

T Level Technical Qualification in Building Services Engineering for Construction (8710-30)

Employer-Set Project – Brief and resources

Project brief

The employer

Rich Build PLC is an established building contractor with branches throughout the UK. Each branch works on different types of developments including, new build residential, commercial retail and more.

The project

Rich Build PLC are preparing a tender submission for the building of a community library. The tender specification includes details on the requirement to include renewable technologies and environmental products as part of the library development.

You are part of the team who are working together to respond to the tender – you will have to research technologies and products and contribute to planning in line with the end client requirements.

An extract of the tender specification, including the relevant sections relating to your part of the project has been provided; this includes site plans, supplier details, budget details, etc.

Tender specification

Community library project

Supplier list

Purchasing technologies directly from manufacturers is preferred, to ensure value for money and inclusion in manufacturer servicing programmes. Potential suppliers include:

- www.worcester-bosch.co.uk/products/heat-pumps
- www.vaillant.co.uk/commercial/products/commercial-renewable-systems
- www.gb-sol.co.uk
- www.polysolar.co.uk/commercial
- www.renewableenergyhub.co.uk/
- www.freerain.co.uk
- www.rainharvesting.co.uk

Building specification/technology requirements

Orientation	South facing
PV system requirements	4kWp System
Solar thermal system requirements	3.6m2 system
Calculated heat pump heat load	9.5kW
Biomass heat output requirements	9.5kW
Rainwater harvesting tank requirements	30,000 litres

To ensure the efficient use of energy, the library should have both SMART heating and SMART lighting controls throughout the building.

The library should include low energy lighting options within the building.

To prevent the wastage of water and to ensure water efficiency throughout the building, the library should incorporate the following water conservation technologies:

- Spray taps
- Low volume flush WC
- Flow reducing valves
- Infrared taps/WC flushing

The library should as far as possible include renewable technologies as part of the finished development, including:

- Water conservation
- Electricity producing technologies
- Heat producing technologies

Systems budget

Projected system costs based on technology requirements:

Water conservation budget:

- Rainwater harvesting £3800 - £4000

Electricity producing technology budget:

- Solar PV £5800 - £6200

Heat producing technology budget:

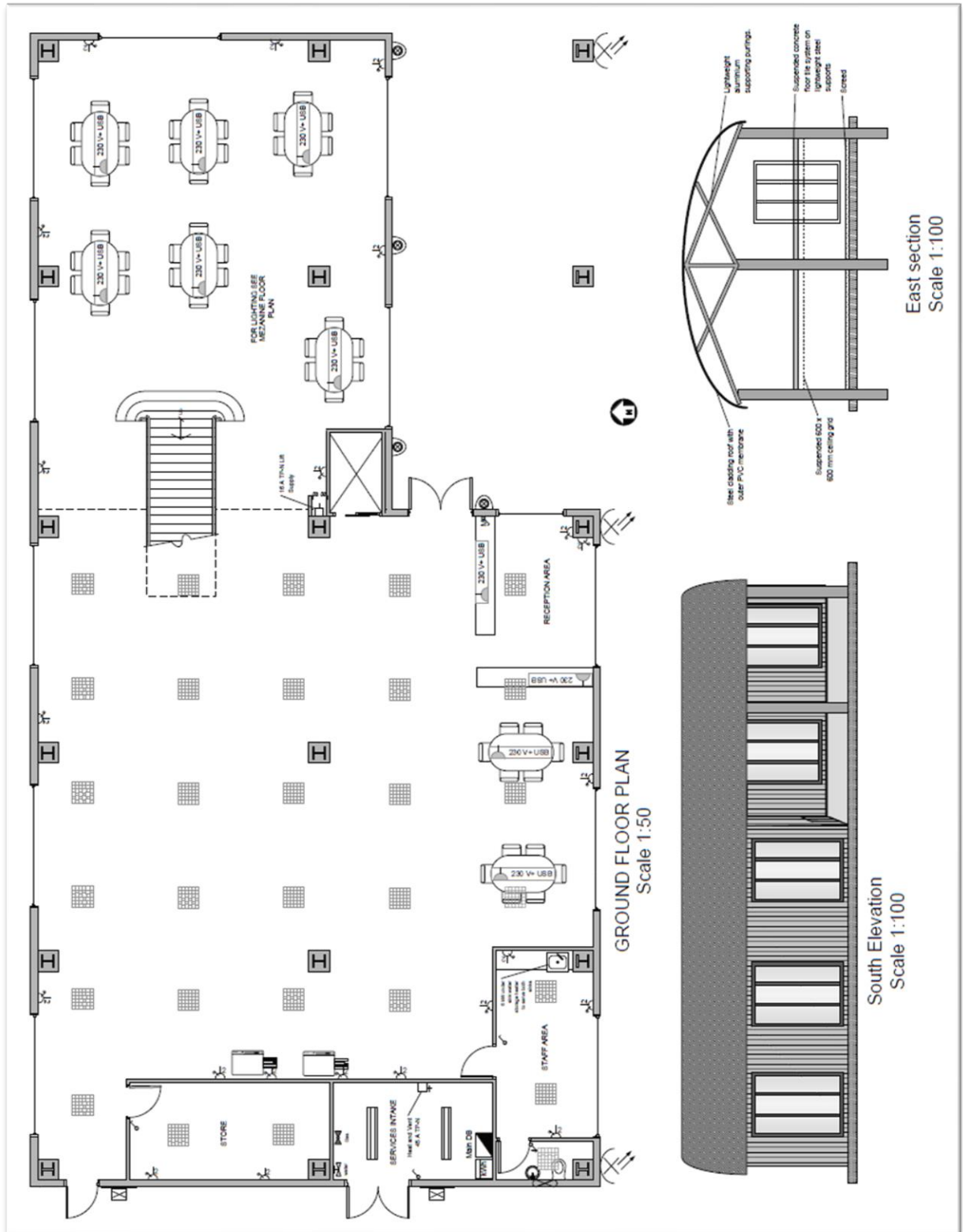
- Solar thermal £4500 - £5000
- Heat Pump £10000 - £11000
- Biomass £16000 - £17000

Duration

Installation of the renewable technologies for the library should take no more than 10 days.

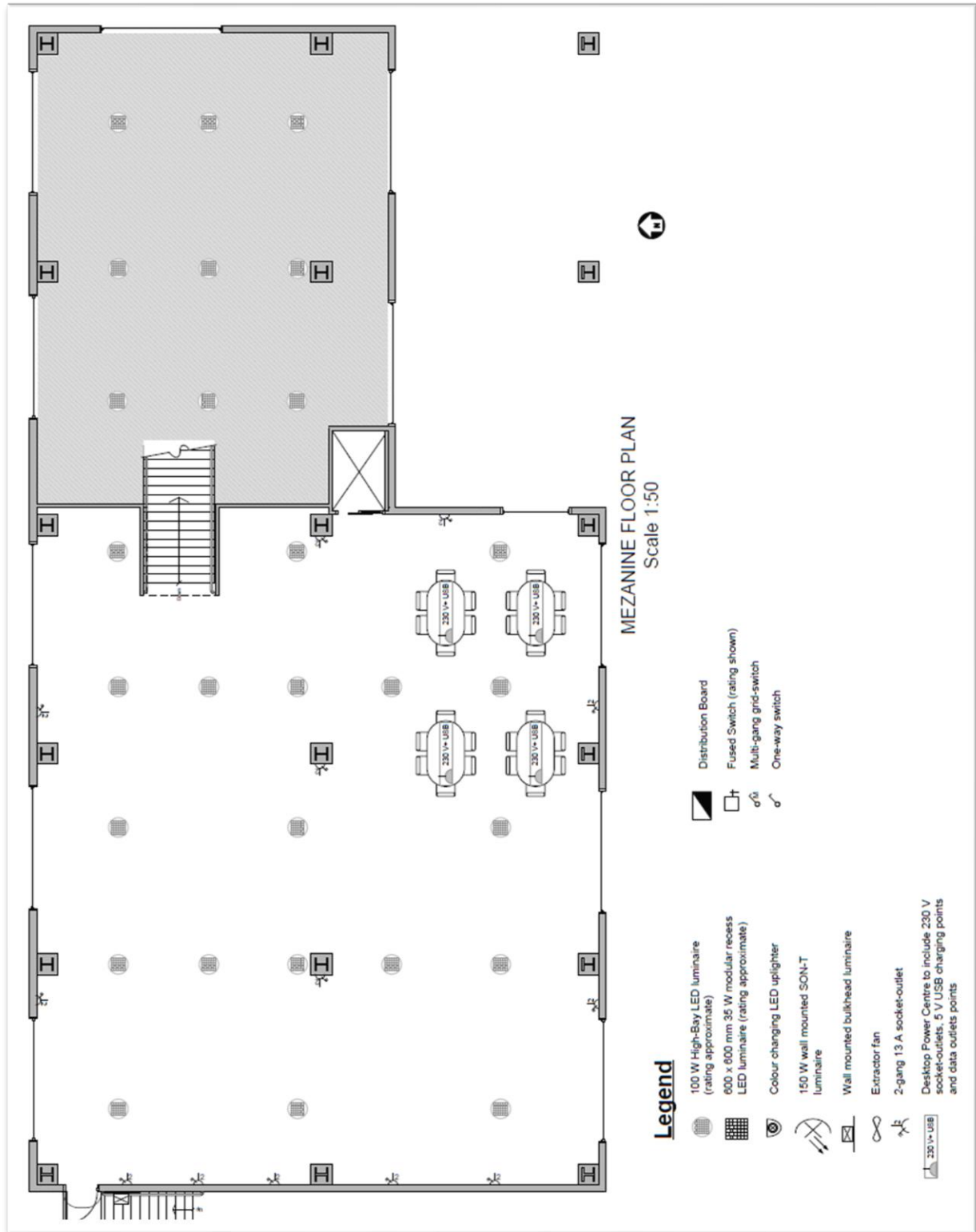
NB - Systems will be commissioned by respective manufacturers', therefore commissioning does not need to be taken into consideration within this 10 day duration.

Drawings
 Site plan ¹



¹ Your tutor can provide full size (A3) copies of site plans as necessary.

Site plan 2



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