

Community Resources Series

K2 Community Hall Project Notes



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December 14, 2015

Abstract: After seven weeks working with K2 community members to plan construction of a community hall, our team compiled all the plans. These include design, construction, shipping container logistics, and management of the facility.

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Project Partners: Community Organisation Resource Centre (CORC), Informal Settlement Network (ISN).

Project Website: For much more on the project from which this report derives, please see [the project website](#).

CTPC Publication Date: December 2015

About the WPI CTPC Community Resources Series

Community Resources publications are designed to assist residents, community-based and non-profit organizations, local government, students, educators and others working toward sustainable community development in disadvantaged communities in South Africa and elsewhere.

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The Cape Town Project Centre (CPTC) is part of the Worcester Polytechnic Institute (WPI) Global Projects Program offering WPI students project opportunities in two dozen centers around the world. Each year, about 26 CTPC third-year undergraduate students from our US university work closely in small groups with local Cape Town organizations and communities on issues posed by our local partners. This report is one of a number of project outcomes produced during two months of fieldwork in Cape Town. See the CTPC website for more information: <http://wp.wpi.edu/capetown>.



K2 Community Hall Project Notes

Cape Town Project Centre

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Version Date:

December 15, 2015

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Purpose of Proposal

This proposal is designed to aid CORC, ISN and informal settlement affiliates to construct a community centre. With future student stakeholders also in mind, it is geared to help ease a student into the realities of this kind of a project. We have drawn up plans both on other student's experiences and our own. It compiles steps needed to implement a community centre in an informal settlement. These include planning, designing, and plan for construction. It is based on a project developed in K2, an informal settlement in Site B of Khayelitsha. A team of about eight community members, including leaders, served as liaisons between the community and other stakeholders. This proposal provides detailed plans for each step of the process. These include:

- Identifying community needs
- Designing a structure that meets those needs
- Drafting a plan for construction
- Drafting a management plan

Identifying Community Needs

Community Hall: A First Tangible Step Toward Reblocking

The community hall will be an area for all members of the K2 community to use. Its primary use will be a space for community meetings. Other potential uses include space for early childhood development, church, savings groups, trainings, workshops, funerals and music/theatre programmes. Part of the hall is a shipping container, which will be used for computers and a library in the future.

The design of the community hall in K2 began with a meeting at CORC to discuss past ideas and plans, and broad ideas related to community improvement. The community quickly decided to focus their efforts on the design and construction of a community hall in the open space at K2. Once the general project was established, the next step was to determine the functions and purposes of the hall. Community members decided that its primary functions would be a meeting hall and a location for early childhood development programmes. The hall was designed with future programmes in mind, such as a library and computer area.

Determining the location of the community building was an ongoing process that began with a map and collaboration between CORC, the K2 community, and the WPI team. Community members decided on several potential locations and worked with the WPI team to create a list of advantages and disadvantages for the various sites. This process continued based on factors such as the location of the Sikhula Sonke early childhood development programme, community input, ease of construction, and drainage locations.

Once a primary location was selected, a scale model was built by the community and the WPI team to better visualize the features of the hall. The original design called for a 12 metre container, which was eventually changed to 6 metres for ease of transport and reduced cost. The scale model helped determine the location of windows and doors, as well as layout and orientation.

From the scale model, drawings and materials lists were created in conjunction with the community to help formalise plans for construction. Involving the community through every step of the project helps ensure that the needs of the community are met and the project will be improved on once the WPI team leaves.

Community Hall Design

Hall Design Aspects: Shipping Container with Custom-Built Hall Attached Shipping Container

The hall has a shipping container as one of the sections, running north to south, perpendicular to the drainage ditch (See Figure 1). The container will serve as a lockable room in the community centre for a library, office, and possibly computers. It also provides a secure space for tools and materials during the construction process.

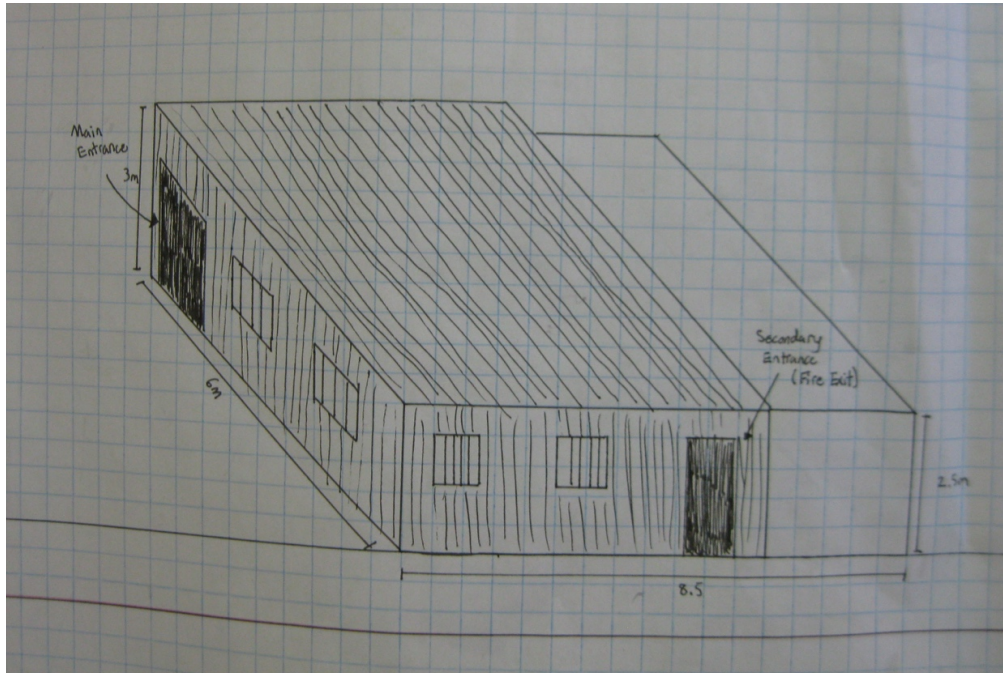


Figure 1: Isometric Scale Drawing

Building Size

Attached to the container will be a new shack-like structure built with the help of community labor. The 6mx6m design was selected over the 8mx12m design primarily due to reduced cost. The building will also be easier to construct quickly due to the smaller size. K2 can only be accessed by vehicle through one road, and old electrical poles as well as overhead wires act as obstacles for moving items into the settlement. There is also a block of toilets and a netball court located in the open area of the settlement. A 6 metre container was selected to decrease the chance that these characteristics of the settlement would be problematic.

The roof span allows for continuous rafters made from standard size lumber (152x50x6.6m) and reduces the possibility of a sagging roof. This also removes the need for a centre roof support. By reducing the area, the facility can be built quicker and using less material. The facility will be designed for expansion, by securing the wall sheeting with screws to facilitate easy removal in the future if necessary.

Drainage

The facility is located away from the passage of floodwater in the winter and has gutters around the upper roof perimeter to channel water towards the main drainage channel. The roof has a 5 degree angle to allow water to flow off the roof and into the drainage channel (Figure 3, label 6). Also Drainage Plan, below.

Access

The facility has two exterior doors located on the outside of the structure, as well as one interior door leading to the shipping container. These provide ventilation during the summer months, as well as easy access and easy exit in case of emergency. All doors can be secured to ensure the security of the facility.

Floor & Anchoring

The container rests on four concrete pads, dug into the ground and properly levelled to ensure a stable footing. The 6mx6m structure is attached to eight poles, anchored in ground in holes filled with concrete. The floor is an elevated concrete slab 25-75mm thick, poured on top of approximately 150mm of rubble fill.

Pros and Cons of using 6x6m Facility

Pros:

- Time: No buildings will be moved or rebuilt in the process.
- Time: The building should be built in approximately half the time.
- Difficulty: The building will be easier to manipulate and construct.
- Difficulty: The netball pole does not have to be moved.
- Safety: No pathways will be blocked with this building.
- Safety: The building will be smaller, and therefore more stable.
- Cost: The building will cost approximately half of the 12x8 plan due to its smaller size.
- Longevity: A flood path can easily be implemented behind the building.
- Longevity: The design allows for relatively easy improvements or expansions.

Cons:

- Smaller: Floor plan switches from 96m² to 51m².
- Security: May only have space for one locking room.

Drawings

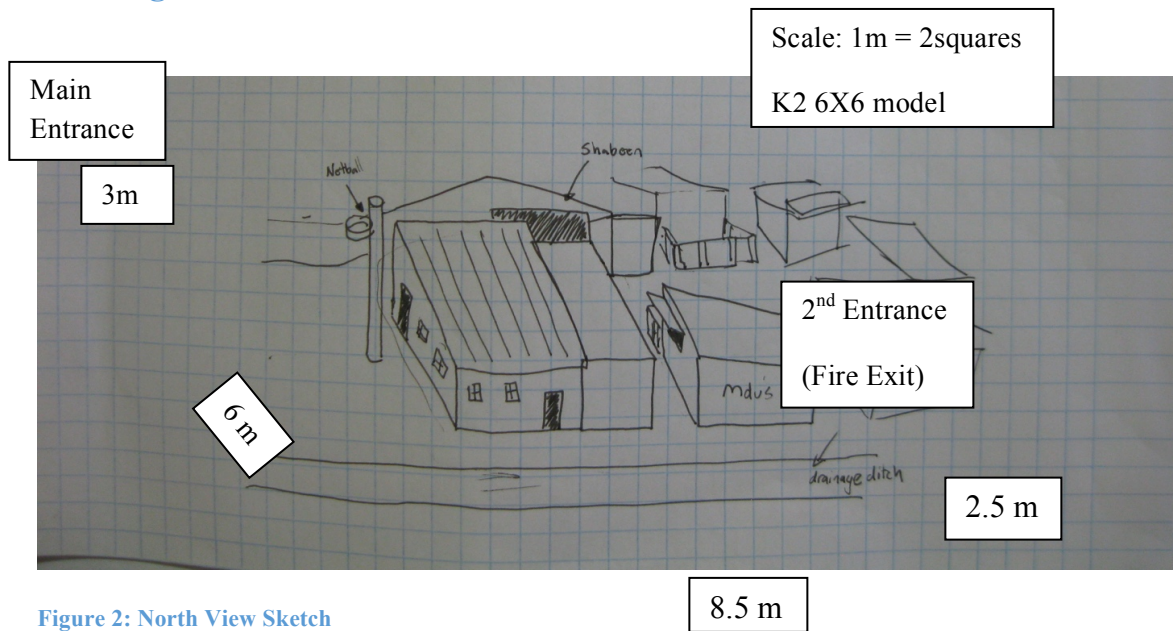


Figure 2: North View Sketch

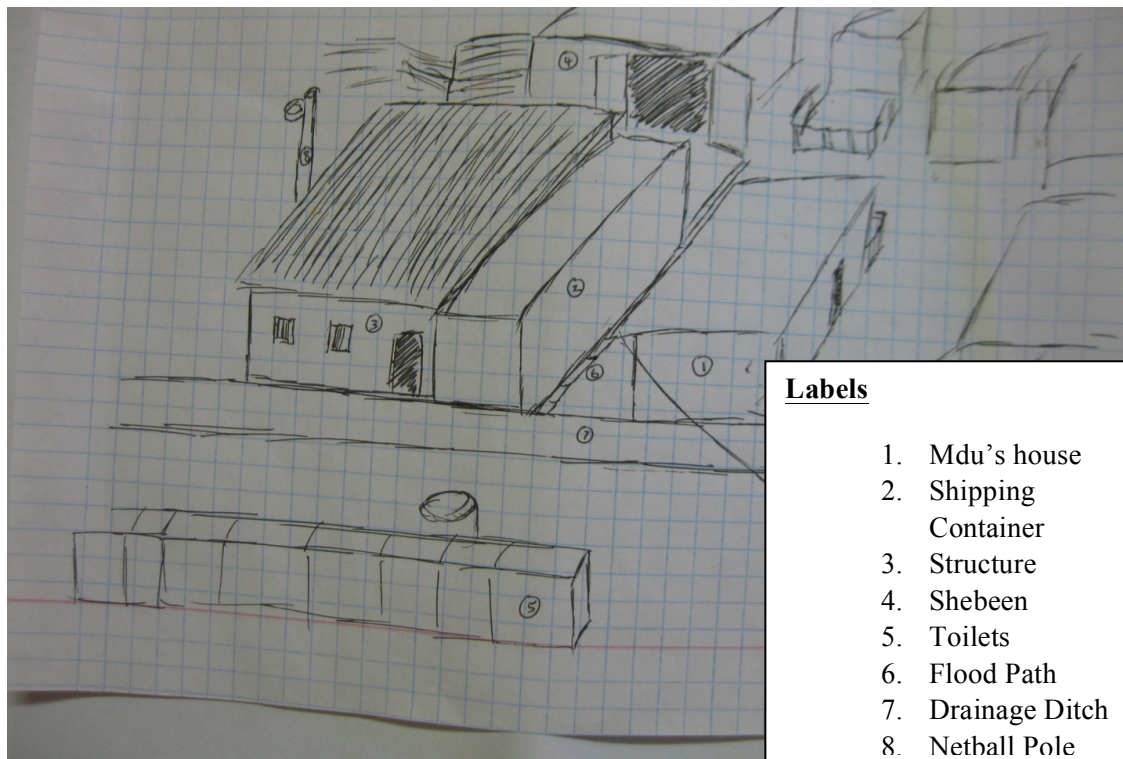


Figure 3: Northwest View

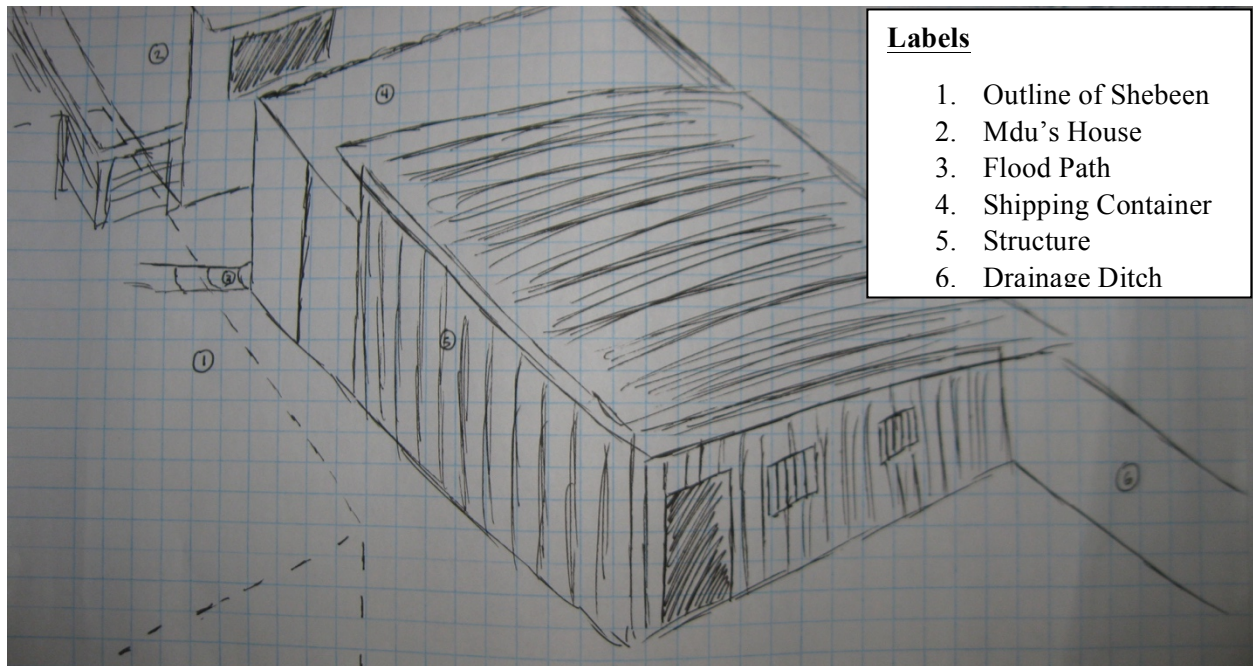


Figure 4: Southeast View

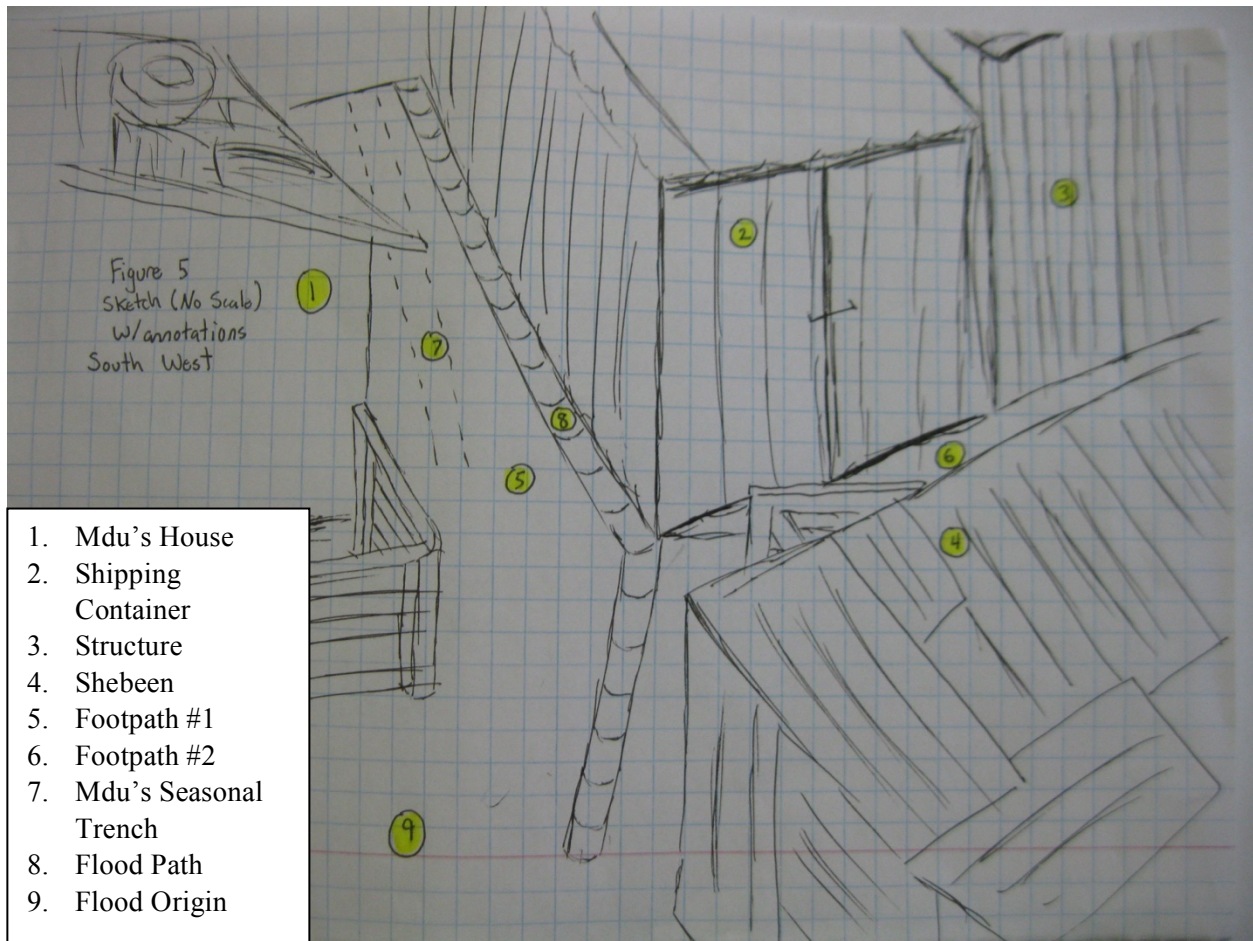


Figure 5: Southwest View

Labels

Footpath #1 (2m from Mdu's House)

Footpath #2 (2.5m from Shebeen)

Mdu's Seasonal Trench (He digs it during the rainy season to transport flood waters)

Flood Origin ("If we put [the flood path] here, flooding will not be an issue"- Mdu)

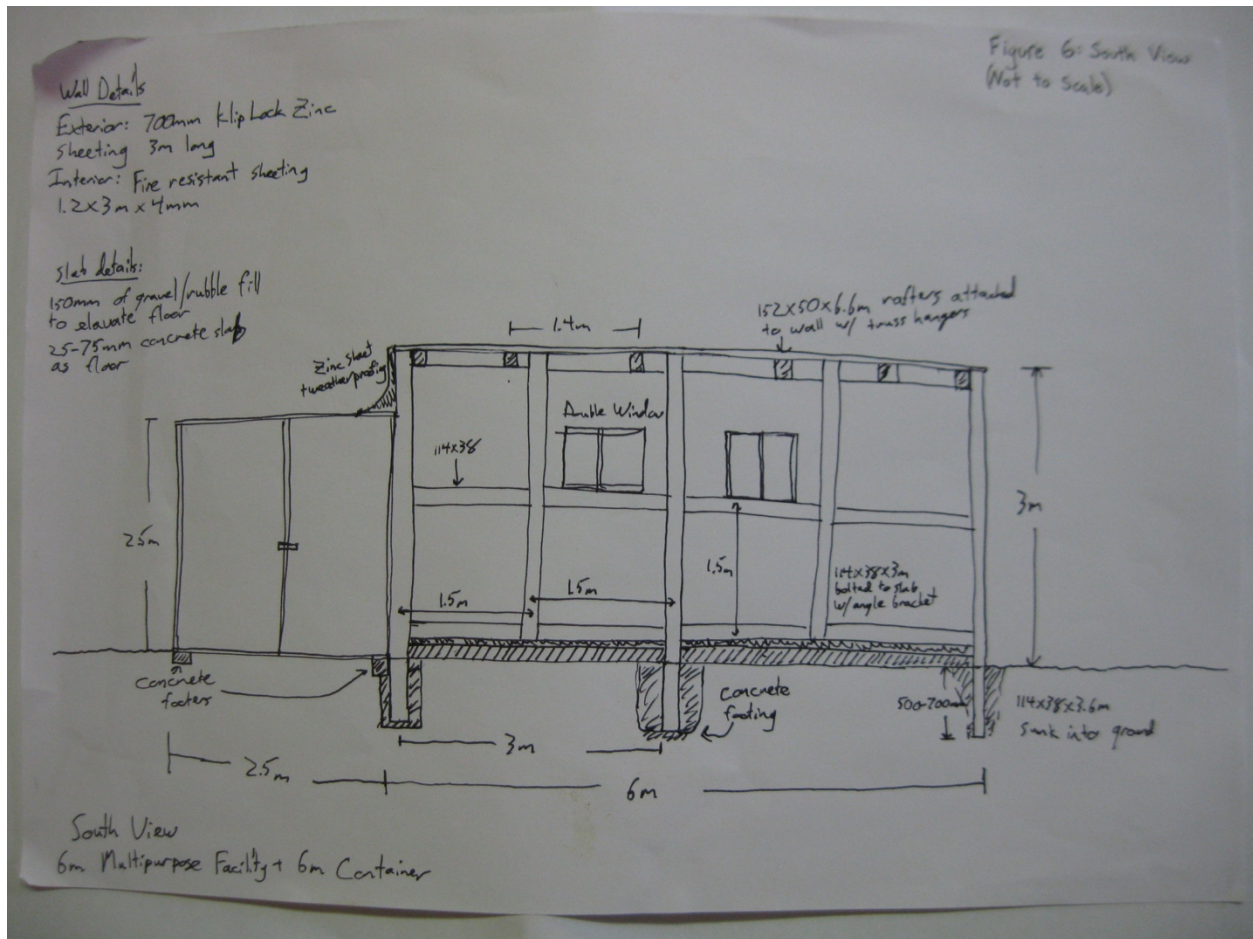


Figure 6: South View

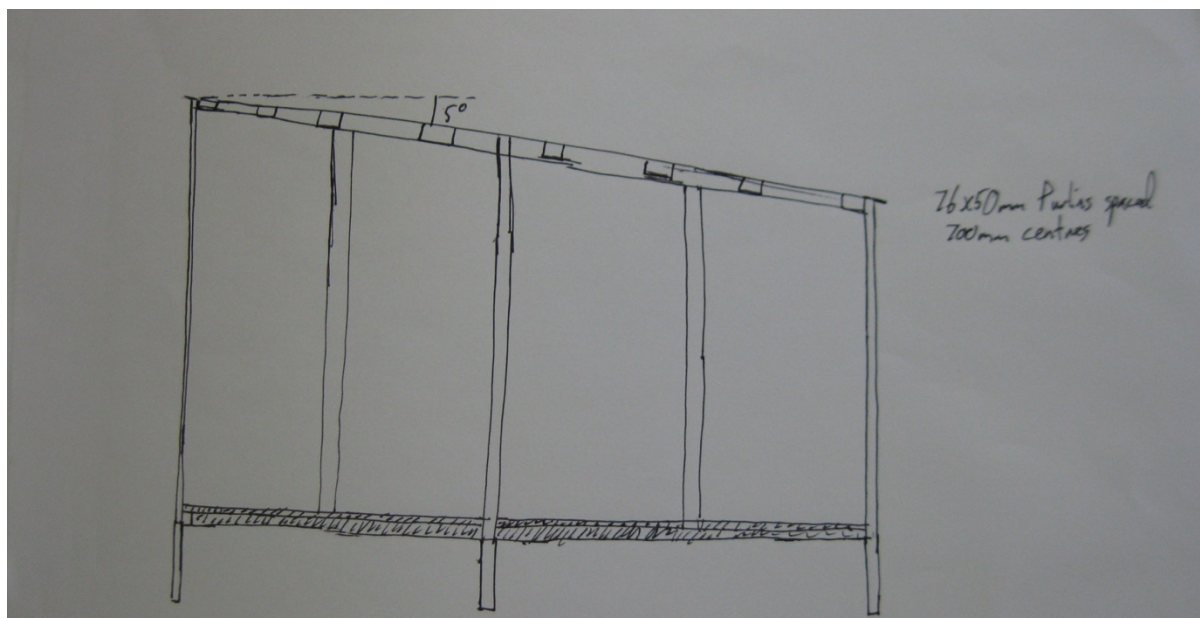
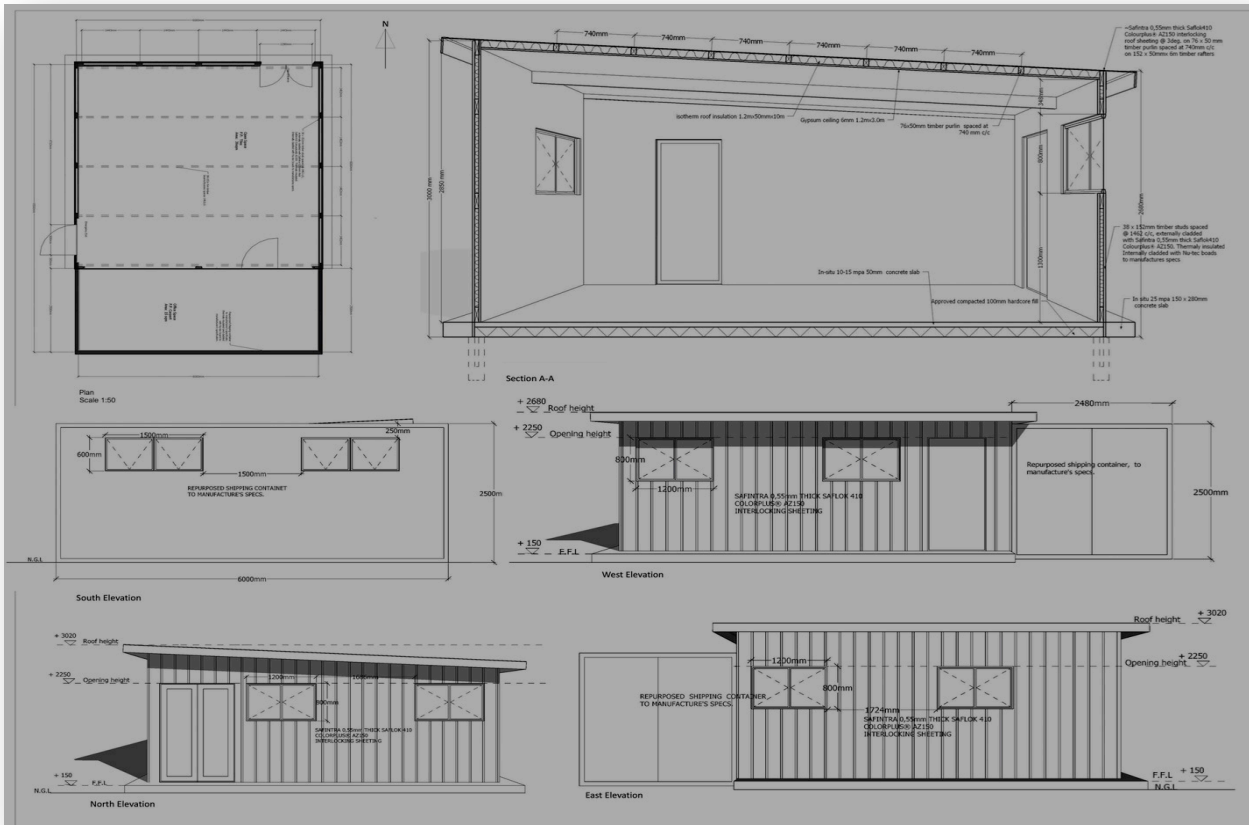


Figure 7: East View

Figure 8: East View without structure

The diagram shows a large rectangle representing the building's footprint. On the left side, there is a smaller rectangle representing a door. To the right of the door, there is a small circle. On the right side of the large rectangle, there is a smaller rectangle with vertical lines inside, representing a window.

Figure 8: East View of Container without Structure



Building Timeline

Our team gathered input on construction processes from CORC and the Langrug MPC Guidebook (2012). Using this information alongside information gathered during our time in K2, we drafted a building timeline divided in two major phases:

Phase 1: Shipping Container

Phase 2: Extended Structure

Basic Questions Applicable to Each Step of Construction:

1. Is there a clear plan for construction?
2. Who will be leading this phase of construction?
3. Who will be the safety officer?
4. What tools and materials are needed for this step?
5. How long will this step take?
6. How many laborers are needed for this step?
7. Does everyone understand the safety risks and the hazards involved with the project?
8. Has everyone taken the necessary safety precautions?
9. Are necessary safety and emergency equipment on site?
10. Is there a reliable source of electricity available?
11. Where will the materials and tools be stored overnight?

Phase 1: Shipping Container

Step 1: Level and compact ground and start building stands

What we need for day one:



Shovel



Pickaxe



Tamper

- Concrete (cement, sand, crushed stone, water)

Specific Questions:

1. What is the the ground like for the site? (This may affect the types of tools needed)
2. How will this affect nearby families, businesses and homes?

Step 2: Cutting windows and doors in the container

What we need for step two:



Grinder



Extension Cord



Door/Window

Assorted Fasteners

Specific Questions:

1. Will the modifications be structurally sound?
2. Would it be easier or cheaper to pay for the conversion instead of doing it yourself?

Phase 2: Extended Structure

Step 1: Level and compact ground/start digging holes

What we need for step one:



Shovel



Pickaxe



Tamper

Specific Questions:

1. What size poles are needed?
2. How many poles are needed?
3. How far apart should the poles be spaced?
4. How deep should the holes be?

Step 2: Digging holes for poles

What we need for step two:



Shovel



Pickaxe

Specific Questions:

1. What size poles are needed?
2. How many poles are needed?
3. How far apart should the poles be spaced?
4. How deep should the holes be?

Step 3: Finish digging holes and start placing poles in ground

What we need for step three:



Shovel

- Concrete (cement, sand, crushed stone, water) for the holes with the poles

Specific Questions:

1. Who will make sure the concrete is mixed correctly?
2. How will the poles be supported while the concrete cures?

Step 4: Wall construction

What we need for step four:



Timber



Nails

- Tools (hammers, saws, measuring equipment, power tools, ladders)

Specific Questions:

1. Will the wall be constructed in sections?
2. How far apart will the studs be spaced?
3. Where will the partially completed wall sections be stored?
4. Is someone checking to ensure all window and door cutouts are correct?

Step 5: Wall construction continuation and siding

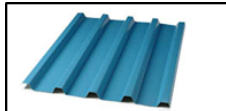
What we need for step five:



Timber



Nails



IBR Zinc



Grinder



Extension Cord

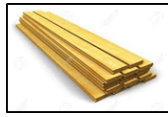
- Tools (hammers, saws, measuring equipment, power tools, ladders)

Specific Questions:

1. Who will make the window and door cutouts in the siding?

Step 6: Roof framing

What we need for step six:



Timber



Nails



Nail Plate

- Tools (hammers, saws, measuring equipment, power tools, ladders)

Specific Questions:

1. Does the design ensure that no water will leak through the roof?
2. How will the roof be put into position?

Step 7: Roof Completion

What we need for step seven:



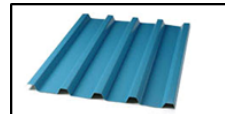
Timber



Nails



Nail Plate



IBR Zinc



Joist Hanger

- Tools (hammers, saws, measuring equipment, power tools, ladders)

Specific Questions:

1. How will the roof be put into position?
2. Will the roof sheeting be put on while the roof is in place or while on the ground?
3. Is there an appropriate overhang to keep the walls dry?

Step 8: Windows and Doors

What we need for step eight:



Timber



Nails



Windows/Doors

- Tools (hammers, saws, measuring equipment, power tools, ladders)

Specific Questions:

1. What are the dimensions of the windows and doors?
2. Have the windows and doors already been cut out?
3. Will the doors have locks on them?
4. Will the windows have bars?

Step 9: Prepare area for concrete slab

What we need for step nine:



Shovel



Rake



Timber



Stakes

- Wood and stakes for concrete form
- Concrete (cement, sand, crushed stone, water) for the slab

Specific Questions:

1. Is the ground level and ready for concrete to be laid?
2. How will the form be constructed?

Step 10: Pour concrete slab

What we need for step ten:



Shovel



Timber



Stakes



Level

- Concrete (cement, sand, crushed stone, water) for the holes with the poles
- Timbers to level the concrete

Weekend: Cement drying period

Specific Questions:

1. Will this be done all in one day?
2. How long does it take for the concrete to dry?
3. How will the concrete slab be levelled?
4. Where will the cement be mixed?

Drainage Plan

This section provides a drainage plan developed with the K2 working group. The team gathered input from community leaders on which locations adjacent to the community hall get flooded during the year.

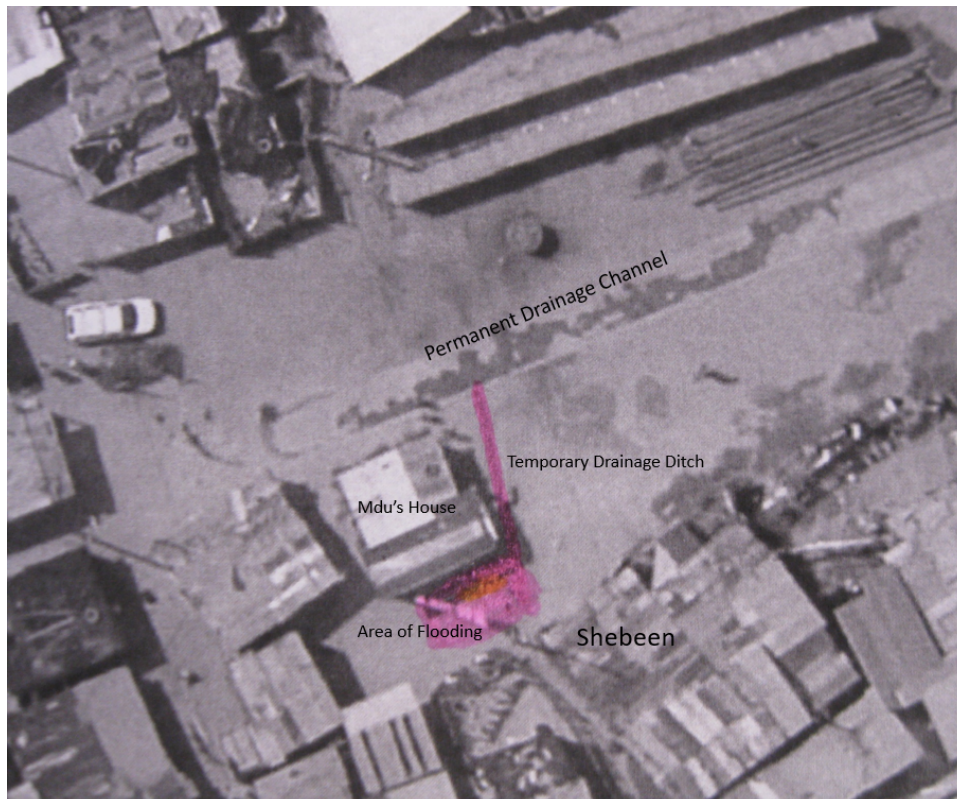


Figure 9: K2 Flooding Map

The area indicated in the map experiences significant flooding in the winter months due to insufficient drainage in the area. Several centimetres of water accumulate next to Mdu's garden and by the shebeen door. Due to the water, the right side door of the shebeen has sunk into the ground by several centimetres and was dug out during the summer months so it could open. To temporarily alleviate the flooding problem, Mdu digs a trench running from his garden area to the drainage ditch. According to him, this removes the floodwater and temporarily solves the problem, until the ditch washes away and has to be remade.

To prevent flooding in the community hall, the back of the shipping container will be placed approximately 2 metres from the front of Mdu's shack. This will allow him to access his

business window as well as dig the trench to redirect floodwater. In the future, a formalized trench could be dug and lined with concrete to provide a more permanent solution to the flooding. The community hall will also have gutters along the roofline and an elevated concrete slab. Gutters will redirect water into the main drainage trench running through the open area of the settlement, and the elevated slab will help keep the bottom of the hall dry in case of severe flooding.

List of Materials and Quotes for Extended Structure

A list of materials was created based on the final design of the Community Hall. Below is a list of materials needed to build the structure and three quotes from hardware stores in Khayelitsha.

6mx6m Design Materials:

Quotes:

1) **Hardware:** Khayelitsha Hardware

Contact Info: 0213618000

Material	Dimensions	Cost per Unit	Quantity	Total Cost
Wood	114 x 38 x 3.6 m	R 95.00	5	R 475.00
Wood	114 x 38 x 3.0 m	R 80.00	27	R 2,160.00
Wood	152 x 50 x 6.6 m	R 245.00	6	R 1,470.00
Purlins	76 x 50 x 6 m	R 160.00	9	R 1,440.00
Door Frames	114 x 38 x 4.2 m	R 110.00	3	R 330.00
Window Support (wood)	38 x 38 x 3.0 m	R 23.50	2	R 47.00
Wood doors		R 950.00	2	R 1,900.00
Windows	Double frames	R 195.00	4	R 780.00
Zinc IBR	700 mm x 3.6 m	R 170.00	20	R 3,400.00
Zinc IBR	700 mm x 2.5 m	R 125.00	9	R 1,125.00
Zinc IBR	700 mm x 3.0 m	R 138.00	18	R 2,484.00
Angle Brackets		R 20.00	6	R 120.00
Cement	40 kg	R 79.00	1	R 79.00
Rocks	40 kg	R 18.00	1	R 18.00
Sand	40 kg	R 15.00	1	R 15.00
Trus Hangers for Rafters		R 20.00	1	R 20.00
Nails	Pack	R 10.00	1	R 10.00
Screws	Pack	R 1.10	1	R 1.10
Interior Sheet	1.2 x 3 m x 4 mm	R 95.00	20	R 1,900.00
Delivery		R 300.00	1	R 300.00
			Subtotal	R 18,074.10

Section	Material	Dimensions
Poles into ground	Wood	114 x 38 x 3.6 m
Vertical and Horizontal Support	Wood	114 x 38 x 3.0 m
Rafters	Wood	152 x 50 x 6.6 m
Roof	Purlins	76 x 50 x 6 m
	Door Frames	114 x 38 x 4.2 m
	Window Support (wood)	38 x 38 x 3.0 m
	Wood doors	
	Windows	Double frames
Roof	Zinc IBR	700 mm x 3.6 m
Front	Zinc IBR	700 mm x 2.5 m
Walls	Zinc IBR	700 mm x 3.0 m
	Angle Brackets	
Slab	Cement	40 kg
Slab	Rocks	40 kg
Slab	Sand	40 kg
Rafters	Trus Hangers for Rafters	
Framing	Nails	Pack
Roof and Wall She	Screws	Pack
Interior	Interior Sheet	1.2 x 3 m x 4 mm
	Delivery	

2) **Hardware:** R&Z Hardware

Contact Info: 0213610187

*IBR Zinc size 700 mm x 2.5 m is not available in this hardware store. However, more quantity of the 3.0 m sized material can be bought and cut.

Material	Dimensions	Cost per Unit	Quantity	Total Cost
Wood	114 x 38 x 3.6 m	R 87.00	5	R 435.00
Wood	114 x 38 x 3.0 m	R 70.00	27	R 1,890.00
Wood	152 x 50 x 6.6 m	R 299.33	6	R 1,796.00
Purlins	76 x 50 x 6 m	R 70.00	9	R 630.00
Door Frames	114 x 38 x 4.2 m	R 99.00	3	R 297.00
Window Support (wood)	38 x 38 x 3.0 m	R 22.00	2	R 44.00
Wood doors		R 554.50	2	R 1,109.00
Windows	Double frames	R 150.00	4	R 600.00
Zinc IBR	700 mm x 3.6 m	R 139.00	20	R 2,780.00
Zinc IBR	700 mm x 2.5 m	R -	9	R -
Zinc IBR	700 mm x 3.0 m	R 116.00	18	R 2,088.00
Angle Brackets		R 18.00	6	R 108.00
Cement	40 kg	R 79.00	1	R 79.00
Rocks	40 kg	R 18.00	1	R 18.00
Sand	40 kg	R 14.00	1	R 14.00
Truss Hangers		R 18.00	1	R 18.00
Nails	Pack	R 20.00	1	R 20.00
Screws	Pack	R 20.00	1	R 20.00
Interior Sheet	1.2 x 3 m x 4 mm	R 125.00	20	R 2,500.00
Delivery		R 70.00	1	R 70.00
			Subtotal	R 14,516.00

3.)Hardware: Cashbuild

Contact: 0710836081

Material	Dimensions	Cost per Unit	Quantity	Total Cost
Wood	114 x 38 x 3.6 m	R 76.27	5	R 381.35
Wood	114 x 38 x 3.0 m	R -	27	R -
Wood	152 x 50 x 6.6 m	R 266.62	6	R 1,599.72
Purlins	76 x 50 x 6 m	R 121.89	9	R 1,097.01
Door Frames	114 x 38 x 4.2 m	R 88.55	3	R 265.65
Window Support (wood)	38 x 38 x 3.0 m	R 19.25	2	R 38.50
Wood doors		R 587.68	2	R 1,175.36
Windows	Double frames	R -	4	R -
Zinc IBR	700 mm x 3.6 m	R 113.99	20	R 2,279.80
Zinc IBR	700 mm x 2.5 m	R -	9	R -
Zinc IBR	700 mm x 3.0 m	R 127.15	18	R 2,288.70
Angle Brackets		R 21.89	6	R 131.34
Cement	40 kg	R 63.99	1	R 63.99
Rocks	40 kg	R 18.38	1	R 18.38
Sand	40 kg	R 21.89	1	R 21.89
Trus Hangers for Rafters		R 19.25	1	R 19.25
Nails	1 kg x 3.55 MM	R 21.89	1	R 21.89
Nails	1 kg x 4 MM	R 21.89	1	R 21.89
Nails	1 kg x 5 MM	R 26.27	1	R 26.27
Nails	1 kg x 6 MM	R 30.66	1	R 30.66
Screws	Pack	R 173.64	1	R 173.64
Interior Sheet	1.2 x 3 m x 4 mm	R -	20	R -
Delivery		R 180.00	1	R 180.00
			Subtotal	R 9,835.29

*Wood sized 114 x 38 x 3.0 m, double framed windows, zinc IBR sized 700 mm x 2.5 m, and interior sheets are not available in this hardware store.

Tools Required for Construction

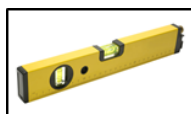
This section provides a list of tools needed to build the Community Hall. It also shows which ones are available in the community and which ones are not. The price to rent them for is still to be agreed upon.



Grinder



Hammer



Level



Circular Saw
(Skilsaw)



Drill



Jigsaw



Chainsaw

- Chainsaw is not available in community

Construction Team

This section shows the different teams the K2 working group broke up into. These are the Builder Team, the Organizer Team, and the “Sizayama” (We Are Trying) Team. Each team has a list of responsibilities.

	Builder Team ●	Organization Team ■	Siyazama Team ▲
People	Zolisa Sobethwa (Mdu)	Neziswa Tgesi	Babalwa Mxabo
	Sandile Lupuwana	Asandiswa Miya	Bongiswa Ngomo (Zusake)
	Masibulele Swelihashe (Mabie)		
	Thobelani (Ficks)		

Builder Team (Community Members) ●

Responsibilities

1. Work in a timely, efficient, and safe manner for the successful construction of the Community Hall.
2. Work on all phases of construction including earthwork, masonry, carpentry, finishing, etc.
3. Employment will be through CORC and will terminate at the end of Community Hall construction or as otherwise determined by CORC.
4. Labourers will be compensated at a rate of R100 for each full day of work completed.
5. Successful employees will also receive a letter of recommendation.

Organizer Team (Community Members) ■

Responsibilities

1. Work in a timely, efficient, and safe manner for the successful construction of the Community Hall.
2. Organize materials every day and assist construction team in assigned tasks.
3. Go to hardware store if needed
4. Help store materials and tools at the end of the day and have them ready before construction begins each day.
5. Employment will be through CORC and will terminate at the end of Community Hall construction or as otherwise determined by CORC.
6. Labourers will be compensated at a rate of R100 for each full day of work completed.
7. Successful employees will also receive a letter of recommendation.

“Siyazama” (We Are Trying) Team (Community Members) ▲

Responsibilities

1. Work in a timely, efficient, and safe manner for the successful construction of the Community Hall.
2. Assist on all phases of construction including earthwork, masonry, carpentry, finishing, etc.
3. Employment will be through CORC and will terminate at the end of Community Hall construction or as otherwise determined by CORC.
4. Labourers will be compensated at a rate of R100 for each full day of work completed.
5. Successful employees will also receive a letter of recommendation.

Safety Officer

The safety officer will be a community member working with a member of the WPI team to oversee general construction safety.

Responsibilities

1. Enforce sensible use of tools.
2. Watch the construction site to assure it is tidy.
3. Make sure children are not around the construction site.
4. Make sure there are safety goggles and work gloves available to workers.
5. Bring first aid kit every construction day.

Labour Hours and Costs

- 9:00 AM-3:30 PM on Monday, Tuesday, Thursday, and Friday
- R100 per day per person

Shipping Container Logistics

For Phase 1 of the Community Hall, a 6 metre shipping container was purchased. Our team contacted various suppliers to obtain quotes and plan for the delivery into an informal settlement. This section contains the suppliers contacted, the quotes obtained, logistics for delivery, directions into K2, and delivery methods.

Suppliers

Supplier Information		
Company	Location	Number
Container R/s	Promat office, 97 voortrekker rd, salt river	(021) 511-4080
Big Box	424 Voortrekker Road, Maitland	(021) 511-3490
Stella Containers	29 Willow Road, Stikland, Belville,	(021) 917 5770
Ufudu	Plot 91, Beyers Naude Drive, Honeydew, Randburg, Gauteng, 2040	27861838381
TCC Containers	Transwerk Industrial Park	27215585087

Options

Quotes

Supplier Information	Container (6 m)				Container (12 m)			Delivery Charge
Company	Storage	Cargo	Office (Door and windows)	Office (with lighting)	Storage	Cargo	Office	
Container R/s	R 16,800.00	N/A	R 25,000.00	N/A	R 19,000.00	-		Included
Big Box	R 18,800.00	N/A	N/A	N/A	R 28,600.00	-		R 3,600.00
Stella Containers	R 17,000.00	R 17,000.00	R 35,000.00	R 37,000.00	R 19,500.00	R 25,000.00	R 59,000.00	R 2,200.00
TCC Containers	R 22,000.00				R 32,661.00	-	R 61,416.88	Included

- If we choose Stella, the team suggests their cargo option. This would be a total of **R19,500.00** including delivery within 48 hours. This does not include any conversions to the container.
- Container R/S has the option of providing a 6 m container with a door and two windows and delivery charge included for R25,000.00

Container Delivery to K2

Preparing the Site for the Shipping Container

Before preparing the site for a shipping container, get information about local laws, permits and restrictions about storage containers in the area. Ensure the necessary permit for the desired placement of the container is completed, to make sure no fines are sent to the community due to the container. The company will provide a site inspection and inform us of any changes that need to be made before delivery.

Coordinate with Delivery Driver

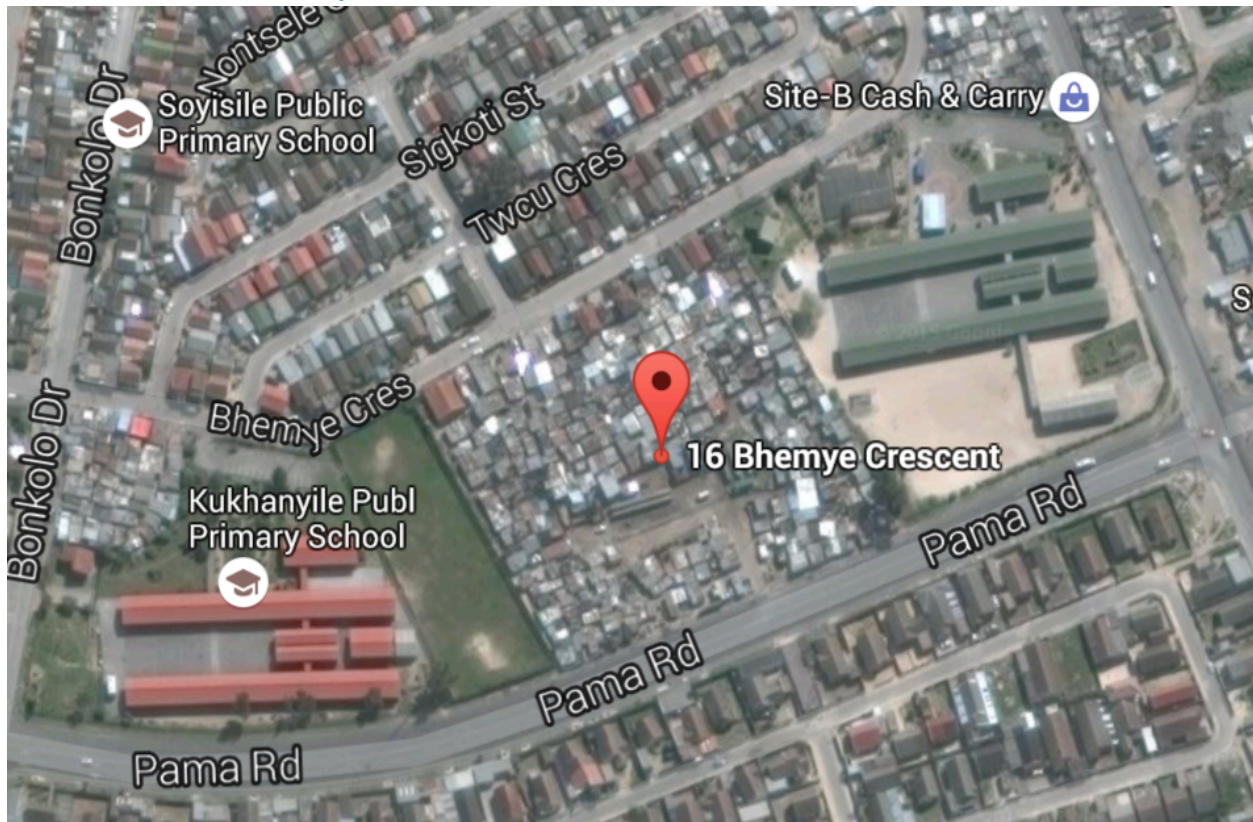


Figure 10: Map of K2 and Surroundings, Taken from Google Earth

The truck driver and buyer must discuss details about the shipping container delivery beforehand. For K2, information such as coordinates (34°01'44.2"S 18°40'24.7"E) or Google Earth will be helpful, as well as detailed information about the area. Give clear directions and ensure the driver knows the location of the site beforehand to avoid extra delivery fees. We will inform the driver of the container location at the site inspection to allow time to prepare equipment to move the container, such as a crane.

Choose Delivery Method

Shipping containers are usually delivered by truck. Different delivery methods include tilt-bed trailers (Figure 11) or flatbed trailers (Figure 12). Tilt-beds usually are used when a forklift or crane cannot be used. Tilt-bed trailers are able to drop the unloaded container directly on the desired area. It is often the easiest option, but typically more expensive. The truck and trailer back the container into the site, and the trailer tilts to slide the container off the trailer and into place. The container is then pulled off until it is resting on the ground and the truck pulls the trailer out from underneath.

Flatbed trailers tends to be a cheaper delivery method but require access to a crane or forklift. With a forklift or crane, the container can be unloaded directly into the required position. If a fork lift or crane is not a possibility at your location, then the options are limited to a tilt bed truck. Talk with the seller to see if they have any preference or advice on the matter.



Figure 11: Tilt-Bed Trailer



Figure 12: Flatbed Trailer

Prepare the Ground

To ensure a stable and level container, the container should be put on firm level ground or a base. The site should be prepared according to directions from the site inspection. In K2, flooding is one of the major concerns, and the container will be placed to avoid winter floodwaters and to ensure proper drainage. Pavement, cement, gravel, hard grass, and dirt are suitable foundations for containers. Placing concrete blocks beneath the container will elevate and support the structure and prevent it from sinking into the ground.

Prepare Drop-off Location

Delivery trucks are large, so leave ample spacing around the area of the drop-off. To prepare the site in K2, clear obstacles such as wires, trees, poles, or any other obstacles. Extra space is required because the truck needs to back in and back out. Before delivering it is imperative to get a representative from the company to come and inspect the site. To ensure a successful delivery, a location for the container and a path for the truck will be marked out.

Management of K2 Community Hall

The following section gives details on the management structure developed by the K2 community in conjunction with the WPI team to ensure proper and organized use of the facility. It includes the following:

- Community Hall Steering Committee
- Weekly Schedule of Community Meetings
- Additional Activities Proposed by K2 Community Members
- Initial Rules
- Ideas Suggested for the Management Plan by the WPI team
- Questions and Concerns
- Useful Templates

Community Hall Steering Committee

The team recommends creating a steering committee including a Caretaker, a Financial Officer, a Maintenance Officer, and a Liaison from outside K2.

Caretaker: In charge of the general maintenance and upkeep of the structure, as well as its use. Jobs include keeping the schedule up to date and accurate, locking and unlocking the building, and ensuring repairs are made in a timely manner.

Maintenance Officer: Is in charge of cleaning up the community hall after events and making sure everything is in order. People who plan events are in charge of cleaning up after themselves. However, this person should make sure the hall is clean after every event and clean the hall once a week. If something gets broken or vandalized, the Maintenance Officer is in charge of letting the steering committee know. The steering committee should then decide on how to address it. They can use money collected from events or ask for community contribution in order to fix it.

Liaison from Outside K2: In charge of being an impartial voice in the steering committee. This person should look out for the best interest of the Community Hall and give suggestions on how to manage it.

Financial Officer: In charge of collecting money for K2 Community Hall events. Non-community meeting events should financially contribute to hall, with the exception of workshops that aim to s the community. The hall is also available for people from other communities that would like to rent out the space. The amount to be contributed should be agreed by the Community Hall steering committee. The financial officer has to charge for the event and deposit the money in the bank account. This money is to be used for maintenance of the community hall. This includes clean-up and repairs.

Schedule

This is the schedule of weekly community meetings proposed by K2 community leaders.

Weekly Events	
MON	
TUES	Community Meetings 6:00-11:00 PM
WED	Community Leader Meetings 6:00-9:00 PM
THURS	Council 6:00-8:00 PM
FRI	
SAT	
SUN	

Additional Activities

The K2 working group proposed that the community hall be used for events and other meetings aside from general community meetings. They suggested that some of these events be charged for. This section includes a description for both paid activities and non-paid activities. It also includes example activities proposed by the K2 working group.

Paid Activities vs. Non Paid Activities

Paid Activities	Non-Paid Activities
<ul style="list-style-type: none"> Events such as celebrations, birthdays People from outside K2 who want to rent out the space Church from outside K2 	<ul style="list-style-type: none"> Activities and/or workshops that help develop the community K2 programmes and presentations Church run by community member

List of Activities Suggested by K2 Working Group

- Sunday church from 11:00 AM-3:00 PM

- Savings group
- Trainings and workshops
 - Domestic violence
 - Substance abuse
 - HIV/AIDS
 - Child Abuse
- Funerals
- Music/ Theatre Programme

Basic Rules for Community Hall as Determined by K2 Group

1. No alcohol
2. No smoking
3. Do not go into the hall if you are under the influence of alcohol
4. No weapons
5. No loud music after 6:00 PM
6. No gambling
7. If you eat in the hall you must clean up after yourself
8. Book space one week in advance
9. Make a spot where there are general announcements and rules
10. Care for the hall
11. Have a register with name, time in, time out, settlement, purpose of coming in
12. The caretaker will have the keys for the Community Hall

Ideas Suggested for Management Structure by WPI team

1. Have a system for booking the space.
2. Include area in the community hall to put announcements and rules. Maybe include a calendar of events, birthdays, and pictures of community members.
3. Formalize the list of paid activities and the list of non-paid activities.
4. Make a plan for how much will be charged for each activity and how the money will be administered.
5. Make a plan for maintenance of the community hall including who will clean after each activity, how many times a week will it be cleaned, and inventory for cleaning supplies.
6. Formalize the committee that will be in charge with a bio and certificate.
7. Make a list of responsibilities for each person in charge and sign a contract.

Questions and Concerns for the Future

1. How will the money be administered and what will it go towards?
2. Who organizes the events?
3. What happens if the community hall gets vandalized?
4. Which activities are paying activities and which are non-paying activities?
5. What happens if something gets broken?
6. Who will clean, with what frequency, and with what supplies?
7. How do we get a team to take over the management?
8. Will the team get paid?

Useful Templates

This section includes templates that can be used for the maintenance of the community hall. Among these are a weekly schedule of activities and a register template.

Weekly Activities and Events Template

	MON	TUES	WED	THURS	FRI	SAT	SUN
9:00 AM-10:00 AM							
10:00 AM- 11:00 AM							
11:00 AM- 12:00 PM							
12:00 PM- 1:00 PM							
1:00 PM-2:00 PM							
2:00 PM-3:00 PM							
3:00 PM-4:00 PM							
4:00 PM-5:00 PM							
5:00 PM-6:00 PM							
6:00 PM-7:00 PM							
7:00 PM-8:00 PM							
7:00 PM-8:00 PM							
8:00 PM-9:00 PM							
9:00 PM-10:00 PM							
10:00 PM-11:00 PM							

Register Template

[illegible]

Early Childhood Development in K2

In K2, there are no formal ECD programmes, only an informal daycare run by one of the community members. Sikhula Sonke is a community-based organisation that addresses the need for quality early childhood development (ECD) in Khayelitsha Township. They offer an assortment of different programmes that target areas of ECD. These projects include: training, coaching and mentoring ECD teachers, family support and playgroup outreach. They seek to educate both children and adults on the importance of ECD, leaving a sustainable model for communities to follow once they leave the community.

Sikhula Sonke is starting its work by doing playgroup outreach in K2. Their goal is to give children a chance to learn as well as interact with other children their age. They also aim to teach parents the importance of ECD by giving them useful information about health, nutrition and educational/physical stimulation.

Tire and Play Structure

- Look for possible designs for movable playgrounds.
- Build a movable play area made out of tires for both children and adults.
- Plan to incorporate ECD programmes into both the outside and inside areas of the community hall.

List of Tire Playground Materials and Budget

Materials



40+ Tires



Bolts



Nuts



Washers



Oil-Based Paint



Wood

Tools



Drill and Bits



Wrenches



Saw

Budget

Material	Type	Size	Cost (R)	Individual Qty	Total Cost
Tires			R -	45	R -
Paint	Oil-based (white)	5 litre	R 195.00	2	R 390.00
Paint Brushes			R 25.00	6	R 150.00
Bottles of Tint	Green, Blue, Red, and Yellow		R 12.00	4	R 48.00
Bolts		13mm	R 2.10	40	R 84.00
Nuts		M8	R 0.50	40	R 20.00
Washer			R 1.00	40	R 40.00
Wratchet			R 160.00	1	R 160.00
Socket			R 18.00	1	R 18.00
Wrench		18mm	R 30.00	1	R 30.00
Wood		305mm x 2.4 M	R 149.95	1	R 149.95
				Total	R 1,089.95

Recommended Steps to Build a Movable Tire Structure



1. Designate a space for the play area
2. Design area according to community interest
3. Gather/buy materials (It is easy to find tires for free around Khayelitsha)
4. Wash tires so that they can be painted
5. Paint tires with water resistant paint
6. Mark tires where they will be connected
7. Mark tires on the bottom to release water
8. Drill holes on marked areas
9. Bolt tires to each other
10. Underneath a few bottom tires, mark areas where they will be bolted to the ground
11. Bolt tires to the ground if the area chosen is permanent
12. Add wood beams for seating area on top of 2 stacked tires
13. Stack 2 tires on top of each other and add wood spool to make tables