Stepping into the New Era of Modular Integrated Construction

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Credit: Grand Raids History & Special Collections, Archives, Grand Rapids Public Library, Grand Rapids, MI

Once upon a time….

We invented bricks and started to build multi-story buildings.

To build multi-story, we used “tower cranes”. At that time, the cranes were made of timber.

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Now, we have heavy duty tower cranes.

Is the method of construction same as before?

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Can we make bigger bricks?

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Victoria Hall, Wolverhampton, UK



The tallest modular building in Europe

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Extensive Coordination with Multi-Disc Work

Structures

Step 1- Structural Steel

+MEP

Step 2- Pod Assembly

Step 3- Framing/MEP

+Architecture

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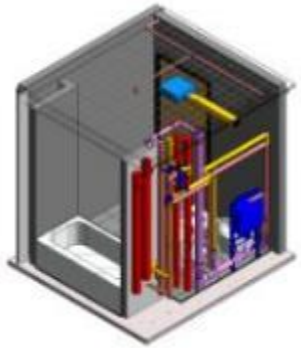
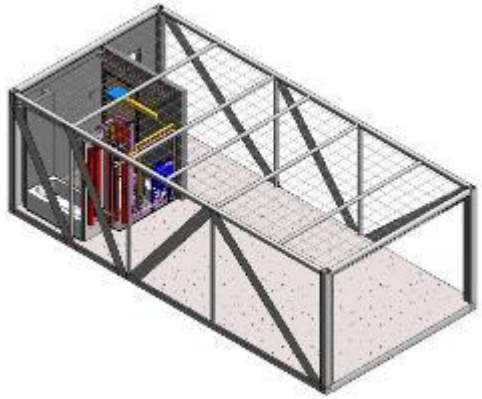
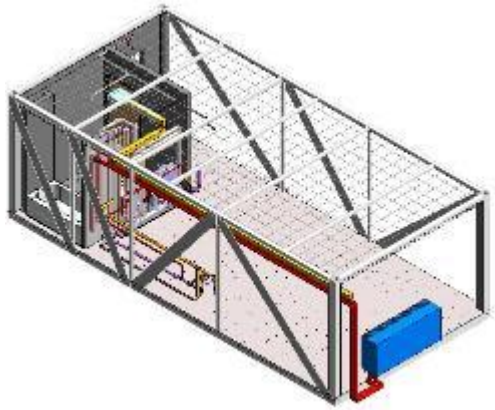
4D Production Sequencing



Phase 1. Bathroom Pod Fabrication

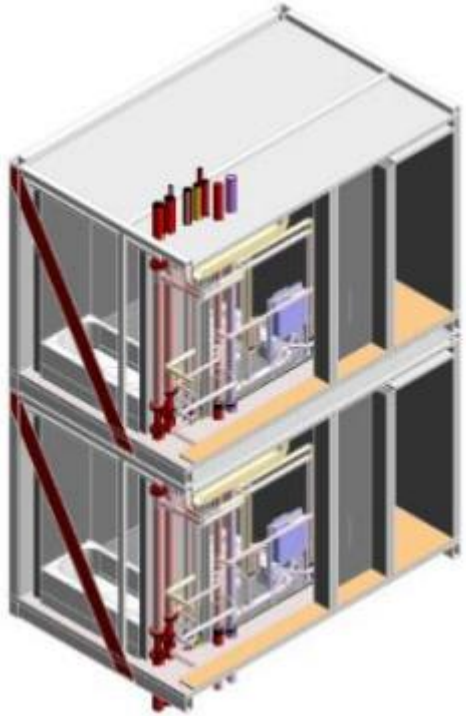


Phase 2. Factory installation of Pod into Module



Phase 3. Factory Module MEP Work

Phase 4. Module Factory Finish Work



Phase 5. Mateline Connections in Field

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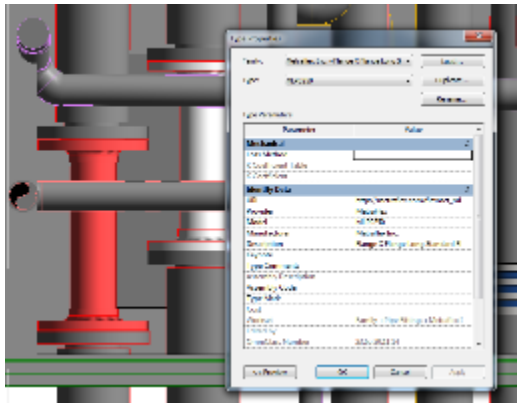
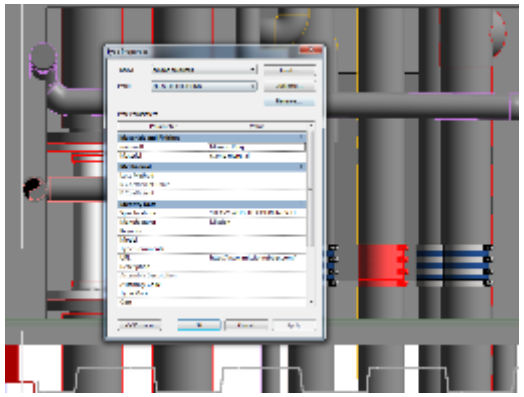
Embedded design data within model

- Intelligent “families”
- Parametric grouping
- Modular constraints require accurate representation of services and geometry
- Ability for:
  - Spec integration
  - Equipment schedules
  - Quantity scheduling
- Coordination





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CIC MiC Display Centre

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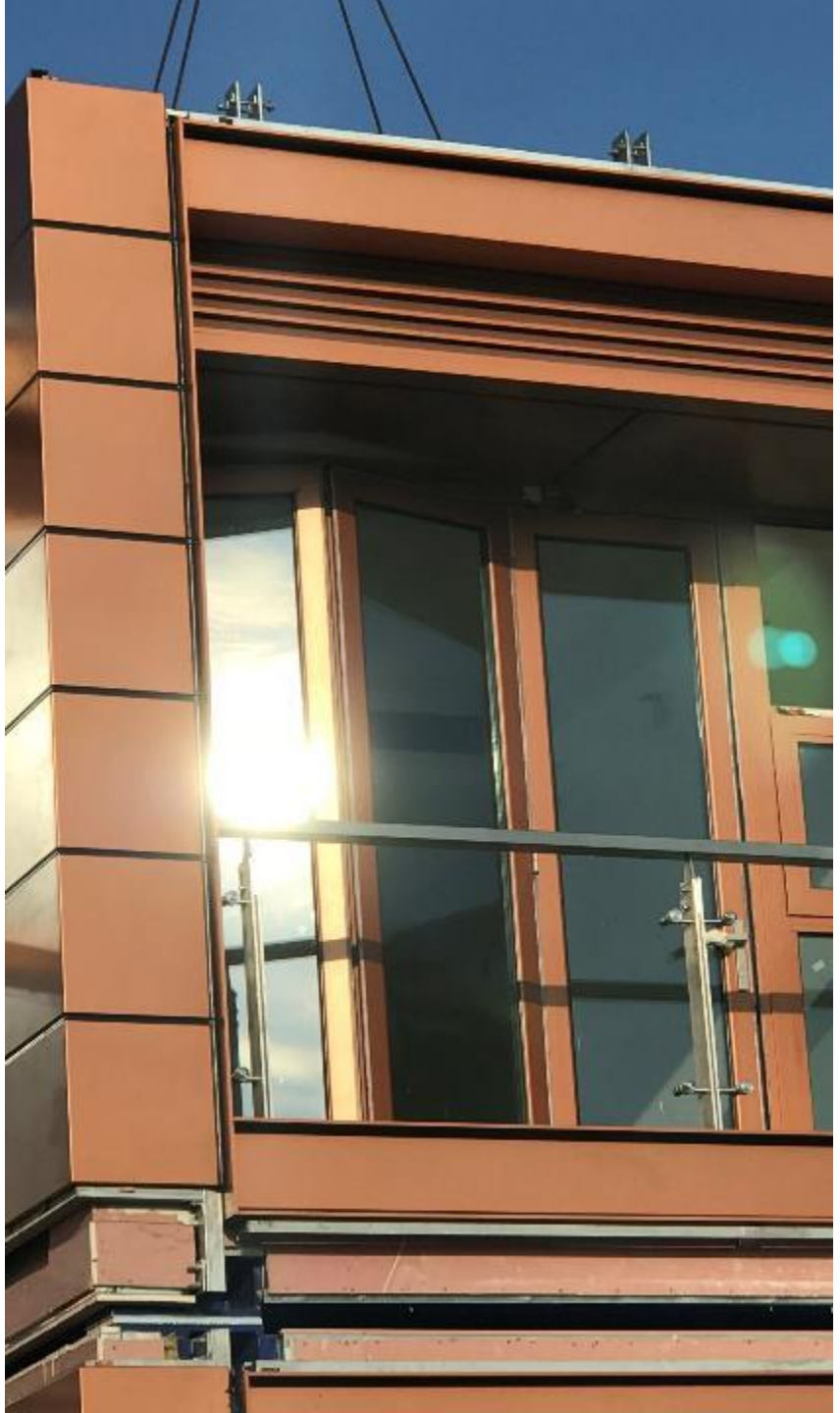


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CIMC


CIMC
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Exhibition Space

Elderly Home


Hotel Room
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Hostel (e.g. Student)

One Bedroom Unit

Three Bedroom Unit

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Potential for MiC in Hong Kong

Modular Construction in Hong Kong: Drivers?

- Productivity greater efficiency
- Increases in labour costs
- Rapid development-Strong demand for housing, student residence, nursing and student home, etc
- Sufficiently large market/sector
- Advances in technology in design tools and manufacturing process
- Safety
- Better risk control
- Improved Sustainability
- Weather condition
- *Policy – incentive to encourage investment, research, training.*

Modular Challenges

Mind set, Investment & Design Issues

- Consumer confidence - Patchy track record and perceived negatively
- Skeptical – long term flexibility
- Dimension and weight of units

- Robustness – vertical and horizontal ties.
- Service interfaces
- Fire rating, Acoustic performance
- Current regulation constraints

Must modules be steel?

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How about concrete?

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Thank You

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