T-LEVELS | Institute for Apprenticeships & Technical Education

T Level Technical Qualification in Onsite Construction (8711-30)

8711-033 Core: Employer-Set Project

Project Brief

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Project brief

The employer

The employer is a housing association that is interested in using modular construction to produce sustainable green living for tenants. You work in a project team at the housing association.

The project

You have been asked by the director to assist with the evaluation of modular construction for the housing association's new project, which will be called 'Clean Living'. This is an exciting development and the local community have been involved, along with all other stakeholders, in order to make the Clean Living project a successful one.

Design specification

Type of modular construction

The director has shown you suitable examples of modular sustainable buildings that join together, which are produced by the Green Living Ideas Company. The company manufactures the modules to include:

- A fully fitted kitchen/dining area
- A bathroom with shower
- One bedroom
- All doors and windows

The modules will fit together side by side in a line, using a terraced approach to building homes, with all the entrance doors on the front of the dwellings.

Project details

- The foundations will be installed as mini piles with a pile cap on top of the pile. Six pads form the foundation support for each of the modules.
- The first phase will include five homes on a lower level and five homes on an upper level (see Figures 1 and 2).
- There will be a galvanised steel staircase and walkway to access the upper level.
- The site will be landscaped and include a social area for tenants to mix.
- External works will include footpaths, grassed areas, landscaping, five car parking spaces, one disabled parking space, entrance gate, lighting and refuse area.
- Solar panels installed on the flat roofs of the top row of modules will generate energy towards subsidising the running costs.

Lifting Operations

- A crane will be used to lift each module into place. The weight of each module is approximately 5 tonnes.
- A base approximately 300 mm thick will need to be constructed using compacted hardcore. The dimensions of the pad that the crane sits on should be suitable for a typical crane size.

Working at Height

- Access will be needed to waterproof the joint between each module on the roof and to install solar panels.

Project constraints

- The modules must be as sustainable as possible, including using a high percentage of materials from sustainable sources

Schedule of activities

Table 1, below, provides an indication of times associated with typical activities in installing the prefabricated modules. The table is not in the correct sequence.

Table 1

Activity	Time Allocation
Clear site and hand over	3 days
Form base for crane	3 days
External finishing works – roof and seals between modules	1 week
Final connections - electrician	1 week
Final connections - plumber	1 week
Making good/snagging/defects	1 week
Module installation (with crane)	1 week
Site setup – fencing and compound	1 week
Staircase and walkway installation	1 week
Alternative energy services, eg solar panels	2 weeks
Drainage	2 weeks
Mini piling contractor	2 weeks
Groundworks contractor	3 weeks
Landscaping	3 weeks
External works	6 weeks

Photographs

The following photographs illustrate the examples of prefabricated module designs from the Green Living Ideas Company. Figure 1 shows the first layer of modules and Figure 2 illustrates how two modules can be stacked, one on top of another.

Figure 1

Image of first layer of modules - volumetric.co.uk

Figure 2

Image of stacked modules - volumetric.co.uk

Get in touch

City & Guilds Technicals Quality Team

We are here to answer any queries you may have regarding your T Level Technical Qualification delivery.

Should you require assistance, please contact us using the details below:

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