areas: refer to photo #15 & 16

- Natural light from windows around dining room



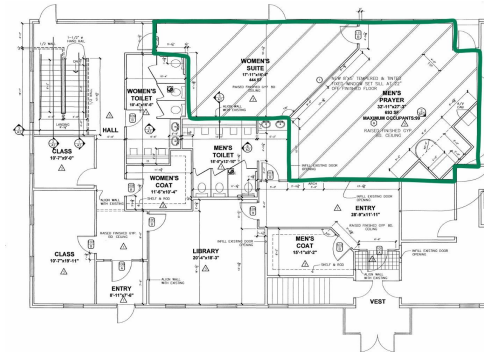
Classrooms: refer to photo #7, 8, 9 & 23

- Limited number of windows per classroom



Prayer Room: refer to photo #10, 11 & 30

- Natural light (multiple windows)
- Warm wooden detailing

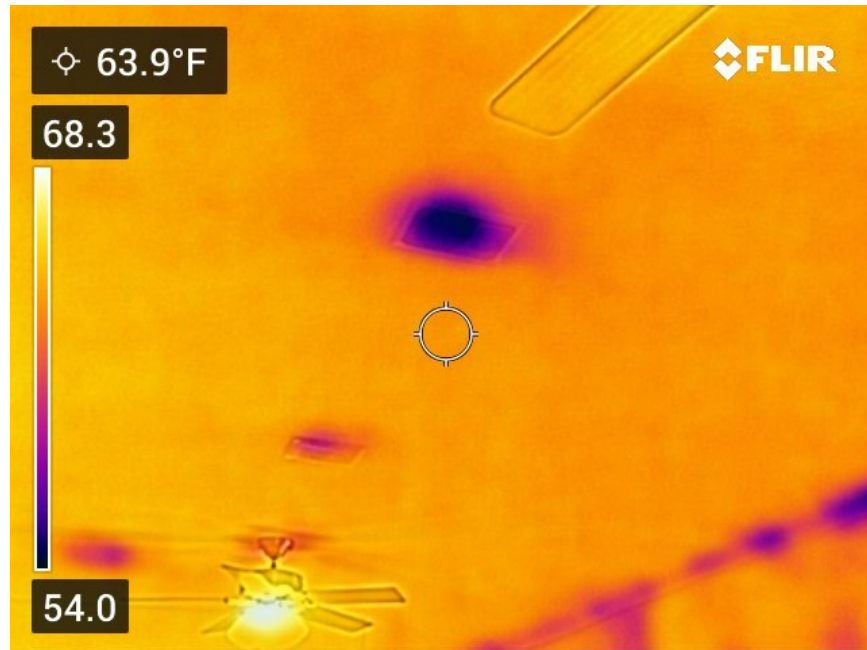


CM Team: Thermal Comfort, Foot Candles, Light Type, Other NotesLighting:

- Inadequate/out of date lights
 - Solution: Prefer LED to new fluorescent fixtures.
 - Easily installed and no dimming with age
 - Utilize a LED's full life
 - Use up fluorescent bulbs and transition everything to LED lighting
 - Natural light is good, free, and has health benefits.
 - If within the budget, more natural light in classrooms downstairs/skylight in the prayer room
 - Add window wells to the basement gathering room, to open up the space/comfort
 - The thermal images show where the the most heat is being lost
 - Windows, doors, and light fixtures were areas with the most heat loss
 - In order to to improve this the owner reevaluate the insulation in those areas
-

Thermal Images:







Photos:

#1



#2



#3



#4



#5



#6



#7



#8



#9



#10



#11



#12



#13



#14



#15



#16



#17



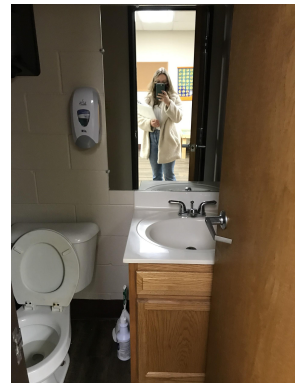
#18



#19



#20



#21



#22



#23



#24



#25



#26



#27



#28



#29



#30



#31



#32

