



DISASTER-RESILIENT HOUSING MICROFINANCE:

An Inclusive Green Finance Approach
through in the Philippines



BUILD CHANGE

The global leader for systems change in climate- and disaster-resilient housing

With equity frameworks and by intertwining disaster prevention and climate resilience into housing programs and services, Build Change works with homeowners, governments, and financial institutions to strengthen unsafe housing and ultimately transform the systems for regulating, financing, building, and improving houses.

OUR GLOBAL IMPACT IN 24 COUNTRIES SINCE 2004



200,000+
SAFER BUILDINGS



1 MILLION
SAFER PEOPLE



\$2 BILLION
HOUSING ASSETS PROTECTED



140+
PARTNERS



85,000+
PEOPLE TRAINED



34,000+
JOBS CREATED











The Philippines



- 70 million Filipinos live in substandard housing. This number is projected to grow to 113 million people by 2030.
- The Philippines ranks first globally for disaster risk. (World Risk Index 2022)
- Country endures approximately 20 typhoons annually, of which four to six make landfall, with devastating consequences.
- Landfalling typhoons in the East /Southeast Asian countries have intensified by 12-15%, with the proportion of storms of categories 4 and 5 doubled or tripled in number.
- This vulnerable population also represents the economic segment that is served by the country's microfinance institutions

RESILIENT HOUSING IS:

<p>DISASTER RESISTANT able to protect people and assets in the face of multiple hazards</p>		<p>HEALTHY AND SECURE with adequate water, sanitation, ventilation, light, access, space, and security</p>	
<p>AFFORDABLE financially accessible for low- to middle-income households</p>		<p>A FINANCIAL ASSET and/or a place of business that stimulates economic opportunity by being adaptable to multiple uses, and protecting a family's property investment</p>	
<p>SUSTAINABLE built and/or strengthened through processes that can be scaled and replicated, with minimal environmental footprint</p>		<p>ADAPTABLE can be expanded and adapted to growing populations, shifting demographics, and emerging technology</p>	
<p>LOCALLY APPROPRIATE built using materials, skills, and tools that are appropriate for the culture and the climate</p>		<p>SCALABLE able to meet the needs of millions of families through a combination of policy change, and access to finance and technology</p>	

SOURCE: BUILD CHANGE



Disaster-Resilient Housing Microfinance Program

THEORY OF CHANGE



PARTNER FINANCIAL INSTITUTIONS



PROGRAM COMPONENTS

Awareness-raising Activities

Appropriate Financial Product for Disaster-resilient Housing

Engineering Resources

INTERVENTION

House Strengthening

New Construction



If they can't afford to build safely, then they won't.



Appropriate Financial Product for
Disaster-resilient Housing



Major Activities

- Market Assessment
- Product and Process Ideation
- Staff Capacity Building
- Pilot Testing
- Pilot Evaluation
- Next: Scaling-up

Financial Product

- Homeowner-driven design
- Based on capacity to repay
- Appropriate amount and term
- Strengthening or New Construction
- Incremental or One-time



Someone has to want the house to be safe.



Awareness-raising Activities





HAZARD ASSESSMENT
REPORT:
Bantayan Elementary School,
Tabaco, Albay



Module 1

Pagahahanda sa Sakuna:

Bagyo



Pagahahanda sa Sakuna:

Lindol



Module 4



Module 2

Mga Malalakas na Lindol
taong 2020



Module 3

Kabuuan



"Matibay na bahay para sa mas ligtas na buhay!"

Awareness Raising Modules:



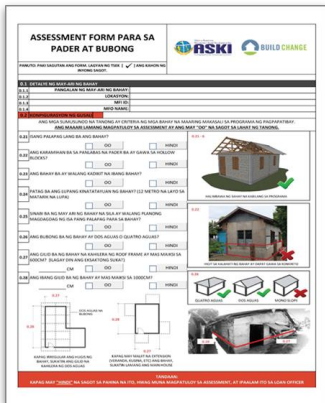
TECHNOLOGY

Supply of resilient housing

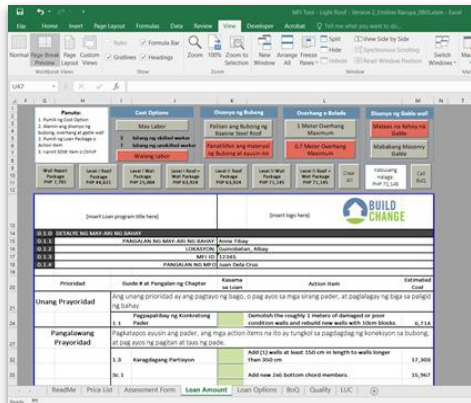
The right building technology must be locally available, widely known, and cost-competitive.



Engineering Resources



Assessment Tool



Automated Calculation System



Builders' Training



Builders' Guide



House Designs

ASSESSMENT FORM PARA SA PADER AT BUBONG



PANUTO: PARI SAGUTAN ANG FORM. LAGYAN NG TSEK [] ANG KAHON NG INYONG SAGOT.

0.1 DETALYE NG MAY-ARI NG BAHAY

0.1.1 PANGALAN NG MAY-ARI NG BAHAY: _____
 0.1.2 LOKASYON: _____
 0.1.3 MFI ID: _____
 0.1.4 MFO NAME: _____

0.2 KONFIGURASYON NG GUSALI

ANG MGA SUMUSUNOD NA TANONG AY CRITERIA NG MGA BAHAY NA MAARING MAKASALI SA PROGRAMA NG PAGPAPATIBAY. ANG MAARI LAMANG MAGPATULUY SA ASSESSMENT AY ANG MAY "OO" NA SAGOT SA LAHAT NG TANONG.

- 0.2.1 ISANG PALAPAG LANG BA ANG BAHAY? OO HINDI
- 0.2.2 ANG KARAMIHAN BA SA PANLABAS NA PADER BA AY GAWA SA HOLLOW BLOCKS? OO HINDI
- 0.2.3 ANG BAHAY BA AY WALANG KADIKIT NA IBANG BAHAY? OO HINDI
- 0.2.4 PATAG BA ANG LUPANG KINATATAYUAN NG BAHAY? (12 METRO NA LAYO SA MATARIK NA LUPA) OO HINDI
- 0.2.5 SINABI BA NG MAY ARI NG BAHAY NA SILA AY WALANG PLANONG MAGDAGDAG NG ISA PANG PALAPAG PARA SA BAHAY? OO HINDI
- 0.2.6 ANG BUBONG BA NG BAHAY AY DOS AGUAS O CUATRO AGUAS? OO HINDI
- 0.2.7 ANG GILID BA NG BAHAY NA KAHLERA NG ROOF FRAME AY MAS MAIKSI SA 600CM? (ILAGAY DIN ANG EKSAKTONG SUKAT) CM HINDI
- 0.2.8 ANG IBANG GILID BA NG BAHAY AY MAS MAIKSI SA 1000CM? CM HINDI



TANDAAN:

KAPAG MAY "HINDI" NA SAGOT SA PAHINA NA ITO, HWAG MUNA MAGPATULUY SA ASSESSMENT, AT IPAALAM ITO SA LOAN OFFICER

0.2.1 PANGALAN NG MAY-ARI NG BAHAY: _____

0.2.2 LOKASYON: _____

0.2.3 MFI ID: _____

0.2.4 MFO NAME: _____

0.2.5 SINABI BA NG MAY ARI NG BAHAY NA SILA AY WALANG PLANONG MAGDAGDAG NG ISA PANG PALAPAG PARA SA BAHAY? OO HINDI

0.2.6 ANG BUBONG BA NG BAHAY AY DOS AGUAS O CUATRO AGUAS? OO HINDI

0.2.7 ANG GILID BA NG BAHAY NA KAHLERA NG ROOF FRAME AY MAS MAIKSI SA 600CM? (ILAGAY DIN ANG EKSAKTONG SUKAT) CM HINDI

0.2.8 ANG IBANG GILID BA NG BAHAY AY MAS MAIKSI SA 1000CM? CM HINDI

0.2.1 PANGALAN NG MAY-ARI NG BAHAY: _____

0.2.2 LOKASYON: _____

0.2.3 MFI ID: _____

0.2.4 MFO NAME: _____

0.2.5 SINABI BA NG MAY ARI NG BAHAY NA SILA AY WALANG PLANONG MAGDAGDAG NG ISA PANG PALAPAG PARA SA BAHAY? OO HINDI

0.2.6 ANG BUBONG BA NG BAHAY AY DOS AGUAS O CUATRO AGUAS? OO HINDI

0.2.7 ANG GILID BA NG BAHAY NA KAHLERA NG ROOF FRAME AY MAS MAIKSI SA 600CM? (ILAGAY DIN ANG EKSAKTONG SUKAT) CM HINDI

0.2.8 ANG IBANG GILID BA NG BAHAY AY MAS MAIKSI SA 1000CM? CM HINDI

0.2.1 PANGALAN NG MAY-ARI NG BAHAY: _____

0.2.2 LOKASYON: _____

0.2.3 MFI ID: _____

0.2.4 MFO NAME: _____

0.2.5 SINABI BA NG MAY ARI NG BAHAY NA SILA AY WALANG PLANONG MAGDAGDAG NG ISA PANG PALAPAG PARA SA BAHAY? OO HINDI

0.2.6 ANG BUBONG BA NG BAHAY AY DOS AGUAS O CUATRO AGUAS? OO HINDI

0.2.7 ANG GILID BA NG BAHAY NA KAHLERA NG ROOF FRAME AY MAS MAIKSI SA 600CM? (ILAGAY DIN ANG EKSAKTONG SUKAT) CM HINDI

0.2.8 ANG IBANG GILID BA NG BAHAY AY MAS MAIKSI SA 1000CM? CM HINDI

0.2.1 PANGALAN NG MAY-ARI NG BAHAY: _____

0.2.2 LOKASYON: _____

0.2.3 MFI ID: _____

0.2.4 MFO NAME: _____

0.2.5 SINABI BA NG MAY ARI NG BAHAY NA SILA AY WALANG PLANONG MAGDAGDAG NG ISA PANG PALAPAG PARA SA BAHAY? OO HINDI

0.2.6 ANG BUBONG BA NG BAHAY AY DOS AGUAS O CUATRO AGUAS? OO HINDI

0.2.7 ANG GILID BA NG BAHAY NA KAHLERA NG ROOF FRAME AY MAS MAIKSI SA 600CM? (ILAGAY DIN ANG EKSAKTONG SUKAT) CM HINDI

0.2.8 ANG IBANG GILID BA NG BAHAY AY MAS MAIKSI SA 1000CM? CM HINDI

0.2.1 PANGALAN NG MAY-ARI NG BAHAY: _____

0.2.2 LOKASYON: _____

0.2.3 MFI ID: _____

0.2.4 MFO NAME: _____

0.2.5 SINABI BA NG MAY ARI NG BAHAY NA SILA AY WALANG PLANONG MAGDAGDAG NG ISA PANG PALAPAG PARA SA BAHAY? OO HINDI

0.2.6 ANG BUBONG BA NG BAHAY AY DOS AGUAS O CUATRO AGUAS? OO HINDI

0.2.7 ANG GILID BA NG BAHAY NA KAHLERA NG ROOF FRAME AY MAS MAIKSI SA 600CM? (ILAGAY DIN ANG EKSAKTONG SUKAT) CM HINDI

0.2.8 ANG IBANG GILID BA NG BAHAY AY MAS MAIKSI SA 1000CM? CM HINDI

1 story - Light Roof Resources

Light Roof - House Strengthening

Maaari kayong pumili kung ano ang nais niyong patibayin sa inyong bahay mula sa pitong packages!

7 PACKAGES



Maaaring ihambing ang halaga ng mga packages gamit ang:

MFI TOOL ng MFO

Feature	Level 1 Roofing	Roofing ng Level 1 Wall	Roofing + Bahay	Roofing ng Bahay
<ul style="list-style-type: none"> 1. Repair ng Level 1 Roof 2. Repair ng Bahay ng Level 1, including repair ng wall 3. Repair ng Level 1 Bahay ng Level 1 	<ul style="list-style-type: none"> 1. Repair ng Level 1 Roof 2. Repair ng Level 1 Wall 	<ul style="list-style-type: none"> 1. Repair ng Level 1 Roof 2. Repair ng Level 1 Wall 3. Repair ng Level 1 Bahay 	<ul style="list-style-type: none"> 1. Repair ng Level 1 Roof 2. Repair ng Level 1 Wall 3. Repair ng Level 1 Bahay 4. Repair ng Level 1 Roof + Wall 	<ul style="list-style-type: none"> 1. Repair ng Level 1 Roof 2. Repair ng Level 1 Wall 3. Repair ng Level 1 Bahay 4. Repair ng Level 1 Roof + Wall 5. Repair ng Level 1 Roof + Wall + Bahay
<ul style="list-style-type: none"> Level 1 Roof Package P= 250,000 Level 1 Wall Package P= 200,000 Level 1 Roof + Wall Package P= 450,000 Level 1 Roof + Wall + Bahay Package P= 600,000 Level 1 Roof + Wall + Bahay + Roofing Package P= 750,000 Level 1 Roof + Wall + Bahay + Roofing + Bahay Package P= 900,000 Level 1 Roof + Wall + Bahay + Roofing + Bahay + Roofing Package P= 1,050,000 Level 1 Roof + Wall + Bahay + Roofing + Bahay + Roofing + Roofing Package P= 1,200,000 	<ul style="list-style-type: none"> Level 1 Roof Package P= 250,000 Level 1 Wall Package P= 200,000 	<ul style="list-style-type: none"> Level 1 Roof + Wall Package P= 450,000 Level 1 Roof + Wall + Bahay Package P= 600,000 Level 1 Roof + Wall + Bahay + Roofing Package P= 750,000 	<ul style="list-style-type: none"> Level 1 Roof + Wall + Bahay + Roofing Package P= 900,000 Level 1 Roof + Wall + Bahay + Roofing + Bahay Package P= 1,050,000 Level 1 Roof + Wall + Bahay + Roofing + Bahay + Roofing Package P= 1,200,000 	<ul style="list-style-type: none"> Level 1 Roof + Wall + Bahay + Roofing + Bahay + Roofing + Roofing Package P= 1,350,000 Level 1 Roof + Wall + Bahay + Roofing + Bahay + Roofing + Roofing + Roofing Package P= 1,500,000 Level 1 Roof + Wall + Bahay + Roofing + Bahay + Roofing + Roofing + Roofing + Roofing Package P= 1,650,000

0.1.0. INITIAL VS. MFI MFI-001-001-001-001 0.1.1. PANGALAN NG MFI-001-001-001-001 0.1.2. LOKASYON 0.1.3. MFI ID 0.1.4. PANGALAN NG MFO				
Priority	Grade # at Papan ng Chapter	Kategorya ng Loan	Amount	Estimated Cost

O kaya'y

PRINTED LOAN OPTIONS

	Mga Priority	Bubong	Pader	Bubong + pader
Unang Priority	1 Pag-repair ng kondisyon ng Pader		Option 1 Wall Repair Package P= 90,000 18 araw para sa konstruksyon	
Pangalawang Priority	1 Pag-repair ng kondisyon ng Pader + 2 Pag-completo sa mga bahagi ng Bubong + 3 Pag-repair sa pader ng mayon sa tamang sukat	Option 2 Level 1 Roof Package P= 250,000 42 araw para sa konstruksyon	Option 3 Level 1 Wall Package P= 200,000 35 araw para sa konstruksyon	Option 4 Level 1 Roof + Wall Package P= 450,000 55 araw para sa konstruksyon
Satlong Priority	1 Pag-repair ng kondisyon ng Pader + 2 Pag-completo sa mga bahagi ng Bubong + 3 Pag-repair sa pader ng mayon sa tamang sukat + 4 Pagpapattibay sa Bubong at pader sa maaring malubhang ang matibay na hangin at lindat	Option 5 Level 1 Roof Package P= 250,000 42 araw para sa konstruksyon	Option 6 Level 1 Wall Package P= 200,000 42 araw para sa konstruksyon	Option 7 Level 1 Roof + Wall Package P= 450,000 62 araw para sa konstruksyon



[insert Loan program title here]		[insert logo here]	
0.1.0	DETALYE NG MAY-ARI NG BAHAY		
0.1.1	PANGALAN NG MAY-ARI NG BAHAY: Juan Dela Cruz		
0.1.2	LOKASYON: Albay		
0.1.3	MFI ID: 123456		
0.1.4	PANGALAN NG MFO: Anne Tibay		

Priority	Guide # at Pangalan ng Chapter	Kasama sa Loan	Action Item	Estimated Cost
Unang Prioridad	Ang unang prioridad ay ang pagtayo ng bago, o pag ayos sa mga sirang pader, at paglalagay ng biga sa paligid ng bahay			
2.0	Paglagay ng Biga sa Pader	✓	Install 20cm x 20cm ring beam above all walls. Connect roof trusses to the ring beam to resist uplift.	33,049
1.6	Paggawa ng Kahoy na Gable Wall	✓	Demolish masonry gable above ring beam and install timber gable wall. Remove lightweight material and replace with timber.	13,304
Pangalawang Prioridad	Paglilatapos ayusin ang pader, ang mga action items na ito ay tungkol sa pagdadagdag ng koneksiyon sa bubong, at pag ayos ng pagitan at taas ng pade.			
1.7	Pagpapalaster ng Pader	✓	Add plaster on the outside of the house.	4,892
3a.1	Paglumpeto sa mga bahagi ng kahoy na truss	✓	Replace existing damaged top chord with new 2x4 members.	14,235
3a.1	Paglumpeto sa mga bahagi ng kahoy na truss	✓	Add new 2x4 bottom chord members.	10,737
3a.1	Paglumpeto sa mga bahagi ng kahoy na truss	✓	Add new 2x2 web members.	2,760
3a.1	Paglumpeto sa mga bahagi ng kahoy na truss	✓	Add new 2x4 king post members.	3,438
3a.2	Pagpapatibay ng koneksiyon ng kahoy na truss	✓	Add plywood gussets at all truss member joints.	3,786
3a.2	Pagpapatibay ng koneksiyon ng kahoy na truss	✓	Add 2x4 bracing between trusses	8,059
3a.2	Pagpapatibay ng koneksiyon ng kahoy na truss	✓	Add nails from truss brace to roof truss	-
3.3	Pagpapatibay ng Koneksiyon ng Truss sa Biga	✓	Connect truss to wall to resist uplift.	1,305
3a.4	Tamang Habang ng Overhang o Bolado	✓	Trim back overhang to max 70cm	-
4a.2	Pagpapalit ng Purlina	✓	Replace 14 damaged purlins with new 2x3 purlins	23,101
4a.3	Paglalagay ng Cleat sa Purlina	✓	Add cleats at all purlin to roof truss connections.	8,770
5.1	Pagpapaligang Yero sa Bubong	✓	Replace the 36 damaged pieces of CGI. Use ring shank nails or tek screws.	35,590
5.2	Pagpapaligang Yero sa Bubong	✓	Make sure all roof nailing/screws are spaced maximum 15cm.	390
5.2	Pagpapaligang Yero sa Bubong	✓	Make sure all roof nailing/screws are spaced maximum 10cm at overhang coverings.	1,053
Ikatlong Prioridad	Paglilatapos gawin ang Prayoridad 1 at 2, and mga action items na ito ay para sa pagpapatibay ng bubong at pader para sa malakas na hangin o maging handa sa lindol.			
1.8	Paglalagay ng Lintel Beam sa Yering Pinto at Bintana	✓	Add lintel beams to all doors and windows.	13,432
Kabuuang Halaga				177,899
Bilang ng Araw ng Construction (1 skilled, 3 unskilled na manggagawa)				30
<p>Ako ay sumasang-ayon na ang mga impormasyong kasama ang mga action items na naipalitan sa akin ng Microfinance Officer ay tama at totoo. Ang pagpuno sa mga rekomendasyong ito ay hindi nangangahulugang ang aking bahay ay may magiging ligtas sa anumang sakuna. At ako ay nangangailang sunod sa mga rekomendasyong ito.</p>				
MFI Representative Pangalan at Firma		May-ari ng Bahay / Borrower Pangalan at Firma		

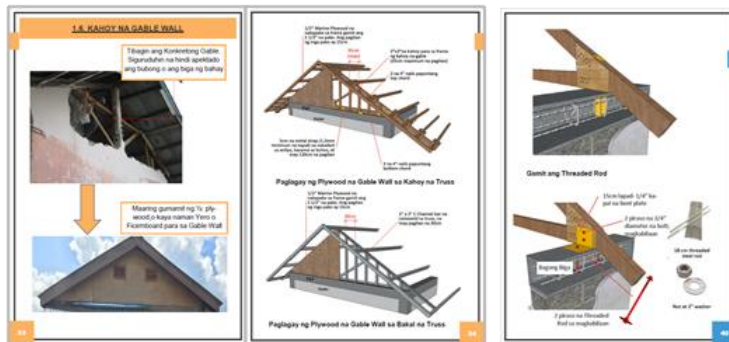
Scope of Works (SOW)

Bill of Quantities (BOQ)

[insert Loan program title here]		[insert logo here]			
Bill of Quantities (BOQ)					
Total Project					
0.1	DETALYE NG MAY-ARI NG BAHAY				
0.1.1	PANGALAN NG MAY-ARI NG BAHAY: Juan Dela Cruz				
0.1.2	LOKASYON: Albay				
0.1.3	MFI ID: 123456				
0.1.4	MFO NAME: Anne Tibay				
Item	Description	Estimated Unit Price	Total Qty.	Unit	Total Cost
A	Concreting and Masonry Works				23,215
-	Portland Cement	220 PHP	24 bag		5,280
-	Sand	1,000 PHP	3 m3		3,000
-	3/4" Crushed Gravel	1,350 PHP	2 m3		2,700
-	12mm Deformed Steel Bars	230 PHP	26 Bar		5,980
-	10mm Deformed Steel Bars	165 PHP	7 Bar		1,155
-	9mm Deformed Steel Bars	120 PHP	30 Bar		3,600
-	#16 G.I. Tie Wire	90 PHP	8 kg		720
-	4" CHB	10 PHP	78 piece		780
B	Timber Works				60,795
-	4"x8"x12" Marine Plywood	550 PHP	9 sheet		4,950
-	2"x2"x12' S4S Good Lumber	380 PHP	18 piece		6,840
-	2"x3"x12' Good Lumber	570 PHP	40 piece		22,800
-	2"x4"x12' S4S Good Lumber	760 PHP	29 piece		22,040
-	Umbrella Nail	100 PHP	12 kg		1,200
-	1.5" Nails	80 PHP	7 kg		560
-	2.5" Nails	80 PHP	4 kg		320
-	3" Nails	75 PHP	2 kg		150
-	3.5" Nails	75 PHP	21 kg		1,575
-	4" Concrete Nails	120 PHP	3 kg		360
C	Metal Works				20,570
-	CGI Sheet undulated, 5'x12' 24ga.	540 PHP	36 piece		19,440
-	Plain GI Sheet, 3'x3' 18ga.	1,130 PHP	1 piece		1,130
D	Formworks & Scaffolding				7,620
-	2"x2"x12' Coco Lumber	85 PHP	24 piece		2,040
-	2"x3"x12' Coco Lumber	130 PHP	31 piece		4,030
-	Ordinary Plywood 4"x8"x1/4"	310 PHP	5 sheet		1,550
E	Total Material Cost (A + B + C + D)				112,200
F	Hauling Cost (10% of E)	10%			11,220
G	Direct Labor	1.00	40.597	PHP	40,597
H	Total Labor Cost (F + G)				51,817
I	Contingency (12% of E + H)	12%			19,682
183,699					
30 Day(s)					
<p>Ako ay sumasang-ayon na ang mga impormasyong naibahagi sa akin kasama ang bill of quantities ay tama at totoo. Aking naunawaan na ang Bill of Quantities ay estimate lamang ng mga paggamitng materyales para sa pagpapayo, o pagpapatibay ng aking bahay, batay sa mga napiling Scope of Works at mga Action items.</p>					
MFI Representative Pangalan at Firma		May-ari ng Bahay / Borrower Pangalan at Firma			



Sample Pages



House Design 1



House Design 2



Floor Plan



Dimensions : 3.8m(L) x 5.0m(W) x 2.70m (H)

Area: 19 sqm floor area



Provision for Horizontal Expansion



Floor Plan



Horizontal expansion provisions



House Strengthening





AFTER

BEFORE



Josefina Hagosojos

ASA Philippines



AFTER

BEFORE



Riza Imus

KCOOP



AFTER



BEFORE

Roselia Tubig

ASHI



AFTER

BEFORE



Florida Vegiga

ASKI



Partnership with Other Stakeholders



Holcim Excel ECOPlanet



Features:

- Proven track record for more than 20 years.
- An eco-friendly cement.
- Lower heat and high sulfate resistant cement.
- A viable and cost-effective cement for general construction

Environmental Advantage:

- **Saves Natural Resources** – The supplementary cementitious material used in the production of Excel ECOPlanet are by products from other industries. Using these SCM's help conserve precious minerals, such as limestone, clay and silica.
- **Reduces Energy Consumption** – Decreased energy consumption during production by using less clinker.
- **Protects the Environment** – at least 30% less CO2 emission, during production of HEE vs OPC.





***Join us in creating safe housing where
it's needed the most..***

