



General Certificate of Secondary Education

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## Construction and the Built Environment

### Controlled Assessment Task

Unit 4: Computer Aided Design in  
Construction

[GCN41]

VALID FROM SEPTEMBER 2023

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#### INSTRUCTIONS FOR THE CONTROLLED ASSESSMENT TASK

You must produce:

- A portfolio of work under controlled conditions which includes a set of plans for a domestic building and one detail drawing.

You must use dimensions in the attached technical drawings/house plans as a basis for this unit.

You should use a maximum of 10 **A3** pages for the portfolio.

#### INFORMATION FOR CANDIDATES

This unit carries a weighting of **25%**.  
The total mark for this unit is **100**.  
You have a total of **20 hours** to complete.

Candidate's work to be submitted **May 2024/25/26**

Controlled Assessment Tasks must comply with the Regulations as detailed in the Subject Specification.

NB: Some instructions for Controlled Assessment Tasks may constitute more than 1 page.  
Please check that you have all the information you need to complete the task if printing from a computer.

## GCSE Construction and the Built Environment

### Unit 4: Computer Aided Design in Construction

#### Time Controlled Assessment

##### Scenario

Your school wishes to construct a new Principal's House on a site identified near the school campus. The local Planning Authority has specified a traditional or modern design will be acceptable, with a ridge height not exceeding 7500 mm. The school has appointed an architectural technologist to design this house.

Working as part of the design team you will produce drawings showing an architectural detail, floor layouts and elevational details. The drawings produced will be sufficient to satisfy the requirements of the local planning and building control authorities. You will make changes to the external elevation, where appropriate, including window design, door design and external finish. Window sizes to accommodate internal fixtures and fittings.

The client would like an additional design option with an attached conference suite / board room.

##### Specification notes for construction:

- **Walls:** Cavity wall construction comprising; 100 mm outer clay facing brickwork skin, 150 mm cavity with sufficient insulation, 100 mm inner concrete blockwork skin with plastered finish.
- **Pitched Roof:** 30 degree pitched trussed roof comprising; 200 mm x 38 mm trusses spaced at 400 mm centres, 200 mm x 38 mm ceiling joists spaced at 400 mm centres supported on 100 mm x 50 mm timber wall plate. Natural slates.
- **Floor Construction:** Solid concrete floor comprising; 100 mm concrete slab, 150 mm floor insulation, 25 mm to perimeter of slab, 1200-gauge damp proof membrane, 100 mm subfloor concrete on 20 mm blinding with 150 mm crusher run hardcore below.
- **First floor Construction:** 75 mm concrete screed on precast concrete slab.
- **Renewables:** Solar photovoltaic cells on the rear south facing elevation generating electrical energy.
- **Level threshold external doors:** Ground level to be graded at 1:20 to all external door exits.
- **Windows and doors:** Triple glazed engineered timber.

The learner will:

- (a) Draw floor plans and a rear elevation of the Principal's house provided by CCEA in the time-controlled assessment task.

Candidates should be using components that have already been drawn and additional components from an appropriate drawing symbol library provided by your teacher.

- (b) Complete a window sill detail for the Principal's house provided by CCEA to comply with current Building Regulations N.I.

- (c) To satisfy the requirements of the client's brief you must design an attached single storey conference suite / board room to accommodate eight people with access to a toilet and simple catering facilities. As an equal opportunity employer, the school insists that the principles of universal accessibility be incorporated into the conference suite. This must complement the internal spatial layout and aesthetically pleasing design already completed. The internal layout of the house may have to be modified to accommodate this change. The client has stated they require a plan, front elevation and working drawing of the conference suite.

Final submissions must include the following list of drawings printed in hard copy on A3 sheets to the stated scale and submitted in the following order:

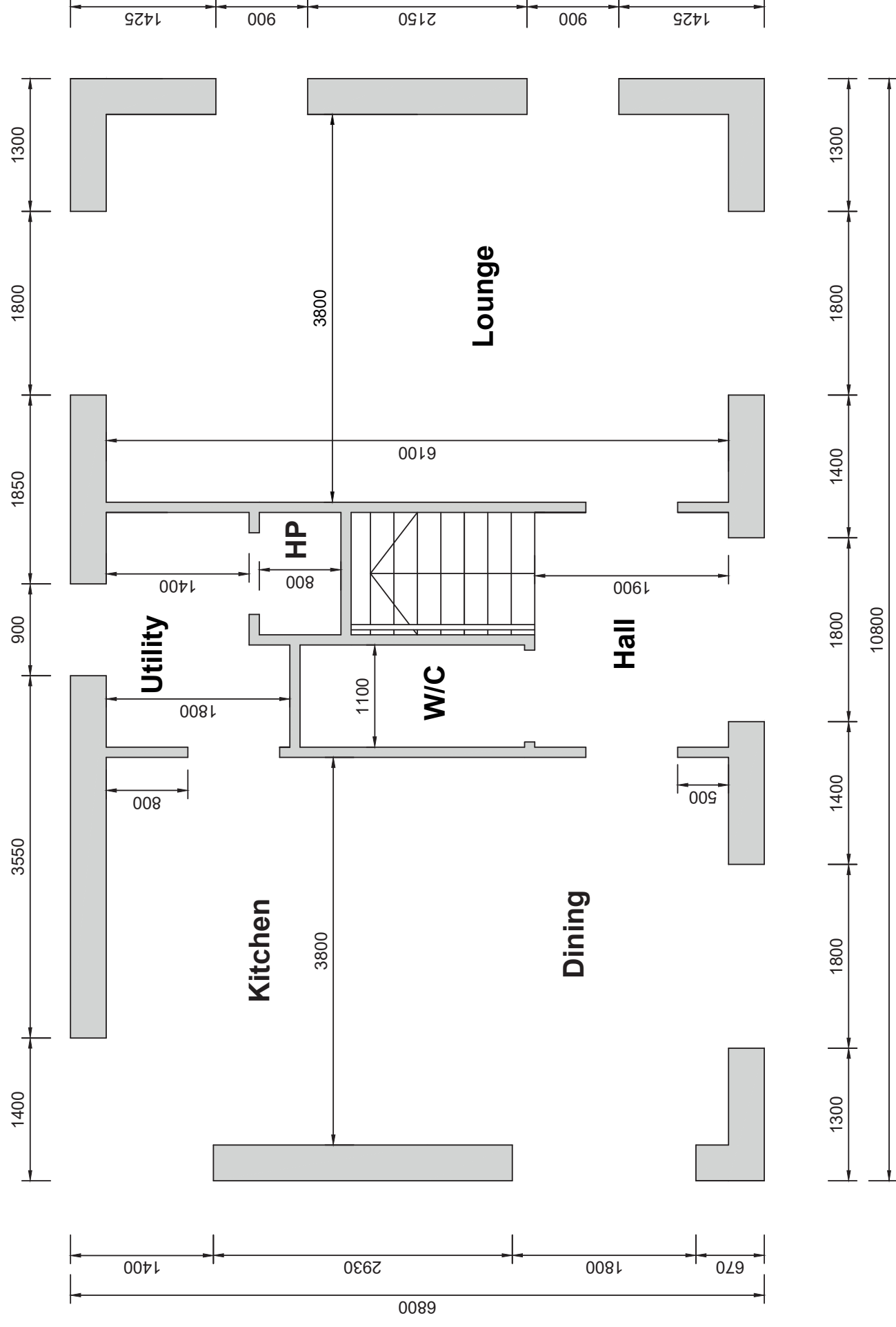
1. Completely annotated **and** sectioned window sill detail (1:5 scale).
2. Four building components, two from the plans and two from the elevation (1:20 scale).
3. Completed ground floor **or** first floor plan showing accurate openings for the insertion of components (1:50 scale) (**CCEA Drawing 1 or 2**).
4. Completed ground floor plan showing all components inserted correctly. (1:50 scale) (**CCEA Drawing 3**).
5. Completed first floor plan showing all components inserted correctly. (1:50 scale) (**CCEA Drawing 4**).
6. Completed rear elevation of the specified building that includes your design for roof and brickwork hatching, windows, and door, created with a high degree of accuracy (1:50 scale) (**CCEA Drawing 5**).
7. Completed working drawing including all windows and doors. Dimensions should be shown. This drawing should show the ground floor, first floor and rear elevation without client's amendments, created with a high degree of accuracy (1:100 scale) (**CCEA Drawing 6**).
8. Completed front elevation that includes client's amendments created with a high degree of accuracy (1:100 scale).
9. Completed ground floor plan that includes client's amendments created with a high degree of accuracy (1:100 scale).
10. A completed working drawing that shows how the candidate has analysed the client's brief and considered the client's amendments as requested in part (c) (1:100 scale).

**The number of drawings submitted should not exceed 10 A3 drawings.**

**All work must be presented in this order.**

**The front cover sheet must include the Candidate Number, Centre Number and final mark.**

**Total time allowed 20 hours.**



# Ground Floor Plan

Notes

Project Name

Controlled Assessment Task

Drawing Title

Ground Floor Plan

Unit

Unit 4: Computer Aided Design

Date

May 2023 - June 2026

Scale

Not to Scale

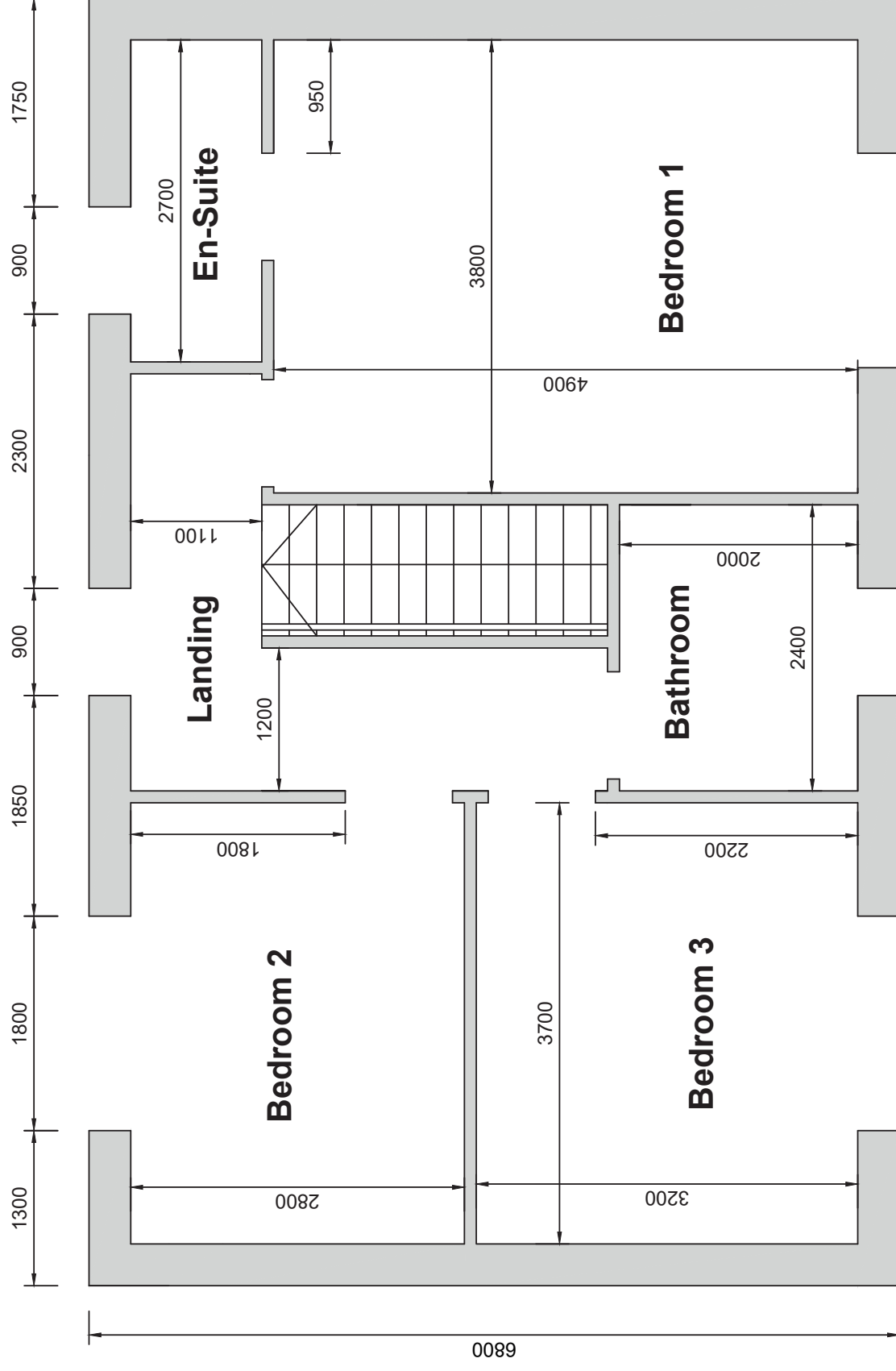
Drawn by

CCEA

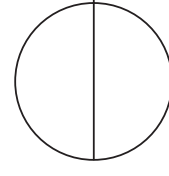
Dwg. No

01

**GCSE Construction  
&  
The Built Environment**



# First Floor Plan



Notes

Project Name

Controlled Assessment Task

Drawing Title

First Floor Plan

Unit

Unit 4: Computer Aided Design

Scale

Not to Scale

Date

May 2023 - June 2026

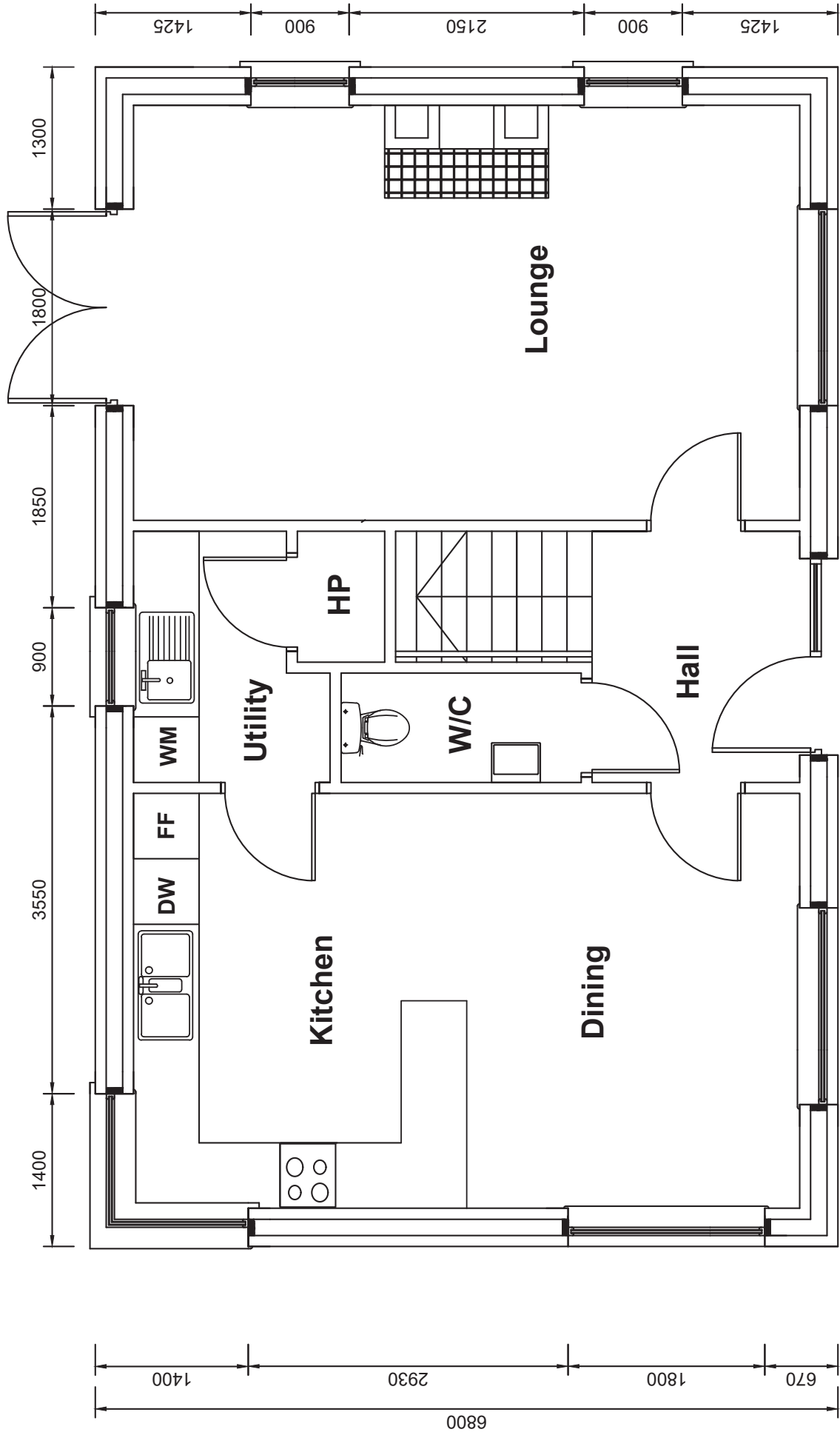
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02

Drawn by

CCEA

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# Ground Floor Plan

Notes

Project Name

Controlled Assessment Task

Drawing Title

Ground Floor Plan

Unit

Unit 4: Computer Aided Design

Scale

Not to Scale

Date

May 2023 - June 2026

Dwg. No

03

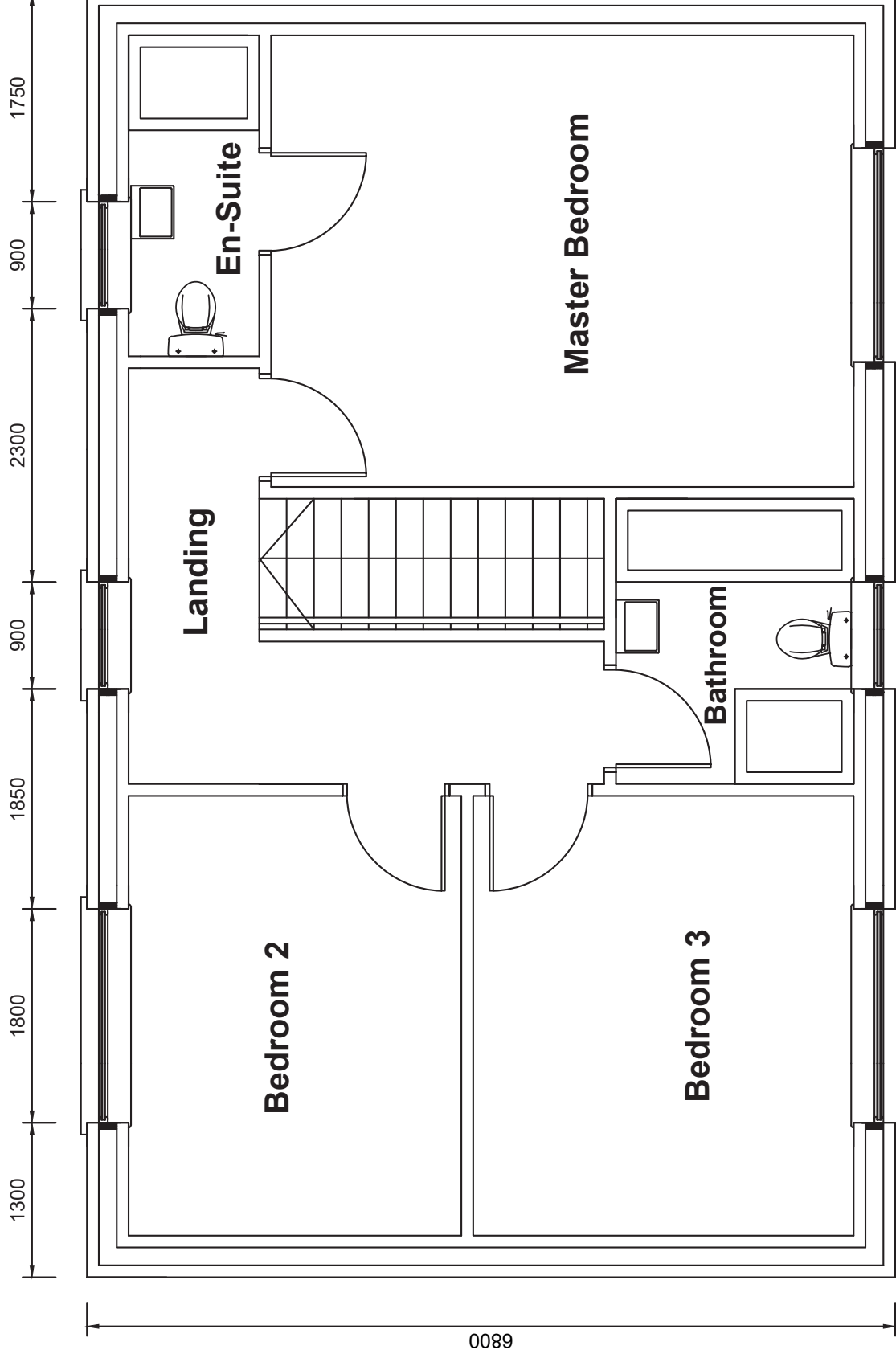
Drawn by

CCEA

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# First Floor Plan

Notes

Project Name

Controlled Assessment Task

Drawing Title

First Floor Plan

Unit

Unit 4: Computer Aided Design

Date

May 2023 - June 2026

Scale

Not to Scale

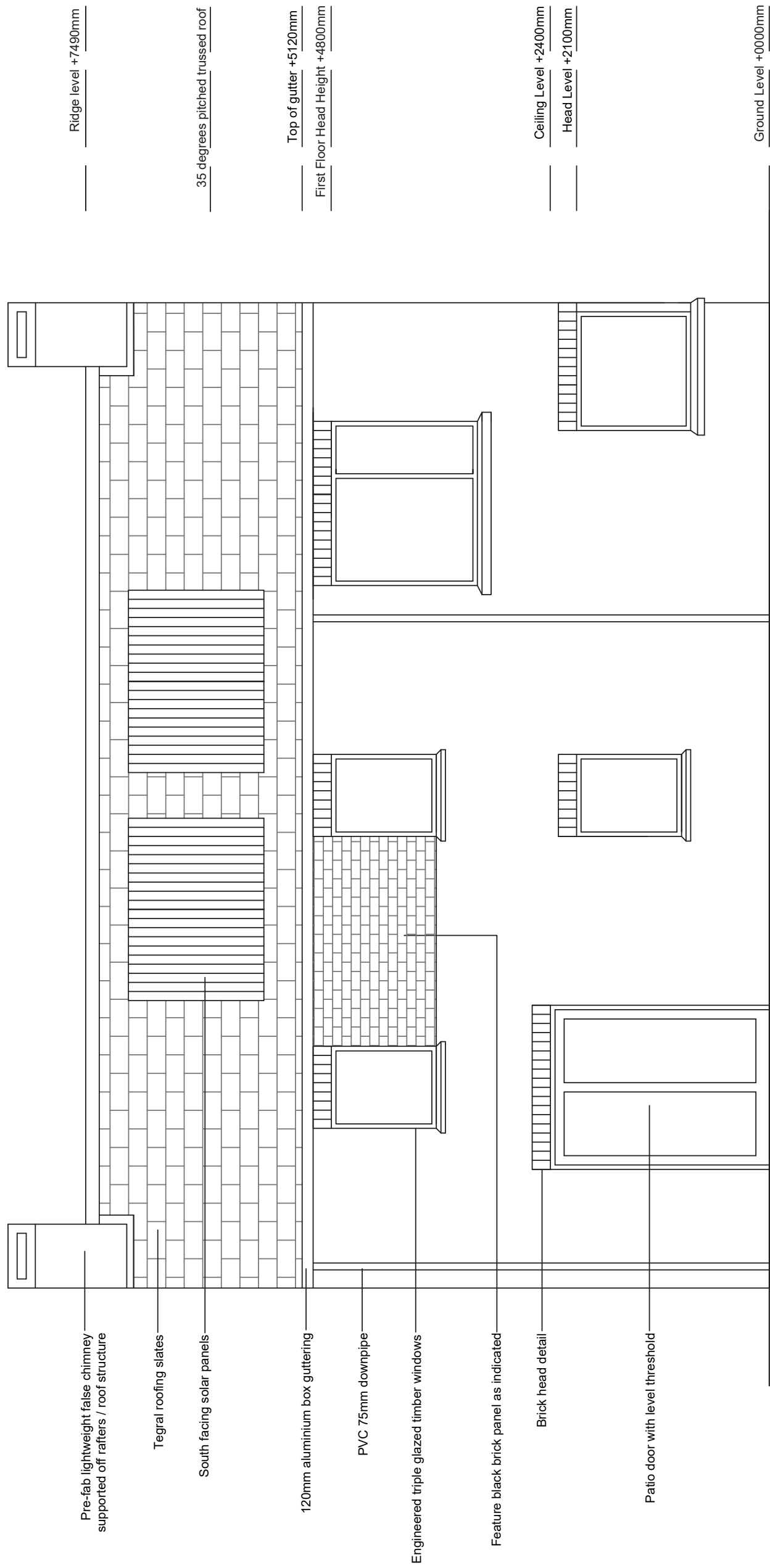
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04

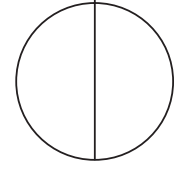
Drawn by

CCEA

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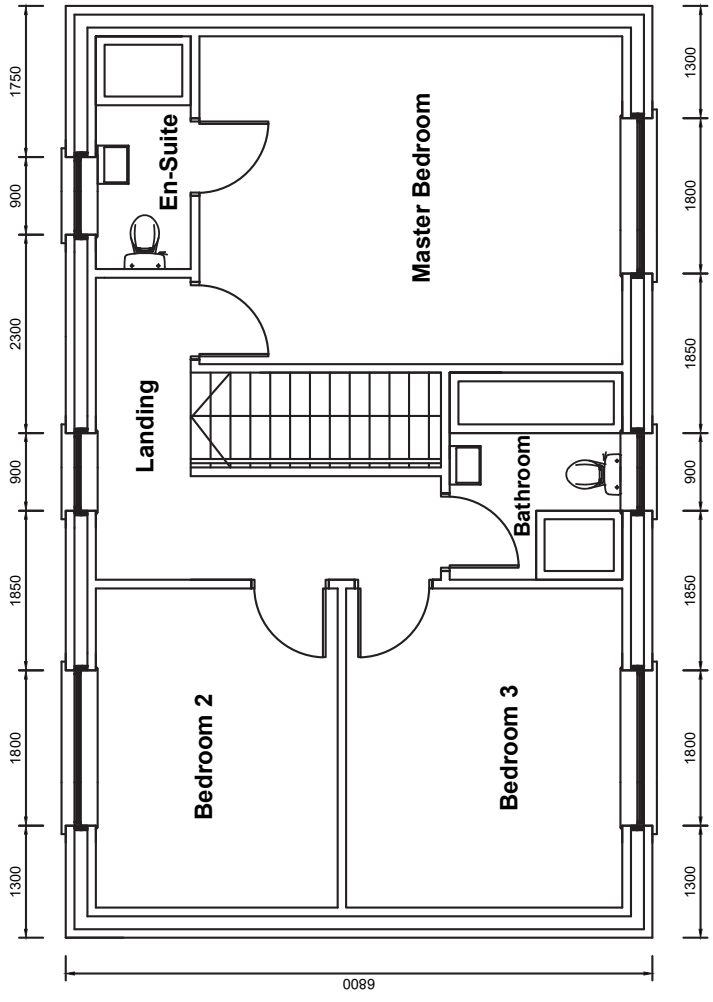


# Rear Elevation

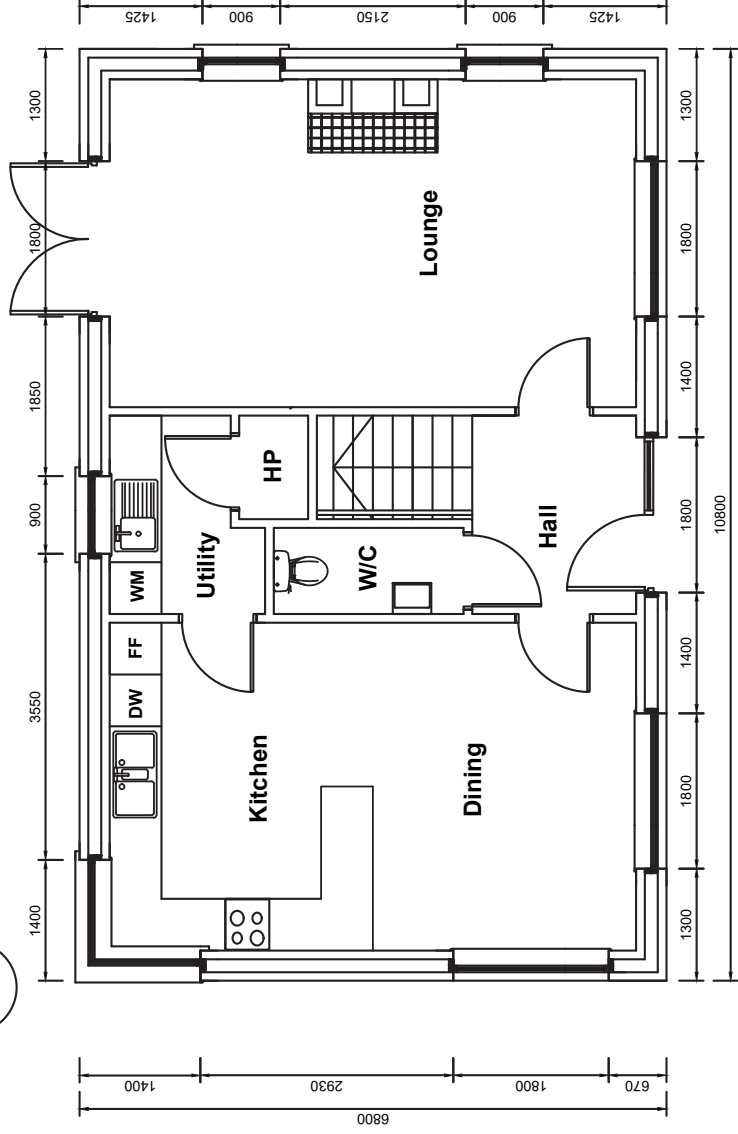


Notes	Project Name	Unit 4: Computer Aided Design		<b>GCSE Construction &amp; The Built Environment</b>	
	Controlled Assessment Task	Scale	Date		
	Drawing Title	Not to Scale	May 2023 - June 2026	Dwg. No	05
	Rear Elevation			Drawn by	CCEA

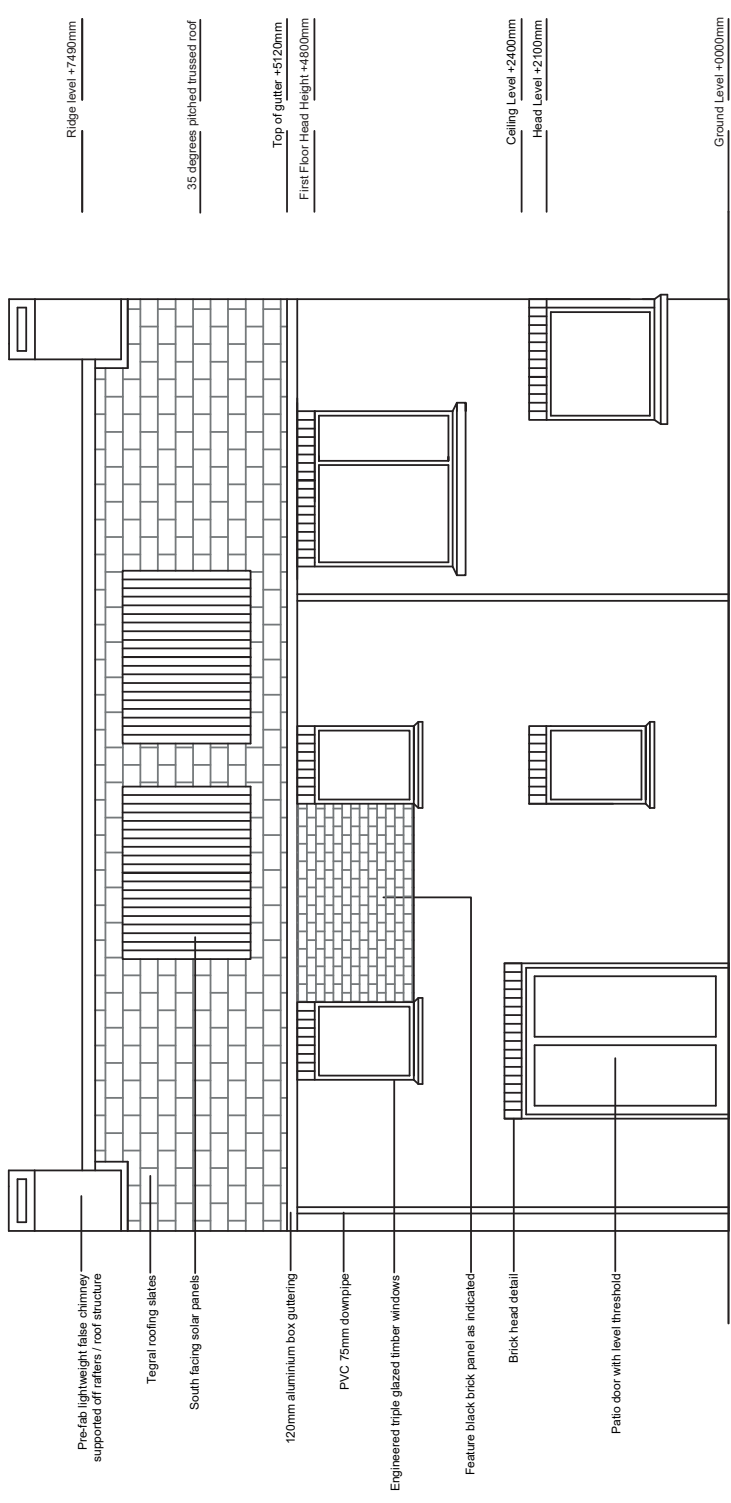




**First Floor Plan**



**Ground Floor Plan**



**Rear Elevation**

Notes

Project Name

Controlled Assessment Task

Drawing Title

Working Drawing

Unit

Unit 4: Computer Aided Design

Scale

Not to Scale

Date

May 2023 - June 2026

Dwg. No

06

Drawn by

CCEA

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