LiGrA™

Lightweight Green Aggregates

Ref: JCP/08/2022/007

JOE Green Concrete Panel Profile

JOE™ just one earth

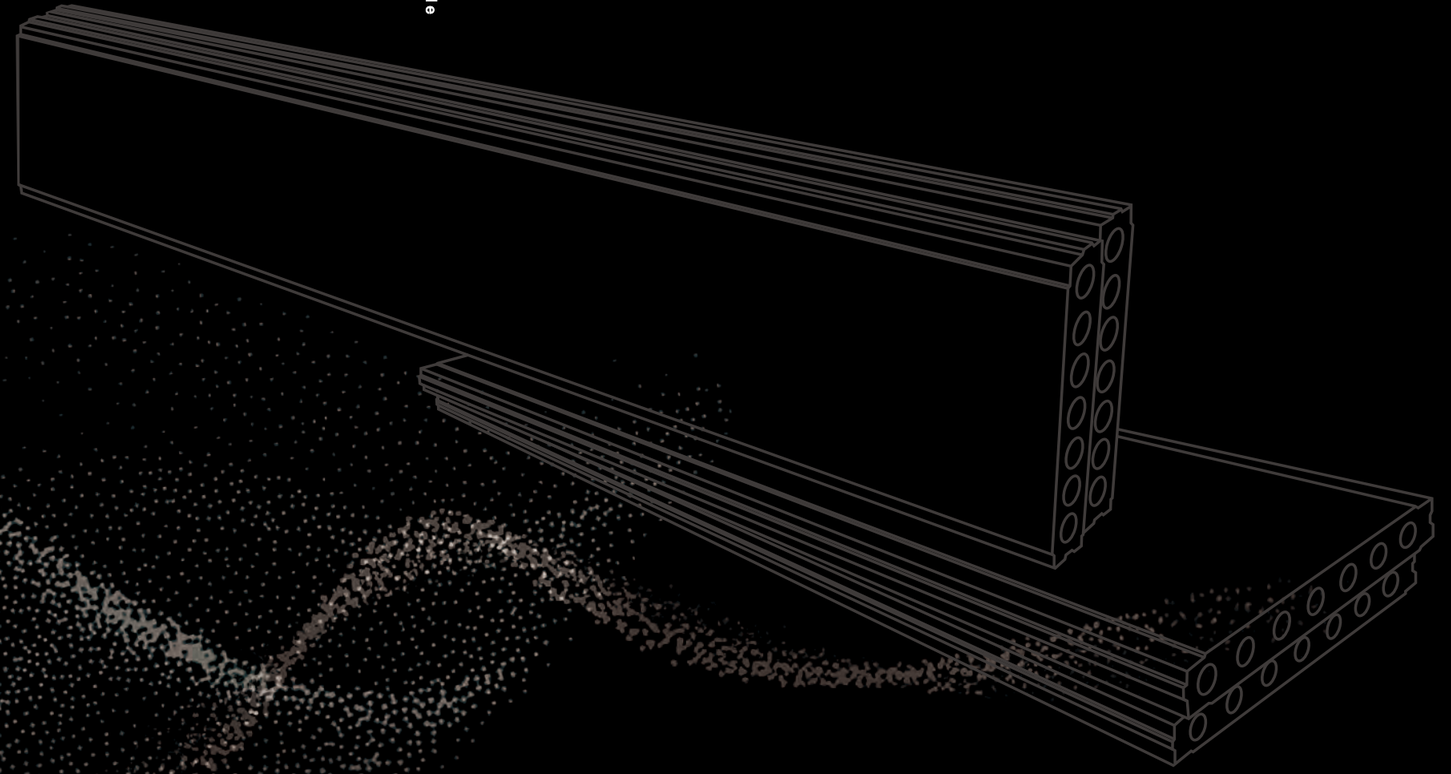
green concrete panel

www.joegreenpanel.com

ENTERPRISE 50

Celebrating Singapore's Enterprising Spirit 2021

SINGAPORE ENTREPRENEUR 100 AWARD YEAR 2021 WINNER



E-Catalogue :

Contact Us :

GREEN MANUFACTURER

ZERO WASTE MANUFACTURER

RECYCLED GREEN CONCRETE

QUALITY

SUPER LIGHT WEIGHT

SUPER FLAT SKIM COAT ONLY

8M

CUSTOMIZED DESIGN & SIZES EASY HOUSEKEEPING












Boediman WIDJAJA, MBA
Founder & CEO JOE Green Group

"Inventing and Developing Novel Lightweight Green Aggregates from Waste Materials to Support Global Climate Challenge to Build a Sustainable Future"

go green go global





JOE™

Care & Passion

We have Just One Earth (JOE). It has to be treasured and duly protected from global warming, grave pollution and exploitation of natural virgin aggregates.

JOE Green is a Zero Waste Manufacturer. All panels that do not pass the stringent quality control are crushed and recycled.

JOE Green is an ISO 9001:2015 Quality Management System certified company that contributes to a sustainable development and to preserving the environment. It is also ISO 14001:2015 certified in improving the efficiency of manufacturing, usage of resources, waste reduction and to its designs of safe, quality wall panels. The ISO 45001:2018 system helps to govern our stringent safety and health concerns, develop and implement policies that foster good occupational health and safety practices, thus reducing injuries and diseases. It is acclimated to local standards with the BizSAFE Star counterpart.

Today, JOE Green Concrete Panel is known for its environmental-friendly and highly efficient products, using the proven **RCAs minimum 30%** that have been tested by accredited and authorised institutions. It is widely used by local and international reputed developers, professional architects, top consultants and established main contractors for their prestigious projects in Singapore, Malaysia, Cambodia and Indonesia.





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Zero Waste

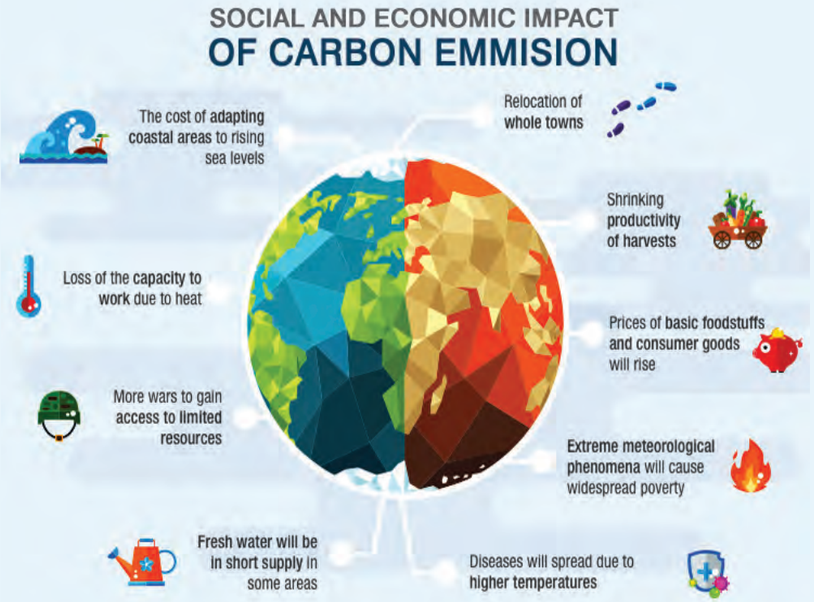
LiGrA™ Lightweight Green Aggregates

GREEN SUSTAINABLE PLAN

Rapid construction is the highest contributor of carbon footprint because concrete is the primary component in these built environments (8% of Global CO2 emission 2019). JOE Green and Gramata Fordea are in line with a solution that will reduce this impact holistically and will have significant outcome for the reduction of carbon emission.

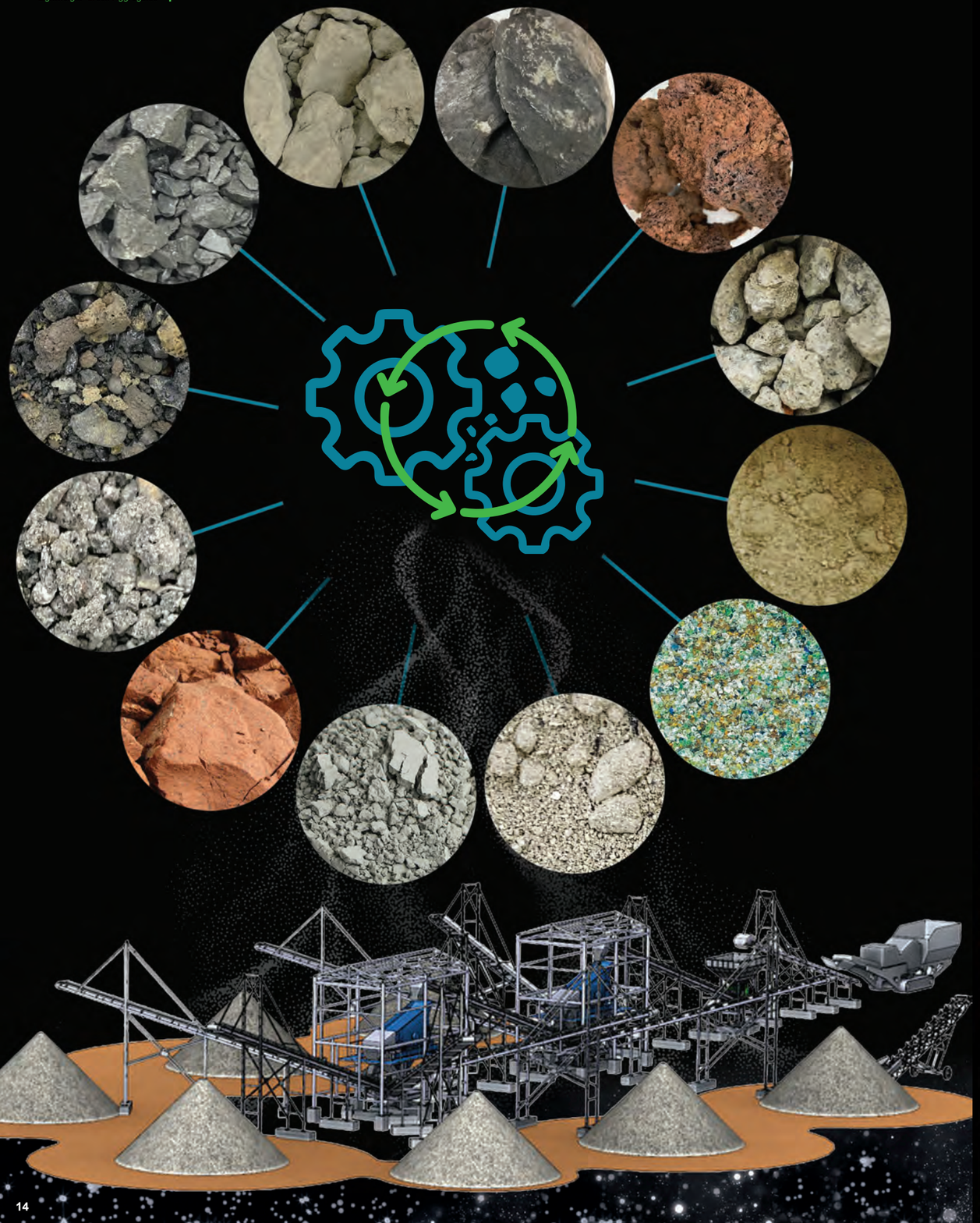
Singapore has consistently been looking into sustainability solutions, for water, food or even sand and aggregates for concrete. On the other hand, the dilemma of limited landfill and growing waste volume are serious concerns.

Converting waste to new materials for concrete and other industries is one of the main crucial solution. Because of the large volume of aggregates needed, it provides an avenue for recycling large volume of waste.



JOE™ just one earth | Various Industrial Wastes

LiGrA™ Lightweight Green Aggregates | Recycling

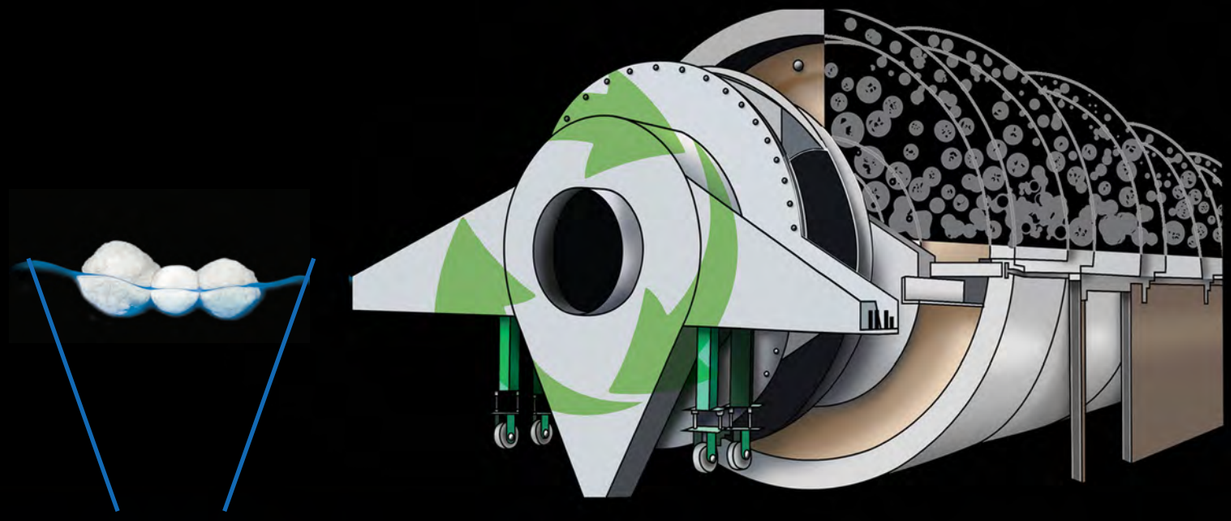


The Engineering of Lightweight Green Aggregates

JOE™ just one earth | Processing

LiGrA™ Lightweight Green Aggregates

We acquired state of the art technology from overseas experts and higher learning institutions to identify, calibrate and formulate lightweight green aggregates from various types of inorganic wastes. The equipment has also been tailor-made for these specific purposes.

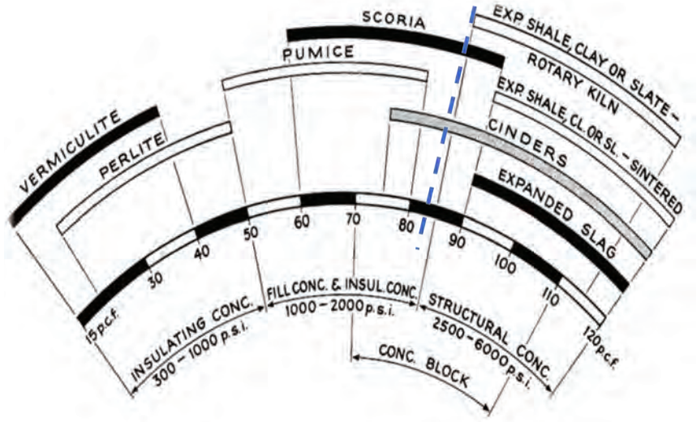


What is Lightweight Green Aggregates ?

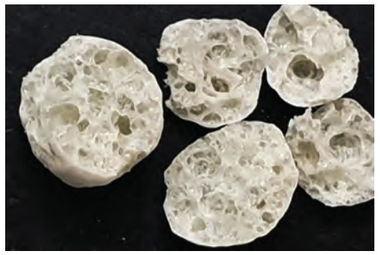
Lightweight Aggregates are granules or pellets of lightweight materials that have many applications. They can either be mined from natural sources or manufactured using minerals. **Lightweight Green Aggregates (LiGrA),** on the other hand, is manufactured from waste materials.

Natural Lightweight Aggregate

Manufactured Lightweight Aggregate



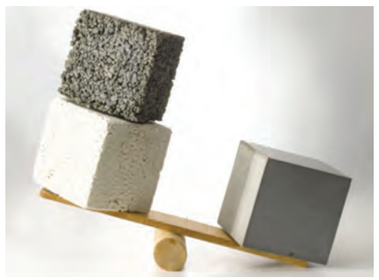
Structural LiGrA
Densely packed finer pores

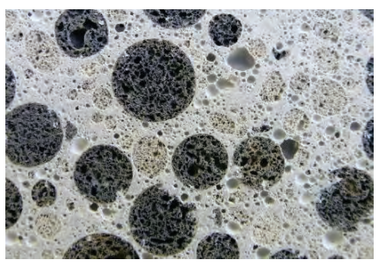


Non-Structural LiGrA
Loosely packed coarser pores

What is Lightweight Green Concrete ?

Lightweight Green Concrete is produced by replacing the heavy aggregates with lightweight aggregates.





1 m^3 of Normal Weight Concrete

Cement	Fine Aggregate **(Sand)**
Water	Coarse Aggregate **(Granite)**

Density 2400 kg/m^3

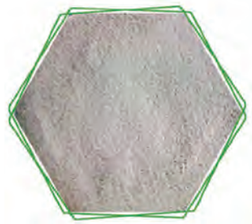
Partially or fully replaced

1 m^3 of Lightweight Concrete

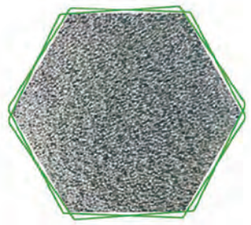
Cement	Fine Aggregate **(LWA)**
Water	Coarse Aggregate **(LWA)**

Density 800 to 2000 kg/m^3 for structural application
&
Density below 800 kg/m^3 for non-structural application

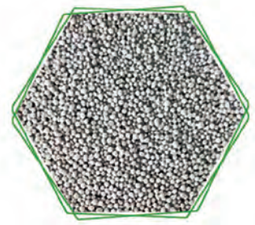
Size | LiGrA™ Lightweight Green Aggregates



0.1 - 0.3 mm



0.25 - 0.5 mm

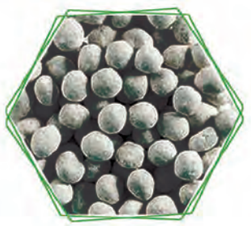


0.5 - 1 mm

Avaliable Sizes Lightweight Geen Aggregates (LiGrA)

1 - 2 mm

2 - 4 mm



4 - 8 mm

8 - 16 mm

Lightweight Structures Built with Lightweight Concrete

Duke Energy Centre (USA)

Heidrun Platform (Norway)

Wellington Stadium (New Zealand)

The Nordhordland Floating Bridge

What is the solution?

LiGrA™ Lightweight Green Aggregates

LiGrA has the technology to convert **Waste** to produce **Lightweight Green Aggregates** for used in **Lightweight Green Concrete**

- Provide Avenues to Recycle Waste
- Reduce Landfill & Waste Disposal Problem
- Reduce Exploitation of Natural Resources
- Manufacture Product Superior to its Original Form

LIGHTWEIGHT GREEN CONCRETE

LIGHTWEIGHT GREEN AGGREGATES

The Benefits

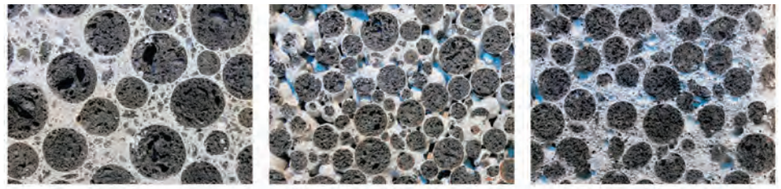
- Saving in Construction Cost and Time
- Saving in Handling & Transportation Cost
- Saving in Foundation Cost
- More Durable Structures
- Higher Earthquake Resistance
- Longer Building Service Life
- Bigger Space Savings between Columns
- Lintel & Stiffener Joint Cost Savings
- Lower Crane Capacity
- Energy Savings Benefit
- Built Sustainable Environments

The Benefits

- Extra Lightweight and Strong
- 100% Biodegradable and Recyclable
- Environmentally Friendly
- Lower Carbon Footprint
- Economic & Competitive
- No Hazards to Health
- Non Combustible
- High Resistance to Fire
- Good Thermal Insulation
- High Acoustic Insulation
- Low Water Absorption

Recycled Lightweight Concrete Advantages Over Normal Weight Concrete

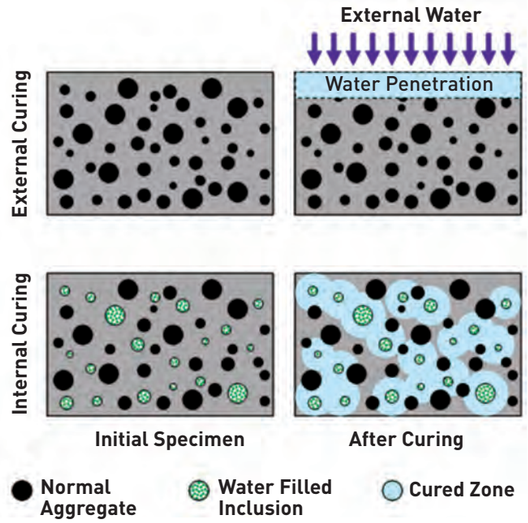
INTERNAL & EXTERNAL CURING	**CONTINUOUS STRENGTH GAIN**
STRONG INTERFACE BETWEEN AGGREGATE & CEMENT	**LIFELONG DURABILITY**
MODULUS COMPATIBILITY OF AGGREGATE & CEMENT	**UNIFORM STRESS DISTRIBUTION**



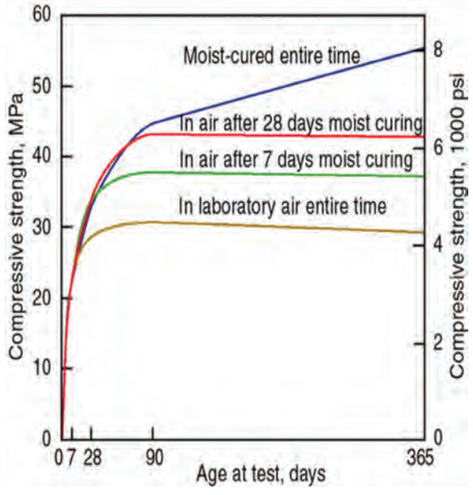
(a) Image of structural lightweight concrete with a dense matrix structure;
(b) Image of lightweight aggregate concrete with open pore structure;
(c) Image of lightweight aggregate concrete with a porous matrix filling the open pore structure

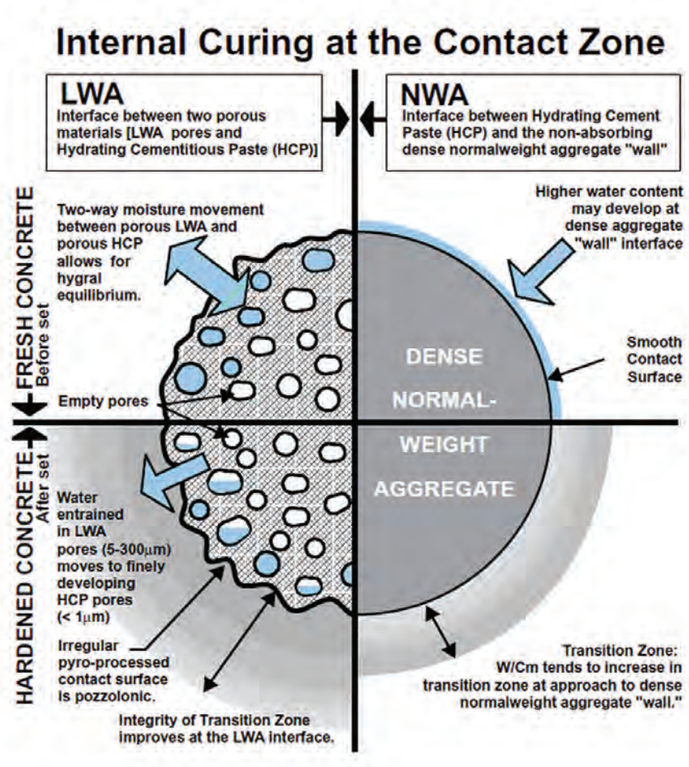
Launching of Lightweight Concrete Ship U.S.S. SELMA in 1919

Year 1919 : 26.7 MPa
Year 1980 : 55.2 MPa



LIGHTWEIGHT CONCRETE EXCEPTIONAL PERFORMANCE





LiGrA™ Lightweight Green Aggregates | R&D

We Are The Innovator

The technology of LiGrA are in consistent collaboration with the Institute of Higher Learnings from some reputable universities, professionals and industrial players into advance building material for the construction industry. Our new formulations and customisation yield many new products that offers cost-effective, high-quality solutions and to keep abreast of the technology and break new frontiers. Our advance R&D lab and dedicated professional scientists and engineers continuously keep developing new sustainable green products for the future. In line with the world GO GREEN PLAN.

Lightweight Green Aggregates Application

LiGrA™ Lightweight Green Aggregates

Thermal Insulation (Roofs, Floors, Fire Doors)

Heat Resistant Plaster & Dry Mortar

Heat Resistant Paints & Wallpapers

PPVC & PBU Precast

Lightweight Building Materials

Lightweight Ready-Mix, Concrete & Industrialised Building System (IBS)

Floating Concrete & Structure

Insulation of Pipeline in Oilfield

Lightweight Fillers for Ceramic and Polymeric Products

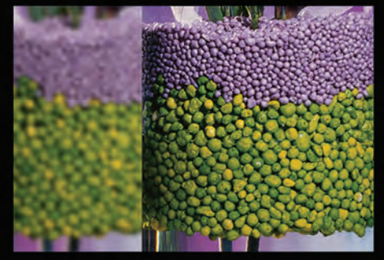
Geotechnical Applications (Retaining Wall, Soil Stability & Foundation)

Wastewater Treatment

Automotive Body Composite

Hydroponic Media

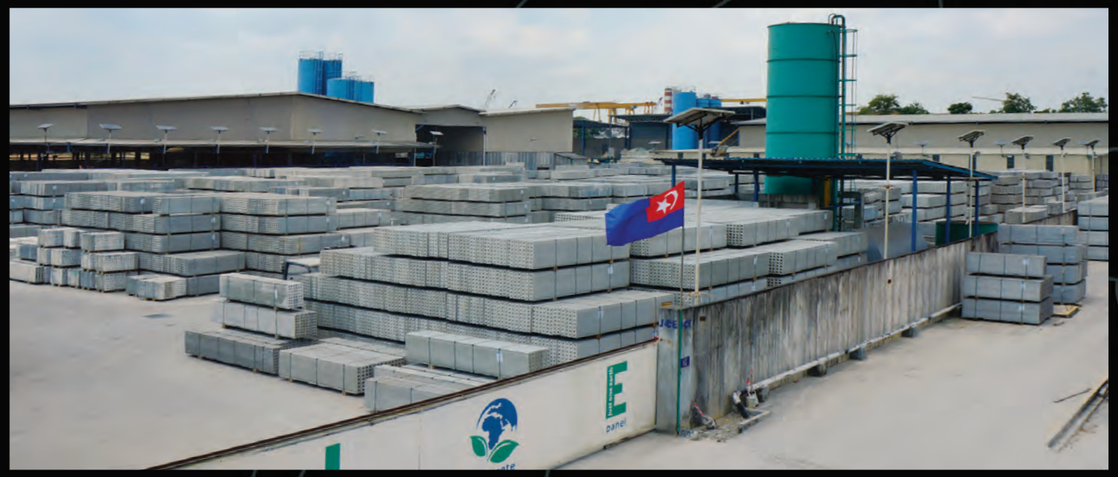
Filtration Media



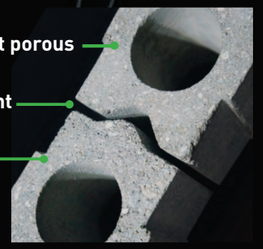
Decorative Materials


Waste Materials


Minimum 30% RCAs

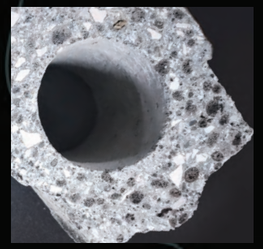


JOE GREEN PANEL DESIGN & RECESS



XS / X5

Thickness : 75 - 200mm
Nominal Weight : 128 - 281 kg/m^2
Fire rating : 1 - 4 Hours
Sound Insulation : STC 47 - 58
Nominal Density : 2,200 kg/m^3
Water Absorption : 6%
Compressive Strength : >40 MPa



X3

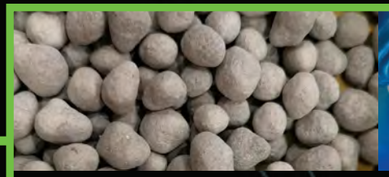
Thickness : 75 - 200mm
Nominal Weight : 93 - 204 kg/m^2
Fire rating : 2 - 4 Hours
Sound Insulation : STC 45 - 54
Nominal Density : 1,600 kg/m^3
Water Absorption : 11%
Compressive Strength : >25 MPa

X2

Thickness : 75 - 200mm
Nominal Weight : 84 - 166 kg/m^2
Fire rating : 2 - 4 Hours
Sound Insulation : STC 41 - 50
Nominal Density : 1,300 kg/m^3
Water Absorption : 14%
Compressive Strength : >15 MPa

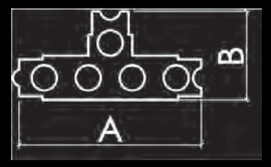
X1

Thickness : 75 - 200mm
Nominal Weight : 58 - 115 kg/m^2
Fire rating : 2 - 4 Hours
Sound Insulation : STC 39 - 48
Nominal Density : 900 kg/m^3
Water Absorption : 15%
Compressive Strength : >5 MPa



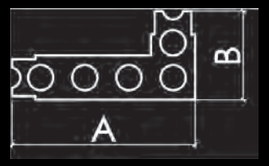
Content : Lightweight Green Aggregates
Characteristic : Xtra Light, Solid, Strong
Performance : Lighter Than Other Hollow-Core Wall Panels
High Fire Resistance
Low Water Absorption
High Sound Insulation
Better Compressive Strength
Green & Environmentally Friendly
Economic & Competitive
Skim Coat Finishing Only

T-Joint



Thickness available		Dimension
75mm, Ø 40mm	:	A=290mm : B= 143mm
90mm, Ø 58mm	:	A=290mm : B= 185mm
100mm, Ø 64mm	:	A=290mm : B= 195mm
150mm, Ø 40mm	:	A=290mm : B= 270mm
200mm, Ø 64mm	:	A=290mm : B= 350mm

L-Joint



Thickness available		Dimension
75mm, Ø 40mm	:	A=290mm : B= 143mm
90mm, Ø 58mm	:	A=290mm : B= 185mm
100mm, Ø 64mm	:	A=290mm : B= 195mm
150mm, Ø 40mm	:	A=290mm : B= 270mm
200mm, Ø 64mm	:	A=290mm : B= 350mm

Other Special Customization Available

Width: 100mm, 200mm, and 300mm
Numbers of Tensile Wire : 8 - 12 nos
Solid Panels
M&E Recess
Groove Lines
Noise Barrier Panel
Anti Blast Design with Rebar and Grouting
Stiffener Panel with Rebar and Grouting

Customized

Width : 600mm, 300mm, 200mm, 100mm

Thickness available :
200mm, Ø 64mm
150mm, Ø 40mm
100mm, Ø 64mm
100mm, Ø 40mm
90mm, Ø 58mm
75mm, Ø 40mm

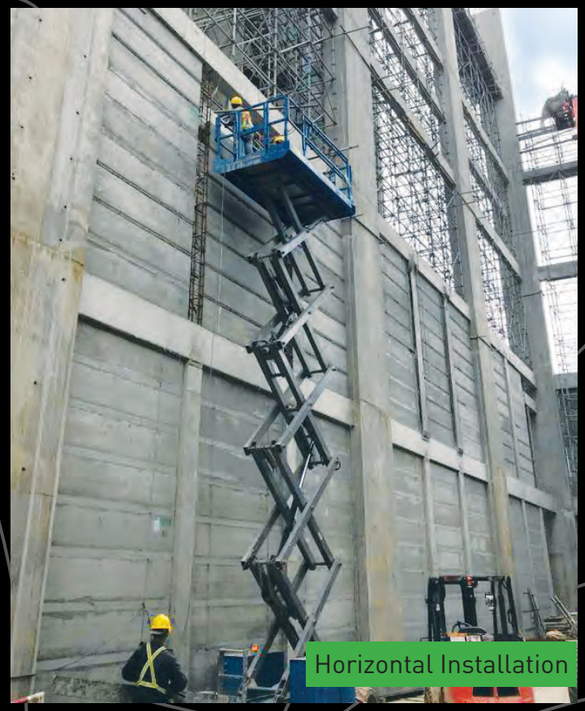
Note: Solid Panels Available (Except 75mm)Customized Panels Available

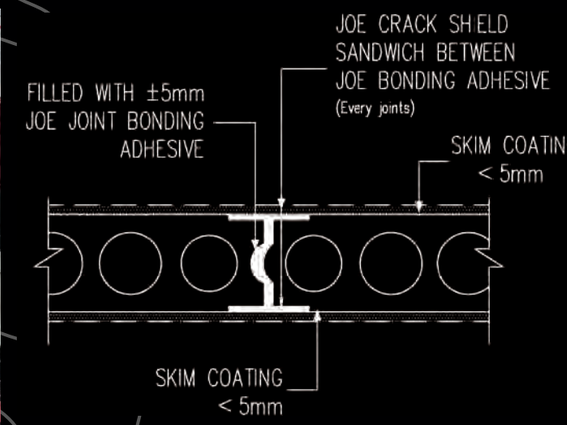
Standard (XS / X5)		Max Panel Height
200mm Solid	:	max 6.0m (with wire)
150mm Solid	:	max 6.0m (with wire)
100mm Solid	:	max 6.0m (with wire)
200mm, Ø 64mm	:	max 6.0m (with wire)
150mm, Ø 40mm	:	max 6.0m (with wire)
100mm, Ø 64mm	:	max 5.2m (with wire)
100mm, Ø 40mm	:	max 6.0m (with wire)
90mm, Ø 58mm	:	max 4.5m (with wire)
75mm, Ø 40mm	:	max 3.3m

Note: Panel above 3.3m will be wired for safety & impact strength

X1 & X2 & X3		Max Panel Height
X1 100mm, Ø 64mm	:	max 5.2m (with wire)
X1 100mm, Ø 40mm	:	max 6.0m (with wire)
X2 100mm, Ø 64mm	:	max 5.2m (with wire)
X2 100mm, Ø 40mm	:	max 6.0m (with wire)
X3 100mm, Ø 64mm	:	max 5.2m (with wire)
X3 100mm, Ø 40mm		max 6.0m (with wire)
Reinforcement Tensile Wire	:	Tensile Strength min. 600 MPa (Ø3, Ø4.5, Ø5)
Recess Design	:	depth 6mm width 40mm


Vertical Installation


Horizontal Installation




Reinforced with High Tensile Wire for Long Panel


Customized with Rebar & Grout

JOE Beyond LiCrA Test Reports

*Skim Coat on Both Sides ** Thin Plasters on Both Sides *** Plaster on Both Sides

With M&E ^Without Wire ^^With Wire { } Acoustic Assessment

tested by: TUV SUD PSB Singapore, SETSCO, Admaterials Technologies, SIRIM QAS INTERNATIONAL, CPG, fischer innovative solutions, HILTI, MULTIFIX™

Functional Requirements	JOE Green Standard Concrete Panel					
	75mm (Ø40mm)	90mm (Ø58mm)	100mm (Ø40mm)	100mm (Ø64mm)	150mm (Ø40mm)	200mm (Ø64mm)
ASTM - E90						
Sound Insulation (STC)	STC 47*	STC 48*	STC 52*	STC 49* {STC 50-51**}	{STC 55}	{STC 56-58}
ASTM C 518						
Thermal Conductivity (W/m^{o}K) K-value	0.675	0.6796	1.194	0.665	N/A	N/A
Thermal Resistance (m^{2} ^{o}K/W) R-value	0.111	0.132	0.0832	0.1484		
BS 476: Part 22: 1987						
Fire Resistance						
Integrity	132Mins*	68Mins*	132Mins#*	132Mins*	N/A	N/A
Insulation	125Mins*	68Mins*	132Mins#*	131Mins*		
Deflection Test (mm)	33mm	65mm	42mm	25mm		
Difference of Area Under Curve with Standard (%)	0.1	0.1	0.0	0.2		
Fire Resistance (4 Hours, Single Wall)						
Integrity	N/A	N/A	N/A	N/A	260Mins*	260Mins*
Insulation					260Mins*	260Mins*
Deflection Test (mm)					35mm	19mm
Difference of Area Under Curve with Standard (%)					-0.1	0.1
BS EN 772						
Compressive Strength - Cube	57.90 N/mm^{2}					
Compressive Strength - Section	42.8 N/mm^{2}	31.6 N/mm^{2}	48.2 N/mm^{2}	37.0 N/mm^{2}	50.8 N/mm^{2}	34.8 N/mm^{2}
SS 271: 1983						
Water Absorption (24 hrs Immersion) - Setsco Labs (Should Not Exceed 23.5%)	7.15 %	7.16 %	7.81 %	6.63 %	6.37 %	5.89 %
Drying Shrinkage - Setsco Labs (Should Not Exceed 0.09%)	0.05 %					
SS 492: 2001 / BS 5234 (Impact Tests)						
Determination of Partition Wall Stiffness	SD	SD	N/A	SD	N/A	N/A
Surface Damaged by Small Hard Body Impact	SD	SD		SD		
Perforation by Small Hard Body Impact	SD	SD		SD		
Damaged by Large Soft Body Impact	SD	SD		SD		
Structural Damaged by Large Soft Body Impact	SD	SD		SD		
Door Slamming	SD	SD		SD		
Lightweight Anchorage Pull-Out	Pass	Pass		Pass		
Lightweight Anchorage Pull-Down	Pass	Pass		Pass		
Heavyweight Anchorage Wash Basin (N)	1500	1500		1500		
Heavyweight Anchorage Wall Cupboard (N)	4000	4000		4000		
Horizontal Load/Crowd Pressure (3.0 kN/m)	Up to 3.0 kN/m	Up to 3.0 kN/m		Up to 3.0 kN/m		
1. Deflection (mm)	-0.04	-0.06		-1.2		
2. Residual Deflection (mm)	0	0		-0.1		
Bending Strength (N/mm^{2})	10.80 N/mm^{2}					

Functional Requirements	JOE Green Standard Concrete Panel		JOE Green Light Panel				
	100mm Solid	150mm Solid	100mm (Ø64mm) X1	100mm X1 SOLID	100mm (Ø64mm) X2	100mm X2 SOLID	100mm (Ø64mm) X3
ASTM - E90							
Sound Insulation (STC)	{STC 54-55}	{STC 57-58}	STC 41*	N/A	STC 43*	{STC 45}	STC 47*
ASTM C 518							
Thermal Conductivity (W/m^{o}K) K-value	0.9012	N/A	0.2306	N/A	0.535	N/A	0.4393
Thermal Resistance (m^{2} ^{o}K/W) R-value	0.111		0.434		0.189		0.2276
BS 476: Part 22: 1987							
Fire Resistance							
Integrity	N/A	N/A	196Mins*	N/A	132Mins*	N/A	N/A
Insulation			169Mins*		120Mins*		
Deflection Test (mm)			-3mm		12mm		
Difference of Area Under Curve with Standard (%)			0.0		0.1		
Fire Resistance (4 Hours, Single Wall)							
Integrity	260Mins*	260Mins*	N/A	240Mins*	N/A	240Mins*	120Mins*
Insulation	260Mins*	260Mins*		240Mins*		240Mins*	120Mins*
Deflection Test (mm)	5mm	23mm		8mm		32mm	25mm
Difference of Area Under Curve with Standard (%)	0.0	0.0		0.0		0.0	0.0
BS EN 772							
Compressive Strength - Cube	57.90 N/mm^{2}		-	-	-	-	-
Compressive Strength - Section	40.9 N/mm^{2}	-	3.7 N/mm^{2}	7.1 N/mm^{2}	11.3 N/mm^{2}	17.5 N/mm^{2}	19.6 N/mm^{2}
SS 271: 1983							
Water Absorption (24 hrs Immersion) - Setsco Labs (Should Not Exceed 23.5%)	5.57%	N/A	14.94 %	20.16 %	14.60 %	12.58 %	11.31 %
Drying Shrinkage - Setsco Labs (Should Not Exceed 0.09%)	0.05 %		0.09 %		0.08 %		0.07 %
SS 492: 2001 / BS 5234 (Impact Tests)							
Determination of Partition Wall Stiffness	N/A	N/A	SD	N/A	SD	N/A	SD
Surface Damaged by Small Hard Body Impact			SD		SD		SD
Perforation by Small Hard Body Impact			SD		SD		SD
Damaged by Large Soft Body Impact			SD		SD		SD
Structural Damaged by Large Soft Body Impact			SD		SD		SD
Door Slamming			SD		SD		SD
Lightweight Anchorage Pull-Out			Pass		Pass		Pass
Lightweight Anchorage Pull-Down			Pass		Pass		Pass
Heavyweight Anchorage Wash Basin (N)			1500		1500		1500
Heavyweight Anchorage Wall Cupboard (N)			4000		4000		4000
Horizontal Load/Crowd Pressure (3.0 kN/m)			Up to 3.0 kN/m		Up to 3.0 kN/m		Up to 3.0 kN/m
1. Deflection (mm)			-0.745		-2.334		-0.4
2. Residual Deflection (mm)			-0.2		-0.2		-0.1
Bending Strength (N/mm^{2})	10.80 N/mm^{2}		0.8 N/mm^{2}		3.5 N/mm^{2}		4.45 N/mm^{2}

JOE™ Quality

LiGrA™ Lightweight Green Aggregates We Are The Best

FOOTNOTE :
* - Varies as per thickness
# - Skimcoat Finishing
NA - Not Available

REFERENCES :
(1) Quoted the report by Lightweight Concrete Journal, that the moisture of AAC wall lab test at 45% moisture content when the wall is just built. In time to come, the moisture will drop to 3.5%. The ratio of 45% and 3.5% will result in what I said 11dB drop of sound insulation.
(2) Panels and other materials which show a water absorption test should directly be connected to the length of time the test sample was submersed under water.
The relationship between these two factors are important and directly related until maximum value is reached.
(3) Requires Plastering to achieve thickness to comply Code for electrical installation - 50mm cover to Electrical Conduits , without damaging the Steel Reinforcement of ALC Panel.

	PROPERTIES	COMPARISON FOR 100MM THICK WALL MATERIALS							COMPARISON FOR 100MM THICK WALL MATERIALS		
		JOE X5 (XS)	Other Panel	Red Brick	JOE X3	AAC Block Bata Ringan	ALC/GIP Panel Bata Ringan	SANDWICH PANEL (EPS)	JOE X2	Dry Wall / Gypsum Board	JOE X1
TEST REPORTS	Nominal Density (kg/m3)	2200	2200	1760	1600	550	800	720	1300	10	900
	Weight (kg/m2)- 100mm thickness	135	145	160	96	80	80	72	85	100 (Frame & Insulation)	65
	Maximum Height without lintel (mm)	8000*	3300	3000	6000*	3000	6000	3000	6000*	2400	6000*
	Compressive Strength (MPa) Cube	49	25	2 - 4	-	4.5	4.5	-	-	NA	-
	Compressive Strength (MPa) Section	42-59	15	2.5	20	2.5 - 5	5 - 7	4	11 - 17	NA	3 - 7
	Water Absorption (Percentage)	6% (24-hr immersed)	5% (30-min immersed)[2]	15 - 25%	11% (24-hr immersed)	35 - 60%	35 - 60%	20%	13% (24-hr immersed)	Not Usable (Dry Areas Only)	15% (24 -hr immersed)
	Water Absorption (Capillary) $g/m^2s^{0.5}$	24	NA	NA	NA	130	190	45	11 (WP-SPEC)	Not Usable (Dry Areas Only)	NA
	Air Tightness Certified	Yes	No	No	No	No	No	No	No	No	No
	Thermal Coductivity (W/K.m) - 100mm (Lower is Better)	0.74	NA	1.15	0.44	0.15 - 0.25	0.15 - 0.25	0.26	0.54	0.17	0.23
	Fire Rating (Hours)	1 - 4	1 - 2 (needs infill)	1 - 2	2 - 4	3 - 4	2 - 4	1 - 4	2 - 4	1 - 2 (needs infill)	2 - 4
	Sound Transmission Class (STC)	49 - 58	37 - 41	37 - 42	45 - 54	35 - 40 (11dB Drop after 3-6 Mos)[1]	40 - 46 (11dB Drop after 3-6 Mos.)[1]	41	41 -50	35 - 52 (Rock Wool) (Requires Insulation)	39 - 48
PERFORMANCES	Buildability (Labour Saving Index))	0.85#	0.85#	Demerits	0.85#	0.10	0.85#	0.85#	0.85#	1.00	0.85#
	Productivity (m^2/manday)	20	18	6	22	12	18	18	24	23	25
	Use of Green Recycled Material	Yes	No	No	Yes	No	No	No	Yes	No	Yes
	Use of Flammable Material	No	No	No	No	No	No	Yes	No	No	No
	Heavyweight Anchorage (4000N) Strength & Robustness	Severe Duty (Highest)	Severe Duty (Highest)	Pass (chemical & mechanical fixing)	Severe Duty (Highest)	Pass (chemical fixing)	Pass (chemical fixing)	Medium - Severe Duty	Severe Duty (Highest)	Pass (mechanical fixing- special bolt)	Severe Duty (Highest)
	Customised Height Available	Yes (8M)	No	No	Yes (6M)	No	Yes (3M or 6M only)	No	Yes (6M)	No	Yes (6M)
	Customised Thickness Available	75 - 200	75 - 200	100 - 230	75 - 200	100-200	75-200	100-200	75 - 200	75-150	75- 200
	Wire Reinforcement (safety & strength) (Earthquake, Vibration, Movement, Impact)	High tensile wire (600 Mpa) 3-5mm dia	No	No	High tensile wire (600 Mpa) 3-5mm dia	No	BRC Mesh	BRC Mesh	High tensile wire (600 Mpa) 3-5mm dia	Metal Stud	High tensile wire (600 Mpa) 3-5mm dia
	Crack Resistance Accessories	1. JOE UV Crackshield 2. JOE Bond Adhesive	Wire or Fiber Mesh	-	1. JOE Crackshield 2. JOE Bond Adhesive	Wire or Fiber Mesh	Wire or Fiber Mesh	Fiber Mesh	1. JOE Crackshield 2. JOE Bond Adhesive	-	1. JOE Crackshield 2. JOE Bond Adhesive
	Stopper Cap for Hollow Insert	Yes	No	No	Yes	No	No	No	Yes	No	Yes
	Joint Recess for Stronger Joints	Yes	No	No	Yes	No	No	No	Yes	No	Yes
	Product Structure	Strong & Compact	Low Strength, More Sand, Less Cement	Compact, Low Strength	Strong & Compact & Lightweight	Porous, Full of Capillary, Low Strength, Potential Fungus/Molding Growth	Porous, Full of Capillary, Low Strength, Potential Fungus/Molding Growth	Porous, Low Strength, Easy to Debond, Weak Glue Adhesive	Strong & Compact & Lightweight	Fragile, Easy to Break, Lowest Strength	Strong & Compact & Lightweight
	Production Process	Extrusion Flat Surface, Compact, Special Customised Machine	Extrusion on Conveyor, Potential Uneven Wavy Surface	Moulding, Potential Uneven Wavy Plate Surface	Extrusion Flat Surface, Compact, Special Customised Machine	Moulding, Potential Uneven Wavy Plate Surface	Moulding, Potential Uneven Wavy Plate Surface	Moulding, Potential Uneven Wavy Surface	Extrusion Flat Surface, Compact, Special Customised Machine	Extrusion on Metal Roller, Potential Uneven Surface, Thin & Brittle	Extrusion Flat Surface, Compact, Special Customised Machine
	Finishing Application (mm)	Thin Skimcoat	Plaster + Skimcoat	Plaster + Skimcoat	Thin Skimcoat	Plaster + Skimcoat	Plaster + Skimcoat	Plaster + Skimcoat	Thin Skimcoat	Putty	Thin Skimcoat
COST SAVINGS	Plaster Material & Labor Savings	-	15-25 mm (3 Layers)	15-25 mm (3 Layers)	-	15-25 mm (3 Layers)	-	15-25 mm (3 Layers)	-	-	-
	Skimcoat Material & Labor Savings (Due to Flatness & Waving)	1 - 5mm (1 Layer)	5 - 15mm (1 Layer)	5 - 20mm (1 - 2 Layer)	1 - 5mm (1 Layer)	5 - 10mm (1 -2 Layer)	5 - 10mm (1 - 2 Layer)	10 mm (2 - 3 Layers)	1 - 5mm (1 Layer)	Rockwool & Putty	1 - 5mm (1 Layer)
	Total Weight (kg/m2) (After Finishing)	155	185	260	115	140	140	122	105	105	85
	Lintel Savings	Up to 8M	Every 3M	Every 3M	Up to 6M	Every 3M	Every 3M	Every 3M	Up to 6M	Every 3M	Up to 6M
	Stiffener Savings	Up to 8M	Every 3M	Every 3M	Up to 6M	Every 3M	Every 3M	Every 3M	Up to 6M	Every 3M	Up to 6M
	M&E Services Savings (MEP - Indonesia)	Services can be run through hollow core with minimum opening	Services can be run through hollow core with minimum opening	Require surface hacking & trimming for recess	Services can be run through hollow core with minimum opening	Require surface hacking & trimming for recess	Require surface Cutting and Trimming for recess (Max. 30mm) No cutting to BRC reinforcement	Require surface Cutting and Trimming for recess (Max. 30mm) No cutting to BRC reinforcement	Services can be run through hollow core with minimum opening	By fitting services before closing up	Services can be run through hollow core with minimum opening
	Wall Fixing	L-bracket + Sleeve Anchor / H10 Dowel Bar	Bracket / H10 Dowel Bar	Wall Tie	L-bracket + Sleeve Anchor / H10 Dowel Bar	Wall Tie	Wall Panel Bracket	Wall Panel Bracket	L-bracket + Sleeve Anchor / H10 Dowel Bar	Metal Stud & Drive Pins	L-bracket + Sleeve Anchor / H10 Dowel Bar
	Site Houskeeeping & Wastage	Min. Wastage & Cutting due to Custom Length	More Wastage Higher Breakage	More Wet Works & High Wastage	Min. Wastage & Cutting due to Custom Length	More Wastage Higher Breakage	More patching material to M&E Works / More Debris to handle	More patching material to M&E Works / More Debris to handle	Min. Wastage & Cutting due to Custom Length	More Wastage (12 - 15%)	Min. Wastage & Cutting due to Custom Length
	External Waterproofing	Joints Only	Full Surface Waterproofing	Full Surface Waterproofing	Joints Only	Full Surface Waterproofing	Full Surface Waterproofing	Joints Only	Joints Only	Not Recommended (Indoor Only)	Joints Only
	Additional Scaffolding / Work Platform Savings Based on Single Tier @ 3.3M	-	-	Needs Scaffolding / Work Platform	-	Needs Scaffolding / Work Platform	Needs Scaffolding / Work Platform	-	-	Needs Scaffolding / Work Platform	-

Singapore Green Mark

BCA GREEN MARK

		Requirements		Higher Scoring X1	X2	X3	XS/X5
1	ENERGY EFFICIENCY		Reduced Heat Gain (ETTV)	✓	✓	✓	✓
2	HEALTH & WELLBEING	HW 1.2	HW 1.2 Material Emissions	✓	✓	✓	✓
		HW 2.3	Sound			✓	✓
3	RESILIENCE	RE 1.1 b	Resources	✓	✓	✓	✓
		RE 1.2b	Urban Heat Island Mitigation				
4	WHOLE LIFE CARBON	CN 1.1	Whole Life Carbon Calculation	✓	✓	✓	✓
		CN 1.2	Embodied Carbon	✓	✓	✓	✓
		CN 1.3	2030 Transition Plan	✓	✓	✓	✓
		CN 2.1	Sustainable Construction	✓	✓	✓	✓
		CN 2.2	Sustainable Products & Finishes	✓	✓	✓	✓
		CN 3.2	Fit out Products	✓	✓	✓	✓
5	MAINTAINABILITY	General	BIM model	✓	✓	✓	✓
		1.5	Design Factor - Masonry & Lightweight Concrete Panel	✓	✓	✓	✓
		1.5.1	Reduce risk of Water ingress and Efflorescence formation	✓	✓	✓	✓
		1.5.2	Reduce risk of façade flaking/peeling/cracking /blistering	✓	✓	✓	✓
		2.5	Basement and Car Park				

malaysia green building index

Applicable GBI Credits	Criteria	Higher Scoring X1	X2	X3	XS/X5
1 Energy Efficiency	EE	✓	✓	✓	✓
Minimum Energy Efficiency Performance					
2 Indoor Environmental Quality	EE	✓	✓	✓	✓
Indoor Air Pollutants		✓	✓	✓	✓
Mould Prevention		✓	✓	✓	✓
Internal Noise Levels / Sound Installation		✓	✓	✓	✓
IQA Before & During Occupancy					
3 Suistanable Planing & Management	SM	✓	✓	✓	✓
Suistanable Construction		✓	✓	✓	✓
Qlasic - Quality Assessment System for Building		✓	✓	✓	✓
IBS - Industrialised Building System					
4 Material & Resources	MR	✓	✓	✓	✓
Material Reuse & Selection		✓	✓	✓	✓
Recycled Content Materials		✓	✓	✓	✓
Regional Materials		✓	✓	✓	✓
MateriL Manufacture & Ingredients		✓	✓	✓	✓
Storage & Collection of Recyclabels		✓	✓	✓	✓
Construction Waste Management		✓	✓	✓	✓

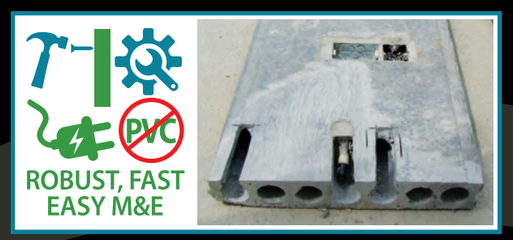
Customized Design & Specification

To fit each unique project requirement and specification such as sound insulation for sound barrier and cinema, fire resistant, blasting walls as well as groove line pattern. We are able to modify number of hollows, different embedded tensile wire from 8 to 12 wires as well as solid panel. We also provide different kind of thickness, L and T Joint as well as accessories to prevent crack issues and ease of installation.

Noise Barrier Wall with Groove Line Design

Pattern Walls Design

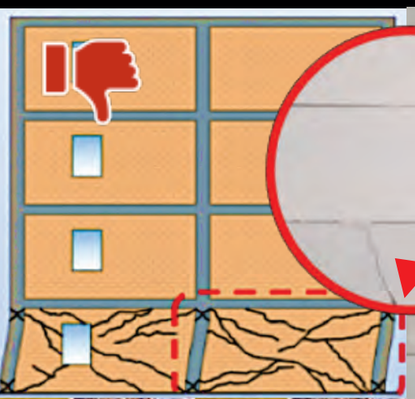
Block Size for Special Order – All Thickness and Models



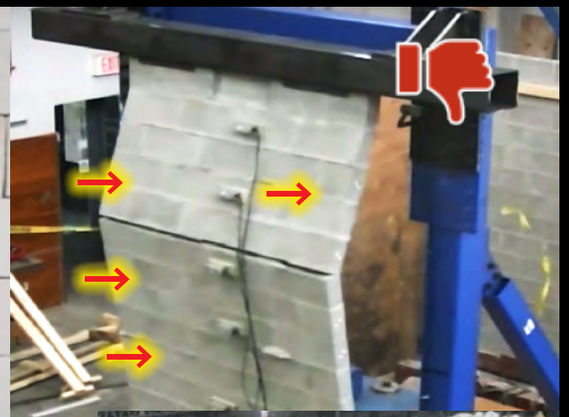
JOE LiGrA Lightweight Green Aggregates | Impact & Safety

Seismic Activity

AAC Block/Brick VS Panels



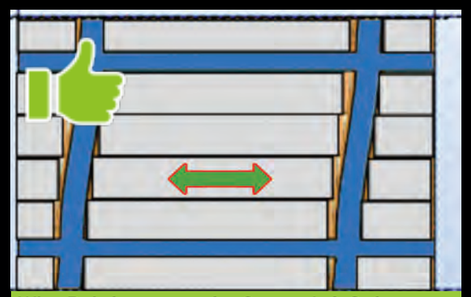
Block Joints Weak Thin Layer
Seismic Loading create high shear forces that result in diagonal cracks and collapse of weak block walls.



Panel Systems & Wire Reinforcement for Security

Wall Panel Systems with Wire
High shear strength coupled with strong end connections help to resist the high shear force of Seismic Loading

Wire Reinforced Panel Joints Solid, Strong, Full Contact Minimize Seismic Impact



Wire Reinforcement for Strength & Safety

PRODUCT:
JOE Green Wire-Reinforced Panel

INCIDENT:
Hit & Damaged by Forklift

LOCATION:
Tampines Warehouse L3

SOLUTION:
Easily Repaired by Patch & Grout

Damaged Accidentally Hit by Forklift

Other Functionable Applications Use as Fire Rated Strong Ceiling at Double Volume Area

Heavy-Load Mounting Capability
Normal Sleeve Anchor M8 Per Point up to 400KG (Hollow Section) & 1.2 Ton (Solid Section)

Air Tightness Test for Hospital (NCID)

AIR TIGHTNESS TEST
Air Transmission = 0% TUV Certified

Water Tightness Test for External Wall

WATER TIGHTNESS TEST = 0% SEEPAGE

JOE Accessories
LiGrA Lightweight Green Aggregates JOINT BONDING ADHESIVE

JOE Joint Bonding Adhesive

Is a pre-blend high polymer cement, specially sized inert aggregates and approved chemical additives. It is a cement based adhesive, specially designed for fixing panel and blocks. The formula has excellent workability to help minimize crack and shrinkage. By just adding in the required amount of water and mixing, it is ready for application.

Technical data (typical) :

Weight : 40 kg/bag
Density : 1.4 gm/cm^3
Open Time : 30 minutes
Setting Time : Initial - 5 hours
Consumption (approximate) :
1 bag = 6 m^2 - 8 m^2

Instructions for use :

1. Surface of application for the adhesive must be free from dust, oil and or any contamination. Moist surface with water spray before application.
2. Mix 26% to 28%, 10 - 11 litre of water by volume.
3. Adhesive must be added into water during mixing.
4. Must use an electric mixer to mix the adhesive for around 5 minutes. The mix must be homogenous.
5. The mix must be used within 30 minutes after mixing.
6. Application to big gap by handheld pump to ensure proper and sufficient infill and bonding contact.

JOE Accessories
LiGrA Lightweight Green Aggregates CRACKSHIELD

Lightweight Concrete Wall Panel Joint Tape

APPLICATION

- Internal & External Wall joints
- Inner and Outer Corner Beads
- Structural to Wall Connections.

TYPE	WIDTH/THICKNESS	LENGTH	UNIT/CARTON
ROLL	50 mm/0.5 mm	40 M	10 Rolls

DESCRIPTION

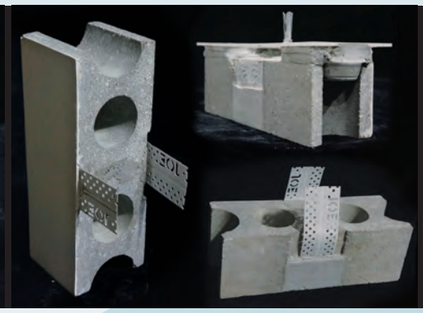
JOE Crackshield is manufactured from special formulated UPVC as a joint reinforcement tape with high tensile strength to resist tearing, stretching and distortion. It is a flexible–centered joint to allow for movements and designed for usage with JOE Joint Bonding Adhesive for :

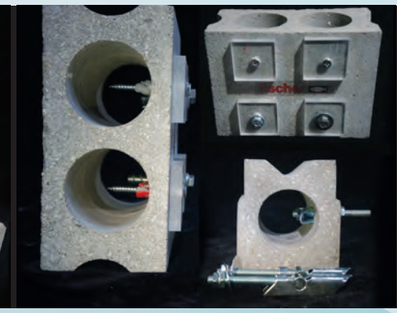
1. Reinforcing joints at inner corner, outer corner, structural joints between column, beam and ceiling.
2. Better performance in resisting crack due to thermal, stretching and other distortions compared to other fibre & wire meshes.
3. Improving water resistant and minimize water seepage through the joint when used at external and wet area.
4. Designed with perforations to provide a superior key grip for bonding between substrate.
5. Designed with flexible center creasing and uniform winding promote accurate and easy application to angles (corner treatment) and angle beading as well as flat joints with length of 40 metre per roll.

JOE Accessories
LiGrA Lightweight Green Aggregates STOPPERCAP

- Specially designed for capping off to fit to hollow core opening at top of JOE Green Concrete Wall Panels for size 40mm and 58/64mm diameter hollows.
- Easy handling and application compared to using backer rod, sponge and other infill material as stopper.
- Prevent water ingress and logging within hollow cores at external wall during in process work.
- Help prevent wastage of bonding adhesive dropping into hollows and ensure compactness of grouting.
- Improve panel grid at top joints as stopper form a key profile, enhance contact surface thus minimizing any potential movements due to insufficient grip and bonding contact surfaces.

TYPE	DEPTH	DIAMETER	UNIT/CARTON	APPLICATION
Capping (PP)	30mm 20mm	40mm 58/64mm	500 Pieces 500 Pieces	To all TOP hollow cores of wall when installing vertically or to both sides of wall when installing horizontally





JOE BOND
JOINT BONDING ADHESIVE

JOE ACCESSORIES
GAP PUMP

JOE ACCESSORIES
CRACKSHIELD

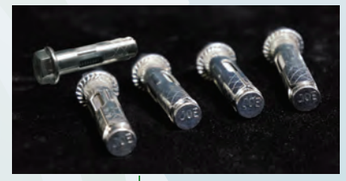
JOE PIM
PANEL INSTALLATION MACHINE

JOE ACCESSORIES
STOPPERCAP

JOE SAFETY EQUIPMENT
SAFETY SHOES

JOE SAFETY EQUIPMENT
TOOLS BAG

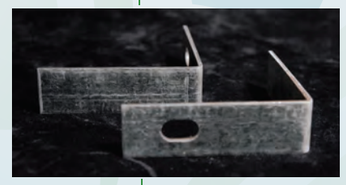
JOE ACCESSORIES
ACRYSHIELD



JOE ACCESSORIES
SLEEVE ANCHOR

JOE SAFETY EQUIPMENT
SOCKS

JOE ACCESSORIES
GRAVITY ANCHOR



JOE ACCESSORIES
L BRACKET

JOE SAFETY EQUIPMENT
MASKER

Honourable Partners

10 YEARS ++

More Than 1,000 Projects

PUBLIC DEVELOPERS

Building and Construction Authority
HOUSING & DEVELOPMENT BOARD
Land Transport Authority — We Keep Your World Moving
People's Association
Ministry of Education SINGAPORE
MINISTRY OF HEALTH SINGAPORE
NUS National University of Singapore
NANYANG TECHNOLOGICAL UNIVERSITY SINGAPORE
TEMASEK HOLDINGS
PSA The World's Port of Call
sembcorp
NUH National University Hospital
MINDEF SINGAPORE
MINISTRY OF HOME AFFAIRS
jtc Breaking New Ground
ntuc National Trades Union Congress
CIDB MALAYSIA
SAFRA
CHANGI airport singapore
URBAN REDEVELOPMENT AUTHORITY
RafflesMedicalGroup
mapletree
Sentosa Sentosa Development Corporation
JKR

DEVELOPERS

长春产业 ALLGREEN PROPERTIES
CITY DEVELOPMENTS LIMITED
ascendas Reit
Aurum
AGUNG SEDAYU GROUP
Far East Organization INSPIRING BETTER LIVES
SGM SOKA GAKKAI MALAYSIA Creating Value, Empowering Lives
CHIU TENG GROUP 九鼎集团
GSH
ROXY-PACIFIC HOLDINGS LIMITED
CAMHOMES
lendlease
CapitaLand
FRASERS CENTREPOINT
FOREST CITY COUNTRY GARDEN PACIFICVIEW
OKH
LIPPO GROUP
IHG
PERENNIAL (PERENNIAL REAL ESTATE HOLDINGS LIMITED)
TASEK MAJU
MB WORLD GROUP
GuocoLand
OUE
MCL Land A member of the Hongkong Land Group
Oxley OXLEY HOLDINGS LIMITED
Keppel Land
YTL SINCE 1955
Setia
MahSing Reinvent Spaces. Enhance Life.
PP PROPERTI
COUNTRY GARDEN
POLLUX PROPERTIES
UOL Group Limited 华业集团有限公司

ARCHITECTS

architects61 singapore shanghai
ADDP ARCHITECTS LLP
aesler
ARUP
CIAP
DP ARCHITECTS
Forum Architects
ida
ONG&ONG
kyoobo
ARKITEK REKACIPTA
CPG CONSULTANTS
AKIPRO Chartered Architect
RSP RSP ARCHITECTS PLANNERS & ENGINEERS
SAA
RONNY CHIN ARCHITECTS
P&T GROUP
SURBANA JURONG
KAJIMA DESIGN
swan & maclaren
WOHA

MAIN CONTRACTORS

新建工程私人有限公司 BHCC CONSTRUCTION PTE LTD
BOUSTEAD Projects
DAEWOO E&C
Dragages Singapore
上海兴浦建筑有限公司 HPC BUILDERS PTE LTD
Gammon
Greatearth
長龍峰建築工程有限公司 CHAN RONG FEN BUILDING CONSTRUCTION PTE LTD
DMC DUA MEDAN CONSTRUCTION SDN BHD
中国建筑(南洋)发展有限公司 China Construction (South Pacific) Development Co Pte Ltd
集永成机构有限公司 CHIP ENG SENG CORPORATION LTD
CNQC 青建国际
LIAN HO LEE CONSTRUCTION
GIANT LEAP
GENNAL
HYUNDAI ENGINEERING & CONSTRUCTION
LAUBROS
强枫建筑私人有限公司 KEONG HONG CONSTRUCTION PTE LTD
Sembawang
SoilBuild CONSTRUCTION GROUP LTD
SQA Builders Sdn Bhd
KSH HOLDINGS LIMITED
KIMLY CONSTRUCTION
LUM CHANG
SKS GROUP MALAYSIA | AUSTRALIA
KAJIMA OVERSEAS ASIA
PRECISE DEVELOPMENT PTE LTD
Ho Lee Group
SSANGYONG Engineering & Construction Co., Ltd.
SHMZ SHIMIZU CORPORATION
Straits Construction Higher Further Together
NAKANO SINGAPORE
聯明集團有限公司 LIAN BENG GROUP LTD
NCB NEWCON BUILDERS PTE LTD
PM PESONA METRO
MCC SHANGHAI BAOYE GROUP CORP., LTD.
SIM LIAN GROUP LIMITED
Lian Soon Construction Pte Ltd
CONSTRUCTION & INVESTMENT
SonKeh
PENTA-OCEAN CONSTRUCTION CO.,LTD. 五洋建设
TEAMBUILD BUILDING ASPIRATIONS
PSYCON SDN BHD
PULAUINTAN
SUMITOMO MITSUI CONSTRUCTION CO.,LTD.
SATO KOGYO Founded 1862
TAY HUP BROTHERS CONSTRUCTION SDN BHD
SPACIOUS STRUCTURE SDN. BHD.
SAMSUNG
ZHENG KENG
WOH HUP BUILDING WITH INTEGRITY
TIONG AIK CONSTRUCTION PTE LTD (A Subsidiary of TA CORPORATION LTD)
TIONGSENG GROUP 长成控股
TAKENAKA
SAMSUNG C&T
OBAYASHI

AIRPORT & LTA PROJECTS

Land Transport Authority
CHANGI airport singapore
JEWEL CHANGI AIRPORT

Efficient & Cost Effective Noise Barrier Walls

Project MRT - T205 - Woodlands South Station

JOE Singapore

LiGrA Lightweight Green Aggregates | Mixed Development

STARS OF KOVAN

ROYAL SQUARE AT NOVENA

Hillion

MARINA ONE
Residences | Offices | Retail

Northpoint City

NORTH PARK Residences

JOE Singapore
LiGrA Mixed Development

THE WOODLEIGH RESIDENCES

THE WOODLEIGH MALL

SOUTH BEACH

EON SHENTON

V ON SHENTON

DUO
RESIDENCES.OFFICES.RETAIL.HOTEL

Paya Lebar Quarter Mall

Paya Lebar Quarter

King Albert Park (KAP)

Le Quest @ Bukit Batok West Avenue 6

SENGKANG GRAND RESIDENCES

FUNAN, comprises a retail component, two office blocks and lyf Funan Singapore serviced residence

ONE KM

JOE Singapore Residential

LiGrA Lightweight Green Aggregates

ONE HOLLAND VILLAGE Residences

Twin VEW Condominium

Martin Modern Condominium

Waterwoods EC at Punggol Field Walk

D'Nest Condominium at Pasir Ris Grove

Sennett Residence Condominium

18 Woodsville Condominium

Sant Ritz Condominium







COMMONWEALTH TOWERS
QUEENS PEAK
THE trilinq 御品居
Centennia suites
MARGARET VILLE
GEM RESIDENCES CLUB + CONDO
EDEN

THE ALPS Residences





A New Facelift of Upper Serangoon Rd

JOE Singapore
LiGrA Residential
Lightweight Green Aggregates

Coco Palms Condominium

Seven Palms Sentosa Cove

Ripple Bay Condominium at 2 Pasir Ris Link


The Greenwich Residential


Forest Woods Residences


The Amore EC at Edgedale Plains


THE TOPIARY Executive Condominium


THE LAKEFRONT RESIDENCES Condominium


Ecopolitan EC at Punggol Walk


The Tapestry Condominium


Sky Park Residences Executive Condominium


Thomson Impressions Condominium


Bartley Ridge Condominium


Sea Esta Condominium


KOVAN REGENCY Condominium


Waterfront Gold Condo at Bedok Reservoir Rd

THE INFLORA Condominium

euHabitat Condominium


SKY GREEN Condominium


WILSHIRE RESIDENCES

SIGNATURE AT YISHUN
Executive Condominium


PARC Life Condominium


ROYALGREEN Condominium @ Bukit Timah


15 Holland Hill


Grandeur Park Residences Condominium


Seventy St Patrick's Condominium

JOE Singapore
LiGrA Residential
Lightweight Green Aggregates

HOUSING & DEVELOPMENT BOARD

JOE Singapore
LiGrA Residential
Lightweight Green Aggregates

HOUSING & DEVELOPMENT BOARD

PIE

18 Woodsville Condo

Sant Ritz Condominium

Upp Serangoon Rd

Park Colonial Condo

Sennett Residence

HDB Bidadari (Alkaff Courtview)

HDB Bidadari (Alkaff Lakeview)

The Woodleigh Residences

HDB Bidadari (Alkaff Oasis)

Alkaff OASIS

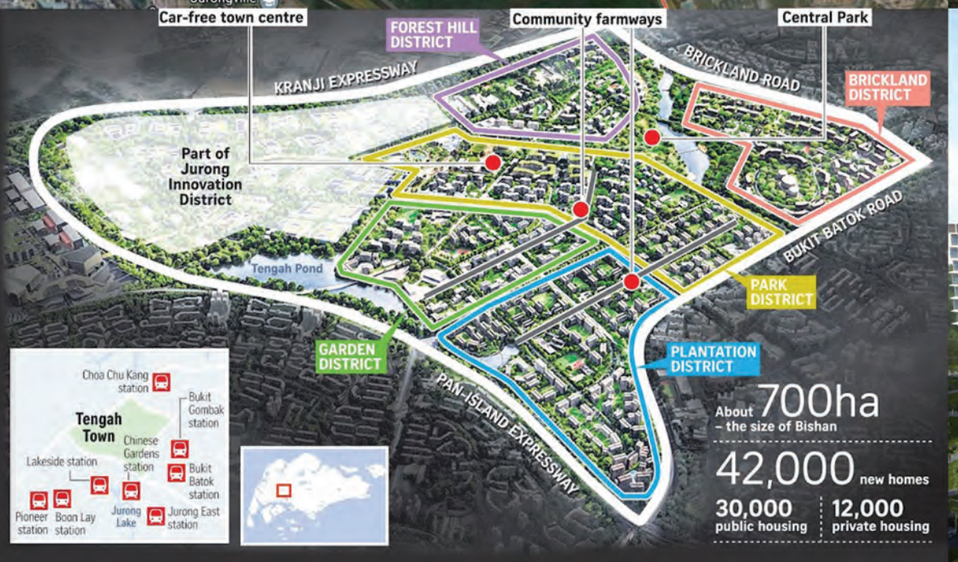
BIDADARI ESTATE

Alkaff LAKEVIEW

Alkaff COURTVIEW

JOE Singapore
LiGrA Residential

HOUSING & DEVELOPMENT BOARD



JOE Singapore
LiGrA Institutions

Integrated Care Hub (ICH)

CENTRE FOR HEALTHCARE INNOVATION

National Centre for Infectious Diseases

RafflesHospital

Sengkang General Hospital SingHealth

NUH National University Hospital

MINISTRY OF HEALTH SINGAPORE

HOMETEAMNS KHATIB

NTUC Health Nursing Home (Chai Chee)

St. Andrew's Nursing Home at Jalan Penjara

Ren Ci @ Ang Mo Kio (Nursing Home)

National Cancer Centre Singapore

NATIONAL SKIN CENTRE (NSC) Singapore

JOE Singapore
LiGrA Institution
Lightweight Green Aggregates

BCA ACADEMY
of the built environment

NUS
National University
of Singapore

YaleNUSCollege

NUS
National University
of Singapore

MINISTRY OF EDUCATION
SINGAPORE

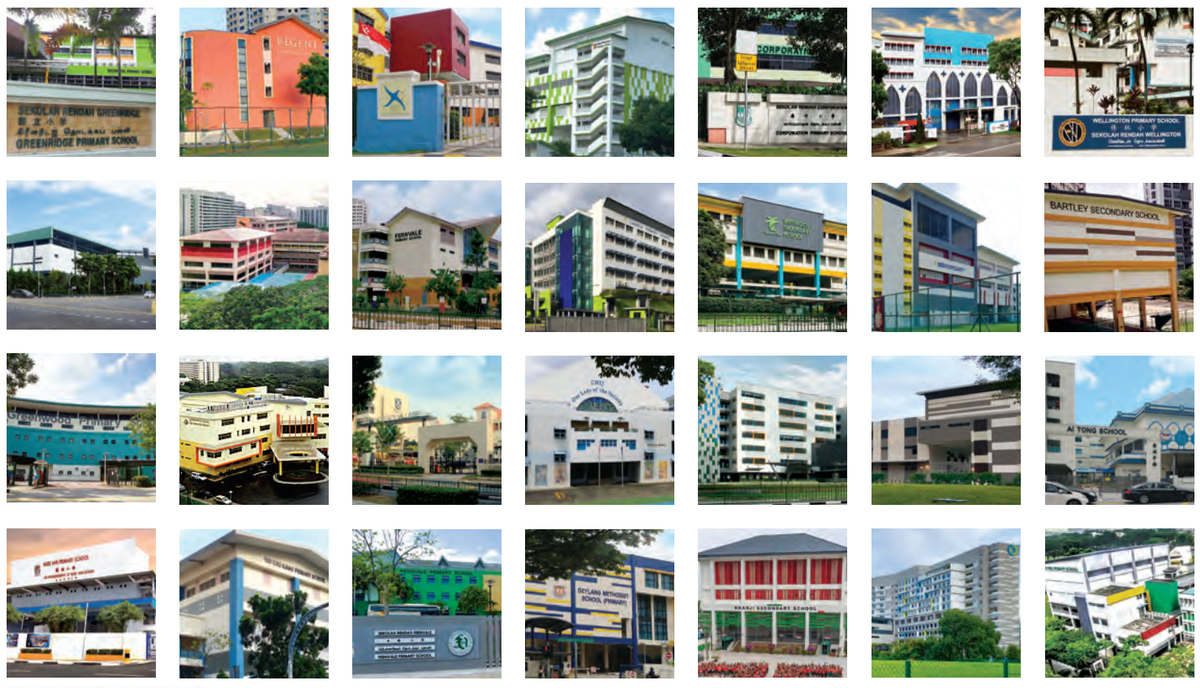
LEE KONG CHIAN
SCHOOL OF
MEDICINE

NTU Yunnan Garden Campus

SUTD
SINGAPORE UNIVERSITY OF
TECHNOLOGY AND DESIGN

NANYANG
TECHNOLOGICAL
UNIVERSITY
SINGAPORE

More Than Hundred Schools Projects in Singapore



Temasek POLYTECHNIC

Global Indian International School

Ministry of Education Singapore

Overseas Family School

NEXUS INTERNATIONAL SCHOOL SINGAPORE

JOE Singapore
LiGrA Commercial

Professional Choice

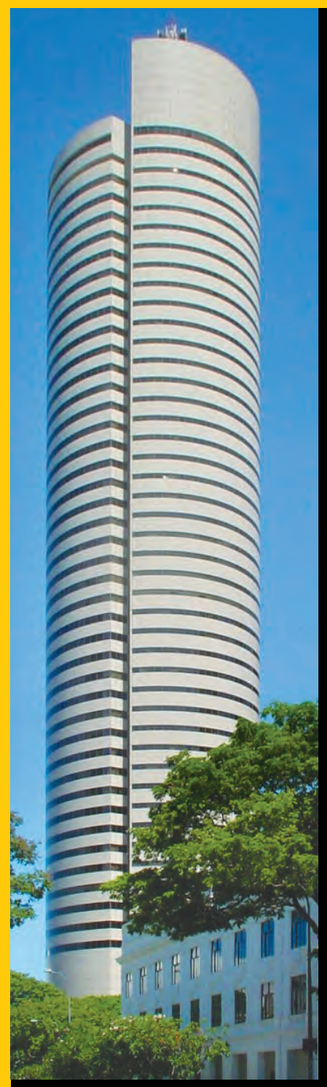
Singapore Chinese Cultural Centre (SCCC)

OUE Downtown

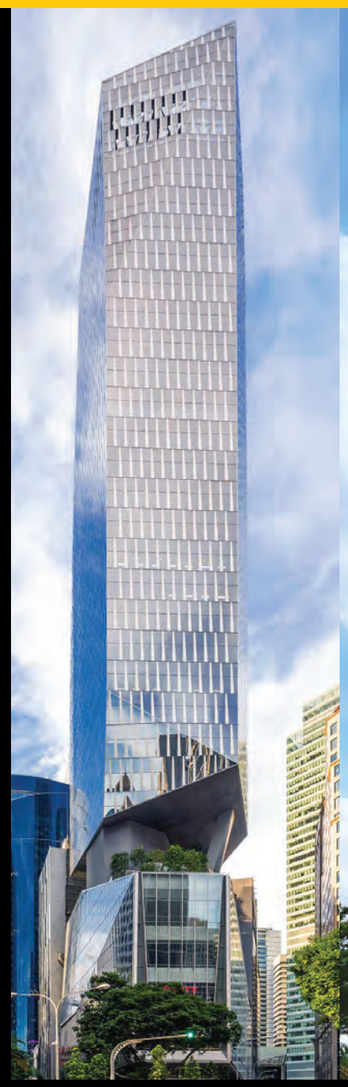
SBF Center

JOE Singapore LiGrA Commercial

Hotel Boss

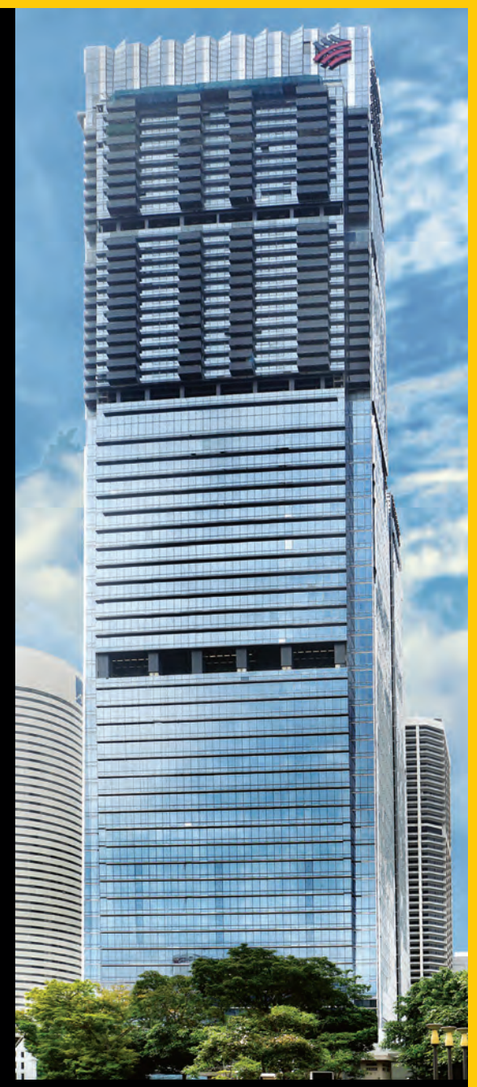


AXA Tower at 8 Shenton Way



Robinson Tower Redevelopment

CapitaSpring at 88 Market St



Guoco Tower at Tanjong Pagar Centre

New PSA Corporate HQ

InterContinental Singapore Robertson Quay

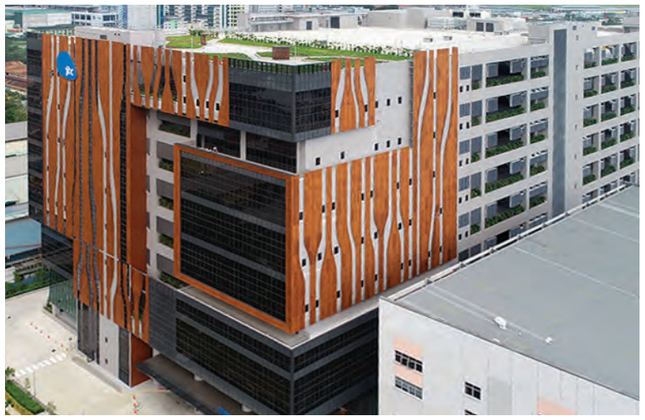
Orchard Hotel Singapore

JOE Singapore
LiCrA Industrial

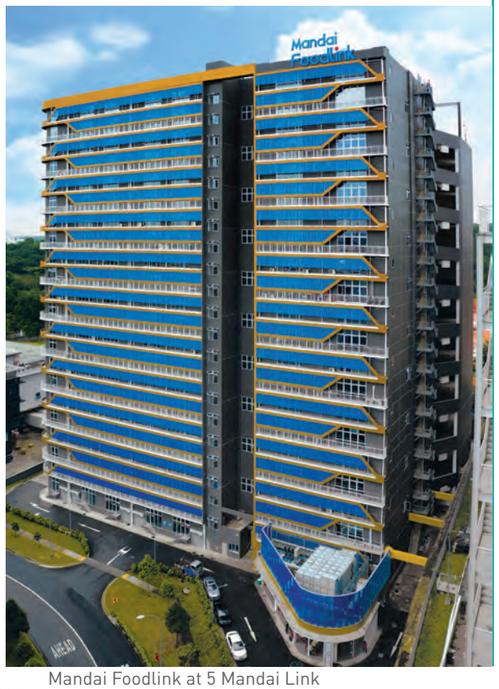
High-Tech Industrial Buildings

Industrial Development at Ang Mo Kio Street 65 for ST Electronics

JTC MedTech Hub @ MedTech Park



JTC Furniture Hub @ Sungei Kadut



Mandai Foodlink at 5 Mandai Link

THE WESTCOM at 1 Tuas South Avenue 6

Micron 300mm NAND Facility at 1 North Coast Drive

NORDCOM I

NORDCOM II

proxima

T-SPACE

JTC Business Aviation Complex at Seletar

Tagore 8 at 421 Tagore Industrial Avenue

JTC Chemicals Hub @ Tuas South

The InDex @ Tuas South Ave 3

External Facade

Industrial Building With Ancillary Office at Tuas South Link

Mandai Link Logistics' Warehouses-Cold Storage at Mandai Link

Data Center at Loyang Drive

6 Storey Warehouse at 47 Jln Buroh

COSL (Singapore) at 3 Benoi Rd

STTelemedia Global Data Centres at 51 Defu Lane 10

Jurong Shipyard Office at Tuas South Boulevard / Tuas View Extension

Using panel 5.2m height for external wall and window opening

EATON RESIDENCES at Kuala Lumpur, Malaysia

MERIDIN EAST

FOREST CITY Projects (Plot 4 - Phase 1, Plot 26 - Phase 2, Plot 26 - Phase 4), Johor Bahru, Malaysia

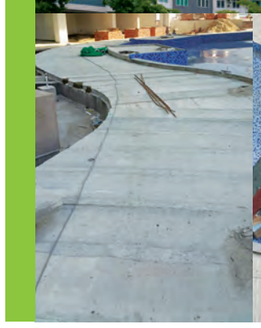
THE AMERALD Resort Hotel at Pengerang, Johor, Malaysia

Taman Pelangi Indah Sales Gallery by SP Setia

Holiday Inn Johor Bahru City Centre

Sky Habitat @ Meldrum Hills, Johor Bahru, Malaysia

Warehouse, Chemical and Paint Store for Malaysia Marine and Heavy Engineering Sdn Bhd, Johor, Malaysia



Walkway Slab at Podium

Perimeter Fence

GRANDVIEW 360° Condominium, Johor Bahru, Malaysia

Permas Jaya - Johor Bahru

Sierra Perdana - Johor Bahru

Brickfields - Kuala Lumpur

Larkin - Johor Bahru

Medini - Johor Bahru

Ecoworld Business Park - Johor Bahru

JOE International
LiGrA Malaysia

Nilai District Police Headquarters, Malaysia

Additional Buildings In Johor State CIDB Complex at Jalan Tampoi, Johor Bahru, Malaysia

ISKANDAR Residences Medini @ Nusajaya, Johor Bahru

PS Jalan Reko Kajang for Petronas

Marlborough College Malaysia, Johor

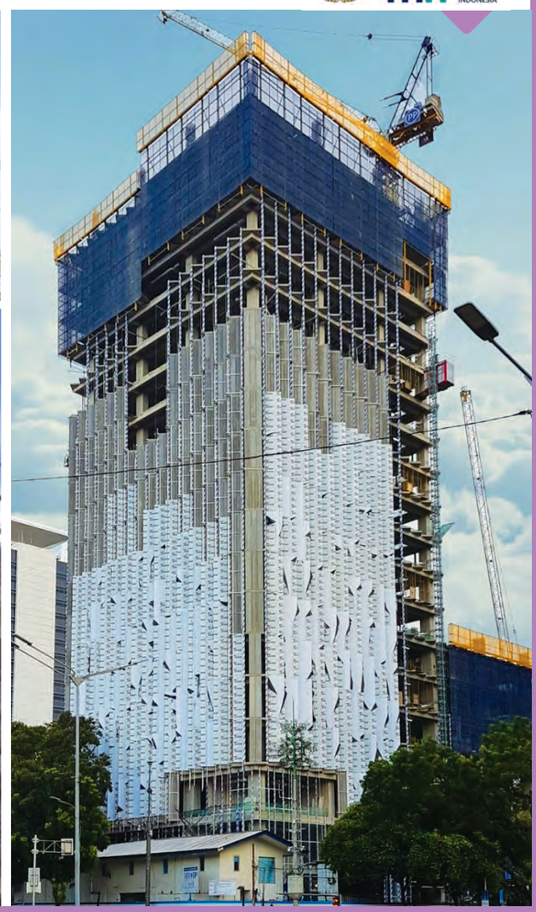
SIHANOUKVILLE, CAMBODIA
D'Seavien

CAMHOMES

International JOE
Cambodia LiGrA

HS Hotel Santika

BUMN KEMENTERIAN BADAN USAHA MILIK NEGARA REPUBLIK INDONESIA



Gereja Reformed Injili Indonesia (GRII) Batam, Indonesia

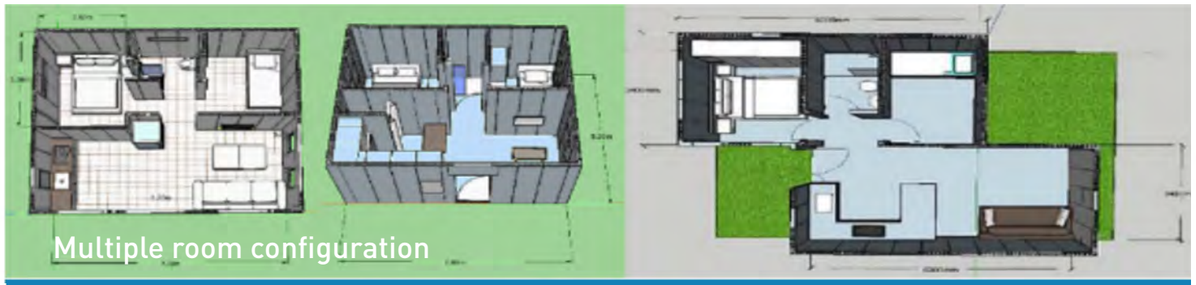
Hotel santika Batam, Indonesia

Affordable Housing Using JOE Green Wall Panel System

✓ **No In-Situ Structural Columns**

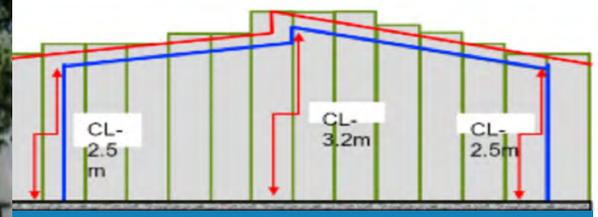
✓ **Fast & Simple Construction**

✓ **High Quality**



Semi-D : Low-cost Housing w/ Piched Roof / Flat False Ceiling
Partition Wall Between Unit to use JOE Panel & Duplicate for Terrace Layout

Tyipical Terrace Facade can duplicate the front entrace design



Concept Roofing Design as photo with stagger roof profile for Modern Look

Gable end / corner Unit can have similar treatment.

JOE Green Wall Panel System for Affordable housing / Worker Dormitory / Etc.

Using JOE Green Wall Panel System for Concrete Flooring Slab.

Achievements

JOE Green Lightweight Concrete Panel has received an Excellent rating certification mark from SGBC and TÜV SÜD PSB at SGBC-BCA Sustainable Leadership Awards Gala Dinner 2016. Today, JOE Green Concrete Panel has been awarded the rating Leader under SGBC product certification scheme

Managing Director of JOE Green, Mr. Boediman Widjaja, received a trophy as one of the winner Asia Green Business Awards 2015/16 in BEI Asia Awards 2015/16 for JOE Green Lightweight Concrete Wall Panel product

Director of Joe Green, Ms. Cindy Lim, received a trophy in Singapore Brands 2012 Gala Dinner Night, 28 April 2012

Ms. Charlina Lim from JOE Green was receiving a trophy as one of the winner of Asia Green Business Awards 2017 in BEI Asia Awards 2017 for JOE Green Lightweight Concrete Wall Panel product

Mr. Boediman Widjaja and Ms. Charlina Lim represented JOE Green to receive a trophy as one of the winner of Enterprise 50 Awards. E50 recognises the enterprises whose journey to innovation is helping to shape a sustainable future.

JOE™ just one earth

LiGrA™ Lightweight Green Aggregates

Seeing Is Believing

We had honorary guests visiting JOE's plant, HQ and project sites to observe our usage of recycle concrete aggregates and waste materials for eco-friendly green products, to make our earth more sustainable.

An honour to have the Ambassador of the Republic of Indonesia H.E. Suryo Pratomo visit JOE Green HQ and Lab at Amazana Building Singapore

Petronas and Dua Medan Construction Sdn Bhd Team

Construction Industry Development Board Malaysia (CIDB) with 40 PKMM (Persatuan Kontraktor Melayu Malaysia)

China Communications Construction

Sunway Construction Sdn Bhd visited Tiong Woon Corporation's Warehouse project site

Country Garden Pacificview Sdn Bhd for Forest City, Gelang Patah

SKS Group and Atria Architects visit JOE Green's project site Holiday Inn JBCC

An honour to have the Ambassador of the Republic of Indonesia H.E. I Gede Ngurah Swajaya visit JOE Green HQ at Amazana Building Singapore

Ministry of Manpower (MOM) Singapore visited The MKZ Condominium project site

CEO of Housing and Development Board (HDB), Dr Cheong Koon Hean, visit HDB project site at Sengkang East Road

JOE Green's prestigious project Pollux Habibie Meisterstadt Batam residential towers topping-out ceremony on April 2019

BCA's Super Low Energy Buildings Department Environmental Sustainability Group visit JOE Green Lab

ECOWORLD Development Group

MCL Land Ltd, Lum Chang Building Contractors Pte Ltd, P&T Architects & Engineers Ltd

Lum Chang Building Contractors Pte Ltd

AESLER Architects Indonesia (PT. Aesler Grup Internasional)

PT PP Tbk visit JOE Green HQ in Singapore for their Indonesia construction projects

Nan Shan Group, Bintan - Indonesia & China

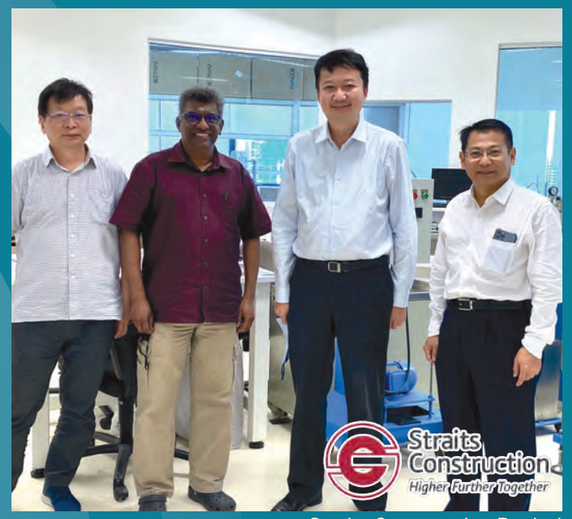
Woh Hup, construction and civil engineering specialist company

Pulau Intan

Shimizu Corporation and ExxonMobil Asia Pacific Pte Ltd

Honorary Guests
Hearing is Believing

Teambuild Singapore



Straits Construction Pte Ltd

JOE Green visits HLH Group HQ in Cambodia to see the projects and potential set up new factory

Obayashi Corporation visited Ripple Bay Condominium Singapore project site

Mr. Richard Koh, MD of Nawarat Group - Thailand

Chiu Teng Enterprise

Daewoo Engineering & Construction Co. Ltd.

Nippon Paint Singapore

Globally Recognized
Patent, Registered Design & Trademark

Singapore

Malaysia

Indonesia

India

China

Hong Kong

Hong Kong

Australia

New Zealand

USA

Cambodia

European Union

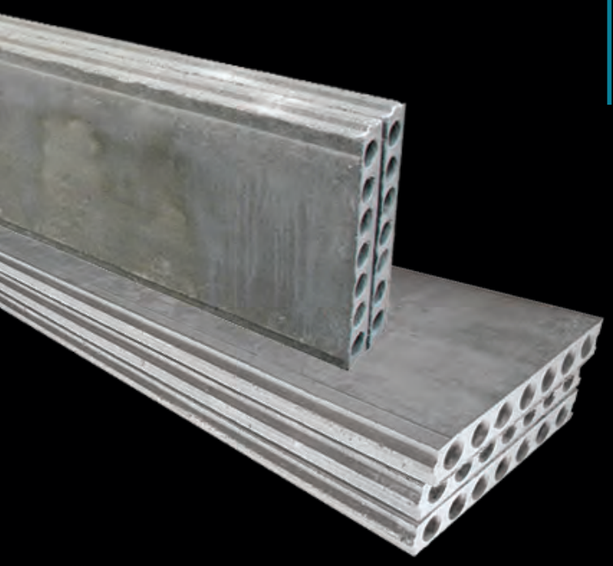
USA

Testimonials

Hearing is Believing

Professional Verdicts :

"The Right Wall Panel for Every Construction"



"Our project hotel Santika Batam had completed in December 2019. We would like to thank JOE Green Team for the full support. We have been satisfied using your products, in terms of cost savings, time and quality of products. We have other projects that may need your support again. We will contact you soon. Thank you very much."

Frans Bambang
Manager
CV. MEGA CONTRACTOR INDONESIA

"Compare to other precast wall panels, we definitely can see the quality and precission of JOE Green panel far more better for INOAC Project."

Tipluk Jati
Director
AGNI **PT. AGNI SATYA PERSADA INDONESIA**

"JOE Green products e.g. panels, brackets and accessories are found to be in high quality standard. JOE Green wall panel system is easy to install & hence can improve productivity. JOE Green's technical support i.e. submission of shopdrawings & details is also excellent. The technical personnel is found to be knowledgeable, responsive. JOE Green panel can be further improved if the panel use in the residential dwelling unit can be lighter in weight, currently need 3 - 4 workers to erect 1 panel"

Lim Jit Heng
Project Manager
長龍峰建築工程有限公司 CHAN RONG FEN BUILDING CONSTRUCTION PTE LTD

"Good material. It would be important to brief customers every construction details shown in the catalogue, especially to the worker of the erector on the dos and don'ts"

Mdm Eng Y H
Project Manager
三達利建設私人有限公司 SANTARLI CONSTRUCTION PTE LTD

"We have been with JOE Green for many years. Their product quality is good & have a broad product range."

Ivy Toh
Contract Manager
WOH HUP BUILDING WITH INTEGRITY

"We are the 1st time work with JOE Green and very satisfy with JOE Green product quality."

Tan Teck Chong
Senior Project Manager
PSYCON SDN BHD

"Installing Joe Green product is very easy. All the material accessories were designed to make it easy. Joe Green product also can be cut to size required, so it can speed up the installation time. We experience those things in one of our project in PIK 2."

Setyowati K
Director
PT. BARA BINTANG SEMESTA

"JOE Green offers wide range of solid and reliable products that not only improve work productivity. It also stands out in term of value proposition that we can offer to our clients"

Wayne Fu Cheng
Director
FU CHENG BUILDING CONSTRUCTION PTE LTD

"Overall service is excellent"

Marvin Laxamana
Quantity Surveyor
誠 建築私人有限公司 YES Construction Pte Ltd

"JOE Green's service is good"

Jackson Tiong
Contract Manager
聯明集團有限公司 LIAN BENG GROUP LTD

"Dear JOE Green, we are very impressed with the strong technical knowledge and fast support of the team. Overall we are very satisfied with your commitment and service"

Soh Lip Hong
Project Manager
BC 新建工程私人有限公司 BHCC CONSTRUCTION PTE LTD

"Quality products, prompt delivery and great support !"

Johnny Xu
Director
CHIAN TECK PEOPLE FOREMOST ADVANCE WITH TIMES

"Service and product quality from JOE Green is good"

May Beh
Purchaser

"The product is good. However the product delivery process need to be improved. Moving forward the contractor's installer need to familiarize with JOE product and take advantage of the speed and quality of JOE product offering for elevating construction industry standard."

Ar. Selamat
Director, JYP Architects Sdn Bhd
Principal, Arkitek Selamat Sdn Bhd
as Arkitek Selamat

"Joe Green products are strong and good quality. The sizes are cut precisely according to our requirement so the waste of material are limited. We do Tokyo Riverside Project."

Harjoto H
Director
PT. TIRTA CITRA BARA PERSADA

JOE™ just one earth
LiGrA™ Lightweight Green Aggregates | Go Global

Expanding into Global Arena

Joe Green success story in Singapore will lead us to be a major global player. By successfully creating innovative Lightweight Green Aggregates (LIGrA) and advanced machinery technologies for wall panel productions. JOE Green will make an impact in the green and lightweight wall system as well as concrete industry globally.

Our aim is to provide alternative conventional wall system that are superior, stronger, lighter for better performance, quality and safe wall system.

Expanding into the global market is our goal and vision to create a new standard Concrete Industry and Wall Panel System recognized internationally.

go green go global

JOE™ just one earth
green concrete panel

Wall Specialist

The Tallest
The Lightest
The Strongest

It Has To Be Us

JOE Green HQ
amazana Building
Singapore

LiGrA™ Lightweight Green Aggregates

The Art of Green Lightweight Technology

Structural & Non-Structural Recycled Lightweight Aggregates are Engineered Here
The Right Aggregates for Concrete, Construction & Other Industries

YOUR SAVINGS, OUR MISSION

PT JOE Green Indonesia
PT Zeroweis Batavia Marketing
Jalan Raya Serang KM.71, Serang 42185,
West Java - Indonesia
Tel: +6221 2262 0685/86/87
Fax: +6221 2262 0681/82
Hp & : +65 9760 5272
E: charlina@joegreenpanel.com

www.joegreenpanel.com

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JOE Green Marketing Sdn Bhd
GM 293, LOT 514 Mukim Senai Industrial Park,
Taman Desa Idaman, Senai 81400,
Johor - Malaysia
Ph: +607 599 7875
Fax: +607 599 7876
Hp & : +60 16 632 2277
E: nikki@joegreenpanel.com

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JOE Green Marketing Pte Ltd
Amazana Building #02-01,
50 MacPherson Road, Singapore 348471
Ph: +65 6745 5377
Fax: +65 6745 1755
Hp & : +65 9760 5272
E: charlina@joegreenpanel.com

Green Label Singapore — Cert. No.:022-015
Eco-Friendly Building Material/Low Emission Concrete/Cement/ 30% Recycled Content

Singapore Green Building Product SGBC Leader — SGBP 3503/1, SGBP 3503/2, SGBP 3503/3, SGBP 3503/4, SGBP 3503/5

MyHIJAU — MyHP00085/17

IMPACT — SIRIM BS EN 14992 : 2007 + A1 : 2012 CERT. NO.: PC000041

U.S. Green Building Council Member

Singapore Entrepreneur 100 Award Year 2021 Winner

Enterprise 50 — Celebrating Singapore's Enterprising Spirit 2021

EQAIMS JAS-ANZ — European Quality Assurance — ISO 9001:2015 — CERTIFICATE NUMBER: JQS-17-0094

EQAIMS JAS-ANZ — European Quality Assurance — ISO 14001:2015 — CERTIFICATE NUMBER: JES-17-0071

EQAIMS JAS-ANZ — European Quality Assurance — ISO 45001:2018 — CERTIFICATE NUMBER: JSH-17-0006

bizSAFE STAR

BEI ASIA AWARDS 2017

CIDB MALAYSIA