Assessment Guide

Module Code and Name	CMA4002 Innovation in Construction
Module Leader	Dr Obafemi Oyewole
Cohort	February 22
Level	Level 4
Assessment component	Component 1: Group Poster Component 2: Report
Restrictions on time/word count	Component 1: (3-4 Students) Group Poster (Maximum 1,000 words) Component 2: Report **3000 words**
Consequence of not meeting word count limit	There is a risk that you may not maximise your potential mark.
Individual/group	Component 1 **Group Poster** Component 2 **Individual Report submission**
Assessment weighting	Component 1: Group Poster (Max. 1000 words) = 25% Component 2: Report (3000 words) = 75%
Submission dates	Component 1: Group Poster **Deadline:19/06/2023 before 23:59** Component 2: Report **Deadline: 26/06/2023 before 23:59**

Assessment Task – Summary

The assignment for this module includes **two** components:

Component 1 – Group Poster (Maximum 1000 words)

In groups of 3-4, you are to design a three-bedroom bungalow with the aid of REVIT software and create a Poster of images depicting the plan view, the 3D view, as well as the East and West elevation views. For each stage provide a summary of the design process involved. Also, from a construction manager's point of view, explain the advantages of using REVIT software.

Component 2 – Report (3000-words)

You are required to prepare a 3000-word report on innovation management, technologies, and digital innovation in the construction industry.

Assessment Task – Detailed Instructions

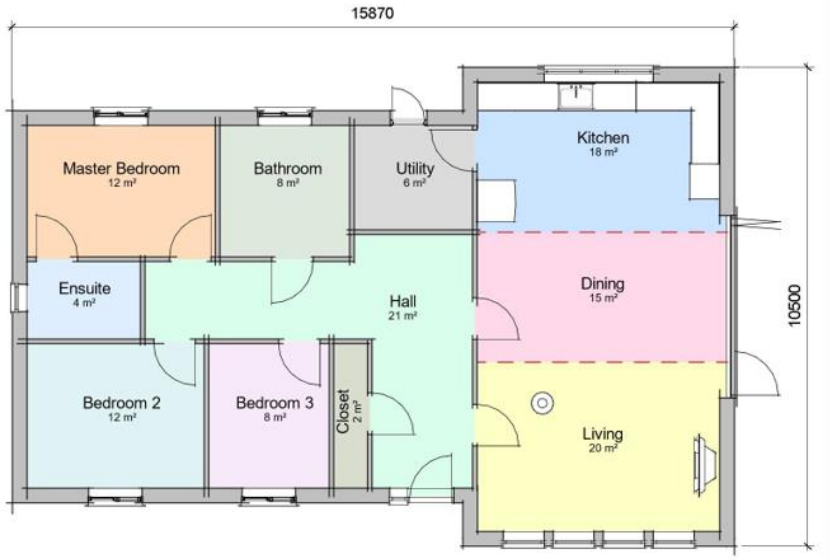
Component 1 – Group Poster Guidance (Max. 1000 words):

Based on the proposed Revit design of a three-bedroom bungalow, you are required to prepare a Poster of images of three stages involved in the project. The following elements should be included in your poster:

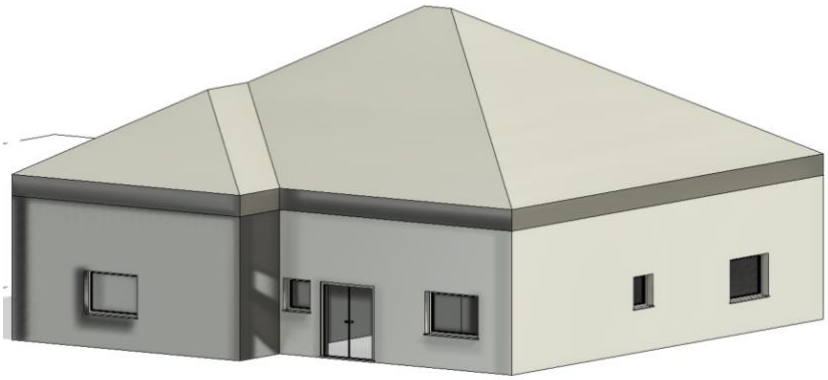
Page 1	**Page 2**
• Module code (CMA4002) • Topic (Innovation in Construction) • Names of all members of the group • Each group member contribution	**Stage 1:** A labelled bungalow plan view and a summary of the design process involved. **Stage 2:** The 3D view and a summary of the design process involved. **Stage 3:** The east elevation view and a summary of the design process involved. **Stage 4:** The west elevation view and a summary of the design process involved. **Stage 5:** Three (3) advantages of using the REVIT modelling Software.

Revit Design Sample

EXAMPLE OF A LABELLED BUNGALOW PLAN VIEW

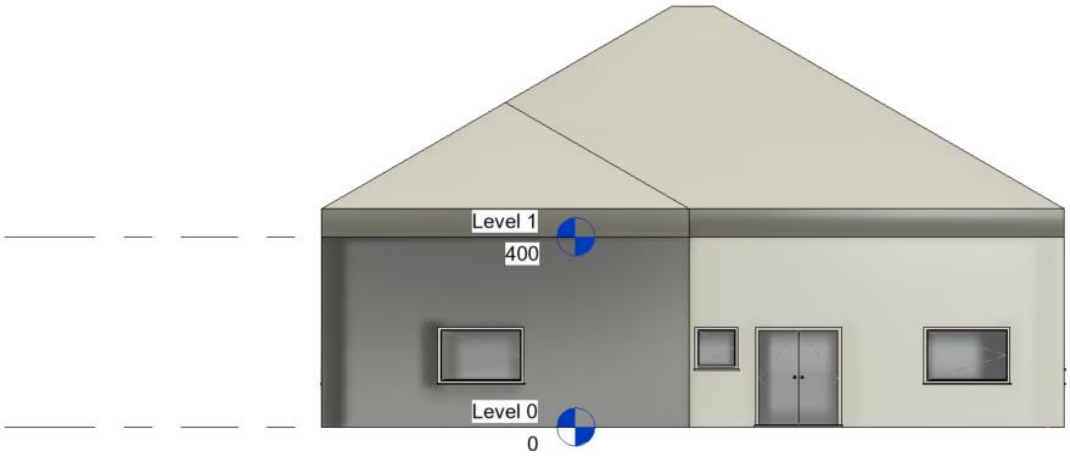


EXAMPLE OF A BUNGALOW 3D VIEW



EXAMPLE OF A BUNGALOW EAST VIEW

EXAMPLE OF A BUNGALOW WEST VIEW



Component 2 – Report (3000 words)

Prepare a 3000-word Report on innovation management, technologies, and digital innovation in construction industry.

1. Describe and explain theories and strategies for managing innovation.
   - ❖ Identify and describe different types of innovation.
   - ❖ Describe the levels of innovation to include incremental, sustaining, disruptive, and radical innovation.
   - ❖ Describe innovation theories and practices, as well as strategies for managing innovation in construction.

2. Based on your general understanding of the current challenges facing the construction industry, identify and explain digital innovative solutions used in the construction industry to tackle and solve the challenges below.

   - ❖ Labor/Workforce Shortages
   - ❖ Construction Cost Overruns
   - ❖ Environmental Sustainability issues
   - ❖ Health and Safety Concerns on site.

3. Identify and describe how the SIX (6) Construction innovative technologies mentioned below work, including the advantages and disadvantages of each technology.

   - ❖ BIM (Building information Modelling)
   - ❖ Drone
   - ❖ Mixed reality (Augmented and Virtual Reality)
   - ❖ Digital Twin
   - ❖ 3D Printing
   - ❖ Modular construction

4. Explore and explain the below SIX (6) innovative construction materials, including their importance.

   - ❖ Ultra-High-Performance Concrete
   - ❖ Graphene
   - ❖ Transparent Aluminium:
   - ❖ Self-healing Concrete
   - ❖ Bio-based Insulation:
   - ❖ Aerogels

Assessment criteria/marking rubric for component 1 (Group Poster = 25% of total mark)

Dimensions	70 – 100% (1st)	60 – 69% (2:1)	50 – 59% (2:2)	40 – 49% (3rd)	0 – 39% (Fail)
Criterion 1 (25%) Provide a labelled plan view of three-bedroom bungalow with measurements using Revit software, and a summary of the design process involved.	Students have provided an excellently labelled plan view of three-bedroom bungalow, with measurements using Revit software, and a summary of the design process involved.	Students have provided a very well labelled plan view of three-bedroom bungalow with measurements using Revit software, and a summary of the design process involved.	Students have provided an averagely labelled plan view of three-bedroom bungalow with some measurements using Revit software, and a summary of some of the design process involved.	Students have provided a basic plan view of three-bedroom bungalow without measurement using Revit software, with no summary of the design process involved.	Students have poor understanding of the Revit software and have not provided a plan view of three-bedroom bungalow including no summary of the design process.
Criterion 2 (25%) Provide the bungalow 3D view with measurements, and a summary of the design process involved.	Students have provided an excellent 3D elevation view of the bungalow with measurements, and a summary of the design process involved.	Students have provided a very good 3D elevation view of the bungalow with measurements, and a summary of the design process involved.	Students have provided an average 3D elevation view of the bungalow, with some measurements, and a summary of some of the design process involved.	Students have provided a basic 3D elevation view of the bungalow without measurement, and no summary of the design process involved.	Student has poor understanding of the Revit software and has provided a poor 3D elevation view or has not provided a 3D elevation view.
Criterion 3 (20%) Provide the East and West elevation views of the bungalow with measurements, and a summary of the design process involved.	Students have provided an excellent East and West elevation views of the bungalow with measurements, and a summary of the design process involved.	Students have provided a very good East and West elevation views of the bungalow with measurements, and a summary of the design process involved.	Students have provided an East and West elevation views of the bungalow with some measurements and a summary of some of the design processes involved.	Students have provided basic East and West elevation views of the bungalow without measurements, and no summary of the design process involved.	Students have poor understanding of the Revit software and has provided a poor East and West elevation views, or a drawing without an East and West elevation views.
Criterion 4 (20%) Explain three (3) advantages of using the REVIT 3D modelling Software for a Construction Manager.	Students have mentioned three (3) impressive advantages of using the REVIT 3D modelling Software.	Students have mentioned three (3) very good advantages of using the REVIT 3D modelling Software.	Students have mentioned less than two (2) advantages of using the REVIT 3D modelling Software. The explanation was adequately elaborated.	Students have mentioned one (1) advantage of using the REVIT 3D modelling Software, which was broadly elaborated.	Student have not mentioned any advantages of using the REVIT 3D modelling Software.
Criterion 5 (10%) Demonstration of collaborative teamwork, with a well-structured and coherent Poster, which included clear references.	Students have demonstrated excellent teamwork, with a Poster that is excellently structured, designed and referenced, as well as very engaging.	Students have demonstrated very good teamwork, providing a Poster that is very well structured, referenced, and designed, as well as very engaging.	Students have demonstrated teamwork; providing a Poster that is satisfactorily structured, referenced and engaging.	Basic Poster and fair demonstration of teamwork.	The Poster is very poor and no evidence of teamwork.

Assessment criteria/marking rubric for component 2 (3000 words report = 75% of total mark).

Dimensions	70 – 100% (1st)	60 – 69% (2:1)	50 – 59% (2:2)	40 – 49% (3rd)	0 – 39% (Fail)
Criterion 1 (20%) Explanation and discussion about theories and strategies for managing innovation.	Excellent explanation and discussion about theories and strategies used for managing innovation.	Very good explanation and discussion about theories and strategies for managing innovation.	Satisfactory explanation and discussion about theories and strategies for managing innovation.	Basic explanation and discussion about theories and strategies for managing innovation.	Not addressed or inadequately explained and discussed the theories and strategies for managing innovation.
Criterion 2 (20%) Identification and explanation of the digital innovative solutions used to tackle the four (4) mentioned challenges in the construction industry.	Excellent identification and explanation of digital innovative solutions used to tackle the four (4) mentioned challenges in the construction industry.	Very good identification and explanation of digital innovative solutions used to tackle the four (4) mentioned challenges in the construction industry.	Satisfactory identification and explanation of digital innovative solutions used to tackle the four (4) or less of the mentioned challenges in the construction industry.	Basic identification and explanation of digital innovative solutions used to tackle some challenges in the construction industry.	Not addressed the digital innovative solutions used to tackle the four (4) mentioned challenges in the construction industry.
Criterion 3 (20%) Identification and description of how the mentioned six (6) Construction innovative technologies work including their advantages and disadvantages.	Excellent identification and description of how the six (6) mentioned Construction innovative technologies work including their advantages and disadvantages.	Very good identification and description how the six (6) mentioned Construction Innovative technologies works including their advantages and disadvantages.	Satisfactory identification and description how the six (6) or less of the mentioned Construction Innovative technologies work with some of their advantages and disadvantages mentioned.	Basic identification and description some random Construction Innovative technologies works with or without their advantages and disadvantages.	The innovation technologies were not addressed and identified, and no description was provided on how they work. Their advantages and disadvantages were not included.
Criterion 4 (20%) Explore and explain the six (6) innovative construction materials, including their importance.	Excellent investigation and explanation of the six (6) mentioned innovative construction materials, including their importance.	Very good investigation and explanation of the six (6) mentioned innovative construction materials, including their importance.	Satisfactory investigation and explanation of the six (6) or less of the mentioned innovative construction materials, with some of their importance.	Basic investigation and explanation of some random innovative construction materials, without their importance.	The innovation construction materials were not addressed including their importance.
Criterion 5 (10%) Referencing: Illustration of a wide range of sources which are formatted according to Harvard referencing style.	Excellent, insightful, and effective use of a carefully selected range of relevant reading. Student has demonstrated consistently accurate application of referencing.	Very good, consistent engagement with a wide range of relevant reading. Consistently accurate application of referencing.	Satisfactory engagement with an appropriate range of reading beyond essential texts. Referencing may show minor inaccuracies or inconsistencies.	Basic evidence of reading, largely confined within essential texts, but mainly reliant on taught elements. Referencing may show inaccuracies and/or inconsistencies.	Inadequate or not addressed, no evidence of reading or engagement with taught elements. Absent or incoherent referencing.
Criterion 6 (10%) The report is well-structured, formatted and designed. The report has been clearly written, and well-articulated.	Excellent report, which is well-structured, formatted and designed. The report is clearly written, and well-articulated.	Very good report, which is well-structured, formatted and designed. The report is clearly written and well-articulated.	Satisfactory report averagely structured, formatted and designed. The report is averagely written.	Basic report structure with no clear format, and incoherent.	Extremely disorganised report confusingly expressed. Very poor inappropriate style.

Learning Outcomes

This assessment will enable you to demonstrate in full or in part the following learning outcomes:

Component 2	LO 1	An understanding of theories and strategies for managing innovation
	LO 2	Recognition of digital innovation technologies and concepts used in the construction industry and the impact on the built environment.
	LO 3	Appreciating the importance of innovation in relation to materials technology and the future technologies for the construction industry.
Component 1 (Weekly Workshops)	LO4	Managing Construction Project with the use of BIM tool (Revit).

Referencing Requirements

The Harvard style of referencing is the GBS standard referencing system. There are many other systems, but Harvard is one of the most straightforward to use and one of the easiest to get right!

There are many guides available online for how to reference using the Harvard System but the Cite Them Right website is an excellent place to start: www.citethemright.co.uk

Click on the following link to access GBS Harvard Guide referencing:

https://moodle.globalbanking.ac.uk/mod/resource/view.php?id=55354&redirect=1

Guidance for Online Submission Through Moodle

All assessments should be submitted to the module Moodle site (Assessments tab) by no later than 23:59 on the designated submission date. For guidance on how to upload your work to Moodle, please see:

https://moodle.globalbanking.ac.uk/mod/resource/view.php?id=55314&redirect=1

Academic Misconduct

Academic Integrity is essential for the successful completion of your studies.

If you do not understand how to properly reference your work you risk accidentally committing academic misconduct, such as plagiarism, collusion, or cheating. This may result in you failing an assignment or a module. Repeated academic misconduct can lead to more serious consequences.

All student work submitted at GBS is thoroughly checked by anti-plagiarism software to ensure it is your own work and not the work of others.

Click here to go to our Academic Integrity course to learn more about this important topic and how you can avoid academic misconduct.