

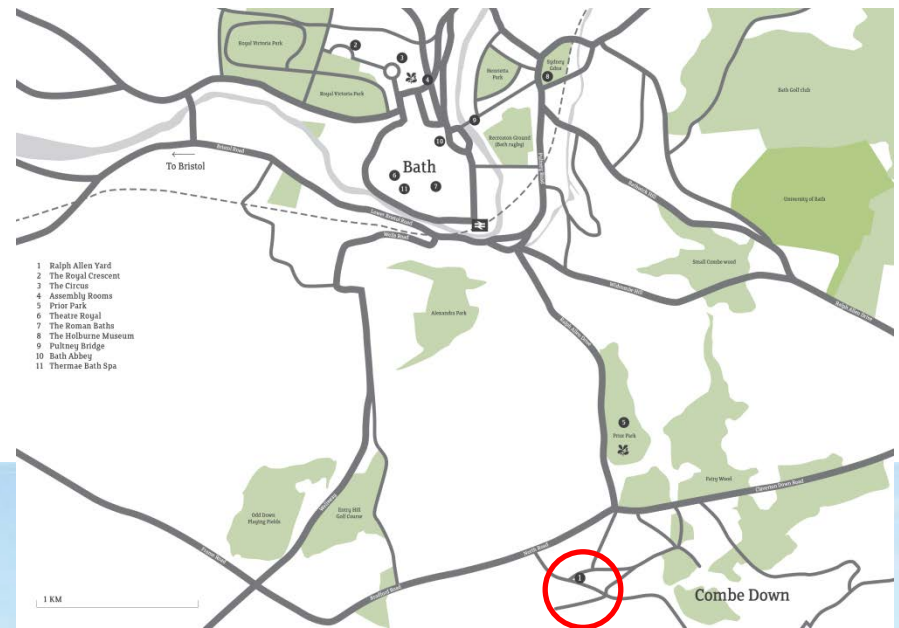
Ralph Allen Yard

A case study of Ralph Allen Yard, Combe down, Bath –
An exemplar for sustainable construction.



Brief

- Combe Down, Bath.
- Brownfield development
- Sustainable mixed-use development.
- Zero Carbon living
- 8 Eco-homes and 1 apartment building.
- Mining interpretation centre.





United Nations
Educational, Scientific and
Cultural Organization



World
Heritage
Convention



- Ralph Allen was an Entrepreneur and mayor of Bath in 1742.
- Helped towards the development of the site to World Heritage status (1987).
- This status demonstrates Bath's global significance and natural beauty.
- The site was part of the intricate mines that provided stone, from which, Bath was built.



Code & BREEAM

- Independently assessed ratings.
- The earlier they are implemented to the design, the more efficient the process. Design-led approach.
- Code for Sustainable Homes level 5
- BREEAM rated 'Very Good'

BREEAM®

Occupant Benefits

- Reduced running and maintenance costs
- Reduction of personal 'footprint'
- Improved wellbeing from living in a pleasant environment – natural lighting etc.

Interpretation centre



- Integral hub to Combe Down Community.
- Flexible space
- Local events
- Celebration of mining history
- BREEAM rated 'Very Good'

Preservation of existing external wall, maintaining local character and history.

Land-Use and ecology



The site is located just above the Bath and Bradford on Avon SAC.

Surveys were carried out to display that there is no evidence of Bats within the site radius.

It was suggested, that native plant species are integrated to the site; this is to improve the sites ecological value.

Native plants can be found on the planted green roof- the living green sedum.

Siting, orientation and access



- South facing
- Maximising PV potential via the roof angle (22°).
- Local amenities
- Bike storage
- Bus drop off point
- Disabled parking

Passive design



- Southerly facing to maximise passive solar gain.
- Lower ground floor level lowered, sunspace to capture passive solar energy.
- Smaller North facing windows.
- Passive ventilation.
- Roof lanterns –Mechanical Ventilation Heat Recovery.



Thermal Mass

- Triple glazed, thermal control windows. (No colour tint)
- Solar shading to keep out the highest summer sun
- Natural ventilation
- Large windows
- Low demand for heating



Surface Water Run-Off

- Green Roof
- Rainwater harvesting
- Permeable paving (matching existing stone hues).
- Water attenuation
- Total reduction to less than 80 litres, per person, per day.



Energy

- Energy display device presenting consumption data to occupants.
- A* rated fridge-freezer
- A rated washing machine and dishwasher.
- EU energy efficiency labelling scheme information leaflet provided to residents.
- Light fittings use LEDs and low energy bulbs to reduce consumption, when required.
- High efficiency gas boilers



Materials

The materials have been carefully selected to maintain the *sustainability focus* and to reflect the character of the local surroundings, in this *World Heritage Site*.



- Rubble stone walls
- Ashlar stone walls
- Timber Cladding
- Triple Glazing
- Single-ply membrane roof
- Planted green roof
- Stone paving flags
- Resin bonded gravel

Challenges

Biomass Vs Gas

- Technology resistance
- Active management – overtones of negative reliability.
- On-going costs.
- High thermal performance, low energy demand of the build.
- Small gas boiler – The more appropriate choice.

Success

- Highly Commended in the 2013 HouseBuilder Awards (Best Zero or Low-Carbon Initiative)
- Secure by design approved.



References

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