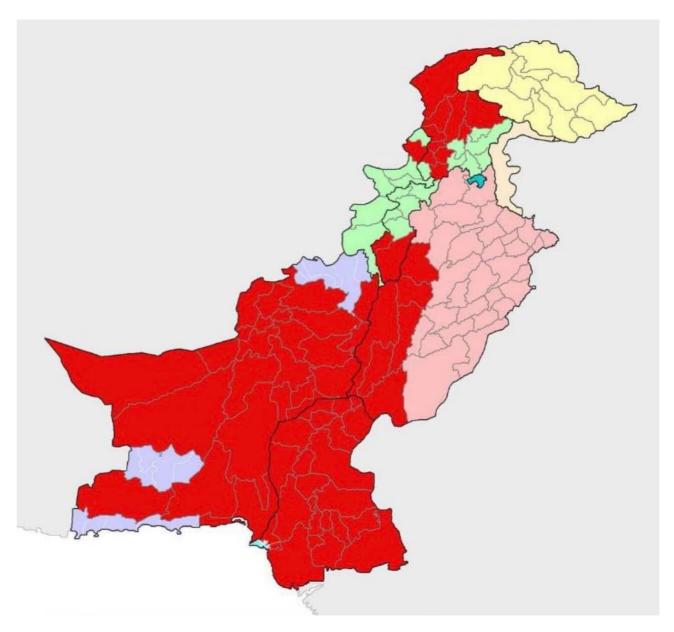
Our motto is Commitment to Community

ECO Development & Low Cost Energy Efficient Affordable Housing for Flood Affectees in Pakistan



By Faran Lodhi Architect August 2022

LONDON UK KARACHI PAKISTAN NORNASS - SWEDEN



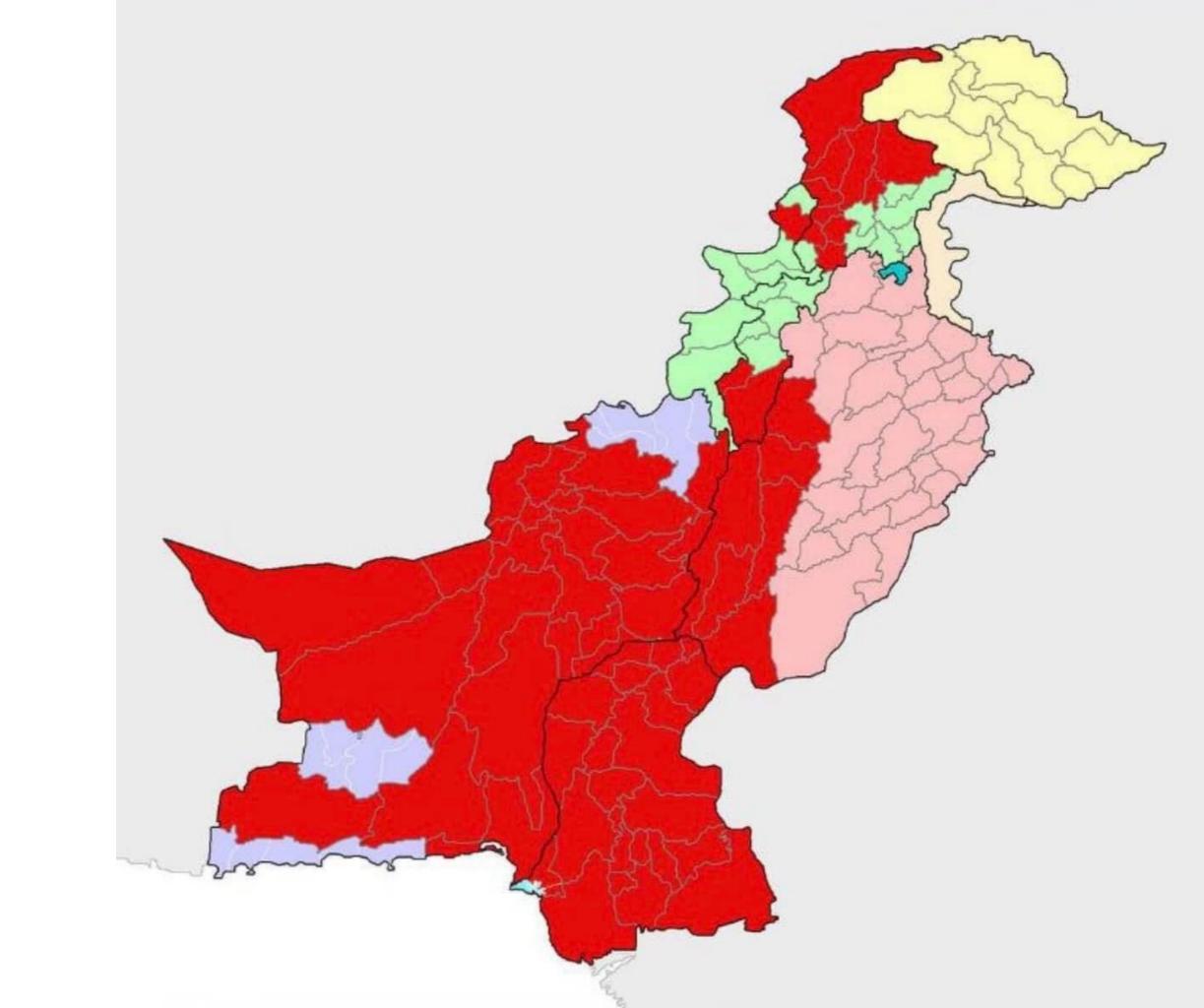
My home country of Pakistan is experiencing an absolute climate disaster with devastating floods impacting millions.

The most recent stats suggest:
33 million people displaced
670K homes damaged/destroyed
Over 1000 people (many of the children) dead

We need your help. ...

Me & my Organisation Algo & Big has decided to Rebuild "FloodLand"- for the communities in the affected areas and the forest.. of Pakistan.

Reduced infrastructure, preserved nature, minimal footprint, adaptable units, local materials, social variety, community spaces and affordability - are only some of the key design strategies.



Pakistan Monsoon Flood - Houses Destroyed and Damaged

670,328

Total houses destroyed and damaged

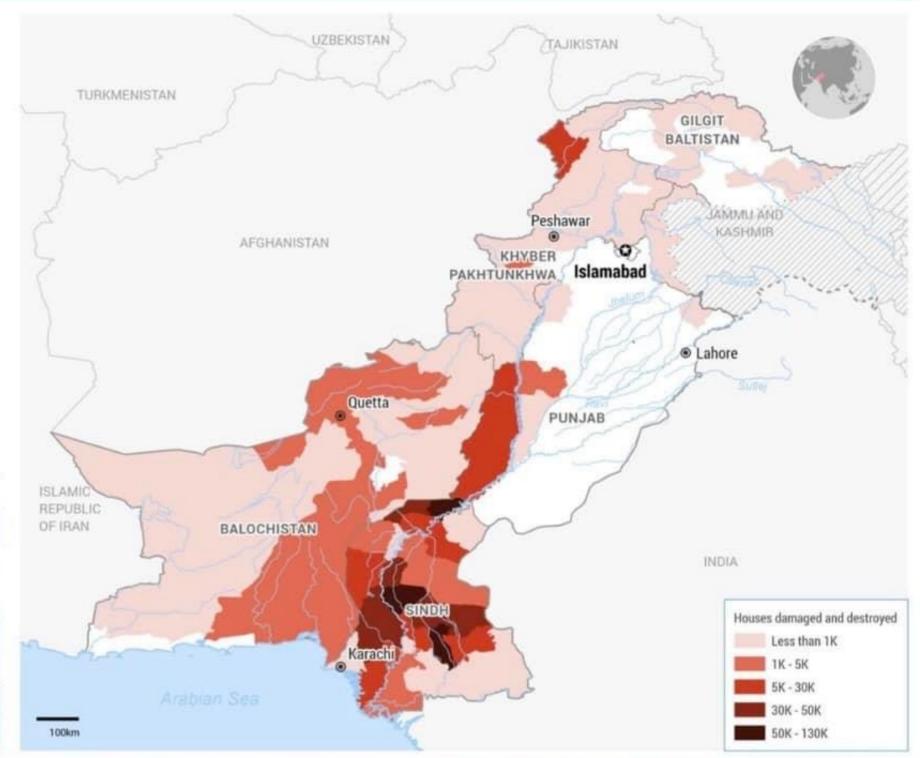
452,098

Total houses damaged

218,230

Total houses destroyed

Province /Region	Houses Partially Damaged	Houses Fully Damaged	Total Houses Damaged
AJ&K	154	255	409
Balochistan	20,220	7,527	27,747
GB	257	383	640
ICT		2	
KP	7,457	8,312	15,769
Punjab	28,951	15,605	44,556
Sindh	395,059	186,148	581,207
TOTAL	452,098	218,230	670,328



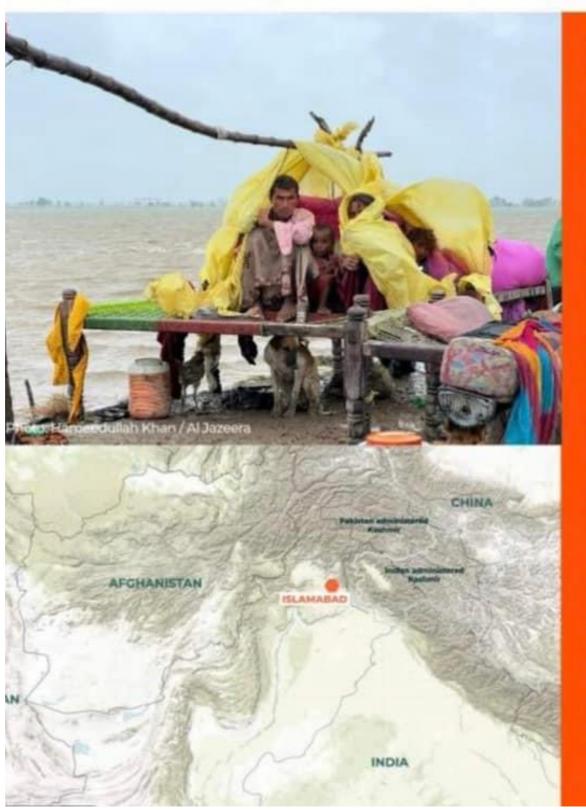
The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the Unified Nations. Dotted line represents Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status has not been agreed by both parties.

Creation date: 26 Aug 2022 Sources: HDX, NDMA Pakistan, PDMA Pakistan, PDMA

PAKISTAN

Floods affect 30 million people

Nearly 1,000 people have died, and millions are without shelter as Pakistan struggles to cope with devastating floods.



According to the National Disaster Management Authority as of August 25, 2022:

DEATHS

937

INJURED

1,343

ROADS DESTROYED

3,100_{km}

BRIDGES DESTROYED

145

HOUSES DESTROYED

581,207

LIVESTOCK DEATHS

793,995







Why it happened? Climate Change results in flood and draught cycle

Reactive Approach	Proactive Approach	
Measures:	Development:	
Boots, Tents, Ration,	Dams	
Medicines, Donations, Helicopters	Drainage Capcity as per Requirement	
Media Highlights	Field Storage	
Corruption	Climate Change	
Must be Condemned	The First & Foremost Priorty	
Measures are adopted during and after damages	Flood & Drought both are managed by development	

Economical Losses by Floods 2022

Crop	Punjab Billions PKR	Sindh Billions PKR	KPK Billions PKR	Balochistan Billions PKR	Total
Cotton	110	275	-	40	425
Rice	26	52	4	39	121
Maize	30	-	6	-	36
Sugarcane	_	-	-	_	15
Pulses	15	-	2	1	18
Vegetables	5	60	5	2	72
Fodders	10	40	4	1	55
Total	196	427	21	83	742
Livestock					300
Grand Total					1042

Rainfall July - August 2022

Sindh	Punjab
Rice Areas	
Badin 642.2mm	Sialkot 620.6mm
Jacobabad 781.1mm	Gujrat 765.2mm
Cotton Areas	
Sukkur 550.5mm	Multan 234.4mm
Nawabshah 594.9mm	RY Khan 416.2mm
Damage is high due to lack of development	Damage is low and managed by development

After Effects of Flood

GDP Growth may go negative
Poverty numbers will increase very quickly
Urban Migration will start at fast pace
Unemployment will be aggravated
Flood inflation may be very high

% Increase over last year June 2022

Crop	World	Pakistan
Wheat	-0.29	4.55
Corn	5.3	18.90
Rice	1.19	10.69
Oilseeds	6.4	20.89
Sugar	2.16	28.57
Potatoes	3.5	35.26
Pulses	5.0	28.4
Vegetables	2.0	31.42
Cotton	1.2	18.0

^{*} Could happen with vision, leadership, commitment & hardworking

Way Forward

Myth Breaking Exploitery Phrases اللہ کی مرضی گناہوں کی سزا سیاست نہ کریں

Reactive Approach	Proactive Approach	
Measures:	Development:	
Boots, Tents, Ration,	Dams	
Medicines, Donations, Helicopters	Drainage Capcity as per Requirement	
Media Highlights	Field Storage	
Corruption	Climate Change	
Must be Condemned	The First & Foremost Priorty	
Measures are adopted during and after damages	Flood & Drought both are managed by development	

Poverty alleviation through agriculture ROI \$1= \$4

Our motto is Commitment to Community

We aim to provide education for people of all ages, running workshops with primary school children, and a range of other activities to develop art, nature and practical skills. We plans to provide training in whittling and allotment management. The allotments have turned into a really sociable thing, People from outside will be really engage with one another in ways that just didn't happen before. Community composting scheme together – before, people would throw all their green stuff away, but now we can really use it.

We have also been looking into renewable energy options as part of their mission to become a sustainable and self-sufficient community.

The projects in this series:

- 1. Community supported farm
- 2. Green Fuel Project
- 3. Community Garden Centre
- 4. Neighbourhood Community Scheme
- 5. Solar Schools project
- 6. Clothes Swap project
- 7. Beekeeping Group
- 8. Repair- Cafe
- 9. Eco-therapy Garden
- 10. The Community Allotment
- 11. Nature Reserve
- 12. School Growing Project
- 13. Bike Repair Cooperative

ECO Homes Introduction



Sweden based Architect Faran Lodhi's Firm Algo & BIG has conceived plans to create a project of Low Cost Affordable ECO Housing - ECO Homes, Karachi, that is designed to be a "pioneer" more eco - Efficient Development.

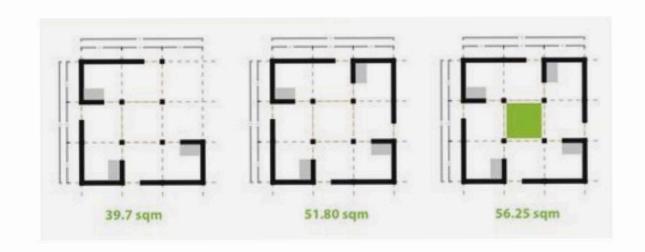
A new concept in low density zero carbon low cost homes specifically designed for the Karachi climate achieving as 1 low cost homes with common family park in the centre.

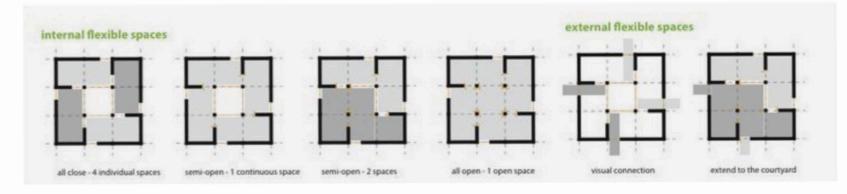
The homes have been specially designed to fit into a masterplan. Streets are shaded by palm trees to maximise pedestrian comfort and create walkable neighbourhoods.

The courtyards provide excellent Supervision of children playing, and have good security, at the same time as maximising the opportunities for meeting other families and creating a strong social network connected to each urban block.









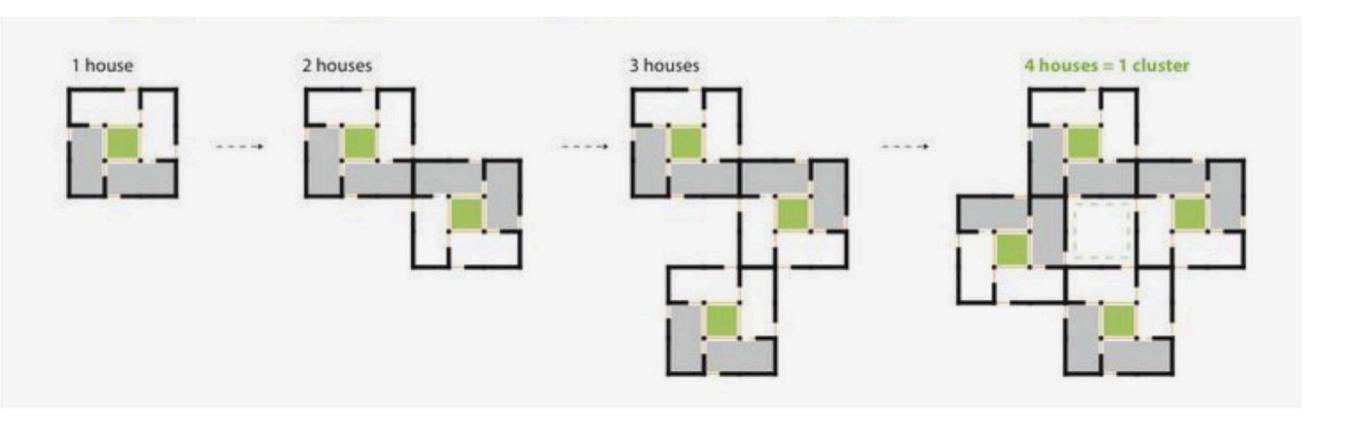
Idea

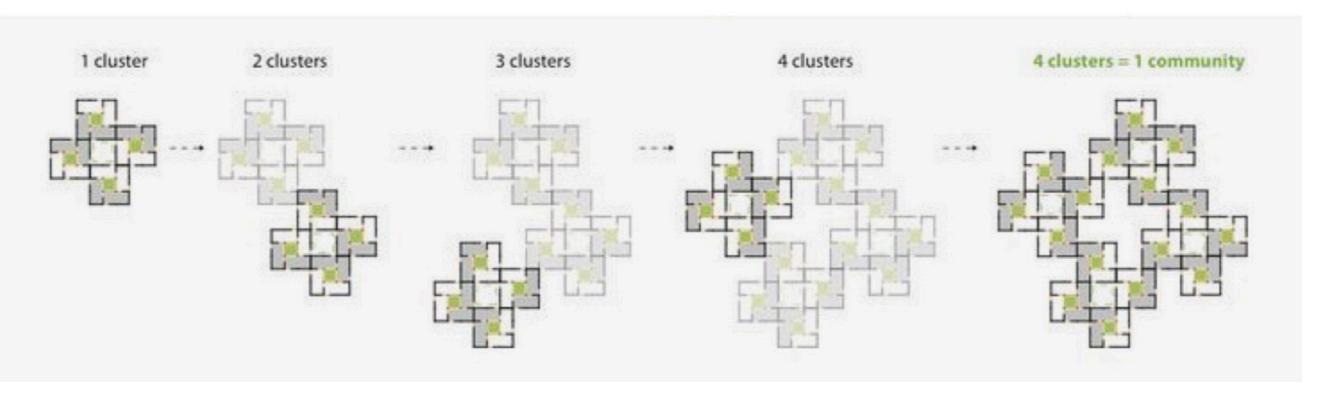
The idea is to make living in low cost zero carbon / zero emissions homes so convenient, and with an overall higher quality of life - that most people will choose to live in this environment because it is healthier, more convenient, calmer on the eye, and quite simply better designed.

It will also have very low running costs, future proofing the purchase investment.



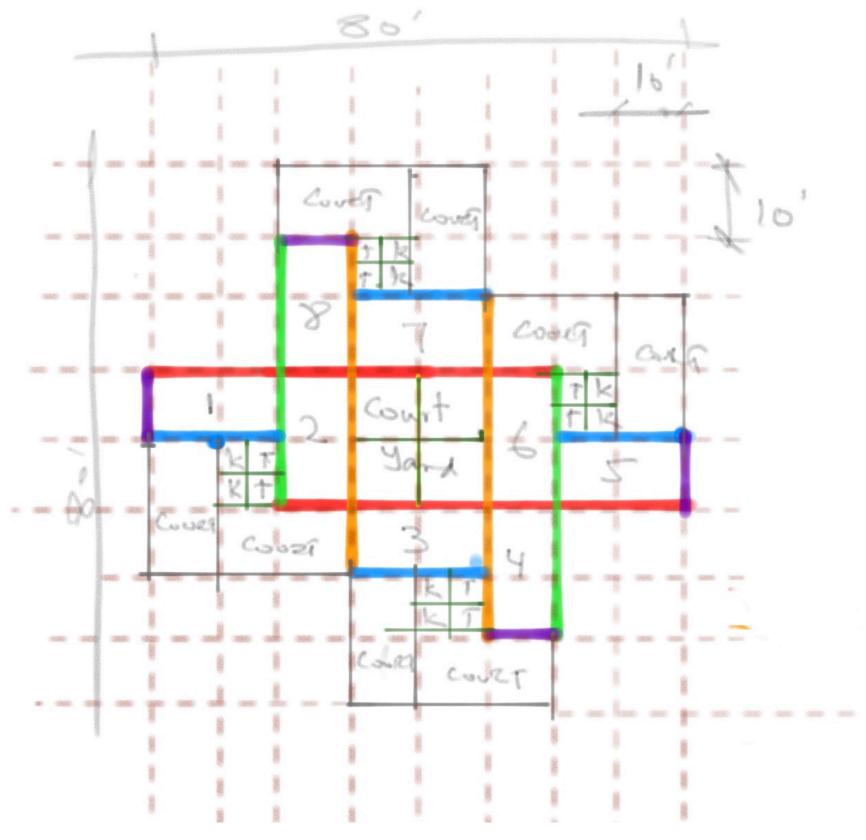
















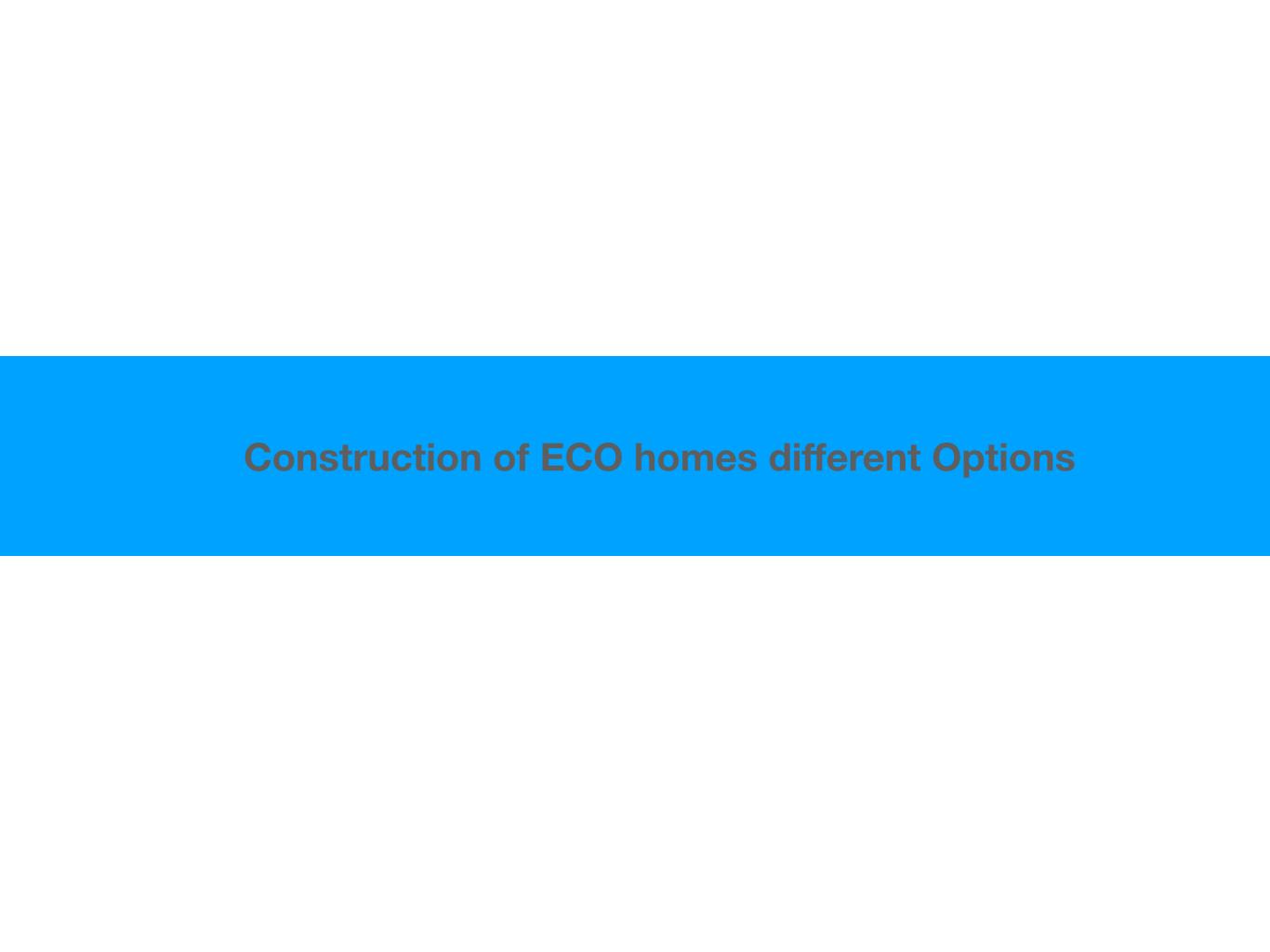


.ARCHITECTS

.PLANNERS

.CONSULTING ENGINEERS

.LANDSCAPE



COST ESTIMATE & ANALYSIS OF 6 TYPES OF ECO HOMES

T D : I'			
Туре	Description	Cost	
Type 1: ECO Balehaus- Homes- 8 x houses in each cluster - 1x large room with Courtyard, Kitchen & Toilet Balouchistan & Sindh	Bamboo with Strawbales & lime mud Structure of 275 Sqft / Courtyard of 200 Sqft & Extra Open Space. Earthquakes & Flood Resilient	Rs.285,000	
Type 2: ECO Pallets - Homes - 8 x houses in each cluster - 1x large room with Courtyard, Kitchen & Toilet Balouchistan & Sindh	Wooden Pallets with Strawbales & lime mud Structure of 275 Sqft / Courtyard of 200 Sqft & Extra Open Space. Earthquakes Resilient	Rs.290,000	
Type 3: ECO CLC - Homes - 8 x houses in each cluster - 1x large room with Courtyard, Kitchen & Toilet Balouchistan & Sindh	CLC foam crete light weight Blocks with monolithic CLC Slab roof Structure of 275 Sqft / Courtyard of 200 Sqft & Extra Open Space. Energy Efficient & Sustainable	Rs.490,000	
Type 4: ECO LGS - Homes - 8 x houses in each cluster - 1x large room with Courtyard, Kitchen & Toilet Balouchistan & Sindh	LGS Light Gauge Steel frame with Gypsum Composite Walls, Single Slope Roof Panel of 275 Sqft / Courtyard of 200 Sqft & Extra Open Space. Energy Efficient & Sustainable	Rs.575,000	
Type 5: ECO Dome - Homes - 8 x houses in each cluster - 1x large room with Courtyard, Kitchen & Toilet Balouchistan & Sindh	16 ft Dia - Dome Shaped ECO homes- No Steel required. Compressed Mud blocks/ bricks Construction, / Courtyard of 200 Sqft & Extra Open Space. Energy Efficient & Sustainable	Rs.590,000	
Type 6: ECO - Homes 24 x houses in each Cluster- Each house 120 sqyds Single Story with 3 KV Solar Panels	CLC foam crete light weight Blocks with monolithic CLC Slab roof Structure of 680 Sqft / Courtyard of 350 Sqft & Extra 1000 sqyds Open Communal Central Space. Energy Efficient & Sustainable	Rs.1,660,000	



Type 1 Balehaus



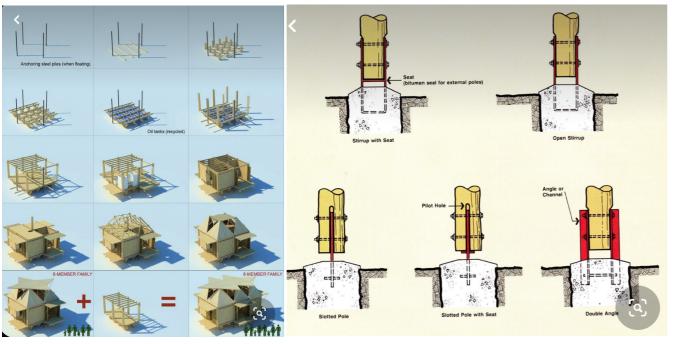








Construction Material Bamboo Structure Option A









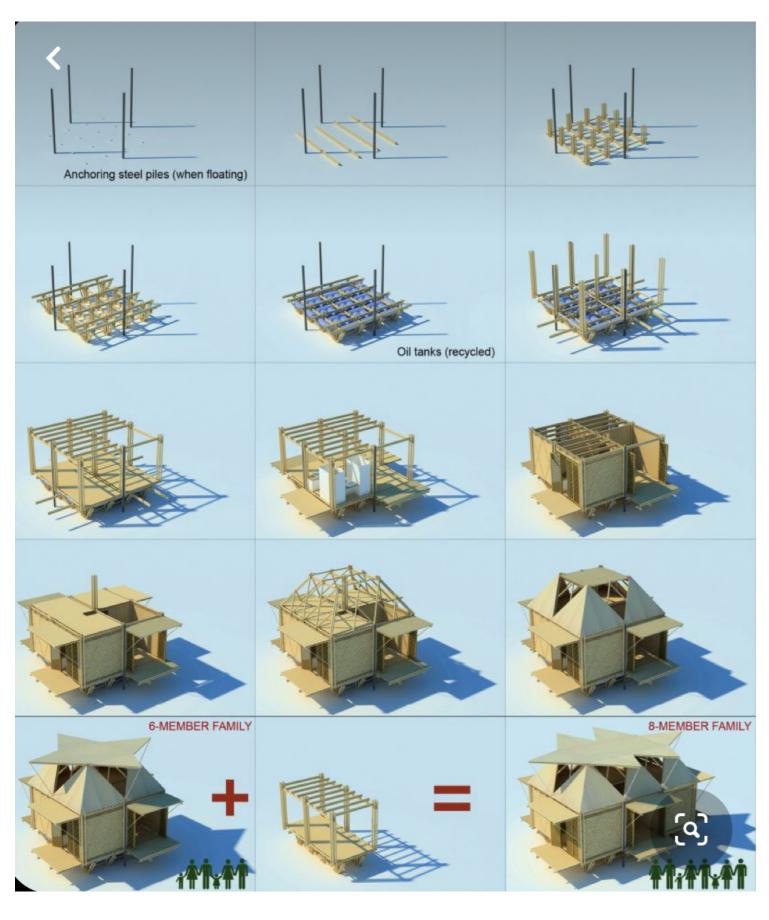




LONDON UK KARACHI PAKISTAN

NORNASS - SWEDEN





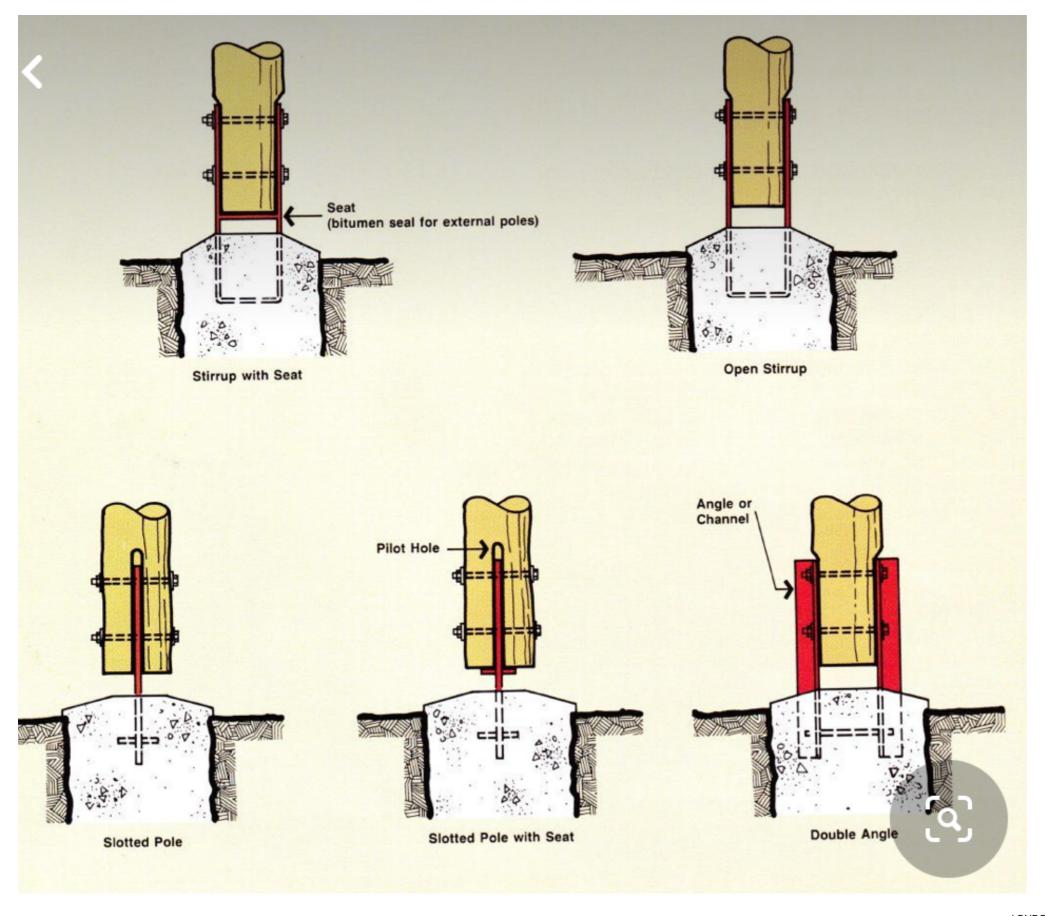
Bamboo Structure











Bamboo Structure





Type 1 Balehaus









Type 1 **Balehaus**

Type 1 - Building Specifications Total Cost Rs.285,000 each house

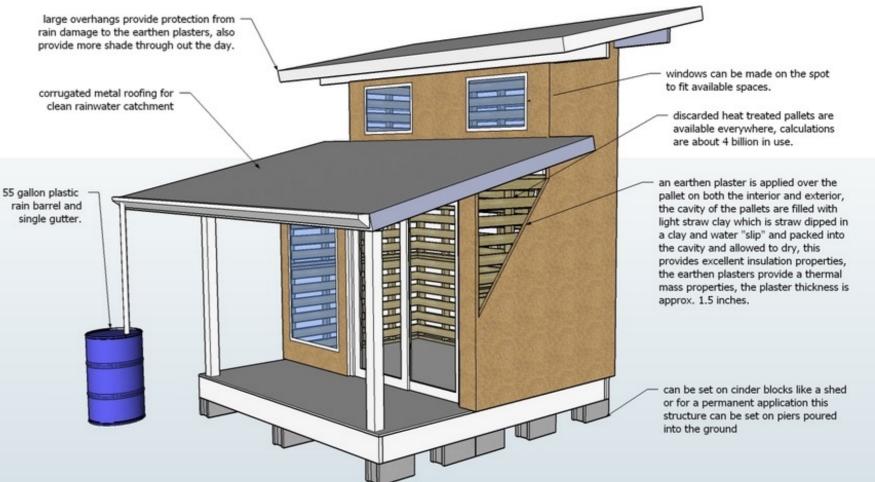
Building Size	275 Sqft covered Area & 200 Sqft Open Area as courtyard each units
Wall Structures	3 " dia Bamboo base frame, columns Structure.
Walls	Lime Mud Plaster
Exteriors	Lime Plaster Finish
Insulations	Straw bales high insulation
Roof	Thatch Roof Chatai type covered with Used Pinaflex 2mm sheets
Base	Concrete floor plinth with Bamboo base floor
Windows & Openings	3 Nos. Composite Pallets wood Swing out type windows & Concrete Precast Jali
Doors	2 Nos Single leaf Pallets wood doors of 810mm x 2100 mm



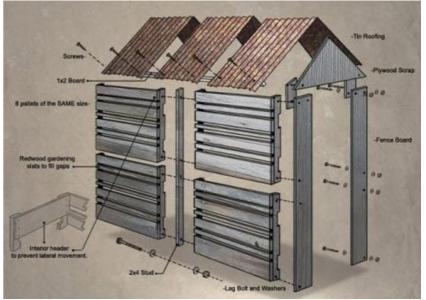


Type 2 **Wooden Pallets**













Type 2 **Wooden Pallets**











Type 2 **Wooden Pallets**

Type 2 - Building Specifications Total Cost Rs.290,000 each house

Building Size	275 Sqft covered Area & 200 Sqft Open Area as courtyard each units
Wall Structures	3 " Wooden Pallets frame Structure.
Walls	Wooden Pallets filled with Strawbales & Lime Mud Plaster
Exteriors	Lime Plaster Finish
Insulations	Straw bales high insulation
Roof	Wooden Pallets Roof covered with Used Pinaflex 2mm sheets
Base	Concrete floor plinth with CC base floor
Windows & Openings	3 Nos. Composite Pallets wood Swing out type windows & Concrete Precast Jali
Doors	2 Nos Single leaf Pallets wood doors of 810mm x 2100 mm





Type 3 CLC Cellular Lightweight Concrete Blocks









Type 3 CLC Cellular Lightweight Concrete Blocks









Type 3 **CLC Blocks**

Type 3 - Building Specifications Total Cost Rs.490,000 each house

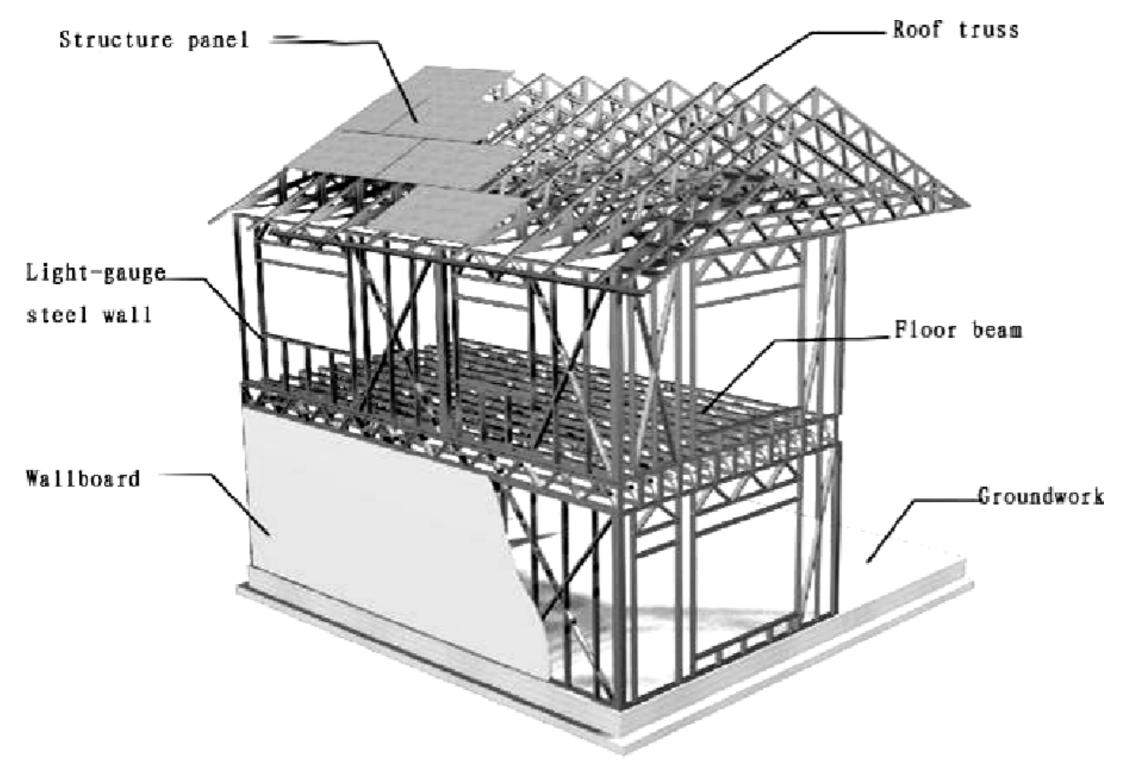
Building Size	275 Sqft covered Area & 200 Sqft Open Area as courtyard each units
Wall Structures	Load bearing walls with CLC 1000 density Blocks.
Walls	Cellular Lightweight Concrete CLC Blocks size 4" x 8" x 24"
Exteriors	CLC blocks doesn't need plaster. And Colour pigments will give great impact as exterior finish & look.
Insulations	CLC blocks as insulation. Heat n Loss 50% reduce
Roof	Single monolithic CLC Roof 3 inches thick
Base	Concrete floor plinth CC base floor
Windows & Openings	3 Nos. Galvanised type Swing out type windows & Concrete Precast Jali.
Doors	2 Nos Single leaf Pallets wood doors of 810mm x 2100 mm





ECO Homes - 8 houses in each cluster Construction Material Light Gauge Steel Structure

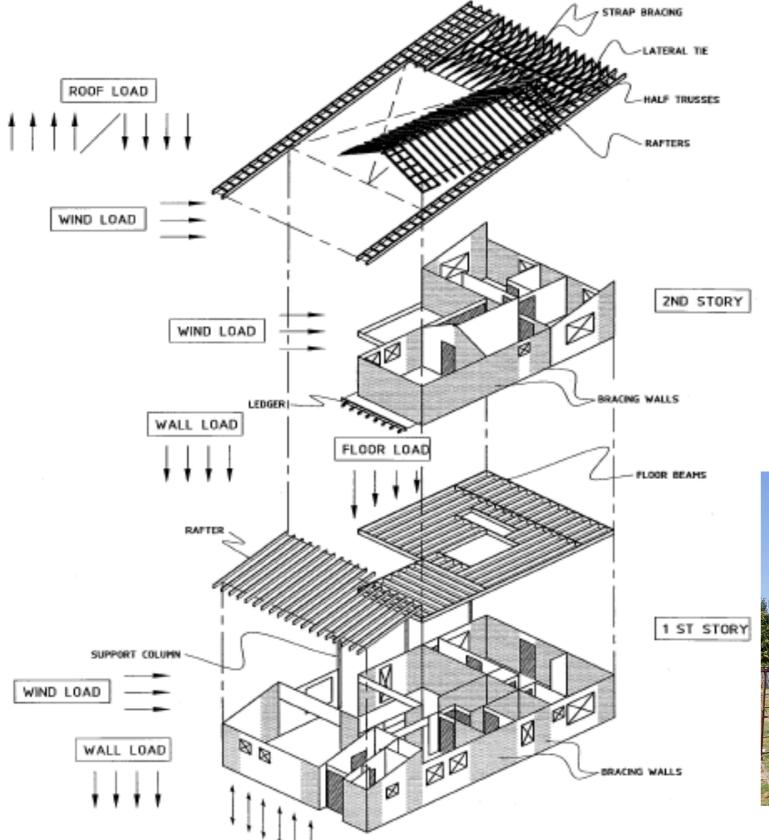
Type 4 LGS Structure







Type 4 **LGS Structure**



Construction Material Light Gauge Steel Structure Option C







Type 3 CLC Blocks







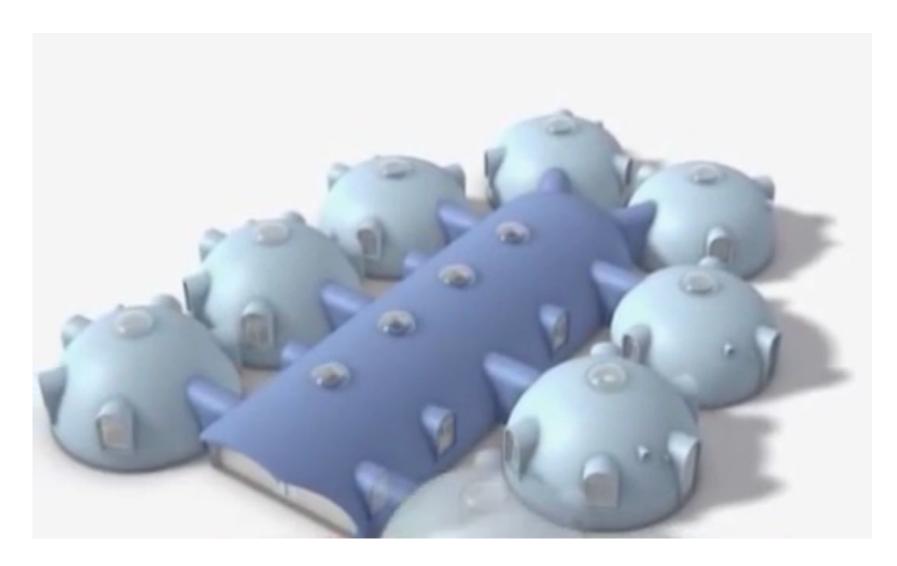
Type 4 LGS Structure

Type 4 - Building Specifications Total Cost Rs.525,000 each house

Building Size	275 Sqft covered Area & 200 Sqft Open Area as courtyard each units
Wall Structures	Load bearing walls with Light gauge frame channels core.
Walls	Composite Gypsum sheeting
Exteriors	Ribbed pre-painted Galvanized steel sheet 0.6mmthk
Insulations	50mm thick fireproof Rockwool insulation
Roof	Single sloped roof panel with attractive border all around
Base	Concrete floor plinth or our steel base floor
Windows & Openings	3 Nos. Galvanised type Swing out type windows & Concrete Precast Jali
Doors	2 Nos Single leaf Pallets wood doors of 810mm x 2100 mm















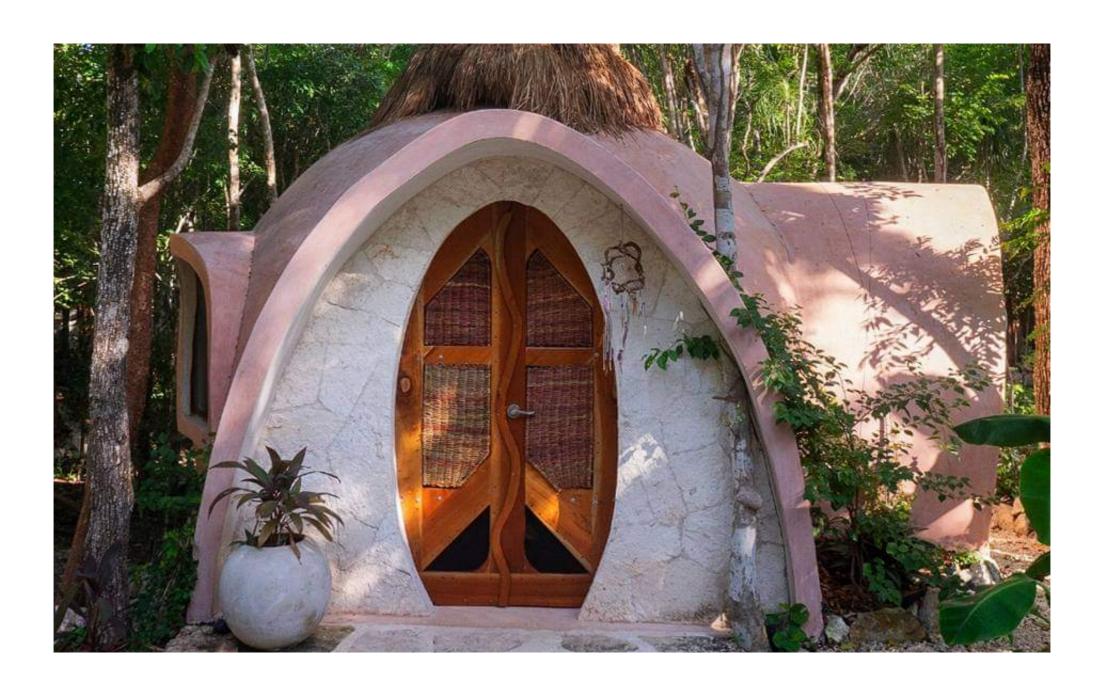




































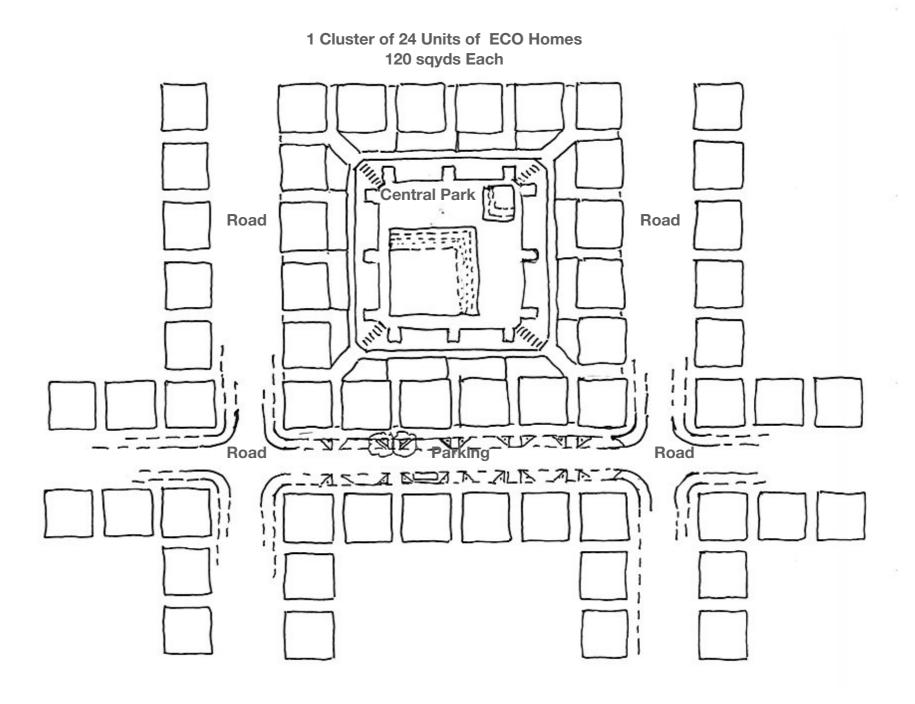


Type 4 - Building Specifications Total Cost Rs.525,000 each house

Building Size	16 ft diameter covered Area & 200 Sqft Open Area as courtyard each units
Wall Structures	Load bearing mud blocks/ bricks dome construction
Walls	Mud Blocks / Bricks
Exteriors	Lime Mud mixed Plaster Finished
Insulations	Strawbales mixing in mud
Roof	Mud Blocks / Bricks
Base	Mud Pud Blocks/ Bricks Construction
Windows & Openings	3 Nos. Galvanised type Swing out type windows & Concrete Precast Jali
Doors	2 Nos Single leaf Pallets wood doors of 810mm x 2100 mm

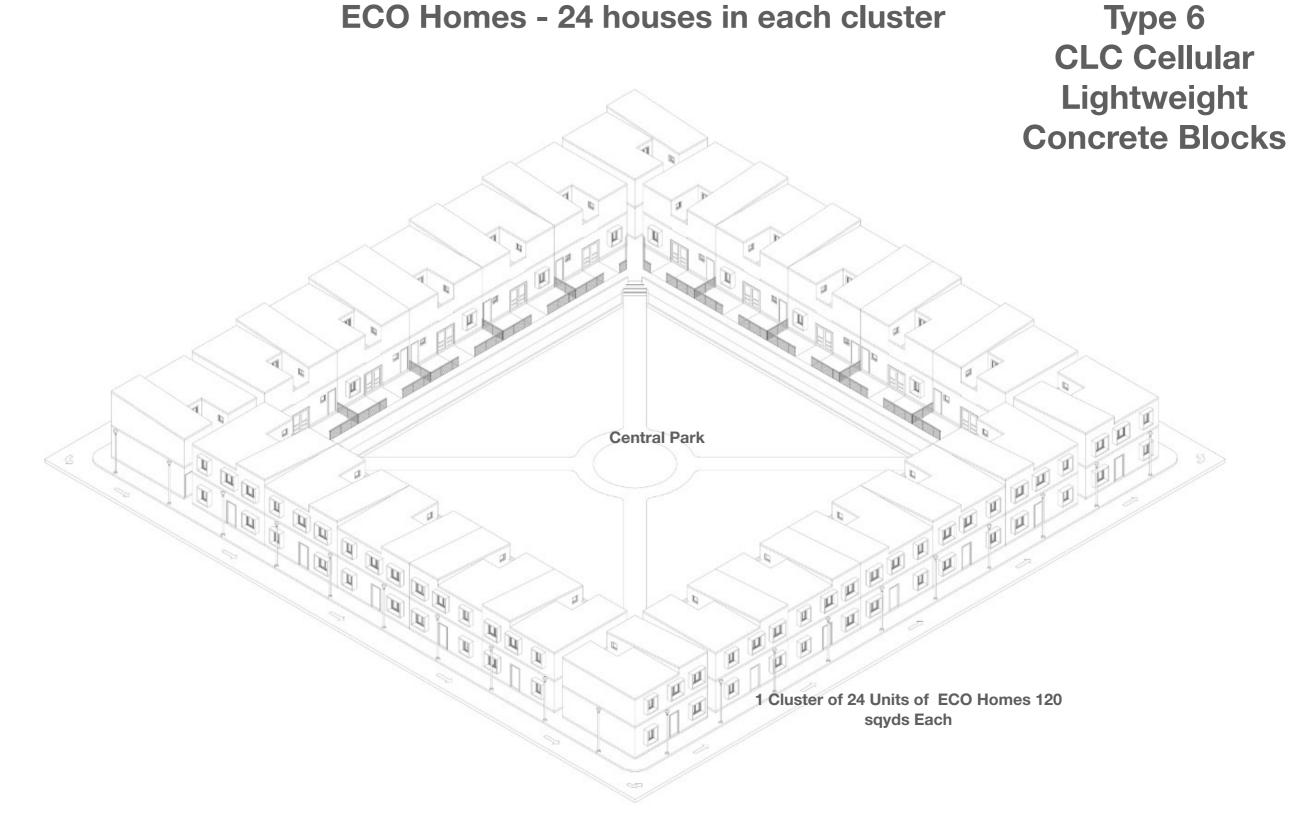






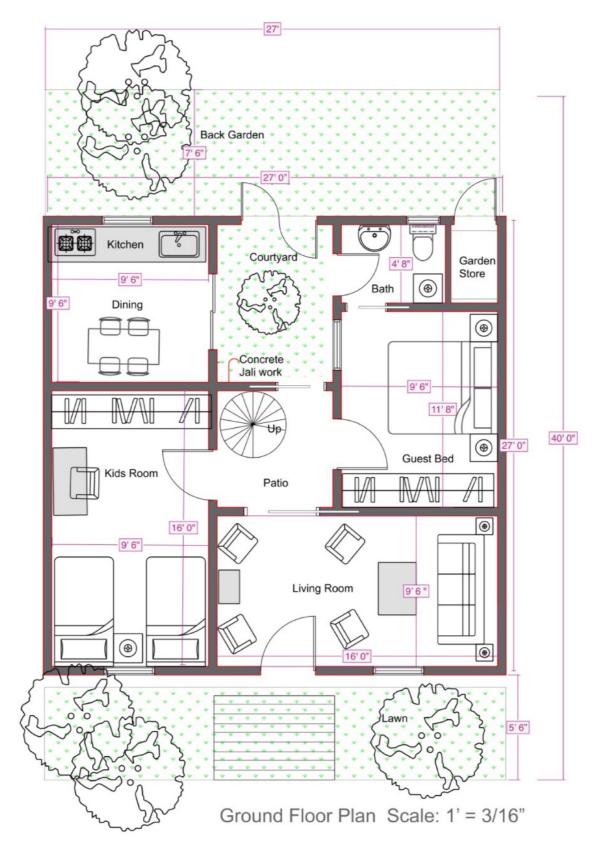


























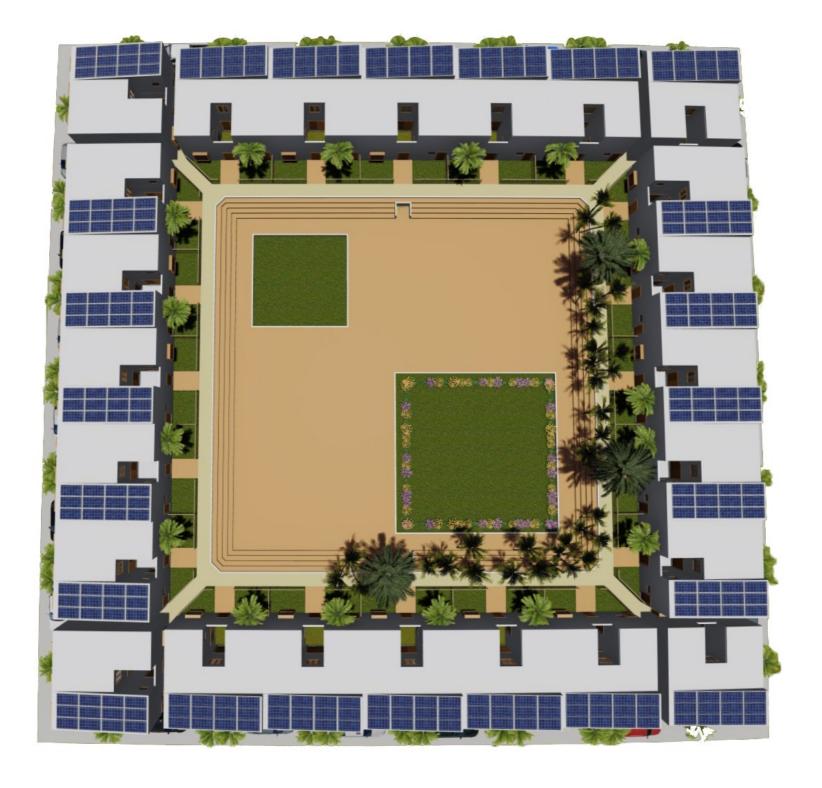
















Type 5 - Building Specifications Total Cost Rs. Rs.1,660,000 each house

Building Size	275 Sqft covered Area & 200 Sqft Open Area as courtyard each units
Wall Structures	Load bearing walls with CLC 1000 density Blocks.
Walls	Cellular Lightweight Concrete CLC Blocks size 4" x 8" x 24"
Exteriors	CLC blocks doesn't need plaster. And Colour pigments will give great impact as exterior finish & look.
Insulations	CLC blocks as insulation. Heat n Loss 50% reduce
Roof	Single monolithic CLC Roof 3 inches thick
Base	Concrete floor plinth CC base floor
Windows & Openings	5 Nos. Galvanised type Swing out type windows & Concrete Precast Jali
Doors	7 Nos Single leaf Pallets wood doors of 810mm x 2100 mm

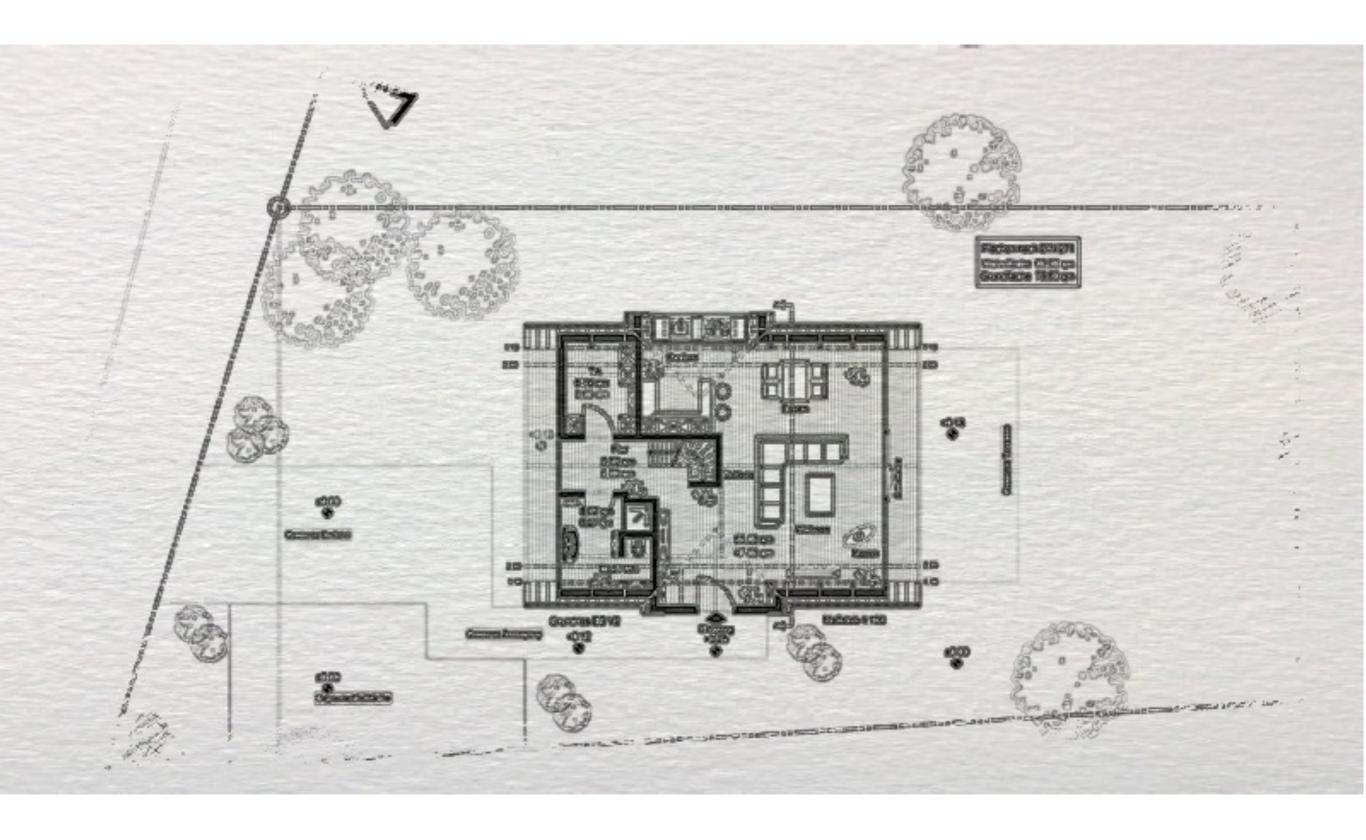




Construction Material Light Gauge Steel Structure Exclusive Option.

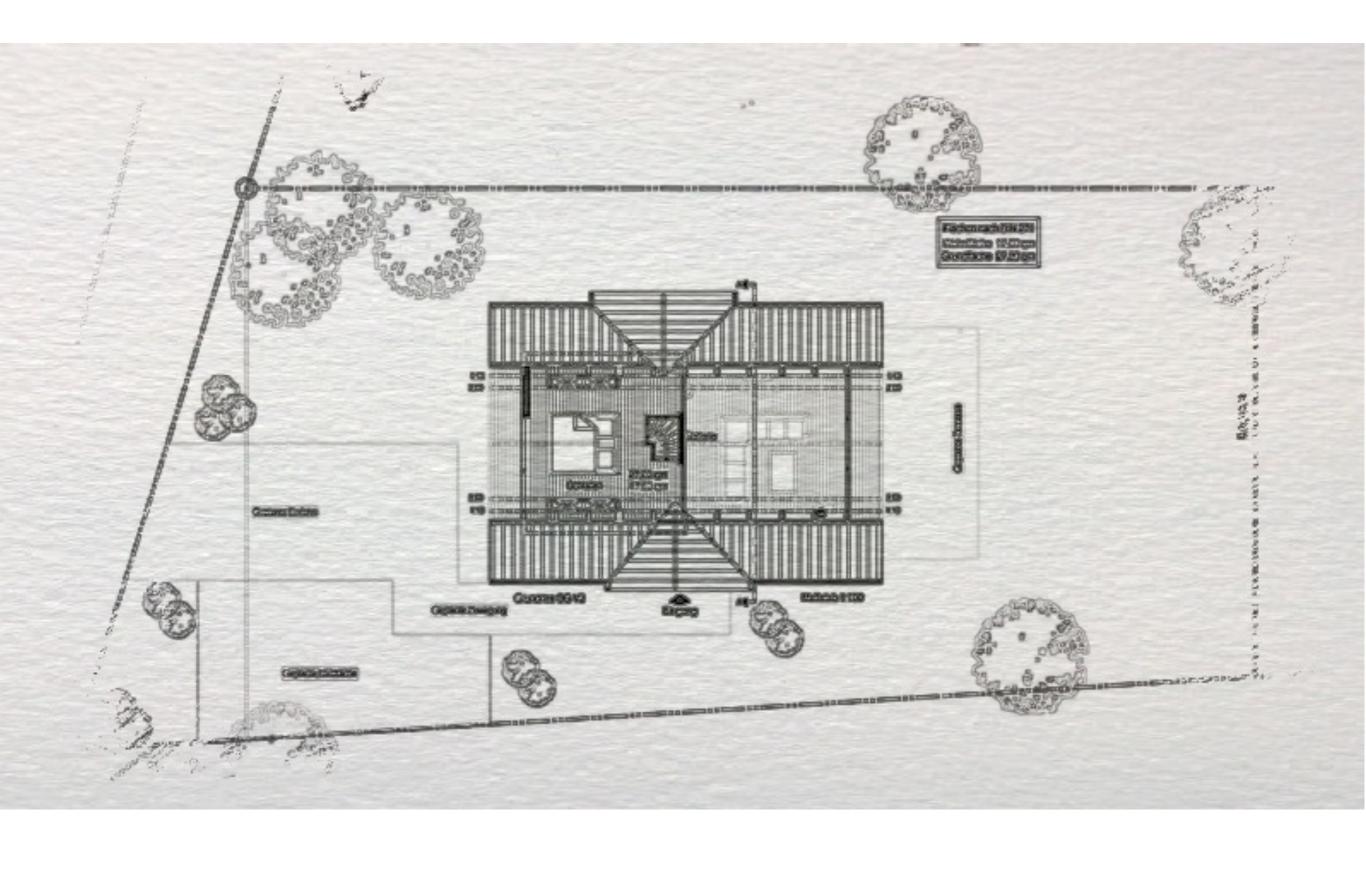








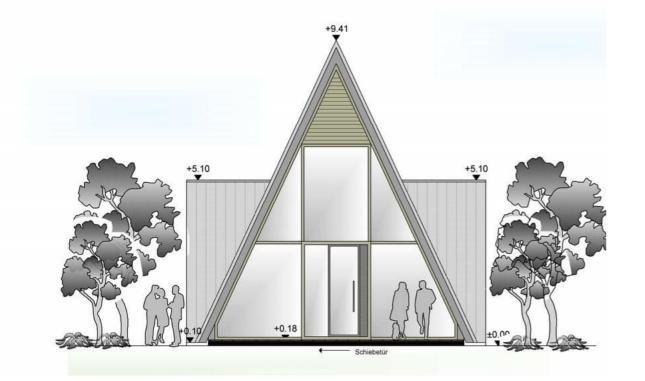




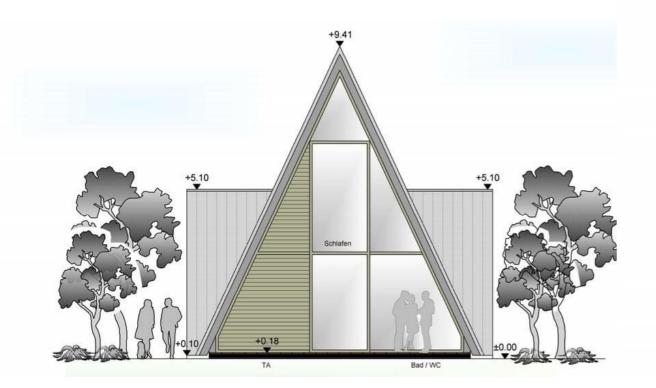


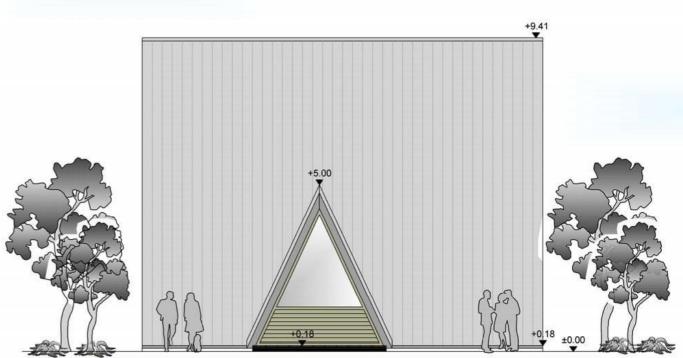


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