

CIBSE HOMES FOR THE FUTURE GROUP

# Can modular construction deliver better homes?

June 2017



bd

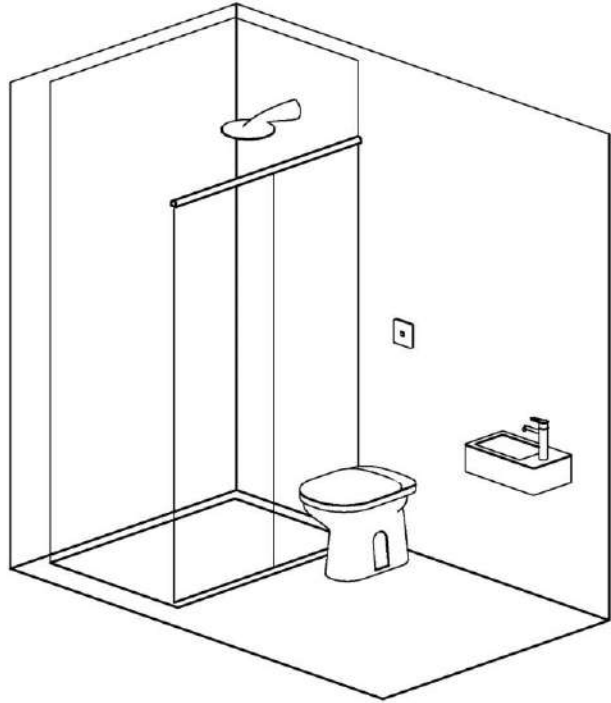
Architect  
of the Year  
Awards 2017

Winner of the Housing  
Architect of the Year

# Pollard Thomas Edwards

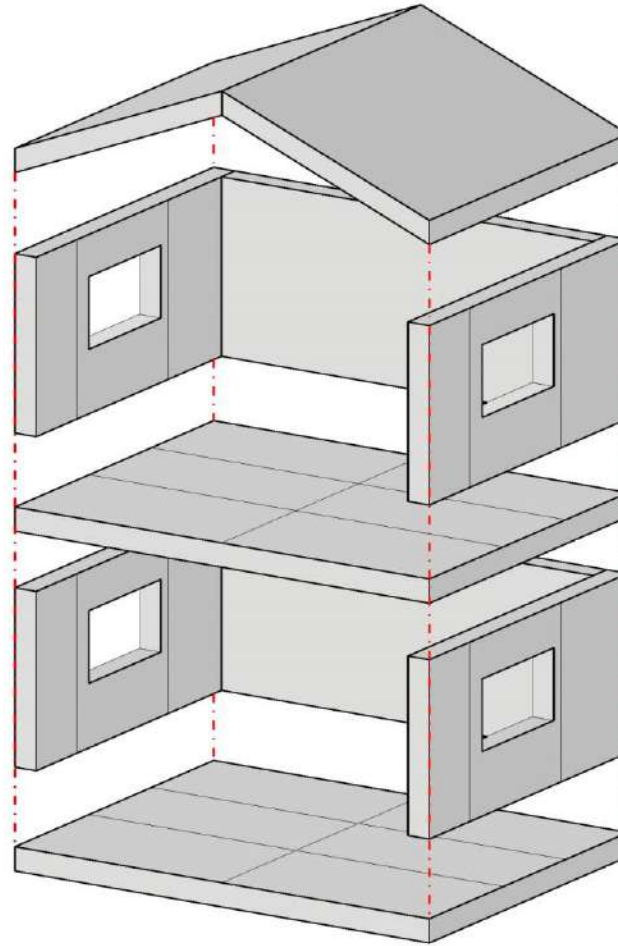


## Off-site construction



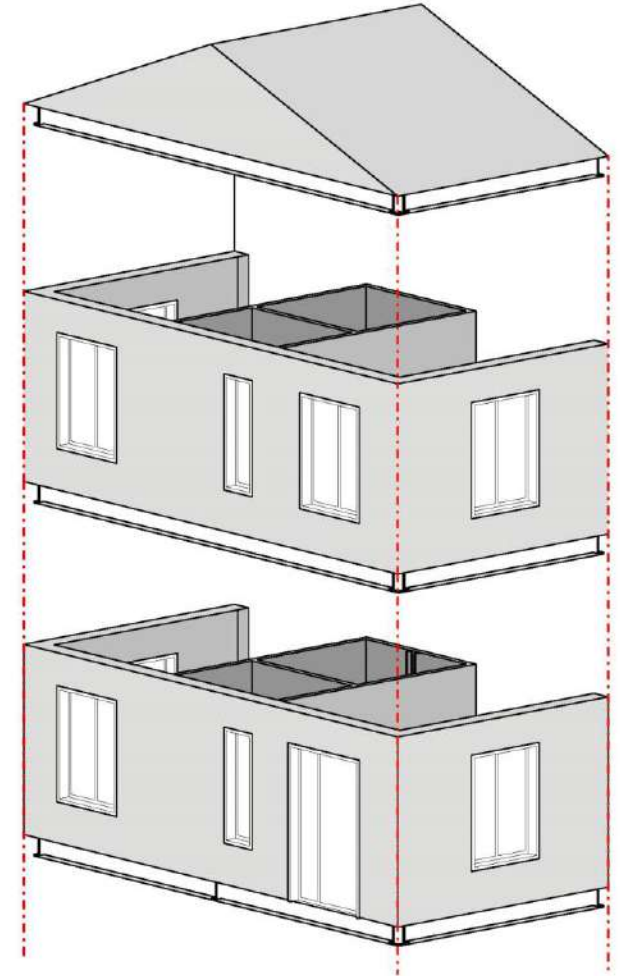
### Elemental

Bathroom, kitchen, services pods etc



### Panelised

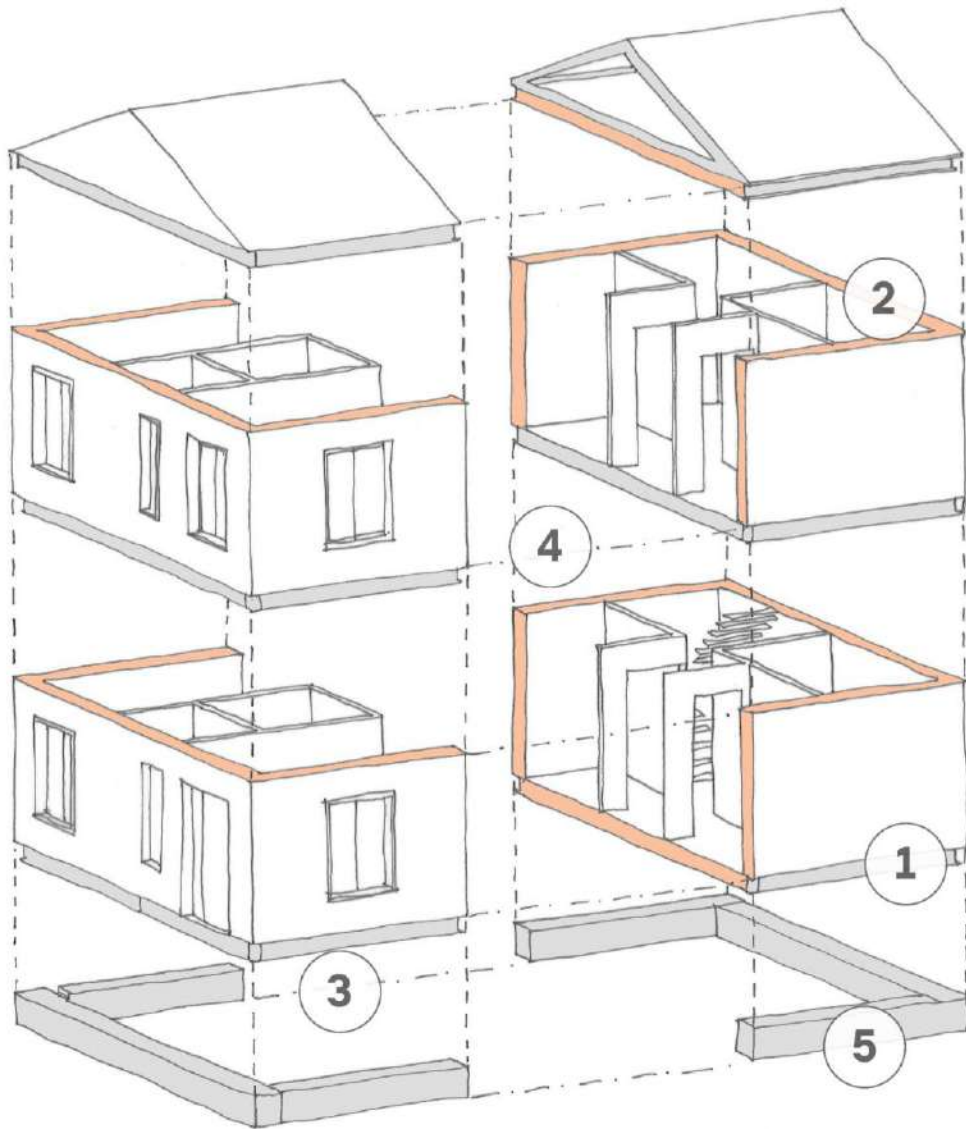
Timber SIPS, timber panels, CLT, pre-cast concrete panels



### Volumetric

Steel/timber, CLT, Timber

# Modular



## 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

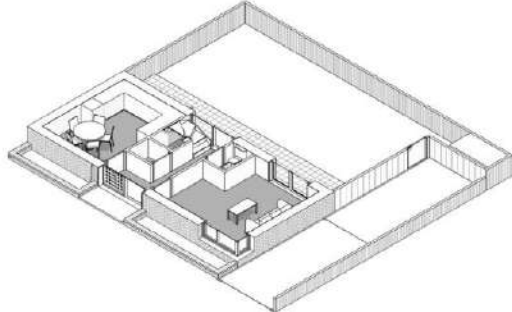
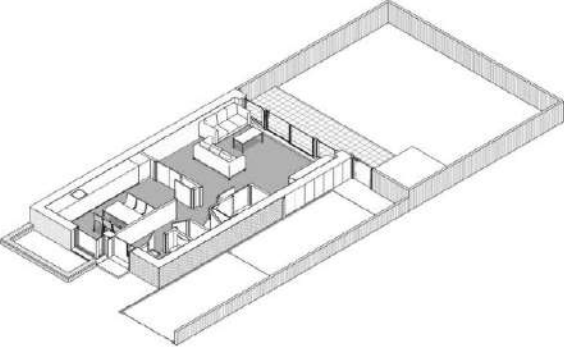
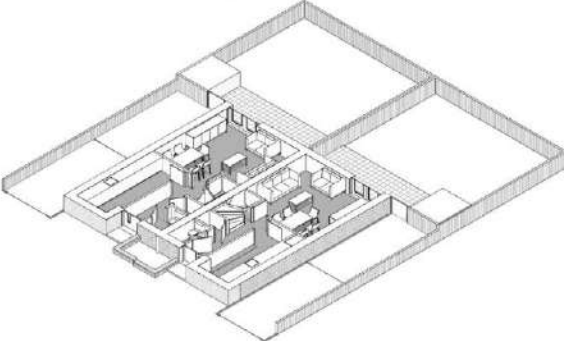
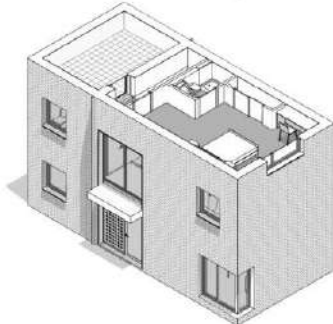
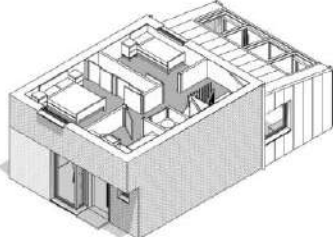
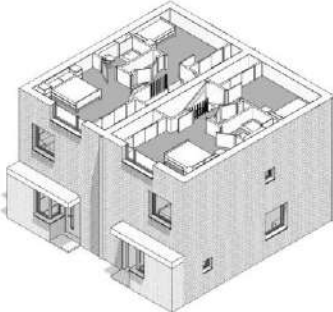
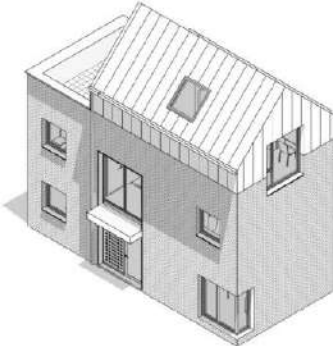
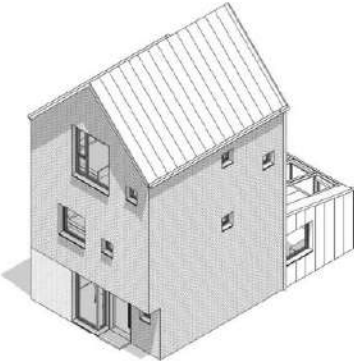
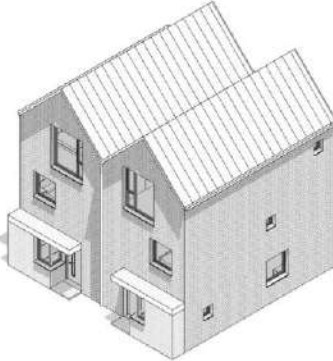




# Laindon Town Centre Building design / appearance



# Laindon Town Centre House types

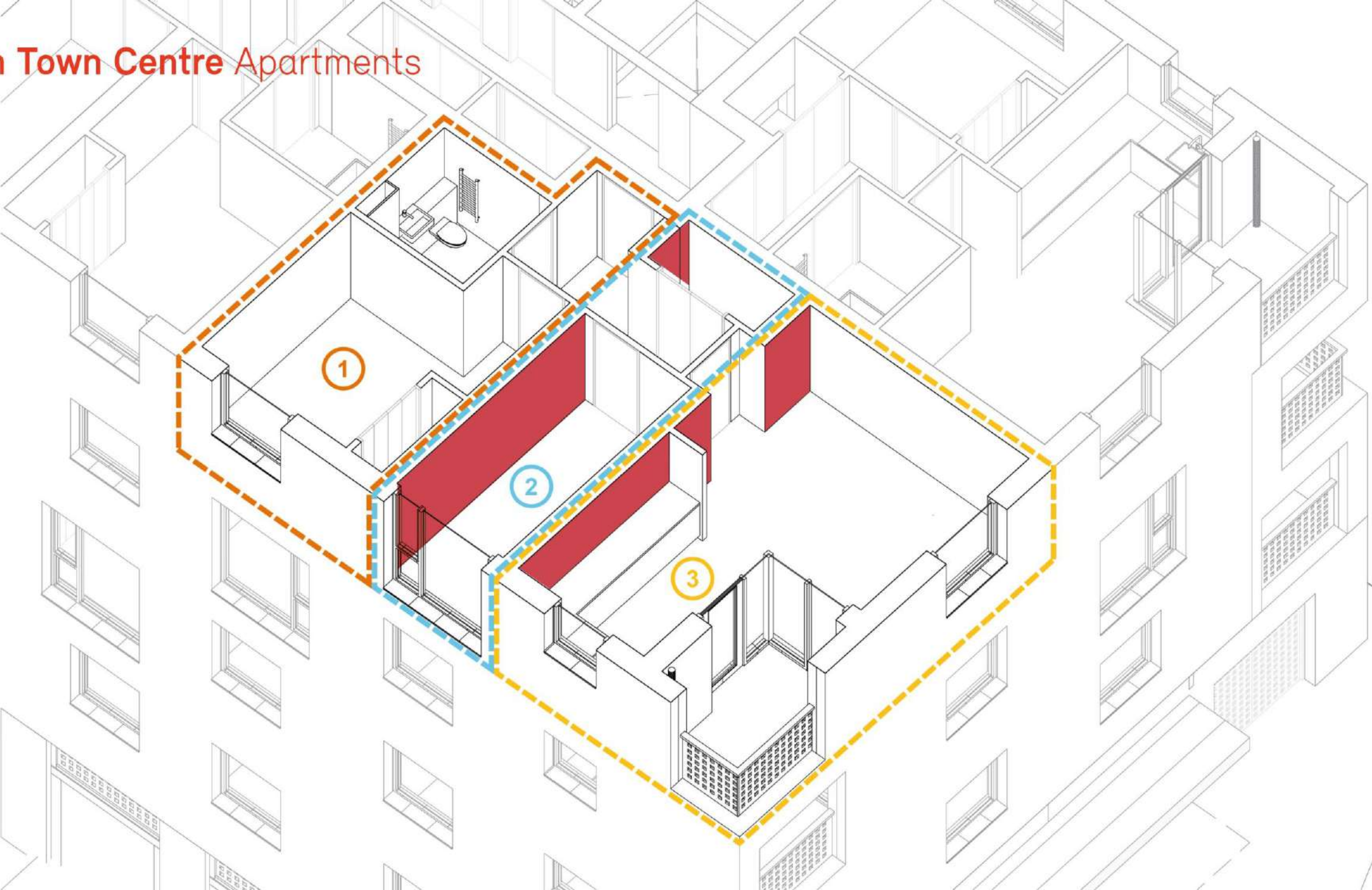


3 Bedroom Street House

4 Bedroom Parkside House

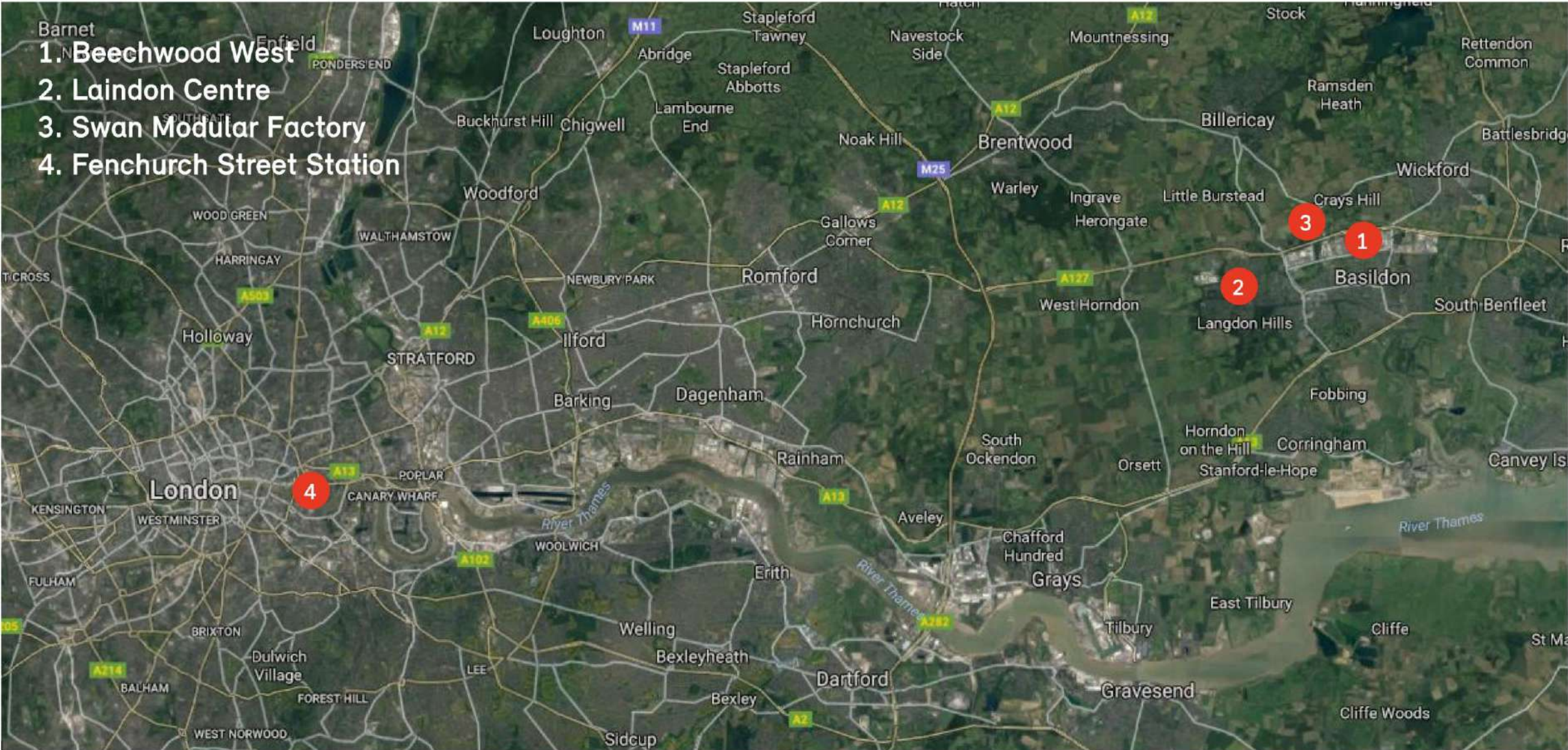
3 Bedroom Hill House

# Laindon Town Centre Apartments





# Laindon Town Centre Geography



# Why modular?



swan



nu<sup>TM</sup>  
living

# Beechwood West Masterplan layout



# Beechwood West House type families



## STREETS

- LANE
- 2 BED TERRACE
- 3 BED TERRACE

## AVENUES

- AVENUE DETACHED
- AVENUE SEMI-DETACHED

## GREENS

- PARK CORNER
- PARK TERRACE
- FRYTH HOUSE

# Beechwood West Material palette



**1**  
Red  
Brick



**2**  
Buff  
Brick



**4**  
Painted  
Brick

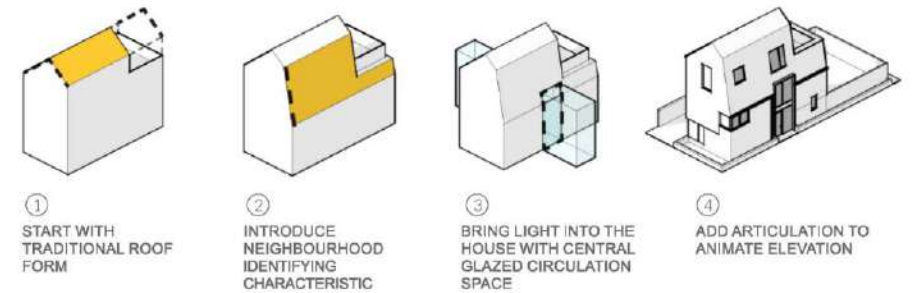
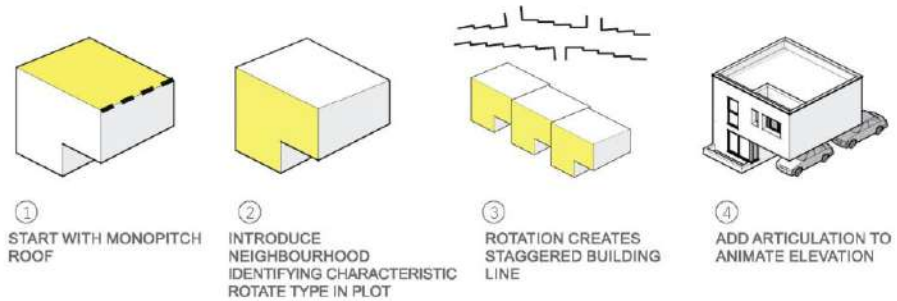
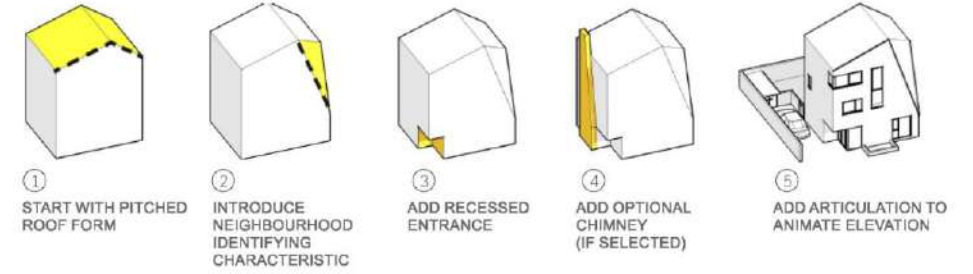
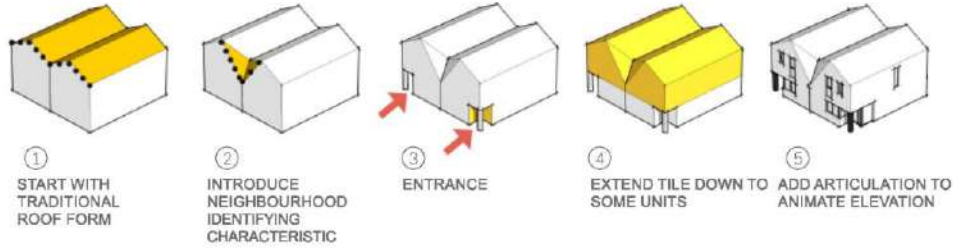


**6** Natural Orange Clay Tile



**6** Brindle Mix Clay Tile

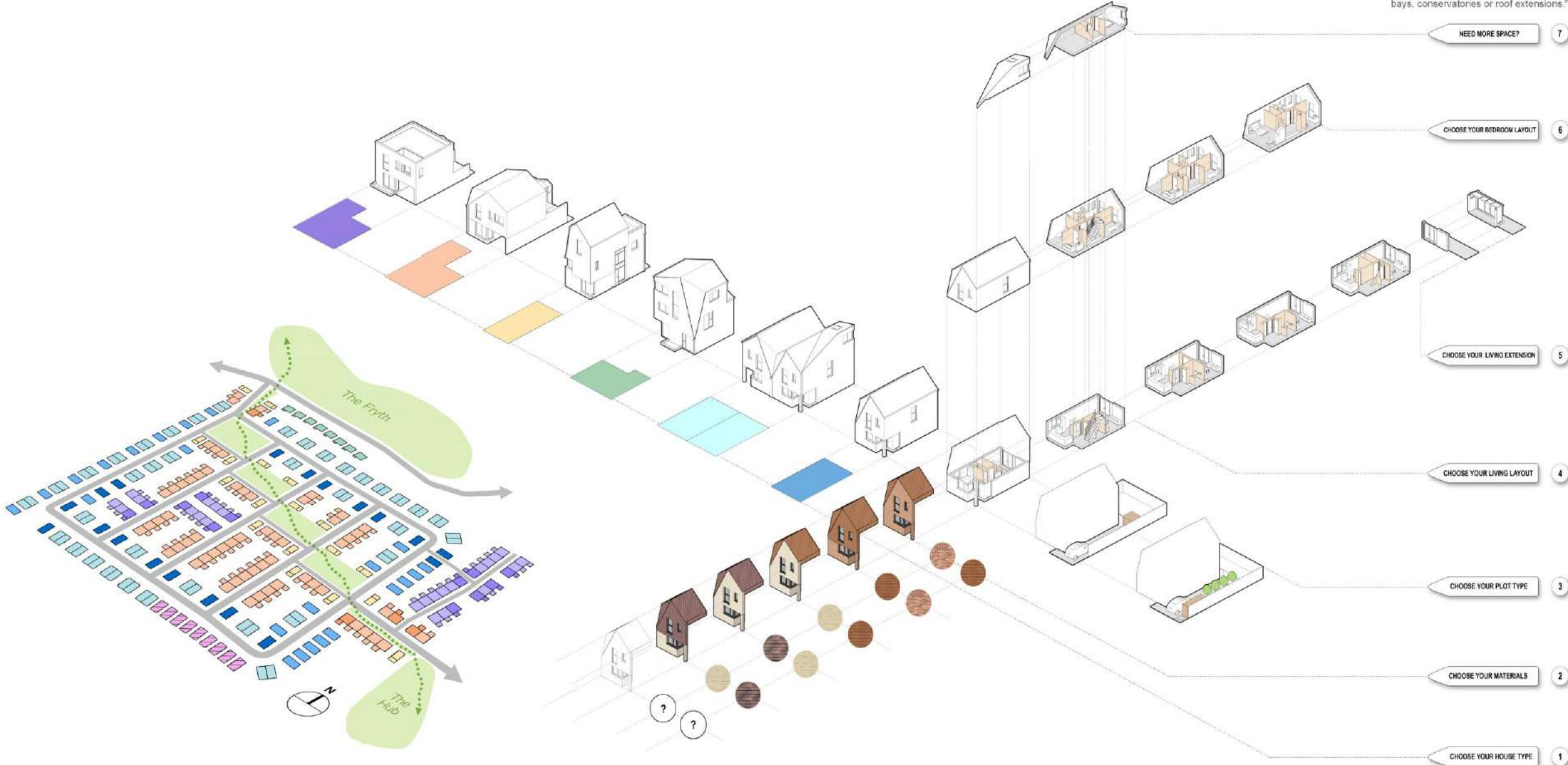
# Beechwood West House type concepts



# 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 bays, conservatories or roof extensions."



NEED MORE SPACE? 7

CHOOSE YOUR BEDROOM LAYOUT 6

CHOOSE YOUR LIVING EXTENSION 5

CHOOSE YOUR LIVING LAYOUT 4

CHOOSE YOUR PLOT TYPE 3

CHOOSE YOUR MATERIALS 2

CHOOSE YOUR HOUSE TYPE 1

# Beechwood West Customisation

The Linked Green  
Baseline Scenario





# Beechwood West Customisation

The Linked Green  
Customised Scenario 1



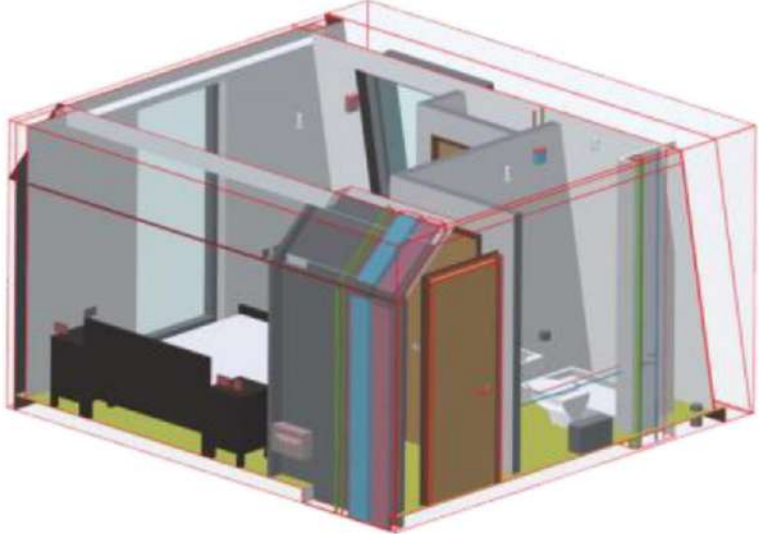
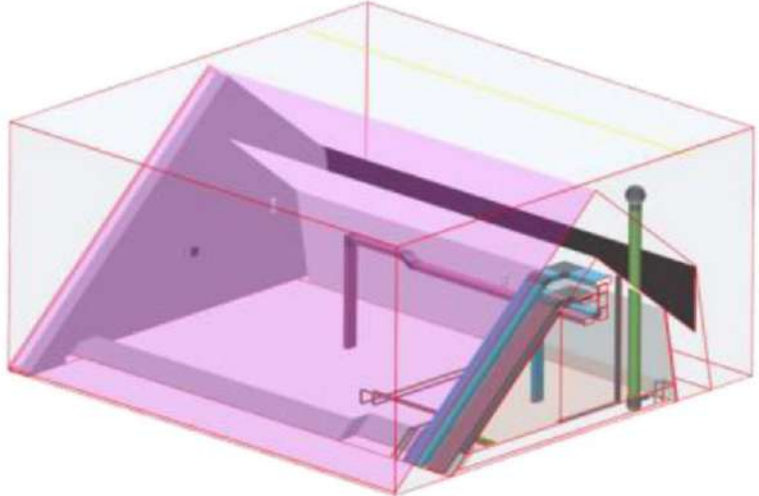
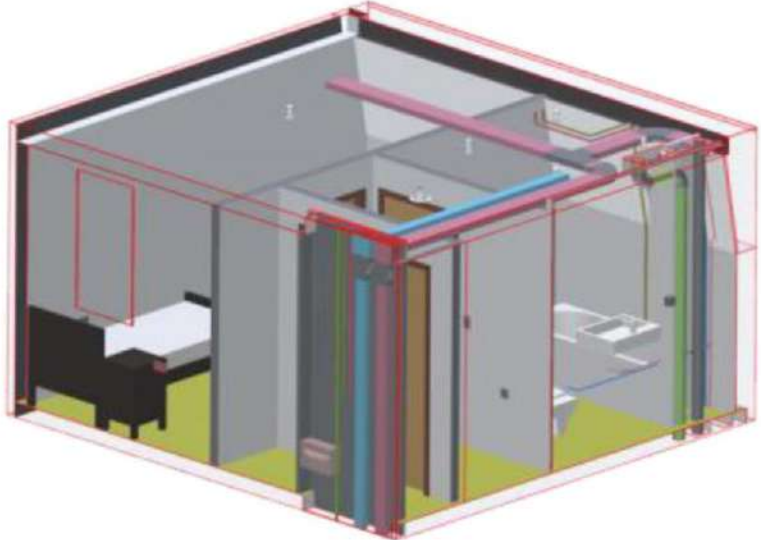
# Beechwood West Customisation

The Linked Green  
Customised Scenario 2



# Beechwood West Construction

Modules as they leave the factory



# Measuring performance



Measuring building performance



Residents at Priory Road

Post-occupancy video screened at the 2014 Royal Academy Summer Exhibition

**✓ WHAT TO DO?**

- Follow the detail drawing or speak with Architect / technical team
- Install a 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 50mm
- Ensure airtight seal under door

**OPTION 1**  
REINFORCED CAVITY CLOSER

**OPTION 2**  
INSULATION AT DOOR THRESHOLD

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

## Builders' Book

PTE-authored guide to best practice sustainable building construction

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# Thank You

