Achieving Passivhaus at Scale

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Achieving Passivhaus at Scale

What we are doing today:

1. Passivhaus in Norwich
2. Case Study Project: Goldsmith St
3. Lessons Learnt – Achieving Passivhaus at Scale
4. Q & A
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Norwich Context:

One of the fastest growing cities in the UK

Young population

“Tale of two cities”

Housing need & demand outstripping supply

Major housebuilding programme

Norwich Regeneration Ltd
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Why Passivhaus – Council Drivers:

- Political
- Economic
- Environmental
- Social
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Norwich City Council - Hansard Close

First Passivhaus scheme by Council

10 Flats for Social Rent

Completed June 2017
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Norwich City Council – Rayne Park

172 units of which 112 are Passivhaus

Largest UK mixed tenure Passivhaus scheme

2/3 for Sale or Private Rent – 1/3 Social Rent

Developed by Norwich Regeneration Ltd

Sales showing 5% premium for Passivhaus
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Norwich City Council – Goldsmith St

100% Passivhaus Certified – 100% Social
UK’s Largest Passivhaus Social Housing Scheme

Year project started/ended
2014 – 2019

Number of units/ tenure mix
105 units for social rent - 45 Houses 60 Flats

Contract Type / value
JCT Standard - Traditional Contract £15M

Construction Cost / sqm
£1875/sqm (2016)

Project Cost incl. Professional Fees / sqm
£2200/sqm (2016)
Site Section
Solar Scheme, Streets & Gardens
Site Plan

Unit Mix

45 Houses
40 2 bed houses
5 4 bed houses

60 Flats
57 1 bed flats
3 2 bed flats
1 3 bed flat

2 Bed House
4 Bed House
1 Bed / 2 Bed Flats
2 Bed House Type (South Entered)

Ground & First Floor Plan

PRIVATE GARDEN

6.3 M

NORTH FACING

LIVING ROOM BATHROOM / LANDING

SOUTH FACING

KITCHEN / DINING BEDROOMS

FRONT GARDEN & STREET
2 Bed House Type (South Entered)

Typical Section

- SOUTH FACING
  - KITCHEN / DINING
  - BEDROOMS
- NORTH FACING
  - LIVING ROOM
  - BATHROOM / LANDING
- SOUTH FACING
  - KITCHEN / DINING
  - BEDROOMS
- FRONT GARDEN & STREET

Dimensions:
- 1.7 M
- 2.1 M
- 2.6 + M
- 2.5 M
Street Elevation (South Entered)

2B Houses, 4B Houses
1 Bed Flats (South Entered)

Ground, First & Second Floor Plan

PRIVATE GARDEN

7.8 M

NORTH FACING
KITCHEN & BEDROOM

SOUTH FACING
BALCONY
Typical Flat Block (South Entered)

1B Flat - Individual Entrances
Materiality & Detail

Robust, Quality, Detail
Materiality & Detail
Wall Construction & Roofing
Lessons Learnt with Q & A
Achieving Passivhaus at Scale

1. **Aspiration & commitment** to achieve Passivhaus from the outset

2. Manage **solar gains & overshadowing** carefully

3. Early **service co-ordination** essential to integrate into design

4. Careful selection of **construction method** – to ensure repeatability

5. Don’t let Passivhaus dominate the design – it’s not the only driver

6. Q & A
Thankyou

Norwich City Council & Mikhail Riches
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