

T Level Technical Qualification in Building Services Engineering for Construction

Ventilation (8710 – 35) (359)

Candidate Pack

Practical Assignment 2020 – Sample

| Version and date | Change detail | Section |
|------------------|--|---|
| 1.1 March 2021 | Removal of working to tolerances from observations | Task 2 Additional evidence for this task |

Sample

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Sample

1. Assessment

This assessment is for the Ventilation Engineering occupational specialism component of the Technical Qualification. This pack consists of a practical assignment that includes a project brief including drawing and diagrams as necessary along with several tasks for you to complete.

Sample

Intentionally blank

Sample

2. Candidate Guidance

General guidance

This is a formal assessment that you will be marked and graded on. You will be marked on the quality and accuracy of the work you produce. It is therefore important that you carry your work out to the highest standard you can.

Plagiarism

This is an assessment of your abilities, so the work must be all your own work and carried out under the conditions stated. You will be asked to sign a declaration that you have not had any help with the assignment.

Your tutor is allowed to give you some help understanding the instructions, if necessary, but they will record any other guidance you need, and this will be taken into account during marking.

Plagiarism is the failure to acknowledge sources properly and/or the submission of another person's work as if it were your own. Plagiarism is not allowed in this project.

Where research is allowed, your tutor must be able to identify which work you have done yourself, and what you have found from other sources. It is therefore important to make sure you acknowledge sources used and clearly reference any information taken from them.

Timings and planning

You are advised to study the details of the assessment before starting.

You should check with your tutor that you have all the relevant materials, equipment and information/data sources that you need before starting the assessment.

You should take care when planning to make sure you have divided the time available between parts of the assignment tasks appropriately. Timings for tasks are provided within this pack to support with planning and time allocation.

If you have a good reason for needing more time, you will need to explain the reasons to your tutor and agree a new deadline date. Changes to dates will be at the discretion of the tutor, and they may not mark work that is handed in after the agreed deadlines.

If you have a good reason for needing more time, you will need to explain the reasons to your tutor, and this must be agreed by City & Guilds.

Health and Safety

You must always work safely, in particular while you are carrying out practical tasks.

You must always follow any relevant Health and Safety regulations, Risk Assessments and codes of practice in line with centre requirements.

If your tutor sees you working in a way that is unsafe for yourself or others, they will highlight the issue and ask you to stop the task immediately. Your tutor will not be able to reassess you until they are sure you are ready for assessment and can work safely.

Presentation of work

Presentation of work must be appropriate to the task.

You should make sure that each piece of evidence including any forms are clearly labelled with your name and the project reference.

All electronic files must be given a clear file name that allows your tutor to identify it as your work.

Written work may be word-processed or hand written unless stated otherwise.

All sketches and drawings should be neat and tidy, to scale and annotated.

Calculations should be set out clearly, with all working shown, as well as any assumptions made. You should use appropriate units at all times, consistent with the requirements of the assignment.

Instructions for this assignment

Ensure you read all the provided assessment information contained in this candidate pack.

You must work independently and not share your work with any other candidates in these supervised assessment sessions.

Your work will be kept secure during any supervised breaks that are taken.

Internet access is **not** allowed.

You must complete all the tasks and present all evidence that is detailed in each task.

This assessment booklet contains:

- An assignment brief
- Task 1
- Task 2
- Task 3

Within each task you will find the following:

Conditions of assessment: This will tell you the duration and rules you must follow when completing a task.

What must be produced for marking: This describes the evidence you must submit when the task is completed. Be aware failure to submit any evidence requested can adversely affect your overall mark for the assessment.

Additional evidence for this task: This describes other forms of evidence that will be collected by the assessor to support the marking of your performance. This will often include but not limited to photographic and video evidence.

3. Assignment Brief

You are working on the refurbishment and extension of an office building and have been asked to carry out the planning and installation of an extract ventilation system for a new toilet block comprising of three toilets.

As part of this work you will be required to carry out a full survey of the proposed installation, including planning activities, measurements and calculations.

Your supervisor will provide you with the following drawings:

- Layout drawing of the installation shown in figure 1.
- Schematic drawing of the installation shown in figure 2.

The toilet block is a fire compartment, and the individual cubicles are within that compartment, hence there is no requirement for fire dampers between cubicles.

The make-up air for the toilet blocks is provided by suitably sized grilles on each of the toilet doors.

You are required to calculate the air volumes for each of the extract grilles based on the information provided on the schematic drawing and supporting information (You are to assume the ductwork sizes are correct and have been verified by an engineer).

You must then annotate the schematic drawing to show air flow rates from every branch within the extract ductwork system, and the flow rate and total pressure of the extract fan.

Once all preliminary checks and calculations have been completed and verified, your supervisor will direct you to carry out the installation of the extract ductwork system.

The installation should be in accordance with the layout drawing and schematic drawing.

The power supply for the fan will be pre-wired and taken from a local isolator provided by others.

Following the installation of the system, you must carry out testing and commissioning and complete the schematic drawing with actuals and handover to customer.

You receive a call from an office facilities team complaining that there is an unusual noise coming from the ductwork. You are required to discuss the problem with the client, diagnose the fault, produce a written report of the maintenance activity and repair the fault.

Figure 1

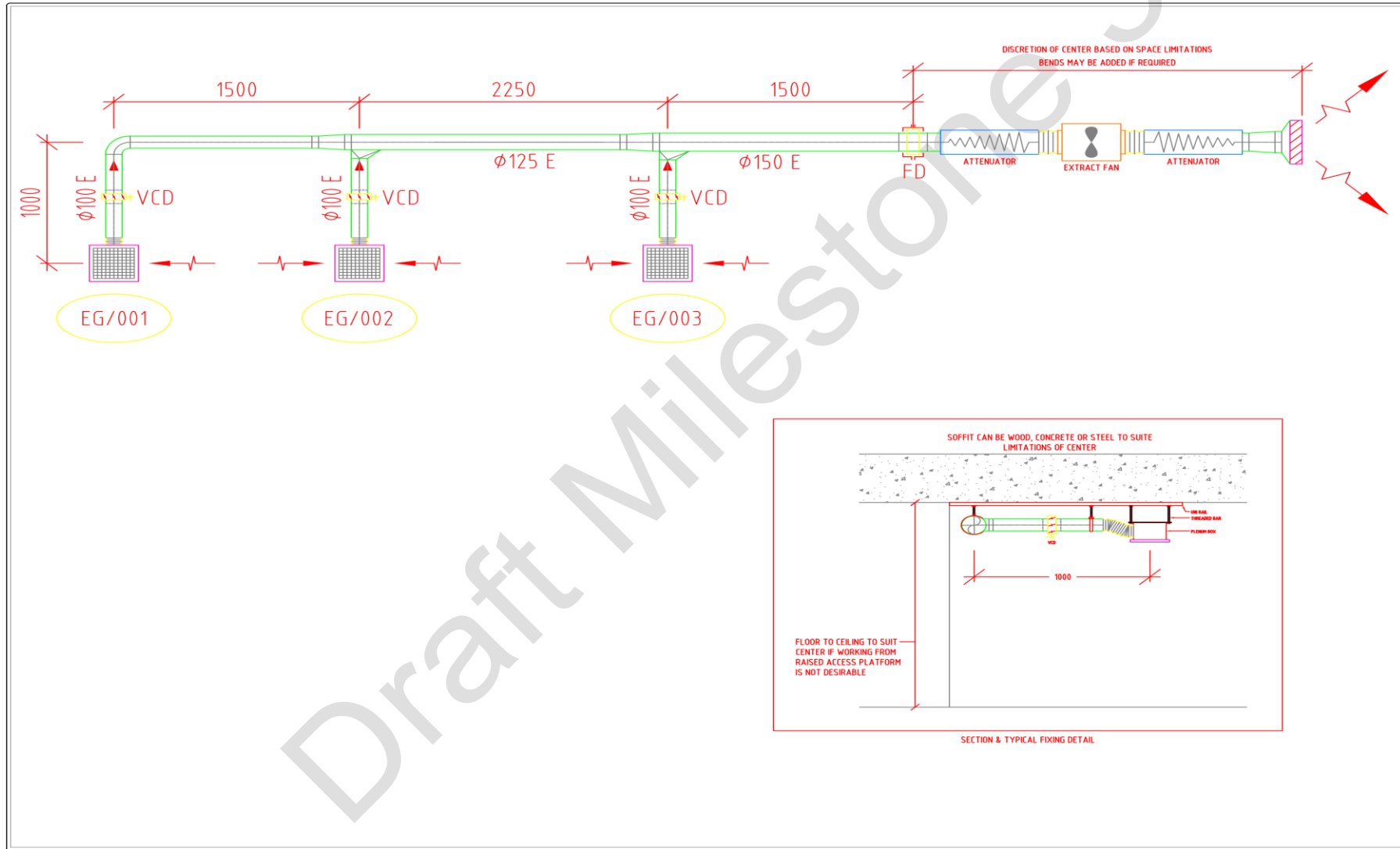


Figure 2

Air Changes Per Hour (CIBSE Guide A Environmental Design Criteria Table 1.5) = _____ ACH

GRILLE 001 – MALE WC

| | | |
|-------------------------------|--------|--------|
| ROOM VOLUME (m ³) | | |
| | DESIGN | ACTUAL |
| FLOW (m ³ /s) | | |

GRILLE 002 – FEMALE WC

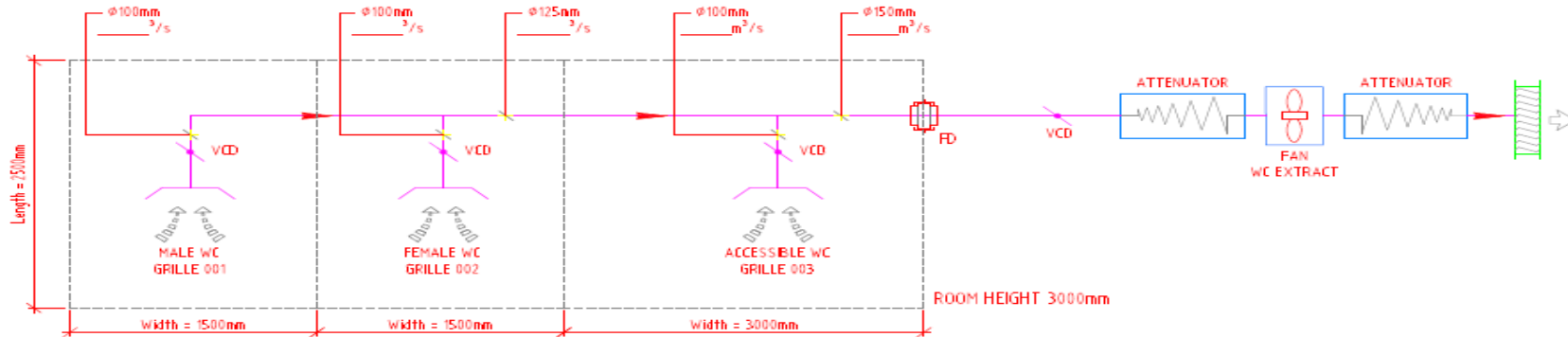
| | | |
|-------------------------------|--------|--------|
| ROOM VOLUME (m ³) | | |
| | DESIGN | ACTUAL |
| FLOW (m ³ /s) | | |

GRILLE 003 – ACCESSIBLE WC

| | | |
|-------------------------------|--------|--------|
| ROOM VOLUME (m ³) | | |
| | DESIGN | ACTUAL |
| FLOW (m ³ /s) | | |

EXTRACT FAN

| | | |
|--------------------------|--------|--------|
| | DESIGN | ACTUAL |
| FLOW (m ³ /s) | | |
| TOTAL PRESSURE (Pa) | | |



This assignment has a time of 20 hours. Plan your time accordingly.

4. Tasks

Task 1 – Planning the installation

- a) Plan the installation of the toilet block following the client brief.
- b) Calculate the air volumes of each of the extract grilles and ductwork branches and add these to the schematic drawing.

Conditions of assessment:

- The time allocated for this task is 4 hours
- You must carry out the task on your own, under controlled conditions

What must be produced for marking:

- Risk assessment
- Materials list
- Method statement with justifications
- Schematic drawing annotated with air volume calculations

Task 2 – Installation and commission

- a) Install the extract ductwork from 3 WCs in accordance with the layout drawing and schematic drawing
- b) Carry out testing in accordance with DW143
- c) Commission system and handover to customer

Conditions of assessment:

- The time allocated for this task is 13 hours
- You must carry out the task on your own, under controlled conditions

What must be produced for marking:

- Commissioning certificate
- Schematic drawing with measured data

Additional evidence for this task:

- Assessor observations:

- Installation of system
- Commissioning
- Handover to customer

Task 3 – Carry out maintenance

- a) Discuss the fault with customer, investigate and diagnose the fault
- b) Produce a written report of the maintenance activity to include:
 - Details of the fault
 - Method chosen for repair and why
 - Detailed process of how you will repair the fault
- c) Rectify and repair the fault

Conditions of assessment:

- The time allocated for this task is 3 hours
- You must carry out the task on your own, under controlled conditions

What must be produced for marking:

- A written report of the maintenance activity

Additional evidence for this task:

- Assessor observation:
 - Discussion with customer
 - Fault diagnosis
 - Rectification of fault

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