

Level 2 Technical Certificate in Electrical Installation (8202-20)

Synoptic Assignment 2019 – V2.1

Version and date	Change detail	Section
2.0 November 2018	Additional Guidance provided to candidates in the assignment brief	Assignment Brief
	Additional Guidance provided to candidates in tasks	Tasks
	Change of symbols used on drawing 8202-20-2019-01	
	Additional Guidance provided to assessors in the instructions for centres	Task instructions for centres
	Clarity on the photographs expected as evidence	
2.1 January 2019	Altered diameter of SWA cable required for task	Task instructions for centres

PAST ASSIGNMENT (2019) - DO NOT USE FOR LIVE ASSESSMENT

General guidance for candidates

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 your practical performance and the written work you produce. It is therefore important that you carry your work out to the highest standard you can. How well you know and understand the subject, and how you have used your knowledge and skills together to complete the tasks must be clear to the marker. This means you will have to explain your thinking and the reasons behind the way you have carried out the tasks and how/why you have made your decisions within your written work e.g. as part of your planning, reflections, or evaluations.

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 assessment.

Your tutor is allowed to give you some help understanding the assignment 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 assignment.

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 all sources and clearly reference any information taken from them.

Timings and planning

Where you have to plan your time, you should take care to make sure you have divided the time available between tasks appropriately. In some assignments, there are specified timings which cannot be changed and which need to be taken into account. You should check your plan is appropriate with your tutor.

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.

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 and codes of practice.

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

Presentation of work

Presentation of work must be neat, legible and appropriate to the task.

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

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

Written work e.g. reports 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, and answers must be expressed to a degree of accuracy consistent with the requirements of the task.

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Assignment Brief

A new sales office is to be built within the grounds of a garden centre. The office is constructed of wood logs with a tile hung roof on a wooden structure.

The sales office requires an electrical installation which you must propose a high level design for the sales office and begin to plan to carry out the work. The specification for the sales office can be found on the next page, and the floor plan is drawing 8202-20-2019-1.

You have then been asked to install the design shown in drawing 8202-20-2019-P. Before doing so, you must demonstrate the safe isolation procedure and show your competency in using access equipment.

Once you have completed the installation, you will need to complete a self-evaluation reflecting on the work you've carried out. You will need to consider what went well and what you would do differently if you were to carry out a job like this again in the future.

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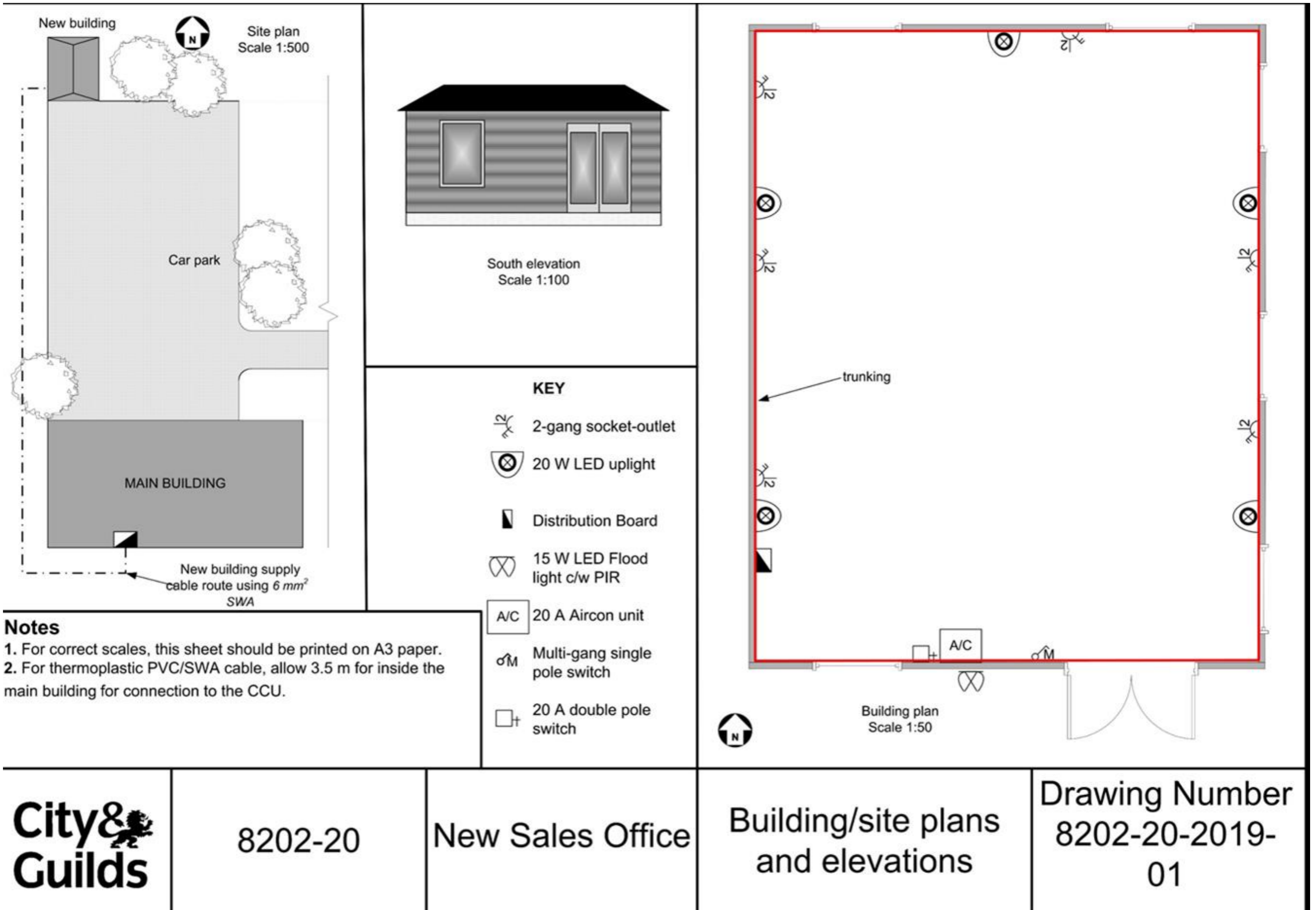
Sales Office Specification

The sales office is to be supplied using a three-core thermoplastic SWA cable from the existing 230 V single-phase installation, utilising a spare way in the distribution board located in the main building. The SWA cable is to be installed in a pre-excavated trench as shown on the drawing 8202-20-2019-01.

Wiring systems within the new workshop are as follows:

- Steel trunking to be installed 2.9 m above finished floor level (ffl) around the perimeter of the office as shown on the drawing 8202-20-2019-01.
- Distribution board located in the office to be mounted 1.5 m above ffl and connected to the trunking.
- Conduit to be installed from the trunking to supply 4 wall luminaires, each mounted 2 m above ffl.
- Conduit drops to be installed from the trunking to supply 5 twin surface socket-outlets, each mounted 450 mm above ffl.
- Conduit to be installed from the trunking to supply multi-gang single-pole (SP) switch at a height of 1200 mm as shown on drawing.
- Conduit to be installed from the trunking to supply the outside lighting to a height of 2000 mm.
- An air-conditioning unit is to be mounted 2.5 m above ffl with adjacent 20 A double pole (DP) switch.

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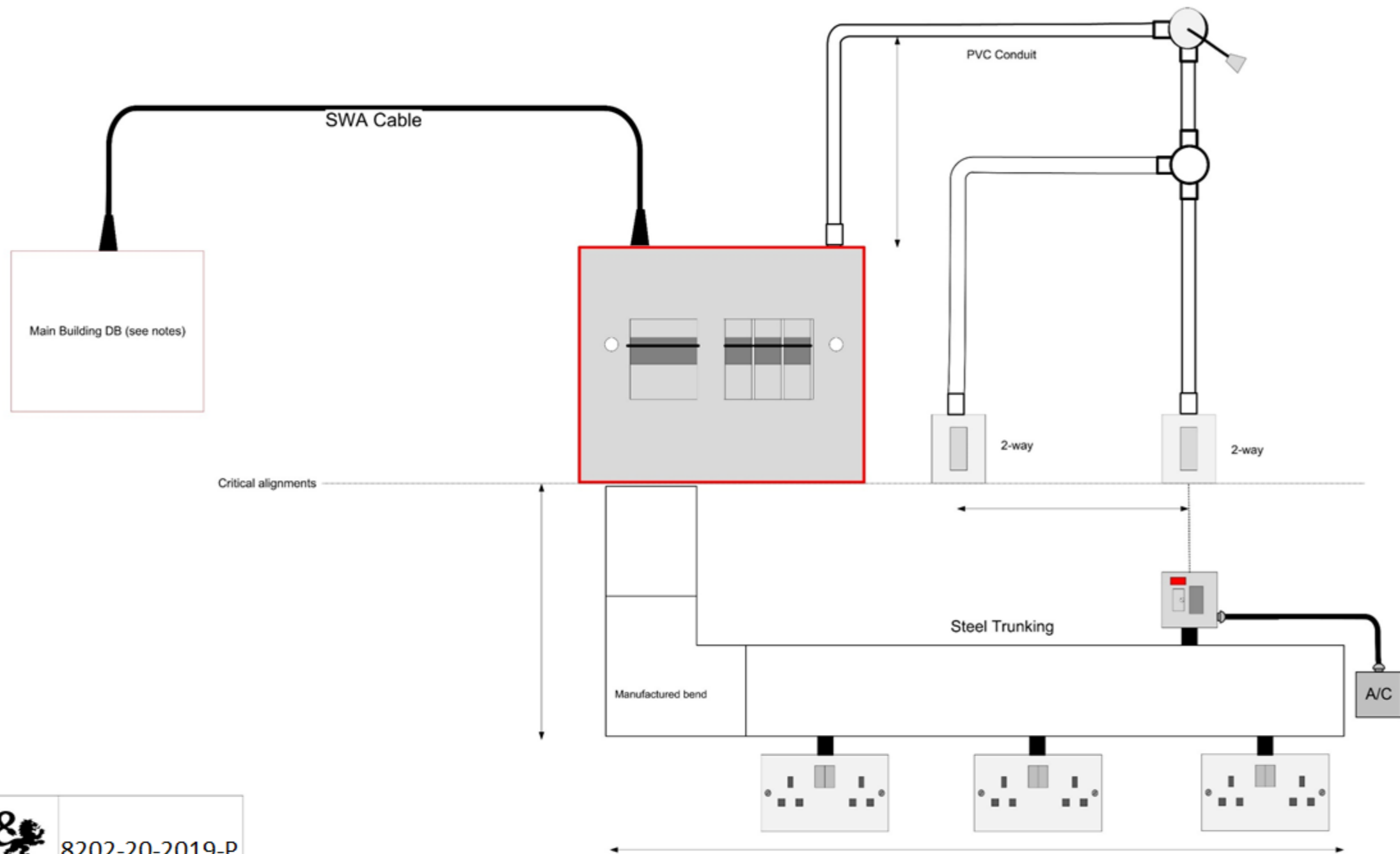
City & Guilds

8202-20

New Sales Office

Building/site plans and elevations

Drawing Number
8202-20-2019-01



Notes

Saddles, cleats or fixings are not shown but must be used to meet industry standards.

Dimensions between equipment and accessories to be set by the centre to suit intended locations.

Items with red borders must be pre-fixed and may not be removed at any time during the assessment. Removal or re-siting will result in termination of the assessment.

Accessory sizes on this drawing are not to scale

SWA supply from real or simulated main building DB. The location of this is not essential but must allow for 2 x 90 degree bends in SWA cable.

The Aircon (A/C) unit may be a simulated adaptable box or similar. Flexible cable from FCU must be terminated into a suitable connector within AC box. Flexible cable must be clipped.

Tasks

Task 1

- 1a. Complete the Circuit Schedule pro forma to divide the installation into circuits, giving reasons for your decisions.
- 1b. Produce a resource list for this installation describing why you have chosen these resources.
- 1c. Produce a method statement for the safe isolation procedure.

Conditions of assessment:

- The time allocated for this task is 1 hours 30 minutes.
- You must carry the task out on your own, under supervised conditions.
- You may refer to both BS 7671 and IET On-site Guide alongside any relevant resource materials, including internet use, during supervised conditions.

What must be produced for marking and submitted for moderation (if applicable):

- Circuit Schedule pro forma
- Plant, materials and equipment list
- Method statement for safe isolation procedure.

Task 2

Carry out the safe isolation procedure.

Conditions of assessment:

- The time allocated for this task is 30 minutes.
- You must carry the task out on your own, under supervised conditions directly observed by your tutor.

Additional evidence of your performance that must be captured for marking and submitted for moderation (if applicable):

- Your tutor's notes of your working practice.

Task 3

Use access equipment.

Conditions of assessment:

- The time allocated for this task is 1 hour.

Evidence of your performance that must be captured for marking and submitted for moderation (if applicable):

- Your tutor's notes of your working practice describing the quality, consistency and accuracy of the finished work
- Photographs to include correct use of the access equipment, one photo per item of equipment

Task 4

Install the electrical installation, detailed in the drawing 8202-20-2019-P.

Conditions of assessment:

- The time allocated for this task is 6 hours.
- You must carry the task out on your own, under supervised conditions.
- You may refer to both BS 7671 and IET On-site Guide alongside any relevant resource materials during supervised conditions.

What must be produced for marking:

- Assembled product.

Additional evidence of your performance that must be captured for marking and submitted for moderation (if applicable):

- Your tutor's notes of your working practice describing the quality, consistency and accuracy of the finished work
- Photographs of the installation, including the progress of the work being carried out

Task 5

Carry out a reflective evaluation of the work you've completed.

Consider what has gone well and what you may change if you were to complete a job like this again in the future.

Conditions of assessment:

- you must carry the task out on your own under supervised conditions.

What you must produce for marking:

- a written reflective evaluation that considers all tasks you've carried out within the assignment. It is recommended that your evaluation is a minimum of 200 words.

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Task instructions for centres

Resources

Candidates must have access to a suitable range of resources to carry out the tasks and to have the opportunity to select tools/equipment or materials in order to demonstrate understanding of appropriate selection.

Candidates are also permitted to use the IET On-site Guide or Student's Guide throughout all tasks and a scientific calculator (graphical and programmable calculators are **not** permitted).

Time

The recommended time allocated for the completion of the tasks and production of evidence for this assessment is **10** hours. It is the centre's responsibility to arrange how this time is managed to fit with timetables during the assessment period. Candidates should be required to plan their work and have their plans confirmed for appropriateness in relation to the time allocated for each task.

Total 10 hours

Task 1 – 1.5 hours

Task 2 – 30 minutes

Task 3 – 1 hour

Task 4 – 6 hours

Task 5 – 1 hour

Timings are recommended, where the candidates require extra time this should be captured within the tutors notes and reflected in the marks awarded.

Task specific guidance

Task 1 – Design

Task 1 requires candidates to provide a high level design for an installation of the new office.

The centre must supply the candidates with the relevant templates to complete the task. This includes the pro forma of a circuit schedule and a drawing of the new office proposal, drawing 8202-20-2019-01.

Pro formas have been provided for Task 1 and **must not** be created by the centre. It is part of the task for the candidate to produce these planning documents, which will be marked and will allow for differentiation between candidates.

The drawing 8202-20-2019-01 is to scale and must be printed on A3 paper and provided to the candidates.

In preparing their Resource List candidates will need to take measurements to provide the correct information using the scale on the drawing 8202-20-2019-01. The expected measurements are expected to be as follows:

- 106 m 6 mm² SWA cable
- 37 m Trunking
- 20 m Conduit drops
- Cable depends on how circuits are arranged
- All accessories and fixings should be accounted for - type of conduit/trunking etc. must be justified.

Task 2 – Safe isolation procedure

The candidate must carry out the safe isolation procedure. This task must be directly observed by tutors on a one-to-one ratio.

The candidate should have the following to carry out this task:

- hand tools
- PPE
- test equipment and proving units
- locking devices and signage suitable for the distribution board.

The centre should provide the candidate with one single phase distribution board containing at least two single phase circuits. A method statement, completed by the candidate in Task 1, will cover any planning required for this practical activity. All work carried out should be to industry standards, undertaken in a safe manner and compliant with industry guidelines. If the candidate works unsafely, the assessment must be terminated and they are not allowed to continue with Task 2.

Task 3 – Use of Access Equipment

This task must be directly observed by tutors.

The tutor should consider using the grounds of the centre for this practical task in using access equipment. Candidates must be observed using the following two pieces of access equipment:

- Step-ladder, erect/check and use to perform a simple task at an appropriate height for steps)
- Mobile scaffold towers (check and use to perform a simple task at an appropriate height for the scaffold)

Note: Centre Policy on erection of MEWPs must be followed. Erection of MEWPs by candidates is encouraged but not essential for the assessment.

It is possible for centres to combine this task within the installation within Task 4 for efficiency.

Additional evidence of the candidate's performance that must be captured for marking and submitted for moderation (if applicable):

- Tutors must also provide detailed notes within the practical observation form detailing how the equipment was set up and used by the candidate.

Task 4 – Electrical Installation

The tutor will need to provide the candidates with drawing 8202-20-2019-P. The centre must apply dimensions to the drawing to meet the centres needs before sharing the drawing with candidates.

The candidate should have the following for this task:

- hand and power tools
- PPE
- all required materials, as per drawing 8202-20-2019-P
- IET On-site Guide

All terminations, joints and couplings must be mechanically secure and electrically continuous where applicable. The assessor must be satisfied that the work complies with BS 7671 and has been fabricated during the assessment. The assessor should focus on the quality, consistency and accuracy of the candidates work, and details of their contribution. Considering this against the below guidance will support the assessor in making a judgement on the candidate's performance of this task, including:

- Terminations
- Glands
- Aesthetics
- Containment systems
- Edges
- Cable support spacing
- Cable selection
- Conductor strands
- Insulation
- Conductor sequence at the consumer unit or outlets
- Cutting of cables
- Conductors omitted.

This task is open-book and candidates are allowed to bring in research notes.

Candidates are not required to test the installation as part of the assessment. If the installation is to be energised, the installation must be tested prior to this. This may be undertaken by the tutor or the candidate under supervision of the tutor.

Additional evidence of the candidate's performance that must be captured for marking and submitted for moderation (if applicable):

Photographs (must be taken from the front around 2 m away)

1. Taken 2 hours into the task
2. Taken 4 hours into the task
3. Taken at 6 hours of the whole installation
4. Taken at 6 hours of the distribution board. (A close-up photograph of the whole distribution board showing terminations.)
5. If the task is not completed within the 6 hours, assessors must take a photo of the installation at completion.

Task 5 – Reflective evaluation

The purpose of this task is for candidates to reflect upon the work they've carried out in a classroom environment. It is expected that candidates will produce a minimum of 200 words written self-evaluation, it is recommended that candidates have access to a computer suite to allow them to type up their evaluations. Candidates should reflect on their own performance and consider how they would change what they did if they were to carry out the activity again. Candidates must complete this activity after carrying out the works.

Centre guidance

Guidance provided in this document supports the administration of this assignment. The following documents, available on the City & Guilds website, provide essential generic guidance for centres delivering technical qualifications and **must** be referred to alongside this guidance:

- **Technical qualifications – marking**
- **Technical qualifications – moderation** (updated annually)
- **Technical qualifications – teaching, learning and assessment**

This synoptic assessment is designed to require the candidate to make use of the knowledge, understanding and skills they have built up over the course of their learning to tackle problems/tasks/challenges.

This approach to assessment emphasises to candidates the importance and applicability of the full range of their learning to practice in their industry area, and supports them in learning to take responsibility for transferring their knowledge, understanding and skills to the practical situation, fostering independence, autonomy and confidence.

Candidates are provided with an assignment brief. They then have to draw on their knowledge and skills and independently select the correct processes, skills, materials, and approaches to take to provide the evidence specified by the brief.

During the learning programme it is expected that tutors will have taken the opportunity to set shorter, formative tasks that allow candidates to be supported to independently use the learning they have so far covered, drawing this together in a similar way, so they are familiar with the format, conditions and expectations of the synoptic assessment.

Candidates should be made aware during learning what the assessment objectives are and how they are implemented in marking the assignment, so they will understand the level of performance that will result in high marks.

Candidates should not be entered for the assessment until the end of the course of learning for the qualification so they are in a position to complete the assignment successfully.

Health and safety

Candidates should not be entered for assessment without being clear of the importance of working safely, and practice for doing so. The tutor must immediately stop an assessment if a candidate works unsafely. At the discretion of the tutor, depending on the severity of the incident, the candidate may be given a warning. If they continue to work unsafely however, their assessment must be ended and they must retake the assessment at a later date.

Compliance with timings

The timings provided are estimates to support centre planning. They refer to assessment time, not any additional setting up the centre needs to carry out to create an appropriate assessment environment.

It is the centre's responsibility to plan sufficient assessment sessions, under the appropriate conditions and within the assignment window, to allow candidates reasonable time to complete the assessment tasks.

Where candidates are required to plan their work they should have their plans confirmed for appropriateness in relation to the time allocated for each task.

Candidates should be allowed sufficient time to fully demonstrate the range of their skills however this also needs to be reasonable and practicable. Candidates should be allowed to overrun their planned timings or professional service times (where they exist) in order for evidence of a range of their skills to be captured. If, however, the time required exceeds reasonably set assessment periods, or the tolerance suggested for professional service times, the centre may stop the assessment and base the marking on the evidence up to that point, including the tutor's notes of how far over time the task has taken.

Observation evidence

Where the tutor is required to carry out observation of performance, detailed, descriptive notes must be recorded on the practical observation form (POF) provided. The centre has the flexibility to adapt the form to suit local requirements (e.g. to use a tablet, hand-written formats, or to ease local administration) as long as this does not change or restrict the type of evidence collected.

The number of candidates a tutor will be able to observe at one time will vary depending on:

- the complexity of evidence collection for the task
- local conditions e.g. layout of the assessment environment,
- amount of additional support available (e.g. to capture image/ video evidence), staggered starts etc,
- whether there are any peak times where there is a lot of evidence to collect that will need additional support or any that are quieter.

It is advisable to trial the planned arrangements where possible during formative assessment, reviewing the quality of evidence captured and manageability. It is expected that for straightforward observations, and unless otherwise specified, no more than eight candidates will be observed by a single tutor at one time, and that the number will usually be fewer than this maximum. The key factor to consider is the logistics of collecting sufficient evidence.

As far as is possible, candidates should not be distracted, or their performance affected, by the process of observation and evidence collection.

Observation notes form part of the candidate's evidence and must describe **how well** the activity has been carried out, rather than stating the steps/actions the candidate has taken. The notes must be very descriptive and focus on the **quality** of the performance in such a way that comparisons between performances can be made. They must provide sufficient, appropriate evidence that can be used by the marker (and moderator) to mark the performance using the marking grid.

Identifying **what it is** about the performances that is **different** between candidates can clarify the qualities that are important to record. Each candidate is likely to carry out the same steps, so a checklist of this information would not help differentiate between them. Qualitative comments on **how well** they do it, along with quantitative records of accuracy and tolerances, would, however.

The tutor should refer to the marking grid to ensure appropriate aspects of performance are recorded. These notes will be used for marking and moderation purposes and so must be **detailed, accurate and differentiating**.

Tutors should ensure that any required additional supporting evidence, including e.g. photographs or video, can be easily matched to the correct candidate, and are clear, well-lit and showing the **areas of particular interest in sufficient detail and clarity** for assessment (i.e. taken at appropriate points in production, showing accuracy of measurements where appropriate).

If candidates are required to work as a team, each candidate's contribution must be noted separately. The tutor may intervene if any individual candidate's contribution is unclear or to ensure fair access (see below).

The **Technical qualifications guides on marking and moderation** are essential guidance documents and are available on the City & Guilds website. These provide further information on preparing for assessment, evidence gathering, standardisation, marking and moderation, and must be referred to when planning and carrying out assessment.

Minimum evidence requirements for marking and moderation

The sections in the assignment:

- **What you must produce for marking**, and
- **Additional evidence of your performance that must be captured for marking**

list the minimum requirements of evidence to be submitted for marking and the moderation sample.

Evidence produced during assessment above and beyond this may be submitted, as long as it provides useful information for marking and moderation and has been produced under appropriate conditions.

While technological methods which support the capturing or creating of evidence can be helpful, e.g. pinboard style websites for creating mood boards, the final evidence must be converted to a suitable format for marking and moderation, which cannot be lost/deleted or amended after the end of the assessment period (e.g. screen prints, pdf files).

Considerations around tracking authenticity and potential loss of material hosted on such platforms during assessment are the centre's responsibility.

Where candidates have carried out some work as a group, the contribution of each candidate must be clear. It is not appropriate to submit identical information for each candidate without some way for the marker and moderator to mark the candidates individually.

Note: Combining candidates' individual pieces of evidence into single files or zip files may make evidence management during internal marking more efficient and will greatly simplify the uploading of the moderation sample.

Where the minimum requirements have **not been submitted** for the moderation sample by the final moderation deadline, or the **quality of evidence is insufficient** to make a judgement, the moderation, and therefore any subsequent adjustment, will be based on the evidence that *has* been submitted. **Where this is insufficient to provide a mark on moderation, a mark of zero may be given.**

Preparation of candidates

Candidates should be aware of which aspects of their performance (across the AOs) will give them good marks in assessment. This is best carried out through routinely pointing out good or poor performance during the learning period, and through formative assessment.

During the learning programme, direct tutor instruction in how to tackle practical tasks through modelling, support, guidance and feedback are critical. However gradual removal of this support is necessary in preparation for summative assessment. This supported approach is **not** valid for summative assessment.

The purpose of summative assessment is to confirm the standard the candidate has reached as a result of participating in the learning process. Candidates should be encouraged to do the best they can and be made aware of the difference between these summative assessments and any formative assessments they have been subject to. Candidates may not have access to the full marking grids, as these may be misinterpreted as pass, merit and distinction descriptors. Refer to the **Technical qualifications – teaching, learning and assessment** centre guidance document, available on the City & Guilds website, for further information on preparing candidates for technical qualification assessment.

Guidance on assessment conditions

The assessment conditions that are in place for this synoptic assignment are to:

- ensure the rigour of the assessment process
- provide fairness for candidates
- give confidence in the outcome.

They can be thought of as the rules that ensure that all candidates who take an assessment are being treated fairly, equally and in a manner that ensures their result reflects their true ability.

The conditions outlined below relate to this summative synoptic assignment. These do not affect any formative assessment work that takes place, although it is advised that candidates are prepared for the conditions they will need to work under during summative assessment.

The evidence for the tasks that make up this synoptic assignment must be completed under the specified conditions. This is to ensure authenticity and prevent malpractice as well as to assess and record candidate performance for assessment in the practical tasks. Any aspect that may be undertaken in unsupervised conditions is specified. It is the centre's responsibility to ensure that local administration and oversight gives the tutor sufficient confidence to be able to confirm the authenticity of the candidate's work.

Security and authentication of candidate work

Candidate evidence must be kept secure to prevent unsupervised access by the candidate or others. Where evidence is produced over a number of sessions, the tutor must ensure learners and others cannot access the evidence without supervision. This might include storing written work or artefacts in locked cupboards and collecting memory sticks of evidence produced electronically at the end of each session.

Candidates are required to sign declarations of authenticity, as is the tutor. The relevant form is included in this assignment pack and must be signed after the production of all evidence.

Where the candidate or tutor is unable to, or does not confirm authenticity through signing the declaration form, the work will not be accepted at moderation and a mark of zero will be given. If any question of authenticity arises e.g. at moderation, the centre may be contacted for justification of authentication.

Accessibility and fairness

Where a candidate has special requirements, tutors should refer to the *Access arrangements and reasonable adjustments* section of the City & Guilds website.

Tutors can support access where necessary by providing clarification to **any** candidate on the requirements or timings of any aspect of this synoptic assignment. Tutors should **not** provide more guidance than the candidate needs as this may impact on the candidate's grade; see the guidance and feedback section below.

All candidates must be provided with an environment, time frame and resources that allows them reasonable access to the full range of marks available.

Where candidates have worked in groups to complete one or more tasks for this synoptic assessment, the tutor must ensure that no candidate is disadvantaged as a result of the performance of any other team member. If a team member is distracting or preventing another team member from fully demonstrating their skills or knowledge, the tutor must intervene.

Guidance and feedback

To support centre file management, tutors may specify a suitable file format and referencing format for evidence (unless otherwise specified e.g. if file naming is an assessment point for the assignment). Guidance must only support access to the assignment and must not provide feedback for improvement. The level and frequency of clarification & guidance must be

- recorded fully on the candidate record form (CRF),
- taken into account along with the candidate's final evidence during marking
- made available for moderation.

Tutors **must not** provide feedback on the quality of the performance or how the quality of evidence can be improved. This would be classed as malpractice.

Tutors **should** however provide general reminders to candidates throughout the assessment period to check their work thoroughly before submitting it, and to be sure that they are happy with their final evidence as it may not be worked on further after submission.

Candidates can rework any evidence that has been produced for this synoptic assignment during the time allowed. However, this must be as a result of their own review and identification of weaknesses and not as a result of tutor feedback. Once the evidence has been submitted for assessment, no further amendments to evidence can be made.

Tutors **should** check and be aware of the candidates' plans and designs to ensure management of time and resources is appropriate, and so any allowed intervention can take place at an appropriate time.

Tutors **should** ensure that candidates' plans for completion of the tasks distribute the time available appropriately and may guide candidates in a general way on where they should be up to at any point. Any excessive time taken for any task should be recorded and should be taken into account during marking if appropriate.

It is up to the marker to decide if the guidance the candidate has required suggests they are lacking in any AO, the severity of the issue, and how to award marks on the basis of this full range of evidence. The marker must record where and how guidance has had an impact on the marks given, so this is available should queries arise at moderation or appeal.

What is, and is not, an appropriate level of guidance

- A tutor **should intervene with caution** if a candidate has taken a course of action that will result in them not being able to submit the full range of evidence for assessment. However, this should **only** take place once the tutor has prompted the candidate to check that they have covered all the requirements. Where the tutor has to be explicit as to what the issue is, this is likely to demonstrate a lack of understanding on the part of the candidate rather than a simple error, and full details should be recorded on the CRF.
- The tutor **should not** provide guidance if the candidate is thought to be able to correct the issue without it, and a prompt would suffice. In other words, only the minimum support the candidate actually needs should be given, since the more tutor guidance provided, the less of the candidate's own performance is being demonstrated and therefore the larger the impact on the marks awarded.
- A tutor **must not** provide guidance to the effect that the candidate's work is not at the required standard or on how to improve their work. This gives candidates the chance to identify and correct any errors on their own, providing valid evidence of knowledge and skills that will be credited during marking.
- The tutor **must not** produce any templates, pro formas, work logs etc., unless instructed to by the assignment guidance. Where instructed, these materials must be produced as specified and contain no additional guidance. Templates forming part of the assignment should be used as provided, and not adapted.

All specific prompts and details of the nature of any further guidance must be recorded on the relevant form and reviewed during marking and moderation.

Guidance on marking

Please refer to the *Technical Qualifications – marking, and – moderation* centre guidance documents for further information on gathering evidence suitable for marking and moderation, and on using the marking grid and forms.

The candidate record form (CRF) is used to record:

- Details of any guidance or the level of prompting the candidate has received during the assessment period.
- Rough notes bringing together relevant evidence from across tasks during marking.
- Summary justifications when holistically coming to an overall judgement of the mark.

The practical observation form (PO) is used to record:

- Descriptive information and evidence of candidate performance during an observation. Although descriptions of the quality of performance should support decisions against the AOs, the notes should follow the flow of the observation, rather than attempting to assign evidence against the AOs at this point.

Marking grid

For any category, 0 marks may be awarded where there is no evidence of achievement

%	Assessment Objective	Band 1 descriptor Poor to limited	Band 2 descriptor Fair to good	Band 3 descriptor Strong to excellent
10	AO1 Recall of knowledge relating to the qualification LOs <ul style="list-style-type: none"> Does the candidate seem to have the full breadth and depth of taught knowledge across the qualification to hand? How accurate is their knowledge? Are there any gaps or misunderstandings evident? How confident and secure does their knowledge seem? 	<p style="text-align: center;">(1-2 marks)</p> <p>Recall shows some weaknesses in breadth and/or accuracy. Hesitant, gaps, inaccuracy</p>	<p style="text-align: center;">(3-4 marks)</p> <p>Recall is generally accurate and shows reasonable breadth. Inaccuracy and misunderstandings are infrequent and usually minor. Sound, minimal gaps</p>	<p style="text-align: center;">(5-6 marks)</p> <p>Consistently strong evidence of accurate and confident recall from the breadth of knowledge. Accurate, confident, complete, fluent, slick</p>
<p>Examples of types of knowledge expected: Detailed material lists, isolation testing procedure documented and followed, familiarity with types of access equipment, familiarity with PPE, manual handling techniques, follow RAMS, use of guidance publications and regulations or manufacturer's instructions and installation drawings, familiar with waste management, site safety management.</p>				
		<p>Where the candidate has demonstrated knowledge, it has been limited and/or showing inaccuracies. There are clear gaps in knowledge with little confidence in working independently.</p>	<p>The candidate has shown a good range of knowledge from across the qualification which is sound. The candidate seeks minimal guidance or reassurance in the completion of tasks.</p>	<p>The candidate shows in-depth and detailed knowledge across the whole qualification range, showing a high degree of accuracy. The candidate is confident and requires no reassurance.</p>
20	AO2 Understanding of concepts theories and processes relating to the LOs <ul style="list-style-type: none"> Does the candidate make connections and show causal links and explain why? How well theories and concepts are applied to new situations/the assignment? How well chosen are exemplars – how well do they illustrate the concept? 	<p style="text-align: center;">(1-4 marks)</p> <p>Some evidence of being able to give explanations of concepts and theories. Explanations appear to be recalled, simplistic or incomplete. Misunderstanding, illogical connections, guessing, disjointed, non-cohesive,</p>	<p style="text-align: center;">(5-8 marks)</p> <p>Explanations are logical. Showing comprehension and generally free from misunderstanding, but may lack depth or connections are incompletely explored. Logical, slightly disjointed, plausible, slightly non-cohesive,</p>	<p style="text-align: center;">(9-12 marks)</p> <p>Consistently strong evidence of clear causal links in explanations generated by the candidate. Candidate uses concepts and theories confidently in explaining decisions taken and application to new situations. Logical reasoning, thoughtful decisions, causal links, justified</p>
<p>Examples of understanding expected: Explanations/comparisons/justifications related to circuit schedule, checking of power tools with an understanding of the risks, use of mathematical units and geometry, selection of tools, choice of installation techniques of wiring systems and supports, choice of electrical accessories and termination methods, selection of protective devices, isolation and switching, consumer controlled equipment logically, justification of circuit arrangements, interpreting drawings symbols and scales and load capacity, precise and logical scale conversion.</p>				
		<p>The candidate has shown a limited range of understanding. Justifications are typically brief or simplistic and do not underpin choices made.</p> <p>Access to higher marks: The candidate is able to show isolated areas of sound understanding but not from across the range of the qualification</p>	<p>The candidate shows a fair understanding across the qualification. Explanations are reasonably clear and some are accurate.</p> <p>Access to higher marks: There is good understanding shown across the qualification, explanations are clear and relevant. The candidate can make reasonably accurate justifications for choices made</p>	<p>The candidate's understanding is strong across the qualification. Explanations are in-depth and coherent to support choices which are mainly accurate. The candidate shows confidence in links between theories and concepts and their application.</p> <p>Access to higher marks: Candidates' understanding of concepts and theories across the qualification are extremely well understood and can be applied consistently and effectively.</p>

40	AO3 Application of practical/ technical skills <ul style="list-style-type: none"> How practiced/fluid does hand eye coordination and dexterity seem? How confidently does the candidate use the breadth of practical skills open to them? How accurately/ successfully has the candidate been able to use skills/achieve practical outcomes? 	(1-8 marks) Some evidence of familiarity with practical skills. Some awkwardness in implementation, may show frustration out of inability rather than lack of care. Unable to adapt, frustrated, flaws, out of tolerance, clumsy.	(9-16 marks) Generally successful application of skills, although areas of complexity may present a challenge. Skills are not yet second nature. Somewhat successful, some inconsistencies, fairly adept/capable.	(17-24 marks) Consistently high levels of skill and/or dexterity, showing ability to successfully make adjustments to practice; able to deal successfully with complexity. Dextrous, fluid, comes naturally, skilled, practiced,	
		Examples of skills expected: safe working procedures followed, checking and use of power and specialised tools, adopting manual handling methods, use of instruments during safe isolation procedure, use of a wide range of hand tools, setting and marking out, erection of cable management systems, erection of wiring systems, termination methods, installation of accessories.			
		The candidate has completed all the tasks but may have exceeded the allocated time by no more than 10% on some tasks. Candidates show low confidence in practical skills and are carried out with some awkwardness. Measurements are often inaccurate and tolerances are not met. Access to higher marks: Candidate has completed the all tasks but exceeded the allocated time by no more than 10% on some tasks. Candidate has limited confidence in performing practical skills but has the ability to carry out basic tasks. Some measurements and tolerances are met.	The candidate has completed all the tasks within the allocated time. The candidate's practical skills are reasonably well developed allowing most measurements and tolerances to be met but some inconsistencies exist. Access to higher marks: The candidate has completed the tasks within the allocated time. Practical skills are of a good standard and shows a good level of confidence on all basic tasks.	The candidate has completed the tasks within the allocated time. Candidates show a high degree of confidence and efficiency along with a methodical approach to completing tasks. The majority of measurements and tolerances are met. Access to higher marks: The candidate has completed the tasks well within the allocated time. A high level of attention is demonstrated towards measurements and tolerances. A high degree of quality is shown in all areas of the tasks	
20	AO4 Bringing it all together - coherence of the whole subject <ul style="list-style-type: none"> Does the candidate draw from the breadth of their knowledge and skills? Does the candidate remember to reflect on theory when solving practical problems? How well can the candidate work out solutions to new contexts/ problems on their own? 	(1-4 marks) Some evidence of consideration of theory when attempting tasks. Tends to attend to single aspects at a time without considering implication of contextual information. Some random trial and error, new situations are challenging, expects guidance, narrow. Many need prompting.	(5-8 marks) Shows good application of theory to practice and new context, some inconsistencies. Remembers to apply theory, somewhat successful at achieving fitness for purpose. Some consolidation of theory and practice	(9-12 marks) Strong evidence of thorough consideration of the context and use of theory and skills to achieve fitness for purpose. Purposeful experimentation, plausible ideas, guided by theory and experience, fit for purpose, integrated, uses whole toolkit of theory and skills.	
		Examples of bringing it all together: applying knowledge and understanding to a particular scenario/ problem, attention to health and safety across all tasks, justifying decisions/approaches taken e.g. materials, techniques, adapting practice to meet contextual challenges, reflects on circuit principles whilst carrying out practical work, applies mathematical principles when setting out and manufacturing wiring systems, considers circuits before drawing in cables showing a link between circuits principles and physical layout.			
		There is limited evidence of the candidate using their knowledge, understanding and skills together. Candidates shows the ability to recall but lacks understanding.	The candidate typically brings together their knowledge, understanding and skills well when solving problems that arise when presented with the context, although they may deal with these separately.	The candidate works with confidence and uses knowledge and understanding well in complimenting their skills to solve challenges. Candidates have the ability to draw on all of their learning from across the qualification to successfully adapt to new situations.	

10	AO5 Attending to detail <ul style="list-style-type: none"> Does the candidate routinely check on quality, finish etc and attend to imperfections/ omissions How much is accuracy a result of persistent care and attention (eg measure twice cut once)? Would you describe the candidate as a perfectionist and wholly engaged in the subject? 	(1-2 marks) Easily distracted or lack of checking. Insufficiently concerned by poor result; little attempt to improve. Gives up too early; focus may be on completion rather than quality of outcome. Careless, imprecise, flawed, uncaring, unfocussed, unobservant, unmotivated.	(3-4 marks) Aims for satisfactory result but may not persist beyond this. Uses feedback methods but perhaps not fully or consistently. Variable/intermittent attention, reasonably conscientious, some imperfections, unremarkable.	(5-6 marks) Alert, focussed on task. Attentive and persistently pursuing excellence. Using feedback to identify problems for correction. Noticing, checking, persistent, perfecting, refining, accurate, focus on quality, precision, refinement, faultless, meticulous.
		Examples of attending to detail: housekeeping, storage of tools, working within tolerances, detail of drawings, drawings and documentation are accurate, attention to accuracy during work, thinking about and attending to specific requirements of the task, attention to detail in risk assessment and risk reduction/method statements, considers approach to all stages of the work undertaken both practically during installation or whilst planning the project work.		
		There is superficial attention to detail. The drawings and documents show some inaccuracies or gaps. The clients' needs are interpreted in a generic rather than personal way with basic attention to their aims.	There is an adequate attention to detail. Drawings and documentation are accurate. The candidate normally is aware of others when working and keeps work areas generally clean and tidy.	The candidate has been highly focused on the task showing extreme care in the accuracy and usability of drawings and document preparation. The candidate is conscientious in their work place and is aware of others working keeping their work area clean and tidy at all times.

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