## Designing Engineering and Constructing Qualification and Information

| HANDBOOK BIM Level 1 | HANDBOOK BIM Level 2 | Level 1 Certificate | Level 2 Certificate | RQF LEVEL DESCRIPTORS |
| :---: | :---: | :---: | :---: | :---: |
| [1] | [1] | [2] | [3] | [4] |

## Level 1

## Level 1, Unit 1 - Defining a sustainable construction project (3 credits)

1. understand issues related to sustainability in construction projects.
1.1 define sustainability. [5]
1.2 identify ways in which sustainability affects the local community. [7]
1.3 identify the range and depth of knowledge in my local community related to sustainability. [9]
1.4 present sustainability issues to a relevant audience. [11]
1.5 identify and communicate ways of improving sustainability in my local community. [13]
2. understand issues related to the local community in construction projects.
2.1 use a range of methods to discover who lives in my local community and suggest ways to demonstrate results. [6]
2.2 engage my community in the design and planning processes of my building project in their role as 'client'. [8]
2.3 respond to identified community needs with specific solutions. [10]
2.4 research the impact of a construction project on the local community. [12]
2.5 understand how a formal meeting should be structured, conducted and recorded. [14]

## Level 1, Unit 2 - Roles in Construction Teams (7 credits)

| 1. under | 2. under | 3. under | 4. under | 5. under | 6. under |
| :--- | :--- | :--- | :--- | :--- | :--- |
| stand | stand | stand | stand | stand | stand |
| the impo | the role | the role | the role | the role | the role |
| rtance of | of the | of the | of the | of the | of the |
| teams in | architect | building | landscap | site | facilities |
| construc |  | services | e | engineer | manager |

## tion projects.

| 1.1 relate <br> successful | 2.1 outline <br> the role of |
| :--- | :--- |
| construction | an architect. |
| projects to | $[17]$ |
| team effort. |  |
| $[16]$ |  |

1.2 identify the roles and respons ibilities of the key members in a construction team. [22]

## engineer designer.

3.1 outline
the role of
the building
services
engineer.
$[18]$
4.1 outline
the role of
the
landscape
designer.
[19]
5.1 outline
the role of a
site
engineer.
$[20]$
6.1 outline the role of a facilities manager in the context of a school building. [21]
3.2 identify

## 4.2

indicate how natural and manmade features impact the layout of a landscape design. [25]
5.2 use $\quad 6.2$ relate specific mat the hematical solutions to inform site engineering problems. [26]
behaviour of
people within a building to the success of adoption and
subsequent sustainabilit y. [27]

| 1.3 identify | 2.3 identify |
| :---: | :---: |
| how each | the key |
| team | elements |
| member | and |
| contributes | structure of |
| to the | a design |
| sustainabilit | brief. [29] |
| $y$ of the |  |
| project. [28] |  |


| 3.3 relate | 4.3 relate |
| :---: | :---: |
| the | the path of |
| behaviour of | the sun to |
| end users to | the |
| impact on | positioning |
| the | of natural |
| efficiency of | and |
| a building. | manmade |
| [30] | garden |
|  | design |
|  | features. |
|  | [31] |


| 5.3 follow | 6.3 use |
| :---: | :---: |
| practical | empirical |
| procedures | evidence to |
| to correctly | inform the |
| position and | sustainabilit |
| orientate a | $y$ of a |
| building. | school. [33] | [32]

## 3.4

recognise the symbols that represent building services on a plan. [36]
1.5 identify

## and

communicat
e ways of
improving
sustainabilit
$y$ in the
local
community. [39]
2.5 explain that a design brief requires clear and effective co mmunicatio
$n$ with the client. [40]
3.5 apply
own
sustainable building design. [41]
4.4 make a water level to
determine
changes in
height. [37]
4.5 relate
the outdoor
learning environment to the
sustainable building project. [42]
6.4 gather information by
interviewing school staff. [38]
6.5 relate evidence to the developmen
$t$ of a
building
project. [43]

| 2.6 | 4.6 use ch | 6.6 |
| :---: | :---: | :---: |
| respond to | aracteristics | establish |
| identified | of the | resource |
| community | school | efficiency |
| needs with | landscape | guidelines |
| specific | as a basis | to support |
| solutions. | for a | the facilities |
| [44] | detailed | managemen |
|  | landscape <br> plan. [45] | trole. [46] |

2.7 provide a concept model and sketch scheme. [47]
2.8 present
a case for a specified construction project. [48]

## Level 1, Unit 3 - Producing a Technical Design for a Construction Project and Sharing Information (3 credits)

## 1. use building information management (BIM) to produce realistic buildings.

1.1 identify reasons why BIM is an essential process for the efficient development of a construction project. [50]

> 1.2 set up a 3D model using simple architectural and aesthetic elements. [52]
1.3 input, organise and combine information in a 3D environment. [54]

> 1.4 define and produce floor plans, elevations, sections and visualisations. [56]

## 2. be able to share information effectively.

2.1 demonstrate the value of professional collaboration and sharing information in a building project. [51]
2.2 use tools and techniques to present my building project in a 3D environment. [53]
2.3 demonstrate the impact of natural and artificial light on my building project. [55]
2.4 communicate detailed information about a building to a client and project team using BIM technology. [57]

[^0]
## Level 1, Unit 4 - Planning, Costing and Presenting a Sustainable Building Project (3 credits)

## 1. understand issues associated with planning legislation and controls.

1.1 describe the importance of planning and planning protocols. [60]
1.2 identify planning requirements related to the design and construction of an Eco Classroom. [63]
1.3 identify common problems that arise in planning applications. [66]
1.4 develop a structured argument to support a given planning application scenario. [69]
1.5 agree appropriate measures to conclude a successful planning application. [72]
2. understand issues associated with procurement for a construction project.
2.1 identify the effects of local and global procurement on local and global communities. [61]
2.2 identify properties of sustainable building materials. [64]
2.3 select sustainable goods and services from local sources where practicable. [67]
2.4 produce a bill of quantities for a construction project. [70]
2.5 identify the range of industry specific skills available locally. [73]

## 3. be able to make effective presentations.

3.1 support a presentation with appropriate digital technologies. [62]
3.2 design supporting media content to have impact and clarity. [65]
3.3 structure a presentation to prioritise the messages. [68]
3.4 make effective use of the time available while making a presentation. [71]
3.5 identify strengths and weaknesses in my
presentation. [74]

Level 2

## Level 2, Unit 1 - Defining a Sustainable Construction Project (5 credits)

\author{

1. understand a client's needs.
}

> 2. be able to formulate project briefs.
3. understand
4. be able to the constraints draft plans. on projects.

1.1 identify the<br>3.1 identify<br>4.1 create a draft

contextual needs of a client. [76]
functional requirements of the project. [77]

## 2.2 establish

 quality objectives for the project. [81] requirements and client expectations. [80]1.3 understand the requirement to establish a budget in relation to the agreed client's needs. [84]
constraints
associated with the site location and present solutions. [78]
$\frac{3.2 \text { test initial }}{\text { ideas against }}$
planning protocol.
$[82]$
3.3 explain the principles of legislation relevant to the project. [86]
project plan. [79]
号
4.2 match project planning to the human resources of the team. [83]
4.3 create an organogram for the project. [87]

| 3.4 carry out a <br> feasibility study and <br> present the results. | 4.4 forecast the <br> lifespan of the |
| :--- | :--- |
| [88] | completed project. |
| $[89]$ |  |

3.5 make a
judgement on
project viability
based on evidence.
$[90]$
4.5 forecast facilities management costs. [91]
3.6 explain how the building design helps minimise energy use. [92]

## Level 2, Unit 2 - Developing a Sustainable Construction Project (4 credits)

## 1. be able to develop feasible proposals from needs analysis.

## 1.1 prepare concept

 diagrams to demonstrate ideas. [95]> 1.2 present the quality of the proposal to a client. [98]

## 2. produce technical support collateral for a project.

2.1 prepare 3D representations of outline information. [96]
2.2 utilise the 3D environment to test the design in virtual locations.

## 3. support development of a project concept.

3.1 explain the importance of compatibility between existing infrastructure and the project proposals. [97]
3.2 explain the environmental and climate change reduction
[99]
1.3 communicate the concept design to the project team. [101]
2.3 use quantitative methods to establish the energy requirements, and a lighting strategy. [102]
2.4 prepare detailed. scaled drawings that can form the basis of a planning application. [105]
2.5 describe the project in writing to form the basis of a planning application. [107]
2.6 produce a financial model of the budget that aggregates the elemental costs of the project. [109]
strategies. [100]
3.3 monitor the execution of the plan to ensure compliance with client requirements taking appropriate action where necessary. [103]
3.4 establish strategies for the proposed construction that support health and safety, occupancy, management and operation. [106]
3.5 relate building design specification to energy efficiency. [108]
3.6 inform planning through collaborative working groups. [110]

# Level 2, Unit 3 - Delivering a Sustainable Construction Project (4 credits) 

## 1. be able to carry out a project. <br> 1.1 coordinate a design proposal to ensure mistakes are avoided. [112]

1.2 identify potential problems at an early stage and take appropriate action. [114]
1.3 identify needs that require specialists from outside the team. [116]
1.4 monitor progress in consultation with peers. [118]
1.5 ensure the project is developed on time and to budget. [120]

## 2. be able to respond to technical issues.

2.1 use a 3D model to test a design. [113]
$\underline{2.2 \text { validate the design against the brief }}$ using a technical investigation. [115]
2.3 ensure that the project complies with building regulations as it progresses. [117]
2.4 explain how the building works in practice using quantitative monitoring. [119]
2.5 review progress and reflect on technical decisions. [121]
2.6 consult and respond appropriately to peer review. [122]

## Level 2, Unit 4 - Evaluating a Sustainable Construction Project (3 credits)

## 1. be able to compare intentions with outcomes.

1.1 explain how the building works and what users need to do to optimise performance. [124]

1.2 explain how well final outcomes meet original intentions. [126]

$$
\begin{aligned}
& \begin{array}{l}
1.3 \text { evaluate feedback and use it as a } \\
\text { basis for improvements in future projects. } \\
\text { [128] }
\end{array}
\end{aligned}
$$

1.4 analyse data and use it as evidence to inform evaluation. [130]
1.5 use data to forecast long term performance of the building. [132]

## 2. transfer project evaluation to other contexts.

2.1 identify issues in existing familiar buildings. [125]

## 2.2 make recommendations to improve

 existing buildings. [127]2.3 carry out a qualitative audit reporting on aesthetics and sensory experiences of users. [129]

## 2.4 present a building project to a

 professional audience. [131]Source URL: https://theingots.org/community/BIM_qualification_info_units

## Links

[1] https://theingots.org/community/sites/default/files/uploads/user4107/BIM_Spec_L1_L2_Spec_SAM_ RQF_1.3.pdf
[2] https://register.ofqual.gov.uk/Detail/Index/30746?category=qualifications\&query=tlm
[3] https://register.ofqual.gov.uk/Detail/Index/30750?category=qualifications\&query=t/m
[4] https://theingots.org/community/RQF_Levels
[5] https://theingots.org/community/decl1u1x\#1.1
[6] https://theingots.org/community/decl1u1x\#2.1
[7] https://theingots.org/community/decl1u1x\#1.2
[8] https://theingots.org/community/decl1u1x\#2.2
[9] https://theingots.org/community/decl1u1x\#1.3
[10] https://theingots.org/community/decl1u1x\#2.3
[11] https://theingots.org/community/decllu1x\#1.4
[12] https://theingots.org/community/decl1u1x\#2.4
[13] https://theingots.org/community/decllu1x\#1.5
[14] https://theingots.org/community/decl1u1x\#2.5
[15] https://theingots.org/community/declluli
[16] https://theingots.org/community/decllu2x\#1.1
[17] https://theingots.org/community/decl1u2x\#2.1
[18] https://theingots.org/community/decl1u2x\#3.1
[19] https://theingots.org/community/decl1u2x\#4.1
[20] https://theingots.org/community/decl1u2x\#5.1
[21] https://theingots.org/community/decl1u2x\#6.1
[22] https://theingots.org/community/decl1u2x\#1.2
[23] https://theingots.org/community/decllu2x\#2.2
[24] https://theingots.org/community/decl1u2x\#3.2
[25] https://theingots.org/community/decl1u2x\#4.2
[26] https://theingots.org/community/decl1u2x\#5.2
[27] https://theingots.org/community/decl1u2x\#6.2
[28] https://theingots.org/community/decl1u2x\#1.3
[29] https://theingots.org/community/decl1u2x\#2.3
[30] https://theingots.org/community/decl1u2x\#3.3
[31] https://theingots.org/community/decl1u2x\#4.3
[32] https://theingots.org/community/decl1u2x\#5.3
[33] https://theingots.org/community/decllu2x\#6.3
[34] https://theingots.org/community/decl1u2x\#1.4
[35] https://theingots.org/community/decl1u2x\#2.4
[36] https://theingots.org/community/decl1u2x\#3.4
[37] https://theingots.org/community/decl1u2x\#4.4
[38] https://theingots.org/community/decl1u2x\#6.4
[39] https://theingots.org/community/decl1u2x\#1.5
[40] https://theingots.org/community/decl1u2x\#2.5
[41] https://theingots.org/community/decl1u2x\#3.5
[42] https://theingots.org/community/decl1u2x\#4.5
[43] https://theingots.org/community/decl1u2x\#6.5
[44] https://theingots.org/community/decl1u2x\#2.6
[45] https://theingots.org/community/decl1u2x\#4.6
[46] https://theingots.org/community/decl1u2x\#6.6
[47] https://theingots.org/community/decl1u2x\#2.7
[48] https://theingots.org/community/decl1u2x\#2.8
[49] https://theingots.org/community/decllu2i
[50] https://theingots.org/community/decl1u3x\#1.1
[51] https://theingots.org/community/decl1u3x\#2.1
[52] https://theingots.org/community/decllu3x\#1.2
[53] https://theingots.org/community/decllu3x\#2.2
[54] https://theingots.org/community/decl1u3x\#1.3
[55] https://theingots.org/community/decl1u3x\#2.3
[56] https://theingots.org/community/decl1u3x\#1.4
[57] https://theingots.org/community/decl1u3x\#2.4
[58] https://theingots.org/community/decl1u3x\#1.5
[59] https://theingots.org/community/decllu3i
[60] https://theingots.org/community/decl1u4x\#1.1
[61] https://theingots.org/community/decl1u4x\#2.1
[62] https://theingots.org/community/decllu4x\#3.1
[63] https://theingots.org/community/decllu4x\#1.2
[64] https://theingots.org/community/decl1u4x\#2.2
[65] https://theingots.org/community/decl1u4x\#3.2
[66] https://theingots.org/community/decl1u4x\#1.3
[67] https://theingots.org/community/decl1u4x\#2.3
[68] https://theingots.org/community/decl1u4x\#3.3
[69] https://theingots.org/community/decl1u4x\#1.4
[70] https://theingots.org/community/decl1u4x\#2.4
[71] https://theingots.org/community/decl1u4x\#3.4
[72] https://theingots.org/community/decllu4x\#1.5
[73] https://theingots.org/community/decl1u4x\#2.5
[74] https://theingots.org/community/decl1u4x\#3.5
[75] https://theingots.org/community/decllu4i
[76] https://theingots.org/community/decl2u1x\#1.1

[^1][77] https://theingots.org/community/decl2u1x\#2.1
[78] https://theingots.org/community/decl2u1x\#3.1
[79] https://theingots.org/community/decl2u1x\#4.1
[80] https://theingots.org/community/decl2u1x\#1.2
[81] https://theingots.org/community/decl2u1x\#2.2
[82] https://theingots.org/community/decl2u1x\#3.2
[83] https://theingots.org/community/decl2u1x\#4.2
[84] https://theingots.org/community/decl2u1x\#1.3
[85] https://theingots.org/community/decl2u1x\#2.3
[86] https://theingots.org/community/decl2u1x\#3.3
[87] https://theingots.org/community/decl2u1x\#4.3
[88] https://theingots.org/community/decl2u1x\#3.4
[89] https://theingots.org/community/decl2u1x\#4.4
[90] https://theingots.org/community/decl2u1x\#3.5
[91] https://theingots.org/community/decl2u1x\#4.5
[92] https://theingots.org/community/decl2u1x\#3.6
[93] https://theingots.org/community/decI2u1x\#4.6
[94] https://theingots.org/community/decl2u1i
[95] https://theingots.org/community/decl2u2x\#1.1
[96] https://theingots.org/community/decl2u2x\#2.1
[97] https://theingots.org/community/decl2u2x\#3.1
[98] https://theingots.org/community/decl2u2x\#1.2
[99] https://theingots.org/community/decl2u2x\#2.2
[100] https://theingots.org/community/decl2u2x\#3.2
[101] https://theingots.org/community/decl2u2x\#1.3
[102] https://theingots.org/community/decl2u2x\#2.3
[103] https://theingots.org/community/decl2u2x\#3.3
[104] https://theingots.org/community/decl2u2x\#1.4
[105] https://theingots.org/community/decl2u2x\#2.4
[106] https://theingots.org/community/decl2u2x\#3.4
[107] https://theingots.org/community/decl2u2x\#2.5
[108] https://theingots.org/community/decl2u2x\#3.5
[109] https://theingots.org/community/decl2u2x\#2.6
[110] https://theingots.org/community/decl2u2x\#3.6
[111] https://theingots.org/community/decl2u2i
[112] https://theingots.org/community/decl2u3x\#1.1
[113] https://theingots.org/community/decl2u3x\#2.1
[114] https://theingots.org/community/decl2u3x\#1.2
[115] https://theingots.org/community/decl2u3x\#2.2
[116] https://theingots.org/community/decl2u3x\#1.3
[117] https://theingots.org/community/decl2u3x\#2.3
[118] https://theingots.org/community/decl2u3x\#1.4
[119] https://theingots.org/community/decl2u3x\#2.4
[120] https://theingots.org/community/decl2u3x\#1.5
[121] https://theingots.org/community/decl2u3x\#2.5
[122] https://theingots.org/community/decl2u3x\#2.6
[123] https://theingots.org/community/decl2u3i
[124] https://theingots.org/community/dec|2u4x\#1.1
[125] https://theingots.org/community/decl2u4x\#2.1
[126] https://theingots.org/community/decl2u4x\#1.2
[127] https://theingots.org/community/decl2u4x\#2.2
[128] https://theingots.org/community/decl2u4x\#1.3
[129] https://theingots.org/community/decl2u4x\#2.3
[130] https://theingots.org/community/decl2u4x\#1.4
[131] https://theingots.org/community/decl2u4x\#2.4
[132] https://theingots.org/community/decl2u4x\#1.5
[133] https://theingots.org/community/decl2u4i


[^0]:    1.5 create a drawing on a title sheet. [58]

[^1]:    (function(i,s,o,g,r,a,m)\{i['GoogleAnalyticsObject']=r;i[r]=i[r]||function()\{ (i[r].q=i[r].q||[]).push(arguments)\},i[r].I=1*new Date();a=s.createElement(o), m=s.getElementsByTagName(o)[0];a.async=1;a.src=g;m.parentNode.insertBPeeqeeqapfis

