



KEMENTERIAN SAINS, TEKNOLOGI DAN INOVASI
MINISTRY OF SCIENCE, TECHNOLOGY AND INNOVATION

BENGKEL *DUE DILIGENCE* SIRI KETIGA
TAHUN PENGKOMERSIALAN MALAYSIA 2017 (MCY 2017)

19hb SEPTEMBER 2017



HC PRECAST SYSTEM SDN BHD
(586697-M)
FAST • FEASIBLE • FLEXIBLE

Office

No. 23B, Jalan Seri
Sarawak 20B/KS2,
Taman Seri Andalas
41200 Klang, Selangor
Darul Ehsan



+603 3325 8995



www.hcprecast.com

Factory

Lot 1, Jalan Zurah 8, Pusat
Perindustrian Zurah
Mukim Rasa, Daerah Hulu
Selangor 44200 Rasa,
Selangor Darul Ehsan



+603 3319 8994



enquiry@hcprecast.com

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Product Description



1

PRODUCT DESCRIPTION

Product Description

- Has been patented in United State (US) and Malaysia Patent (MyIPO).
4 patent is represent to column, beam and modular shear keys

1 US

United States Patent
Hur

(10) Patent No.: **US 6,829,870 B2**
(43) Date of Patent: **Dec. 14, 2004**

(54) **BUILDING METHODS**

(75) Inventor: **Teow Beng Hur, Selangor Darul Ehsan (MY)**

(73) Assignee: **HC Precast System SDN. BHD., Selangor Darul Ehsan (MY)**

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 345(b) by 18 days.

(21) Appl. No.: **10/285,448**

(22) Filed: **Nov. 1, 2002**

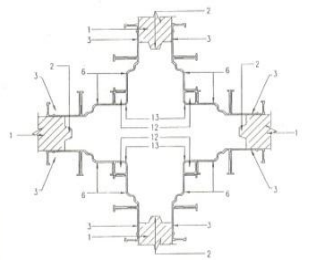
(65) **Prior Publication Data**
US 2004/0014199 A1 Jan. 29, 2004

(51) Int. Cl.⁷: **E28B 1/22(2006.01)**
E28B 1/22(2006.01)

(52) U.S. Cl.: **249/27, 47, 191; 524/26, 362, 363, 373, 606, 1, 631**

(56) **References Cited**
U.S. PATENT DOCUMENTS
2,830,300 A • 6/1960 Crane

3 Claims, 5 Drawing Sheets



US Patent
Building Method

3 MyIPO

MALAYSIA
CERTIFICATE OF GRANT OF A PATENT

In accordance with Section 31(2) of the Patents Act 1983 a patent for an invention having grant number MY-124213-A has been granted to HC PRECAST SYSTEM SDN. BHD in respect of an invention having the following particulars:

TITLE : IMPROVEMENTS IN BUILDING METHODS

FILING DATE : 25 JULY 2002

PRIORITY DATE : NONE

NAME OF INVENTOR : TEOW BENG HUR

PATENT OWNER : HC PRECAST SYSTEM SDN BHD
NO. 1, JALAN SINGA 20/E,
SEKSYEN 20,
40000 SHAH ALAM,
SELANGOR DARUL EHSAN,
MALAYSIA.

DATE OF GRANT : 30 JUNE 2006

Dated this 30 day of JUNE 2006

(MOHD. AMILAN BIN ABAS)
for Registrar of Patents
MALAYSIA

MyIPO
Improvement In Building
Method

MALAYSIA
CERTIFICATE OF GRANT OF A PATENT

In accordance with Section 31 (2) of the Patents Act 1983 a patent for an invention having grant number MY - 139712 - A has been granted to HC PRECAST SYSTEM SDN. BHD. in respect of an invention having the following particulars:

TITLE : PANEL FORMWORK SYSTEM

FILING DATE : 27 MAY 2003

PRIORITY DATE : NONE

NAME OF INVENTOR : TEOW BENG HUR

PATENT OWNER : HC PRECAST SYSTEM SDN. BHD.
NO. 1, (GRD. FLOOR) JALAN SINGA 20/E
SEKSYEN 20
40000 SHAH ALAM
SELANGOR DARUL EHSAN
MALAYSIA

DATE OF GRANT : 30 OCTOBER 2009

Dated this 30 day of OCTOBER 2009

(SHAMSIAH BINTI KAMARUDDIN)
for Registrar of Patents
MALAYSIA

MyIPO
Panel Formwork System

MALAYSIA
CERTIFICATE OF GRANT OF A PATENT

In accordance with Section 31 (2) of the Patents Act 1983 a patent for an invention having grant number MY-157698-A has been granted to HC PRECAST SYSTEM SDN. BHD., in respect of an invention having the following particulars:

TITLE : EARTHQUAKE PROOF WALL PANELS

FILING DATE : 22 JULY 2010

PRIORITY DATE : NONE

NAME OF INVENTOR : TEOW BENG HUR

PATENT OWNER : HC PRECAST SYSTEM SDN. BHD.
NO. 238, JALAN SERI SARAWAK,
208K5 2, TAMAN SRI ANDALAS
41200 KLANG
SELANGOR DARUL EHSAN
MALAYSIA

DATE OF GRANT : 15 JULY 2016

DURATION OF PATENT : 22 JULY 2010 UNTIL 22 JULY 2030

END OF PROTECTION : 14 JULY 2017 (SUBSEQUENT ANNUAL FEE SHALL FOLLOW AS STATED IN THE SCHEDULE OF FEES AT THE BACK OF THIS PAGE)

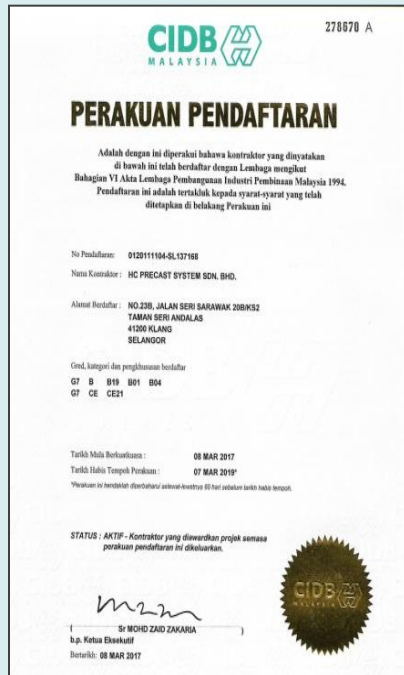
Dated this 15 day of JULY 2016

(DATO' SHAMSIAH BINTI KAMARUDDIN)
Registrar of Patents
MALAYSIA

MyIPO
Earthquake Proof Wall
Panel

Product Description

- Register with CIDB Gred G7, Sijil Perolehan Kerja Kerajaan, Sijil Pengeluar IBS
- ISO 9001 : 2008



CIDB
Gred G7



CIDB
Sijil Perolehan Kerja Kerajaan



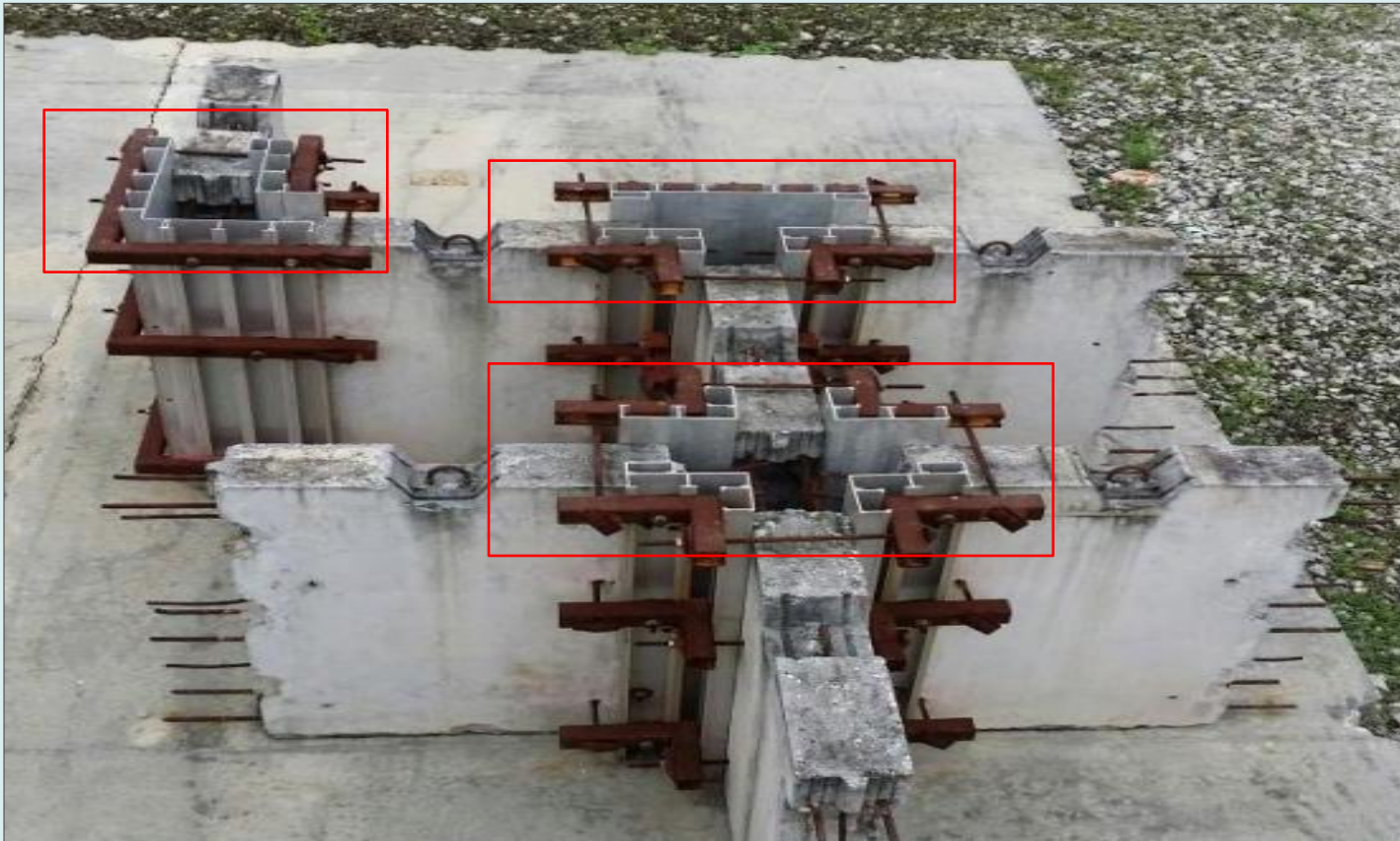
CIDB
Sijil Pengeluar IBS



ISO 9001 : 2008

Product Description

- HCPS IBS flexibility to suit all architectural demands by using Modular Mould System. In the construction of a building, there are always 4 types of joint namely L-shape, T-shape, Cross shape and Straight joint.



- Provide speedier construction, cost effectiveness, high quality and easy standardization.

Product Description

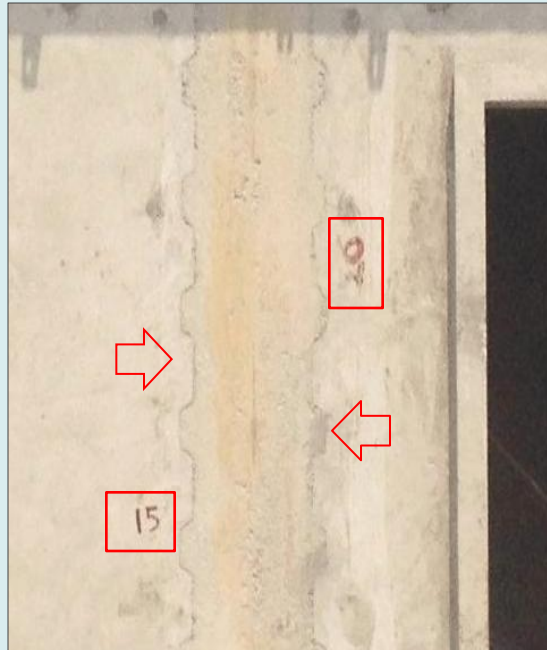
- HC Precast System (HCPS) is a **system provider** with **manufacturing facilities** specialist in Industrialized Building System (IBS)
- Supply and Install Superstructure (Frame & Wall)

3 in 1 in Malaysia

- Load bearing wall



- Modular shear keys (wet joint)



- Box system




- 37.7 kN per key :
 - Independent checker by JKR for HCPS Modular Shear Keys Wet Joint




Product Description

- HCPS has been collaboration with Agency CREAM, UTM, UiTM for earthquake test and with Nanyang Technological University, Singapore to published journal. International magazine in precast has been published in previous years.



eSEER
Engineering Seismology and
Earthquake Engineering Research



HC PRECAST SYSTEM SDN. BHD.

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



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	
Tabas, Iran	1978	0.114	7.4	
Irpinia, Italy	1980	0.606	6.5	
Kobe, Japan	1995	1.035	6.9	
New Zealand	1987	0.165	5.6	
Taiwan SMART1	1983	0.117	6.8	
Duzce, Turkey	1999	0.075	7.1	
Malaysia Artificial	-	0.606	-	

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


Dr Azlan Adnan
Professor of Structural Earthquake Engineering
Faculty of Civil Engineering, Universiti Teknologi Malaysia

UTM

Earthquake Resistance Test of Scale-Down Double Storey Building



ELSEVIER

Case Studies in Structural Engineering

Certificate of publication for the article titled:
"Case study of load-bearing precast wall system subject to low seismic intensity by linear and nonlinear analyses "

Authored by:
Patrick Liq Yee Tiong, Sing Ping Chiew and Beng Hur Teow

Published in:
Volume 6C, 2016, Pages 11-21

Nanyang Technological University, Singapore

Product Description

- Ability to address challenges and resolve critical construction issues

a) No leaking

b) No crack

Training unit : - 9 years expose precast wall, precast staircase, half slab & precast beam with in-situ column.
- No Maintenance - No Touch-up - No Water proofing - No Leaking - No crack



Product Description

HCPS IBS Factory : Capacity

- Existing production : 1,800 – 2,500 units of single storey (1000 ft²) per year
- Supply & Lay : RM900/m³ ex-factory



- Future development 13 acres : 2,500 to 3,500 units of single storey (1000 ft²) per year

- Existing production 8 acres : 1,800 to 2,500 units



2

**COMMERCIALISATION
STATUS OF PRODUCT**

Problems / Challenges

- **Sales Revenue**

Total Sales : RM219,163,983.20

Quantity

- Single Storey	: 1,163 units
- Double Storey	: 451 units
- 3 Storey	: 1 unit
- 3 Shop Lot	: 42 units
Total	: 1,657 units

- **Licensing Agreement**

We are ready to engage and cooperate with all parties government and private sector

- **Royalty**

In discussion on technology transfer to China and Indonesia

Commercialisation Status of Product

• Intellectual Property

1 United State (US)

United States Patent
HUR

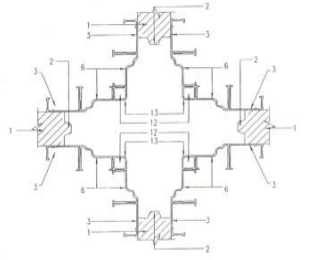
(11) Patent No.: **US 6,829,870 B2**
(45) Date of Patent: **Dec. 14, 2004**

(54) **BUILDING METHODS**
(75) Inventor: **Teow Beng Hur, Selangor Darul Ehsan (MY)**
(73) Assignee: **HC Precast System SDN. BHD., Selangor Darul Ehsan (MY)**

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 18 days.

(21) Appl. No.: **10/285,048**
(22) Filed: **Nov. 1, 2002**
(85) Prior Publication Data: **US 2004/0059159 A1 Jan. 29, 2004**
(51) Int. Cl.: **E04C 2/38**
(52) U.S. Cl.: **5206.3, 5206.328(1), 5206.7, 5206(1), 5403.9, 5436, 5437, 5438, 5439, 5440, 5441, 5442, 5443, 5444, 5445, 5446, 5447, 5448, 5449, 5450, 5451, 5452, 5453, 5454, 5455, 5456, 5457, 5458, 5459, 5460, 5461, 5462, 5463, 5464, 5465, 5466, 5467, 5468, 5469, 5470, 5471, 5472, 5473, 5474, 5475, 5476, 5477, 5478, 5479, 5480, 5481, 5482, 5483, 5484, 5485, 5486, 5487, 5488, 5489, 5490, 5491, 5492, 5493, 5494, 5495, 5496, 5497, 5498, 5499, 5500**
(56) References Cited: **U.S. PATENT DOCUMENTS**
3,939,500 A • 6/1980 Chan • 200102

3 Claims, 5 Drawing Sheets



US 6,829,870, B2

Building Methods

Year Filed : 1/11/2002

Year Granted : 14/12/2004

3 Malaysia (MyIPO)

MALAYSIA
CERTIFICATE OF GRANT OF A PATENT

In accordance with Section 34(2) of the Patents Act 1983 a patent for an invention having grant number MY-124213-A has been granted to HC PRECAST SYSTEM SDN BHD in respect of an invention having the following particulars :

TITLE : IMPROVEMENTS IN BUILDING METHODS
FILING DATE : 25 JULY 2002
PRIORITY DATE : NONE
NAME OF INVENTOR : TEOW BENG HUR
PATENT OWNER : HC PRECAST SYSTEM SDN BHD
NO. 1, JALAN SINGA 20/E, SEKSYEN 20, 40000 SHAH ALAM, SELANGOR DARUL EHSAN, MALAYSIA.
DATE OF GRANT : 30 JUNE 2006

Dated this 30 day of JUNE 2006

(MOHD. AMIRAN BIN ABAS)
for Registrar of Patents
MALAYSIA

MY-124213-A

Improvements In Building Method

Year Filed : 25/7/2002

Year Granted : 30/6/2006

MALAYSIA
CERTIFICATE OF GRANT OF A PATENT

In accordance with Section 31 (2) of the Patents Act 1983 a patent for an invention having grant number MY-139712-A has been granted to HC PRECAST SYSTEM SDN. BHD. in respect of an invention having the following particulars :

TITLE : PANEL FORMWORK SYSTEM
FILING DATE : 27 MAY 2003
PRIORITY DATE : NONE
NAME OF INVENTOR : TEOW BENG HUR
PATENT OWNER : HC PRECAST SYSTEM SDN. BHD.
NO. 1, GROUND FLOOR, JALAN SINGA 20/E, SEKSYEN 20, 40000 SHAH ALAM, SELANGOR DARUL EHSAN, MALAYSIA
DATE OF GRANT : 30 OCTOBER 2009

Dated this 30 day of OCTOBER 2009

(SHAMSIAH BINTI KAMARUDDIN)
for Registrar of Patents
MALAYSIA

MY-139712-A

Panel Formwork System

Year Filed : 25/7/2002

Year Granted : 30/10/2009

MALAYSIA
CERTIFICATE OF GRANT OF A PATENT

In accordance with Section 31 (2) of the Patents Act 1983 a patent for an invention having grant number MY-157696-A has been granted to HC PRECAST SYSTEM SDN. BHD., in respect of an invention having the following particulars :

TITLE : EARTHQUAKE PROOF WALL PANELS
FILING DATE : 22 JULY 2010
PRIORITY DATE : NONE
NAME OF INVENTOR : TEOW BENG HUR
PATENT OWNER : HC PRECAST SYSTEM SDN. BHD.
NO. 238, JALAN SERI SARAWAK, 208K3 2, TAMAN SRI ANDALAS, 41200 KLANG, SELANGOR DARUL EHSAN, MALAYSIA
DATE OF GRANT : 15 JULY 2016
DURATION OF PATENT : 22 JULY 2010 UNTIL 22 JULY 2030
END OF PROTECTION : 14 JULY 2017 (SUBSEQUENT ANNUAL FEE SHALL FOLLOW AS STATED IN THE SCHEDULE OF FEES AT THE BACK OF THIS PAGE)

Dated this 15 day of JULY 2016

(DATO' SHAMSIAH BINTI KAMARUDDIN)
Registrar of Patents
MALAYSIA

MY-157696-A

Earthquake Proff Wall Panels

Year Filed : 22/7/2010

Year Granted : 15/7/2016



3

PROBLEMS / CHALLENGES

Commercialisation Status of Product

- Low knowledge of developer regarding open system and proprietary system
- Assumption that building built with IBS cannot be renovated
- Low enforcement of IBS



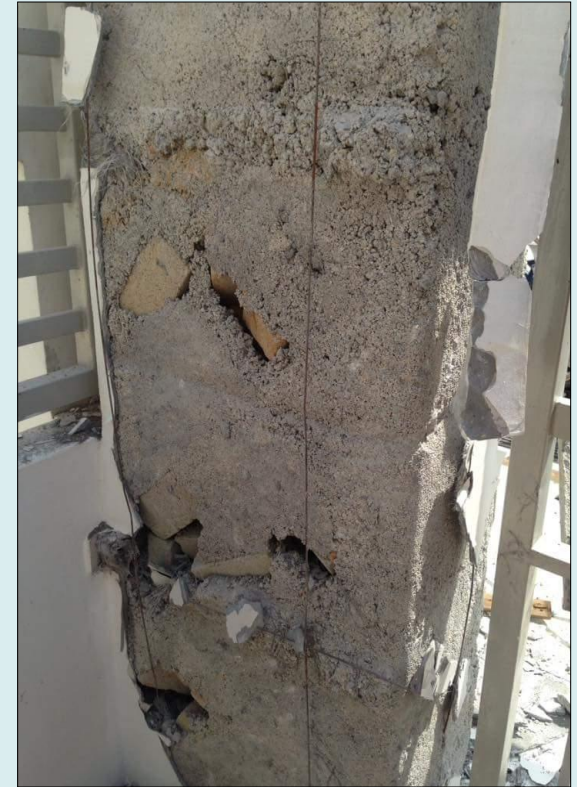


4

**INTERVENTION /
FACILITATION
REQUIRED**

Intervention / Facilitation Required

- Standardize uniform building by law to local authority
- Conquas or Qlassic should be carried-out upon the completion of the superstructure works (frame & wall) instead of upon completion of finishing work.



- Responsibility of the building :
 - System Provider or Manufacturer should provide installer of the building precast element.

Intervention / Facilitation Required

PROPOSE TO GOVERNMENT & PRIVATE DEVELOPER

Invite industrialized building system provider with manufacturing facility (flexibility to suit all architectural demands) to participate to build 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 without 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 .



5 OTHERS

Completed Project

HC Precast System has been used for the listed project :

WISMA HC PRECAST SYSTEM
5-storey Office



42 units 3-Storey Shop Office at Klang



HC PRECAST SYSTEM

Completed Project Using HC Precast System



156 units Single Storey at Batu Arang



7 units Shop Lot at Batu Arang



10 units bangle at Shah Alam.



112 units Single Storey at Batu Arang



119 units Double Storey at Shah Alam



1234 unit Semi Detached at Bukit Botak.



119 units Single Storey at Bernam Jaya



34 units Semi Detached at Shah Alam



118 units Double Storey at Batu Arang.



Single Storey Show Unit at Rasa.



Training Unit at Rasa (Double Storey)

Bay Window, Grove Line, Arch



- Bay Window



- Grove Line



- Arch



- Arch

Staircase



- Precast staircase with in-situ landing slab



- Precast staircase with in-situ landing slab



Cost Effectiveness

Lowering Of Building Cost . The best way is to build faster and cheaper .

- One of the ways is by using Industrial Building Systems (IBS) .
- System Provider or Manufacturer should provide installer of the Building Precast Element .



Completed in 7 days with 6 workers :

- Precast Element	:	88 %	
- Wet Work	:	12 %	
Ex-Factory	:	RM	900.00 per m3
Volume	:		13.16 m3 / unit
Amount	:	RM	11,844.00 per unit
GFA	:		800 ft2
Cost	:	RM	14.805 per ft2 GFA

Note :

All works below lowest floor finish, ground floor slab & footing by other .

All walls & common party walls at 100 mm thick .



Responsibility :

- System Provider or Manufacturer should provide installer of the Building Precast Element .
- The wall is designed to provide adequate fire resistance according to demand (with minimum 2 hours as per BS8110) .



6 CONCLUSION

Conclusion

- **Built faster & cheaper**
- **Saving up to 15%-30% (superstructure)**
- **Full responsibility of building**
- **Suite 100% architect demands**
- **Reduce foreign worker - 40%**
- **Out flow currency**



**Innovative
&
Revolutionary
Precast System**

THANK YOU