

## **SUSTAINABLE DESIGN (GP9) –952 –SHORNCLIFFE**

Our proposals for a new build residential building, has been carefully designed with the following ethos:

- A. It had been designed to take into account the use of energy and resources and any adverse impact on the environment through paying particular regard to the location, orientation and appearance of the building, the form of construction, the materials used and its resilience to climate change and flooding; and,
- B. Will not have unacceptable impacts on the amenities of neighbouring properties or an adverse effect on the special interest of Conservation Areas, protected buildings or protected monuments.

We can demonstrate that our proposal follows the guidelines by including the following within the design:

### **1.0 CONSERVATION OF FUEL AND POWER**

#### **1.1 THERMAL EFFICIENCY OF THE BUILDING FABRIC**

- A. The proposed external walls will comprise either of steel and timber framed with external insulation and clad in a selected system, plasterboard and skim internally. U-Value of 0.13 W/m<sup>2</sup>K
- B. The proposed ground bearing insulated reinforced concrete slab will have a U-Value of 0.11 W/m<sup>2</sup>K.
- C. The proposed warm flat roof will be timber framed and covered with rigid insulation and a single-membrane waterproofing system. U-Value of 0.11 W/m<sup>2</sup>K.

#### **1.2 GLAZING**

- A. Windows are to be timber or aluminium framed with edge sealed double glazed units, Low E and Argon filled which achieves a minimum of 1.2 W/m<sup>2</sup>K Centre of pane U-Value or better.

#### **1.3 LIGHTING**

- A. All new lighting will be energy efficient with 40 lumens per circuit watt.

### **2. MECHANICAL ENGINEERING**

#### **2.1 MEASURES TO REDUCE NOISE & IMPACT OF FUMES**

- A. The kitchen ventilation, boiler and fireplace flues will all discharge above roof level.

#### **2.2 MEASURES TO REDUCE THERMAL ENERGY**

- A. We propose to install a heat recovery air handling unit in the dwelling to recovery energy from internal spaces
- B. All rooms will be mechanically ventilated to avoid the need to open windows and thereby reduce wasted energy due to unwanted and uncontrolled infiltration.
- C. To avoid temperature swings (and associated energy wastage), the underfloor heating will be set to minimum requirements (16-18°C), with the ventilation system used for fine control of both heating & cooling.

### 3. DRAINAGE

- A. All new rainwater and surface water drainage will connect to existing drainage runs. Existing soak away to be inspected and if insufficient to take new load, proposed soak-away to be installed.

### 4. WATER EFFICIENCY

- A. For new dwellings, the consumption of wholesome water must not exceed 125 litres per person per day calculated in accordance with the methodology set out in the Water Efficiency Calculator.

### 5. DEMOLITION AND WASTE MANAGEMENT

- A. Material from demolition of existing structure to be inspected and reused where possible.
- B. All spoil and excavation material from any excavation will be reused on site.
- C. Integrating waste minimisation. Separating materials into various skips and having an overall strategy for minimising waste.
- D. Refer to the Waste management plan drawings details of the dealing with the waste from demolishing the existing glasshouses.

### 6. LOCAL TRADES AND MATERIALS

- A. Where possible materials will be sourced locally.
- B. Where possible local trades will be instructed.
- C. Where possible local consultant and contractors, and sub-contractors will be instructed.
- D. Specification –Products and companies that have a low environmental impact (Kingspan insulation) will receive priority selection

### 7. MATERIALS AND/OR SYSTEMS NOT BE USED

- A. Produces/components based upon or reinforced with asbestos mineral fibres.
- B. Asbestos.
- C. High alumina cement or concrete; tricolorite cement.
- D. Mundic; calcium silicate bricks or tiles; glass fibre bricks.
- E. Urea formaldehyde or polystyrene material.
- F. Sea dredged or sea washed aggregates.
- G. Lead or material containing lead other than in roof flashings where rain water run-off is discharged directly into a sewer.
- H. Lindane; tributyltin oxide; pentachlorophenolate; pentachlorophenol.
- I. Poly-Chlorinated Biphenyl.
- J. Chlorofluorocarbons.
- K. Calcium chloride in admixtures for use in reinforced concrete.
- L. Timber which has not come from well managed forests, or sustainable sources.
- M. Any substances or materials not in accordance with any relevant British Standard and Codes of Practice.
- N. Practices or good building practice, or which have been declared deleterious in a publication of the Building Research Establishment.
- O. Other substances generally known at the time of use to be deleterious to health or safety or to be likely to affect adversely the development in particular circumstances in which they are used.