

# SKEEN RESIDENCE; freedom by design

Freedom by Design is a national sub-division of the American Institute of Architecture students. Our mission is to help those with disabilities that do not have the means to improve their living conditions. Freedom by Design is a non-profit organization meaning that students must do everything from marketing, fund raising, design, and physical build. Every client is a separate challenge and encompasses many research areas. The first area would be how simple design can affect quality of life in communities. The next areas of research are based around material sciences, construction methods, contextual design, concept design, detailing, and project management.

The Skeen Residence project was one of the largest FBO projects in the nation to date. Our clients consisted of a mother with physical disabilities, and a daughter with physical / mental disabilities. Initial inspection of the property showed many areas of immediate need, and the house lacked ADA handicapped accessible entrances. The main road entrance was at negative ten feet below door height so our initial design move was to change the directionality of the house to the back. The next decisions were made to demolish the small stoop to the side, remove the concrete patio and change the structural columns of the overhang to allow for a wider approach. Due to grants in materials, and fund raising we were able to connect the front door and the side door with ample patio space. Due to the clients only hobby being gardening we designed two large wheelchair accessible planters made from recycled and re-purposed railroad ties. These heavy planters anchored both ends of the deck and provided a beautiful material contrast. The ramp through concrete that extended from the overhang got until it met level with the stoop site. Other aspects that improved quality of life are the 30 inch handrails, and much needed turn around space and room for doors to open and close with a wheel chair.

## existing site photos



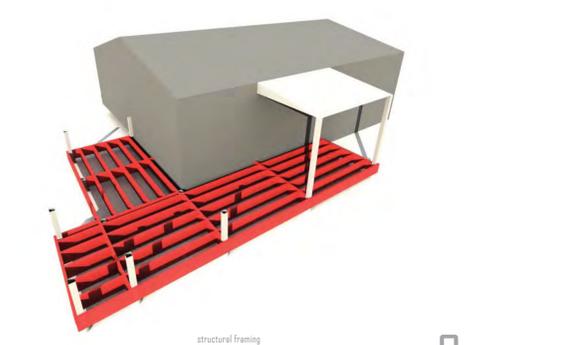
## construction photos



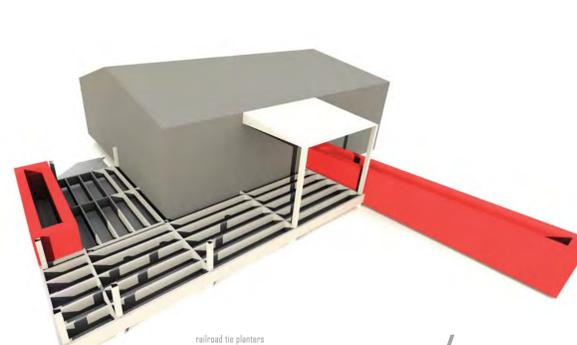
**1**  
foundation piers  
the first step after site demolition was to pour the 8" foundation piers that extend below the frost line



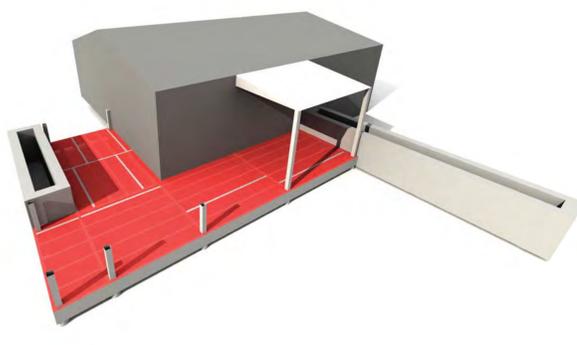
**2**  
support columns  
after the concrete foundation dried the 6" x 6" wood post were bolted and braced to the foundation



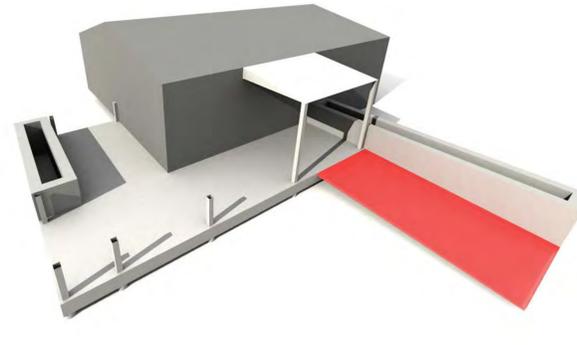
**3**  
structural framing  
the framing system was put in place around the posts, the framing system was designed to have minimal bounce.



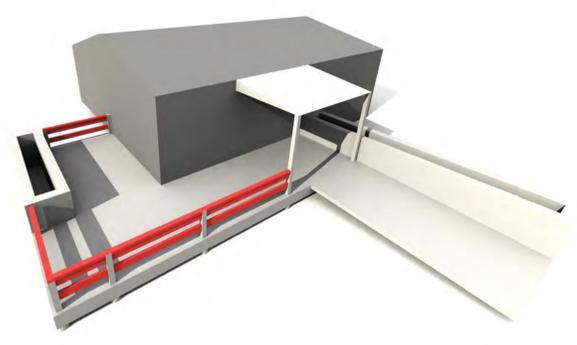
**4**  
railroad tie planters  
stepped footers were dug and inlaid with gravel as a base for the planters, the rail road ties were stagger stacked and tied together with interior rebar, this allowed for each ties to be attached to up to 3 other ties.



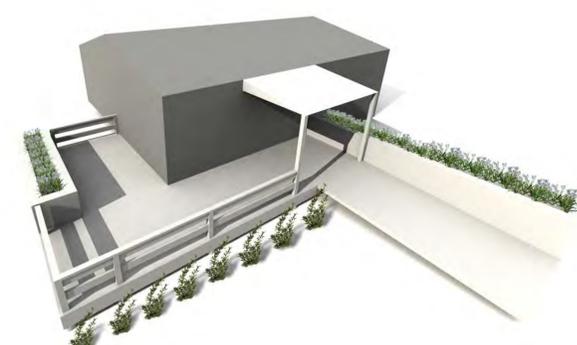
**5**  
deck surface  
the deck surface was laid in two separate directions due to the structural framing design, this also allowed for minimum gap in between boards, this is important due to the wheelchair path



**6**  
concrete ramp  
the ramp had wood framing and a gravel bed footer, due to the heaviness and resilience off the railroad ties we were able to pour directly to the edge and create a very clean detail of 'wood-concrete-rail road tie' connection



**7**  
wood railings  
the last step of physical construction was the application of 30" high wheel chair hand rails, the hand rails were designed to be linear and give a view from front yard to back.



**8**  
landscaping / planting  
when the fall arrived we kicked off the year of design / build with a planting event to put site / climate specific plants in the planters and around the construction area, the plants were picked for minimal maintenance in some areas and average gardening maintenance in others

## finished product photos

