



THINKING HAND - NGO INTERNATIONAL COMPETITION 2018

RESULTS

A N N O U N C E D

W W W . K E T H A M S A T E L I E R . C O M

“BE THE CHANGE THAT YOU WISH TO SEE IN THE WORLD.”

-MAHATMA GANDHI

We've had an overwhelming response and some great ideas from participants across the globe who had taken part in thinking hand competition - an innovative furniture design for neglected communities in India and Africa.

This shows humane efforts of designers to provide better opportunity to the people to lead comfortable life. The deeper thinking and understanding the brief of competition by the participants is commendable and the innovative solutions / approaches are a welcome sign for a better future. While acknowledging all the participants, we are happy to announce the results of inaugural international competition by Thinking Hand. Congratulations to all the winners and shortlisted entries. It was a tough task for jury to come on consensus, however combination of critical review and appraisal by the jury has resulted in the following as winners.

THINKING HAND

NONPROFIT ORGANIZATION

INTERNATIONAL COMPETITION

IN COLLABORATION WITH KETHAM'S ATELIER

AN OPEN INVITATION TO DESIGN AN INNOVATIVE FURNITURE
FOR NEGLECTED COMMUNITIES IN
INDIA AND AFRICA

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WINNERS:

First Place:

TH442KSA (Cardboard puzzle) *Sameh Ibrahim Emam - Egypt*

Jury comments: Great idea! Waste or reused cardboard boxes can be used to make furniture, environmental friendly but question is how much weight can it hold? Material and feasibility yet to be tested?

Second Place:

TH379KSA (Sedia) *Anjana Lakshmi. A - India*

Jury comments: interesting idea but too complex to make. Good for daily life of vendors for sitting, storage and carry stuff. Good presentation

Third Place:

TH10089KSA (innovative furniture) *Jitu Elizabeth Joseph -India*

Jury comments: Good project, well thought. Scope for further development. Solution need to be worked out for a family to use it. Design needs more clarity on unfolding and material specification.

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SPECIAL MENTIONS:

TH907KSA (Adaptive lattice) *Karan Dhanyakumar Darda - India*

Jury comments: Very practical, well understood and tried to meet the criteria given in the brief - sleep, store, organize in slums. Economical viability needs to be examined.

TH1001020KSA (The Primitive wedges) *Anderson Chan - China*

Jury comments: Good design, however material has to be rechecked, as bamboo is expensive. It needs lot of space; it can be an urban furniture or selling base for vendors. Needs skilled carpenters to build it.

TH408KSA (no-space slums) *Deepesh Tekwani - India*

Jury comments: Interesting but task was to design furniture. Good analysis and drawings but structure is not firm enough. Room height / clearance is problem and always need square rooms to fix it.

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SHORTLISTED:

TH900KSA (Multifunctional shelter) *Ahmed Ali Roman - Egypt*

Jury comments: Good project but doesn't fit to brief, however many possibilities can be achieved with these materials. Good concepts and thoughts.

TH405KSA (walking desk) *Zhang Qingjiang - China*

Jury comments: interesting idea, very sustainable / takes care of renewable energy use, but not explained well on how it works practically, quite heavy for bag. This idea has potential, needs more development.

TH514KSA (Foldable furniture) *Min Su Chung - United States*

Jury comments: Interesting idea, but stability with cardboard is an issue. Idea has potential, a working mock-up would give more insight.

TH352KSA (The wall) *T.R.Radhakrishnan - India*

Jury comments: Design has potential but Plastic as a material needs to be rechecked and how it is re-cycled. It is not environmental friendly to manufacture it insitu. Good modular system can be used in public spaces. Good presentation.

TH803KSA (Fold it) *Digant Shah - India*

Jury comments: Good thoughts. Can evaluate more possibilities in outdoors and indoors however pipe, as material is not available easily in slums

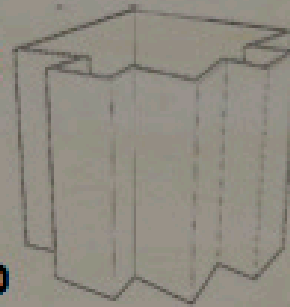
You can see images of all the winning entries and commended work in : 'The wall of winners'.

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CARDBOARD PUZZLE

Inhabitants in slums and other neglected communities lack space to accommodate. Also, they lack materials and money for new materials.



Cardboard trade in Africa
Source : hiveminer.com



Cardboard trade in Mumbai
Source : cbschazenstudenttravel.wordpress.com

This project is designed to help inhabitants to benefit from waste cardboards and make useful modular units that can be easy fold and make furniture.



Using Cardboard has many benefits like :

- Flexible
- Cheap
- Eco-friendly
- Strong
- Recyclable
- Available



Casts 375/Ton



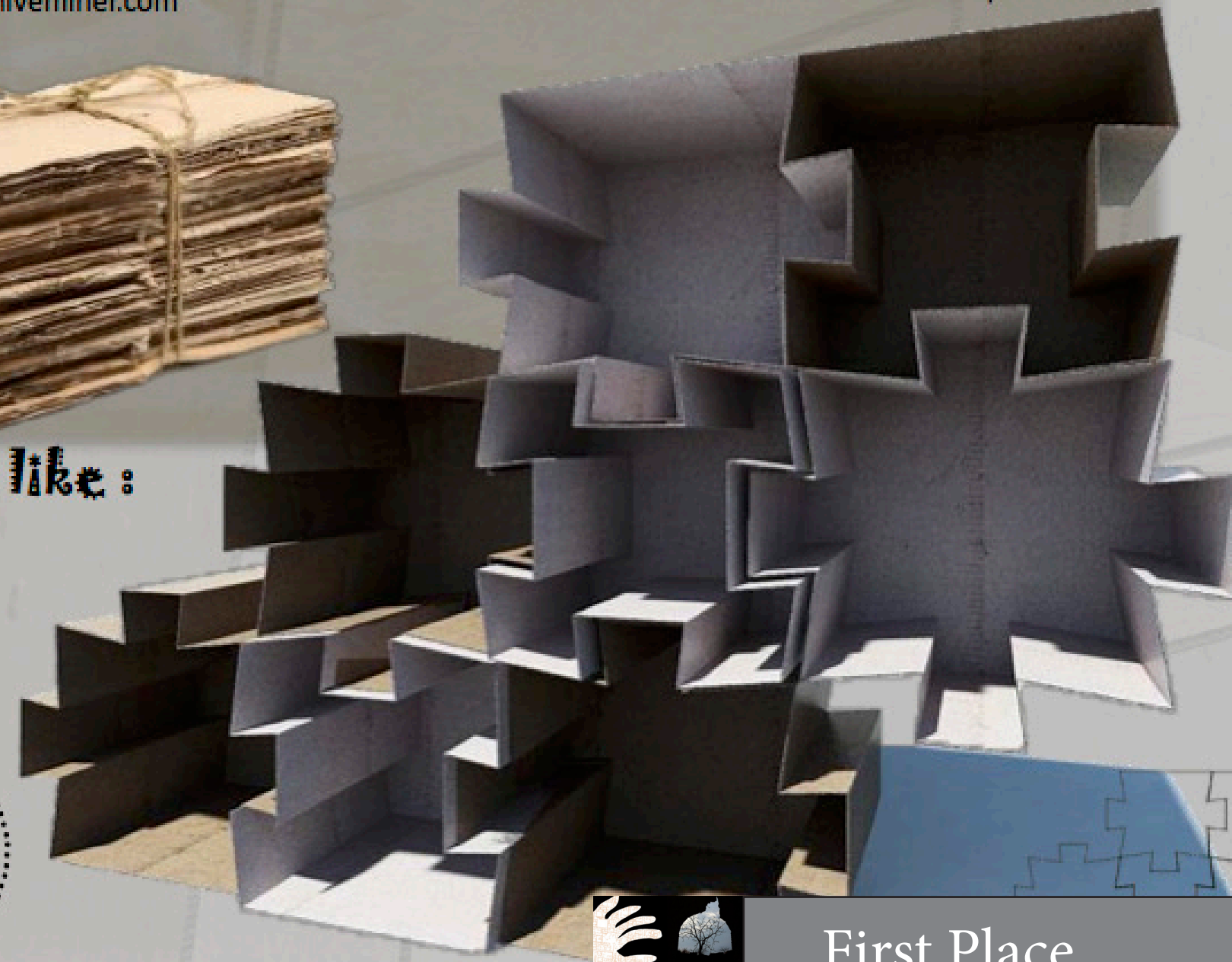
Can hold up to 29 lb/ft²



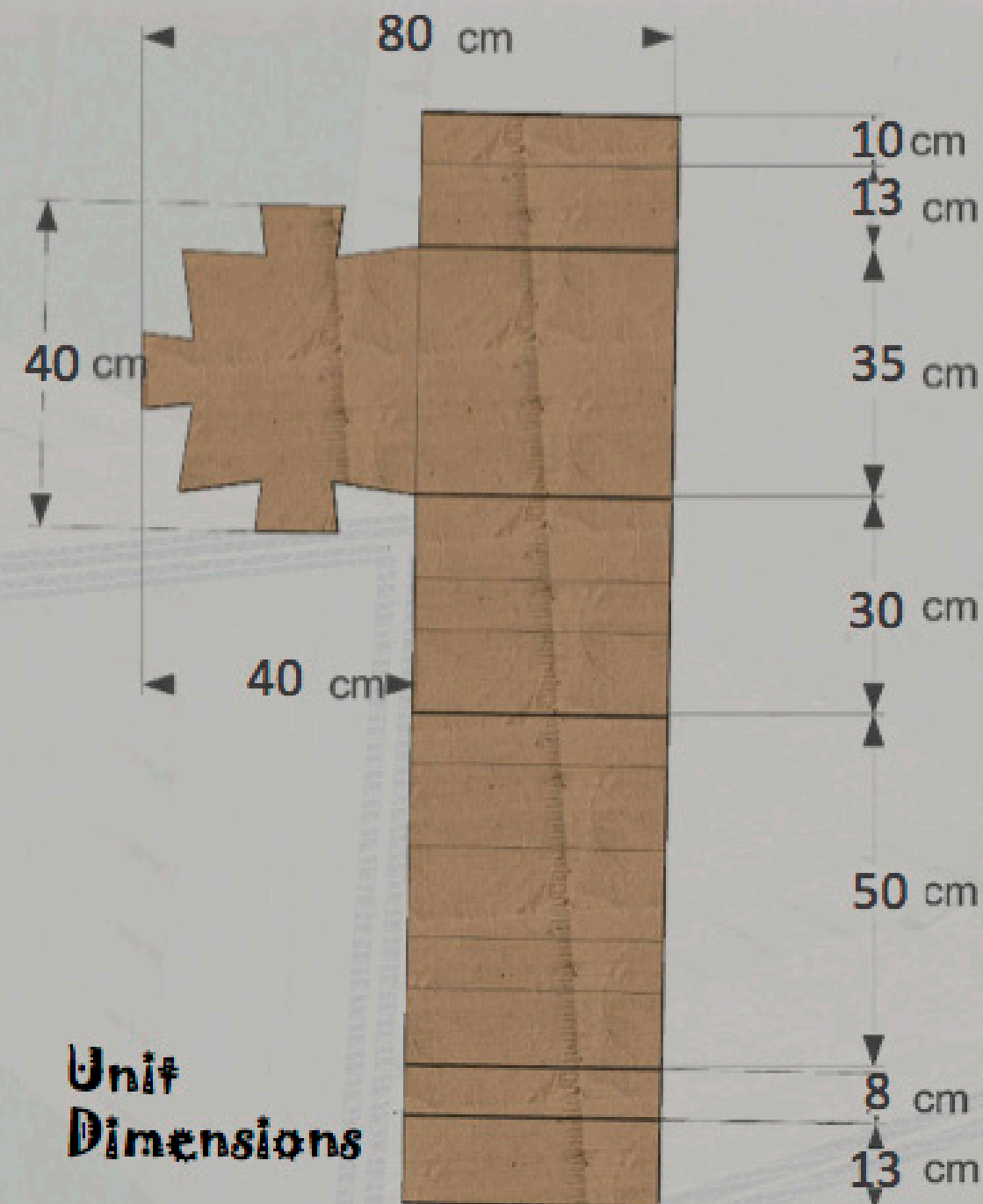
Decomposing in about one year



Can be recycled



First Place



Unit Dimensions

The modular units are all 40x40x40 cm volume and it is easy cut, fold and paste. It can be designed in many puzzle shapes to adapt to all changes in size and volume.

40 cm

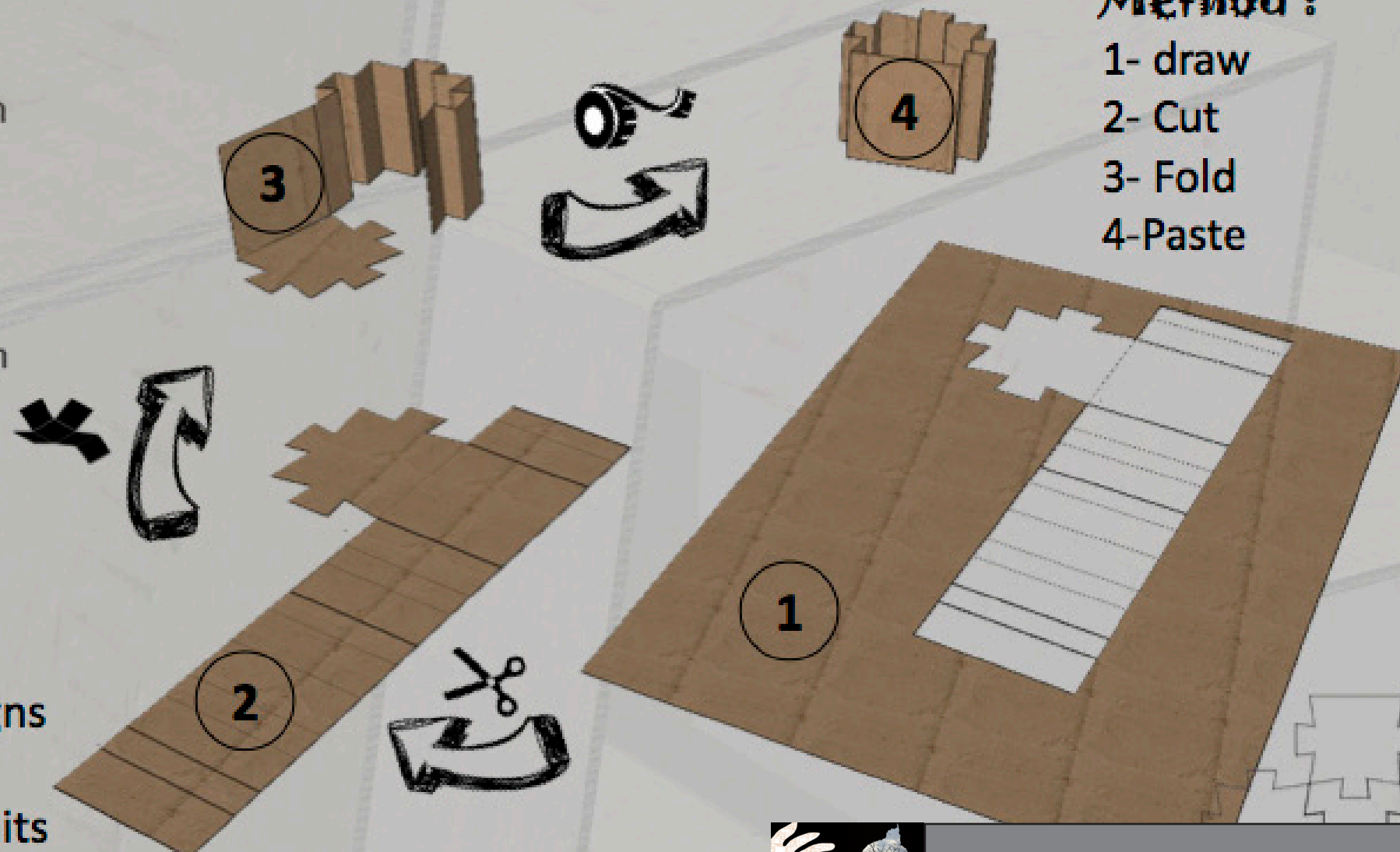
40 cm

Construction Method :

- 1- draw
- 2- Cut
- 3- Fold
- 4- Paste

Benefits of using puzzle fold :

- Easy constructing units together.
- Can left cantilever units.
- More Stiffness for the units.
- More units = More space = More designs
- Flexible enough for all spaces by increasing or decreasing number of units
- Dimensions can be changed by User to meet his needs.

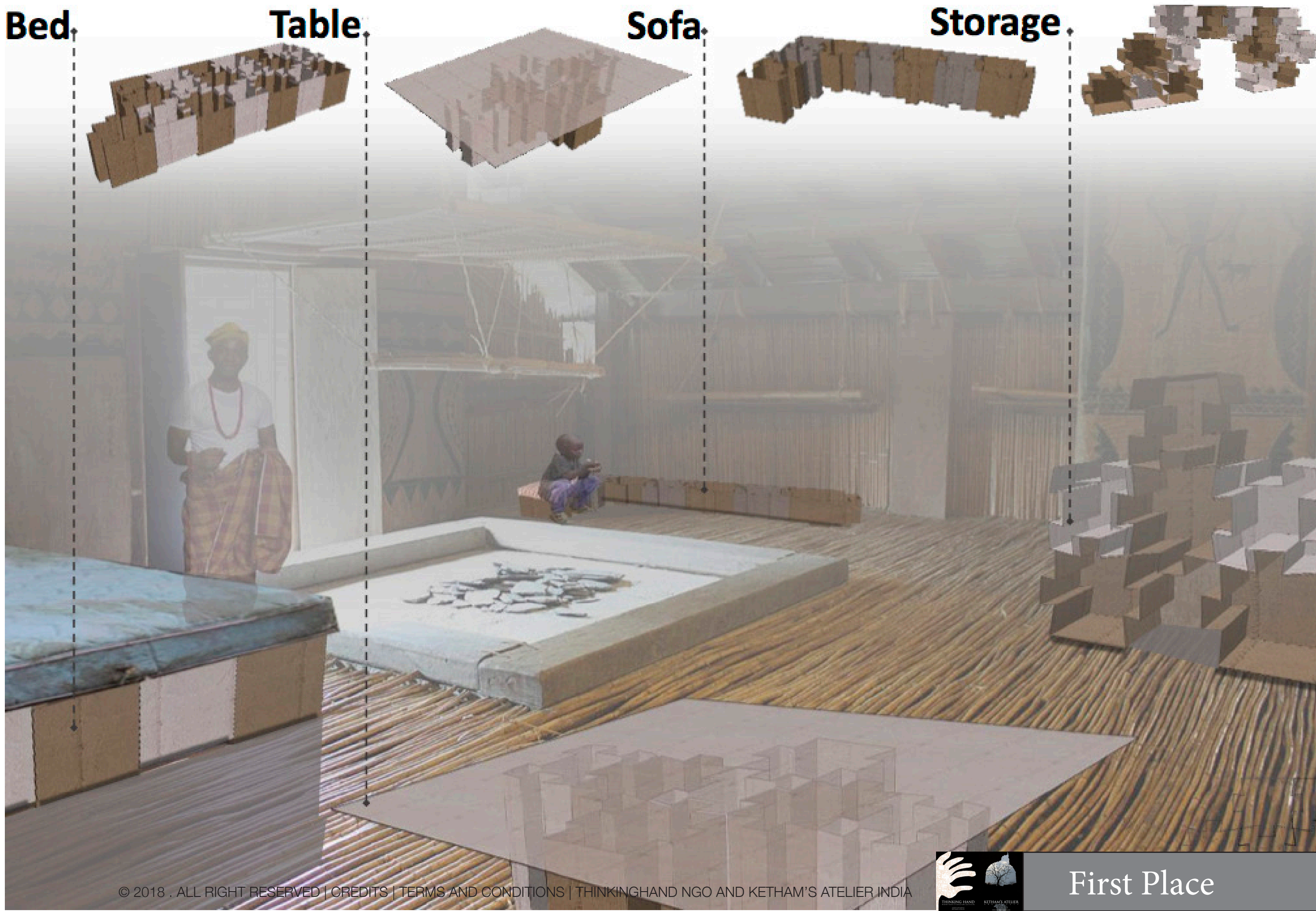


Bed

Table

Sofa

Storage



STEP 1

Initially, **lengthy** rattan poles are cut as per the required size,

The rattan cane is then heated using **kerosene lamp** and is bent according to the required shape with the help of a **shaping tool** which is made of wood.

SEDIA is a folding furniture designed for ameliorating the conditions of the society. One of the unique features of Sedia is the **detachable lock screw** which helps in the furniture's dual usage.

Different patterns are created while weaving.

The natural colour variations of the reed are used to enhance the look of the furniture.

Sedia

ID Number: TH379KSA

STEP 2

The **bent canes** are then fixed between two 6mm thick plywood with nails.

Sand paper is used to smooth out the **plywood base**.

The cane frame is polished using natural polish.

A rotating metal rod is attached to the ply with **metal clips** and reed is weaved around the frame.

And a **handy seat** is made out of foam and a 12mm thick ply.



STEP 3

A 25mm thk ply with a **cushion** on one side is attached between two **Z shaped** plywood pieces using nails and they are smoothed to make it look like a single piece.

This piece can act as a **backrest** or a **table top**.

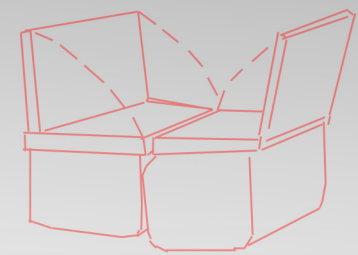
Two **metal screwing joints** are fixed to its two legs.

Finally, **three coats of polish** are given to attain fine glossy look of the furniture.



CONCEPTUAL SKETCHES

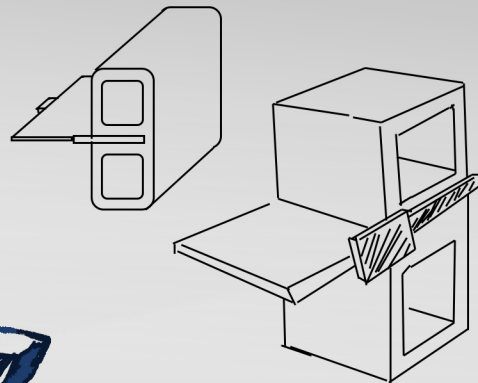
SELECTED CONCEPT



Twinning table chair



Pull open furniture



Cantilevered chair with storage



Comparatively, this concept provides optimum comfort with maximum storage in a minimal space and duality (backrest or table top).

Basket type chair is chosen so as to serve utilitarian as well as aesthetic purposes, such that the user can detach and carry it along.

Sedia

ID Number: TH379KSA



USER NEEDS

Portable

Thus the use of a detachable table clip.
The basket chair being light-weight can be carried around.

Storage

Space to store things to be carried along.
Space to store things at home.

Ergonomic

Dimensions provide optimum comfort

Folding

Easy to setup and fold, fits in a small space

Aesthetics

Materials chosen to suit the economical background



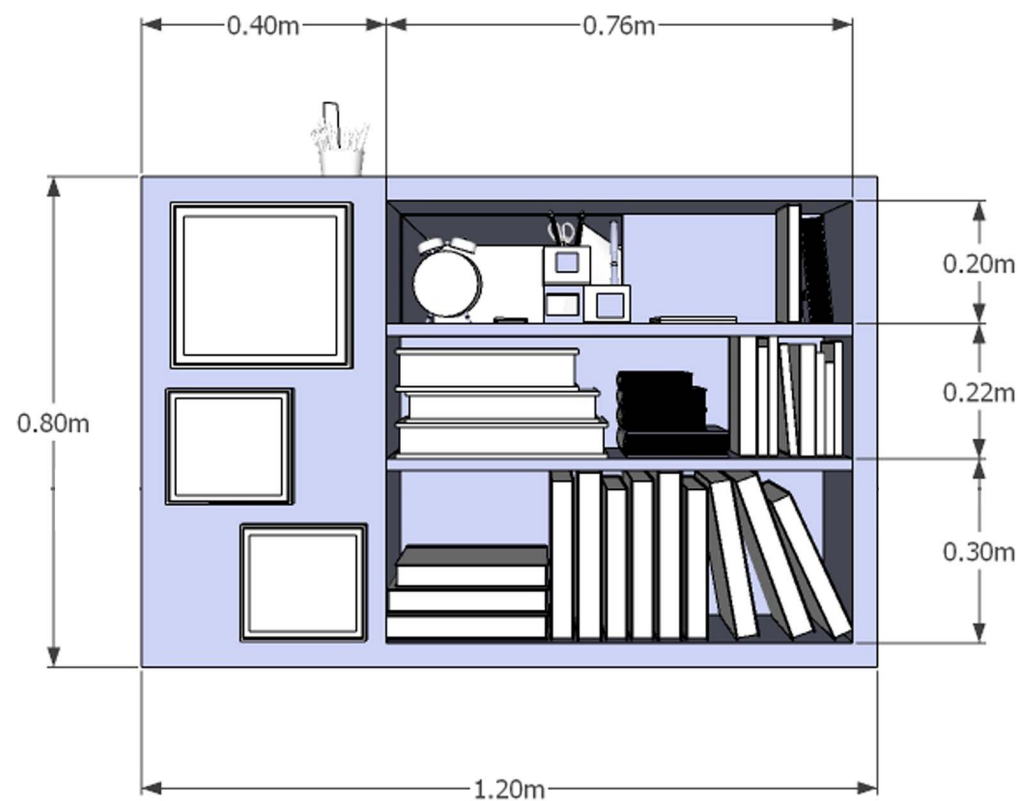
MATERIAL SELECTION

Baskets were originally designed as multi-purpose baskets to carry and store and to keep stray items at home such as processing seeds or grains, fish traps, vegetables, laundry, and other uses.

The basket chair is designed by caning out of cost effective and environment friendly materials (rattan, reed and wood).

USER CUSTOMISATION

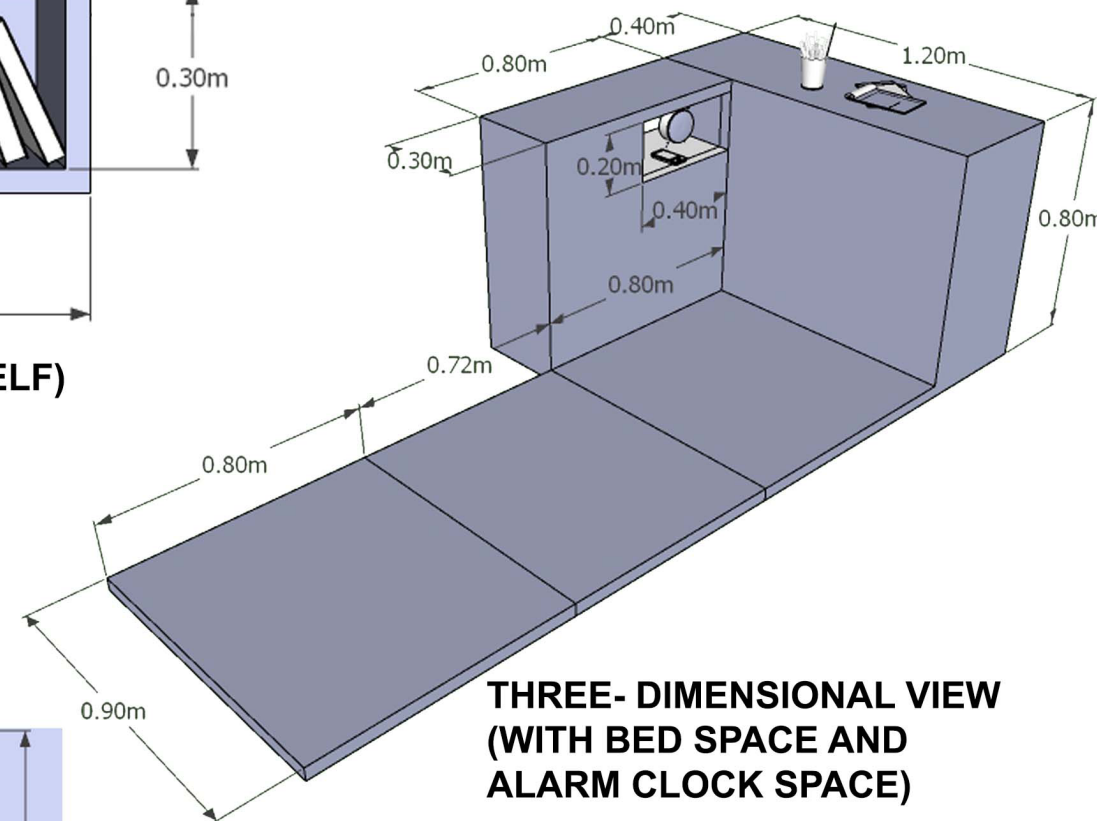
The user can customise this furniture with his/her own choice of material fibres and weaving technique, depending on the nature of work



BACK ELEVATION (STORAGE SHELF)

- THE OBJECTIVE IS TO DESIGN AN INNOVATIVE FURNITURE WHICH CAN IMPROVE THE LIFESTYLE (COMFORTABILITY) OF THE NEGLECTED COMMUNITIES IN AFRICA AND INDIA.

- THE FURNITURE MUST INCORPORATE THESE FUNCTIONS: STORE, SIT, SLEEP, READ AND WRITE.



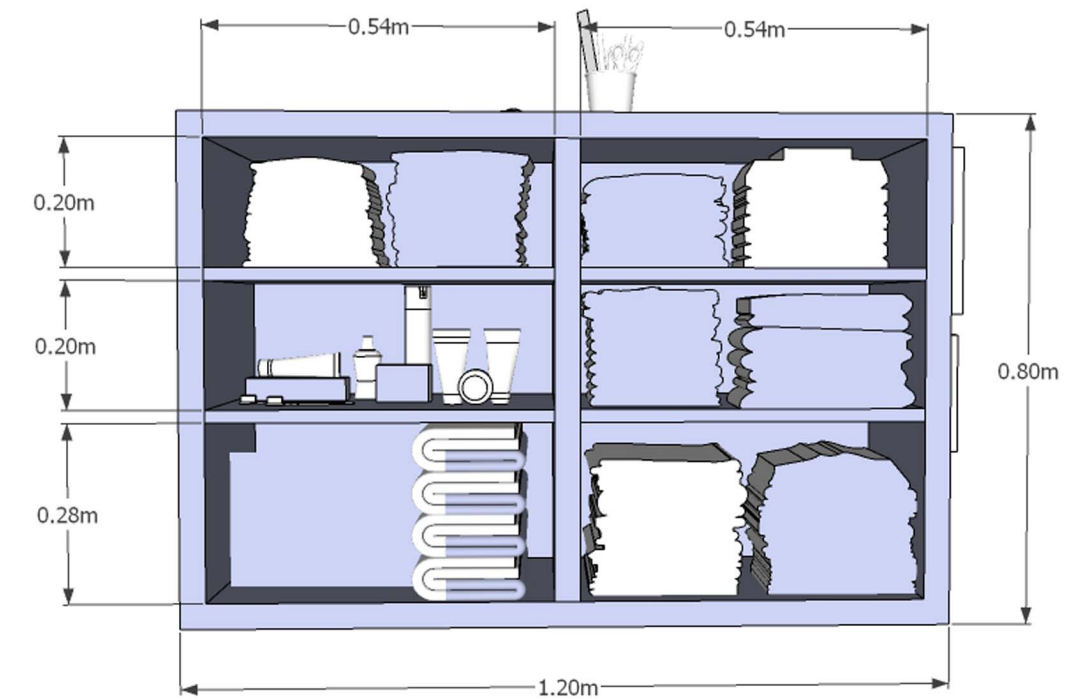
THREE- DIMENSIONAL VIEW (WITH BED SPACE AND ALARM CLOCK SPACE)

- THERE ARE THREE MATERIAL OPTIONS CONSIDERED:

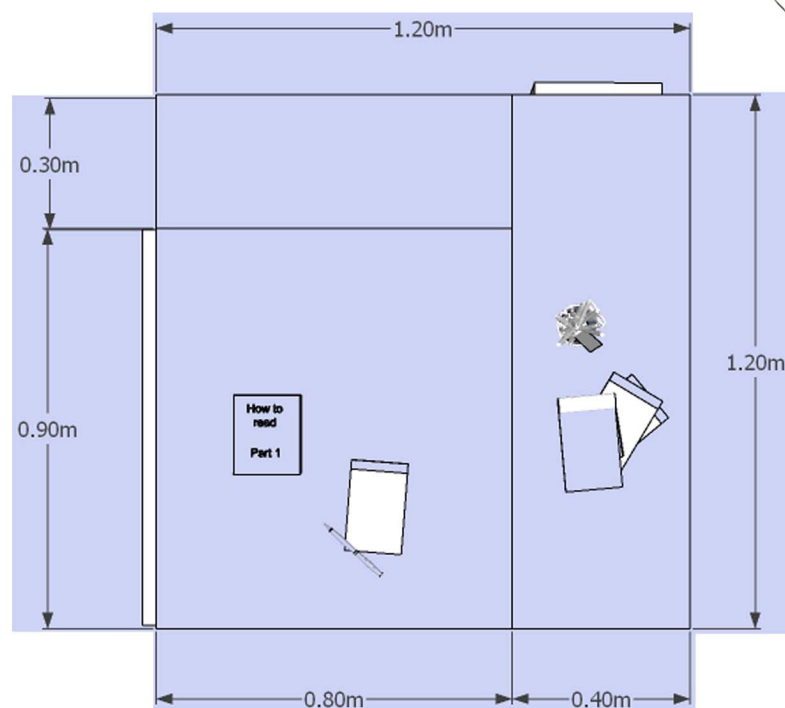
- >CHERRYWOOD- EASILY AVAILABLE IN AFRICAN AND ASIAN COUNTRIES
- >PLYWOOD + WOOD VENEER
- >CHIPBOARD + WOOD VENEER

- THESE MATERIALS ARE:

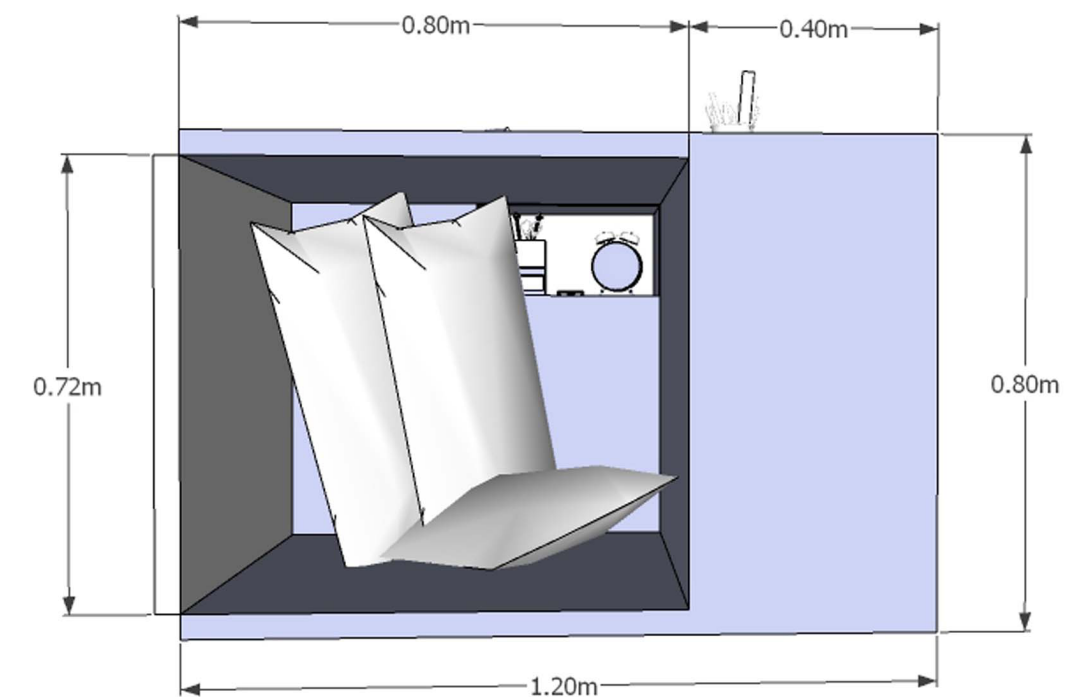
- >STRUCTURALLY STABLE ENOUGH TO BUILD FURNITURE
- >EASILY AVAILABLE
- >ECO- FRIENDLY
- >PROVIDES A CLASSY AND ELEGANT LOOK



SIDE ELEVATION (STORAGE SHELF)



PLAN (TABLE TOP)



FRONT ELEVATION (OPENABLE BED SPACE)



- THE FURNITURE CAN BE OPENED TO USE AS A SEATING SPACE AS WELL AS A BED SPACE.
- TWO PEOPLE CAN EASILY BE SEATED WHEN THE FURNITURE IS UNFOLDED.



- THE STORAGE SPACE (SHELVES) ARE GIVEN ON TWO ADJACENT SIDES.
- THE SHELF HAS AN INSIDE CUTOUT TO ACCOMMODATE ALARM CLOCK, MOBILE PHONE, ETC WHICH MAKE THEM ACCESSIBLE WHILE ON THE BED.





**- CONCEPT:
"OUTTA BOX"**

**- THINKING OUT
OF THE BOX;
LITERALLY
PRACTICALLY
TRANSFORMING
A BOX
ACCORDING TO
OUR USE.**



**- THE FURNITURE CAN BE USED AS
A TABLE FOR WRITING AND
READING, PROVIDED A CHAIR MUST
BE ADDITIONALLY AVAILABLE.**

**- THE STORAGE SPACE IS NOT
DISTURBED WHILE BEING USED AS
A TABLE.**

**- THE SIDE FACE OF SHELF CAN BE
USED TO HANG PHOTO FRAMES.**



**- THE FURNITURE CAN BE USED AS
A BED TO SLEEP WHEN THE FOLDED
TABLE FACES ARE OPENED
STRAIGHT.**

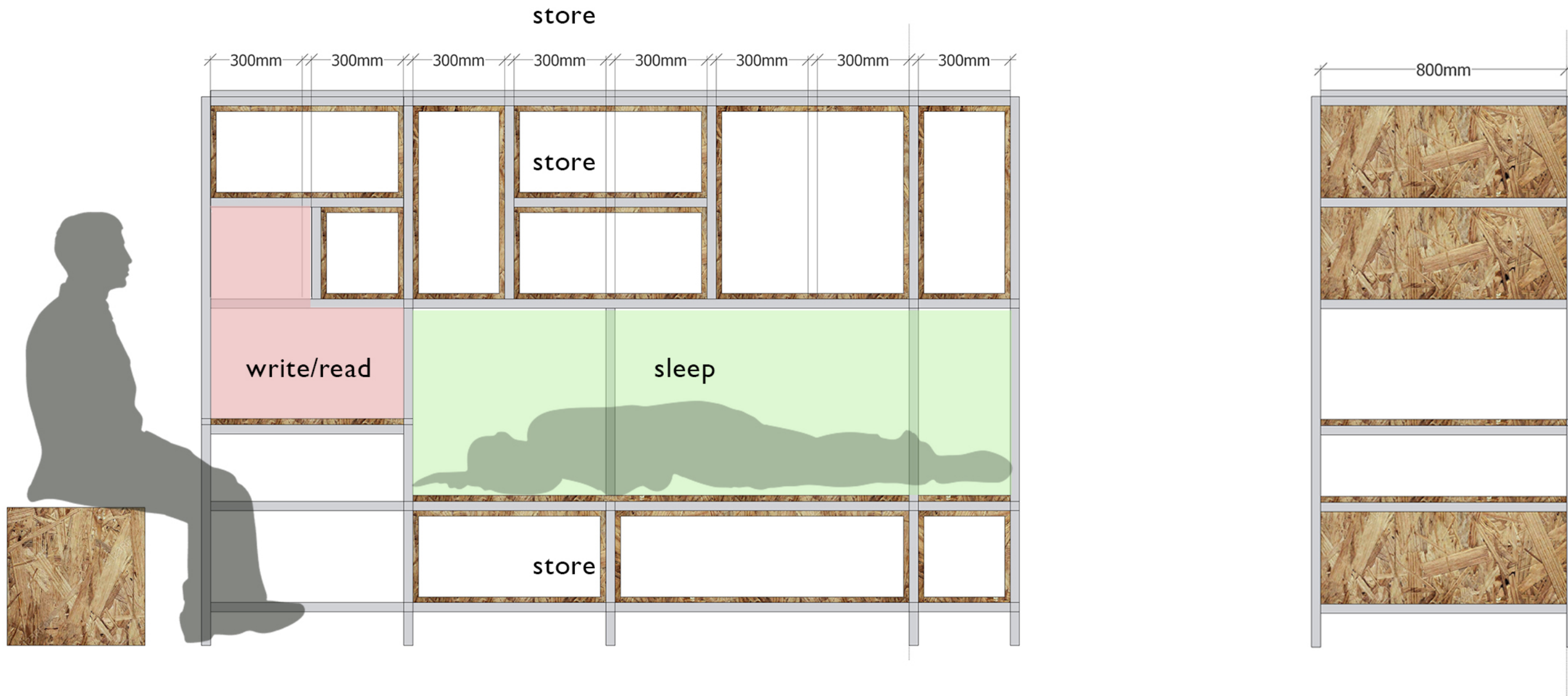
**- THE STORAGE SPACE IS NOT
DISTURBED WHILE BEING USED AS
A BED.**

**- IT FORMS A SINGLE COT BUT CAN
BE USED AS A DOUBLE COT IF TWO
UNITS ARE PLACED NEXT TO EACH
OTHER.**





To design a furniture for the deprived class it becomes very important to study the adaptive usage of limited space those people have .The observations tell that most of the storage happen on the loft or below the furniture. People mostly have shelves rather than closed cupboards to store things .The bed is less important as you can comfortably sleep on the floor mattress and roll it after use. But to surprise most of the area say 35% is utilised by the bed. Small ledges and niches which are naturally created by the structure itself are utilised very well for small daily things.The storage happens in a unorganised way making the house look ugly.



The design is a simple grid rack of 300mm x 300mm made of 30 mm mild steel box section. The grid is broken and reformed to create spaces of varied sizes catering to various needs such as to read, sleep, write, store. It is important that all this happens in a much organised way. The grid helps it to do so. Between each Ms Grid there are boxes made up of 18mm recycled plywood which could be removed out and placed anywhere in the room to create another set of furniture which is modular and adaptive in nature. In such case plywood planks will be placed on the MS sections to make the MS rack function able.

The space provided for sleeping could be further used for storage if the user decides to sleep on the floor area.

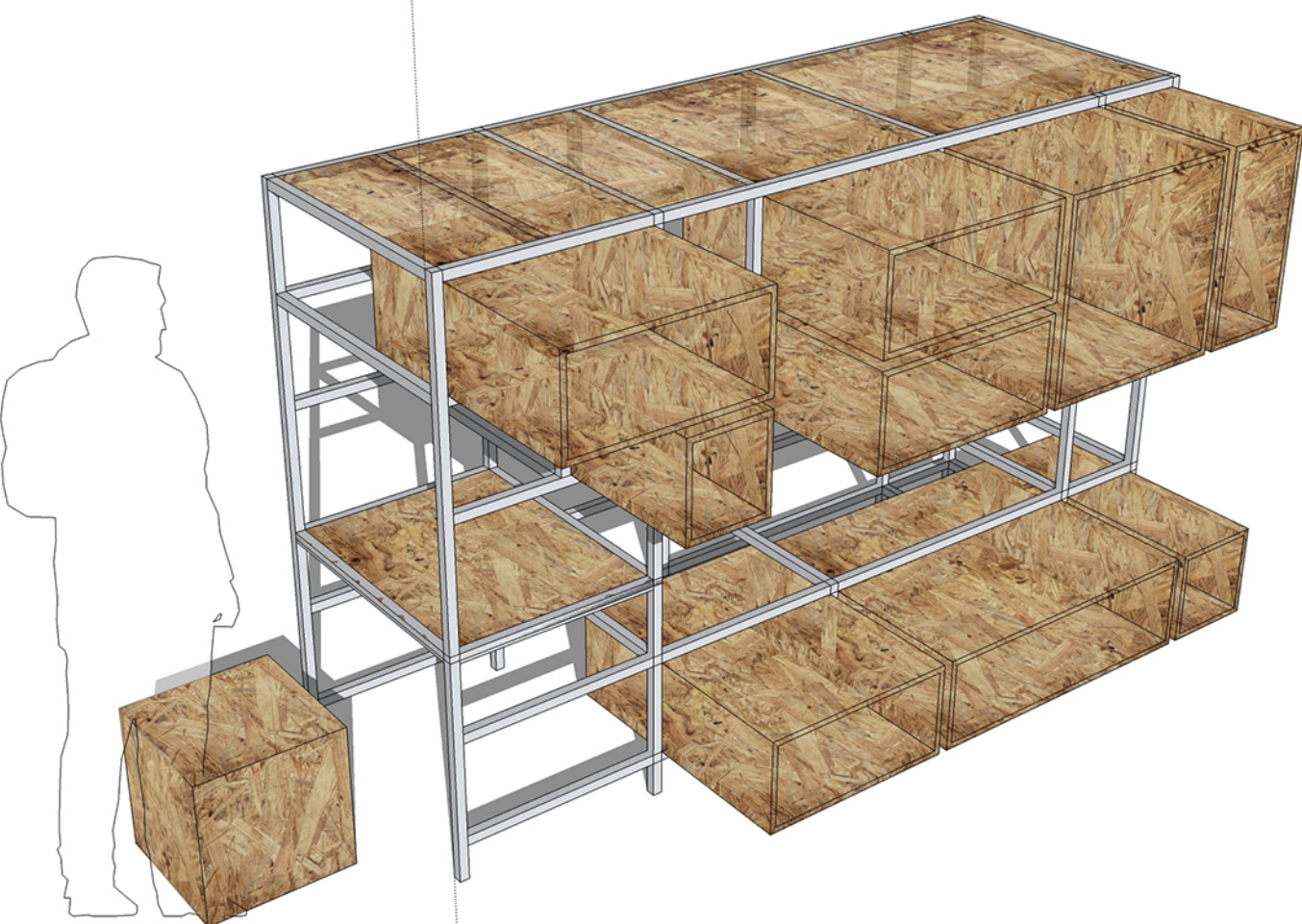
The idea is to keep the design very simple, user friendly and expansive when in need.



rack inserted with the boxes when
the space is less



removed boxes
form modular storages



rack after removing ply boxes



RAW BAMBOO POLES



LAMINATED FURNITURE

The Primitive Wedges

The economical bamboo is abundant in any places around India and Africa.

They can be utilized as a cheap material for furniture. By utilizing the craftsmanship of the locals, raw bamboo sticks can be processed into laminated bamboo strips for furniture making.

The furniture is a two-into-one modular furniture system. Its dimension is carefully calculated on human ergonomics, providing four modes of use, namely 'high table' for people working while standing; 'desk and chair' for children or adults to read and write; 'sofa and bed' for people who want to lie down or sleep; and 'window display' for storage of goods.

This furniture set 'The primitive wedges' hopes to speculate on handcraft furniture that can be delicately made by the locals, using indigenous material.



Standing Table



Reading and Writing



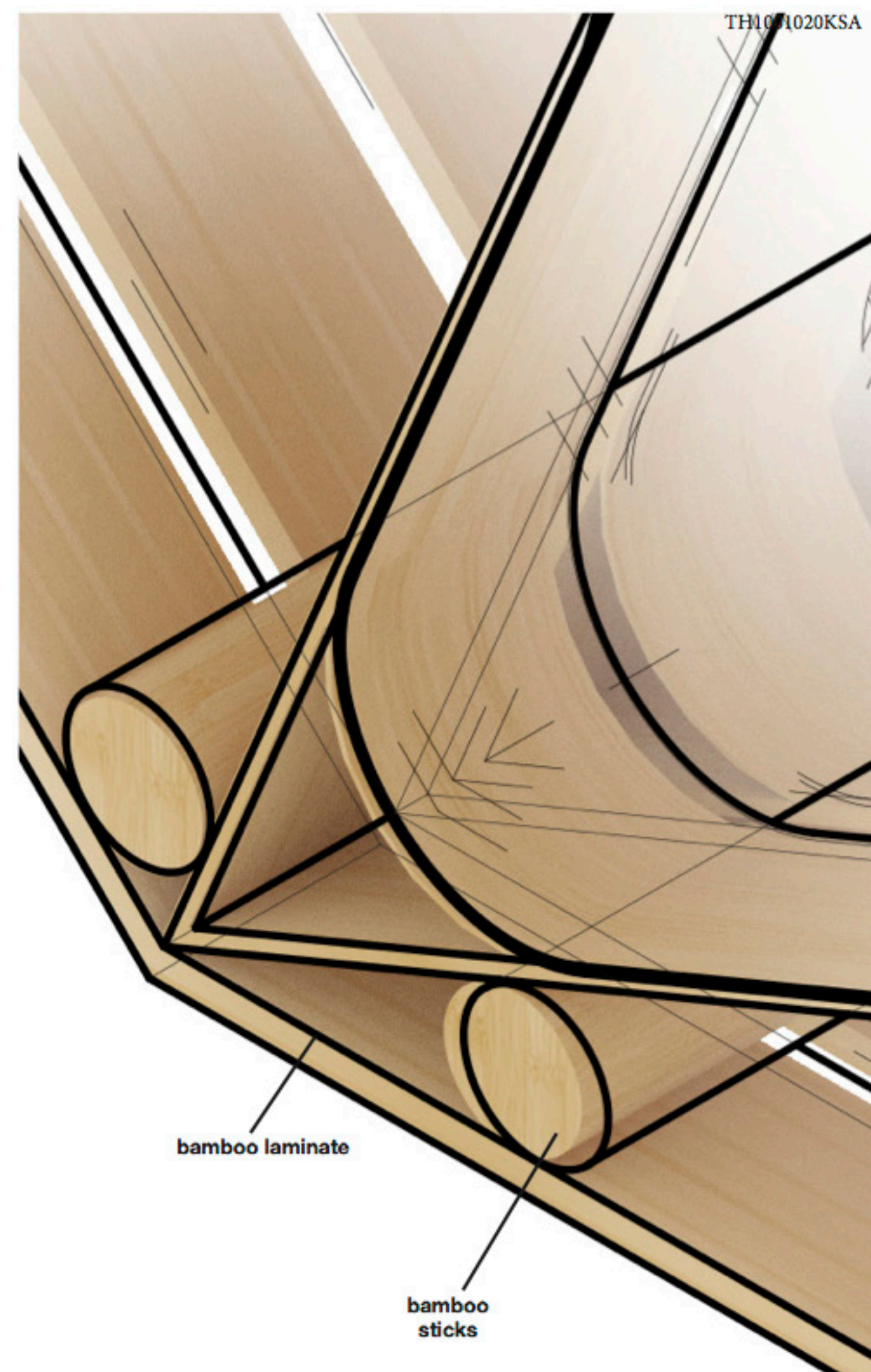
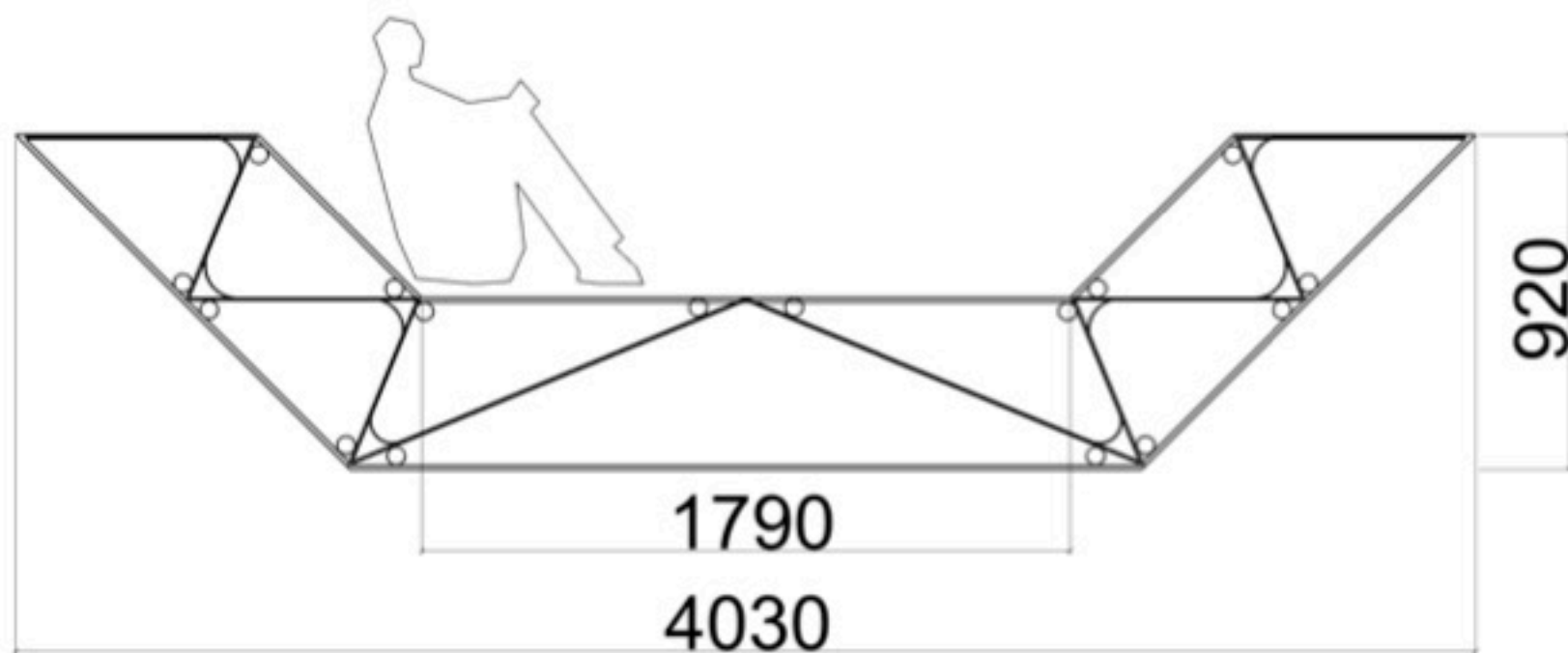
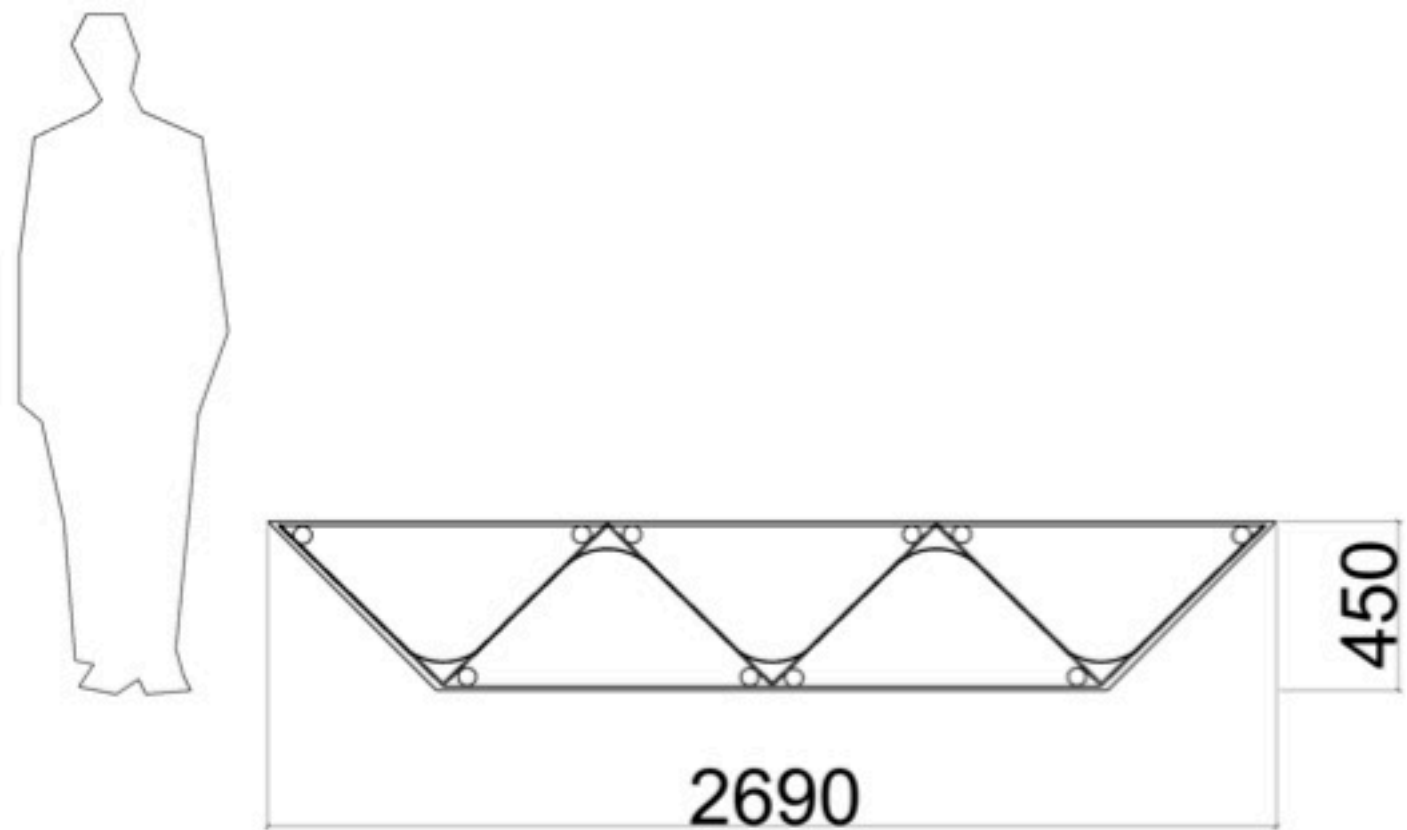
Sleeping and Lying



Display area



Special Mention



NO-SPACE SLUMS

Reg. -TH408KSA

"Deprived of fundamental human rights in society,
Demand the basic right to 'live WITHIN' four walls..."

High risks of fires

Houses made of flammable items
such as wood and cardboards.

Houses are built
very close to
each other.

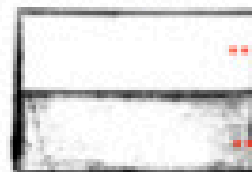
SPACE-ACTIVITY ANALYSIS of a SLUM unit

Small living
space

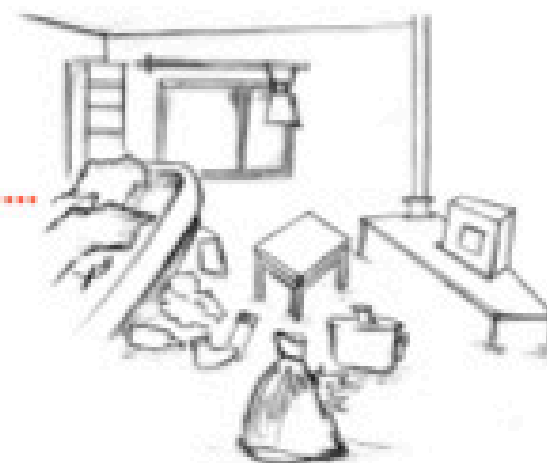
Water stored in
urns - lack of
access to clean
water

Poor sanitation with rubbish
littered all around. Dirty
environment encourage the
spread of disease

SPACE REQUIREMENT
FOR INMATES



SPACE REQUIREMENT
FOR OTHER HOUSEHOLD
STUFF

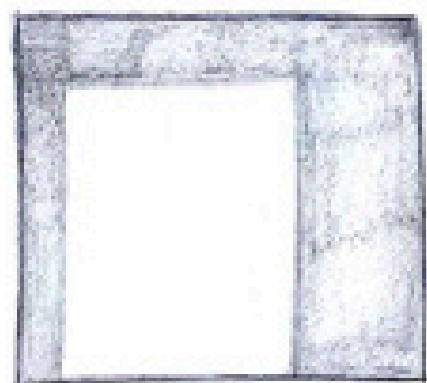


THE EXCESS AMOUNT OF UTILITY STUFF CAUSING LESSENING
OF HUMAN SPACE EVEN WHEN THESE UTILITIES ARE NOT IN USE

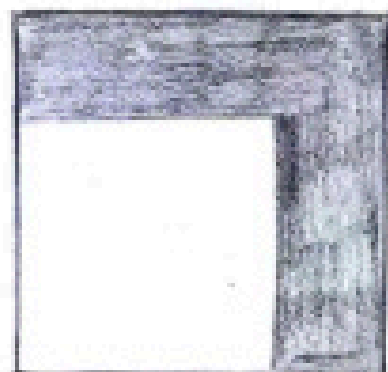


Special Mention

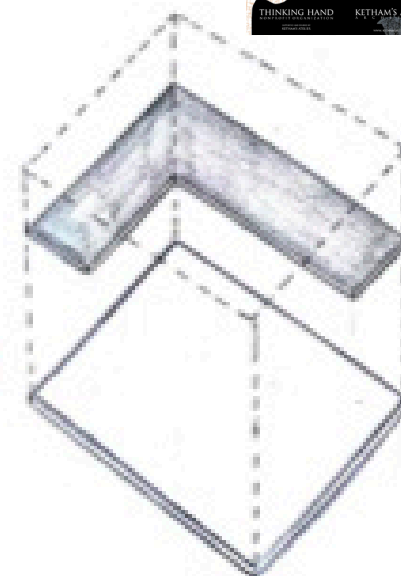
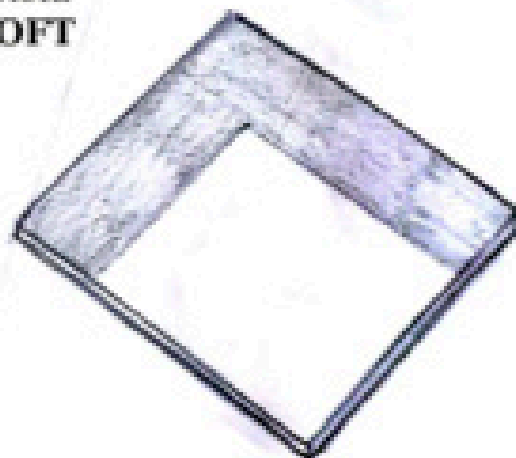
CONCEPT LINE- Disarranging the storage layer(shaded black) of household
as per the time-activity periods to make maximum use of allotted space- **LOFT**



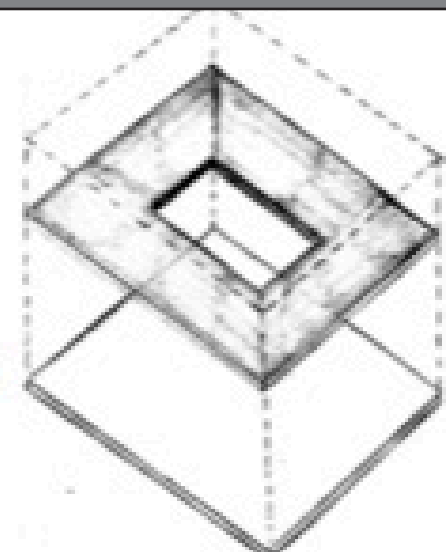
PRESENT SCENARIO OF
SLUM UNIT



DISARRANGING TO EASE
INDOOR LIVING



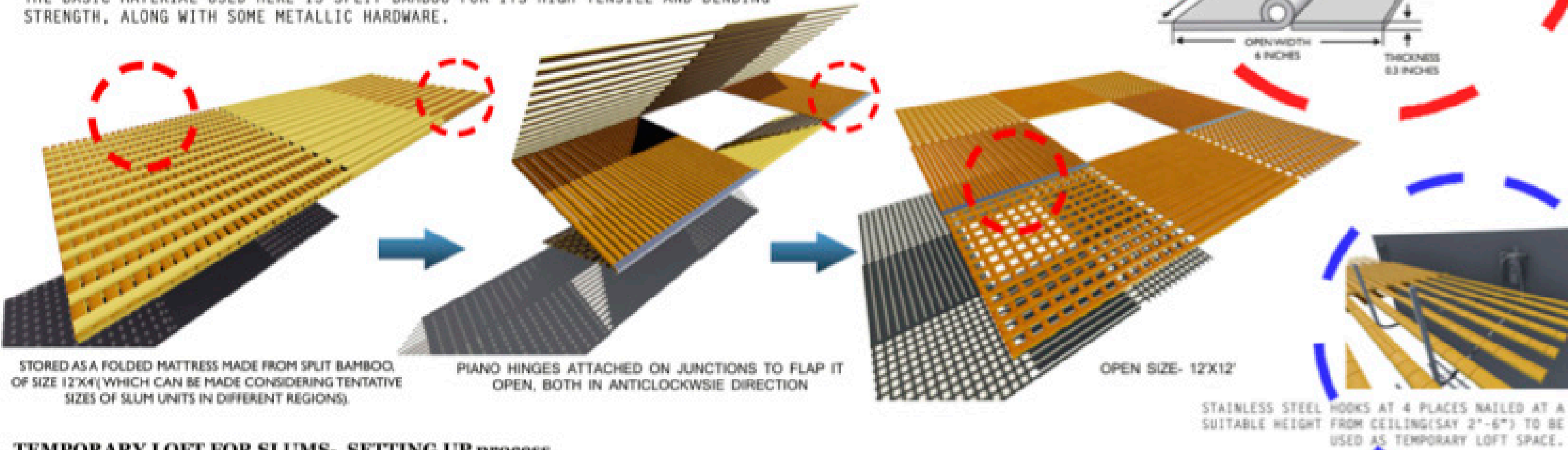
USING 3RD DIMENSION TO VACATE
THE FLOOR SURFACE



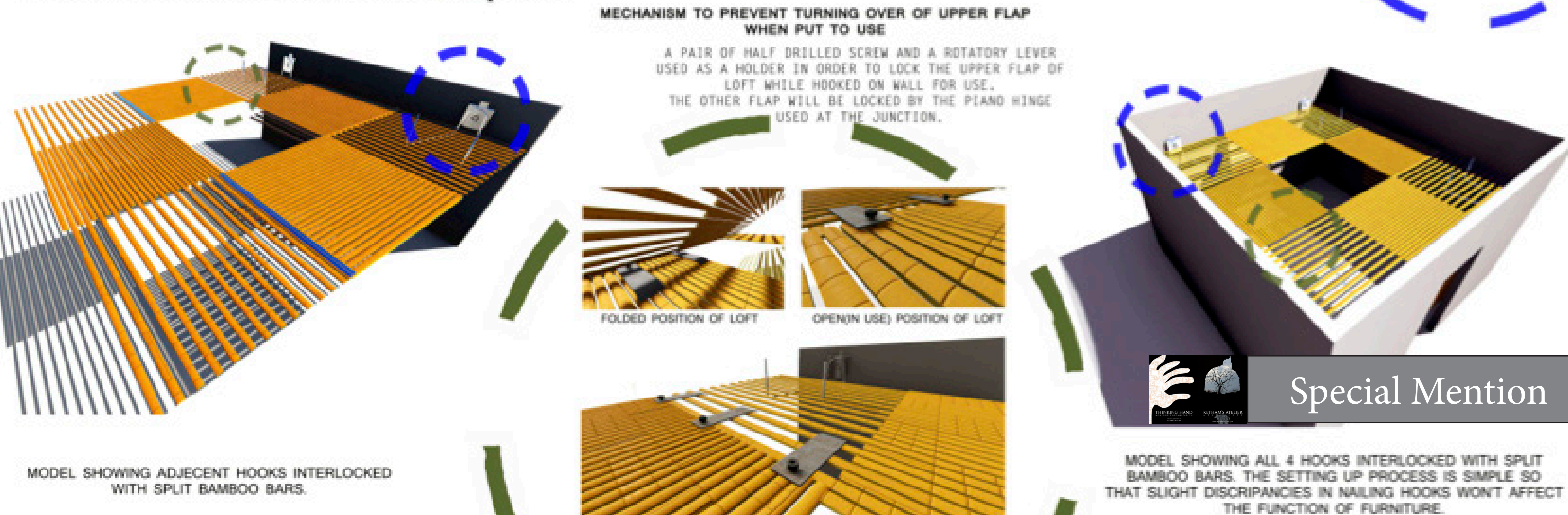
USING THE DIMENSIONAL ADVANTAGE
TO INCREASE SURFACE ALONG OTHER AXIS

TEMPORARY LOFT FOR SLUMS- opening MECHANISM

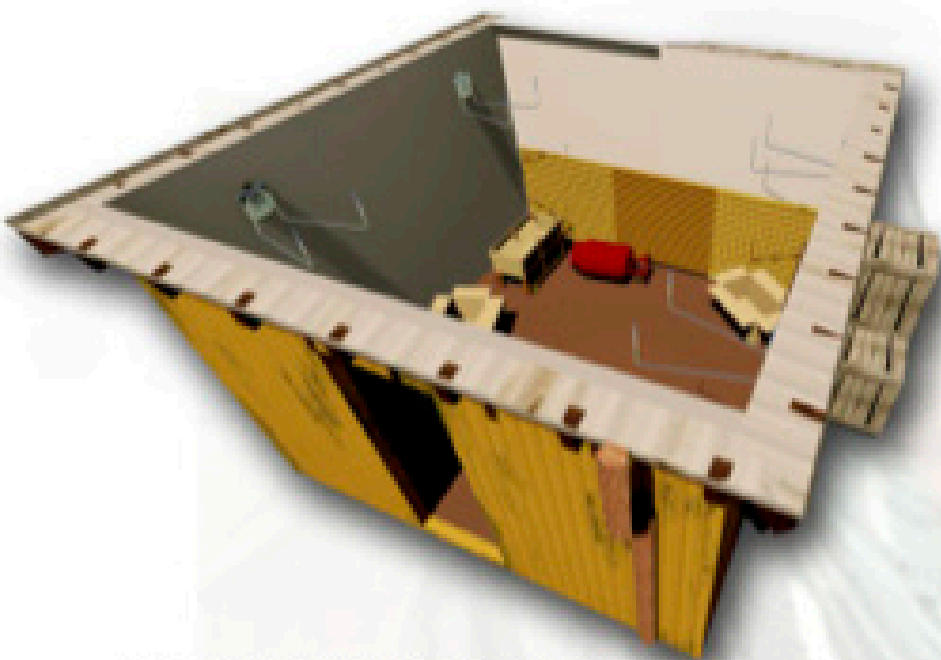
THE IDEA HERE IS TO PROVIDE A TEMPORARY LOFT STRUCTURE INSTALLED EASILY WHEN MUCH OF FLOOR SPACE IS NEEDED FOR ACTIVITIES LIKE SLEEPING, STUDYING OR IN CHALLENGING CLIMATIC SITUATIONS WHEN STAYING IN IS NECESSARY. THE BASIC MATERIAL USED HERE IS SPLIT BAMBOO FOR ITS HIGH TENSILE AND BENDING STRENGTH, ALONG WITH SOME METALLIC HARDWARE.



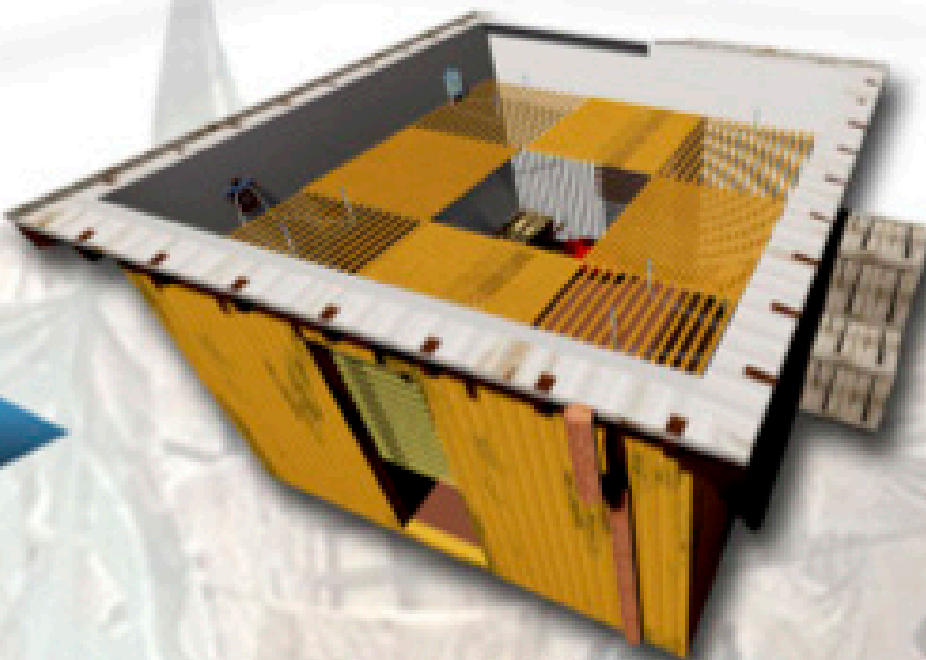
TEMPORARY LOFT FOR SLUMS- SETTING UP process



Special Mention



THE FOLDED LOFT IS SIMPLE TO STORE, TAKING LESS SPACE EVEN WHEN NOT IN USE. SIZE- 12 FT. X 4 FT.



OPEN SIZE OF LOFT 12FT. X 12FT.



THE LOFT TAKES UP ALL THE UNNECESSARY HOUSEHOLD STUFF (AS PER THE TIME ACTIVITIES) THEREBY PROVIDING MAXIMUM FLOOR AREA WHEN SLEEPING OR WHEN THERE'S AN INCREASE IN NUMBER OF SPACES USERS.



Special Mention



APART FROM TEMPORARY STORING OF HOUSEHOLD STUFF, THE DOUBLE LAYERED MIDDLE SEGMENTS MIGHT BE USED FOR PARTIAL SHADING OF DOORS AND WINDOWS, ALSO INCREASING SECURITY IN DWELLINGS LIKE SLUMS.

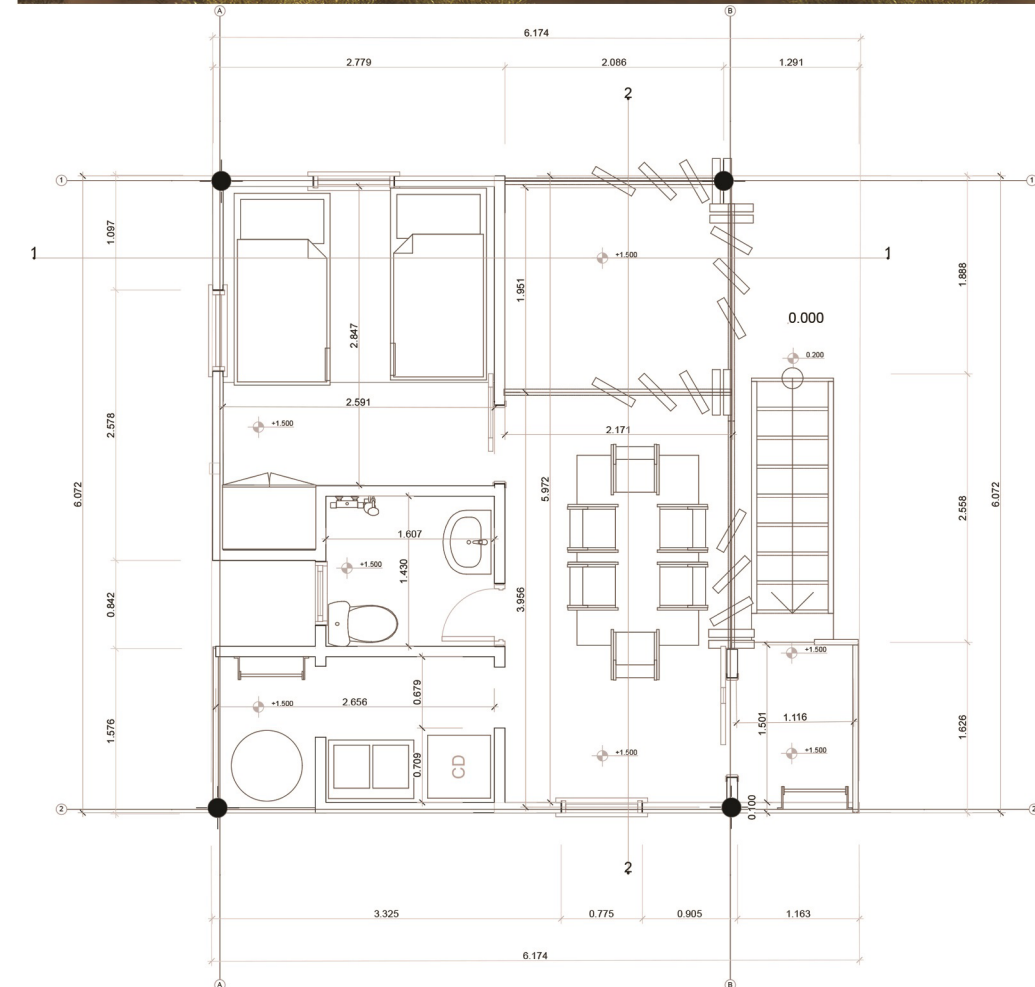
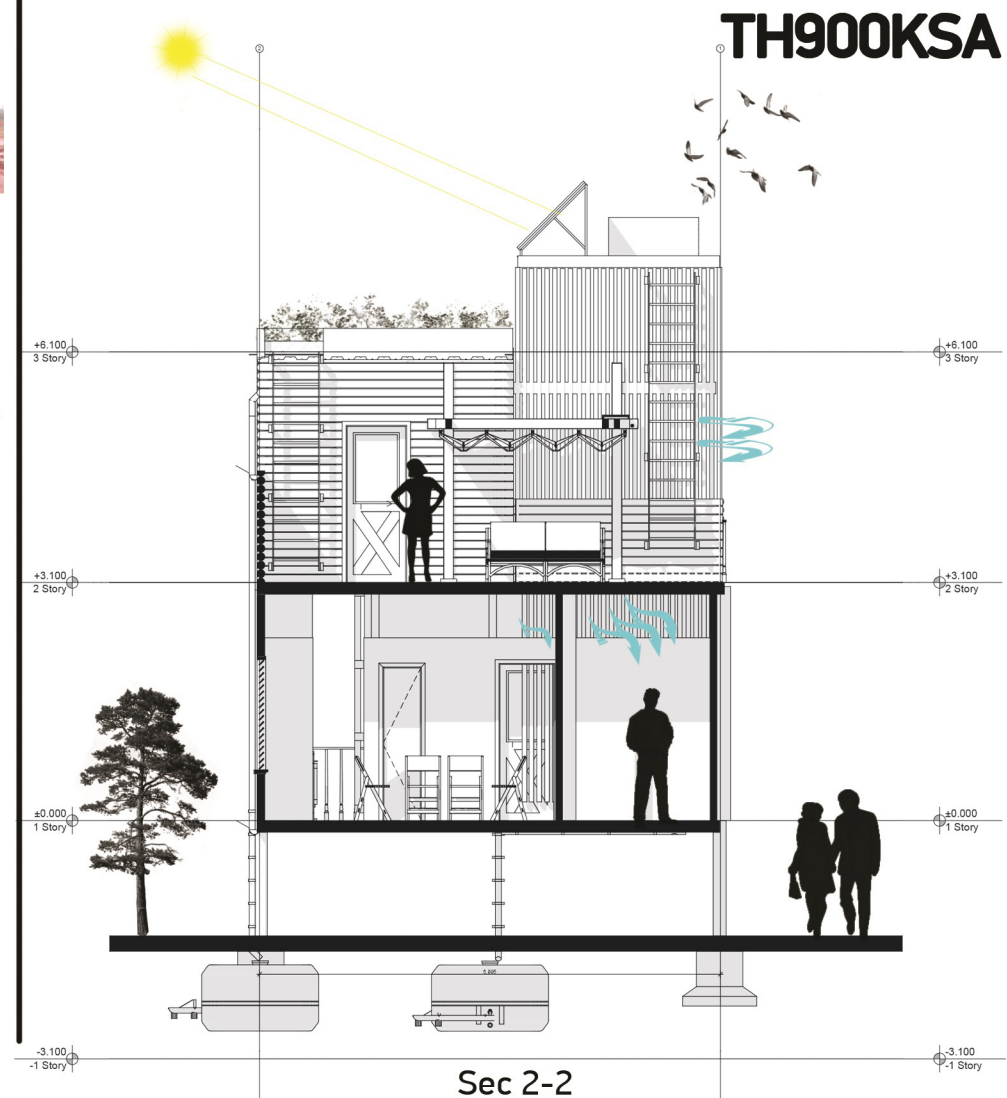
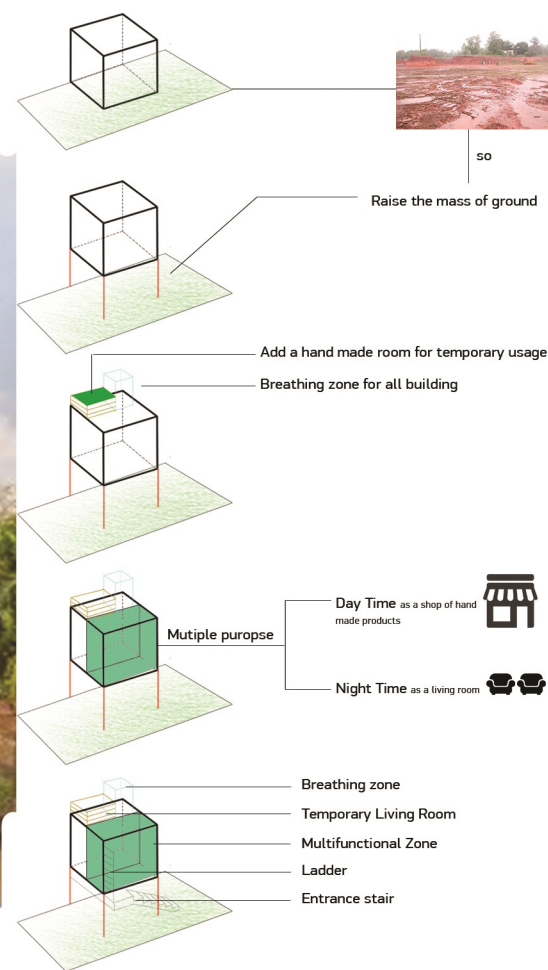


THE FOLDED LOFT CAN EASILY BE CARRIED ANYWHERE AND HENCE CAN BE USED AS A TEMPORARY SEATING OR MATTRESS IN SOME CASES. CAN BE MADE WITH THE STRENGTH OF BAMBOO

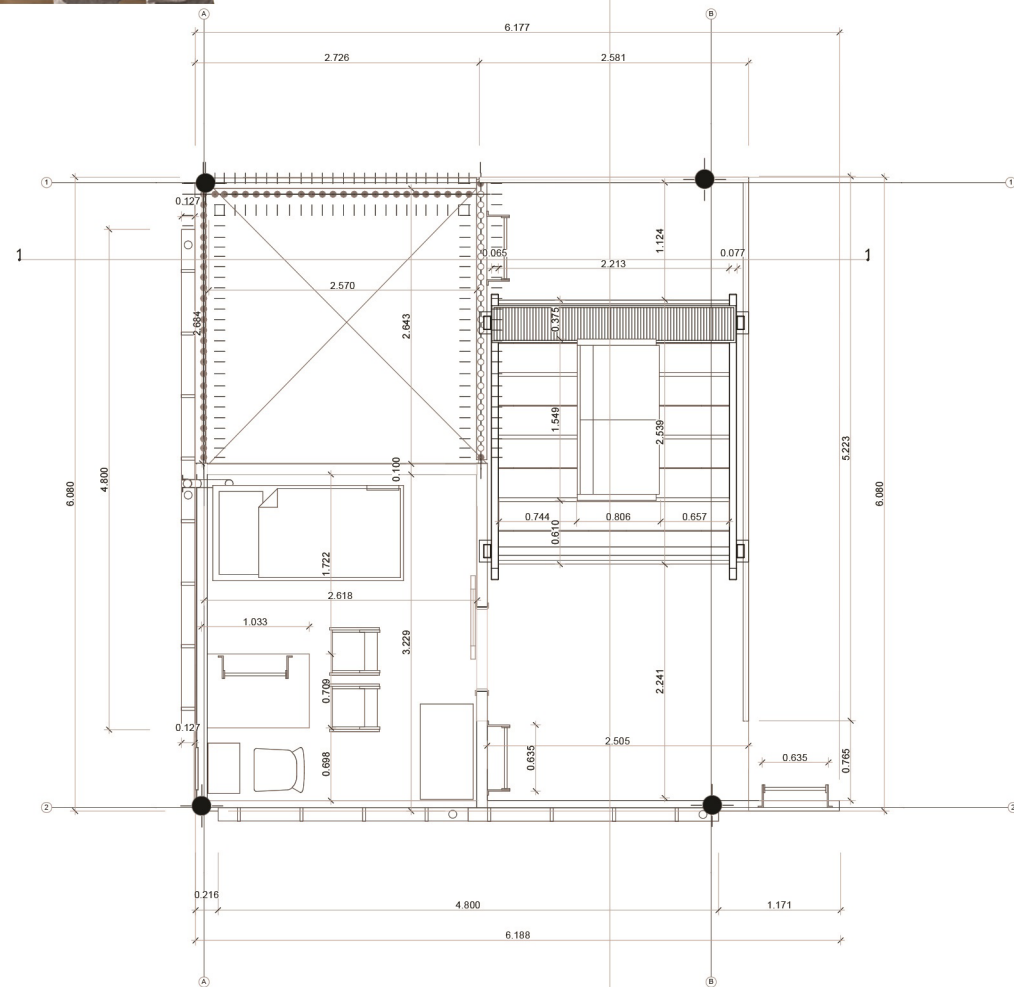




Form Finding Scenario



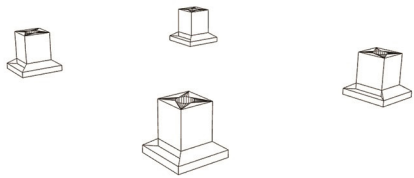
First Floor



Second Floor 2

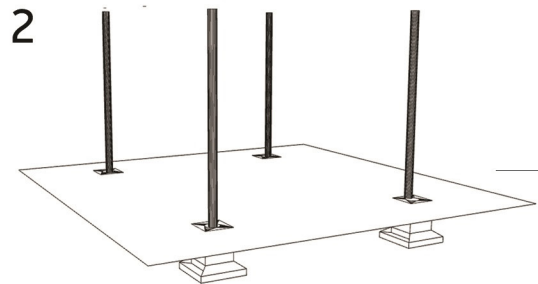


1



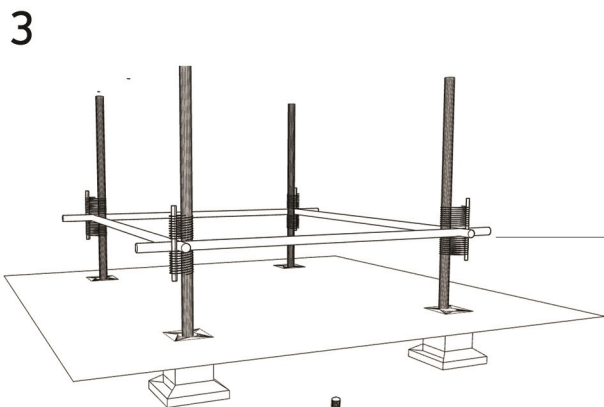
Suitable for wet soil in this location to ensure the stability of the shelter safely

2



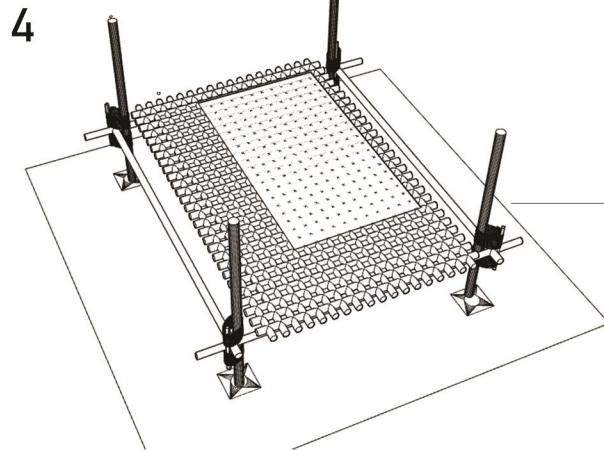
Place the columns of bamboo in the place prepared for them

3



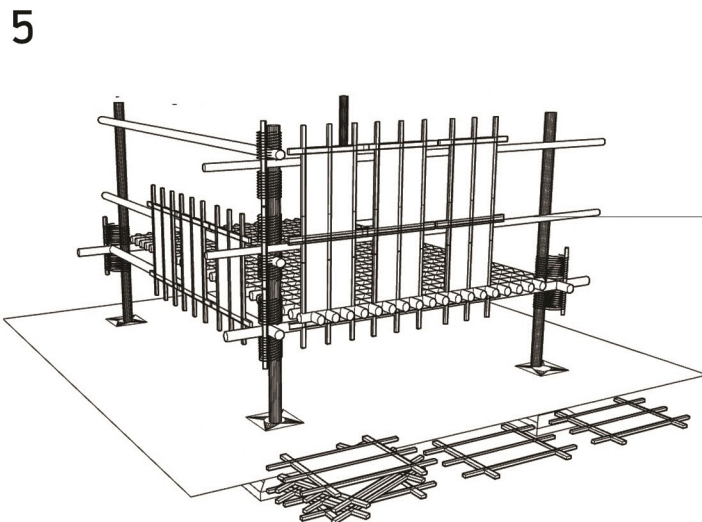
To make a floor, bamboo trees are placed horizontally and tied with columns with wooden links and ropes

4



The bamboo trees are then distributed on the horizontal rails and fill the openings with dried clay

5



For laying the walls, clay is poured in molds and the mud plates are then placed on bamboo pillars with beams fixed with wooden connections and ropes.

Current Situation



Materials



Bamboo trees



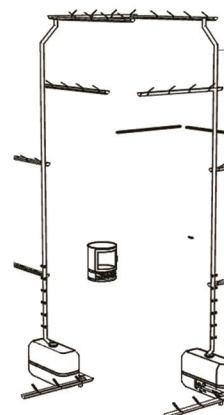
Silt



Water

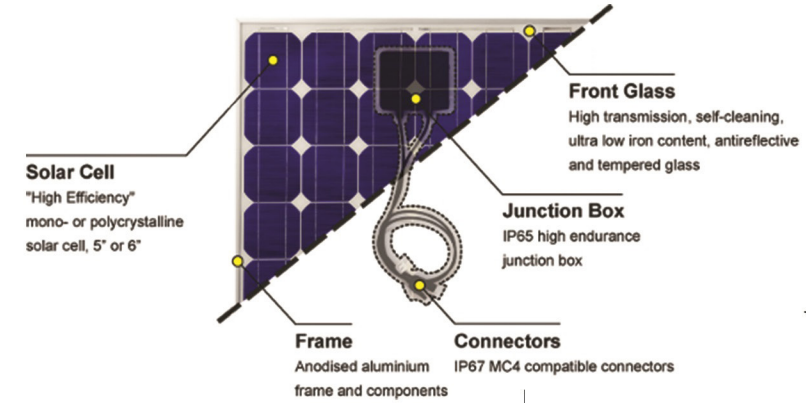


made their shelter themselves

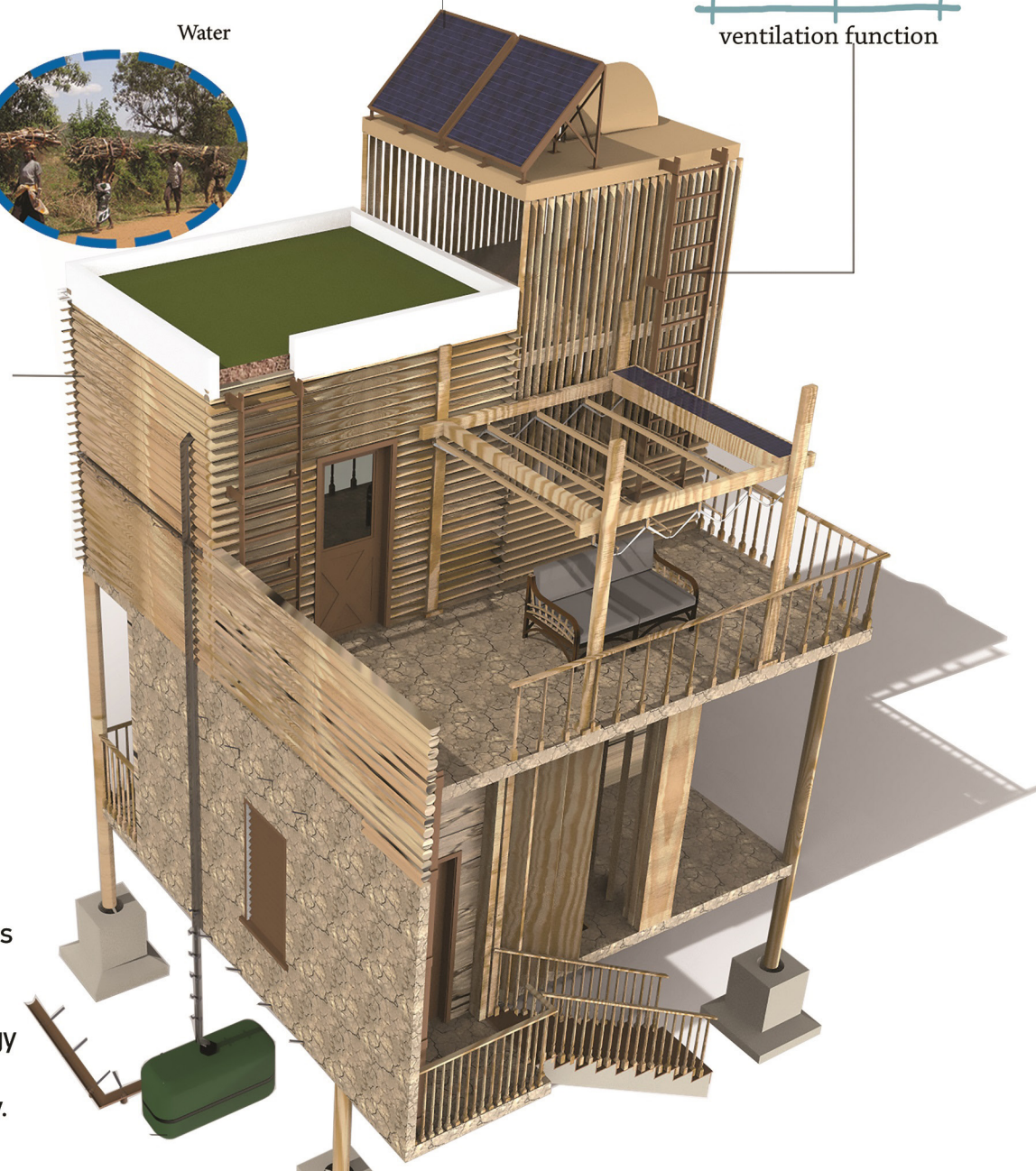
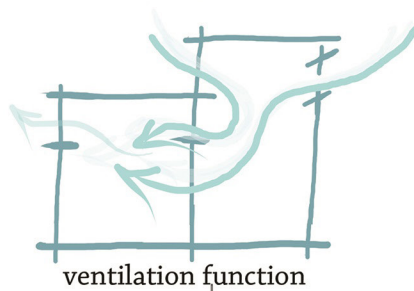


Drip irrigation system in which rainwater is collected through pipes and surplus irrigation needs are stored in tanks below.

Solar panels to store solar energy and take advantage of them in generating electricity and energy.



Ventilation

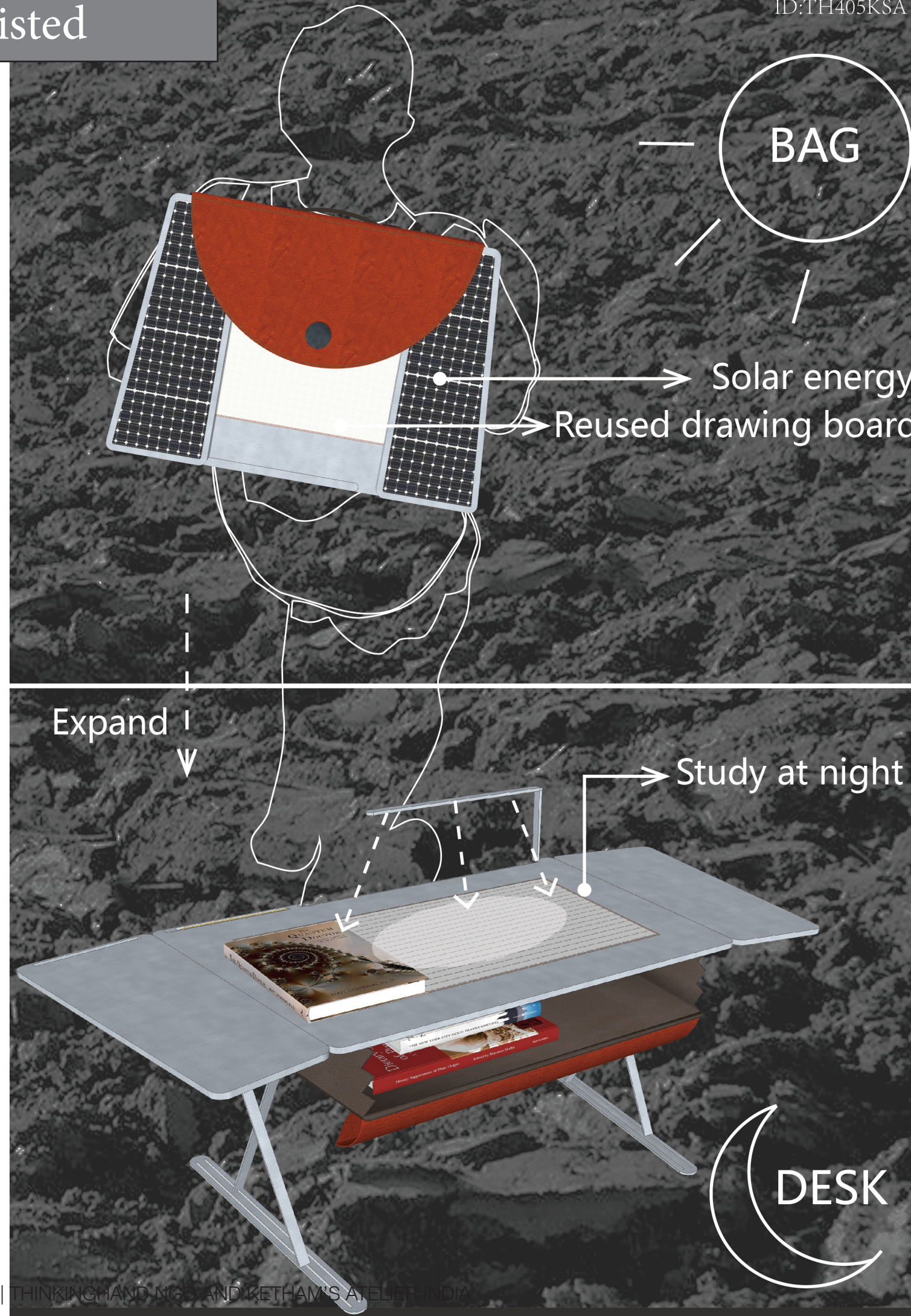
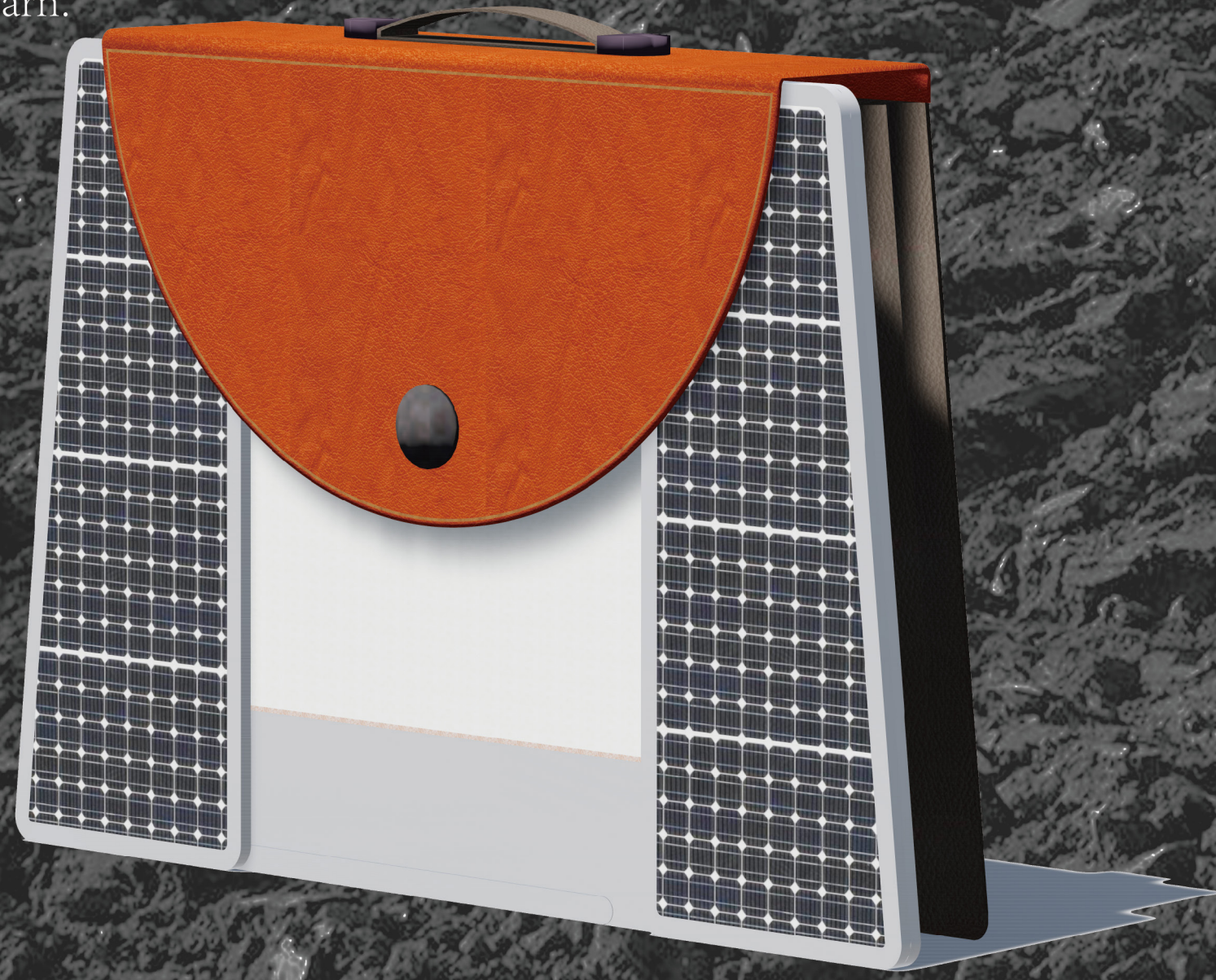




Shortlisted

WALKING DESK

In India, many children have no permanent place to live and no fixed place to study. Many children have no light at night and can not study at night. We want them to have a tool that they can learn from anywhere. Mobile desks came into being, it can be a school bag, easy to carry learning utensils, children are free, you can become a desk anywhere, anytime, to learn.



Current situation



FOLDABLE FURNITURE

Saving space is important to occupy spaces functionally. Usually in neglected societies, there are not much space wherein you could be able to all of your furniture and stuff in. This furniture is made for inhabitants in slums and other neglected communities where need more space to accommodate, fordable furniture is comittted to the house when it comes to furniture quality and sustainability.

'The feature of this furniture is easy to take apart and bring with. At living space, it could pretty much save some space that you may need. This furniture is comprised of two different folded cardboard. One is for seat and storage and another is for bed , table, and storage. Both are covered with cover which is part of the furniture . The cover can be used for layering on the top of table or storage. Both furnitures are same but different size. It can be stretched to be chair, table, and stoarge. The size can be various up to demands. By unfolding it, the furniture become bed for sleeping or sitting.

Corrugated cardboard is an eco-friendly material that is made of recyclable materials like used cardboard carton and old news papers. This recycling and reusing of cardboard helps to reduce the energy and other resources required to produce it. Since the material is easy to get from the local, transportaiton costs for manufacturing are lower than import- ed material from other regions.

According to QUT researcher team, they have developed a new waterproof coating boxed that is both recyclable and renewable. This would be applied to the furniture for being accommodated in countries where have humid weather or dynamic weather change.

TH514KSA

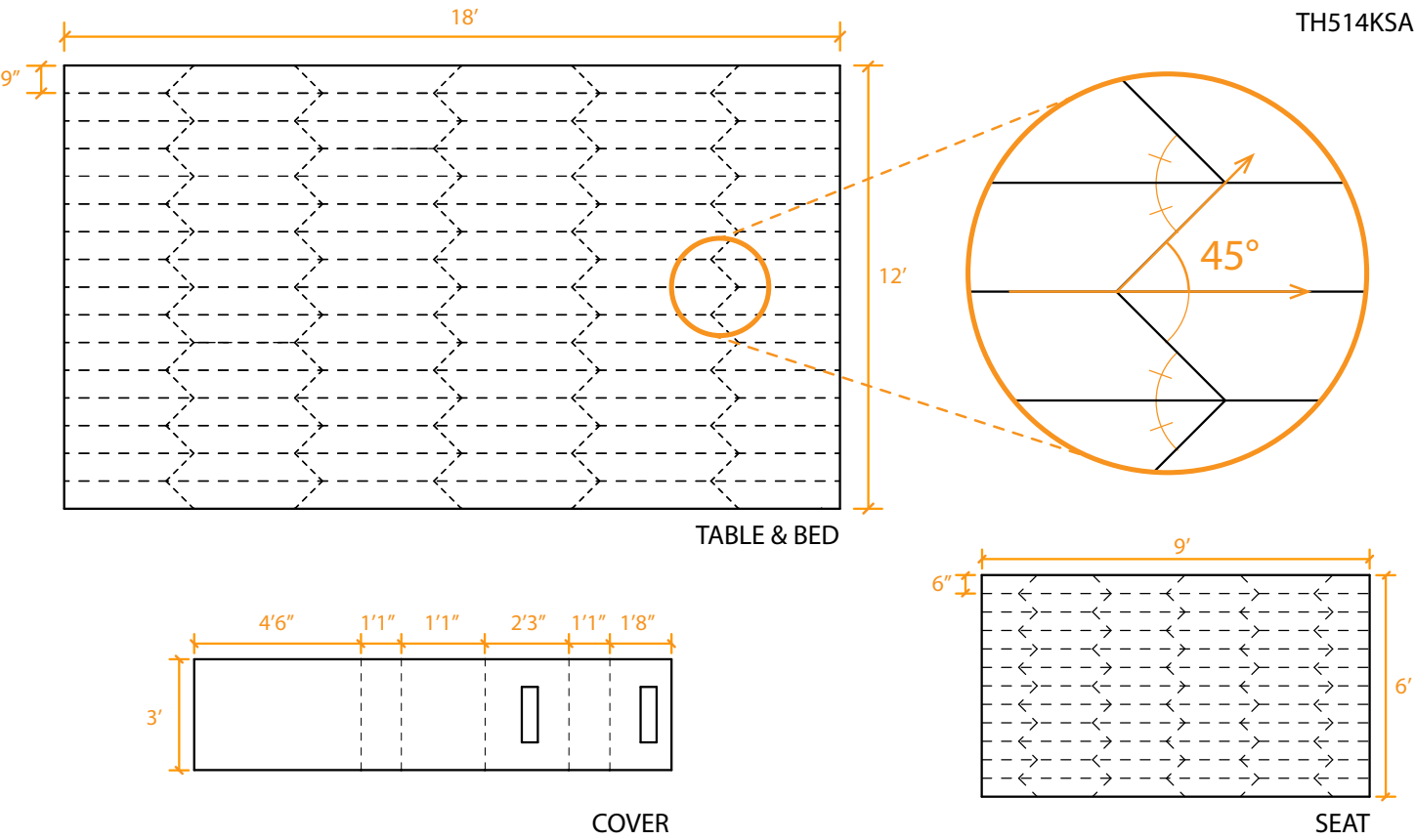


Diagram illustrating the furniture's structure and material. The diagram shows the furniture being transformed from a folded state to an unfolded state. The furniture is made of cardboard and is used in a small space. The furniture is made of cardboard and is used in a small space. The furniture is made of cardboard and is used in a small space.

Lignin is a naturally occurring by-product from pulped wood and grasses. Lignin coating is cost-comparable, and it is 100% recyclable, provides a high level of waterproofing and strengthens the boxes to a higher degree than wax. The cardboard is composed of double layer to make strong. The thickness is 1/4".

Compression from weight of people and tension from the ground are both capable of damaging part of the furniture as a varying load weight and other forces act on the structure.

Shortlisted



THE WALL

"The bouncing ball that never stopped,
the working hand that never dropped,
where a roll of the eye captures the bounding wall,
outdoor spaces is where they sprawl,
with a sound of noise, they hear the voice.
Together they eat, work and rise,
diverse activities for every age,
all they need is an identity in exchange,
race for adequate hygiene and organised space,
can a furniture make the change ?"

THE IDEA

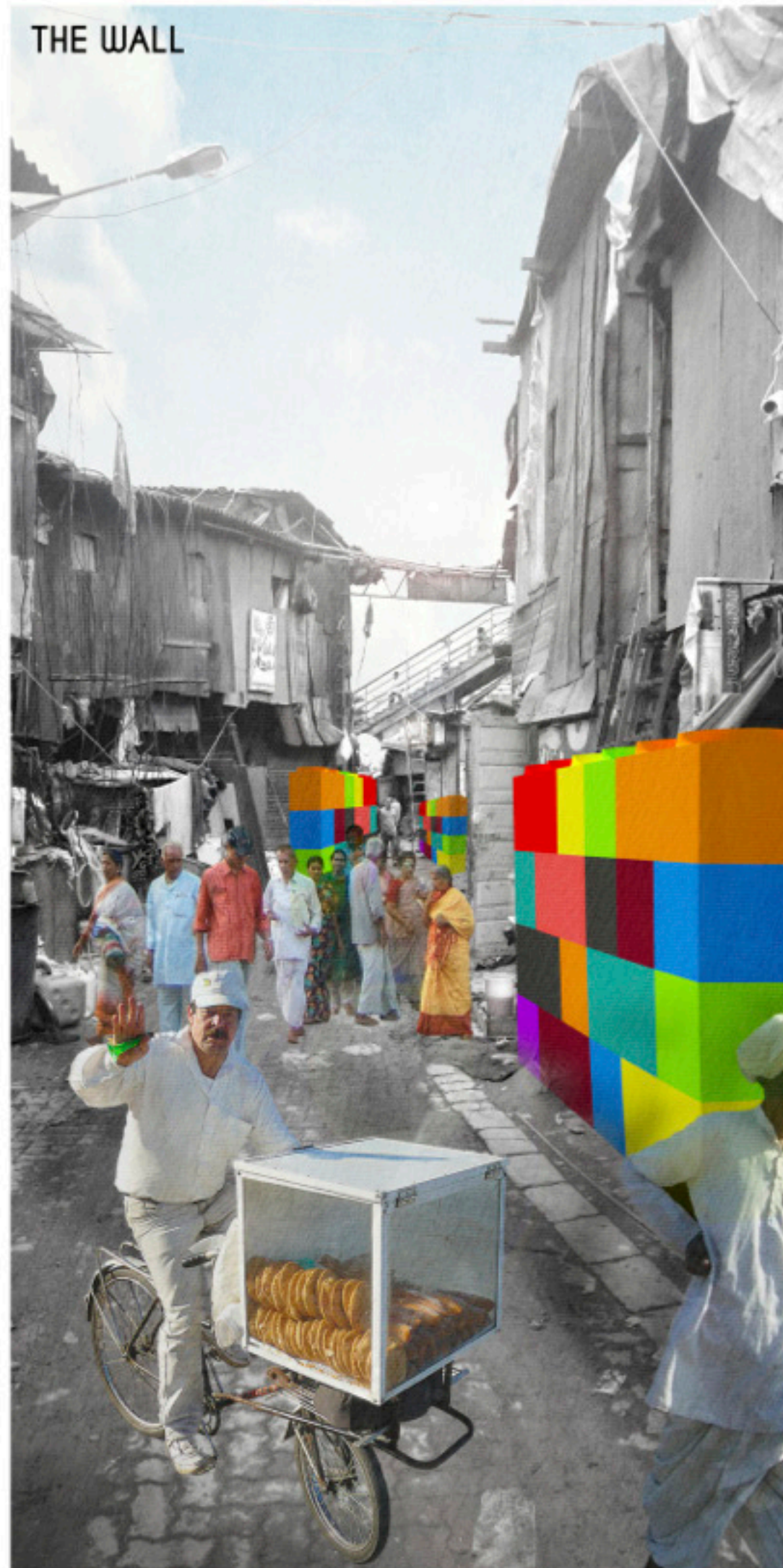


The daily exchanges and communal cohesion, are the main assets of any slum settlement. Hence, to heighten this bond and create a sense of belonging in the spatial constraints, an intervention in the form of a wall is being accentuated in the tiny pockets of the neighborhood. But, can just a wall bring in the change?

ITS NOT JUST A WALL !



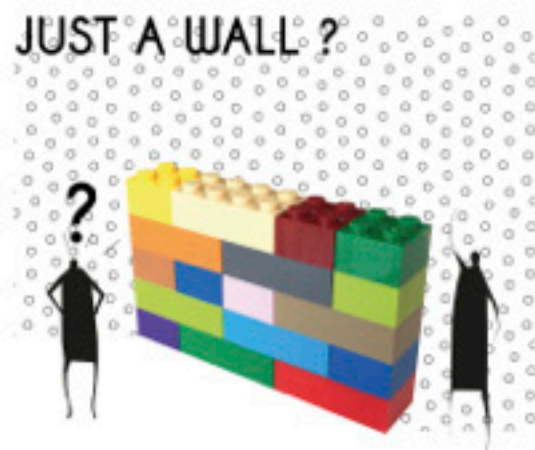
THE WALL



WHEN BROKEN

TH352KSA





PARTITION



AMPHITHEATER



GROUP SEATING

THE MODULE

TH352KSA

The idea of the 'wall' was further broken down to understand its potential using 'lego' blocks. Inspired from this, two interlocking modules are proposed, a single seater and a double seater together making the wall. The modules are made of light recycled plastic which could be stacked, flipped, rotated and arranged to form infinite user-friendly possibilities activating community spaces of the slums.



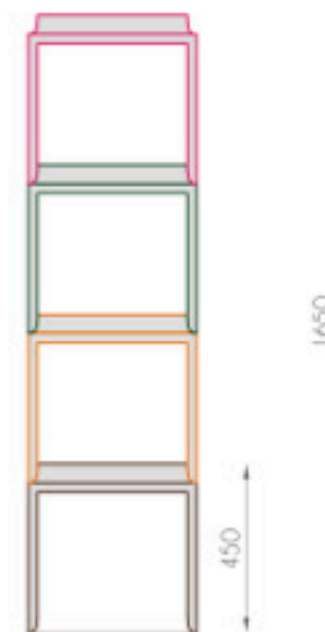
EVENT STAGE



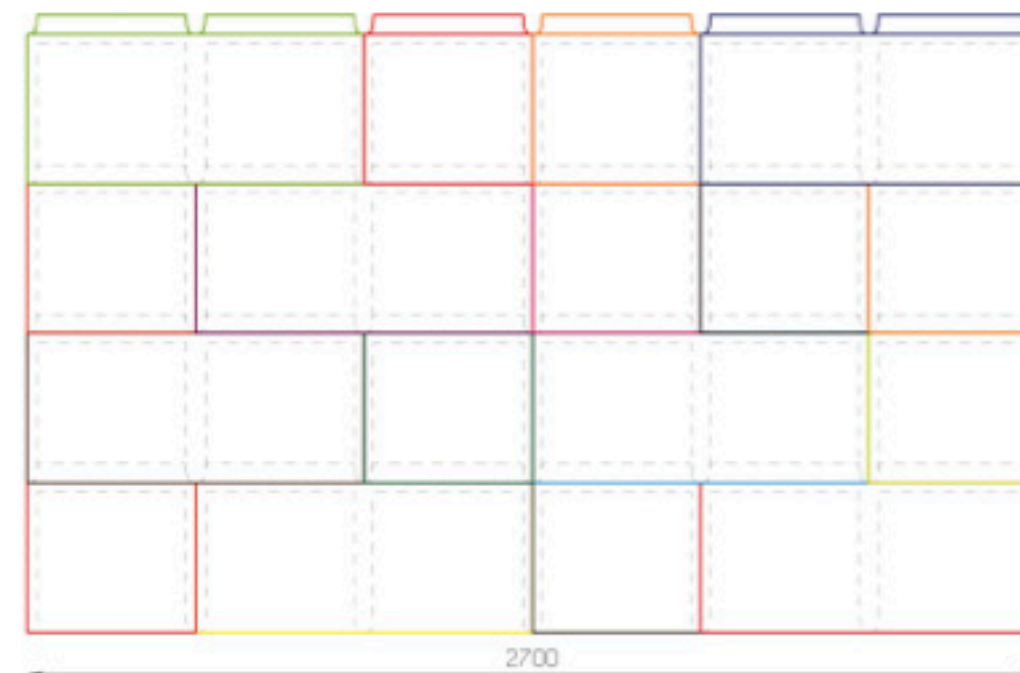
PLAY



ROW SEATING



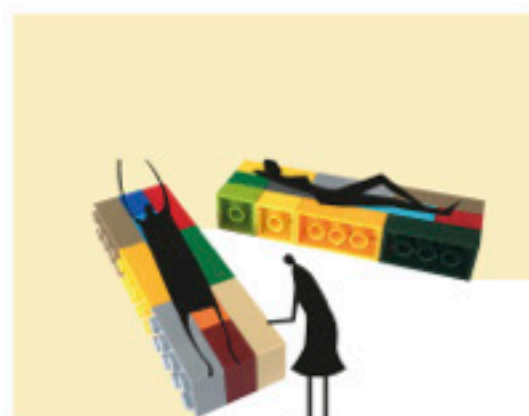
SECTION



ELEVATION



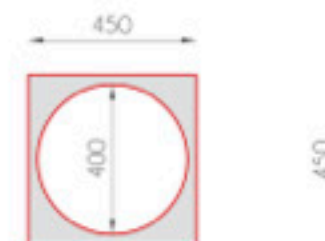
LEARN



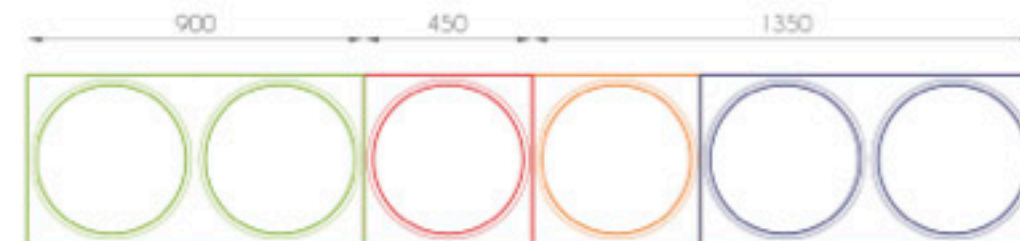
SLEEP



SCATTERED SEATING



PLAN



TOP VIEW

ALL DIM. IN MM | SCALE - 1:20



PLANTER



STORAGE

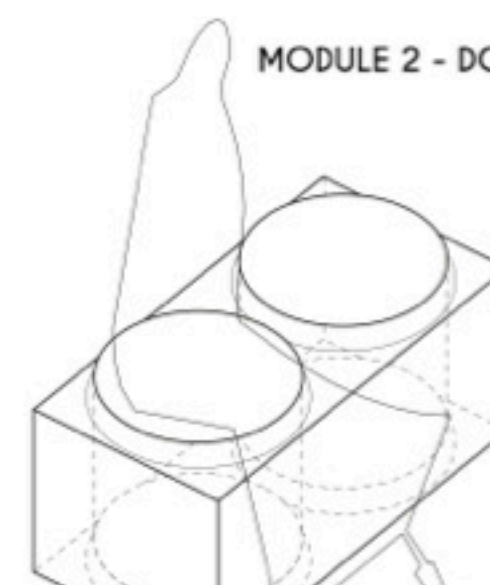


CIRCULAR SEATING

MODULE 1 - SINGLE SEATER



MODULE 2 - DOUBLE SEATER



AND MANY MORE.... !



Shortlisted

A COMMUNITY FURNITURE

The community is collectively involved in the entire process of making the module, which includes collecting the plastic waste and creating onsite modules using fabricated moulds which are provided. Thus the module is an initiative to create an everlasting loop of interactive building process that will cater to the development of the society and establish a sense of belonging amongst the people.



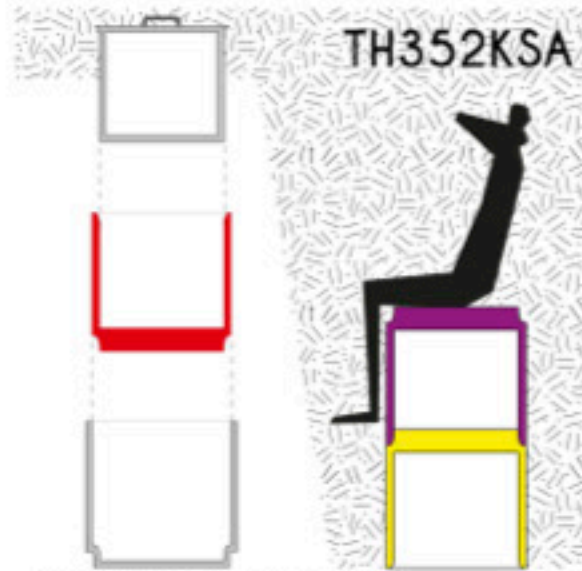
COLLECTING THE PLASTIC WASTE



RECYCLING THE PLASTIC



CREATING MODULES ON SITE



REUSING THE MODULE

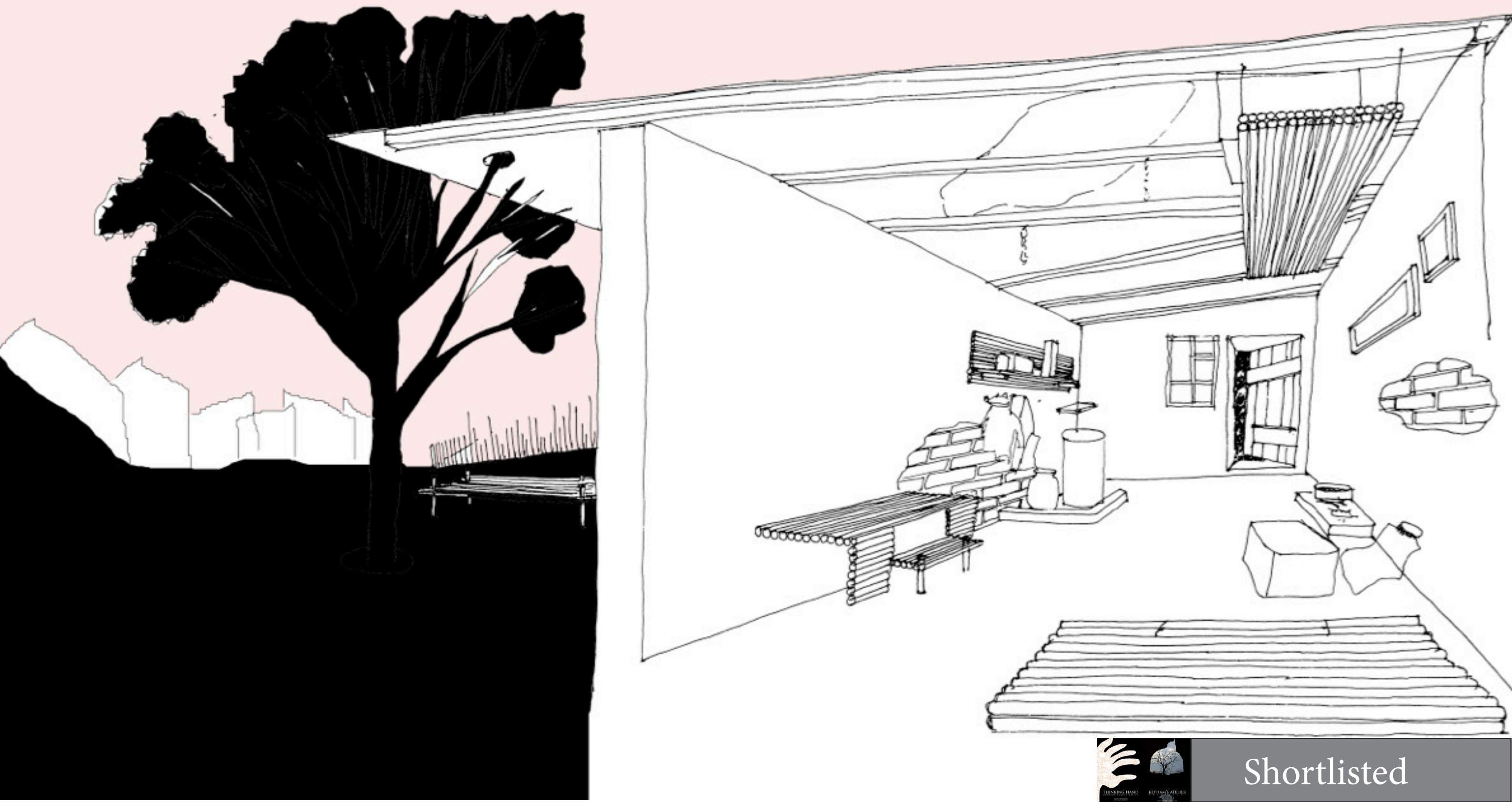


ACTIVATING NARROW DEAD SPACES



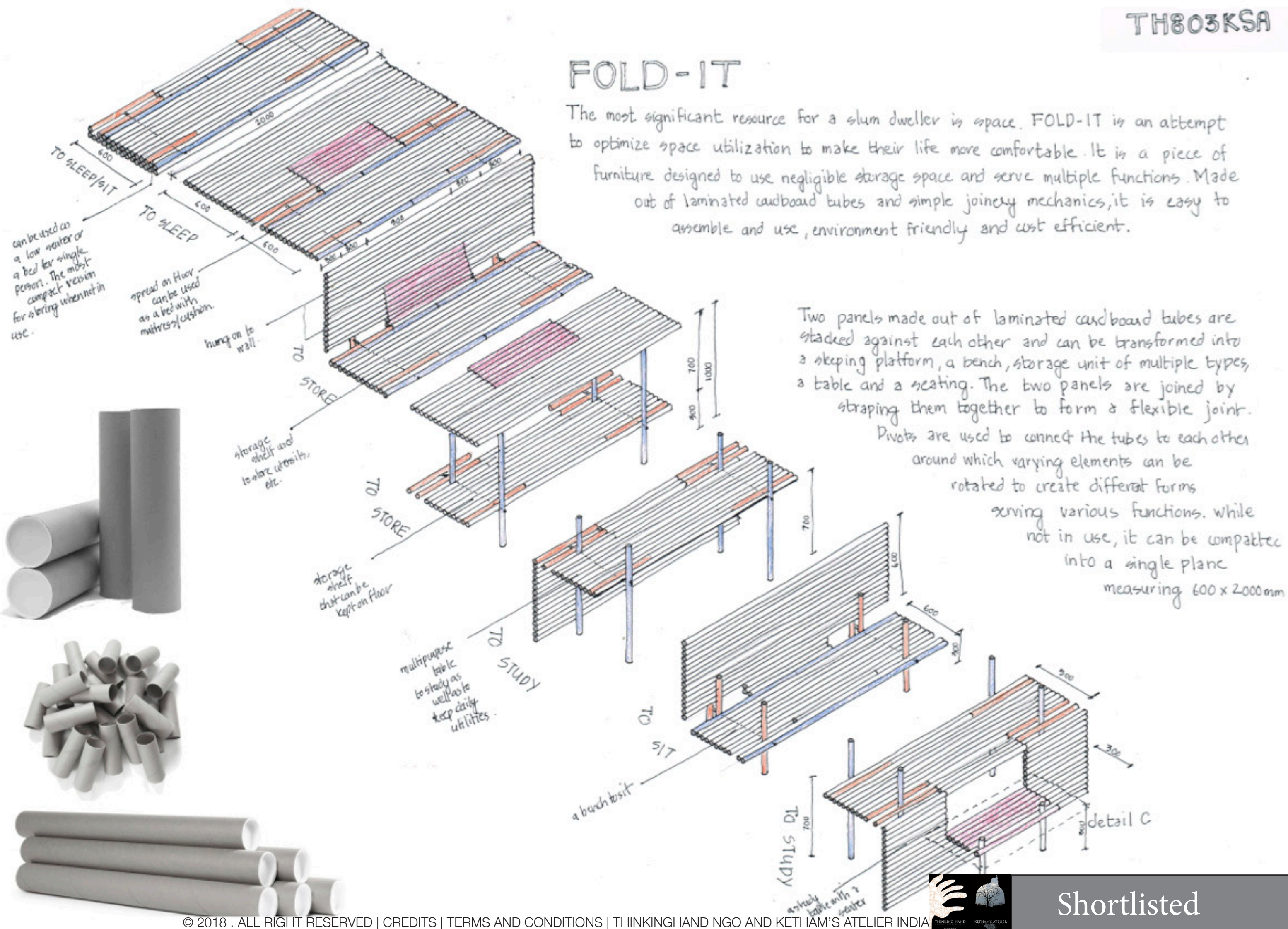
ENHANCING THE OUTDOOR



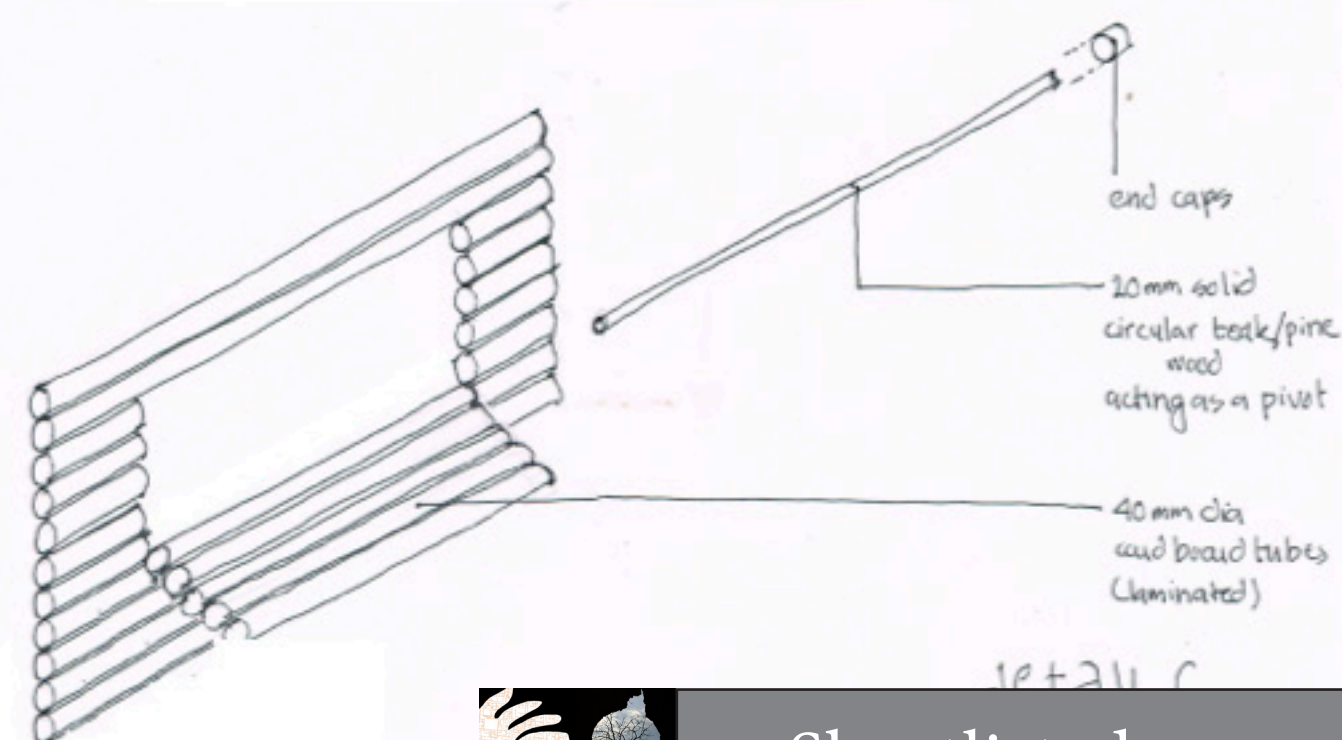
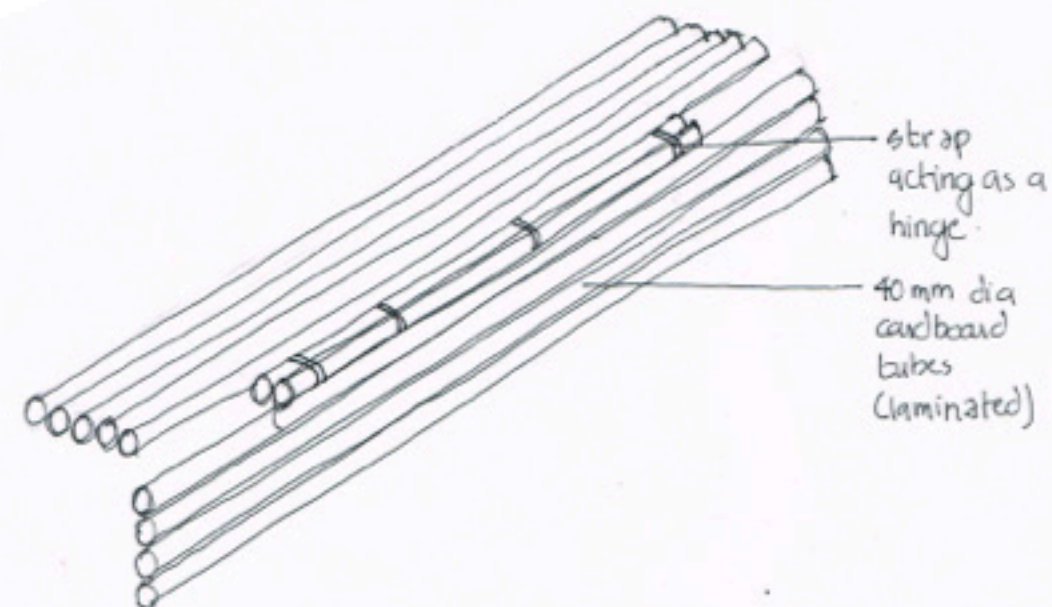
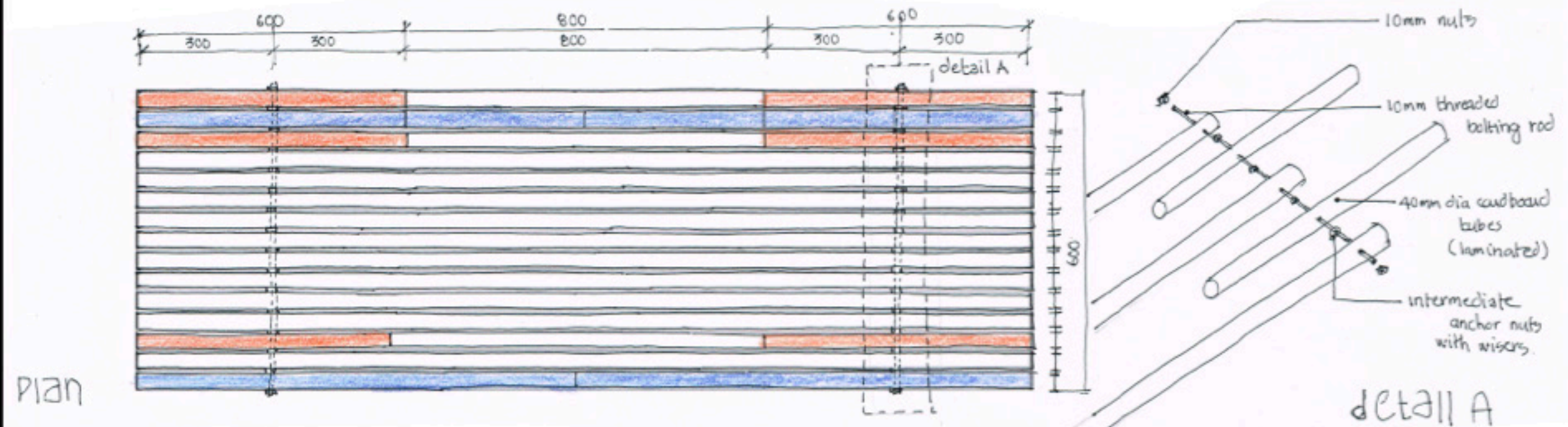
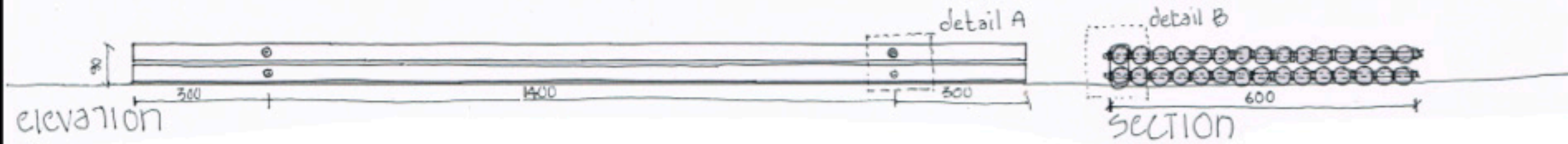


FOLD-IT

The most significant resource for a slum dweller is space. FOLD-IT is an attempt to optimize space utilization to make their life more comfortable. It is a piece of furniture designed to use negligible storage space and serve multiple functions. Made out of laminated cardboard tubes and simple joinery mechanics, it is easy to assemble and use, environment friendly and cost efficient.



TH803KSA FOLD-IT



Shortlisted