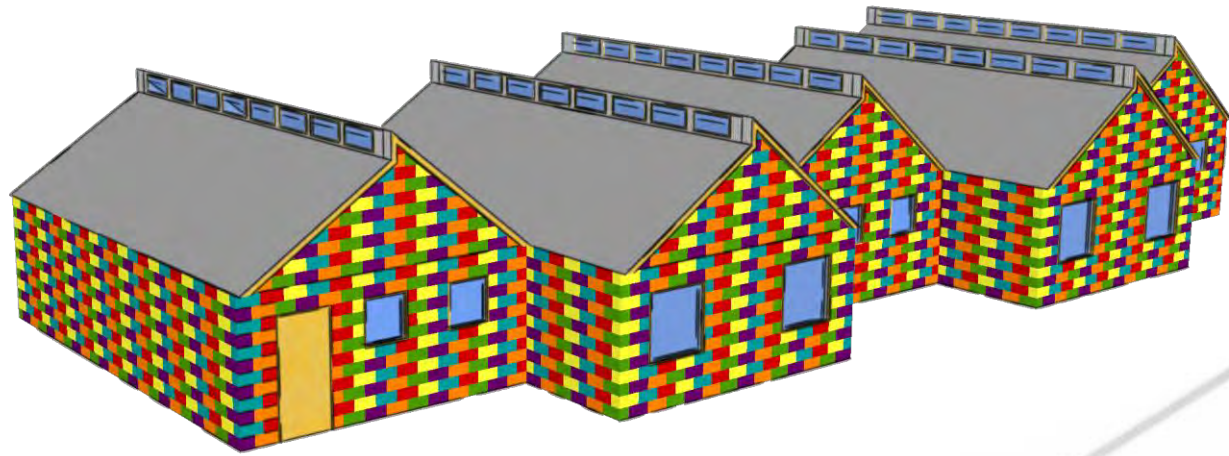
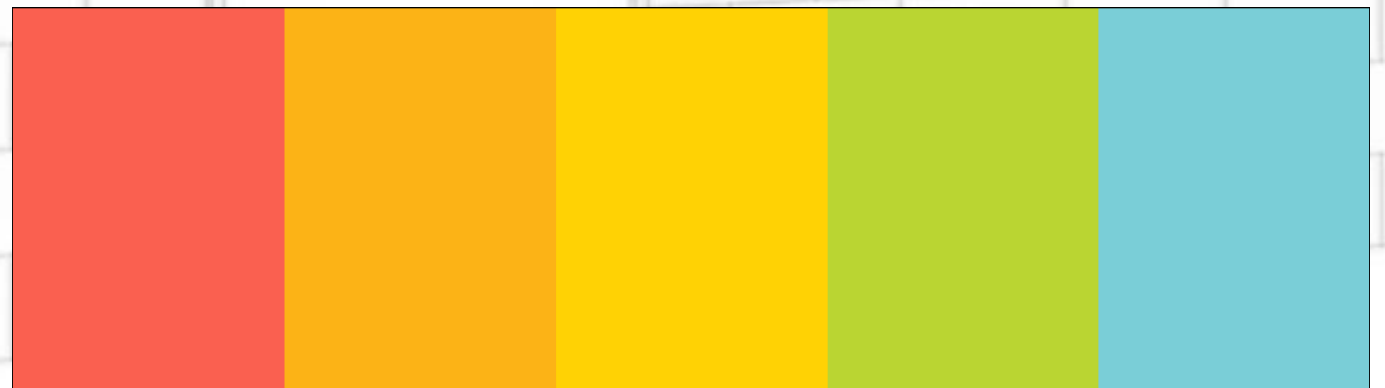


Building 'Blocks' Housing Design

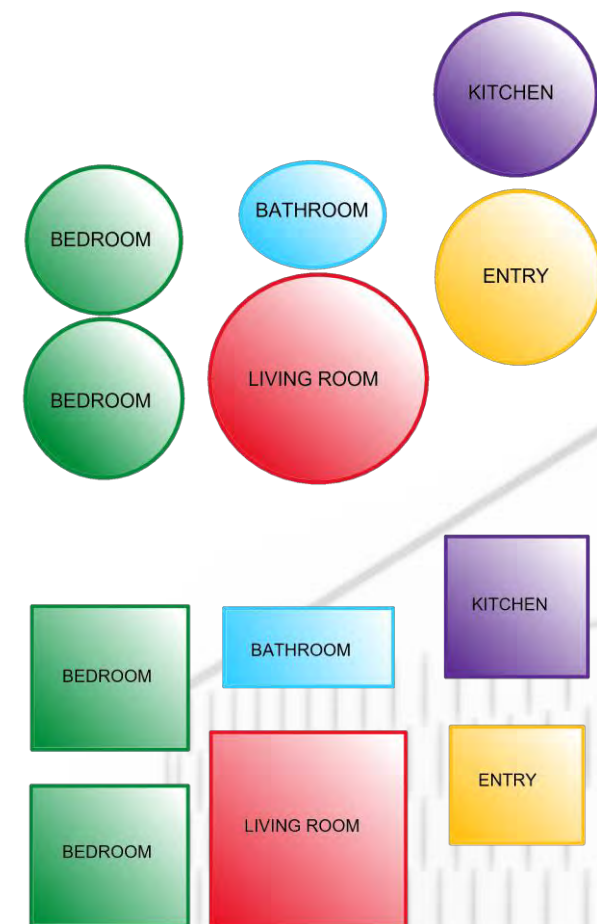




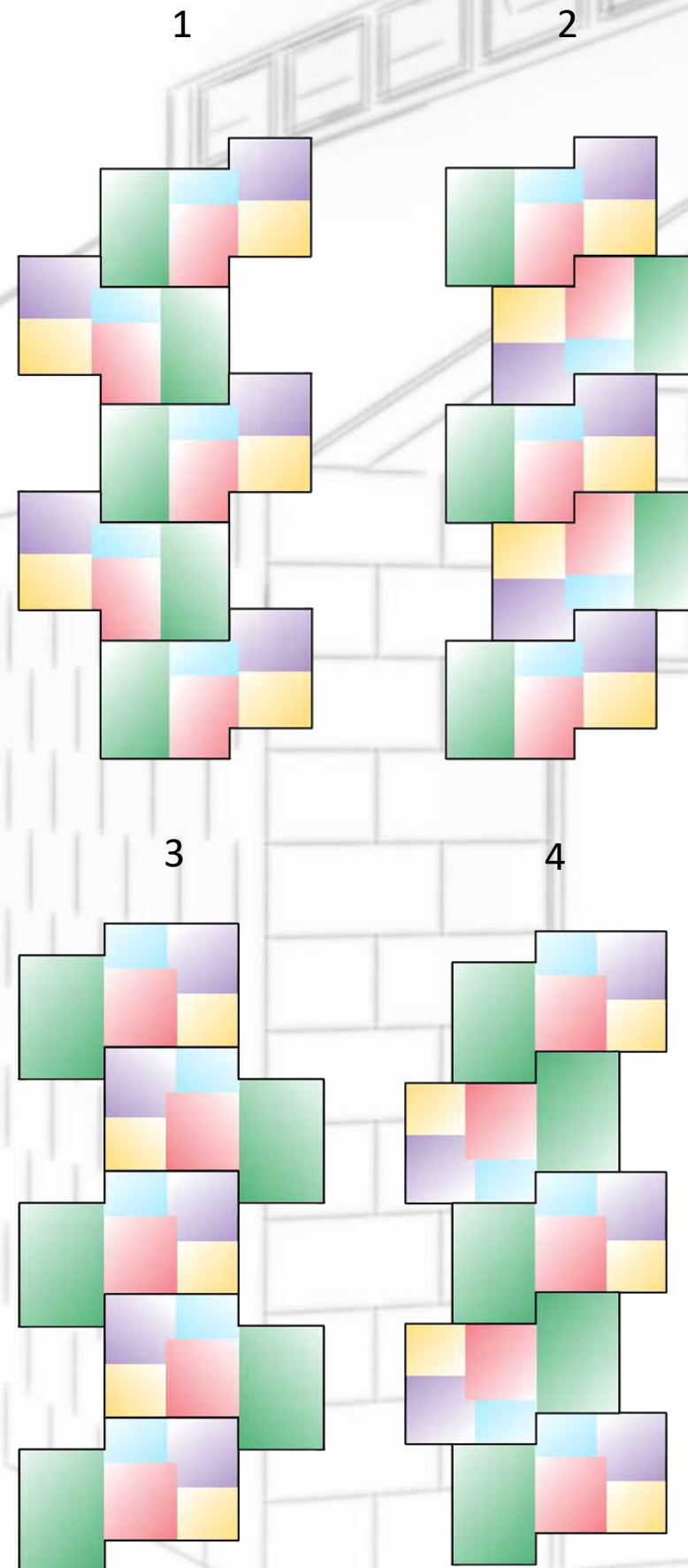
Connectivity can transform a place filled with people into a caring community. This design is based on the idea of connectivity. The blocks that make up the buildings are made out of wasted plastic that overflow landfills and take up space on the side of the road. The vibrant colors of the façade embrace the plastic nature of the bricks that make up the structure of the home. These colors would be painted onto the bricks; however, I am also looking into the possibility of using painted recycled plastic siding. Each home is also designed for connectivity with one another, maximizing shared surface area reduces the heating and cooling load, and the shape of the footprint naturally provides privacy for each home. Due to the potential link between the homes eliminating window space, a series of clerestory windows was added to ensure the interior gets plenty of light. The roofing material is a very simple corrugated iron roof, a common material in Maseru and one that would save extra cost. Demand for affordable housing in Lesotho is rising, and the Lesotho Housing Supply estimates that around 5,200 houses will need to be built every year in order keep up with demand. This design would not only be cheap to build, but it would be energy efficient and very quick to put together in large quantities. These communities would feel connected to one another because of the personality and character of the houses that make it up, and they wouldn't feel as though they were on top of one another because of the design of each room and entry.



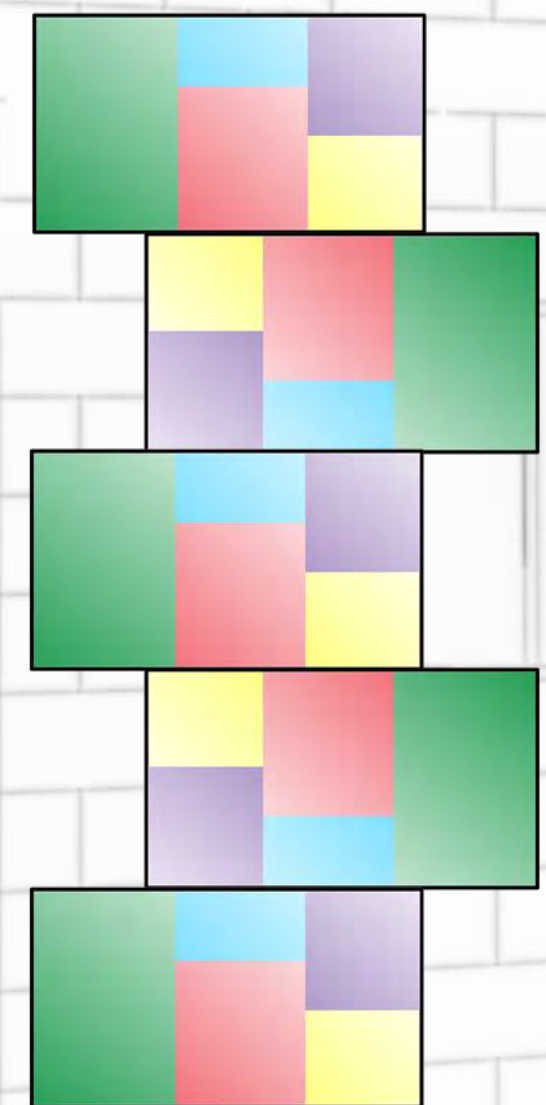
The first floorplan concept separates the kitchen and centers the in relation to the living areas of the home. This layout provides one wall that could connect all of the plumbing for the house, with an advantage to combined concept 2 which could connect plumbing lines between two houses very easily.



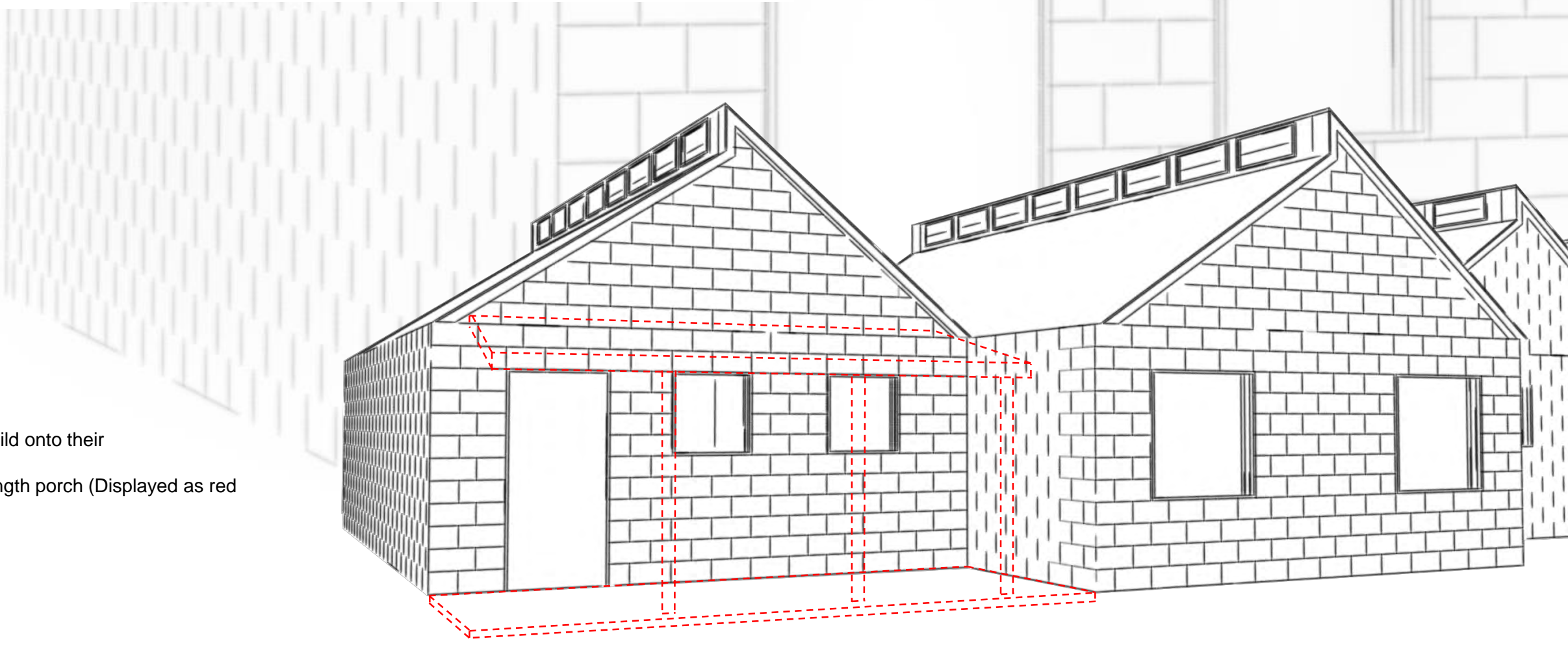
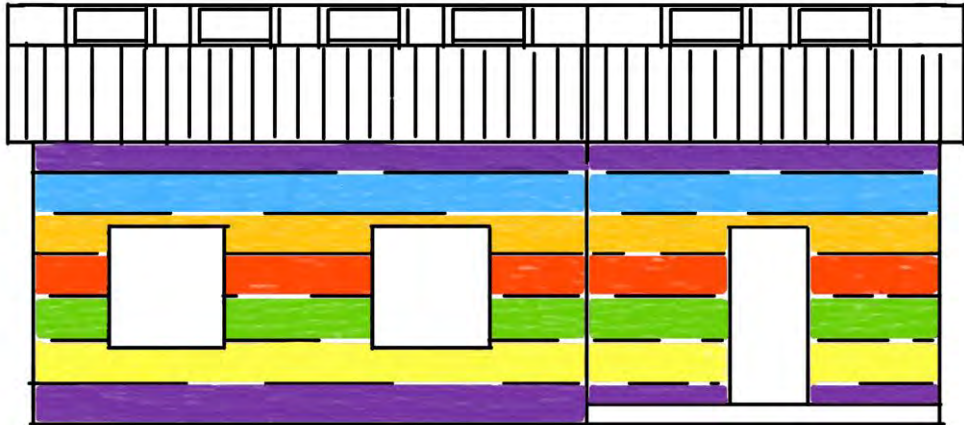
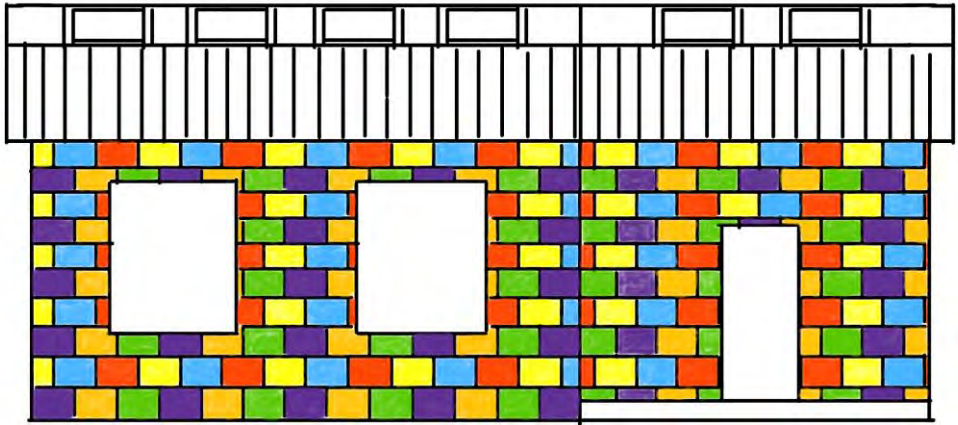
The second floorplan concept offsets the bedrooms slightly from the rest of the home. It separates the bedrooms slightly from the bathroom and kitchen. In the two concepts for combining the units, one enhances the bedroom isolation and the other encloses the bedrooms within the volume. This layout provides one long plumbing wall for bathroom and kitchen but its more difficult to connect those walls in the combined layouts.



Due to ease of construction and cost, the layout has been revised to a rectangle. It also eliminates complicated edges on the roof so the houses will be more airtight.



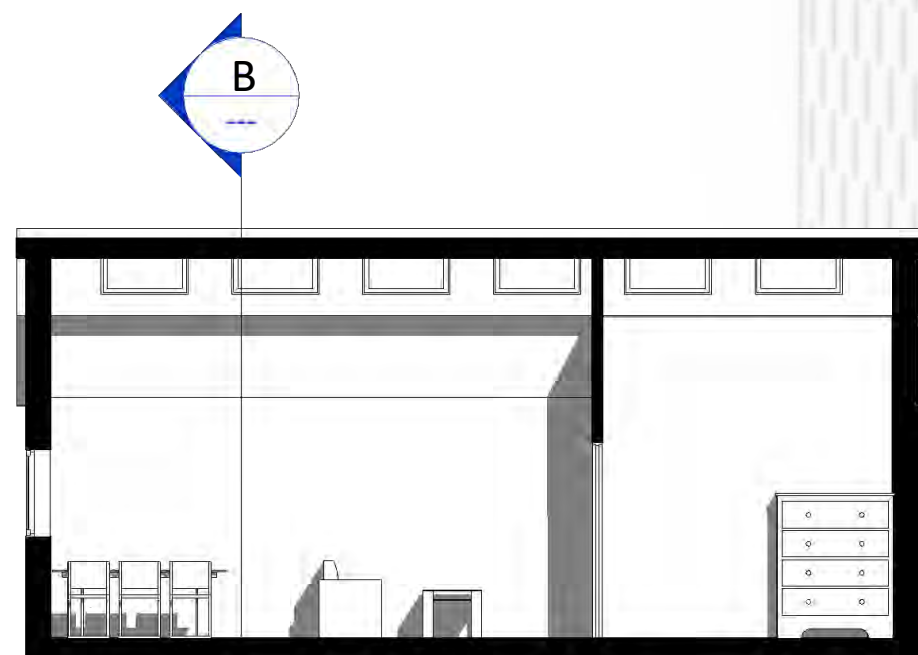
These two exterior concept sketches show the potential for these colorful houses. The colors give the buildings character and celebrate the plastic nature of the structure. The painted brick scheme is mosaic-like and pulls the eye strongly. The horizontal siding scheme demands less attention but it is still very appealing to the eye. The colors are a representation of the plastic used in the bricks.



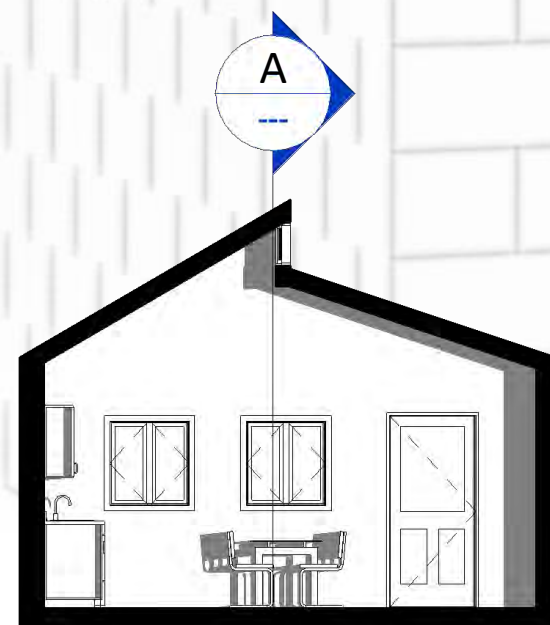
There will also be an opportunity for homeowners to build onto their lot if they decide to in the future. For example, a full length porch (Displayed as red dashed outline) would fit the available space nicely.



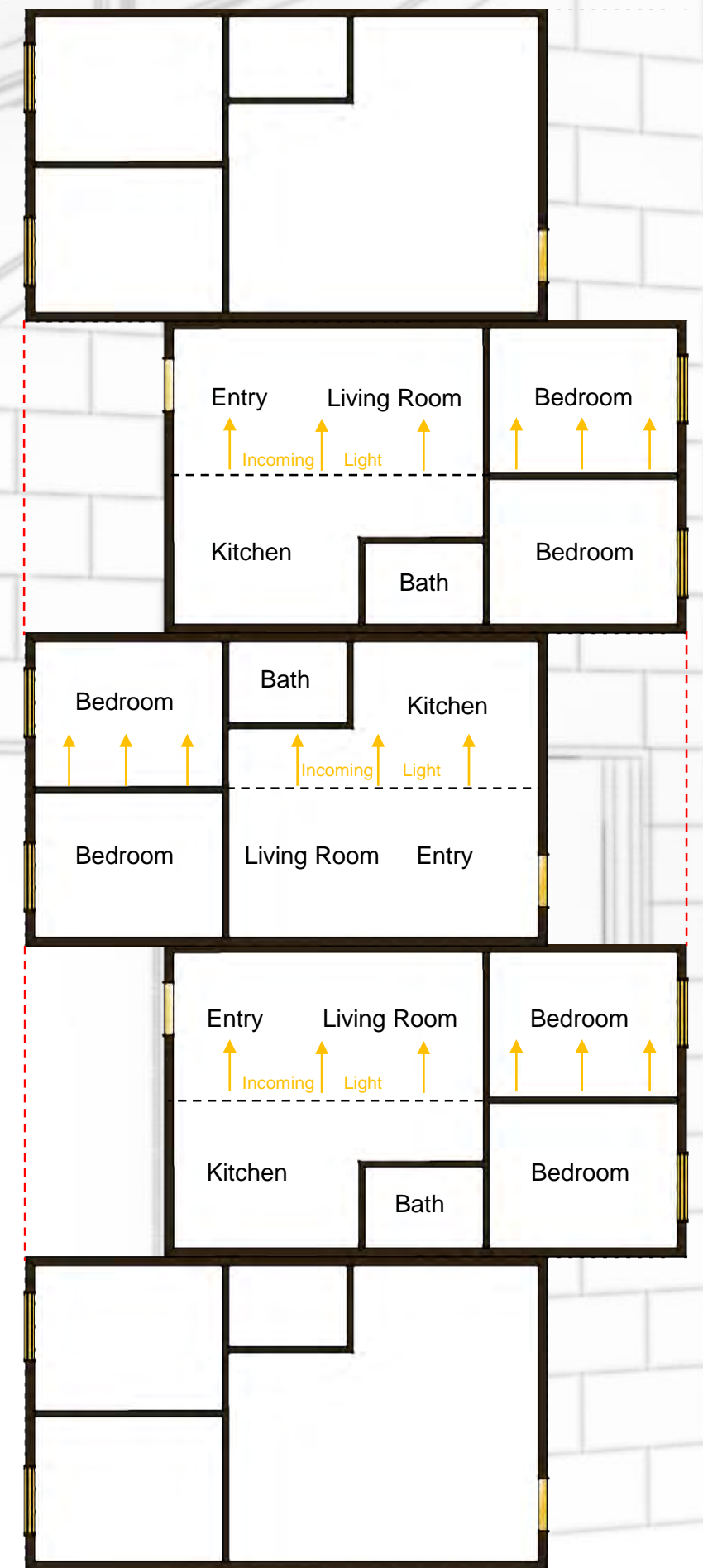
Floor Plan



Section A

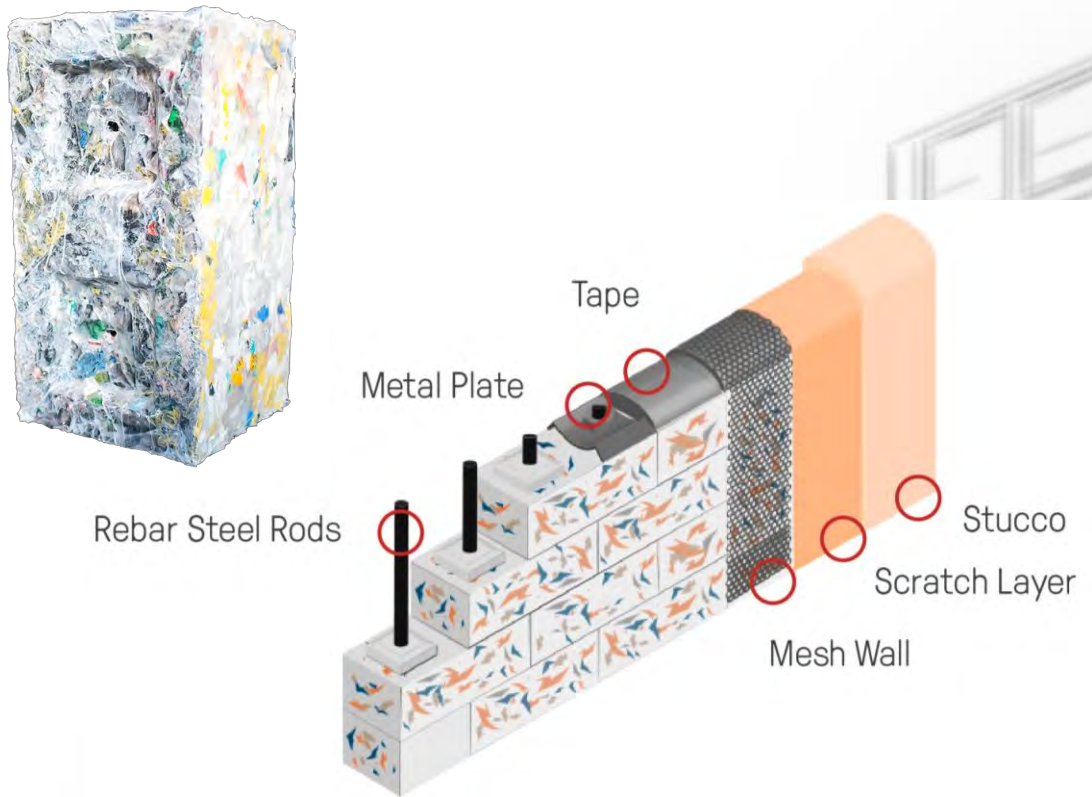


Section B



Adjacency/Light Analysis

The BiFusion BiBlock is an example of the potential of recycled plastic bricks. These bricks have a much higher R value than masonry, and are structurally stronger than typical masonry. The blocks are reinforced with mesh and finished with stucco and paint.



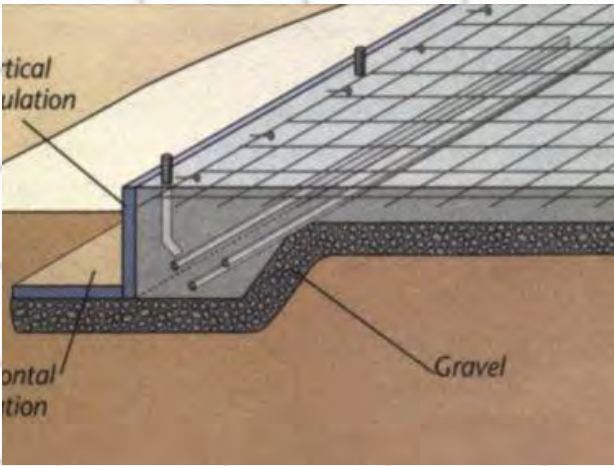
SABS approved pine timbers used for the roof trusses and interior walls.



Cellulose insulation has low carbon emissions, high R value per inch, and is easy to install.



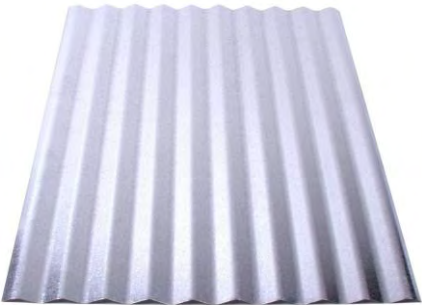
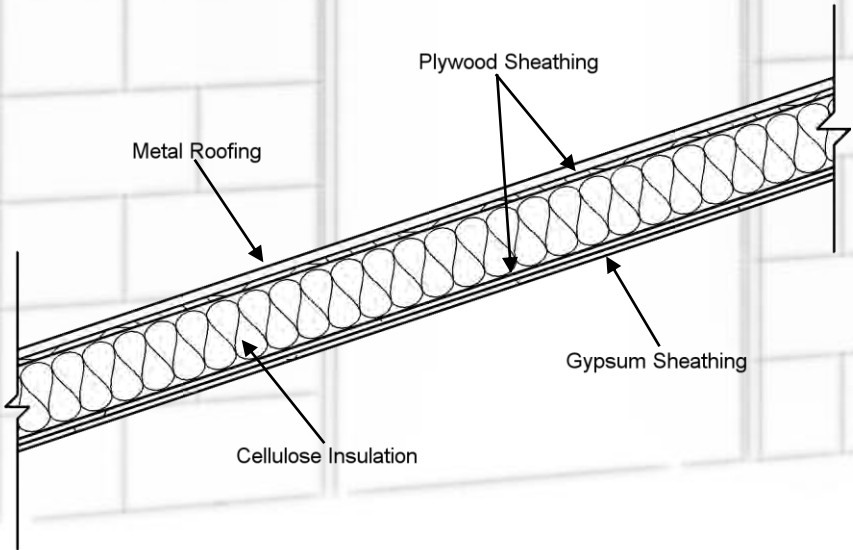
SABS approved cement poured as the floor slab and polished as floor material.



References:

Housingfinanceafrica.org
Readersdigest.com
Byfusion.com
Buildit.co.za

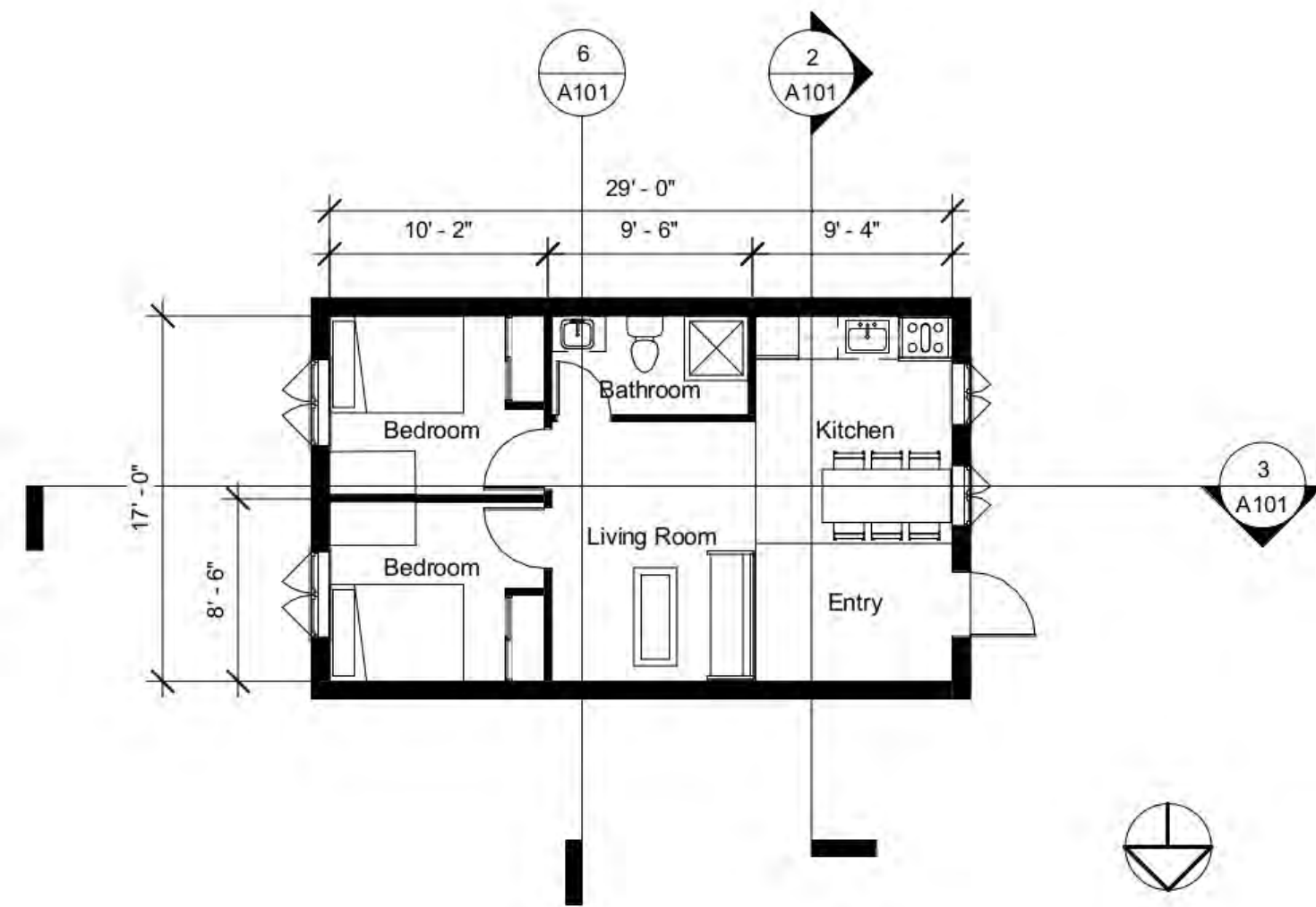
Corrugated steel sheets are very commonly used in Maseru and is a cheaper material than a ceramic or concrete roof.



Building 'Blocks' Housing Design

On the issue of low income housing in Lesotho, I wanted to focus on creating a community of houses anyone could be happy about being a part of. For me, this meant creating something that looks unique and displays an identity of change. It also meant being as environmentally cautious by looking for reused materials and recycled materials that reduce their impact on a weary worldwide climate. Donations and fundraising is key to the success of a project such as this, and my project leans on it for some of the required materials. Change is inevitable, it just needs a push in a positive direction.

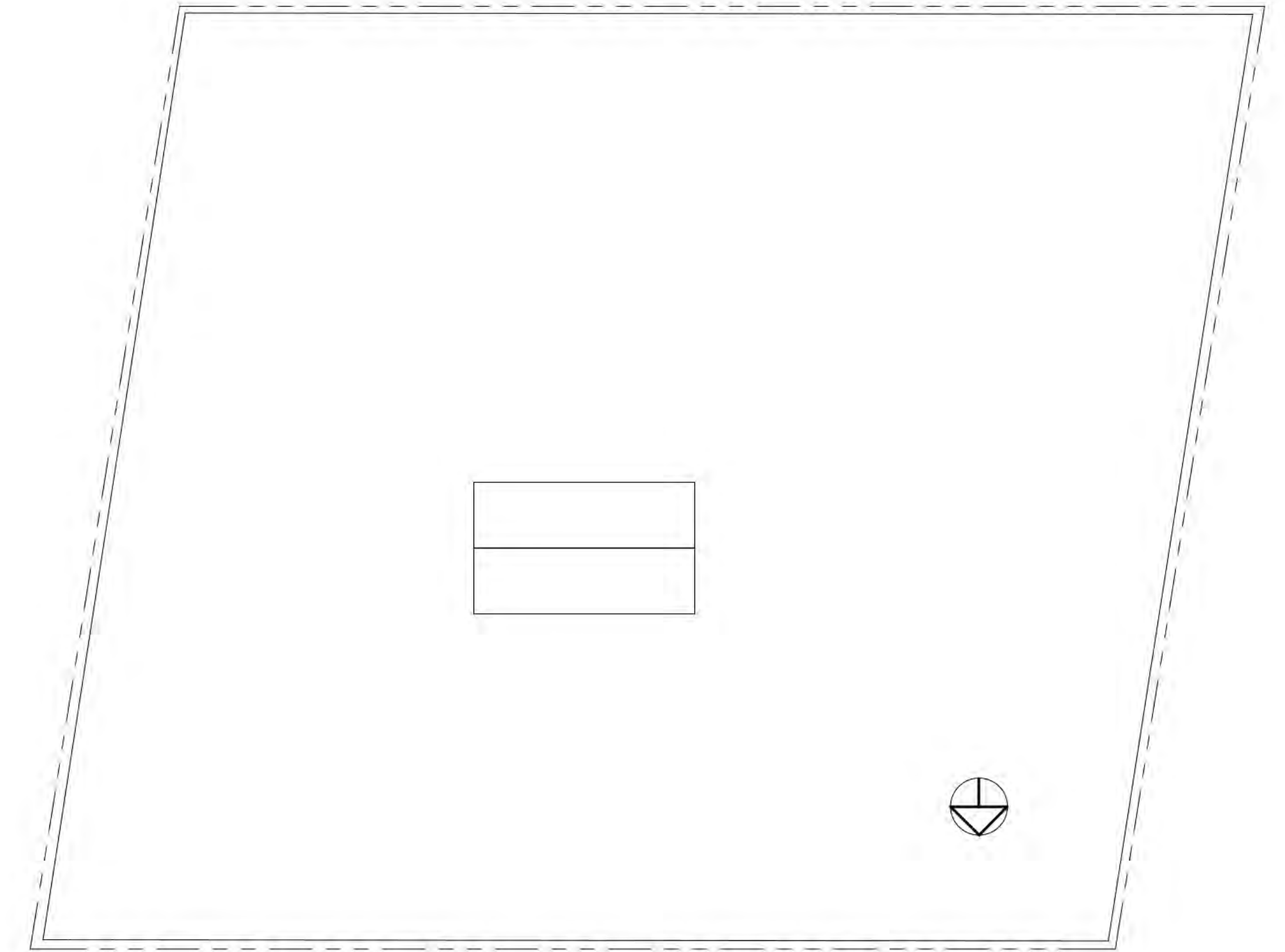
Material	Explanation	Cost (USD)	Cost (LSL)
Plastic	The plastic for the bricks could be collected or donated, therefore it will not be included in the overall cost.	\$129-157	1,788.6-2,176.8
Bricks	The machine that creates the bricks could be used for the entire community and could be used as a fundraising campaign, therefore it will not be included in the overall cost.	\$1,000	14,392.50
Corrugated Metal		\$605.80	8,400
Cellulose Insulation		\$208.50	2,890.80
Pine Lumber		\$101.40	1,459.30
Cement Slab		\$1,503.50	20,845.50
Windows and Doors	Through lightly used resale stores, a variety of windows and doors can be found for 50-75% less than retail price. This pricing is based on 50%.	\$575	8,275.70
Stucco		\$333.90	4,756.40
Labor costs	Assuming 2 weeks (10 days) of construction w/ three workers on average per day.	\$291.80	4,200
Total Cost		\$3,619.90	50,827.7



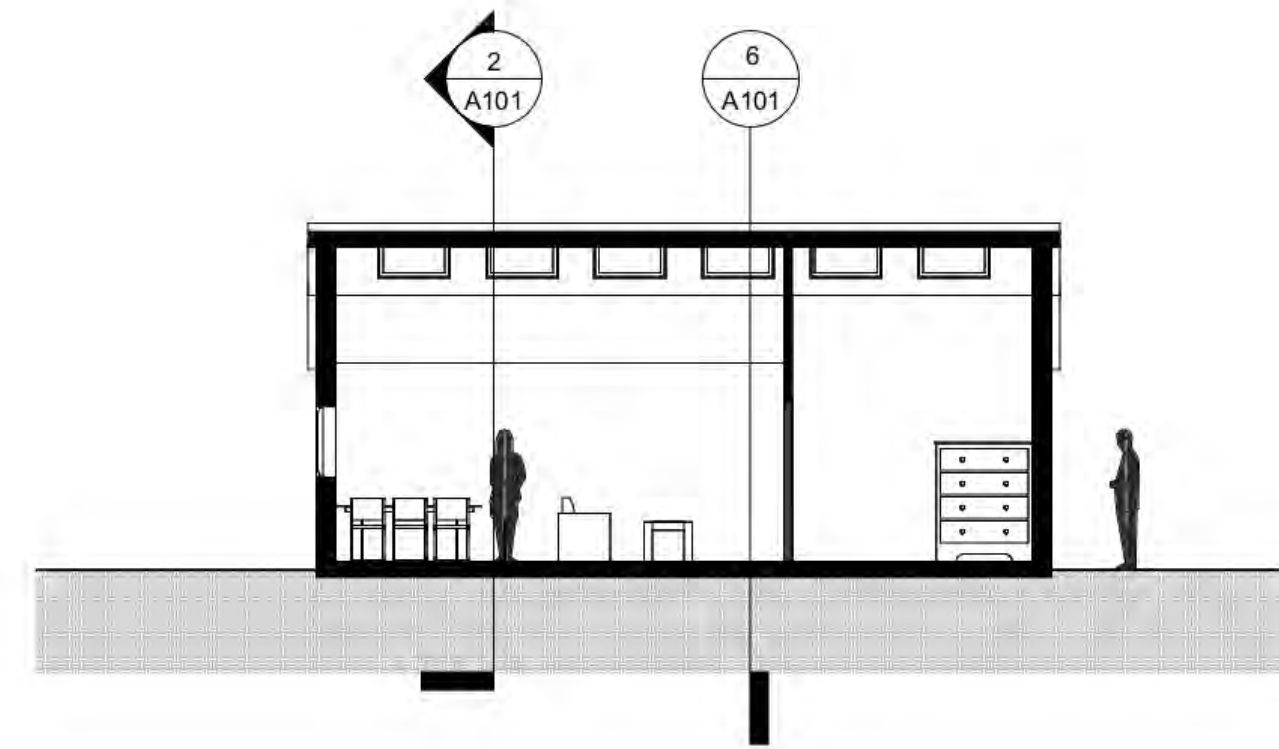
① Floor Plan
1/8" = 1'-0"



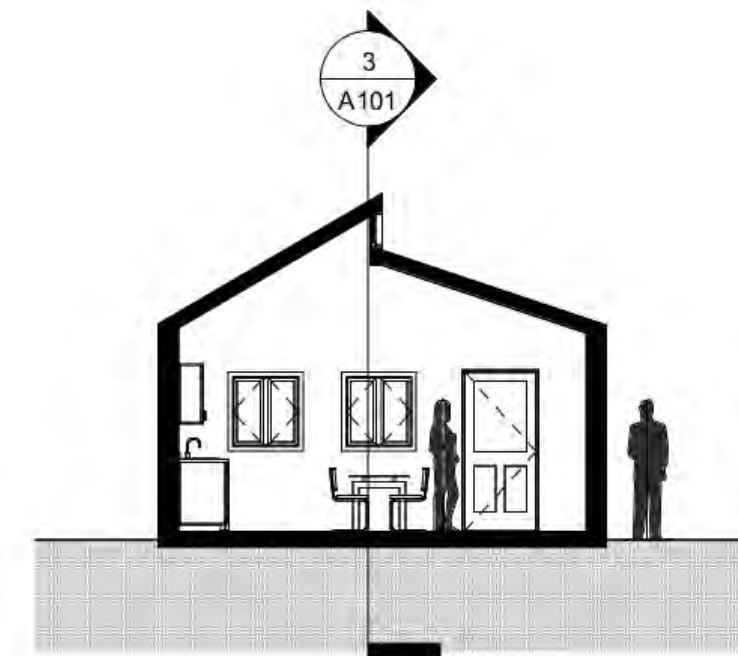
⑦ 3D View 1



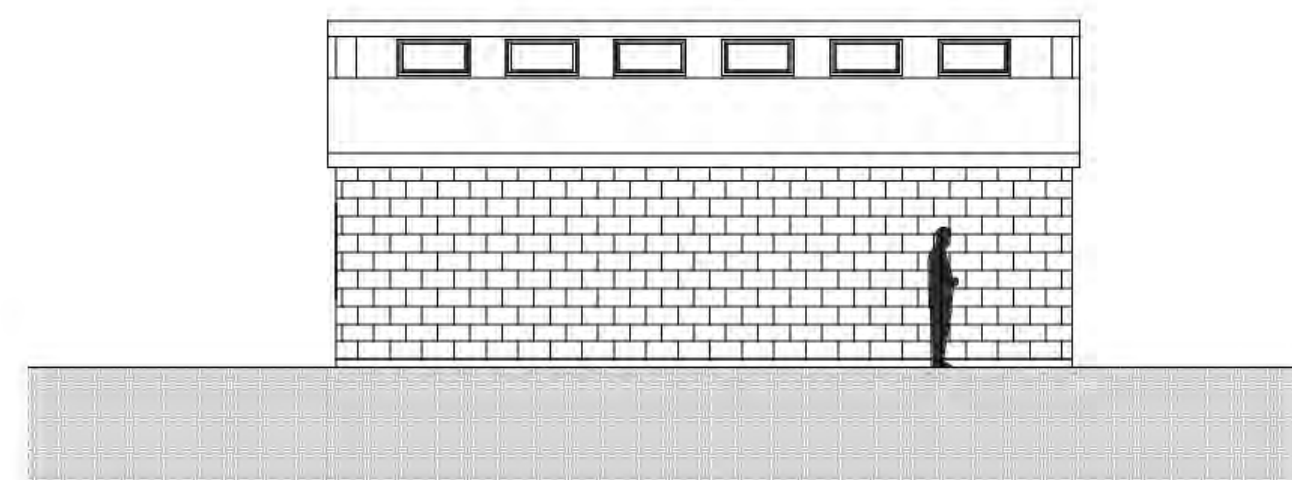
⑧ Site
1/16" = 1'-0"



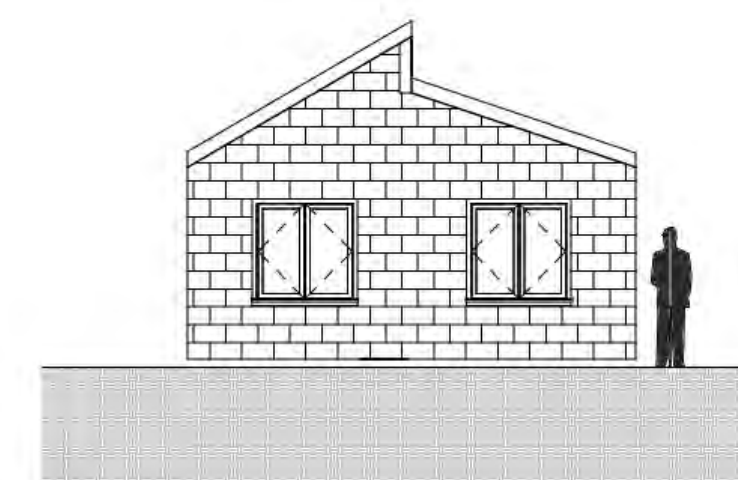
③ Section B
1/8" = 1'-0"



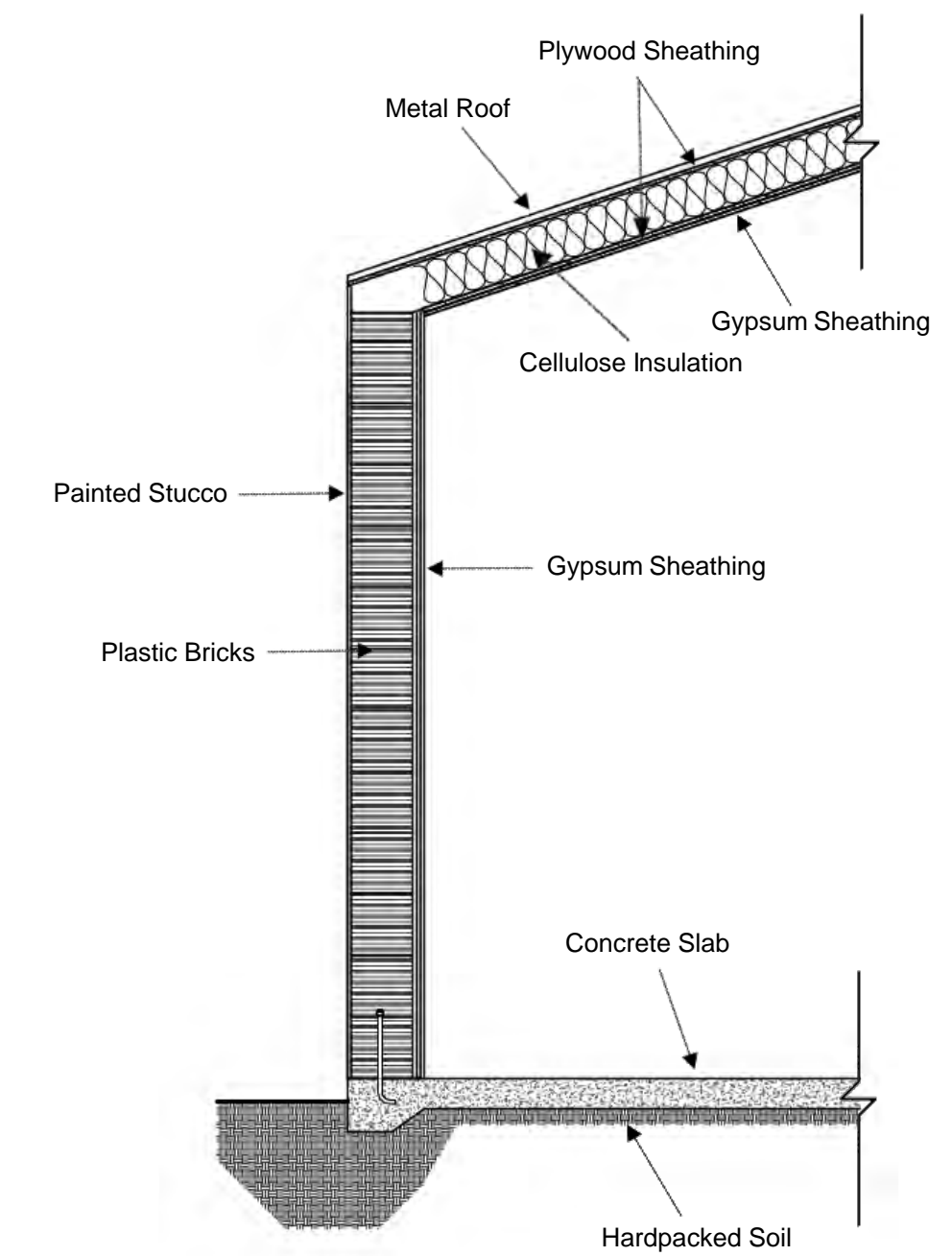
② Section A
1/8" = 1'-0"



④ North Elevation
1/8" = 1'-0"



⑤ East Elevation
1/8" = 1'-0"



⑥ Detail A
1/2" = 1'-0"