The proposal responds to disaster by developing a 2 person [or single parent and 2 small children] shelter. A rapidly deployable flat pack shelter made of an insulating, renewable resource. The flat pack shelter has various interior components that

10 | DESIGN SYNTHESIS
10.1 KIT OF PARTS

PACKAGE PART 01:

volume: 0.04m³
dimensions: 780mm x 1800mm x 30mm

1. ground sheet
   [not to scale]
   # 1

2. wall braces
   [not to scale]
   # 4

3. floor beams
   [not to scale]
   # 2

4. 2 part plastic studs
   # 40 + 2 extra

5. ventilation caps
   # 48 + 2 extra
PACKAGE PART 02:

volume: 0.17 m³
dimensions: 1903 mm x 787 mm x 115.5 mm

roof section A
[scale 1:20]
# 1

roof section B
[scale 1:20]
# 1

PACKAGE PART 03:

volume: 0.22 m³
dimensions: 1730 mm x 782 mm x 168 mm

roof brace
[scale 1:20]
# 2

closer panel
[scale 1:20]
# 2
10.1 ASSEMBLY

10.1.1 TRANSPORTATION

[fitting in a standard 20ft shipping container]

GROSS PACKAGE SIZE:

VOLUME: 0.6 m³
WEIGHT: 74 kgs
DIMENSIONS: 1903mm x 787mm x 429mm
10.1.2 ASSEMBLY INSTRUCTIONS

**STEP 01 - ASSEMBLE BASE**

**STEP 02 - ASSEMBLE WALLS**
STEP 03 - LIFT WALL SECTIONS ONTO BASE + SECURE WITH PLASTIC STUDS

STEP 05 - PLACE ROOF ONTO WALLS AND SECURE TO ROOF FLAPS
STEP 04 - UNFOLD ROOF PACKAGE + PLACE PART B ONTO PART B.

START IN A CORNER AND ASSEMBLE PRE-DEFINED FOLDS AND LOCKS

WHEN ROOF IS COMPLETE TURN OVER AND PLACE ONTO WALLS
Conceptual options for the front and back panels. The connection details will ultimately influence the clustering variations.

### 10.1 FRONT + BACK PANEL OPTIONS

Plan variations @ night
10.1 ENVIRONMENTAL COMFORT

VENTILATION
[not to scale]

RAIN WATER RUN OFF
[not to scale]
WATERPROOFING
elevation / section through shelter explaining waterproof coatings and treatments
[scale: 1:20]

- BreatheCoat powder paint for application after assembly if longer life span is required
- 200mm emulsion to seal open ended corrugations
- woven high density polyethylene ground sheeting, water proof to withstand a minimum of 2000mm water column. All seams to be treated with anti-leak/anti seepage water sealant tape
- 7mm corrugated cardboard treated with fire retardant (boric acid) and water repellant (Hydraban) additives during manufacturing process with polyethylene sheeting
I0.1 SCENARIOS IN SECTION

Section through shelter unit in various scenarios showing the diverse range of modular interior components

SUBURBAN PERSPECTIVE

conceptual visualization
[not to scale]
MODELS
side elevation
[scale 1:10]

MODELS
Interior section showing assembled interior components
[scale 1:10]
DETAIL 01
Connection between wall component and wall brace
[scale: 1:10]

DETAIL 02
Connection between wall component and roof
[scale: 1:10]
MODELS

Section model 01
[scale 1:10]

MODELS

Section model 02
[scale 1:10]

DETAIL 02
Connection between wall component and roof
[scale: 1:10]
Woven polyester Ripstop weave: number count warp 64 and weft 42 threads per inch water proof to withstand a minimum of 200mm of static water column. All seams should be double stitched (50mm) double stitching on either side of opening.

50mm Ø keyhole in closer panel sheet

30mm double stitched overlap

50mm closer panel membrane overlap

9mm moulded plastic zipper with double pull slider opening upwards

50mm closer panel membrane overlap

9mm moulded plastic zipper with double pull slider opening upwards

SIDE ELEVATION
[scale 1:20]
25mm Ø ventilation openings
50mm polyethylene sheeting overlap
7mm corrugated cardboard external wall panels
optional window panel
7mm cardboard wall brace wrapped in ground sheet

FRONT ELEVATION
[scale 1:20]

BACK ELEVATION
[scale 1:20]
10.1 BRAND OPPORTUNITIES

elevation variations
[not to scale]