



General Certificate of Secondary Education

Construction and the Built Environment

Controlled Assessment Task

Unit 4: Computer Aided Design in
Construction

[GCN41]

VALID FROM MAY 2019

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 2020/21/22**

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

A client has purchased a large site in a suburban setting, located in a leafy suburb surrounded with modern architectural dwellings. The client has appointed an architect to design 10 semi-detached two storey houses. The local planning authorities have indicated the proposals must complement the surrounding area with a maximum ridge height of 7.5m to match existing adjacent properties.

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.

The client would like an additional design option with an attached sunroom on each house type.

Specification notes for construction:

- **Walls:** Cavity wall construction comprising; 100mm outer clay facing brickwork skin, 150mm cavity with pumped insulation beads, 100mm inner concrete blockwork skin with plastered finish.
- **Pitched Roof:** 30 degree pitched trussed roof comprising; 200mm x 38mm trusses spaced at 400mm centres, 200mm x 38mm ceiling joists spaced at 400mm centres supported on 100mm x 50mm timber wall plate. Natural slates.
- **Floor Construction:** Solid concrete floor comprising; 100mm concrete slab, 150mm floor insulation, 25mm to perimeter of slab, 1200 gauge damp proof membrane, 100mm subfloor concrete on 20mm blinding with 150mm crusher run hardcore below.
- **First floor Construction:** 75mm concrete screed on precast concrete slab.
- **Renewables:** Solar panels on the front south facing elevation providing hot water for the heating system.
- **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 front elevation of the semi-detached house type 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 parapet detail for the semi-detached house type provided by CCEA to comply with current Building Regulations N.I. 2012. This elemental detail may be used for the construction of the sunroom.
- (c) To satisfy the requirements of the client's brief you must design an attached sunroom for the rear of this house type. 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, elevation and working drawing of the sunroom.

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:

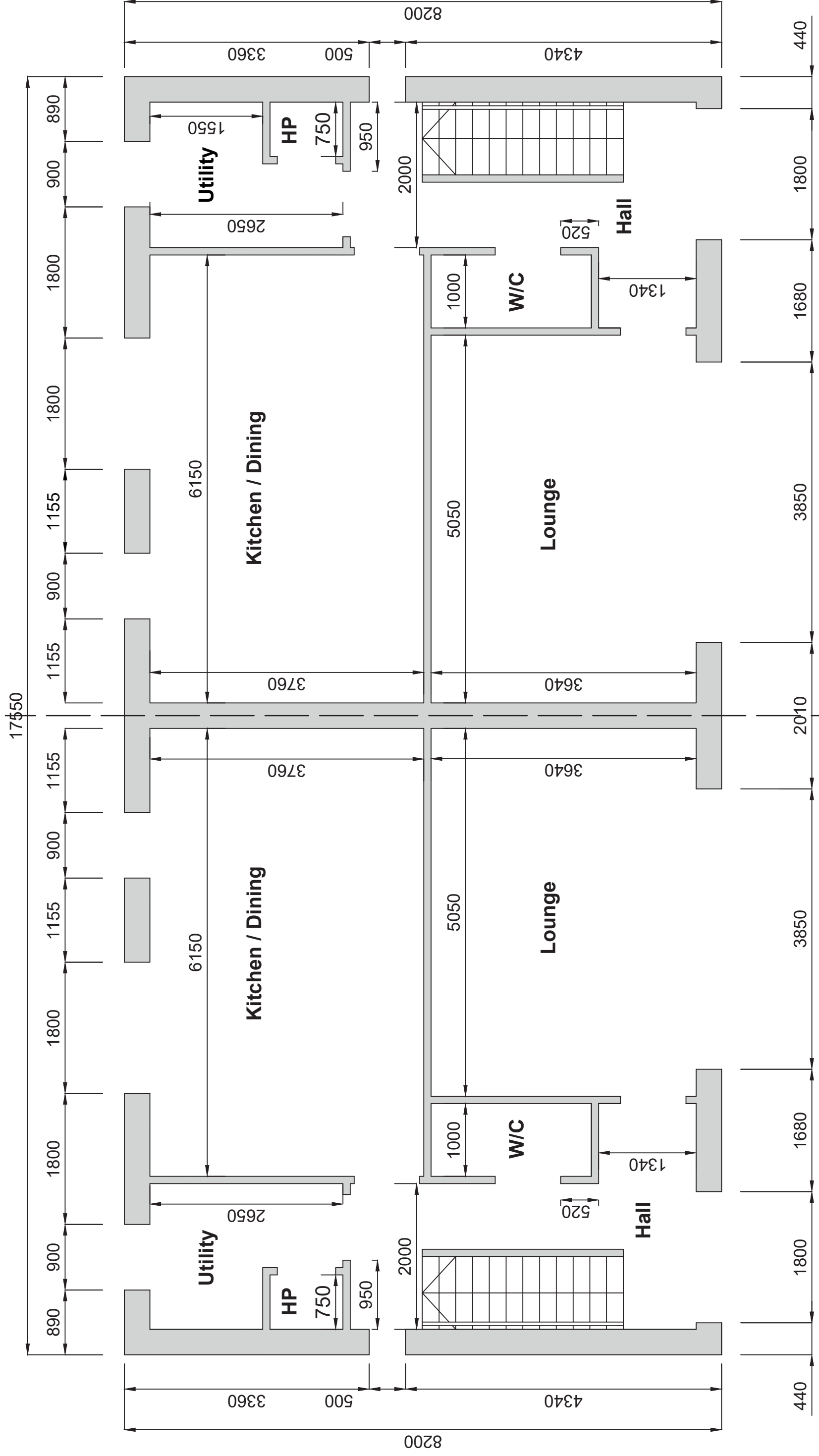
1. Completely annotated **and** sectioned parapet detail (1:5 scale).
2. Four building components, two from the plans and two from the elevation (1:20 scale).
3. Completed ground floor **or** first floor plan showing accurate openings for the insertion of components (1:50 scale) (**CCEA Drawing 1 or 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 front 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 front elevation without client's amendments, created with a high degree of accuracy (1:100 scale) (**CCEA Drawing 6**).
8. Completed rear elevation that includes client's amendments created with a high degree of accuracy (1:50 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 taken into account 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 Marks.

Total time allowed 20 hours.



PERSONAL DETAILS:

Name: Unit 4 - CAD

Class: Controlled Assessment Tasks

DRAWING DETAILS:

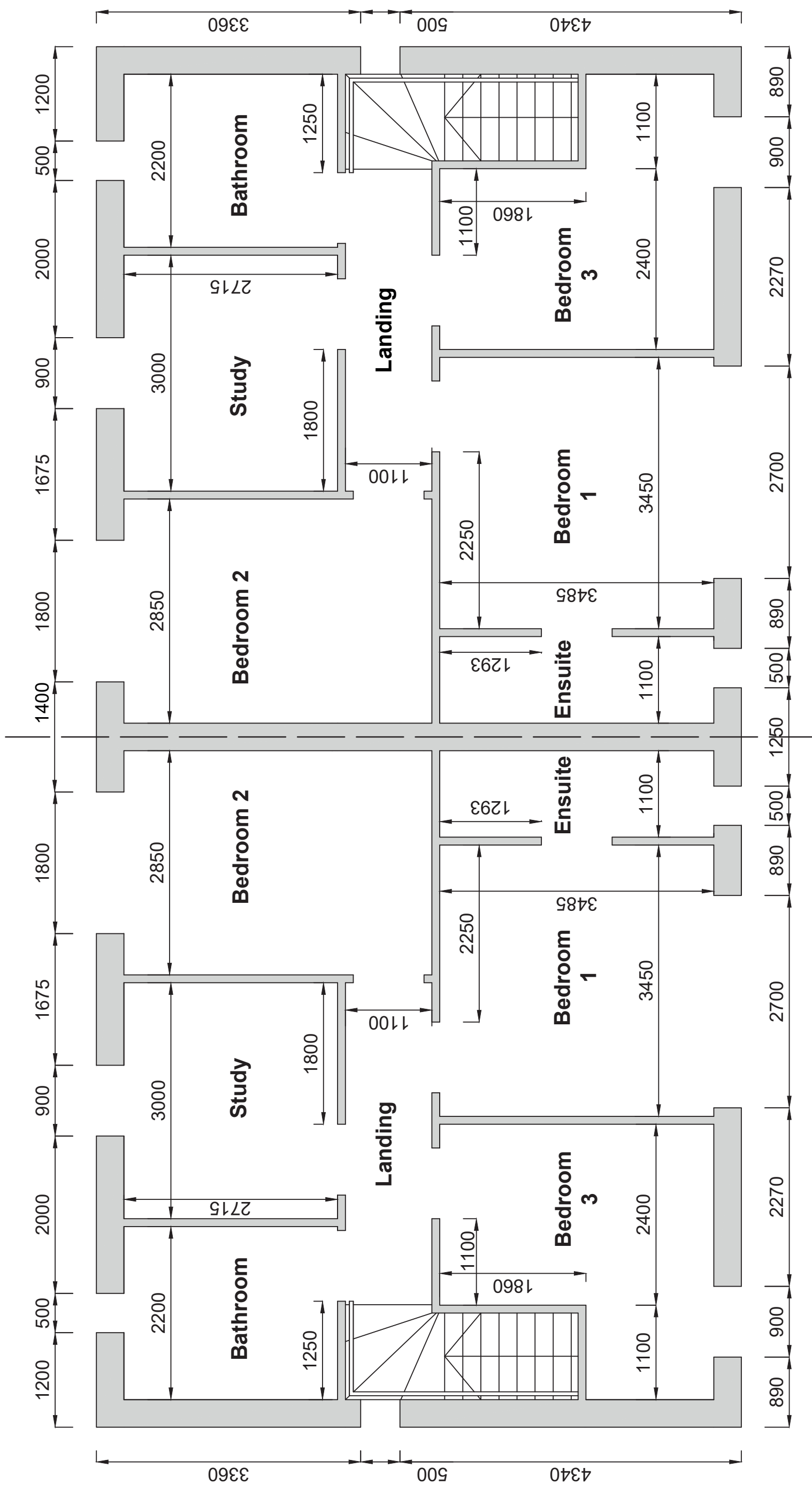
Drwg Nr: 01

Title: Ground Floor Plan

Scale: 1:50

Date: May 2019 - June 2021

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PERSONAL DETAILS:

Name: Unit 4 - CAD

Class: Controlled Assessment Tasks

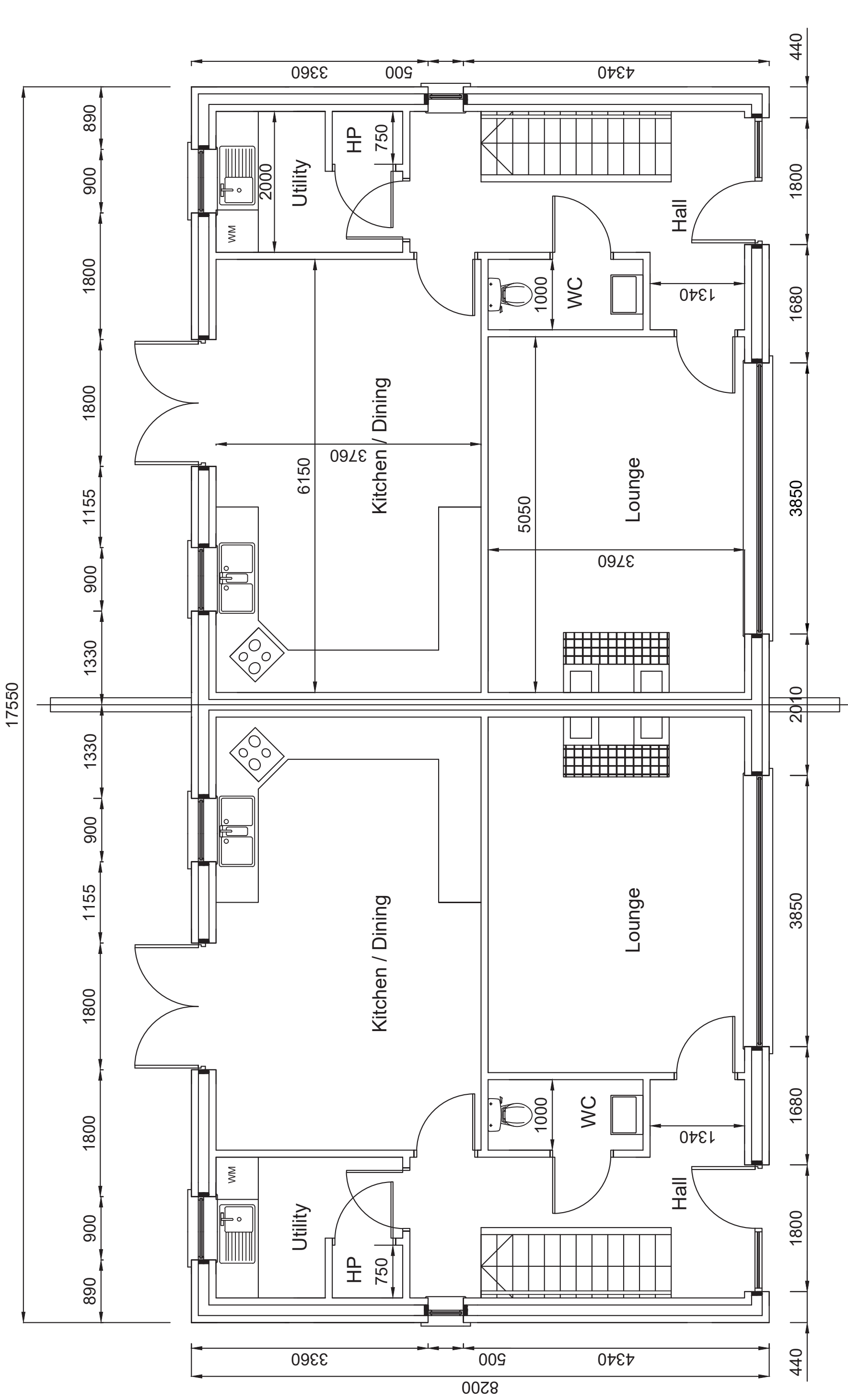
DRAWING DETAILS:

Drwg Nr: 02

Title: First Floor Plan

Scale: 1:50

Date: May 2019 - June 2021



PERSONAL DETAILS:

Name: Unit 4 - CAD

Class: Controlled Assessment Tasks

DRAWING DETAILS:

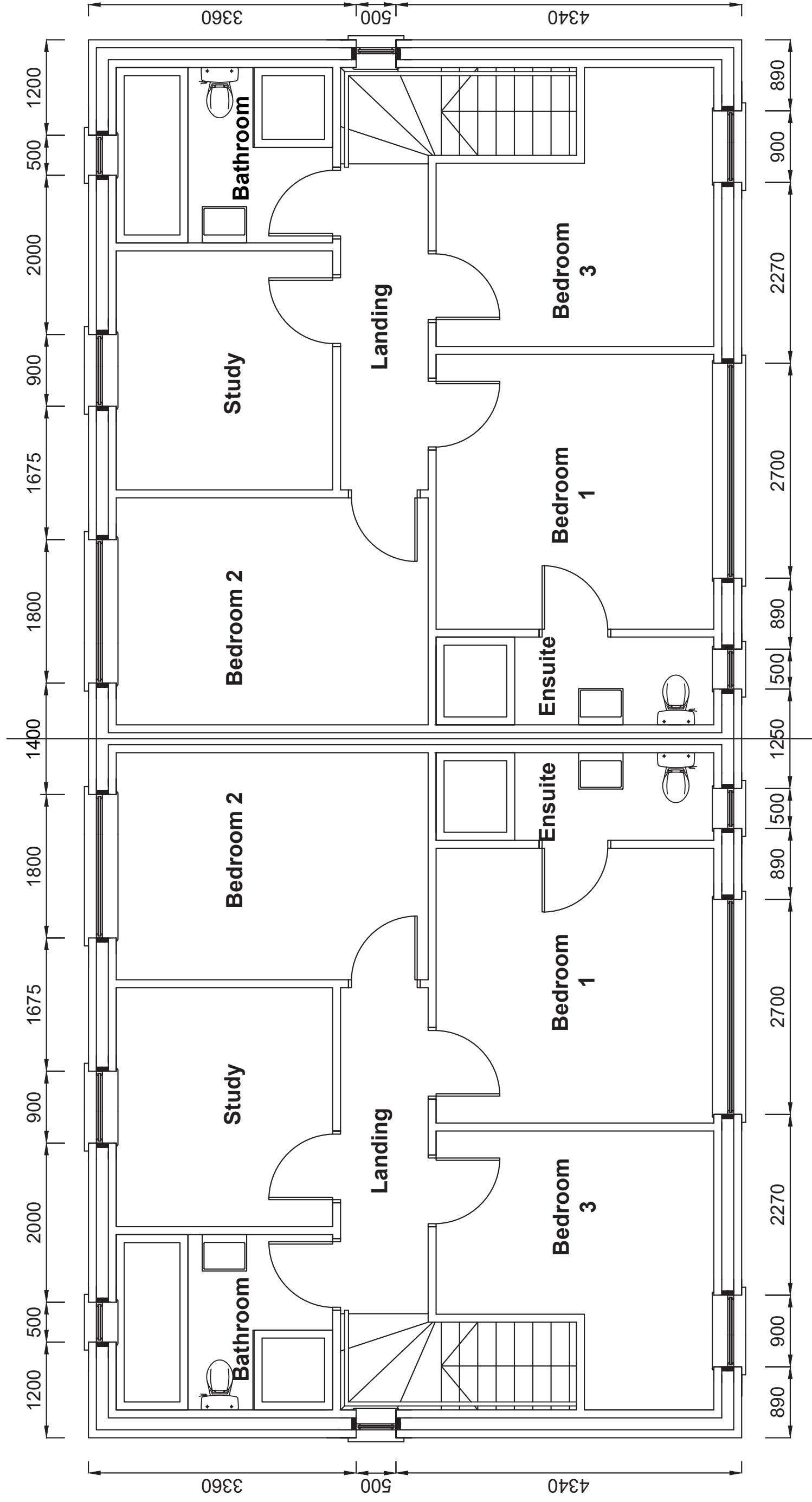
Drwg Nr: 03

Title: Ground Floor Plan

Scale: 1:50

Date: May 2019 - June 2021

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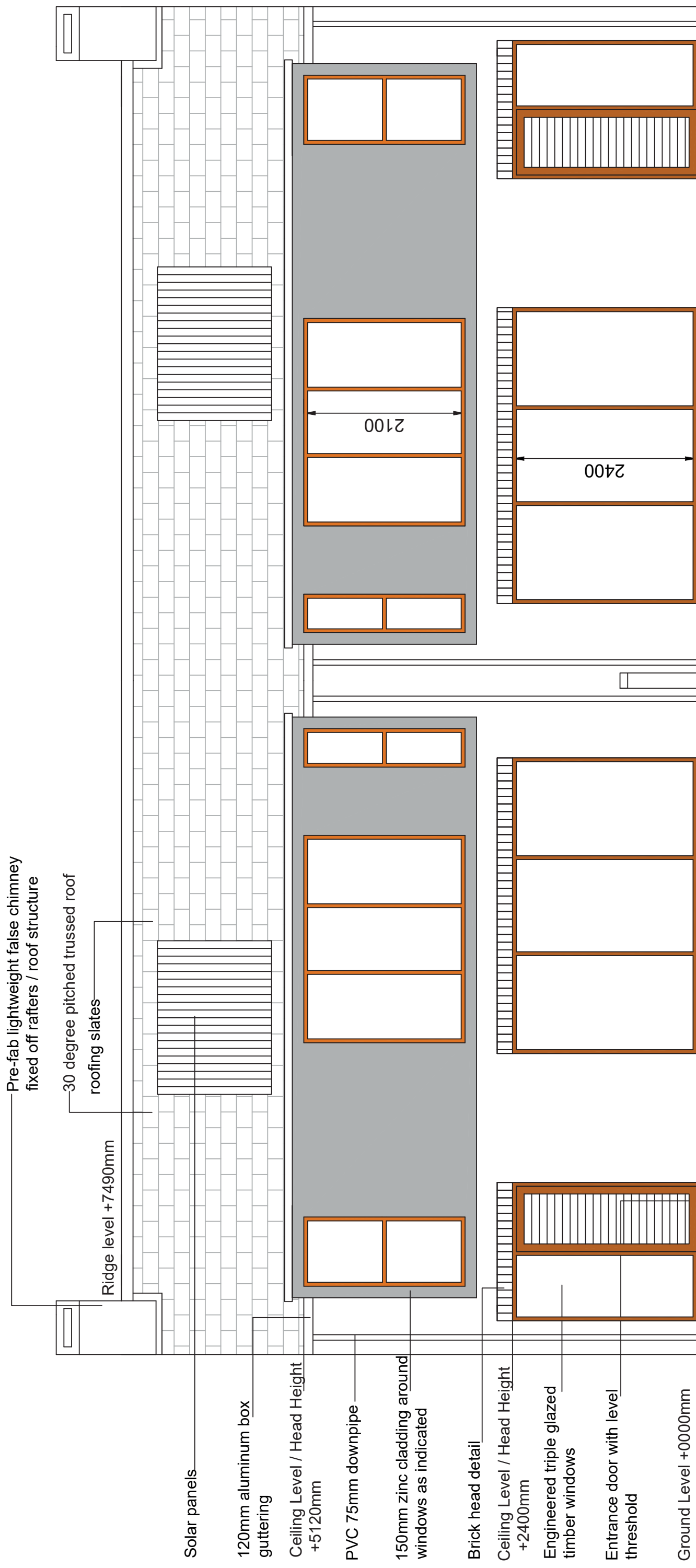
DRAWING DETAILS:

Drwg Nr: 04
 Title: First Floor Plan
 Scale: 1:50
 Date: May 2019 - June 2021

PERSONAL DETAILS:

Name: Unit 4 - CAD
 Class: Controlled Assessment Tasks

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PERSONAL DETAILS:

Name: Unit 4 - CAD

Class: Controlled Assessment Tasks

DRAWING DETAILS:

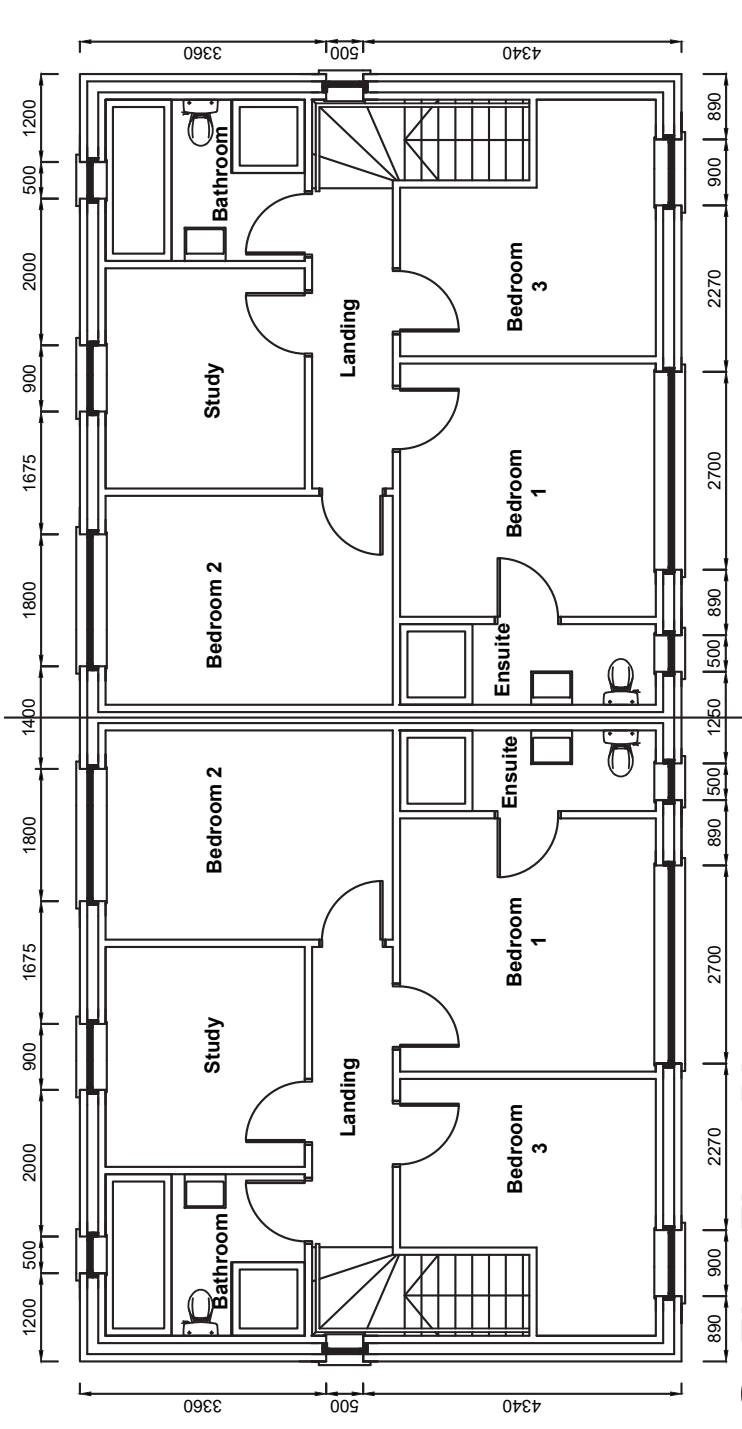
Drwg Nr: 05

Title: Front Elevation

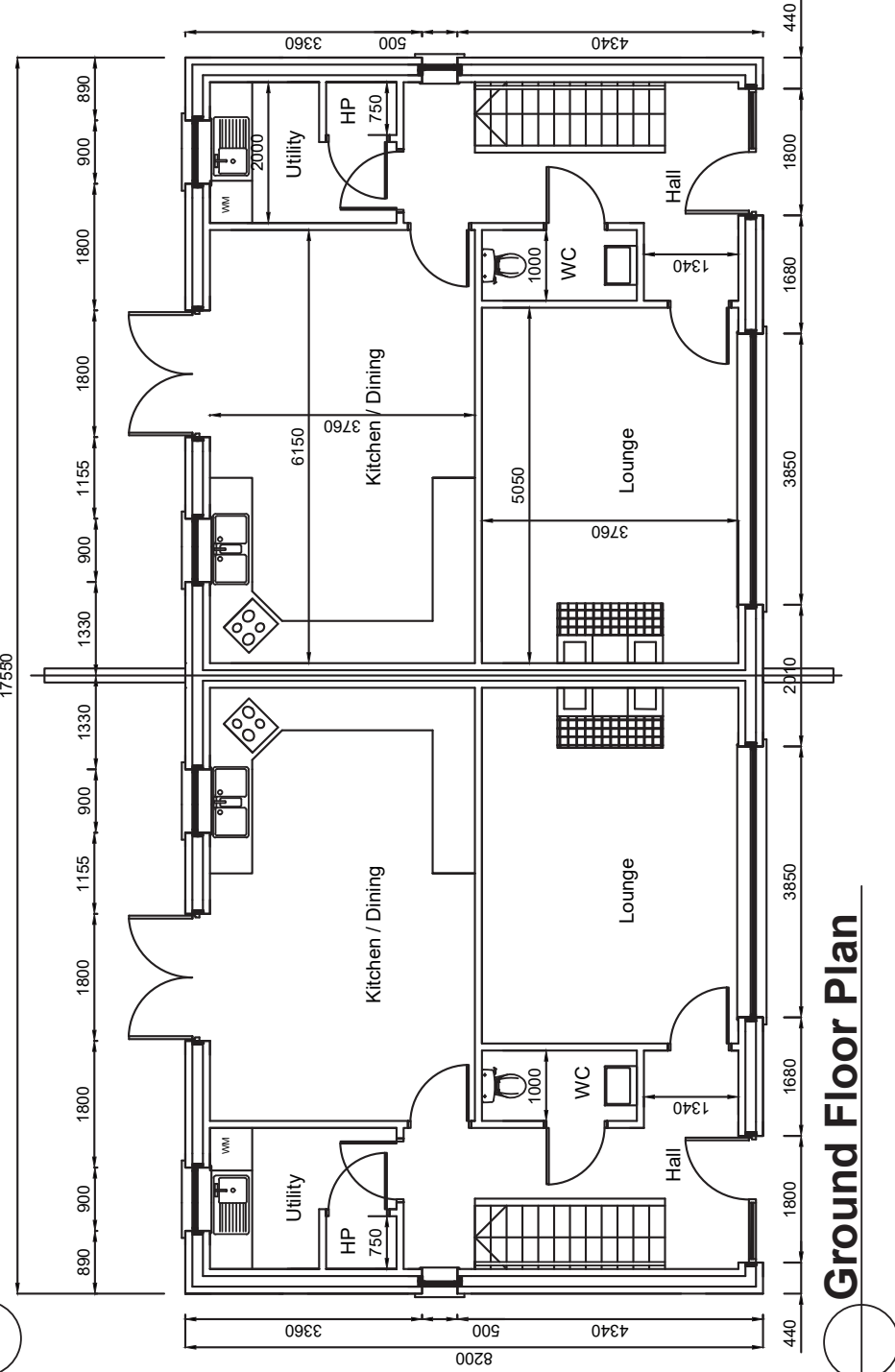
Scale: 1:50

Date: May 2019 - June 2021

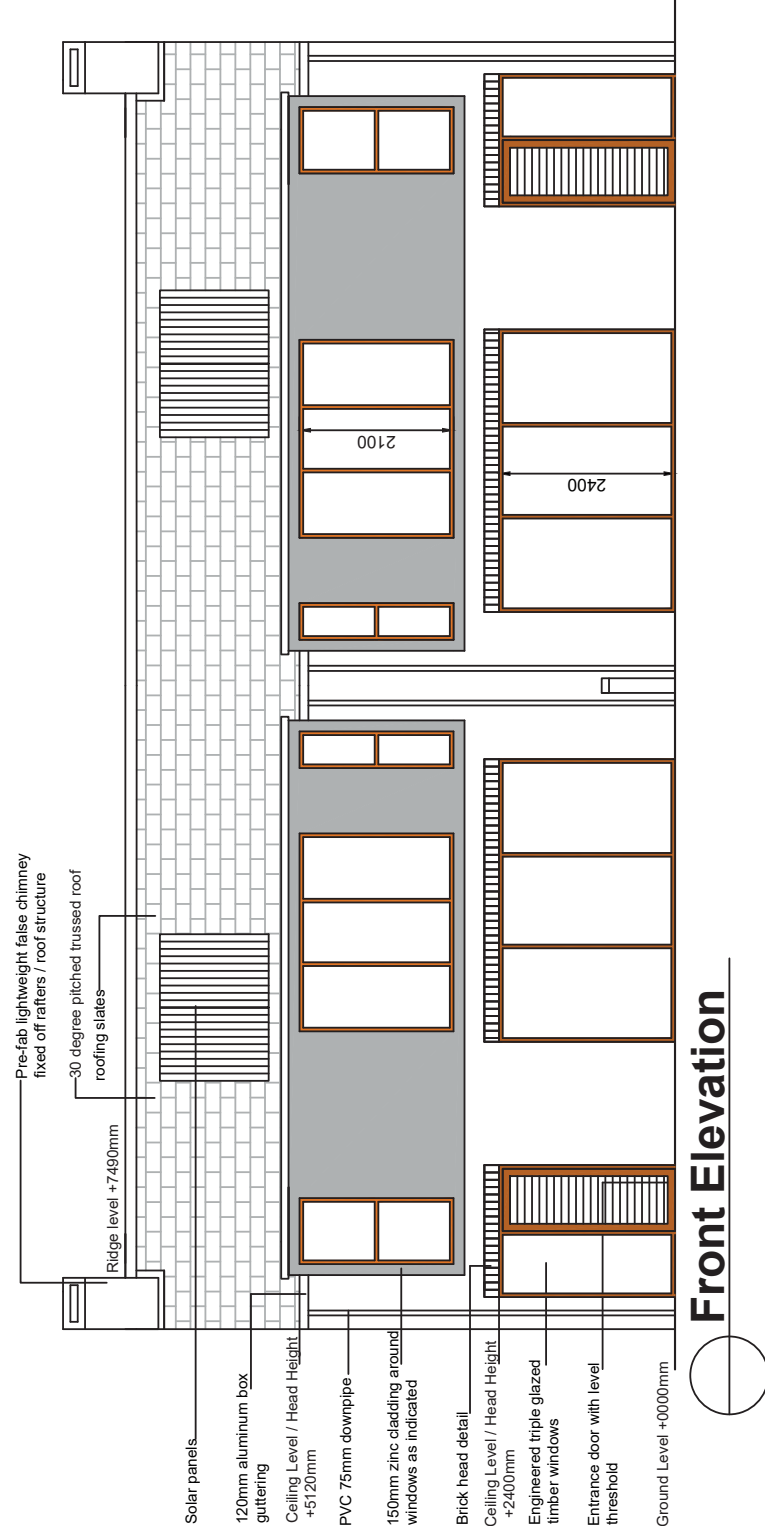
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First Floor Plan



Ground Floor Plan



Front Elevation

- Solar panels
- 120mm aluminium box guttering
- Ceiling Level / Head Height +5120mm
- PVC 75mm downpipe
- 150mm zinc cladding around windows as indicated
- Brick head detail
- Ceiling Level / Head Height +2400mm
- Engineered triple glazed timber windows
- Entrance door with level threshold
- Ground Level +0000mm

PERSONAL DETAILS:

Name: Unit 4 - CAD

Class: Controlled Assessment Tasks

DRAWING DETAILS:

Drwg Nr: 06

Title: Working Drawing

Scale: 1:100

Date: May 2019 - June 2021

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