Attributes of HC Precast Wall Panel

- Easy standardization
- Speedier construction
- Cost effectiveness
- High quality finish
- Suitable for existing architectural layout

Beyond Malaysian Waters

Having made an impact in the local industry, with a pioneering spirit and dedicated and trained personnel, HC Precast System Sdn Bhd is poised to take its revolutionary concept in precast to neighbouring developing countries and other parts of the world and contribute effectively to the fast developing world.

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Patented: US 6,829,870 B2 MY-124213-A

Innovative & Revolutionary Precast System

IBS ONE STOP CENTRE

www.hcprecast.com.my
THE COMPANY

Looking Back

Incepted in July 2002, HC Precast System Sdn Bhd, a member of the HC Group of Companies, is the pioneer of the HC Precast System, an industrialized building system (IBS) invented locally and has patent rights in Malaysia and the United States.

Remarkable in every respect

A revolution in the industry, the HC Precast System offers flexibility in design, distinct quality and can be installed quickly. All these attributes allow for easy standardization, accelerated construction, cost effectiveness, high quality finishes and enhanced façade design.

Suitable for any development

The HC Precast System is suitable for existing architectural designs and can be used for bungalows, semi-D, double and single storey houses and in commercial buildings. This is evident as more developers everywhere come to appreciate the beauty of the HC Precast System.

How the HC Precast System works

Comprising of a series of precast wall panels that are generally designed as the load bearing wall system, and interconnected with cast in-situ joints or columns. The in-situ joints are reinforced in accordance to structural requirements and provide the stability to the building and eliminate the possibility of ingress of water. These in-situ joints also act as columns to support heavily loaded beams and allow a hybrid system of conventional and precast structural system to be achieved.

Distinct features of the HC Precast System

- Attractive external wall features
- Variable wall panel size
- Adjustable column size
- Flexibility of making certain openings
- Consists of Precast Wall Panels & Cast In-situ Column Joints
- Wall and columns form an integral and strong structural member

Flexible & adaptability of HC Precast Wall Panel

- Thickness of the wall panels can be varied
- Size of the wall panels can be adjusted
- Wall panels are cast in the specially designed moulds
- Edge of the precast wall panels is cast with a shear key joint
- The shear key, coupled with starter bars, provide strong interlocking after the columns have been cast

Features of HC Precast Column Mould

- The moulds are made from aluminium to achieve the desired pattern and make it light to handle.
- The size of the columns can be easily increased or reduced by increasing or reducing the number of modules.
- The column moulds consist of a series of standard module designs of moulds, interlocked and assembled to form various shapes of columns required.

Services

- Design and build
- Provides system design service based on HC Precast System to the developer or main contractor. Furnish the client with a complete system design and installation details and drawings.
- Renting the moulds
  Main contractor and developer stand to gain substantially by using this innovative, revolutionary and cost-effective HC Precast System.

LOW INVESTMENT COST REQUIRED
The main contractor or developer does not have to invest high capital cost on the moulds.
Industrialized Building System (IBS) is a construction system using pre-fabricated components to build a building. The manufacturing of the components are systematically achieved by utilizing machines, formworks and other forms of mechanical equipment. IBS is also defined as an integrated manufacturing and construction process with well-planned organization for efficient management, preparation and control over resources used, activities and results supported by the use of highly developed components.

Construction Industry Development Board (2003) defined IBS as a construction technique in which components are manufactured in a controlled environment (on or off site), transported, positioned and assembled into a structure with minimal additional site works. Modern Method of Construction (MMC) (other term for IBS) is a term adopted as a collective description for both offsite based construction technologies and innovative onsite technologies. The systems and products of HC Precast System Sdn Bhd are classified as IBS. Non-structural and structural panels are cast off-site and during assembly of the building components the main structural members shall form the joining parts fabricated using innovative system formwork.
HC Precast System Sdn Bhd (HC) has been formed to carry out design, supply of precast system formwork and construction of precast buildings. The company has developed and owned the proprietary HC Precast System. The patent has been approved in US under US 6,829,870B2. The company received its patent No. MY-124123-A in 2006 and patent No. MY-139712-A in 2009 in Malaysia.

**Why HC Precast System?**

- Suit to any existing architectural layout design
- Unlimited flexibility in design
- Enhanced facade design
- Easy standardization
- No plastering is required
- No problem with ingress of water through vertical joints
- Reduce risk of delay and variations
- Cost effectiveness
- High quality finishes

"Innovative & Revolutionary Precast System"
IBS One Stop Centre

HC Precast System Factory

- The factory comprises 21 acres of land in Rasa, Rawang.
- The current facilities is able to produce 2,000 units of single storey house a year.
- Additional land space to expand the present facility based on project needs.

Factory Layout

- Various sizes of wall panels can be erected and the alignment of precast wall panels can be easily controlled by placing the timber markers for the precast walls to be seated. In this manner, the central line control of the precast wall panels can be achieved.
- Any slight out of alignment of the wall panels can be easily concealed with the cast-in-situ columns/ joints.
- The cast-in-situ columns and precast wall panels form an integral and strong structural element.
- The cast-in-situ columns prevent any possible ingress of water.
- The cast-in-situ columns and flexibility of the wall panel make this system adaptable to all conventional design and hence provide versatility for architects to plan the layout and for the structural engineer to design for HC Precast System to suit.
- The column moulds consist of various combination of the standard modules – hence allowing the flexibility of achieving various column sizes.
- The width and height of the precast wall panels can be adjusted.
- Minimal touching up is required as columns and wall joints are formed with smooth formwork system.

HC PRECAST SYSTEM INTERIOR DESIGN

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Adding Value

Added Value to the Client / Customer

- Early delivery
- Cost benefit to early possession & function
- Less defects, reduce maintenance cost
- Reduce risk of delay and variations

Added Value to the Consultant Team

- Time saving for early production of design due to useable conventional design methodology
- HC Precast System can suit to any conventional design without limitation, unlike the standard production system which requires designer to suit the design
- Production of 3 dimensional (3D) drawing by the system can detect early problems, reduce risk of variations
- Minimum supervision

Added Value to the Construction Team

- Leaner project chart – project is divided into sub-projects, less time of construction
- Project is structured for easy to monitor
- Does not require special grade of concrete at the wet joint areas
- Less cold joints increase benefits to structural integrity
- Does not require grouting to increase structural joints integrity
- Minimum mistakes due to early detection before construction
- Reduce manual labor requirement and less depended foreign workers
- Reduce overhead cost
- Environmental friendly

How the System Works

Comprising of a series of precast wall panels, which are generally designed as load bearing wall system, and interconnected with cast-in situ joints or columns. The in-situ joints are reinforced in accordance to structural requirement and provide the stability to the building and eliminate the possibility of ingress of water. These in-situ joints can also act as columns to support heavily loaded beams and allow a hybrid system of conventional and precast structural system to be achieved.

Services

We provide following engineering supporting services:

- Design and build
- Provides system design service based on HC Precast System to the developer or main contractor. Furnishes the client with a complete system design and installation details and drawings
- Rental of HC Precast System Formwork Mould are available
- HC Precast System will provide 2 days practical training at our HC Precast System Factory for those using HC Precast System at NO cost for:
  a) Panel installation
  b) Beam & Column Joint moulding installation
  c) Slab System Formwork installation
  d) Staircase installation
Range of Products

Precast Wall Panel

- The thickness of the precast wall panels can be varied, depending on the structural engineering requirements by changing the height of the side formwork.
- The size of wall panels can be adjusted in terms of both height and width to satisfy architectural requirements and functional purpose of the building.
- The wall panels are cast in the specially designed mould.
- The edge of the precast wall panels is cast with a shear key joint. This shear key, coupled with starter bars, provides very strong interlocking and strength after the columns have been cast.

Standard Panels

<table>
<thead>
<tr>
<th>Item</th>
<th>Panel Wall Thickness (mm)</th>
<th>Panel Wall Height (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>100</td>
<td>3.0 m</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3.5 m</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4.0 m</td>
</tr>
<tr>
<td>2</td>
<td>120</td>
<td>3.0 m</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3.5 m</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4.0 m</td>
</tr>
<tr>
<td>3</td>
<td>150 mm / 180 mm</td>
<td>4.0 m</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4.5 m</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5.0 m</td>
</tr>
</tbody>
</table>

Panel thickness, breadth and height can be varied to suit project requirements. However, the panel height above 3 km must be cast with side due to the restriction of height at the highway.

Columns

- Various column or joint shapes are formed as a result of the intersection of the different wall panels. The columns are formed by basically clamping the various wall panels with specially designed moulds.
- Standalone columns can also be constructed with the same mould.
- The column moulds consist of a series of standard module design of moulds, interlocked and assembled to form various shapes of columns required.
- The size of the columns can be easily increased or reduced by increasing or reducing the number modules.
- The moulds are made from aluminium to achieve the desired pattern and to make it light to handle.

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Slab Panels

The slab can be either carried out as in-situ construction of precast planks with concrete topping. It is highly recommended the toilet area to be done as in-situ construction to negate any water leakage problem.

For precast planks and with concrete topping construction:

• The precast plank are precast in sleeping moulds
• Starter bars are left at the edges for interconnection of cast in-situ beams and columns

Arch And Precast Beam

Staircase

Baywindow, Groove Line And Set In Profile

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Quality Assurance

- Ready Mixed Concrete – Concrete Grade To Comply Engineer’s Requirements
- Slump Test Carried Out On Every Delivery
- Cube Test Taken For Every 20m³
- Rebound Hammer Test Carried Out Daily & on Selected Panel
- Lifting Of Panel Only After Minimum 18 Hours Or As Specified By Engineer
- Panels Stored In Stock Yard For 7 Days Or AsSpecified By Engineer For Curing BeforeDelivery To Site
- Panels Stack Individually As Opposed To One On Top Of Another To PreventCracks

List of Projects

42 Units 3 & 5 Storey Shop Office, Taman Seri Andalas, Klang

70 Units Double Storey House Semi-D, Section 7, Shah Alam

119 Units Double Storey Link House, Section 24, Shah Alam

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List of Projects

1. 112 Units Single Storey House, Kota Puteri
2. 493 units Single Storey House Semi D, Bukit Botak, Selayang
3. 10 units Exco Bungalow and Club House, Section 7, Shah Alam
4. 119 Units Single Storey Terrace House, Bernam Jaya
5. 118 Units Double Story Terrace House, Kota Puteri
6. 156 Units Single Storey Terrace House, Kota Puteri

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