# Gold - Unit 4 - Evaluating a Sustainable Construction Project

**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 2 qualifications**

- Achievement at QCF level 2 (EQF Level 3) reflects the ability to select and use relevant knowledge, ideas, skills and procedures to complete well-defined tasks and address straightforward problems. It includes taking responsibility for completing tasks and procedures and exercising autonomy and judgement subject to overall direction or guidance.
- Use understanding of facts, procedures and ideas to complete well-defined tasks and address straightforward problems. Interpret relevant information and ideas. Be aware of the types of

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information that are relevant to the area of study or work.
- Complete well-defined, generally routine tasks and address straightforward problems. Select and use relevant skills and procedures. Identify, gather and use relevant information to inform actions. Identify how effective actions have been.
- Take responsibility for completing tasks and procedures subject to direction or guidance as needed.

***Requirements***

- Standards must be confirmed by a trained Gold Level Assessor or higher
- Assessors must at a minimum record assessment judgements as entries in the on-line 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 on-line 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.
- This unit should take an average level 2 learner 40 hours of work to complete.

***Assessment Method***

Assessors can score each of the criteria N, L, S or H. N indicates no evidence. L indicates some capability but some help still required. S indicates that the candidate can match the criterion to its required specification. H indicates performance that goes beyond the expected in at least some aspects. Candidates are required to achieve at least a S on all the criteria to achieve the full 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 be able to compare intentions with outcomes.

## 1.1 I can explain how the building works and what users need to do to optimise performance

Candidates will evaluate their final product and provide recommendations for use to optimise benefits.
**Evidence:** Documentation in portfolios.

**Additional information and guidance**
Evaluations of the practical aspects of the building need to be related to user behaviour. Planning seating arrangements, circulation space, use of storage. Can users contribute to energy efficiency, improving aesthetics?

## 1.2 I can explain how well final outcomes meet original intentions

Candidates will use strengths and weaknesses in outcomes related to intentions to support their explanations.
**Evidence:** Documentation in portfolios.

**Additional information and guidance**

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Candidates should be guided to be analytical in their approach to evaluation using strengths and weakness classifications to compare and contrast aspects of their design in relation to original intentions. They should realise the importance of clarity at the planning stage so that their final evaluation can be decisive and rational rather than vague and subjective.

## 1.3 I can evaluate feedback and use it as a basis for improvements in future projects

Candidates will receive feedback from a range of sources and use it to inform their formal evaluations.
**Evidence:** Documents in portfolios.

**Additional information and guidance**
Candidates should receive (and give) feedback graciously and objectively. It is difficult to remove emotion from criticism and a good part of this criterion is to demonstrate emotional intelligence in the form of maintaining control and being constructive in order to foster improvement rather than destructive and precipitating withdrawal or resistance to change.

## 1.4 I can analyse data and use it as evidence to inform evaluation

Candidates should gather data from a range of sources including software models, measurements and surveys and use this as a basis for making their evaluations objective.
**Evidence:** Documentation in portfolios.

**Additional information and guidance**
While there are always grounds for subjective elements in evaluation, there needs to be at least some dimensions of backing evaluation judgements with clear evidence. e.g. I think the aesthetics of my design worked because 83% of the people in my survey said aesthetics was a strong aspect of the building.

Or my original costings were poor as the final cost of the building was 10% over budget. Assessors should deter candidates from vague and subject statements like “I think my design was good because I liked it” or “My friends said the room was a bit small”. Highlight the difference between vague anecdotal comments and evidence that has reasonable substance. Candidates should realise that they will have to work to gather evidence for objective evaluation, it doesn’t just appear on its own. They need to understand that a representative sample is enough data that is typical of the entire set of data that could be sampled to be confident in the result.

## 1.5 I can use data to forecast long term performance of the building

Candidates should be able to use simple forecasting based on quantitative data from their modelling.
**Evidence:** Documentation in portfolios.

**Additional information and guidance**
As a specific example, the energy consumption needed to operate the building will be available from modelling. Overall energy consumption will depend on extrinsic as well as intrinsic factors. Candidates could provide a study of possible variations in energy costs in the long term depending on how the building is used and environmental conditions outside. This could be complex and at Level 2 straightforward simplifications are enough that illustrate principles. eg energy consumption is likely to go up in the winter as temperatures fall. Air conditioning could be a significant cost in hot days when large glass areas in the building cause a greenhouse effect. Such conclusions should be supported by data from the modelling.

## 2. The candidate will transfer project evaluation to other contexts.

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## 2.1 I can identify issues in existing familiar buildings

Candidates should be able to make observations in existing familiar buildings and record aspects that are less than optimal from a user perspective.
**Evidence:** documentation in portfolios.

**Additional information and guidance**
Candidates can be given check lists as prompts of what to look for. Typical examples in schools are computer rooms that get too hot through lack of ventilation and too much south facing glass. Bottlenecks in circulation space. Ineffective sound insulation, plastic sinks or easily marked work surfaces in science labs, leaking flat roofs, asbestos used in construction, lack of adequate parking space, lack of adequate play areas, entrances that are not at all obvious to anyone new to the site, poorly sited WCs, inaccessible spaces for disabled people, lack of suiting of rooms in logical subject areas, bells that deafen people waiting to enter a room. High maintenance wooden window frames, impractical aesthetics e.g. galleries where students can drop things on people below or throw themselves off. Inadequate display space to encourage a learning environment.

## 2.2 I can make recommendations to improve existing buildings

Candidates should choose specific issues related to the building that would have a significant impact but low cost.
**Evidence:** Report in portfolio.

**Additional information and guidance**
Candidates will identify many possibilities that are too expensive to rectify with existing resources.

They should appreciate that there is always going to be a tension between cost and benefit and that issues related to health and safety are going to get the highest priority. Some solutions will have running cost implications e.g. installing air conditioning or carpeting an area. Some capital cost implications will make e.g. replacing a flat roof with a pitched roof prohibitively expensive. The best solutions are ones that have a significant impact but do not cost anything or perhaps even save money e.g. better energy efficiency.

## 2.3 I can ensure that the project complies with building regulations as it progresses

Candidates will check a building for its aesthetic and sensory impact on its users.
**Evidence:** portfolio evidence.

**Additional information and guidance**
Candidates can draw up a questionnaire for users of the building based on an inspection of the building and identification of issues related to aesthetics and sensory impact. They should be provided with guidance to ensure that their questionnaire is free from bias and targeted on getting valid and targeted responses from the users. A significant aspect of this criterion is learning how to transfer learning about evaluation to other contexts. Assessors should make it clear to the candidate that the methods being used can be employed in other situations including outside the BIM domain.

## 2.4 I can present the building project to a professional audience

Candidates will make a summative presentation of their project and present it to a professional audience and respond to subsequent questions.
**Evidence:** Assessor observations, portfolio evidence.

**Additional information and guidance**
Candidates should have the opportunity to make a short presentation of their project to a knowledgeable audience. The questions and comments should be used to help inform the final project evaluation. Assessors should bring out the basic principles for this type of presentation so

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that candidates appreciate that the learning can be transferred to other contexts.

## Moderation/verification

The assessor should keep a record of assessment judgements made for each candidate guided by the above guidance. Criteria should be interpreted in the context of the general descriptors of QCF Level 2 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/decl2u4x

**Links**
[1] https://theingots.org/community/BIM_qualification_info_units

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