

TEST PROJECT  
PROJET D'ÉPREUVE

# ARCHITECTURAL TECHNOLOGY & DESIGN DESSIN ET TECHNOLOGIE ARCHITECTURALE

POST-SECONDARY  
NIVEAU POSTSECONDAIRE

CONTINUOUS LEARNING



FORMATION CONTINUE

DIGITAL



COMPÉTENCES NUMÉRIQUES

DOCUMENT USE



UTILISATION DE DOCUMENTS

NUMERACY



CALCUL

ORAL COMMUNICATION



COMMUNICATION ORALE

READING TEXT



LECTURE

WORKING WITH OTHERS



TRAVAIL D'ÉQUIPE

WRITING



RÉDACTION

THINKING



CAPACITÉ DE RAISONNEMENT

# Day 1

## Competition Test & Appendix I



# Day 1 (7 hours)

**REMEMBER TO SAVE YOUR WORK OFTEN**

## Project Criteria

Produce a partial set of working drawings for a commercial building.

## Documentation Provided

- Pictorial view of the concept model (**Refer to Cover**).
- Preliminary drawings of floor plans and a wall section (**Refer to Appendix**).

This Project is based on a proposed office complex, with the first floor layout defined according to the clients requirements and the second floor left undeveloped. Based on this, execute the following;

## FIRST DAY DRAWING(S) SHALL INCLUDE:

- **Main Floor Plan** (20)
  - Scale 1:100
  - Determine structural layout. **Refer to Appendix I** for criteria.
  - Determine partition wall locations based on the relative scale of the enclosed image. **Refer to Appendix II**
  - Design **BARRIER FREE** washroom layout:
    - Female: 3 water closets (including 1 handicap stall) and 2 sinks
    - Male: 2 water closets (including 1 handicap stall), 2 urinals and 2 sinks
  - **Include:**
    - Grid lines
    - Dimensions
    - Wall Legend and Wall Tags
    - Room Names and Room Numbers
    - Door Identifications
    - Technical References for Building Cross Section. **Refer to Appendix II.**
    - Technical References for Construction Details. **Refer to Appendix II**

- **Building Section (Refer to Appendix II for locations)** (15)
  - Scale 1:100
  - One required as noted as “BS-A in **Appendix II** ;
  - **Include:**
    - Grid lines
    - Spot elevations
    - Room Names and Numbers
    - References for details; where applicable
    - Construction assembly identification
  
- **Sectional Construction Details, detail the following locations:** (20)
  - Scale 1:5 (**Refer to Appendix II** )
    - Det 1: Roof Parapet Detail (Roof to wall connection)
    - Det 2: Intermediate Floor Detail (Exterior wall to floor connection at 2<sup>nd</sup> floor)
    - Det 3: Base Connection Detail  
(Exterior wall to floor connection at main floor curtain wall)
    - Det 4 : Base Connection Detail  
(Exterior wall to floor connection at cavity wall as spec'd)
  - **Include all of the following for all details:**
    - Grid lines
    - Dimensions
    - Spot elevations
    - Full annotation; Material Identifications
  - **Ensure the following is addressed to the best of your ability;**
    - Resolve any technical envelope issues with regard to rain screen effect and moisture permeability including Thermal, Air, Water (vapour) and Structure.

## HAND IN INSTRUCTIONS DAY ONE:

### Layout:

- Architectural “D landscape” or equivalent depending on your software.
- Drawing(s) must include a title block (Skills Border.dwg) or similar.
- **Ensure** your **competitor number** is included in the Title Block in lieu of your name.

### Hand-in Instructions:

- Plot your work on an 11 x 17 sheet; adjust your line weights accordingly!
- Save drawing files.
- Turn off your monitor only.
- Do **not** shut down the CAD program.
- Leave all notes and the test paper at your station.
- **Make sure your competitor number is on all the documents and files.**

**IDENTIFY YOUR DRAWINGS AND COMPUTER FILES WITH YOUR COMPETITOR NUMBER ONLY!**

**THE USE OF YOUR NAME COULD RESULT IN DISQUALIFICATION.**

## Appendix I

### STRUCTURE AND ASSEMBLIES:

#### Major Concept:

- Structural steel frame c/w Structural masonry walls as indicated.

#### Exterior Wall Types: Refer to Appendix III for location

- WT-1: 100mm face brick, airspace, rigid insulation as required 200mm CMU
- WT-2: Aluminum Curtain Wall
- WT-3: 100mm face brick, airspace, rigid insulation as required 152mm steel stud @ 400mm o.c.

#### Interior Wall Types:

- Interior Partitions to be 31mm x 92mm Steel Stud @ 400mm o.c. unless noted
- Stairwell and Elevator walls to be 200 mm CMU

#### Foundation:

- 400mm x 900mm Concrete grade beams (c/w Rigid insulation at exterior locations) bearing on 400mm Diameter Concrete piles
- 250mm x 900mm Concrete grade beams at all interior locations bearing on 400mm Diameter Concrete piles.

#### Main Floor Construction:

- 200mm precast concrete (Hollow core)

#### Second Floor Construction:

- 100mm Concrete topping on 38mm Steel Deck, supported by Open Web Steel Joists (OWSJ) on structural steel frame (Beams and columns, no exposed steel structure)

#### Roof Construction:

- “Modified Roof System” Using sloped rigid insulation on 38 mm steel deck supported by OWSJ on steel frame (no exposed steel structure)

#### Stair Construction:

- Steel Stairs c/w concrete topping on treads and landings.

## STRUCTURAL SIZING GUIDE: (FOR DRAWING PURPOSES ONLY)

**Metal Deck:** 38mm

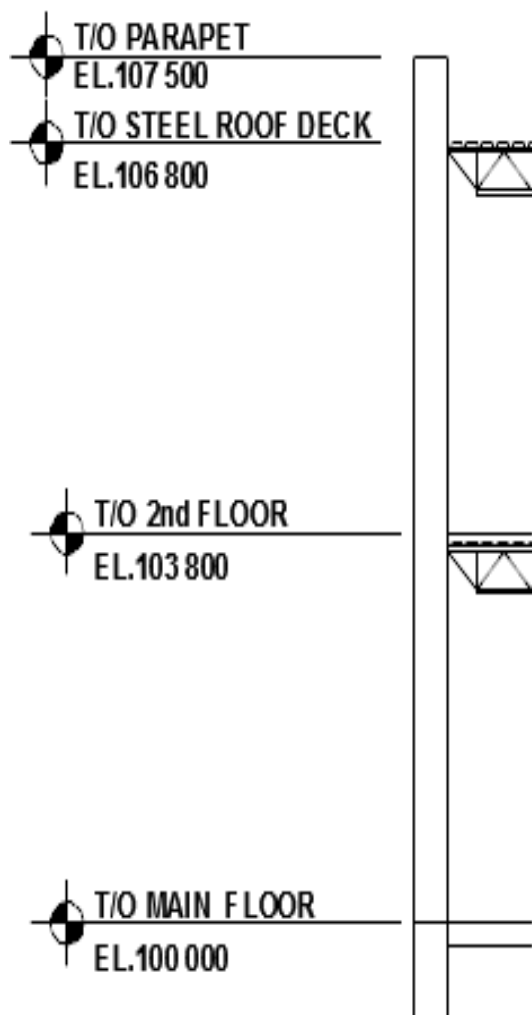
### Open Web Steel Joists:

- 300 mm for every 3000mm of span.
- Chord width = 150mm.
- Assume a spacing of 1500mm for Second Floor.
- Assume a spacing of 1800mm for Roof.

### Steel Beams:

- 12mm depth for every 300mm of span. Flange width to be 150mm.

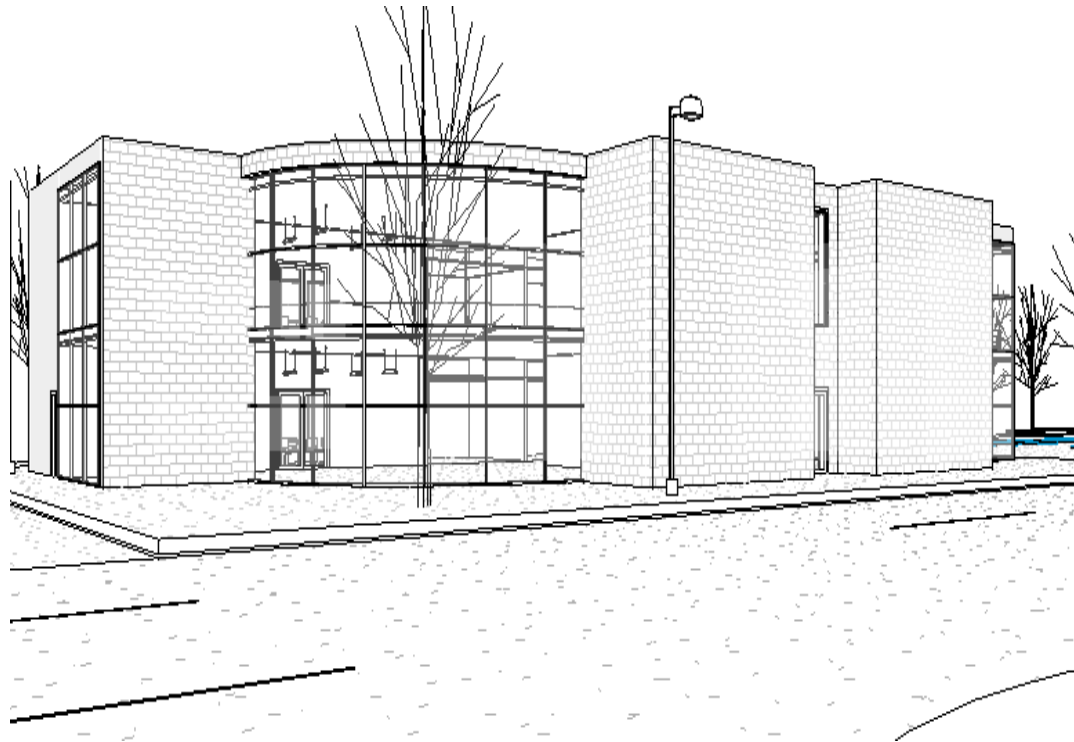
**Steel Columns:** 150mm x 150mm.



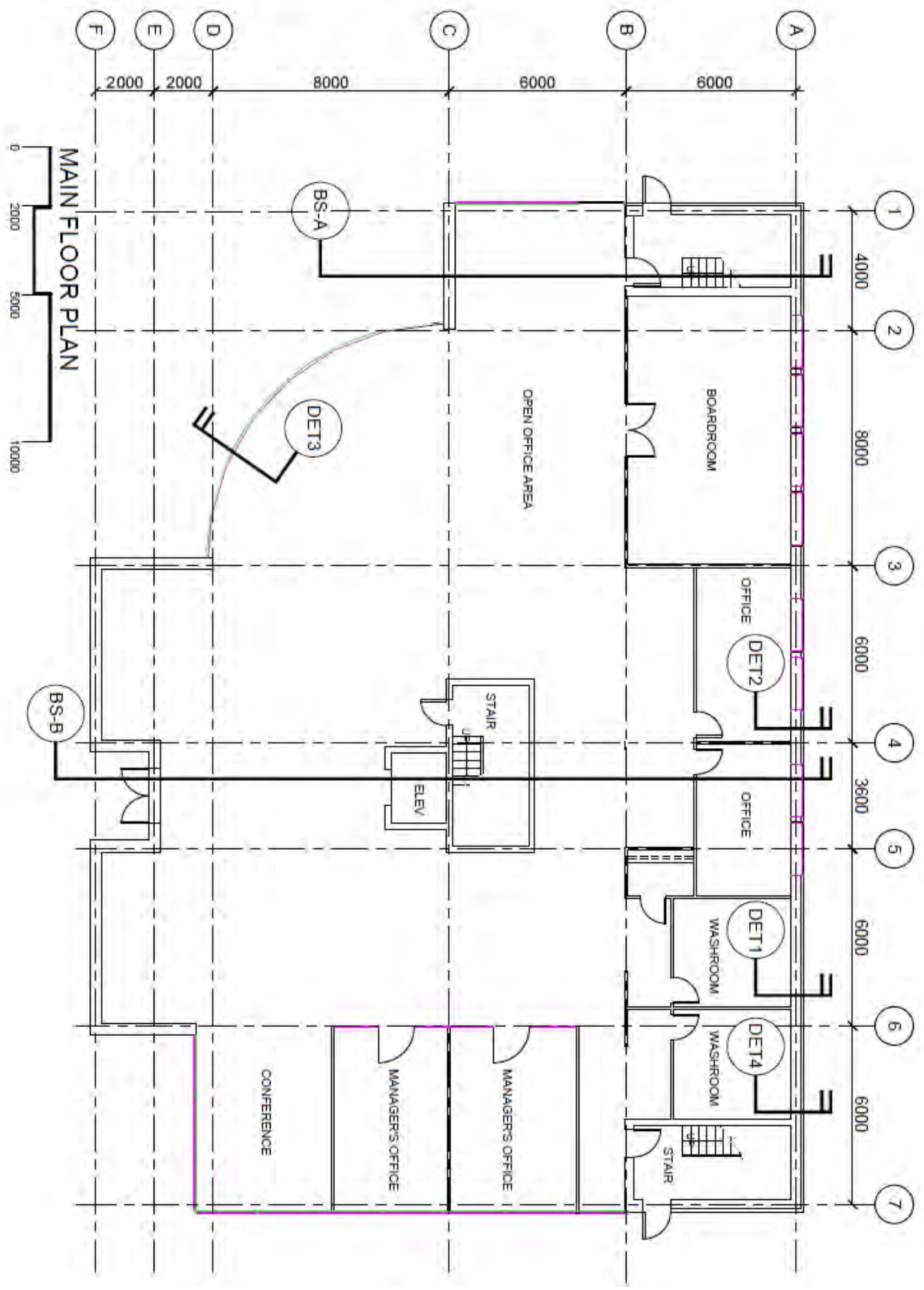
The purpose of this illustration is to illustrate elevations of floors, roof and parapet only. It is **not** intended to illustrate type of wall, floor or roof assemblies.

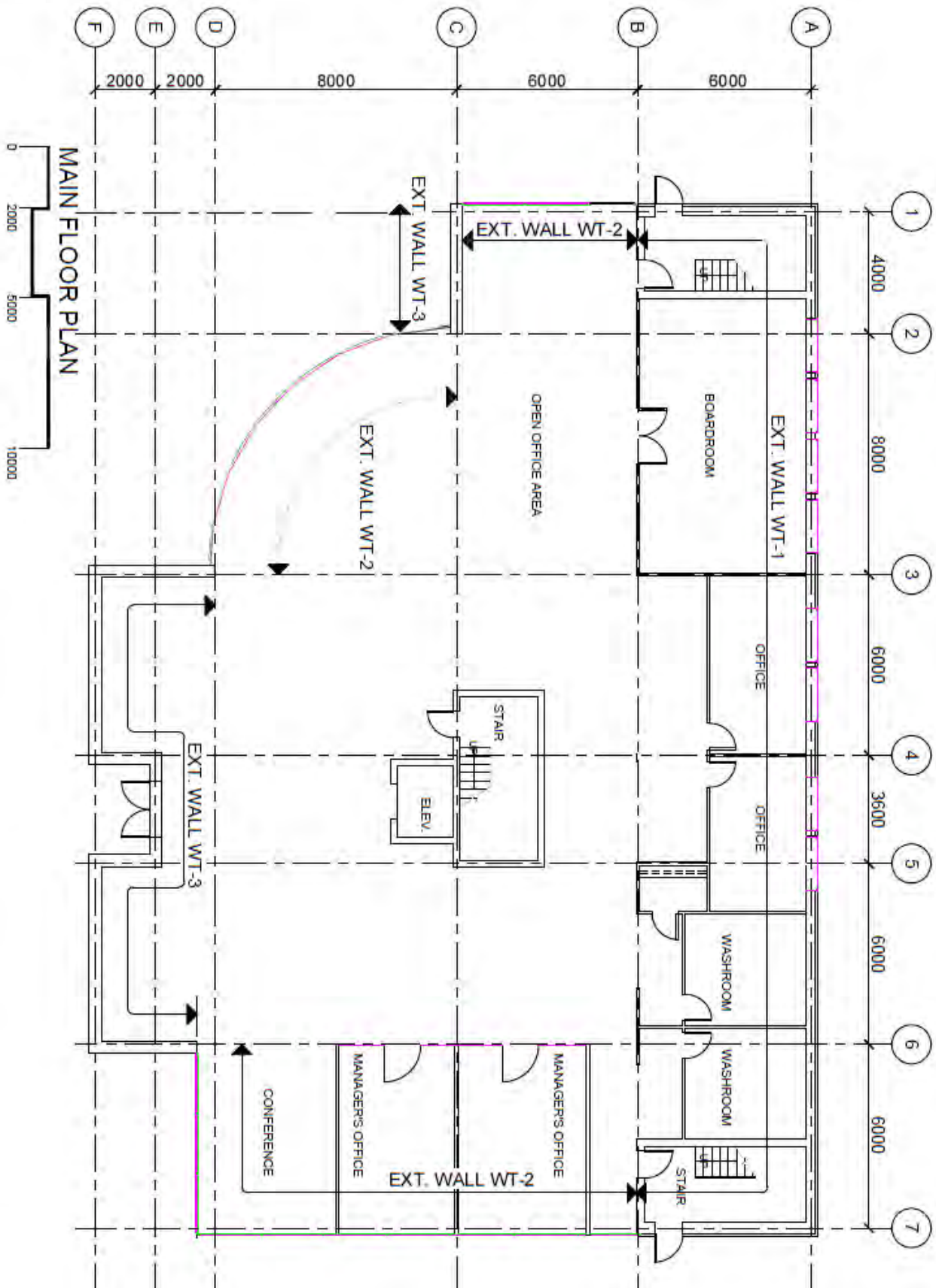
# Day 1

## Appendix II & Appendix III









## Day 2 (5 hours)

### Documentation Provided

- Pictorial views of the concept model (**Refer to Appendix**).
- Preliminary drawings of floor plans and a wall section (**Refer to Appendix**).
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**Problem:** Using your work from Day 1, complete the following working drawings for the commercial building:

### SECOND DAY DRAWING(S) SHALL INCLUDE:

- **Exterior Elevations** (2 only as noted “EL-1 and EL-2 “ in Appendix IV ) (10)
  - Must be consistent with the Appendix IV and Appendix V)
  - **Include:**
    - Grid lines
    - Spot elevations
    - Exterior finish notes
    - Line convention
  
- **Two Vertical Wall Sections** (Taken from Cross Section) (10)
  - Scale 1:20
  - Include:
    - Grid lines
    - Spot elevations
    - Dimensions
    - Construction Assembly Notes
    - Detail cross references
  
- **Plan View Construction Details** (10)
  - Scale of 1:5
    - HD1, HD2 and HD3 (**Refer to Appendix IV** for locations)

## **HAND IN INSTRUCTIONS DAY TWO:**

### **Layout:**

- Architectural “D landscape” or equivalent depending on your software.
- Drawing(s) must include a title block (Skills Border.dwg) or similar.
- Ensure your competitor number is included in the Title Block in lieu of your name.

### **Hand-in Instructions:**

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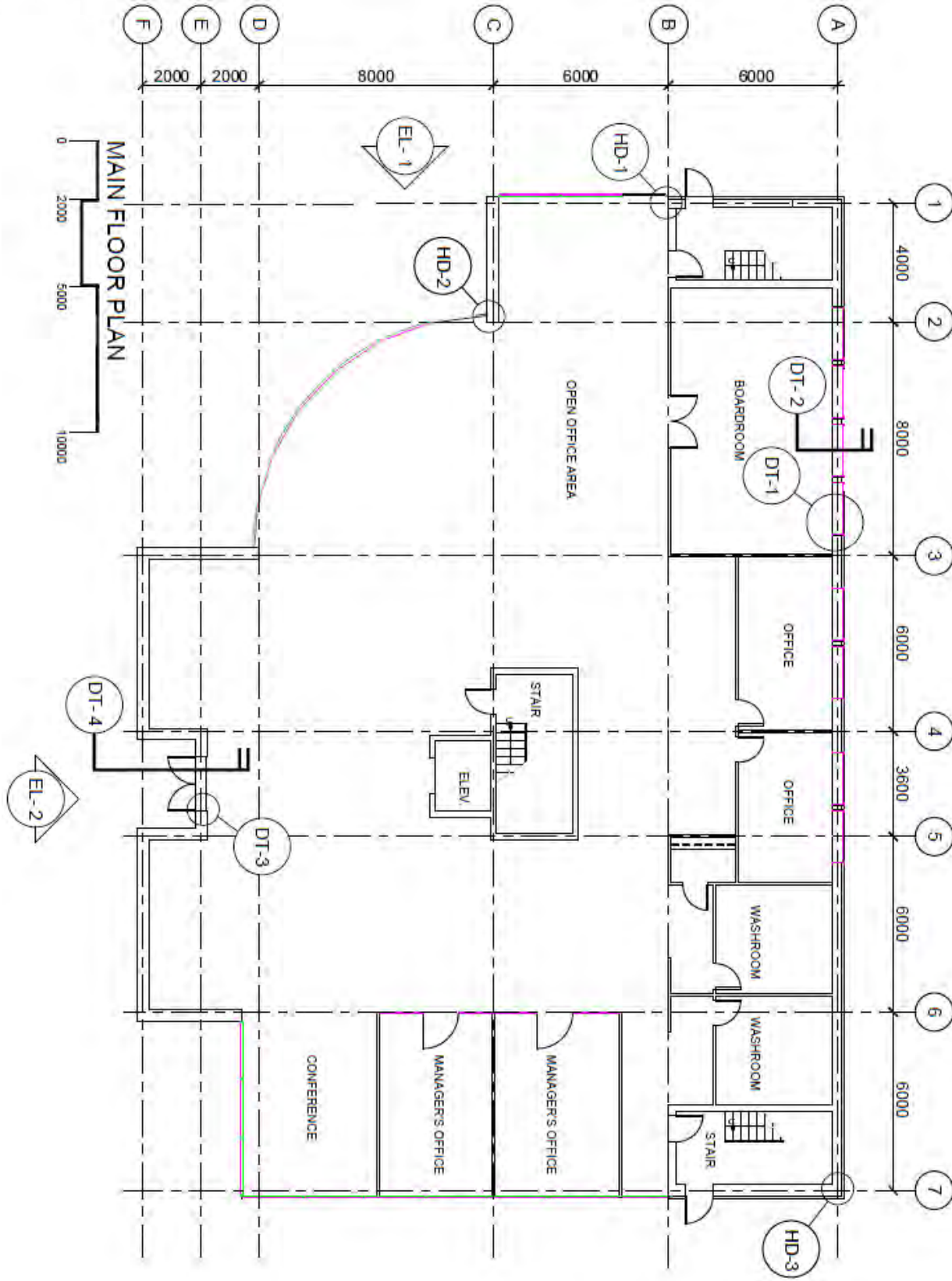
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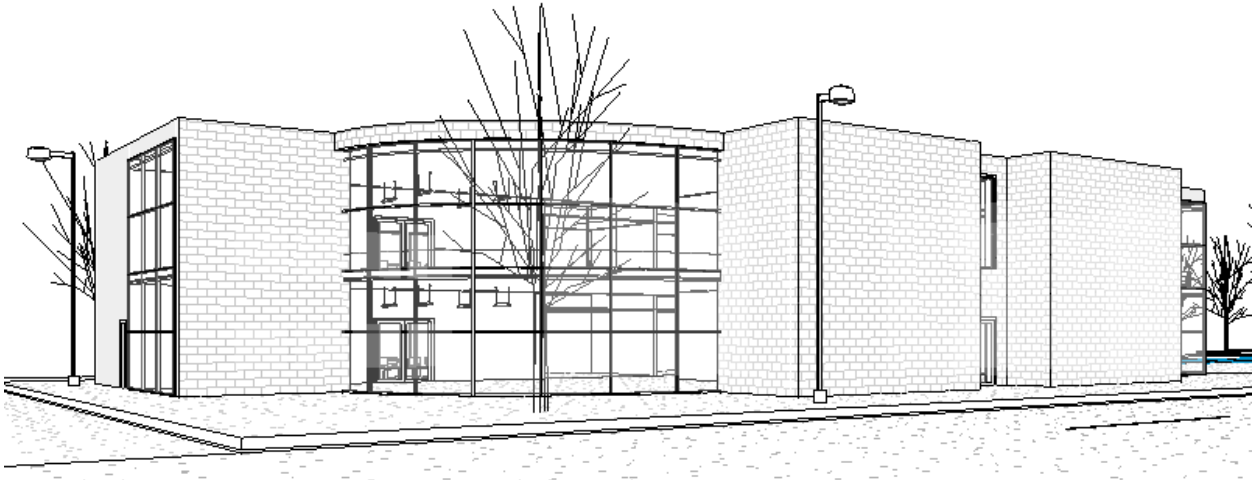
# Day 2

## Appendix IV & Appendix V

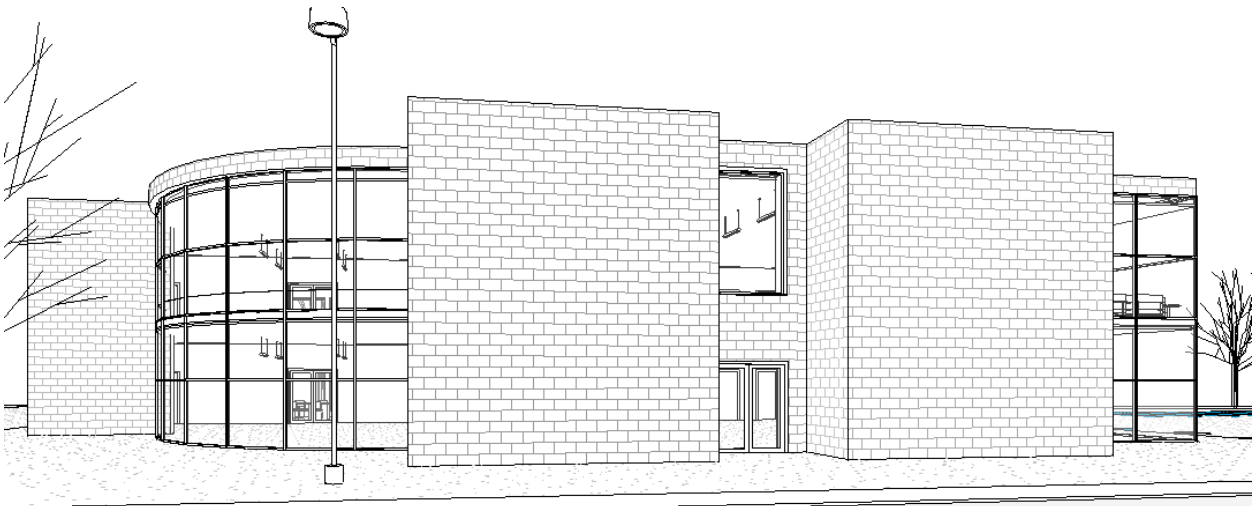




## Appendix V



PROPOSED ELEVATION



PROPOSED ELEVATION