



Portakabin®

# Education – Modular Construction Cradle to Handover

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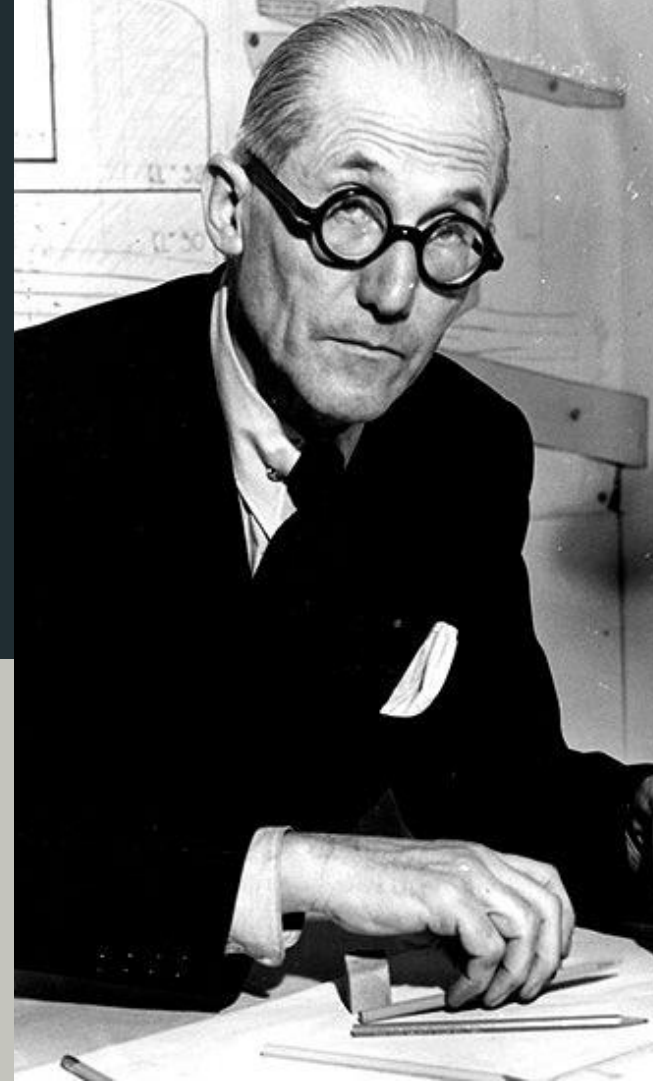
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1.0

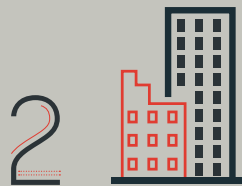
**The legacy of modular  
Construction &  
standardisation.**

# Three guidelines for modern architecture

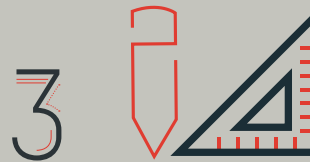
Le Corbusier believed buildings are tools specifically designed to provide the essentials for their occupants.



Open to new materials  
and construction  
systems



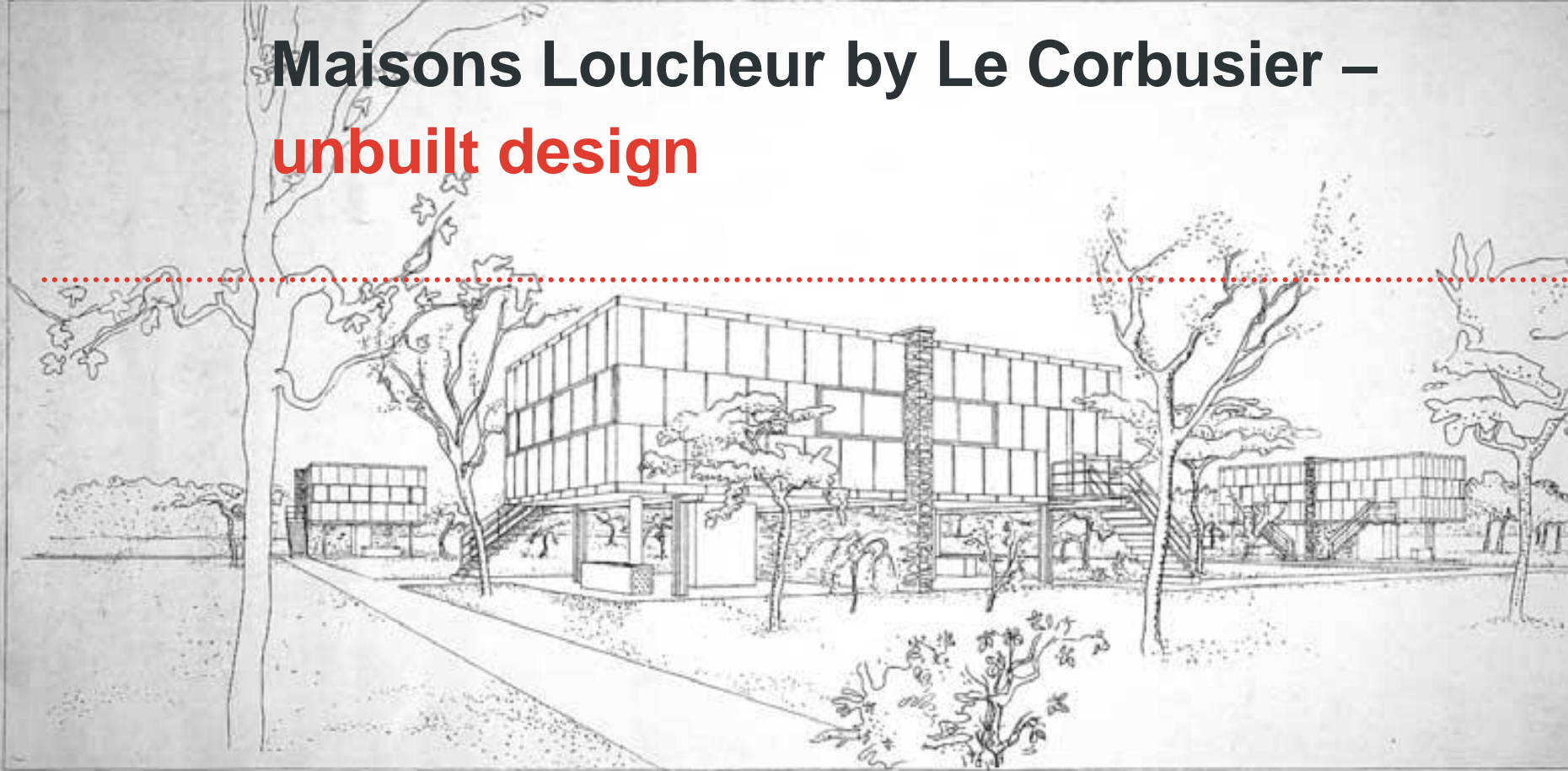
Sensitive to new  
social realities



Based on an effective plan  
that takes into account the  
full manufacturing process

TYPE: 45 MS

# Maisons Loucheur by Le Corbusier – unbuilt design



1936 236



# Basílica de la Sagrada Família – a modular story

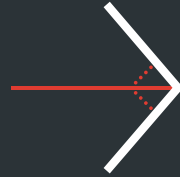
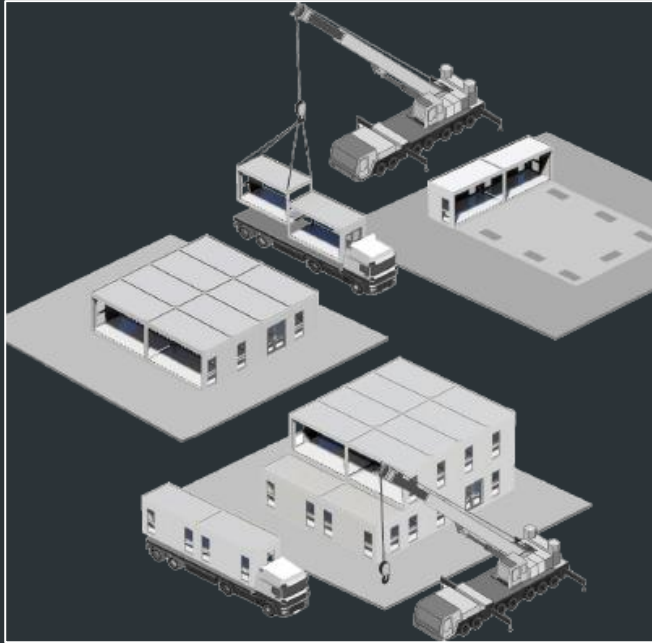
3D modelling, prototyping and low  
cost 3D printing are also used to  
ensure the precision of the  
construction is still part of this  
great monument's story  
construction and ensure quality

2.0

**Modular vs  
traditional  
construction**



# Understanding modular construction terms



## **Volumetric Modules**

Highly engineered building units made up of multiple components, designed to be stacked together until an entire building is complete

# Understanding modular construction terms



## Volumetric

Three-dimensional modules manufactured off-site include complete buildings or sections of a building, with finishes, fixtures, and services.



## Panelised

Fabrication of individual panels or sections in a factory. May include walls, floors, roofs, or other building components.



## Hybrid

Combines elements of both volumetric and panelised construction methods. Highly serviced areas may be manufactured as volumetric modules, while other areas use panelised construction.

- Quality standards have significantly increased
- Products are extensively trialled and tested
- Products built to last for up to 60 years





**Consistent  
quality  
through  
factory-  
controlled  
construction**



# H&S advantages of modular construction

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Modular construction can improve health and safety:

- By providing a controlled working environment
- Through the use of production line techniques and standards
- By reducing the time working at height or below ground





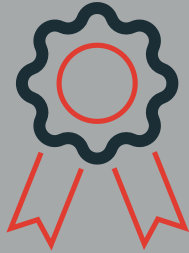
# Planning for the long-term



Reduce labour requirements



Lower on-site waste



Raise quality



Lower maintenance



3.0

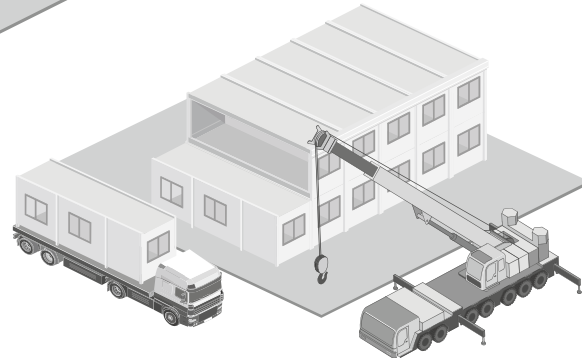
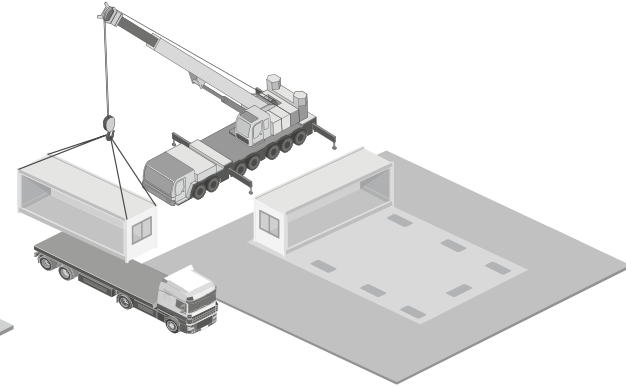
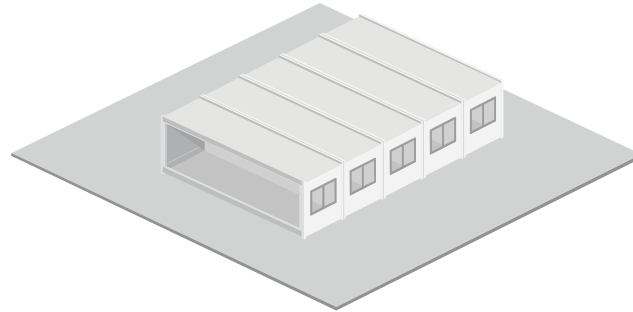
# Temporary Classrooms & Schools

# Reduce time, waste and disruption on site

**70%\*** faster than traditional build

**90%** less waste

**90%** fewer vehicle movements



\*RICS (2018). "Modern Methods of Construction A forward-thinking solution to the housing crisis?"



4.0

# Permanent School Buildings



# Special Educational Needs School in 12 months



Case Study:

## The Bridge Eaton School

- Built in just 12 months
- 60 custom modules
- 170 places: 4-19 years



WELCOME TO  
**Badger Hill**  
PRIMARY SCHOOL

# Meeting Passivhaus standards

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Case Study:

## Foleshill Health Centre

- Passivhaus health centre
- Serves 10,000 patients
- EPC A rating
- BREEM excellent

5.0

The image shows the number '5.0' in a large, white, sans-serif font. The '5' has two vertical red lines inside its lower loop and a vertical red dotted line along its right edge. The decimal point is a small white square with a red dotted line forming its top and right sides. The '0' has two vertical red lines inside and a red dotted line tracing its inner curve.

**Platform Approach**

**&**

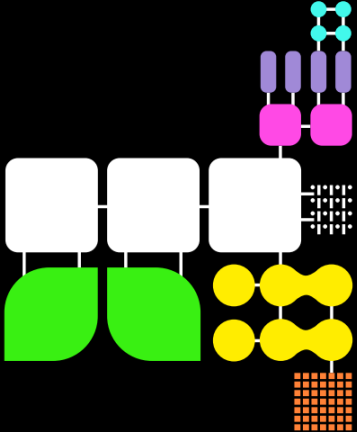
**DfE Gen Zero**

# Platform Approach

Aims to transform construction and delivery of government projects in built environment. Platform approaches aspire to use DfMA to drive efficiency and standardisation across supply-chains.

Delivery Platforms for Government Assets

Creating a marketplace for manufactured spaces



Bryden Wood



THE PRODUCT PLATFORM  
**RULEBOOK**

CONSTRUCTION INNOVATION HUB UK Research and Innovation

DRAFT FOR CONSULTATION  
MAY 2022

## The Rules

1. Deployable
2. Configurable
3. Common Repeatable Elements
4. Interfaces
5. Quality
6. Structured Information
7. Open



1. DEPLOYABLE 2. CONFIGURABLE 3. COMMON REPEATABLE ELEMENTS 4. INTERFACES 5. QUALITY 6. STRUCTURED INFORMATION 7. OPEN

Infrastructure and Projects Authority

Reporting to Cabinet Office and HM Treasury



Transforming Infrastructure Performance: Roadmap to 2030



# DfE Gen ZERO Schools

An R&D Exercise transforming the future of school design.

Working with nature: schools designed for health, well-being & the environment.



A protective landscape

A healthy environment

Engaging outdoor spaces

The Central Commons

# DfE Gen Zero Schools

Classroom Demo - Glasgow COP26



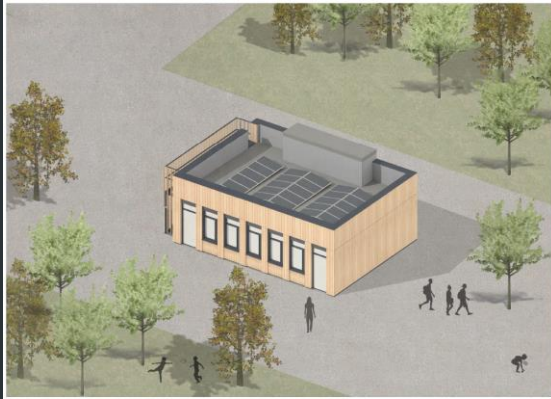
A kit of parts

Ultra Low Carbon

An Active Choice of Timber

A Digital Way of Working

# DfE Gen Zero Schools



**PRACTICAL CLASSROOM**  
EXTERIOR VIEW



**PRACTICAL CLASSROOM**  
INTERIOR VIEW

- Delivering two working single storey buildings.
- Two different site location.
- Demonstrating the repeatable kit of parts.
- UK Home Grown Timber.
- Natural finishes.
- Low Embodied Carbon.
- Whole life Carbon.



**SPORTS FACILITY**  
EXTERIOR VIEW



**SPORTS FACILITY**  
GROUND FLOOR

**Portakabin<sup>®</sup>**

THANK YOU