CIBSE HOMES FOR THE FUTURE GROUP

Can modular construction deliver better homes?

June 2017

Pollard Thomas Edwards
Off-site construction

**Elemental**
Bathroom, kitchen, services pods etc

**Panelised**
Timber SIPS, timber panels, CLT, pre-cast concrete panels

**Volumetric**
Steel/timber, CLT, Timber
Volumetric construction - Good practice

1. Steel / timber structure.
2. Insulation installed in factory, so quality assurance is easier, but only as good as quality management and design.
3. Max dimensions constrained by transport size, typically 3.6m x 8m, and up to approx. 5m x 14m if specialist transport used.
4. Airtightness can be more easily monitored in factory, but damage must be limited in transport and site installation when external membrane is sealed.
5. Pre cast foundations laid on site with co-ordination of incoming services and no thermal bridging.
Laindon Town Centre
Laindon Town Centre Masterplan layout
Laindon Town Centre Building design / appearance
Laindon Town Centre House types

- 3 Bedroom Street House
- 4 Bedroom Parkside House
- 3 Bedroom Hill House
Laindon Town Centre Apartments
Laindon Town Centre Geography

1. Beechwood West
2. Laindon Centre
3. Swan Modular Factory
4. Fenchurch Street Station
Why modular?
Beechwood West Masterplan layout
Beechwood West House type families

- LANE
- 2 BED TERRACE
- 3 BED TERRACE

- AVENUE DETACHED
- AVENUE SEMI-DETACHED

- PARK CORNER
- PARK TERRACE
- FRYTH HOUSE
Beechwood West Material palette

1. Red Brick
2. Buff Brick
4. Painted Brick
6. Natural Orange Clay Tile
6. Brindle Mix Clay Tile
Beechwood West  House type concepts

1. START WITH TRADITIONAL ROOF FORM
2. INTRODUCE NEIGHBOURHOOD IDENTIFYING CHARACTERISTIC
3. ENTRANCE
4. EXTEND TILTO DOWN TO SOME UNITS
5. ADD ARTICULATION TO ANIMATE ELEVATION

1. START WITH PITCHED ROOF FORM
2. INTRODUCE NEIGHBOURHOOD IDENTIFYING CHARACTERISTIC
3. ADD RECESS ED ENTRANCE
4. ADD OPTIONAL CHIMNEY (IF SELECTED)
5. ADD ARTICULATION TO ANIMATE ELEVATION

1. START WITH MONO-PITCH ROOF
2. INTRODUCE NEIGHBOURHOOD IDENTIFYING CHARACTERISTIC
3. ROTATION CREATES STAGGERED BUILDING LINE
4. ADD ARTICULATION TO ANIMATE ELEVATION

1. START WITH TRADITIONAL ROOF FORM
2. INTRODUCE NEIGHBOURHOOD IDENTIFYING CHARACTERISTIC
3. BRING LIGHT INTO THE HOUSE WITH CENTRAL GLAZED CIRCULATION SPACE
4. ADD ARTICULATION TO ANIMATE ELEVATION
Beechwood West Customisation

Let's build your new home...

“Starting with the basics - number of bedrooms, arrangement of the downstairs and upstairs plans and the level of specification - residents can then choose from a carefully selected palette of external finishes for walls, roofs and windows and even add bay, conservatories or roof extensions.”

1. CHOOSE YOUR HOUSE TYPE
2. CHOOSE YOUR MATERIALS
3. CHOOSE YOUR PLOT TYPE
4. CHOOSE YOUR LIVING LAYOUT
5. CHOOSE YOUR LIVING EXTERNAL
6. CHOOSE YOUR BEDROOM LAYOUT
7. NEED MORE SPACE?
Beechwood West Customisation

The Linked Green
Baseline Scenario
Beechwood West Customisation

The Linked Green
Customised Scenario 1
Beechwood West Construction

Modules as they leave the factory
Measuring performance

WHAT TO DO?

- Follow the detail drawing or specs with Architect/technical team
- Install thermal break at the threshold – at least 25mm high performance insulation
- Install damp proof membrane, gas membranes and separating layer as necessary
- Overlap door with cavity by at least 30mm
- Ensure airtight seal under door

GOOD PRACTICE
50mm thick insulation at door threshold or reinforced cavity closer

OPTION 1
REINFORCED CAVITY CLOSER

OPTION 2
INSULATION AT DOOR THRESHOLD

Builders’ Book
PTE-authored guide to best practice sustainable building construction

Residents at Priory Road
Post-occupancy video screened at the 2014 Royal Academy Summer Exhibition
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Thank You