Silver - Unit 3 - Producing a Technical Design for a Construction Project and Sharing Information

Relevant LINKS

BACK TO BIM UNITS **[1]**

Overview

This is the ability to understand and define a construction project with particular emphasis on what is required to make it sustainable over a reasonable period of time. Some understanding and appreciation of the impact on the wider community will also need to be in evidence. The main issues will need to be presented clearly to all stake-holders, and where appropriate, solutions to issues will need to be found before progressing.
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the software tools and functions will be predetermined or commonly used; and
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Main areas covered will include, but not be limited by:

- the ability to research materials and functions
- the understanding and application of local and national guidelines
- ability to present information and attend relevant meetings to support the process

Example of context: Proposing a local construction project, such as an eco friendly classroom for a primary school.

Activities supporting the assessment of this award

Assessor's guide to interpreting the criteria

General Information

QCF general description for Level 1 qualifications

- Achievement at QCF Level 1 (EQF Level 2) reflects the ability to use relevant knowledge, skills and procedures to complete routine tasks. It includes responsibility for completing tasks and procedures subject to direction or guidance.

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- Use knowledge of facts, procedures and ideas to complete well-defined, routine tasks. Be aware of information relevant to the area of study or work
- Complete well-defined routine tasks. Use relevant skills and procedures. Select and use relevant information. Identify whether actions have been effective.
- Take responsibility for completing tasks and procedures subject to direction or guidance as needed

Requirements

- Standards must be confirmed by a trained Level 1 Assessor or higher
- Assessors must at a minimum record assessment judgements as entries in the online mark book on the INGOTs.org certification site.
- Routine evidence of work used for judging assessment outcomes in the candidates' records of their day to day work will be available from their e-portfolios and online work. Assessors should ensure that relevant web pages are available to their Account Manager on request by supply of the URL.
- When the candidate provides evidence of matching all the criteria to the specification, subject to the guidance below, the assessor can request the award using the link on the certification site. The Account Manager will request a random sample of evidence from candidates' work that verifies the assessor's judgement.
- When the Account Manager is satisfied that the evidence is sufficient to safely make an award, the candidate's success will be confirmed and the unit certificate will be printable from the web site.
- Each unit at Level 1 has recommended guided learning hours based on time required to complete by an average learner.

Assessment Method

Assessors can score each of the criteria N, L, S or H. N indicates no evidence and it is the default setting. L indicates some capability but some help still required to meet the standard. S indicates that the candidate can match the criterion to its required specification in keeping with the overall level descriptor. H indicates performance that goes beyond the expected in at least some aspects. Candidates are required to achieve at least S on all the criteria to achieve the full unit award. Once the candidate has satisfied all the criteria by demonstrating practical competence in realistic contexts they achieve the unit certificate.

Expansion of the assessment criteria

1. The candidate will use building information management (BIM) to produce realistic buildings

1.1 I can identify reasons why BIM is an essential process for development of a construction project

Candidates should recognise BIM as enabling the realistic modelling of buildings and the sharing of critical real-time information.
Evidence: verbal/written report in portfolios.

Additional information and guidance
They should investigate current local, national and international use, and government drivers for adoption across all built environment sectors. The UK Government website dedicated to BIM practice and protocol [2].

1.2 I can set up a 3D model using simple architectural and aesthetic

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elements

Candidates will use professional software to produce a building model.
Evidence: from assessor observations, creation of a 3D architectural model using Autodesk Revit software.

Additional information and guidance
Candidates, ideally with senior management support, should include their evidence in a guidebook to help community members get an insight into how buildings can be modelled.

1.3 I can input, organise and combine information in a 3D environment

Candidates will prepare the resources they need in the 3D software environment to realise their model.
Evidence: from assessor observations, creation of a 3D architectural model using Autodesk Revit software.

Additional information and guidance
Candidates will have completed reasonable research by this point and be in possession of the design brief, sketch schemes, building services data and aesthetic information. They are to introduce spaces/rooms which are included in their design by drawing walls using specified materials to encompass the rooms which have been identified in the Brief. Areas should be calculated using standardized units (M^3), rooms named, and doors added to demonstrate the flow of the building. Candidates should be encouraged to 'test' their designs by firstly estimating and then physically measuring rooms having a similar function within their school (e.g. disabled toilets, classrooms etc). They should research guidance specific to accommodation and inhabitants.
Windows, curtain walling, floors, ceilings, roofs and furniture can be added and the external site can be modelled to include topography.

1.4 I can define and produce floor plans, elevations, sections and visualisations

Candidates should be able to use the software to produce projections and rendering to provide realistic designs.
Evidence: from assessor observations, creation of a 3D architectural model using Autodesk Revit software.

Additional information and guidance
Candidates will create 2D floor plans, elevations and sections, and also are to produce a realistic visualisation and render.

1.5 I can create a drawing on a title sheet

Candidates will create their own fully annotated drawing sheet complete with floor plans, elevations and sections at a useful scale.
Evidence: from assessor observations, creation of a 2D drawing sheet using Autodesk Revit software.

Additional information and guidance
Level 1 candidates will require structured support to achieve this.

2. The candidate will be able to share information effectively

2.1 I can demonstrate the value of professional collaboration and sharing information in a building project

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Candidates should be able to navigate their model, and share ideas and information.
Evidence: from assessor observations, presentation of 3D model using Autodesk Revit software/crit/team presentation in portfolios.

Additional information and guidance
Candidates should demonstrate their appreciation of the client's requirements through comparison to the 3D model. They should navigate around the model, and be able to interrogate each element when asked to do so.
Candidates should discuss the merits of collaborative working and sharing ideas and information recognise that BIM plays a key role in reducing construction resource consumption and promoting sustainability.

2.2 I can use tools and techniques to present my building project in a 3D environment

Candidates should demonstrate their knowledge and ability to use tools and techniques to present their 3D projects.
Evidence: from assessor observations, presentation of 3D model using Autodesk Revit software/crit/team presentation in portfolios.

Additional information and guidance
Candidates will learn the tools and techniques in the 3D software environment through practical experience. The accumulated knowledge and skills should enable them to present their 3D projects. Level 1 candidates will need structured guidance in getting to this point.

2.3 I can demonstrate the impact of natural and artificial light on my building project

Candidates will be able to demonstrate simple lighting effects to show how they need to be taken into account in their project design.
Evidence: from assessor observations, presentation of 3D model using Autodesk Revit software/crit/team presentation, shadow study in portfolios

Additional information and guidance
Candidates will action, analyse and demonstrate understanding of a shadow study. They should evaluate an artificial lighting schedule concluding in the selection and justification of the most energy efficient solution.

2.4 I can communicate detailed information about a building to a client and project team using BIM technology

The candidate should be able to use the BIM environment confidently to communicate details of their project.
Evidence: from assessor observations, presentation of 3D model using Autodesk Revit software/crit/team presentation in portfolios.

Additional information and guidance
Candidates should be comfortable and confident in navigating and explaining fundamental principles as they work their way around their eco classroom project.
They should include items in the checklist featured in the design brief, and discuss issues and successes. At level 1 templates and structures can be provided to help organise the presentation of work.

Moderation/verification
The assessor should keep a record of assessment judgements made for each candidate guided by

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the above guidance. Criteria should be interpreted in the context of the general descriptors of QCF Level 1 qualifications. They should make notes of any significant issues for any candidate and be in a position to advise candidates on suitable routes for progression. They must be prepared to enter into dialogue with their Account Manager and provide their assessment records to the Account Manager through the on-line mark book. They should be prepared to provide evidence as a basis for their judgements through reference to candidate e-portfolios. Before authorising certification, the Account Manager must be satisfied that the assessor's judgements are sound. In the event of missing evidence, the assessor will be requested to gather appropriate information before the award can be made.

Source URL: https://theingots.org/community/decl1u3x

Links
[1] https://theingots.org/community/BIM_qualification_info_units
[2] http://www.bimtaskgroup.org/

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