

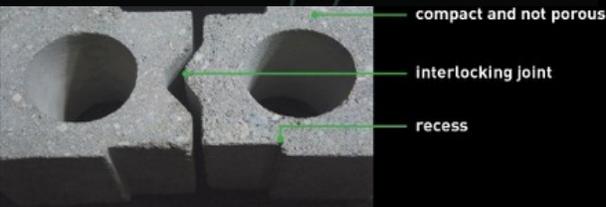
## 绿色混凝土革命的未来



The Art of Lightweight Technology



## JOE Green 的墙板设计 凹槽



Pull-off test (Per Point Load):

- Hollow 400 kg
- Solid 1.2 tones



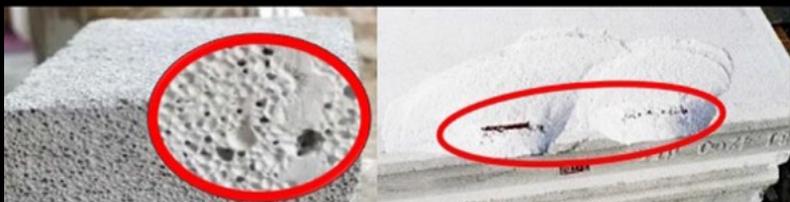
其他类型的墙板

多孔波浪形, 无凹槽设计

容易开裂 (振动)



AAC Block



多孔, 内部腐蚀 BRC, 弯曲且无强度



声级不一致



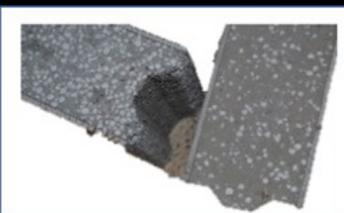
渗水



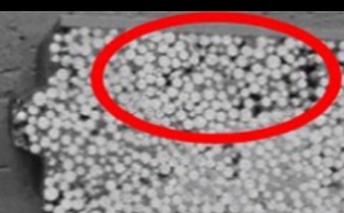
发霉的墙



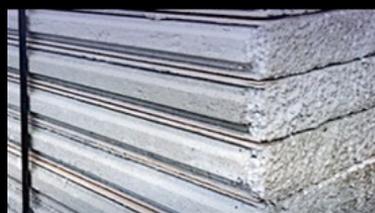
外部开裂



Sandwich Panel/ EPS Beads



质量不一致



低强度



接缝开裂和剥落



剥离



Malaysia

EPF Bldg/KL



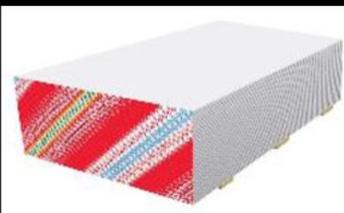
SG



UK

Dubai

易燃和有毒烟雾



Gypsum Board



渗水



霉菌和真菌

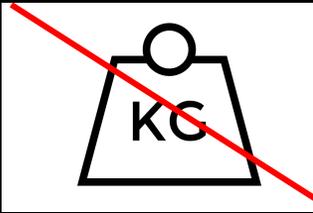


低强度



Require Glasswool

低隔音



### 使用上述材料的墙板的风险:

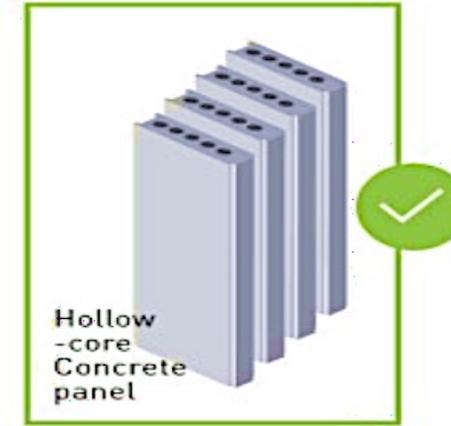
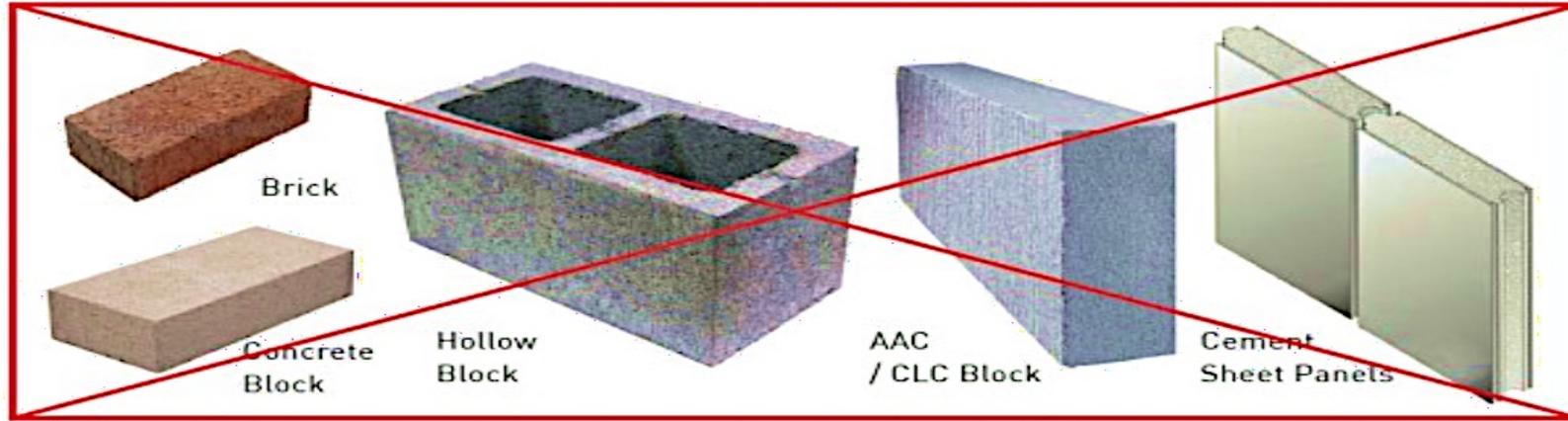
1. 蜘蛛网状裂缝和关节裂缝
2. 吸水/渗水
3. 真菌和霉菌滋生
4. 易燃材料的高风险
5. 低隔热和隔音
6. 有毒烟雾
7. 腐蚀性材料
8. 脱粘
9. 偏转/不均匀表面
10. 空气传播疾病

### 有2个耐火要求:

1. 防火完整性
  - 完好无损
  - 未塌陷
  - 未烧毁
2. 防火绝缘
  - 热量穿透墙壁的时间



# 比较：混凝土空心墙板 v/s ACC 砌块

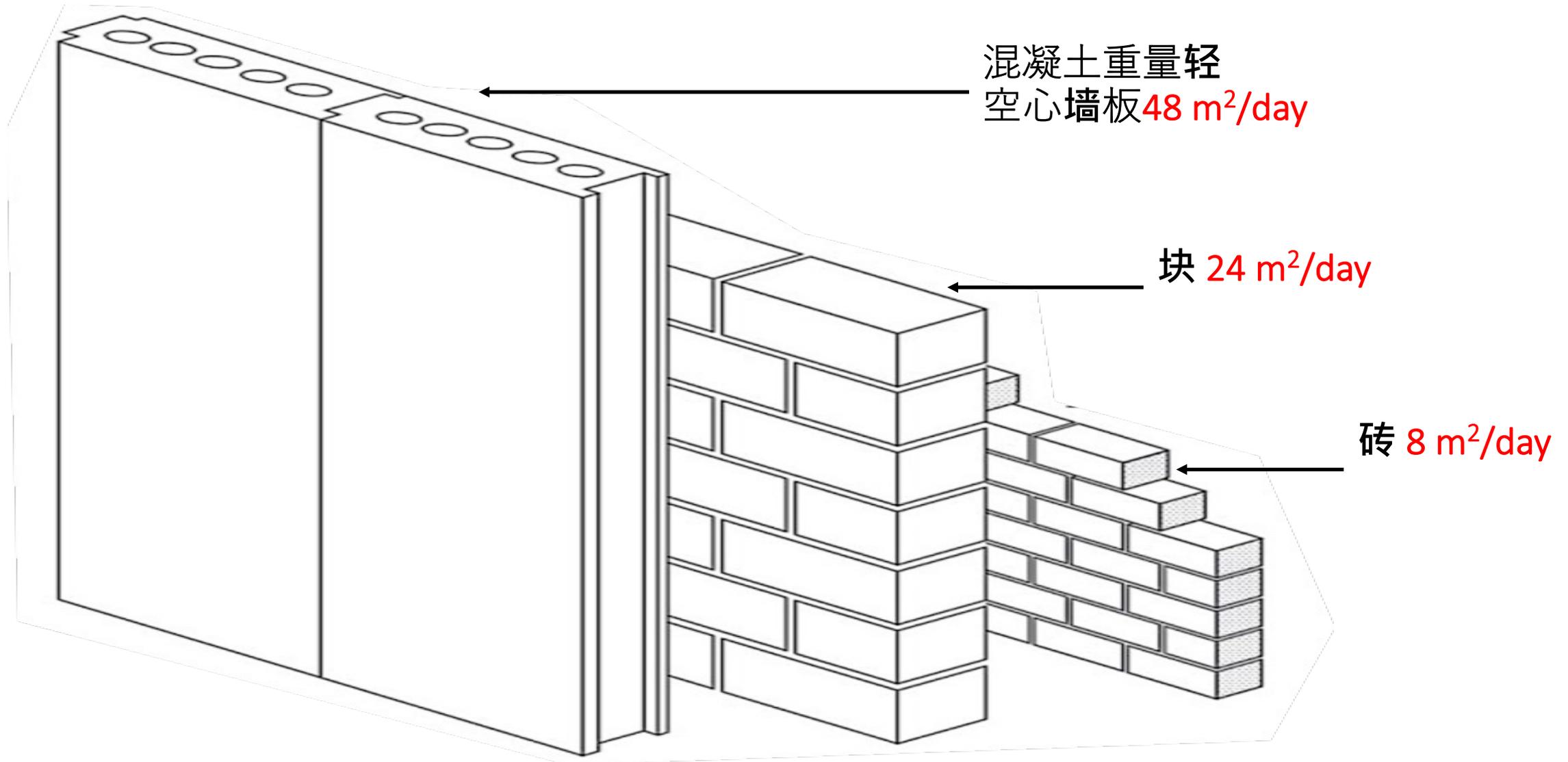


- 非常快速和易于安装，节省时间，最大限度地减少对熟练劳动力的需求。
- 3-4人的团队每天可以安装48-50 m<sup>2</sup>。（比传统方法快5倍）
- 墙板由具有平整度的高强度混凝土制成，因此无需水泥砂浆抹灰。只有1-3mm的薄脱脂涂层。
- 卓越耐潮湿条件，最理想的厨房，浴室，外墙和内墙。
- 完整的墙体系统与其他传统材料（如AAC /实心混凝土砌块和砖）非常有竞争力。
- 对于超大型项目，面板生产可以在现场进行，节省运输，进口税和海关费用。
- 与传统材料相比，增加占地面积，节省石膏厚度。

- 易于M&E安装，只需取芯和插入柔性导管，节省时间，成本和碎屑清除。
- 最少的门楣和加强筋，不需要RC路缘。
- 与传统砌体相比，接缝和砂浆粘合剂的使用次数更少。
- 与石膏砌体相比，重量更轻，节省了结构成本。
- 非常高的压缩立方体强度，为 40-50 MPa。
- 非常高的隔音等级，达到46-49 STC。
- 干净整洁的建筑工地，浪费和杂物少。
- 节省砖/水泥、水、脚手架等的运输。
- 是空心的，对Wifi，互联网网络的阻塞和干扰更少。
- 更好的性能是地震情况下的强度和鲁棒性性能。

# 比较：混凝土空心墙板 v/s ACC 砌块

## 安装速度

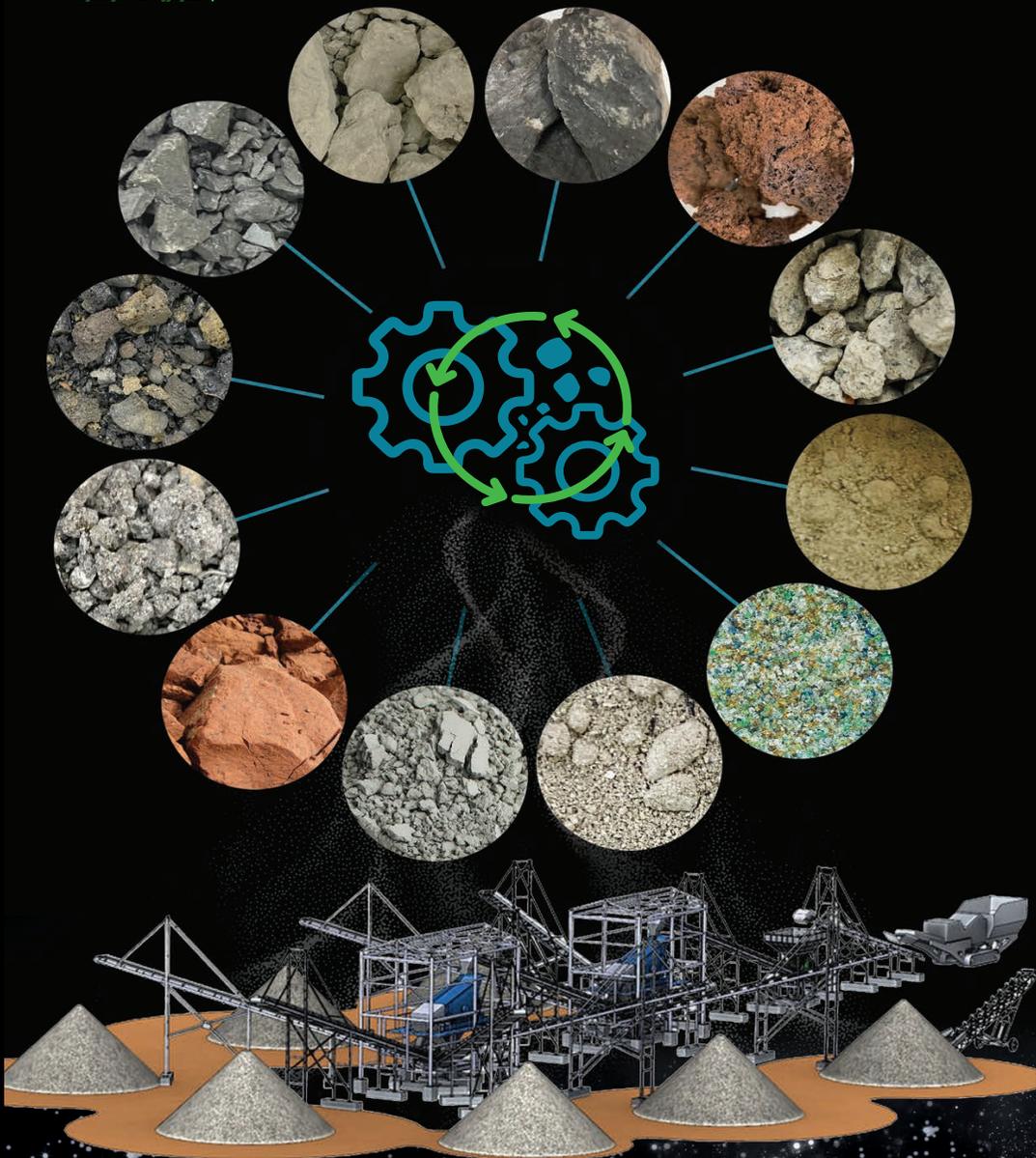




各类工业废料



回收利用



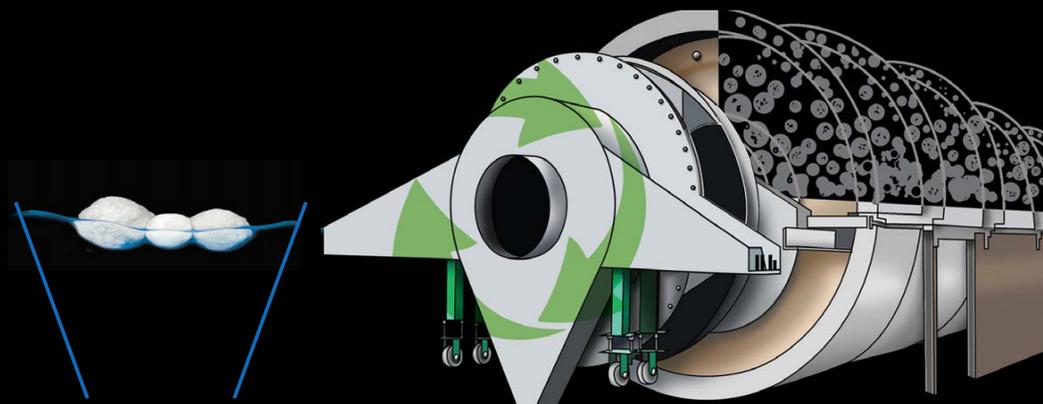
## 轻质绿色骨料工程



生产程序



我们与顶尖的创新制造商展开合作，以便开发出了低碳排放的高科技以及节能设备。





# 是解决方案



LiGrA 凭借其技术能够将废料转化为绿化，环保的轻质骨料，从而作为环保型轻质混凝土的再生骨料。

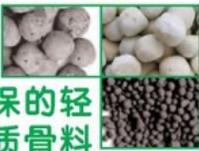
- 提供回收废物的途径
- 减少垃圾填埋和废物处理问题
- 减少对自然资源的开发
- 制造优于其原始形式的产品



环保型轻质混凝土

优点：

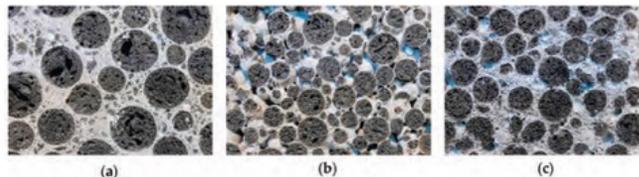
- 节省成本和施工时间
- 节省搬运和运输成本
- 节省基础成本
- 更耐用的结构
- 更抗地震
- 更长的建筑使用寿命
- 立柱间节省的空间更大
- 节省过樑和加劲肋成本
- 较低的起重能力
- 节能
- 建立可持续发展的环境



环保的轻质骨料

优点：

- 轻巧而结实
- 100% 可回收和再循环
- 环保
- 碳排放量更低
- 经济又有竞争力
- 对健康无危害
- 不可燃
- 高耐火性
- 良好的防火隔热能力
- 高隔音
- 吸水率低

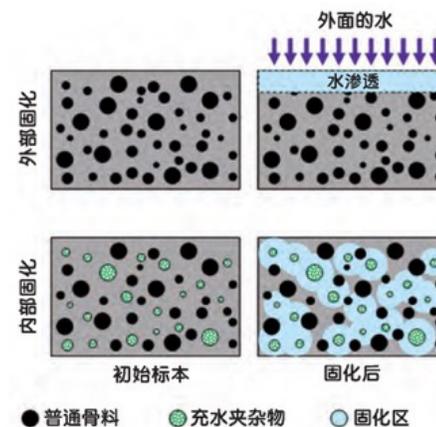


(a) 具有密集矩阵结构的结构轻质混凝土图像；  
(b) 具有开孔结构的轻骨料混凝土图像；  
(c) 多孔基体填充开孔结构的轻骨料混凝土图像

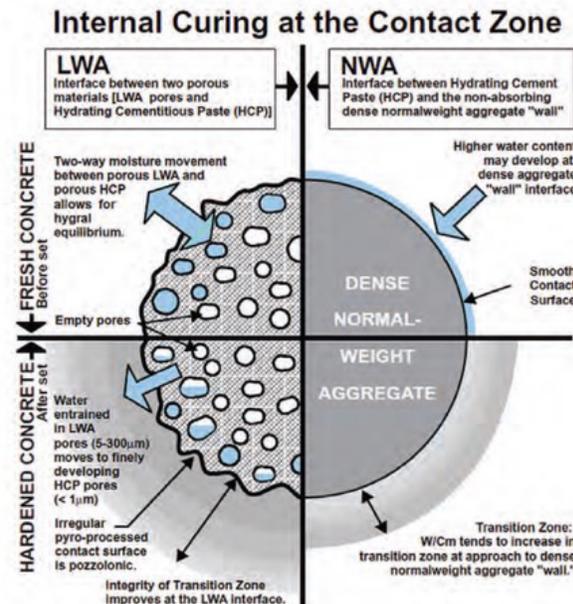
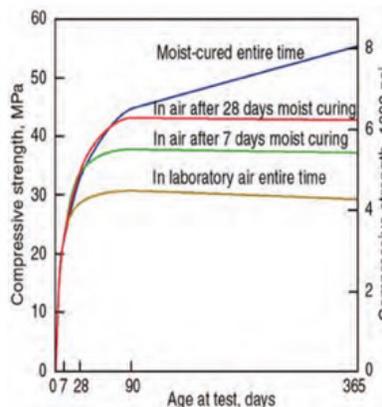


下水轻质混凝土船 U.S.S. 1919 年的 SELMA

1919 年：26.7 兆帕  
1980 年：55.2 兆帕



## 轻质混凝土卓越的性能



再生轻质混凝土优于普通重量混凝土	
内部和外部固化	持续的力量增长
强大的界面骨料和水泥	终身耐用
骨料和水泥的模量相容性	均匀应力分布

LiGrA 的技术与一些知名大学、专业人士和工业参与者的高等教育研究所协力合作，为建筑行业提供先进的建筑材料。我们的新配方和定制产生了许多新产品，这些产品提供了具有成本效益的高质量解决方案，并与技术保持同步并开拓新领域。我们先进的研发实验室和敬业的专业科学家和工程师不断为未来开发新的可持续绿色产品。符合世界 GO GREEN PLAN 的基准。



隔热 (屋顶, 地板, 防火门)	耐热石膏和干灰浆	耐热涂料和墙纸
PPVC & PBU 预制混凝土	轻质建材	轻型现成混凝土和 Industrialised Building System (IBS)
浮动混凝土和结构	油田管道保温	用于陶瓷和聚合物产品的轻质填料
岩土工程应用 (挡土墙, 土壤稳定性和地基)	废水处理	汽车车身复合材料
水培培养基	过滤介质	装饰材料



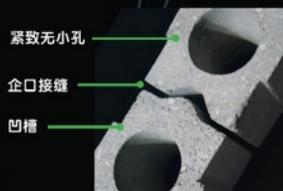
建筑废料



至少含有 30% RCA

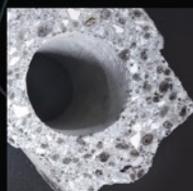


JOE Green 的墙板设计凹槽



**XS/X5**

厚度 : 75 - 200mm  
公称重量 : 128 - 281 kg/m<sup>2</sup>  
防火等级 : 1 - 4 小时  
隔音性能 : STC 47 - 58  
公称密度 : 2,200 kg/m<sup>3</sup>  
吸水率 : 6%  
抗压强度 : >40 MPa



**X3**

厚度 : 75 - 200mm  
公称重量 : 93 - 204 kg/m<sup>2</sup>  
防火等级 : 2 - 4 小时  
隔音性能 : STC 45 - 54  
公称密度 : 1,600 kg/m<sup>3</sup>  
吸水率 : 11%  
抗压强度 : >25 MPa



**X2**

厚度 : 75 - 200mm  
公称重量 : 84 - 166 kg/m<sup>2</sup>  
防火等级 : 2 - 4 小时  
隔音性能 : STC 41 - 50  
公称密度 : 1,300 kg/m<sup>3</sup>  
吸水率 : 14%  
抗压强度 : >15 MPa



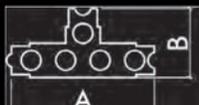
**X1**

厚度 : 75 - 200mm  
公称重量 : 58 - 115 kg/m<sup>2</sup>  
防火等级 : 2 - 4 小时  
隔音性能 : STC 39 - 48  
公称密度 : 900 kg/m<sup>3</sup>  
吸水率 : 15%  
抗压强度 : >5 MPa



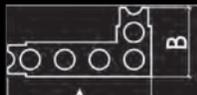
材质 : 环保轻质集料  
特点 : 超轻、结实、坚固  
性能 : 比其它空心墙板轻  
耐火性高  
吸水性低  
隔音性能强  
抗压强度更高  
绿色环保  
经济实惠  
只刷一层灰泥

**T型接头**



可选厚度	尺寸
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型接头**



可选厚度	尺寸
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

**可特殊定制其它尺寸**

- 宽度: 100mm, 200mm, 和 300mm
- 抗拉钢丝数量: 8 - 12 根
- 固体板
- 机电凹槽
- 槽线
- 隔音板
- 钢筋和灌浆抗爆设计
- 钢筋和灌浆加筋板

**定制**

宽度 : 600mm, 300mm, 200mm, 100mm

可选厚度 : 200mm, Ø 64mm  
 150mm, Ø 40mm  
 100mm, Ø 64mm  
 100mm, Ø 40mm  
 90mm, Ø 58mm  
 75mm, Ø 40mm

注: 可供实心面板  
 (75mm 厚除外)  
 可定制面板

**标准 (X5 / X5)**

标准 (X5 / X5)	最大板高
200mm 实心	: 最高 6.0m (带钢丝)
150mm 实心	: 最高 6.0m (带钢丝)
100mm 实心	: 最高 6.0m (带钢丝)
200mm, Ø 64mm	: 最高 6.0m (带钢丝)
150mm, Ø 40mm	: 最高 6.0m (带钢丝)
100mm, Ø 64mm	: 最高 5.2m (带钢丝)
100mm, Ø 40mm	: 最高 6.0m (带钢丝)
90mm, Ø 58mm	: 最高 4.5m (带钢丝)
75mm, Ø 40mm	: 最高 3.3m

注: 高度 3.3m 米以上的面板将  
 采用钢丝, 以确保安全性和抗  
 冲击强度

**X1 & X2 & X3**

X1 & X2 & X3	最大板高
X1 100mm, Ø 64mm	: 最高 5.2m (带钢丝)
X1 100mm, Ø 40mm	: 最高 6.0m (带钢丝)
X2 100mm, Ø 64mm	: 最高 5.2m (带钢丝)
X2 100mm, Ø 40mm	: 最高 6.0m (带钢丝)
X3 100mm, Ø 64mm	: 最高 5.2m (带钢丝)
X3 100mm, Ø 40mm	: 最高 6.0m (带钢丝)

**强化抗拉钢丝**

: 抗拉强度最低 600 MPa  
 (Ø3, Ø4.5, Ø5)

**凹槽设计**

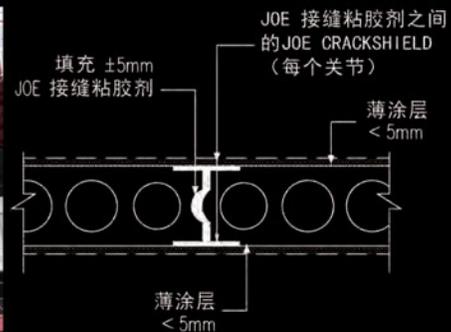
深度 6mm  
 宽度 40mm



垂直安装



水平安装



长板用高强度钢丝加固



钢筋和灌浆定制

## 设计规范和规格

为满足每个项目的独特需求和不同规格要求，例如隔音墙需求和电影院的隔音、防火或防爆等级要求、以及相关形状/图案方面的要求，我们可以修改墙孔数量/墙洞数量、以及布钢线的数量（从8到12根线），且能够满足无孔洞的实心/固体板要求。我们还生产各种厚度的板件、L & T接头和各种配件，以防止接缝破裂并便于安装。

新加坡的带沟槽线设计的隔音墙



墙体图案设计



特殊订购的块尺寸 - 所有厚度和型号



高质量  
超级平  
仅须很薄的腻子涂层

低吸水性  
低水毛细管  
高水密性  
防水涂料少

高防火

高隔音

无泄漏气流

8米  
设计和尺寸  
可以定制  
干净整洁的工作区

减少使用  
过樑和  
加劲肋  
节省建筑  
结构成本

带加固安全钢线的墙板件

坚固安全

坚硬的 = 1.2 吨位  
空洞的 = 400 公斤

强壮, 快速简便的机械电气

更快的安装  
无需脚手架

减少浪费

抗震  
高层建筑抗振

功能要求	JOE 标准环保混凝土面板					
	75mm (Ø40mm)	90mm (Ø58mm)	100mm (Ø40mm)	100mm (Ø64mm)	150mm (Ø40mm)	200mm (Ø64mm)
ASTM - E90						
隔音 [STC]	STC 47*	STC 48*	STC 52*	STC 49* (STC 50-51**)	(STC 55)	(STC 56-58)
ASTM C 518						
热导率 [W/m <sup>2</sup> K] K - 值	0.675	0.6796	1.194	0.665	无	无
热阻 [m <sup>2</sup> °K/W] R - 值	0.111	0.132	0.0832	0.1484		
BS 476: 第 22 部分 : 1987						
耐火性能						
完整性	132分钟*	68分钟*	132分钟**	132分钟*	无	无
隔热性	125分钟*	68分钟*	132分钟**	131分钟*		
挠曲试验 [mm]	33mm	65mm	42mm	25mm		
曲线下的面积与标准之差 [%]	0.1	0.1	0.0	0.2		
耐火性 (4 小时, 单墙)						
完整性	无	无	无	无	260分钟*	260分钟*
隔热性					260分钟*	260分钟*
挠曲试验 [mm]					35mm	19mm
曲线下的面积与标准之差 [%]					-0.1	0.1
BS EN 772						
抗压强度 - 立方体	57.90 N/mm <sup>2</sup>					
抗压强度 - 截面	42.8 N/mm <sup>2</sup>	31.6 N/mm <sup>2</sup>	48.2 N/mm <sup>2</sup>	37.0 N/mm <sup>2</sup>	50.8 N/mm <sup>2</sup>	34.90 N/mm <sup>2</sup>
SS 271: 1983						
吸水性 [24 小时浸泡] - Setesco 实验室 [不得超过 23.5%]	7.15 %	7.16 %	7.81 %	6.63 %	6.37 %	5.89 %
干燥收缩 - Setesco 实验室 [不得超过 0.09%]	0.05 %					
SS 492: 2001 / BS 5234 (冲击测试)						
隔声刚度的确定	标准偏差	标准偏差	无	标准偏差	无	无
小型硬体撞击造成的表面损坏	标准偏差	标准偏差		标准偏差		
小型硬体冲击造成的穿孔	标准偏差	标准偏差		标准偏差		
大型软体冲击造成的损坏	标准偏差	标准偏差		标准偏差		
大型软体冲击造成的结构损坏	标准偏差	标准偏差		标准偏差		
摔门测试	标准偏差	标准偏差		标准偏差		
轻型锚具拉拔试验	通过了	通过了		通过了		
轻型锚具下拉试验	通过了	通过了		通过了		
重型锚具洗涤盆 [N]	1500	1500		1500		
重型锚具壁厨 [N]	4000	4000		4000		
水平荷载/人群压力 [3.0 kN/m]	达 3.0 kN/m	达 3.0 kN/m	达 3.0 kN/m			
1. 挠度 [mm]	-0.04	-0.06	-1.2			
2. 残余挠度 [mm]	0	0	-0.1			
抗弯强度 [N/mm <sup>2</sup> ]	10.80 N/mm <sup>2</sup>					

功能要求	JOE 标准环保混凝土面板		JOE 环保轻型板				
	100mm 实心	150mm 实心	100mm (Ø64mm) X1	100mm X1 实心	100mm (Ø64mm) X2	100mm X2 实心	100mm (Ø64mm) X3
ASTM - E90							
隔音性能 [STC]	(STC 54-55)	(STC 57-58)	STC 41*	无	STC 43*	(STC 45)	STC 47*
ASTM C 518							
热导性 [W/m <sup>2</sup> K] K - 值	0.9012	无	0.2306	无	0.535	无	0.4393
热阻 [m <sup>2</sup> °K/W] R - 值	0.111		0.434		0.189		0.2276
BS 476: 第 22 部分 : 1987							
耐火性能							
完整性	无	无	196分钟*	无	132分钟*	无	无
隔热性			169分钟*		120分钟*		
挠曲试验 [mm]			-3mm		12mm		
曲线下的面积与标准之差 [%]	0.0		0.1				
耐火性 (4 小时, 单墙)							
完整性	260分钟*	260分钟*	无	240分钟*	无	240分钟*	120分钟*
隔热性	260分钟*	260分钟*		240分钟*		240分钟*	120分钟*
挠曲试验 [mm]	5mm	23mm		8mm		32mm	25mm
曲线下的面积与标准之差 [%]	0.0	0.0		0.0		0.0	0.0
BS EN 772							
抗压强度 - 立方体	57.90 N/mm <sup>2</sup>		-	-	-	-	-
抗压强度 - 截面	40.9 N/mm <sup>2</sup>	-	3.7 N/mm <sup>2</sup>	7.1 N/mm <sup>2</sup>	11.3 N/mm <sup>2</sup>	17.5 N/mm <sup>2</sup>	19.6 N/mm <sup>2</sup>
SS 271: 1983							
吸水性 [24 小时浸泡] - Setesco 实验室 [不得超过 23.5%]	5.57 %	无	14.94 %	20.16 %	14.60 %	12.58 %	11.31 %
干燥收缩 - Setesco 实验室 [不得超过 0.09%]	0.05 %		0.09 %		0.08 %		0.07 %
SS 492: 2001 / BS 5234 (冲击测试)							
隔声刚度的确定	无	无	标准偏差	无	标准偏差	无	标准偏差
小型硬体撞击造成的表面损坏			标准偏差		标准偏差		标准偏差
小型硬体冲击造成的穿孔			标准偏差		标准偏差		标准偏差
大型软体冲击造成的损坏			标准偏差		标准偏差		标准偏差
大型软体冲击造成的结构损坏			标准偏差		标准偏差		标准偏差
摔门测试			标准偏差		标准偏差		标准偏差
轻型锚具拉拔试验			通过了		通过了		通过了
轻型锚具下拉试验			通过了		通过了		通过了
重型锚具洗涤盆 [N]			1500		1500		1500
重型锚具壁厨 [N]			4000		4000		4000
水平荷载/人群压力 [3.0 kN/m]	达 3.0 kN/m	达 3.0 kN/m	达 3.0 kN/m				
1. 挠度 [mm]	-0.745	-2.334	-0.4				
2. 残余挠度 [mm]	-0.2	-0.2	-0.1				
抗弯强度 [N/mm <sup>2</sup> ]	10.80 N/mm <sup>2</sup>		0.8 N/mm <sup>2</sup>		3.5 N/mm <sup>2</sup>		4.45 N/mm <sup>2</sup>

**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 submerged 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 RESULTS	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	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) <sup>2</sup>	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 <sup>2</sup> s <sup>0.5</sup>	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 Conductivity (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) <sup>1</sup>	40 - 46 (11dB Drop after 3-6 Mos) <sup>1</sup>	41	41 - 50	35 - 52 (Rock Wool) (Requires Insulation)	39 - 48	
PERFORMANCE	Buildability (Labour Saving Index)	0.85 <sup>a</sup>	0.85 <sup>a</sup>	Demerits	0.85 <sup>a</sup>	0.10	0.85 <sup>a</sup>	0.85 <sup>a</sup>	1.00	0.85 <sup>a</sup>	
	Productivity (m <sup>2</sup> /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 (6M)	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	
COST SAVINGS	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
SAVINGS	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 Housekeeping & 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	-	

# 保持强度测试

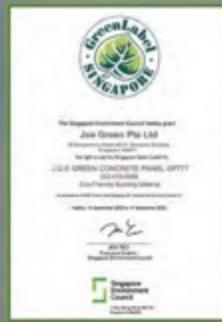
SS 492:2001/BS 5234



6 米高的 JOE 绿色轻质混凝土板，每个植物箱重约 200 公斤



5.4m JOE 绿色混凝土面板，带脱脂涂层，在单个重力锚固上加载 650 千克

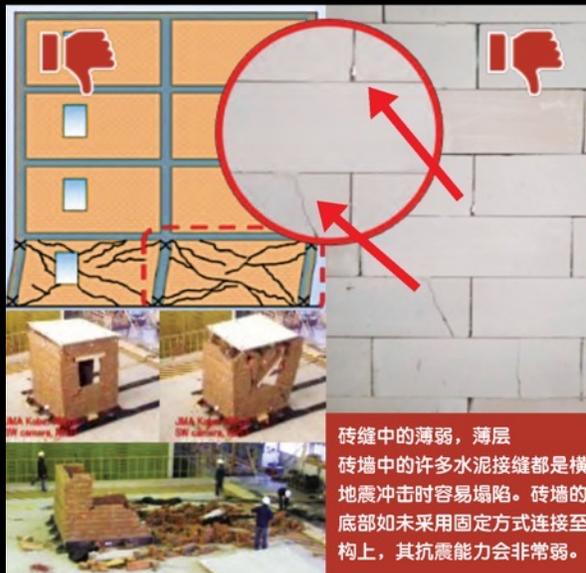


Singapore Green Mark		Higher Scoring			
Requirements		X1	X2	X3	XS/XS
1	<b>ENERGY EFFICIENCY</b> Reduced Heat Gain   ETTV	✓	✓	✓	✓
2	<b>HEALTH &amp; WELLBEING</b> HW 1.2 HW 1.2 Material Emissions HW 2.3 Sound	✓	✓	✓	✓
3	<b>RESILIENCE</b> RE 1.1 b Resources RE 1.2b Urban Heat Island Mitigation	✓	✓	✓	✓
4	<b>WHOLE LIFE CARBON</b> 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	<b>MAINTAINABILITY</b> 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		Higher Scoring			
Applicable GBI Credits	Criteria	X1	X2	X3	XS/XS
1	<b>Energy Efficiency</b> Minimum Energy Efficiency Performance	✓	✓	✓	✓
2	<b>Indoor Environmental Quality</b> Indoor Air Pollutants Mould Prevention Internal Noise Levels / Sound Insulation IQA Before & During Occupancy	✓	✓	✓	✓
3	<b>Sustainable Planning &amp; Management</b> Sustainable Construction Classic - Quality Assessment System for Building IBS - Industrialised Building System	✓	✓	✓	✓
4	<b>Materials &amp; Resources</b> Material Reuse & Selection Recycled Content Materials Regional Materials Material Manufacture & Ingredients Storage & Collection of Recyclables Construction Waste Management	✓	✓	✓	✓





砖缝中的薄弱，薄层  
砖墙中的许多水泥接缝都是横线，在地震冲击时容易塌陷。砖墙的顶部和底部如未采用固定方式连接至建筑结构上，其抗震能力会非常弱。



#12 JMA Kobe 110% (+/- 200mm, 1 g)  
(front view)  
PHIVOLCS-DOST and NIED

产品:  
JOE Green 带加固安全钢线的墙板系统

事件:  
被叉车撞到并损坏

地点:  
Tampines 仓库 L3

解决方案:  
容易通过修补和灌浆修复



墙被叉车意外击中损坏

重载安装能力  
普通锚套 M8 每点高达  
400公斤(空心部分)和 1.2 吨位(实心部分)



JOE 墙板的其他功能应用用作两倍体积区域的防火强力天花板



Live Load

**带加固安全钢线的墙板系统**

带加固安全钢线的墙板系统  
如墙板上无太多横线接口，且墙的顶部和底部采用支架/销钉以固定方式连接，将更能够承受振动力。

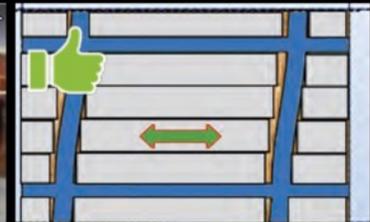


PANEL EARTHQUAKE RESISTANT

钢丝增强墙面板的接头牢固，牢固，完全接触。可以将地震的影响降低到最低



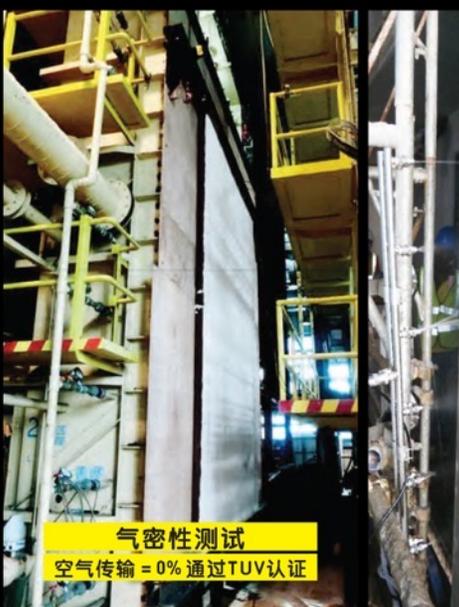
Earthquake Proof Building Design - Chile



加强强度和安全性 的钢丝



**医院气密性测试 (NCID)**



气密性测试  
空气传输 = 0% 通过TUV认证

**外墙水密性测试**



水密性测试 = 0% 渗漏

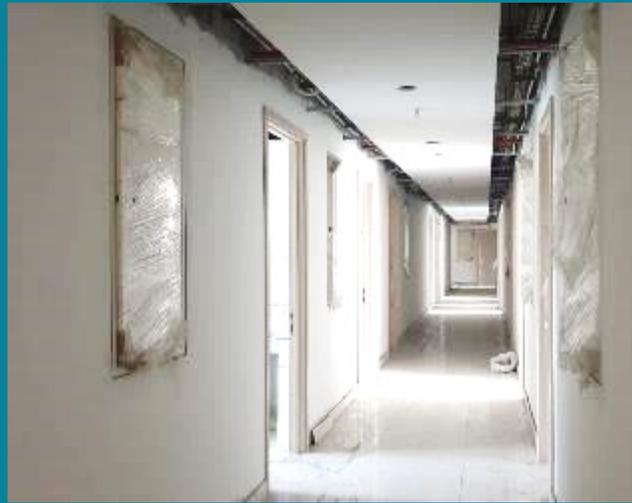
优越、坚固、扁平 and 线材定制

使用高张力钢线

600 Mpa

为了更好的弯曲强度和安全性

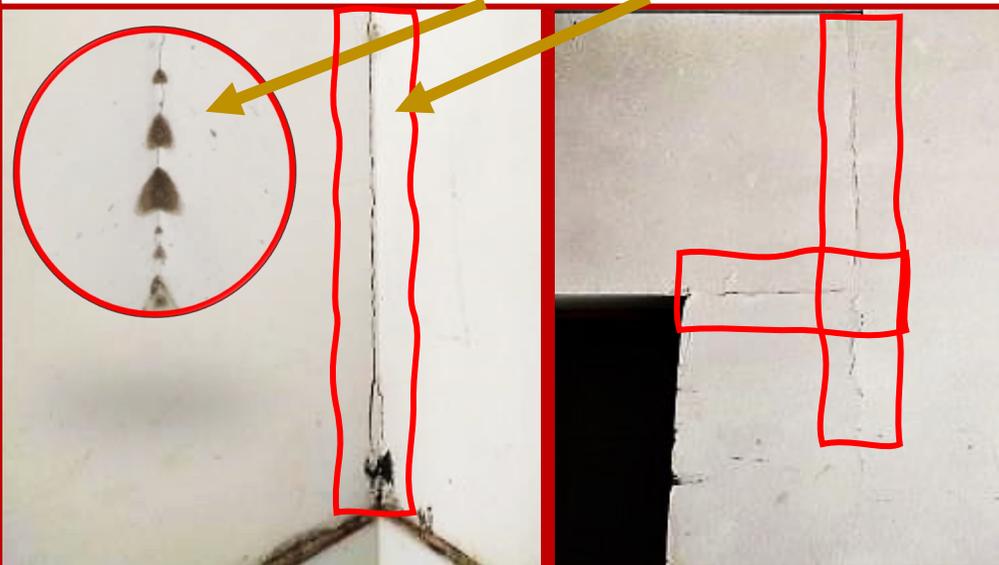
Wire Reinforcement for Strength & Safety



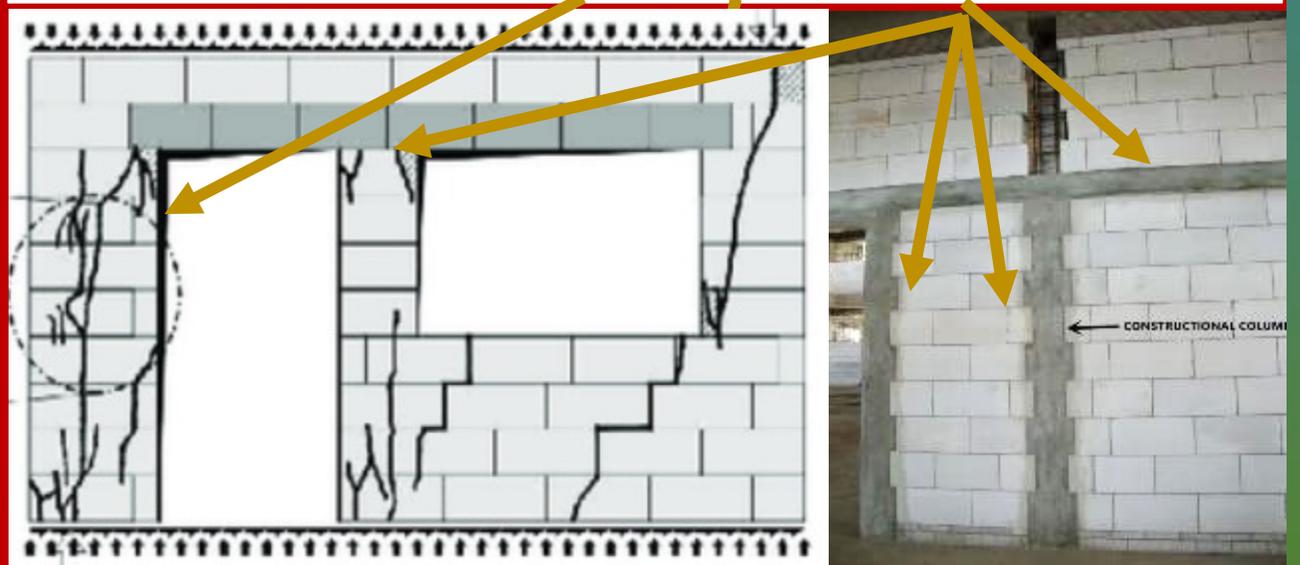
减少门楣/过梁、分力柱和柱子的使用



其他：霉菌真菌滋生和施工期间的开裂



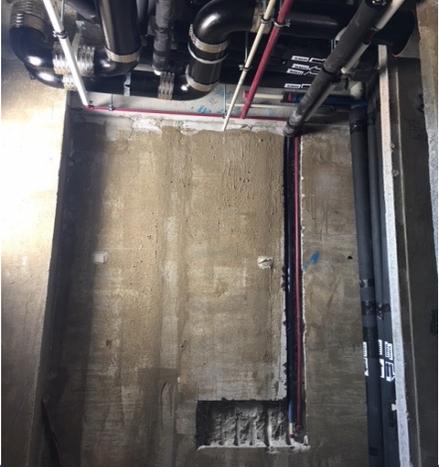
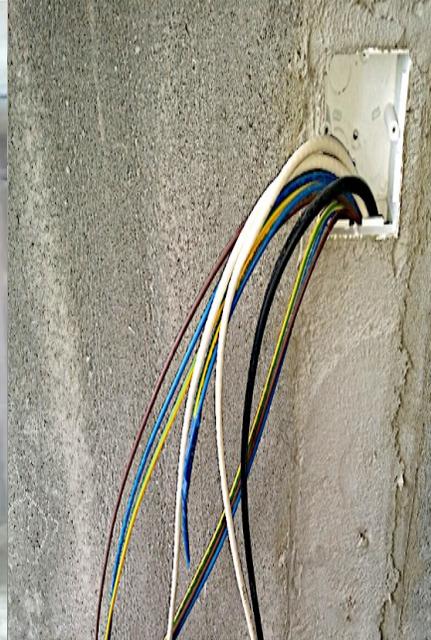
其他：强力关门而导致的裂缝，需要增加分力柱/过梁加固



# 机械和电气应用 (M&E)

快速, 高效的凿墙方法, 实现灵活的机电工艺

M&E 导管可以插入空芯, 无需修整凹槽以嵌入管道



简单快速的机电接线。  
最佳在金属导管上节省时间和成本

嵌入式切割KO盒子。

空心设计, 便于机电

可直接切割更大的管道

# JOE GREEN –新加坡建设局- PPVC 预制预成体积组件和 马来西亚建设局-IBS -工业建筑系统

1

50 次循环 – 热晒， 雨水测试



2

水毛细管测试



3

防火等级和墙体完整性测试



PPVC预制体积组件、PBU预制卫生间、卧室、厕所和机电，排水管道应用



PPVC预制体积组件运输问题：

- ❌ 载重 (30 吨以上)
- ❌ 雨水影响吸水率
- ❌ 需要使用轻质技术以减少 避免开裂/损坏

LiGrA 对 PPVC预制体积组件 和 IBS 预制卫生间的好处

- 👍 节省建筑基础成本
- 👍 减少和节省超级起重机型与起重
- 👍 更低的碳足迹和更少的材料使用
- 👍 节省成本和时间的的好处

# 用于 PPVC 的 JOE Green 墙板

在新加坡PPVC精加工场安装空心墙板

JOE Green 预制  
混凝土空心墙板  
到厨房和卧室。



JOE Green 预制  
混凝土空心墙板  
到厨房和卧室和  
阳台管道。

# 用于 PPVC 的 JOE Green 墙板

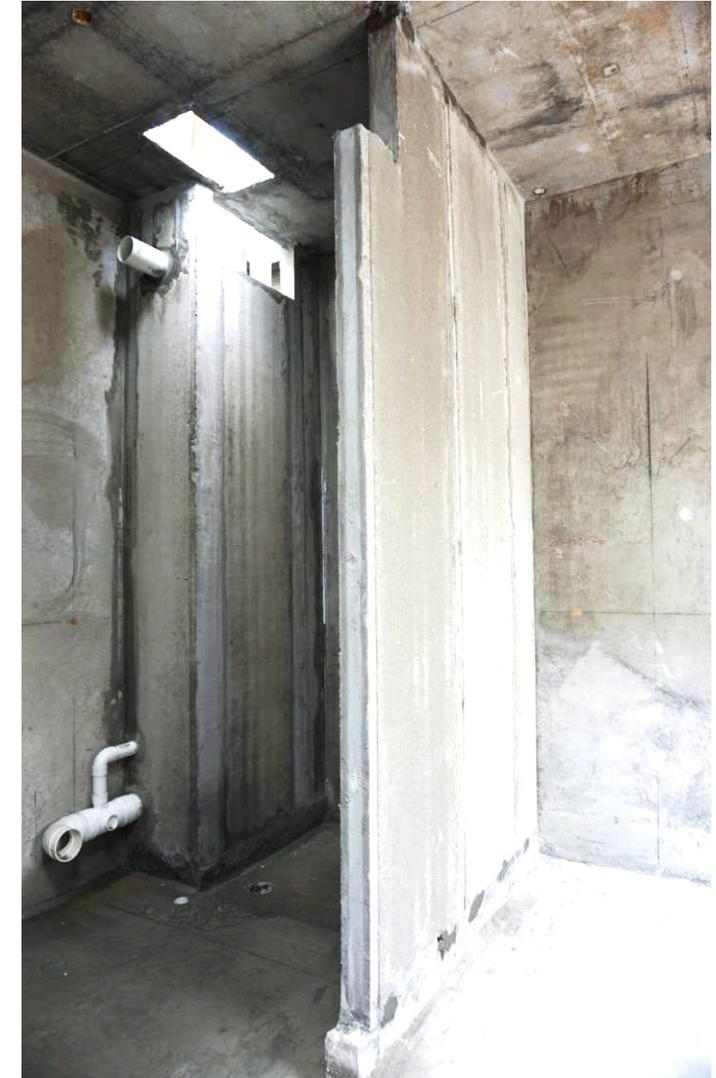
## Mock-up Installation of JOE Green Hollow Core Wall Panel at PPVC Precast Yard in Senai, Johor Malaysia



Bedroom Toilet and Service Duct application.

# 用于 PPVC 的 JOE Green 墙板

PPVC – In Build Bathroom ( IBB ) Wet Area Applications - Toilet / Bathroom / Bedroom and Kitchen



# 马来西亚 CIDB - 预制墙板安装培训中心

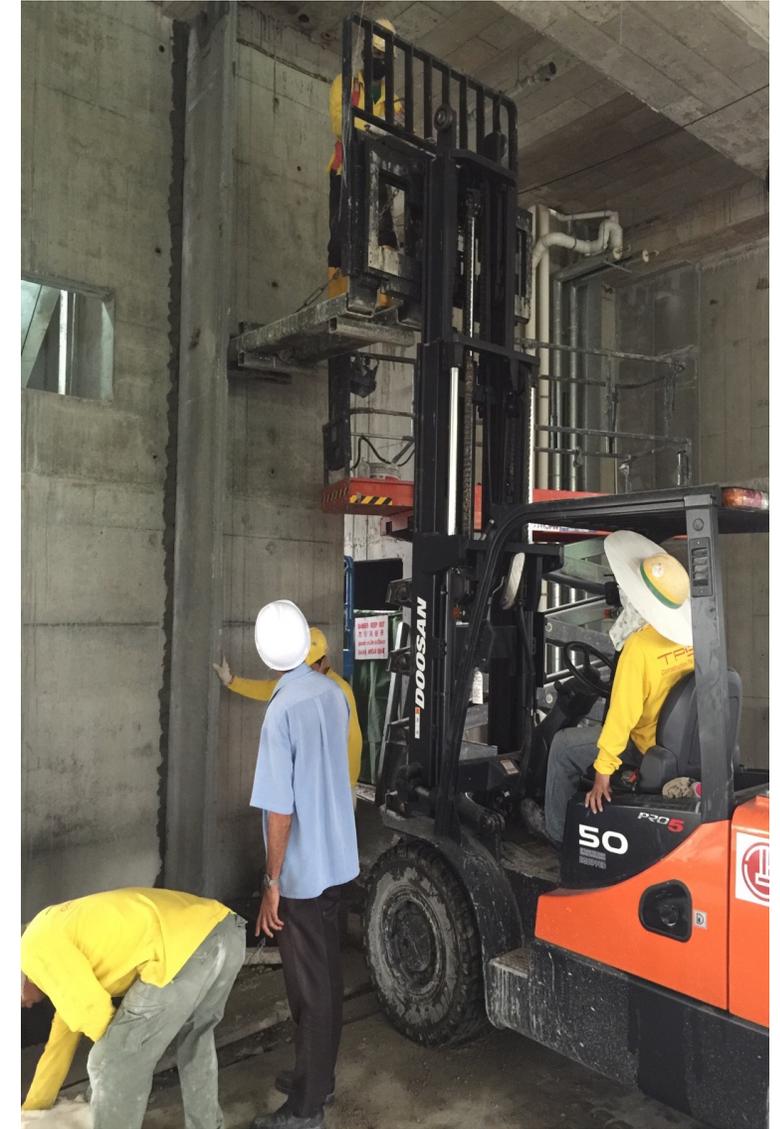
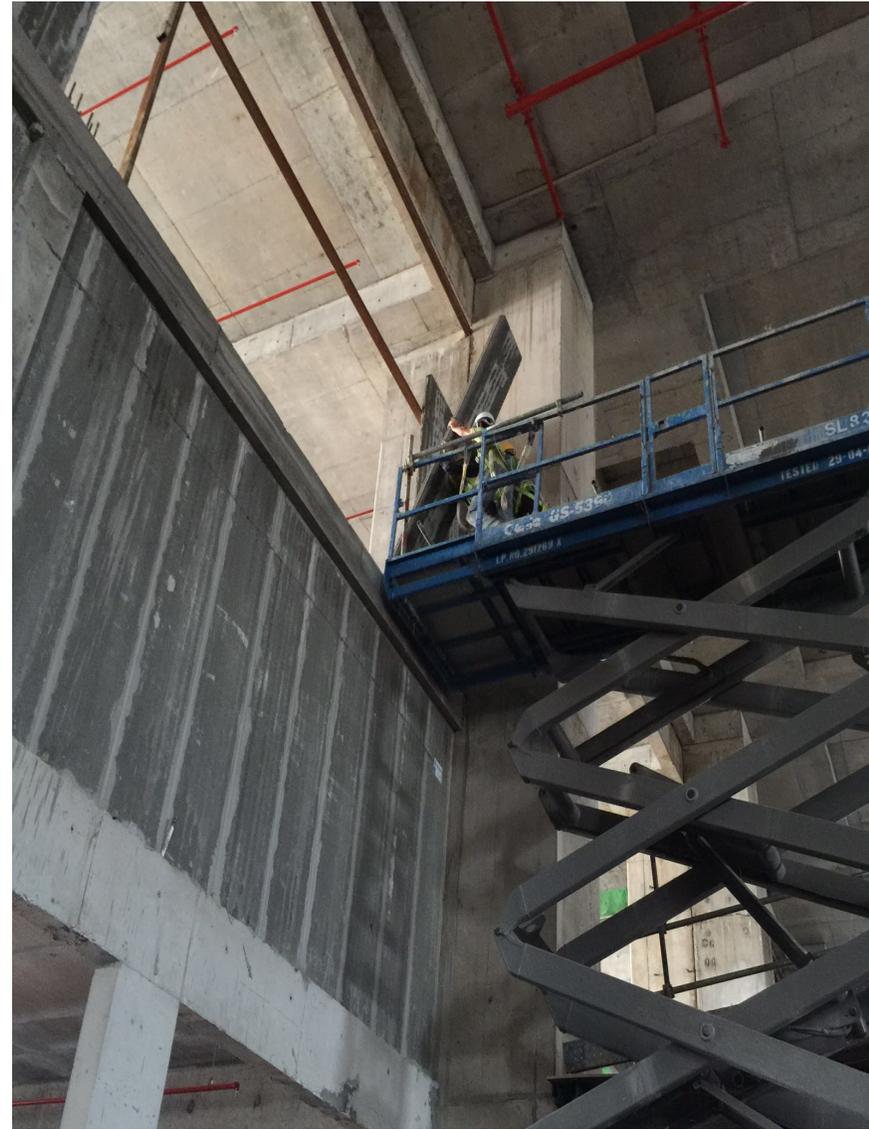


# JOE Green 墙板安装



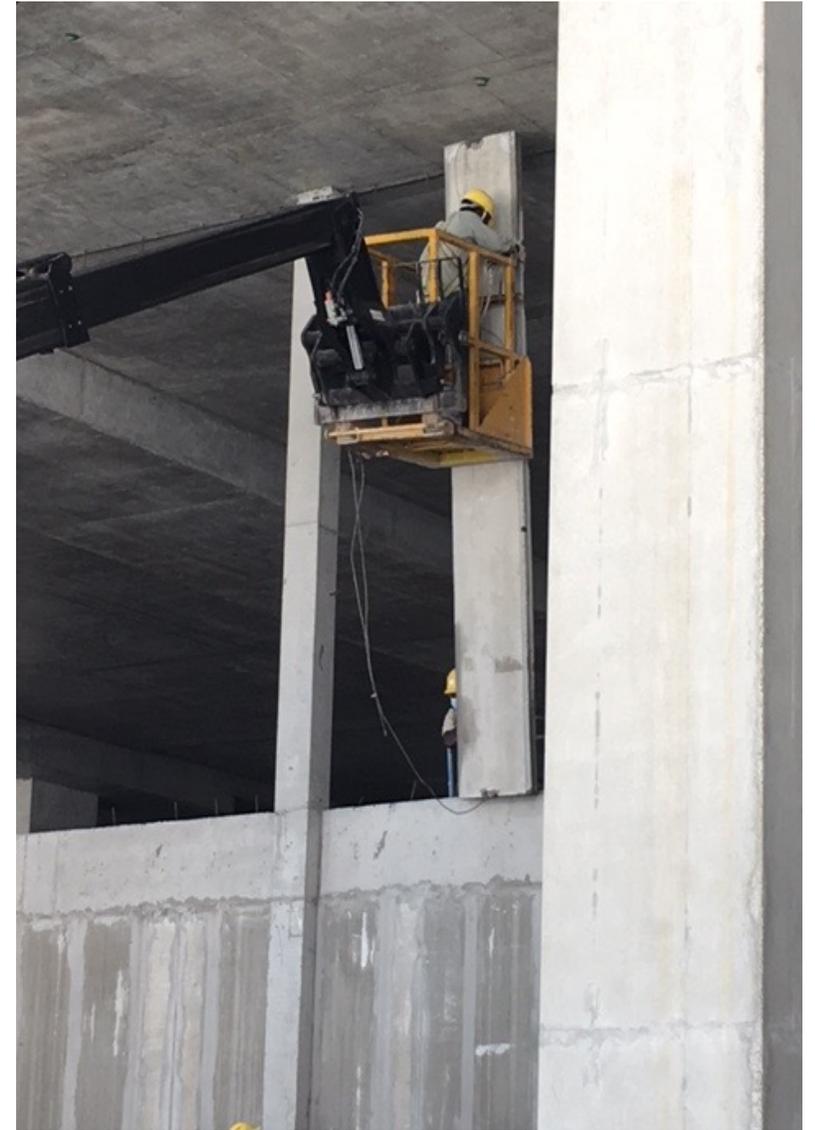
Using Electric Stacker for Lifting and Installation

# JOE Green 墙板安装



Using Forklift and Scissor Lift for Lifting and Installation

# JOE Green 墙板安装



Using Forklift and Lorry Crane for Lifting and Installation

# 使用销钉/钢筋（外墙）方法

## 使用手推车移动面板



## 对齐和调整

- 底部间隙 (+/-25mm)
- 顶部间隙 (+/-25 毫米)
- 使用木楔



在梁和板上插入 T10 销钉/钢筋

由 Makita 电动圆盘刀轻松切割，为 M&E 等做任何开口



应用 JOE JOINT BONDING 粘合剂



# 使用JOE L 型支架（内墙）方法

- 安装孔塞与顶缝全接触灌浆。
- 在施工过程中防止渗漏。

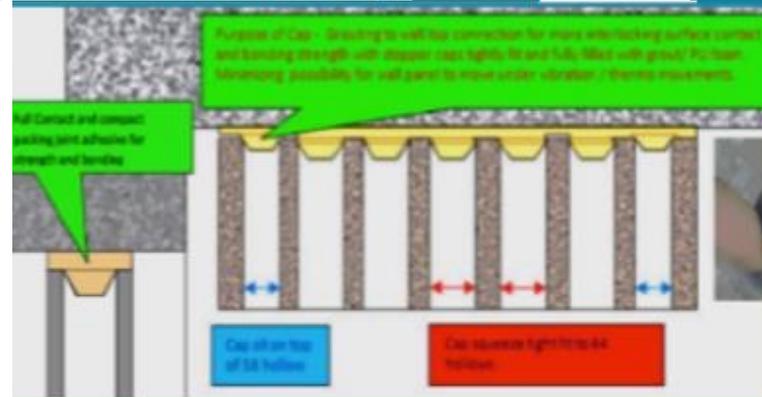


L 型支架（顶部）



L 型支架（底部）

每个面板 2 个支架  
1 个顶部和 1 个底部  
非常强，不须切割墙面。  
减少垃圾，浪费和工时。  
更便宜的建设成本。  
灌浆/粘合剂成本节约。  
安全、一致和高效





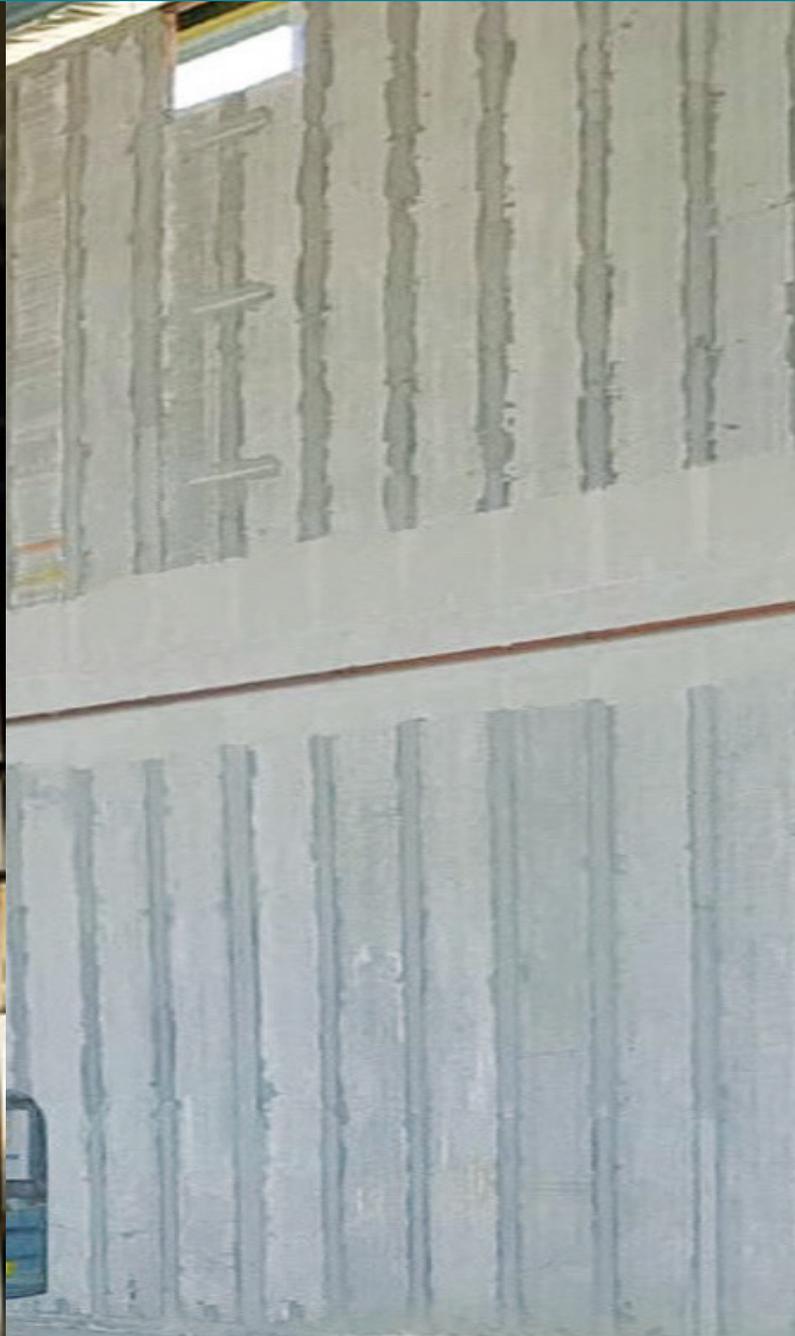
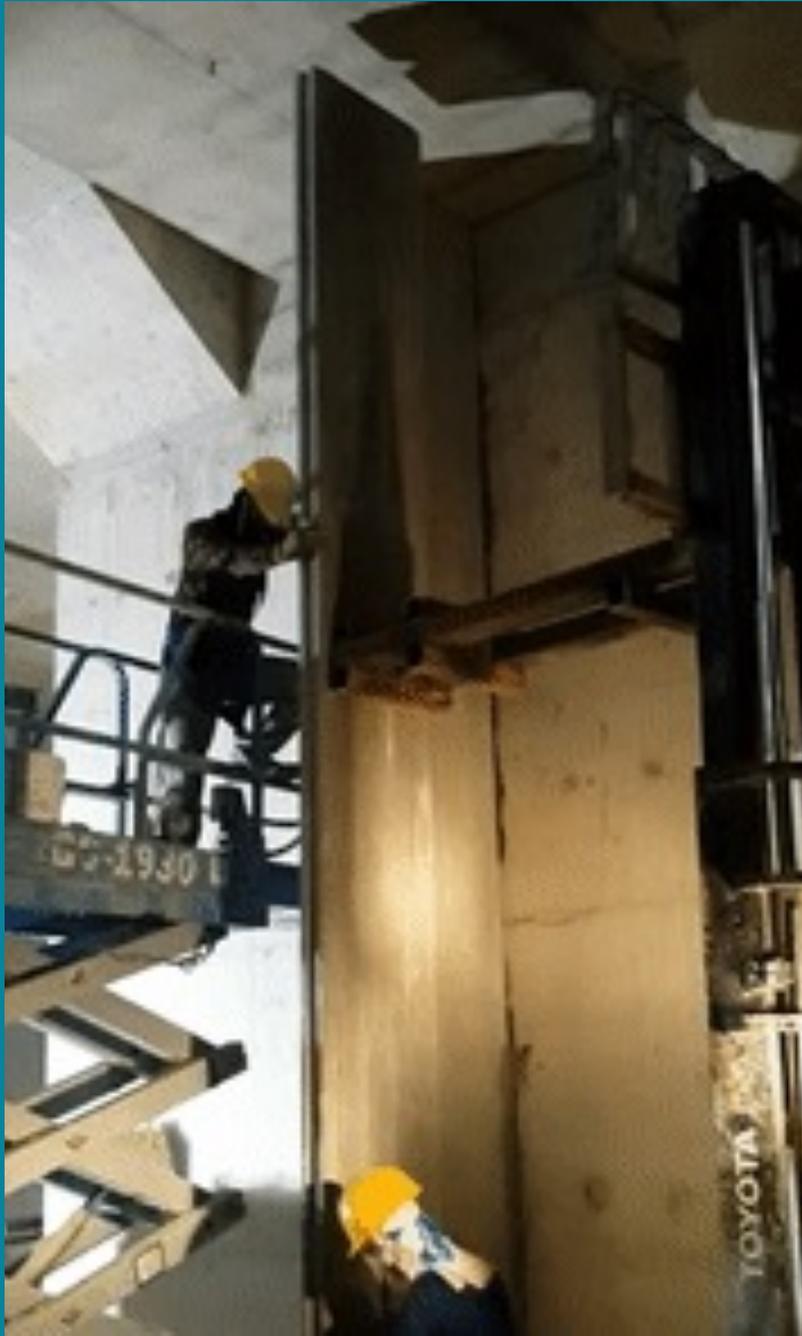
2.8M高墙

2-3人一组安装

只须5 分钟可装一面板

使用手推车易于操作





- ✓ 5.2M 高墙
- ✓ 叉车 +
- ✓ 3人一组安装
- ✓ 5 分钟可装一面板
- ✓ 电动堆垛机/叉车
- ✓ 可带延叉臂，  
由PE设计和特殊应用

**JOE Accessories**  
**LiGrA 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                      Setting Time : Initial - 5 hours  
Density : 1.4 gm/cm<sup>3</sup>                      Consumption (approximate) :  
Open Time : 30 minutes                      1 bag = 6 m<sup>2</sup> - 8 m<sup>2</sup>

**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 20% 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 CRACKSHIELD**



**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.



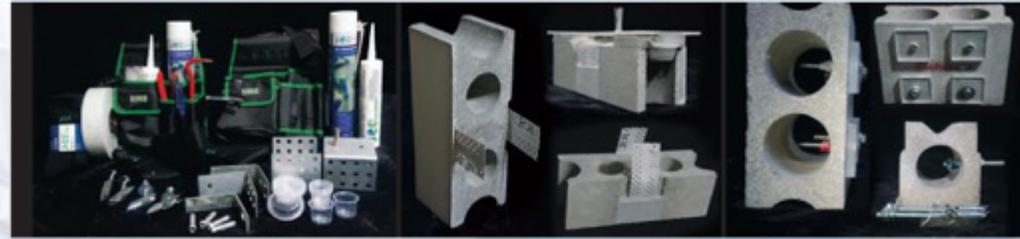
**JOE Accessories**  
**LiGrA STOPPERCAP**



- 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	40mm	500 Pieces	To all TOP hollow cores of wall when installing vertically or to both sides of wall when installing horizontally
	20mm	58/64mm	500 Pieces	

**TOTAL SOLUTION**



**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



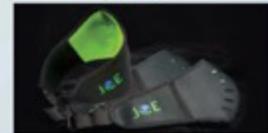
**JOE SAFETY EQUIPMENT**  
SOCKS



**JOE ACCESSORIES**  
GRAVITY ANCHOR



**JOE ACCESSORIES**  
L BRACKET



**JOE SAFETY EQUIPMENT**  
MASKER

**PUBLIC DEVELOPERS**



**DEVELOPERS**



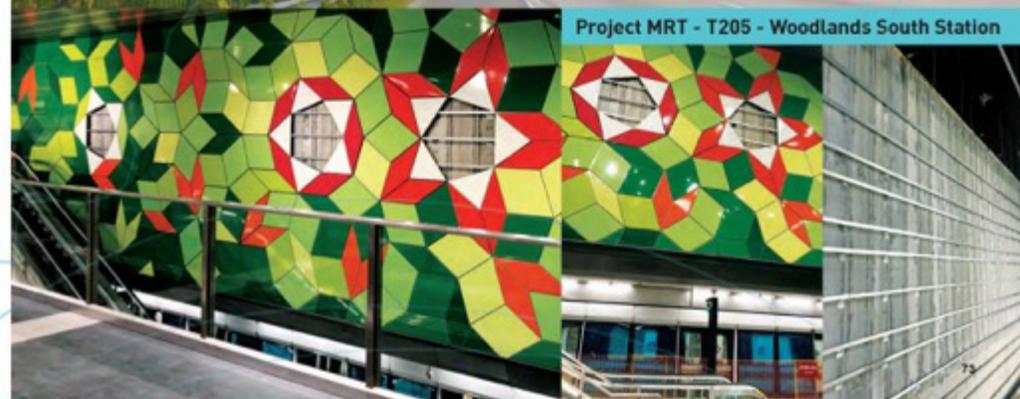
**ARCHITECTS**



**MAIN CONTRACTORS**



Efficient & Cost Effective Noise Barrier Walls



Project MRT - T205 - Woodlands South Station



**STARS OF KOVAN**



**ROYAL SQUARE**



**Hillion**

**MARINA ONE**  
Residences | Offices | Retail

**Northpoint City** **NORTH PARK**





THE WOODLEIGH RESIDENCES

THE WOODLEIGH MALL

SOUTH BEACH

EON SHENTON

V ON SHENTON

DUO RESIDENCE OFFICE 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

ONE HOLLAND VILLAGE Residences



Twin VEW Condominium



Martin Modern Condominium



THE CREST Condominium

Principal Garden Condominium

Alexandra Primary School



Waterside EC at Punggol Field Walk



SIMS URBAN OASIS



SEASIDE



LAKEVILLE





COMMONWEALTH TOWERS

  
 QUEENS PEAK

THE triling 御品

Centennia suites

 MARGARET VILLE

  
 GEM RESIDENCES

  
 EDEN



THE ALPS Residences



18 Woodsville Condo

Sant Ritz Condo

Park Colonial Condo

Sennett Residence

The Woodleigh Residences

HDB Bidadari

A New Facelift of Upper Serangoon Rd



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 Edgetale Plains



THE TOPHAT 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 Esia Condominium



KIVAN REGENCY Condominium



THE INFLORA Condominium



eHubitat Condominium



SKY GREEN Condominium



WILSHIRE RESIDENCES



SIGNATURE AT YISHUN Executive Condominium



RARC Life Condominium



Waterfront Gold Condo at Bedok Reservoir Rd



ROYALGREEN Condominium @ Bukit Timah



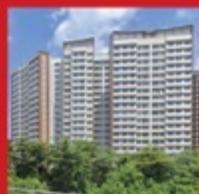
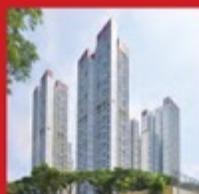
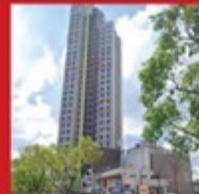
15 Holland Hill

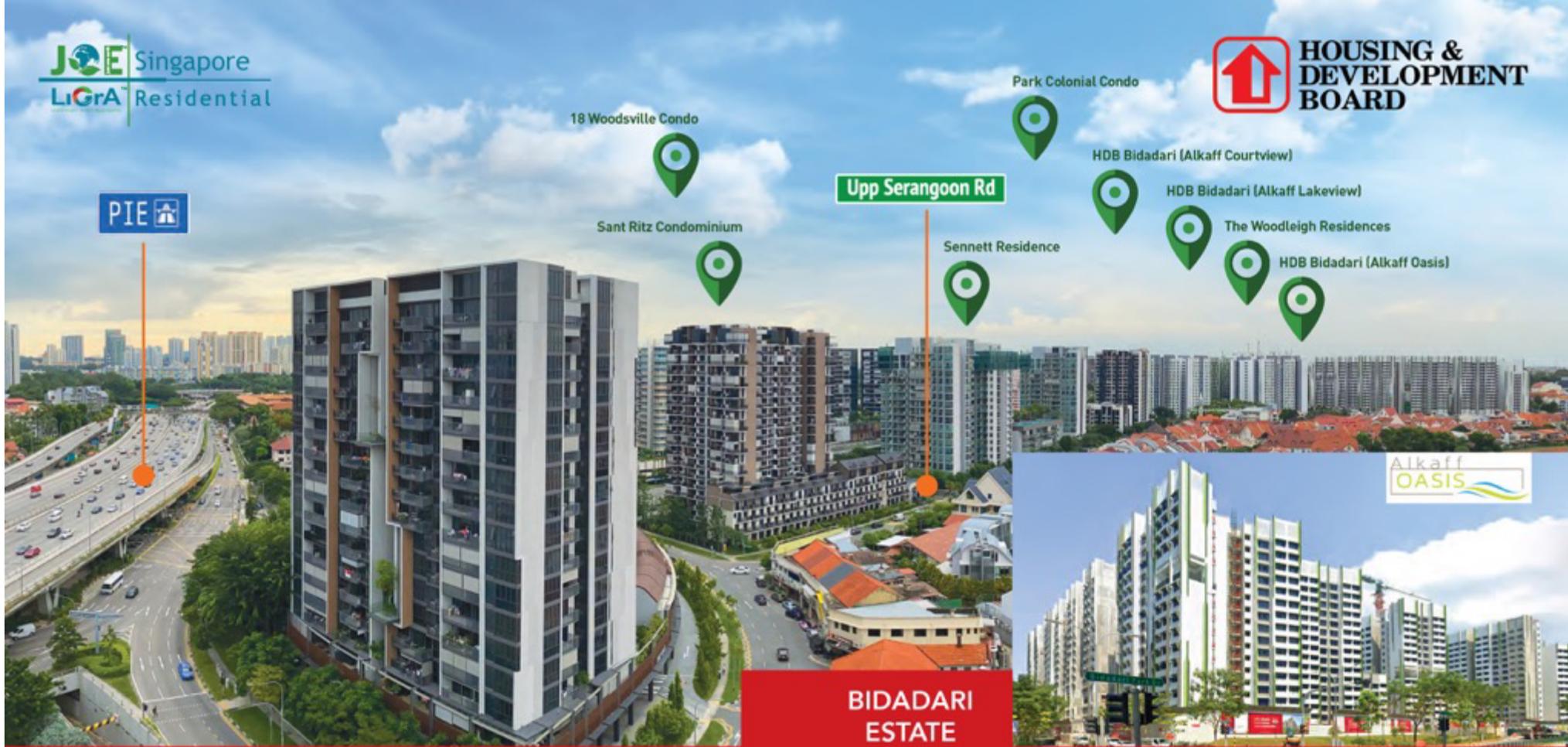


Grandeur Park Residences Condominium



Seventy St Patrick's Condominium







SkyResidence @ Dawson



"TENGAH The Next New HDB Town Project"



**700ha**  
 About the size of Bishan  
**42,000** new homes  
 30,000 public housing | 12,000 private housing





**Integrated Care Hub (ICH)**

**CENTRE FOR HEALTHCARE INNOVATION**

**NIU** National Centre for Infectious Diseases

**RafflesHospital**

**Sengkang General Hospital**  
SingHealth

**NUH**  
National University Hospital

**MINISTRY OF HEALTH SINGAPORE**



**HOMETEAMS Khatib**



NTUC Health Nursing Home (Chai Chee)



St. Andrew's Nursing Home at Jalan Penjara



Ren Ci Ji Ang Mo Kio (Nursing Home)



National Cancer Centre Singapore



NATIONAL SKIN CENTRE (INSCI) Singapore

**BCA ACADEMY**  
 of the built environment



Yale**NUS** College



**NANYANG  
 TECHNOLOGICAL  
 UNIVERSITY**  
 SINGAPORE

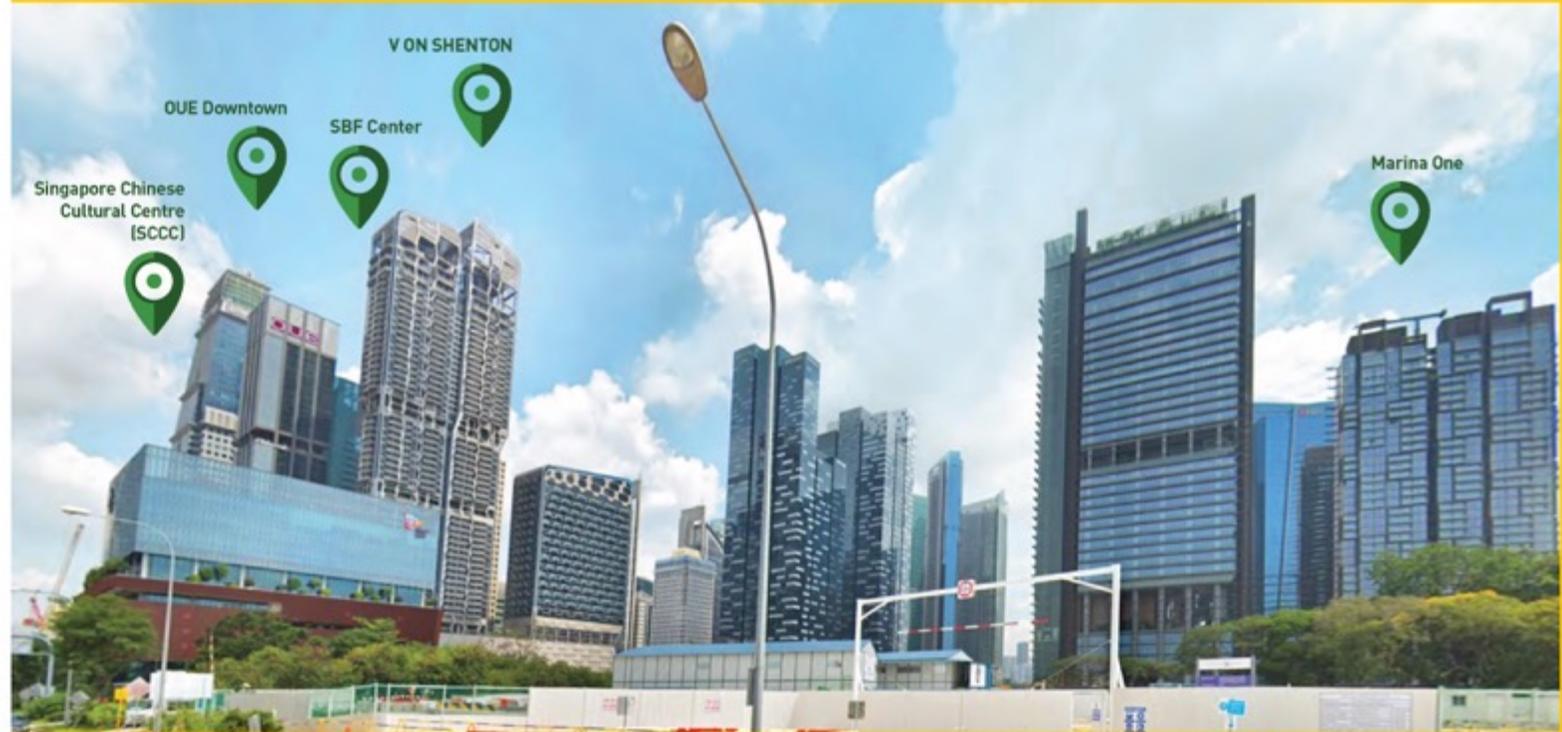




**More Than Hundred Schools Projects in Singapore**



# Professional Choice



Singapore Chinese Cultural Centre (SCCC)



QUE Downtown



SBF Center





Hotel Boss



AXA Tower at 8 Shenton Way



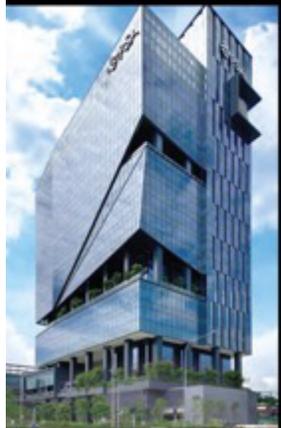
Robinson Tower Redevelopment



CapitaSpring at 88 Market St



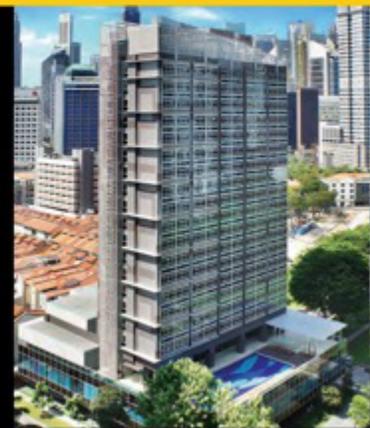
Guoco Tower at Tanjong Pagar Centre



New PSA Corporate HQ



InterContinental Singapore Robertson Quay



Orchard Hotel Singapore



woods square

## 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



NORDCOM I

NORDCOM II

T-SPACE



Mandai Foodlink at 5 Mandai Link



THE WESTCOM at 1 Tuas South Avenue 6



proxima



Micron 300mm NAND Facility at 1 North Coast Drive



JTC Business Aviation Complex at Seletar



Tagore 8 at 421 Tagore Industrial Avenue



JTC Chemicals Hub @ Tuas South



Data Center at Loyang Drive



6 Storey Warehouse at 47 Jln Buroh



The InDex @ Tuas South Ave 3



COSL (Singapore) at 3 Benoi Rd



Industrial Building With Ancillary Office at Tuas South Link



STTelemedia Global Data Centres at 51 DeFu Lane 10



Jurong Shipyard Office at Tuas South Boulevard / Tuas View Extension



Mandai Link Logistics Warehouses - Cold Storage at Mandai Link



Using panel 5.2m height for external wall and window opening



EATON RESIDENCES at Kuala Lumpur, 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 @ Melidrum Hills, Johor Bahru, Malaysia



MERIDIN EAST



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



GRANDVIEW 360° Condominium, Johor Bahru, Malaysia



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



Perimeter Fence

Walkway Slab at Podium

Permas Jaya - Johor Bahru



Larkin - Johor Bahru



Medini - Johor Bahru



Sierra Perdana - Johor Bahru



Brickfields - Kuala Lumpur



Ecoworld Business Park - Johor Bahru

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





**HS**  
**Hotel Santika**

**GRII BATAM**  
 Gereja Reformed Injili Indonesia

Gereja Reformed Injili Indonesia (GRII) Batam, Indonesia

Hotel santika Batam, Indonesia

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



-  Reinforcement bar
-  Rebar for stiffeners
-  C-Channel or Capping Beam



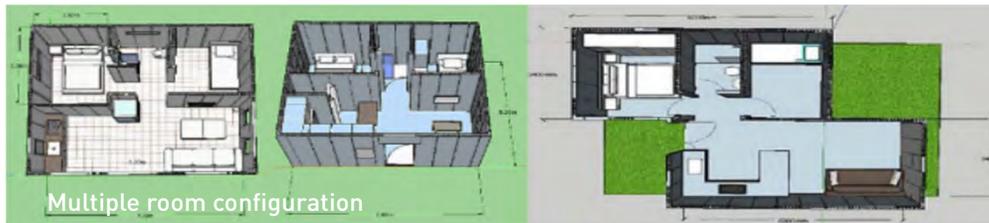
# Affordable Housing Using JOE Green Wall Panel System



✓ No In-Situ Structural Columns

✓ Fast & Simple Construction

✓ High Quality

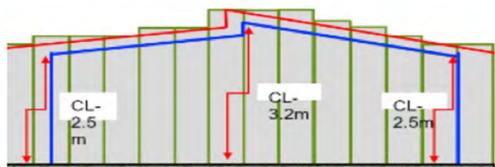


Multiple room configuration

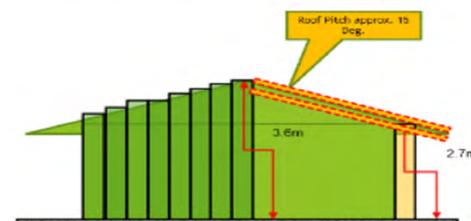
Semi-D : Low-cost Housing w/ Piched Roof / Flat False Ceiling  
Partition Wall Between Unit to use JOE Panel & Duplicate for Terrace Layout



Typical Terrace Facade can duplicate the front entrance design



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



Gable end / corner Unit can have similar treatment.



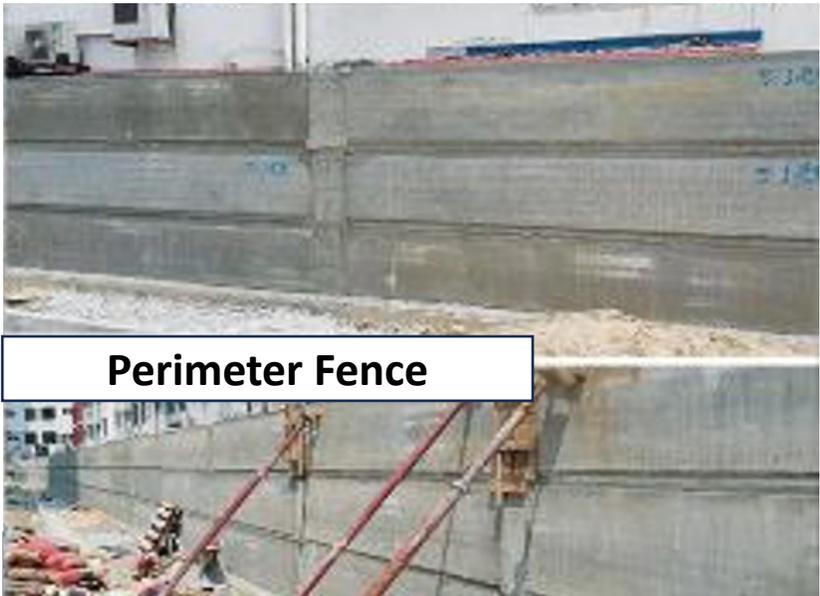
# 使用 JOE Green 墙板系统进行混凝土排水和灌溉



# 使用 JOE Green 墙板系统用于混凝土楼板



# 其他功能应用程序

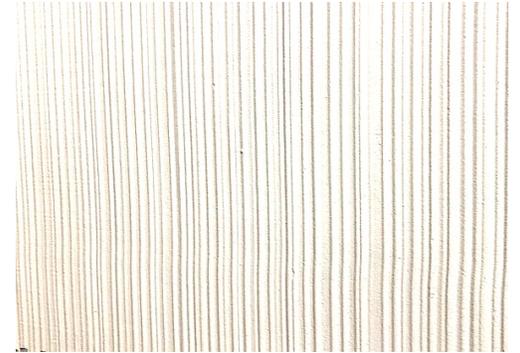


# 外立面图案墙设计 - 定制



使用成型衬里成型的预制立面 - 波浪形和占用颅骨时间

客户要求建议将立面墙更换为我们的空心墙，以获得更经济的替代方案和更快的施工选择，以最大限度地减少对塔式起重机起重作为关键活动的依赖。



JOE Green 的定制图案面板作为非关键活动安装-减少对塔式起重机的依赖。



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

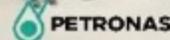


Seeing Is Believing

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



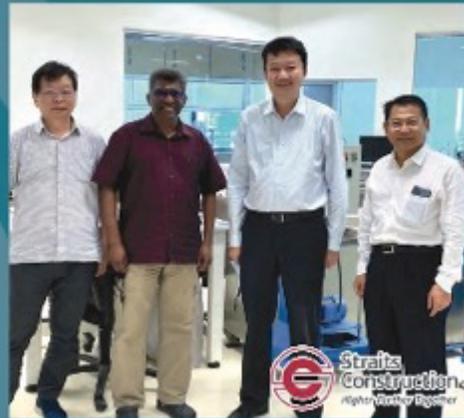
Pulau Intan



Shimizu Corporation and ExxonMobil Asia Pacific Pte Ltd



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

Singapore



Malaysia

Malaysia



Indonesia

India



China

Hong Kong

Hong Kong

Australia

New Zealand

USA

Cambodia



European Union

USA



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 precision of JOE Green panel far more better for INQAC 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**  
 Customer Manager  
**WOH HUP**  
 BUILDING SUPPLIES (M) LTD

"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  
**YES Construction Pte Ltd**

"JOE Green's service is good"  
**Jackson Tiong**  
 Contract Manager  
**聯興集團有限公司**  
**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  
**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**  
 HONGKONG SERVICE S.P.A. S.R.L.

"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 far elevating construction industry standard."

**Ar. Setamat**  
 Director, JYP Architects Sdn Bhd  
 Principal, Arkitek Selamat Sdn Bhd  
**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**



**Worldwide, Buildings Account for 40% of Global Energy Consumption and 33% of Greenhouse Gas Emission**



**JOE Green has a Plan to Decarbonise the Industry, With a focus of Sustainability**



**Lightweight Green Aggregate (LiGrA) is Made from Recycled Waste, Help to reduce CO2 Emissions, Resource use and Construction costs.**



**JOE Green is Continuously Developing other products, with the aim of Reducing Emissions, Manpower, Resource use and Energy Inefficiency.**



**The Art of Lightweight Technology**

Contact Us :



E-Catalogue :



**谢谢**

[www.joegreenpanel.com](http://www.joegreenpanel.com)

**+65 9760 5272**