

# GROW & IMPACT

ENERGY HOUSE 2.0 PROJECT



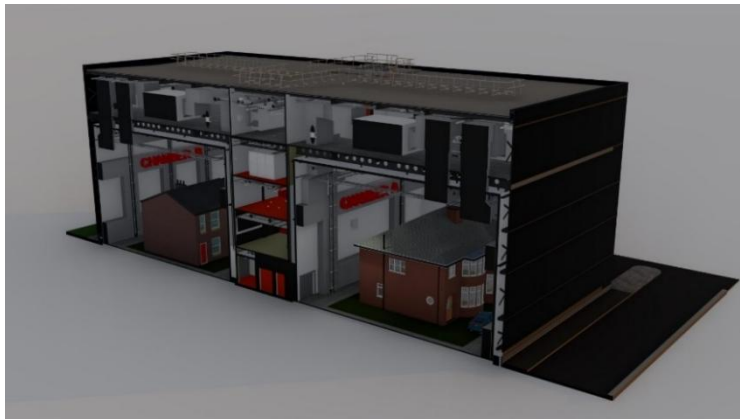


University of  
**Salford**  
MANCHESTER

**ENERGY**  
**HOUSE** 2.0

# ENERGY HOUSE 2.0 FACILITY OVERVIEW

- £16m research facility at Salford University
- Funded by the European Regional Development Fund
- Consists of 2 environmental chambers
- Each chamber can accommodate 2 three-bed homes
- Can recreate temperatures ranging between -20°C to +40°C
- Simulates wind, rain, snow and solar radiation
- Completed in December 2022



**£16m**  
research facility

—

**2**  
environmental chambers

—

**-20°C to +40°C**  
in the chambers

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# SUSTAINABILITY IN GROWTH



# EHOME2

Saint-Gobain has partnered with Barratt Developments to create eHome2, a three-bed detached house that has been designed to meet future performance requirements.

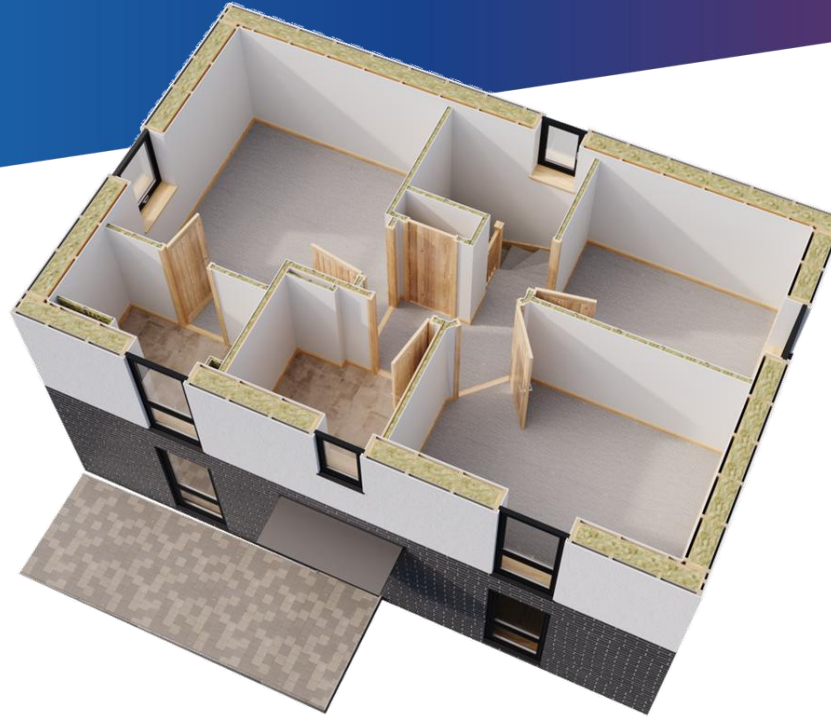


## eHome2 will:

- Provide an understanding of delivering zero carbon housing at scale using off-site construction solutions
- Pilot the use of next generation mechanical and electrical provisions
- Understand what role data and smart technology will play to deliver comfortable, efficient homes

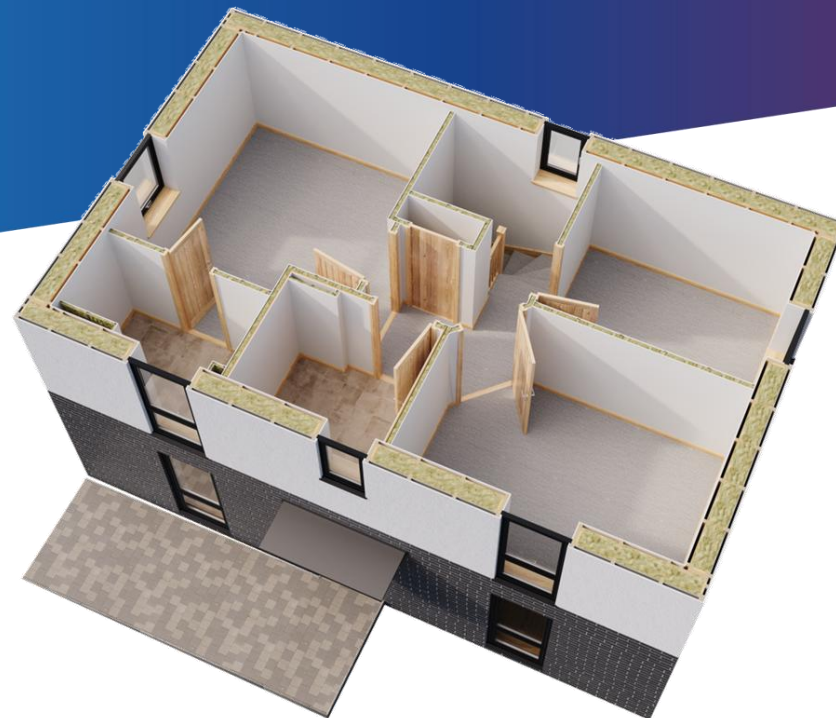
# EHOME2: SAINT-GOBAIN BRANDS

GROW &  
IMPACT



# EHOME2: PARTNERED COMPANIES

GROW & IMPACT



Service Providers:



Complementary Materials:



Data / Automation:



MEP - Service:





# EHOME2: FABRIC PERFORMANCE

- Insulated Pre-Cast Concrete Unit Ground Floor –  $0.11\text{W/m}^2\text{k}$
- Category 2 Closed Panel structure –  $0.13\text{W/m}^2\text{k}$
- Posi Joist floor cassettes to allow for service integration
- Low air tightness targets
- Lightweight external façade
- Investigate potential Saint-Gobain Offsite Solutions platform application and interoperability





## Category 2 Closed Panel:

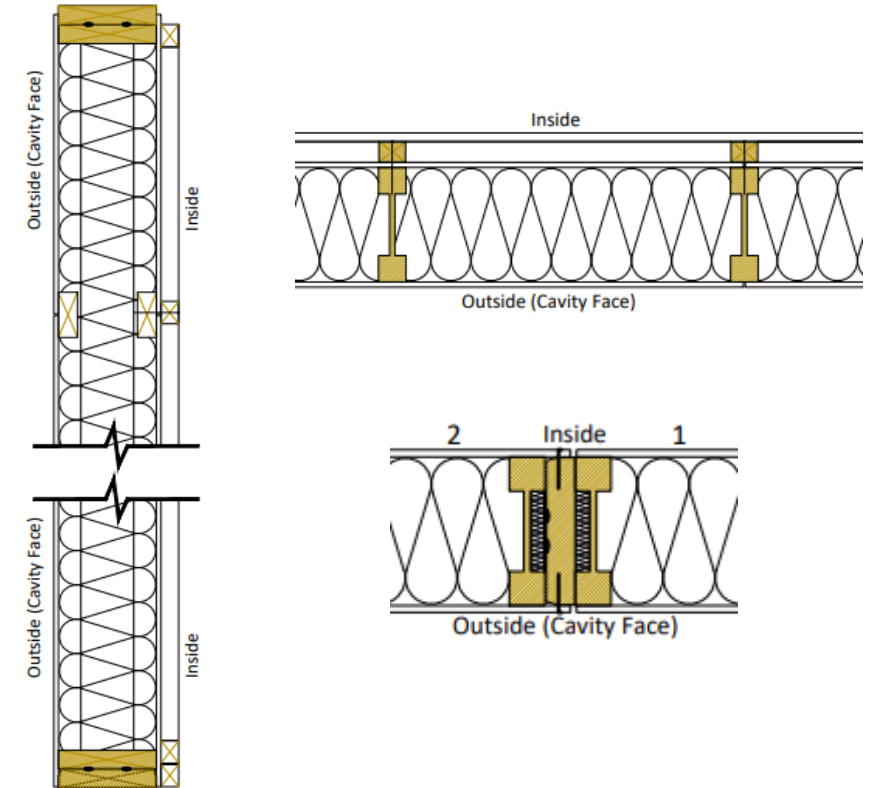
- A more sustainable structural timber panel solution
- A closed panel solution (Category 2)
- A performance point to meet and exceed Future homes requirements without the need for additional site installed insulation
- A Solution to promote higher levels of PMV

## Next step:

- Warranty approval - NHBC Accepts and BOPAS

## Other product applications:

- Cassette development – Posi
- Utility housing / locations – Utility Roofs
- Light weight Facades – Weberwall / GRX – detailing and interfaces



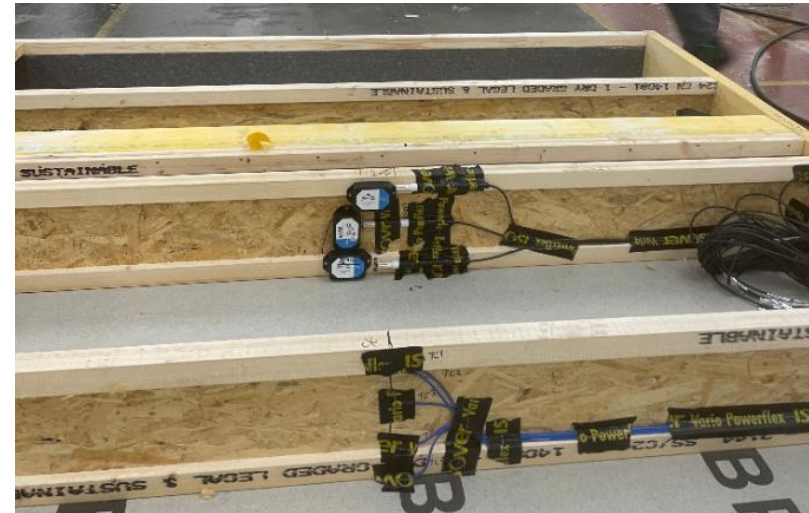
# GLOBAL INFLUENCE

## Saint-Gobain Research:

- QUB – Quick HLC / pre-occupation testing
- Sustainability qualification – whole house
- Occupant Comfort Measurements
- EV integration & vehicle thermal performance

## US Delegation:

- Sensor analysis and qualification





## Program – 9 months applied study:

- Month 1 – University baseline study and chamber calibration
- Months 2-4 – MEP and fabric testing and development / optimisation
- Months 5-7 – QUB testing and validation
- Month 8 – Overheating analysis and stress testing
- Month 9 - AOB

## Resource:

- Leeds Beckett University PHD (SGR sponsored) applied program for QUB + SGR - Johann
- 18 months local Post Doctorate level researcher to oversee local program application and reporting
- Friends of Salford – PHD sponsor (WIC)

## Potential for Extended Study:

- Greater Manchester Innovation Accelerator – 24 month extended program

# MAKING THE WORLD A BETTER HOME