HC PRECAST SYSTEM SDN. BHD.

QUALITY I ECO-FRIENDLY I ECONOMICAL

Targeted Test for Cracks & Leakages

Tests Conducted : Visual Inspection, Core Sampling, Water Penetration Test.

- Visual Inspection :
 - To inspect Verticality, Flatness and Overall Quality of the HCPS Monolithic Walls.
- Core Samples :
 - To inspect the *effectiveness* of the *Cebex 100 Expendite grout admixture*. To check the *compressive strength* between the *monolithic joint* between concrete and *Cebex 100 Expendite grout admixture*. To inspect the *quality* of the *wet joint* casting for through *cracks* and *completeness* of concrete casting.
- Water Penetration Test :
 - To inspect the *penetration of liquids across the panel section*.

To confirm the effectiveness of the monolithic joints against water leakages.

Tests were conducted Independently by a Reputable Developer and jointly witnessed by HCPS at the sample unit at HCPS fabrication complex.

Industrialised Building System Provider

is one who knows the "Way", goes the "Way" and shows the "Way".

A Little About Us

HCPS was founded in year <u>2002</u> and specializes in *Precast* Concrete Structure Construction for low to mid rise buildings.

Our patented revolutionary "shear key joint" system have managed to resolve the very issue which have plaqued the *precast industry, water leakages.*

HCPS currently holds *six* (6) *Intelectual Properties* (*IP*) encompassing this proprietary Precast technology. Among the highlights of the *HCPS's system* is the ability of the structure to withstand *earthquake forces* (test conducted in collaboration with UTM).

The *complete IBS* rather than IBS components is in full compliance with the recent *government's requirement*. The company can *undertake any design* and build in *fulfilling* the *architectural demand*, unlike most other system which often poses certain restrictions due to *structural limit* or *production/manufacturing impediment*.

Propose to Government and Private Developer

Invite industrialized building system provider with manufacturing facility (flexibility to suit all architectural demands) to participate to built the show unit with work below and superstructure without finishing for the Government & Private Developer to identify the system in terms of green, environment, quality and speed for supply in Its development.

- 1. Architect
 - Appointed by the Government & Private Developer.
 - Design of single storey bungalow of 1,000 ft2 (affordable home), up to superstructure with out finishing.
 - With M&E requirement.
 - Wall finishing with plaster or skim coat only.
 - Door and window frame opening.
 - Ground floor without tiling.
- 2. Industrialized building system manufacturer have formed their BQ for superstructure (in terms of wall area) and to submit work program with sequence of work for record purposes.
- 3. Proper record by the Government & Private representative during construction, in terms of labour and machinery involved per day up to completion (superstructure only).
- 4. Cost Comparison for each Industrialized Building System Manufacturer by the Government & Private Developer (for superstructure only). Cost will be fixed for the selected manufacturer and supply to its development.



		(12) United States Pat Hur (54) BUILDING METHODS	100 M	(MyPO
	The	(75) Inventör: Teow Beng Hur, Selang (MY)		MALAYSIA CERTIFICATE OF GRANT OF A PATENT
	United States	 (73) Assigner: HC Precast System ST Sclargor Dani Dhan () (*) Notice: Subject to any disclaime patient is extended or a U.S.C. 15(4) by 16 day (21) Appl. No.: 10/285548 (22) Flick: Nov. 1, 2002 (65) Prior Publication Data 	CERTI In accordance with Section 3 grant number MY 124213 in respect of an invention ha	In accordance with Section 31 (2) of the Patenta Act 1983 a catent for an investion having prant runbor MV - 139712 - A has been granted to HC PRECAST SYSTEM SDN. BHD. In respect of an invention having the following particulars
F	America	(b) US 20040016199 AI Jan. 29, 2004 (51) Int. Cl. ⁷ (52) U.S. Cl. 52656.1; 52656.1; (58) Field of Search 249/27, 47, 191; 52/428	TITLE FILING DATE	TITLE : PANEL FORMWORK SYSTEM
		(56) References Cited	PRIORITY DATE	FILING DATE 27 MAY 2003
1		U.S. PATENT DOCUMEN 2,939,500 A * 6/1960 Grant	NAME OF INVENTOR	PRIORITY DATE : NONE NAME OF : TEOW BENG HUR
		1	PATENT OWNER	INVENTOR
		3 2 6-		PATENT OWNER : HC PRECAST SYSTEM SON, DHD. NO. 1, (CMD, LCOOR) JALAN SINGA 20E STRKYTH 22 40002 SHAH ALAM STLANGOR DARUL EHSAN MALAYSIA
1		1-475	DATE OF GRANT	DATE OF GRANT : 20 OCTOBER 2009
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		3 6-1	Dated this 30 day of JUNE	Dated this 30 day of OCTOBER 2009
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Ĩ	TITLE	FILING DATE	Nama dan Alamat Pemegang Paten	exultation Pennetica Print - Adab Merica Antibi, 57, Juniel Marci, 5
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Dated this 15 day of JUL

e-SEER Engineering Seismology and Earthquake Engineering Research



Earthquake Resistance System Tested on 18 August 2011 @ Laboratory of Shake Table Testing Faculty of Civil Engineering Universiti Teknologi Malaysia 81310 Skudai, Johor

Dr Azlan Adnan

Professor of Structural Earthquake Engineering

Faculty of Civil Engineering, Universiti Teknologi Malaysia



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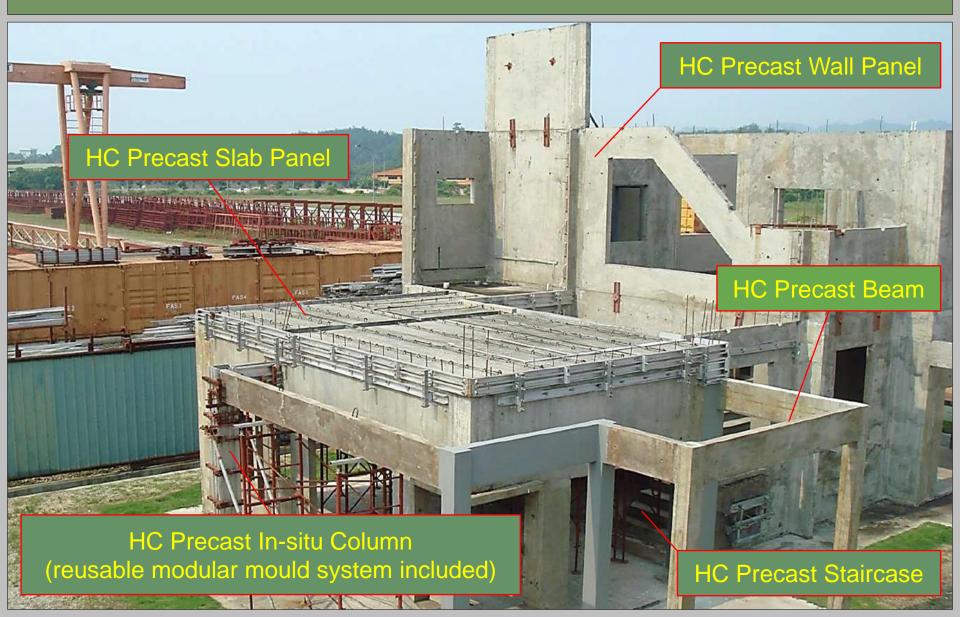
Earthquake Resistance Test of Scaled-Down Double Storey Building of HC PRECAST SYSTEM SDN. BHD.

Under 8 different real earthquake time histories over the world as follow:

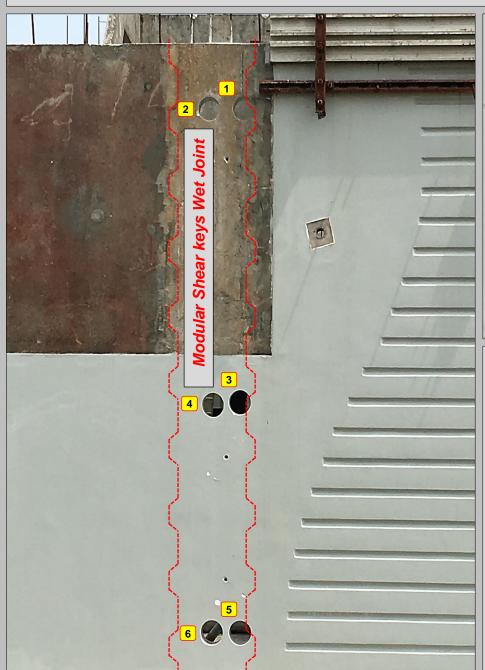
Earthquake	Year	Scaled PGA (g)	Magnitude	Result
El-Centro, California	1940	0.96	7.1	e
Tabas, Iran	1978	0.114	7.4	e
Irpinia, Italy	1980	0.606	6.5	Ø
Kobe, Japan	1995	1.035	6.9	Ø
New Zealand	1987	0.165	5.6	 Image: A start of the start of
Taiwan SMART1	1983	0.117	6.8	 Image: A start of the start of
Duzce, Turkey	1999	0.075	7.1	
Malaysia Artificial	-	0.606	-	Ø

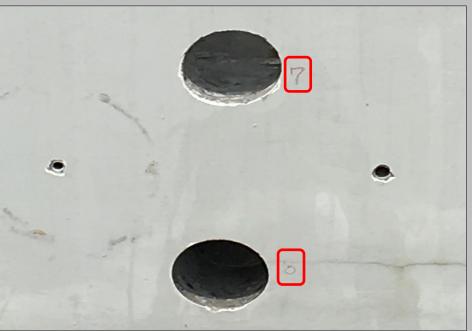
The HC PRECAST SYSTEM performed extremely well throughout all the earthquake tests without any visible cracks or damages $\Lambda \Lambda$

HC Precast System is a complete IBS solution particularly in a design and build precast system developed by HC PRECAST SYSTEM SDN. BHD.









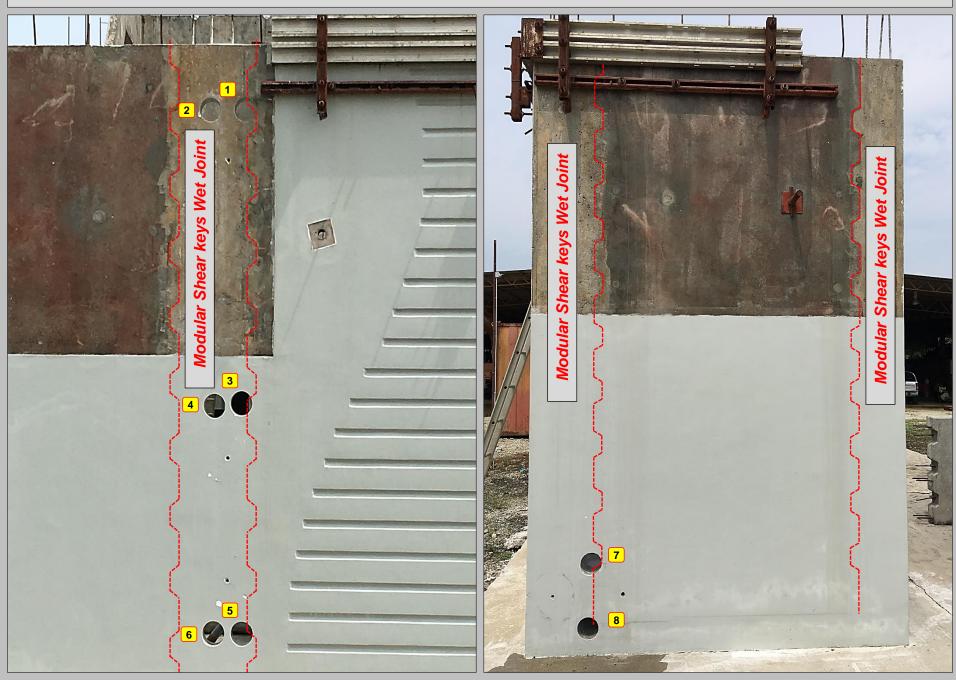
Our Patented

Revolutionary "shear key joint"

system have managed to resolve the very issue which have plaqued the precast industry, water leakages. This patented system has helped to eradicate the most common issue with Precast Concrete construction, *water leakages.*

- Wet joint
- Tongue and groove
- Seamless interfacing





- Visual Inspection : To inspect Verticality, Flatness and Overall Quality of the HCPS Monolithic Walls.
- 3. Water Penetration Test Sample Location





- Visual Inspection : To inspect Verticality, Flatness and Overall Quality of the HCPS Monolithic Walls.
- 1. Water Penetration Test Samples (Preparation)



2. Water Penetration Test Set-up (Day 1: 15 Nov 2019 Time: 3pm)



- Visual Inspection : To inspect Verticality, Flatness and Overall Quality of the HCPS Monolithic Walls.
- 3. Water Penetration Test Result after 24hours (Day 2: 16 Nov 2019 Time: 3pm)



Test Sample	Day One	Day Two (After 24 hours)
Sample P1	25mm	26mm (Loss 1mm)
Sample P2	25mm	28mm(Loss 3mm)
Sample P3	25mm	31mm(Loss 6mm)
Benchmark (BM)	25mm	26mm (Loss 1mm)

Industrialised Building System Provider

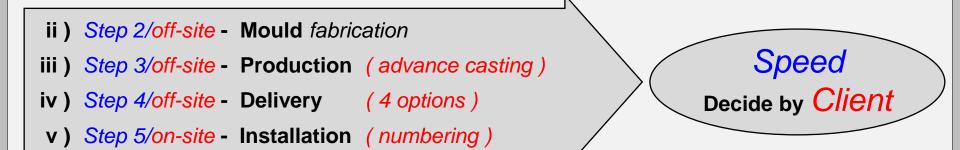
is one who knows the "Way", goes the "Way" and shows the "Way".

IBS CONCEPT

Precast Elements requirements to complete a building is sequence of work - 5 Steps

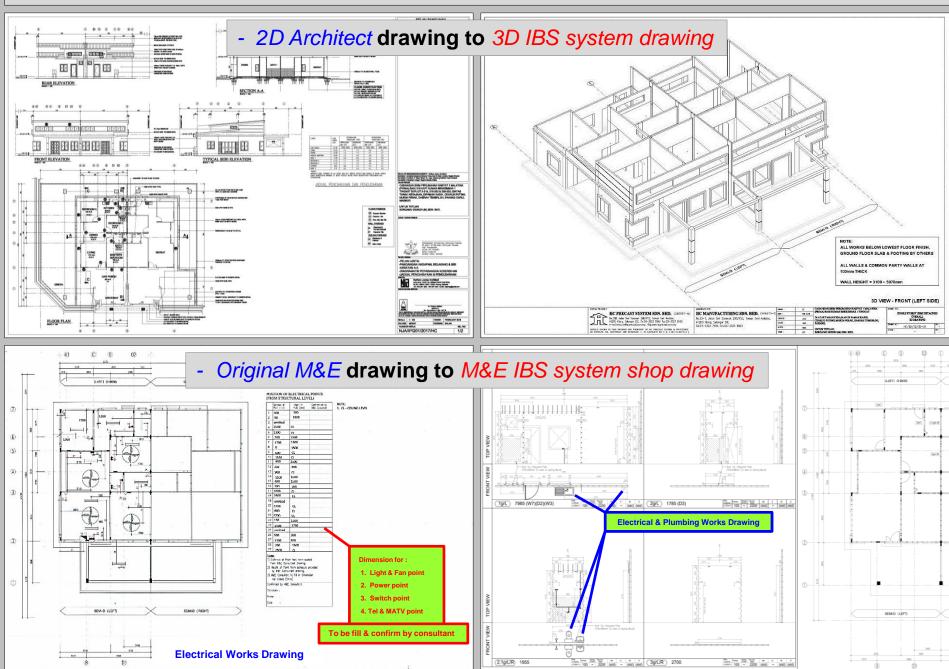
i) Step 1 - Drawing conversion :

- 2D Architect drawing to 3D IBS system drawing
- Original M&E drawing to M&E IBS system shop drawing

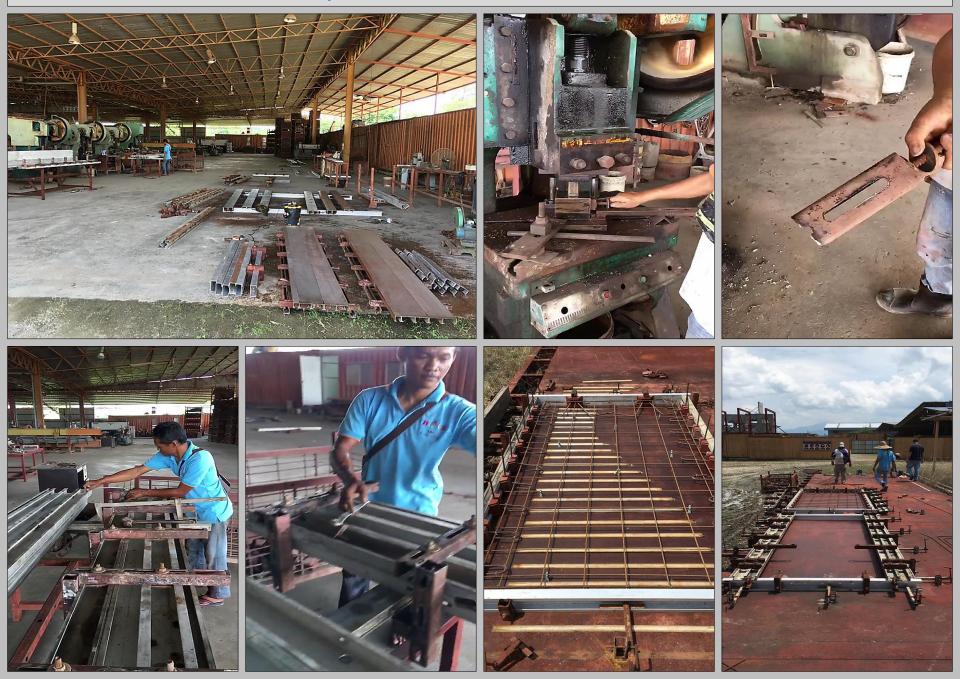


Precast element comply to the Bsi code & Building by Law

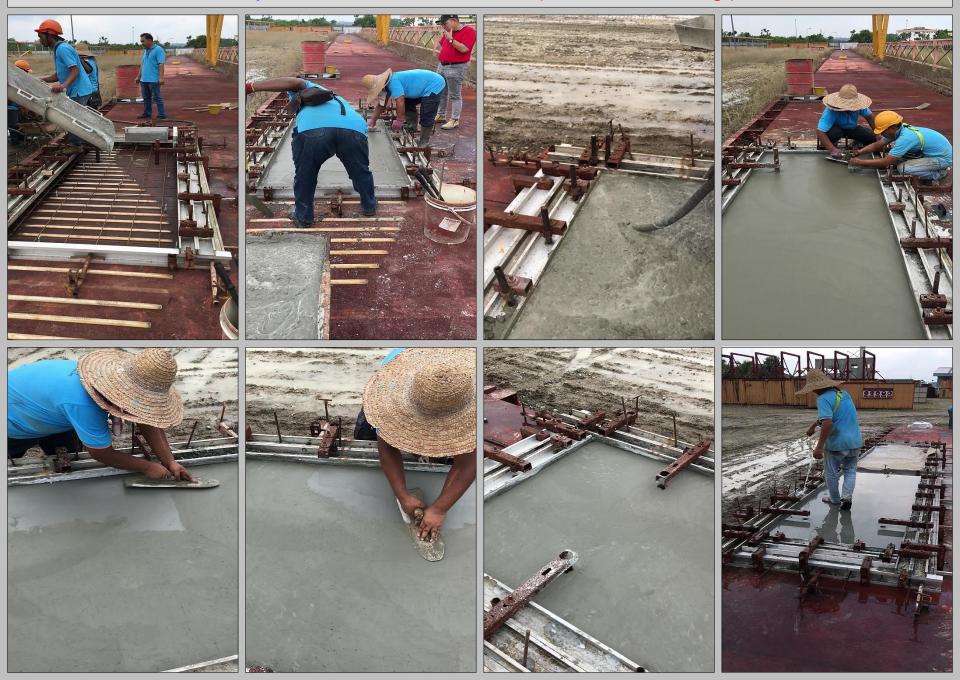
Step 1 - Drawing conversion



Step 2/off-site - Mould fabrication



Step 3/off-site - Production (advance casting)



Step 4/off-site - Delivery (4 options)



Step 5/on-site - Setting-out & Installation (numbering)



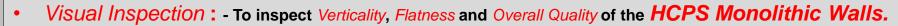
Step 5/on-site - Installation (numbering)



HCPS monolithic precast wall system











• Visual Inspection : - To inspect Verticality, Flatness and Overall Quality of the HCPS Monolithic Walls.































































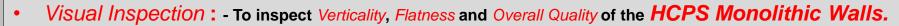






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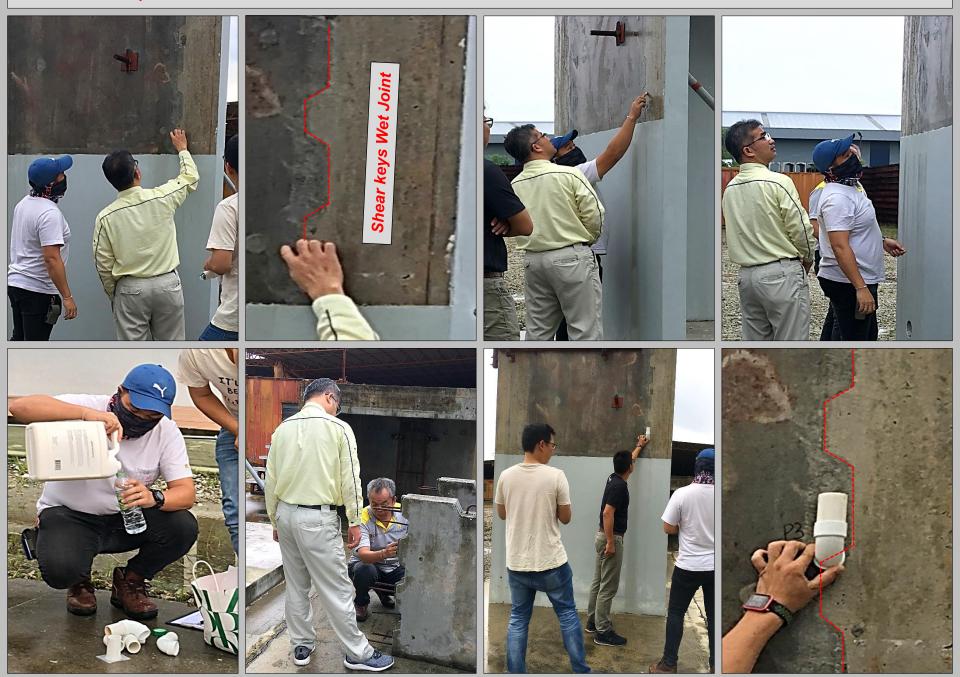


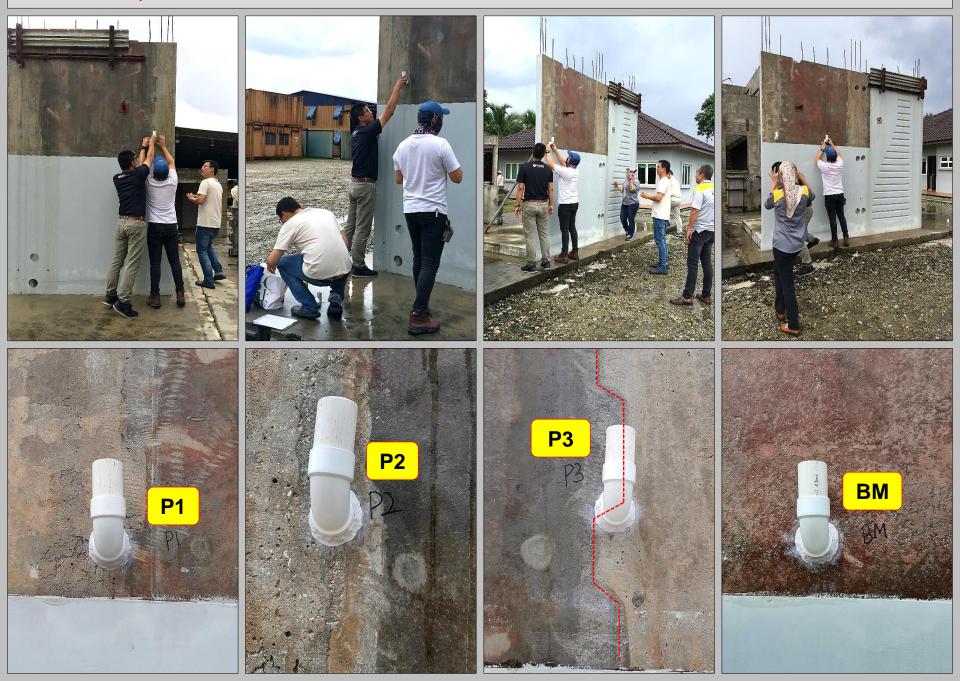






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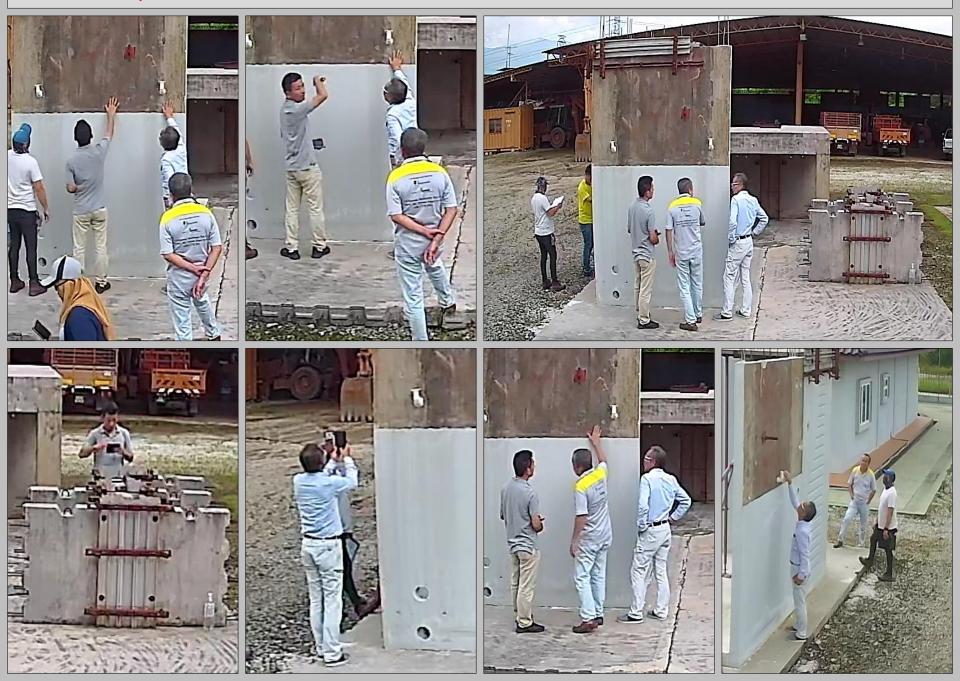
















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WATER PENETRATION TEST DATE: 15-16 NOVEMBER 2019



