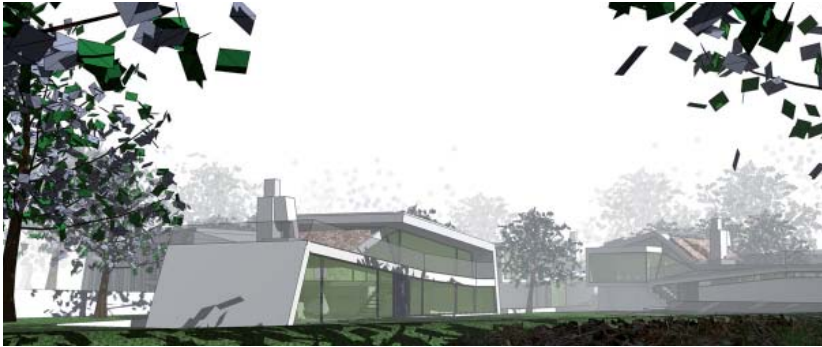


BATTLE McCARTHY®

Consulting Engineers & Landscape Architects



PROJECT:
KINGSWOOD WORKS, LEIGHTON BUZZARD

CLIENT:
Undisclosed

ARCHITECTS:
Type3 Studio

BM SERVICES:
Sustainability and Environmental Design

VALUE:
£20m

DATE OF COMPLETION:
Ongoing

DESIGN BRIEF

Battle McCarthy has supported Type 3 Studio Ltd. in providing a planning application for the above project in the fields of Sustainable Building Engineering and particularly specialising in providing a sustainable solution contributing to the environmental aspects of the development both considering a site wide application as well as the individual building performance

Using National, Regional and Local sustainability policy and guidelines as a benchmark, Battle McCarthy has the proposed scheme's sustainability and environmental performance, making recommendations on the potential for improvements towards achieving exemplar 'high-end' sustainable residential architecture with the least financial outlay

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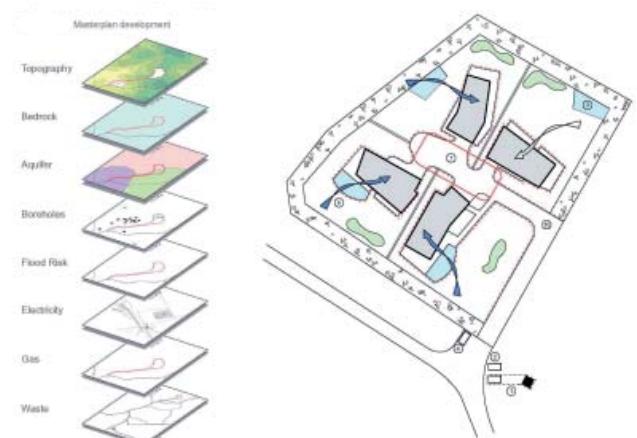
DESIGN INITIATIVES/ACTIONS UNDERTAKEN

Battle McCarthy assisted the team in developing a sustainable strategy that not only meets the government expectations but is also of real value to the developer.

The overall success of such a development hinges upon the ability to be truly outstanding and therefore particular reference was made to the PPS7 requirements. Ground breaking steps to achieve zero carbon, water neutrality, and CfSH Level 6 were explored in detail

SUSTAINABLE STRATEGIES

- Bioclimatic Design
- Fabric Performance
- Renewable Energy & Low to Neutral Carbon Strategies
- Materials & Waste
- Water Consumption recycling and Supply
- Code for Sustainable Homes



KEY SUSTAINABLE TARGETS

Landscape & Ecology

A holistic approach that creates on-site habitats and provides long term protection and enhancement of existing habitats on and particularly surrounding the site.

Ultra Low Carbon and Energy in Operation

A low energy and low carbon bioclimatic design that emits zero net annual CO2 emissions to heat light and ventilate the buildings.

Renewable energy

The use of locally available biomass and roof top-mounted photovoltaics providing 100% of the energy to light, heat and ventilate the buildings.

Low water

An integrated approach to water management that reduces net water consumption by a minimum of 50% when compared to average UK water consumption figures while maintaining the natural water cycle.

Waste

Adequate space for on-site waste treatment and a commitment to divert at least 80% of construction and non-hazardous demolition waste from landfill by reusing and recycling.

Materials

Use of low impact materials including use of recycled and re-used components that work with the building conditioning to provide life cycle benefits.

Construction

Considerate and low impact construction that utilises modern methods of construction, i.e. prefabrication to minimise construction pollution.

Best Practice

Minimum Code for Sustainable Homes Level 5 for all buildings.

Education

A design that encourages and facilitates sustainable living.

Health and Well-being

A design that enhances access to light, the sun, fresh air and provides association with nature and a means for passive social integration.

Ventilation Operation - Summer/Mid-Season

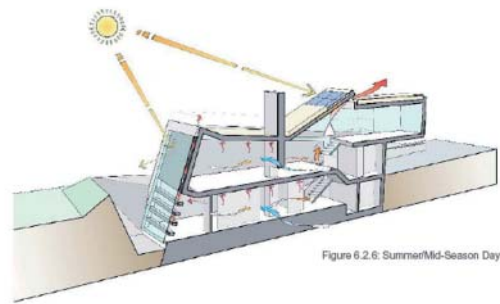


Figure 6.2.6: Summer/Mid-Season Day

- Fresh air supply pre-cooled through vegetation and nature pool before entering through openings;
- Air extract through passive stack through building, exiting at high level;
- Solar controlled southern facade;
- Exposed thermal mass absorbs direct heat, reducing peak temperatures;
- Potential for cooling due to earth acting as additional thermal mass;
- PV electricity generation.

Ventilation Operation - Winter

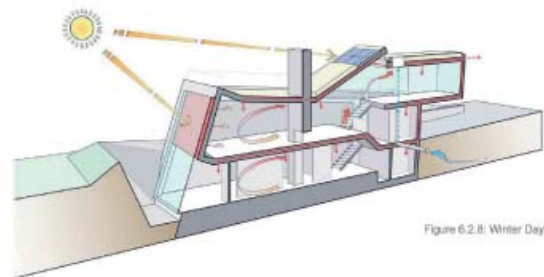
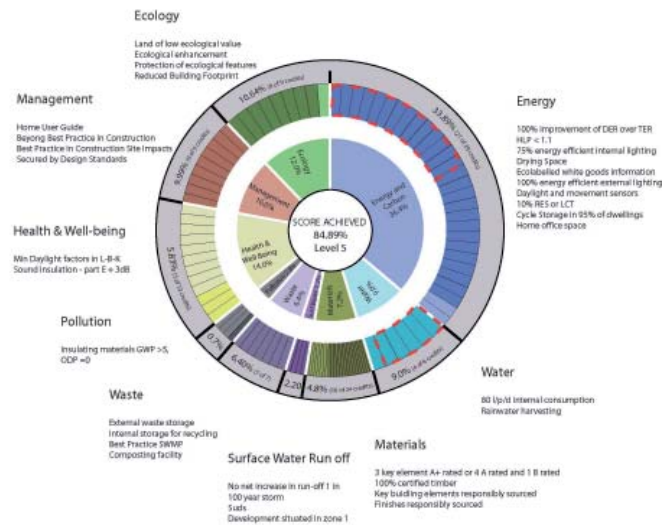


Figure 6.2.8: Winter Day

- Trombe wall captures heat of sun for use throughout the day;
- Sealed building envelope with mechanical whole house ventilation;
- Fresh clean air supplied from landscape heat exchanged from exhaust air to supply to rooms;
- PV electricity generation.



Minimum required percentage scores per code level:



Achieving CfSH Level 5