

## **HC Precast System**

(100 % Malaysia Technology With 6 IPs')

**Economical . Eco Friendly . Quality** 

## **IBS Concept**



## **IBS CONCEPT**

- 1. Precast elements requirements to complete a building is sequence of work
  - 5 Steps
    - i) Step 1 Drawing conversion :
      - 1.1) 2D Architect drawing to 3D IBS system drawing
      - 1.2) Original M&E drawing to M&E IBS system shop drawing
    - ii ) Step 2 Mould fabrication
  - iii) Step 3 Production (advance casting)
  - iv) Step 4 Delivery (4 options)
  - v) Step 5 Installation (numbering)

Decide by client Production speed

- 2. Precast element comply to the code & building by law
  - Precast elements must not involve many different manufactured components
- 3. Open system and proprietary system is a technology
  - Industrialised building system function as a system not a component or machine





**Original Architect drawing 2D** 



#### **Original Architect drawing 2D**



#### **IBS system drawing 2D**



#### **IBS system drawing 2D**



**Original M&E drawing** 

#### i) Step 1 - Drawing conversion : 1.2) Original M&E drawing to M&E IBS system shop drawing



#### i) Step 1 - Drawing conversion : 1.2) Original M&E drawing to M&E IBS system shop drawing



M&E IBS system shop drawing (Subject to client / consultant confirmation)

#### i) Step 1 - Drawing conversion : 1.2) Original M&E drawing to M&E IBS system shop drawing



M&E IBS system shop drawing (Subject to client / consultant confirmation)

#### ii ) Step 2 - Mould fabrication



#### iii ) Step 3 to 5 Decide by client - Production speed

- Step 3 Production (advance casting)
  - 7 to 9 units single storey per day
  - Quality control & Assurance
- Step 4 Delivery
  - 4 options logistic
- Step 5 Installation
  - Block by block
  - One time adjustment
  - Numbering sequence

### Decide by client Production speed

Capacity :			Single storey (unit / day)	Double storey (unit / day)	
	- Bay 1 ( 170m x 4.5m x 2 line )	:	3	1.2	
	- Bay 2 ( 170m x 4.5m x 2 line )	:	3	1.2	
	- Bay 3 ( 170m x 4.5m x 2 line )	:	3	1.2	
	Tota	al :	9	3.6	
			Single storey (year / unit)	Double storey (year / unit)	
	Existing production 8 acres	:	1,800 - 2,500	800 - 1,000	
	Future development 8 acres	:	2,500 - 3,500	1,200 - 1,400	
	Tota	al :	4,300 - 6,000	2,000 - 2,400	

#### iii) Step 3 - Production (advance casting) - 7 to 9 units single storey per day



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 of single storey ( 1000 ft2 ) per year

#### iii) Step 3 - Production (advance casting) - Quality control & Assurance



#### iv ) Step 4 - 4 options logistic

Logistic option : Decide by client

Option 1

- Bay yard (factory) to block yard (project site)
- Option 2 ( advance casting )
  - Bay yard (factory) to site yard (project site)
- Option 3 ( advance casting )
  - Storage yard (factory) to block yard (project site)
- Option 4 ( advance casting )
  - Storage yard (factory) to site yard (project site)

#### Notes :

- a) Client / Consultant / Main contractor need to choose which option to be used before production
- b) Rate for RM 900.00 / m3 includes for option 1 & 3
- c) An additional of RM 30.00 / m3 need to be charges for option 2 & 4
- d) Crusher run base to be provided at site yard for option 1 to 4

#### iv ) Step 4 - 4 options logistic



#### iv) Step 4 - 4 options logistic

![](_page_16_Picture_1.jpeg)

External transport to project

Internal transport to block yard

![](_page_17_Figure_0.jpeg)

![](_page_18_Figure_1.jpeg)

#### SETTING OUT AND LEVEL CHECK LIST

Panel	FF Level	Existin	g Level	Proposed Plastic Pad Level	Proposed FFL	Plastic Pa (min=15mm,	ad Height max=35mm)
56 Lgr	15.750	15.692	15.704	15.725	15.750	0.033	0.021
57 Lgr	15.750	15.699	15.690	15.725	15.750	0.026	0.035
58 Lgr	15.750	15.690	15.692	15.725	15.750	0.035	0.033
59 Lgr	15.750	15.691	15.690	15.725	15.750	0.034	0.035
60 Lgr	15.750	15.688	15.697	15.725	15.750	0.037	0.028
61 Lgr	15.750	15.688	15.695	15.725	15.750	0.037	0.030
62 Lgr	15.750	15.706	15.702	15.725	15.750	0.019	0.023
63 Lgr	15.750	15.701	15.693	15.725	15.750	0.024	0.032
64 Lgr	15.750	15.690	15.700	15.725	15.750	0.035	0.025
65 Lgr	15.750	15.709	15.706	15.725	15.750	0.016	0.019
66 Lgr	15.750	15.694	15.691	15.725	15.750	0.031	0.034
67 Lgr	15.750	15.709	15.698	15.725	15.750	0.016	0.027
68 Lgr	15.750	15.697	15.694	15.725	15.750	0.028	0.031
69 Lgr	15.750	15.689	15.707	15.725	15.750	0.036	0.018
70 Lgr	15.750	15.673	15.678	15.725	15.750	0.052	0.047
71 Lgr	15.750	15.697	15.705	15.725	15.750	0.028	0.020
72 Lgr	15.750	15.710	15.711	15.725	15.750	0.015	0.014
73 Lgr	15.750	15.673	15.668	15.725	15.750	0.052	0.057
74 Lgr	15.750	15.683	15.685	15.725	15.750	0.042	0.040
75 Lgr	15.750	15.675	15.682	15.725	15.750	0.050	0.043

![](_page_19_Figure_3.jpeg)

Z = Y + (X - Y) + 25mm 15.750 = 15.692 + (15.725 - 15.692) + 0.025

- One time adjustment (25mm tolerant)

![](_page_20_Figure_1.jpeg)

- Numbering sequence

![](_page_21_Figure_1.jpeg)

#### - Numbering sequence

![](_page_22_Figure_1.jpeg)

#### - Numbering sequence

#### IBS Superstructure In Malaysia 3 in ( customized & flexibility to suit all Architectural demands )

![](_page_23_Picture_1.jpeg)

Load bearing wall + Modular shear keys (wet joint) + Box system (comply to code & Building By Law)

#### 2. Precast element comply to the code & building by law

## **HC Precast System**

(100 % Malaysia Technology With 6 IPs')

IBS Superstructure In Malaysia 3 in 1

- Load bearing wall

- Modular shear keys ( wet joint )

- Box system

**Customized & Flexibility To Suit All Architectural Demands** 

The system is a proprietary technology that has been established in accordance to British Standards (BSI) and is also a patented technology.

The main design of the connection system has also been subjected to detail checking by an Independent Checker.

Hence, the specifications are not to be altered without proper engineering study to ensure the safety and integrity of the precast system.

![](_page_24_Picture_11.jpeg)

Table 6.2 — Minimum period before striking formwork (concrete made with Portland cement 42.5 to BS 12:1991 or sulfate-resisting Portland cement 42.5 to BS 4027:1991)

Type of framework	Minimum period before striking Surface temperature of concrete				
	16 °C and above	t °C (any temperature between 0 °C and 16 °C)			
Vertical formwork to columns, walls and large beams	12 h	$\frac{300}{t+10}h$			
Soffit formwork to slabs	4 days	$\frac{100}{t+10}$ days			
Soffitt formwork to beams and props to slabs	10 days	$\frac{250}{t+10}$ days			
Props to beams	14 days	$\frac{360}{t+10}$ days			
NOTE This table can be appli cement strength classes.	ied to PC and	SRPC of higher			

#### 2. Precast element comply to the code & building by law

![](_page_25_Picture_1.jpeg)

2. Precast element comply to the code & Building By Law

#### LAWS OF MALAYSIA

# UNIFORM BUILDING BY-LAWS

All amendments up to May, 2006

#### ACT 133

Head Office: MDC Building, 2717 & 2718, Jalan Permata Empat, Taman Permata, Ulu Kelang, 53300 Kuala Lumpur. Tel: 03-41086600 Fax: 03-41081506 E-mail: inquiries@mdcp.com.my Website:http://www.mdcpd.com.my

Compiled by: MDC Legal Advisers

K.L. Showroom: Lot L3-04, 3rd Floor, Shaw Parade, Changkat Thambi Dollah, 55100 Kuala Lumpur. Tel: 03-21457745

PRICE: RM 18.00

(3) Every brick or masonry wall of a building founded on strip footings shall be provided with a damp proof course which shall

[Section 84 - 86]

- (a) at a height of not less than 150 millimetres above the surface of the ground adjoining the wall; and
- (b) beneath the level of the underside of the lowest timbers of the ground floor resting on the wall, or where the ground floor is a solid floor, not higher than the level of the upper surface of the concrete or other similar solid material forming the structure of the floor.

(4) Where any part of a floor of the lowest or only storey of a building is below the surface of the adjoining ground and a wall or part of a wall of the storey is in contact with the ground—

- (a) the wall or part of the wall shall be constructed or provided with a vertical damp proof course so as to be impervious to moisture from its base to a height of not less than 150 millimetres above the surface of the ground; and
- (b) an additional damp proof course shall be inserted in the wall or part of the wall at its base.

(5) Where the floor or any part of the walls of a building is subject to water pressure, that portion of the floor or wall below ground level shall be waterproof.

85. For the purposes of this Part wherever references are made monitor to the thickness of any brick wall, the maximum or minimum thickness of such wall shall not exceed the nominal thickness plus or minus the maximum tolerance permissible under any standard specification.

86. (1) All party walls shall generally be of not less than 200 Party walls millimetres total thickness of solid masonry or *insitu* concrete which may be made up of two separate skins each of not less than 100 millimetres thickness if constructed at different times:

Provided that in multi-storeyed flats and terrace houses of reinforced concrete or of protected steel framed construction having floors and roofs constructed to the requirements of these By-laws, the party wall thereof shall not be less than 100 millimetres total thickness.

(2) Party walls in single storeyed houses may be in load-bearing 100 millimetres solid masonry or *insitu* concrete provided the requirements of Part V, VI and VII of these By-laws are complied with.

(3) All party walls shall be carried above the upper surface of the roof to a distance of not less than 230 millimetres at right angles to such upper surface.

2006

![](_page_27_Picture_1.jpeg)

10 days completed with 6 workers superstructure (frame, wall & RC flat roof)

![](_page_28_Picture_0.jpeg)

- Industrialised building system function as a system not a component or machine

![](_page_29_Picture_0.jpeg)

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![](_page_30_Picture_0.jpeg)

![](_page_31_Picture_1.jpeg)

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![](_page_32_Picture_1.jpeg)

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![](_page_33_Picture_1.jpeg)

![](_page_34_Picture_1.jpeg)

- Industrialised building system function as a system not a component or machine

![](_page_35_Picture_0.jpeg)

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![](_page_36_Picture_1.jpeg)

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![](_page_37_Picture_0.jpeg)

- Industrialised building system function as a system not a component or machine

![](_page_38_Picture_1.jpeg)

- Industrialised building system function as a system not a component or machine

![](_page_39_Picture_1.jpeg)

![](_page_40_Picture_1.jpeg)

![](_page_41_Picture_1.jpeg)

![](_page_42_Picture_1.jpeg)

- Industrialised building system function as a system not a component or machine

# THANK YOU