

SQA Advanced project-based Graded Unit specification

General information for centres

This Graded Unit has been validated as part of the SQA Advanced Diploma in Computer Aided Architectural Design and Technology award. Centres are required to develop a project-based assessment in accordance with this validated specification.

Graded Unit title: Computer Aided Architectural Design and Technology: Graded Unit 2 (SCQF level 8)

Graded Unit code: HT8A 48

Type of project: Practical assignment

Publication date: August 2017

Source: Scottish Qualifications Authority

Version: 01

Graded Unit purpose

This Graded Unit is designed to provide evidence that the learner has achieved the following principal aims of the SQA Advanced Diploma in Computer Aided Architectural Design and Technology:

General aims:

- ◆ develop knowledge, understanding and skills across a range of core Architectural CAD principles and technologies at SQA Advanced level
- ◆ develop a range of *Communication and Information and Communication Technology (ICT)* knowledge and skills relevant to the needs of Architectural CAD specialists
- ◆ develop knowledge, understanding and skills in applying a structured approach to advanced Architectural CAD principles in the production of complex drawings, particularly as they apply to more sophisticated design projects relative to the professional activities of the qualified Architectural Technician
- ◆ develop an ability to apply analysis and synthesis to the solution of Architectural CAD related problems, particularly as they apply to more sophisticated design projects relative to the professional activities of the qualified Architectural Technician
- ◆ develop skills of study, research, analysis and resource management
- ◆ develop skills of evaluation, organisation and problem solving
- ◆ develop responsibility for individual learning and progression

- ◆ develop skills, knowledge and motivation towards progression to higher education
- ◆ develop key skills for employability while building on previously acquired transferable skills which that could allow progression within the SCQF (Scottish Credit and Qualification Framework) or lead to employment
- ◆ support learners' continuing professional development and career development

Specific aims:

- ◆ prepare learners for employment as Architectural Technicians in private or public practice, working with a range of associated professional disciplines
- ◆ prepare learners with a range of the most contemporary vocational skills, including the preparation, co-ordination and communication of technical information relevant to the Architectural industry, using the most advanced CAD and IT platforms available
- ◆ provide learners with underpinning knowledge and skills contributing to the efficient operation and management of architectural design projects through control of specified regulatory, quality or management standards
- ◆ provide opportunities for learners to achieve appropriate professional recognition, particularly, but not exclusively, with the Chartered Institute of Architectural Technology (CIAT)
- ◆ provide an award that, on successful completion, will allow learners to progress to appropriate degree level programmes
- ◆ provide learners with the opportunity to develop knowledge and skills in the use of Building Information Modelling (BIM)
- ◆ develop contextual computer-aided design knowledge, understanding and skills in the resolution of core architectural and construction design problems

Credit points and level

2 SQA Advanced Credits at SCQF level 8: (16 SCQF credit points at SCQF level 8)

Recommended entry to the Graded Unit

It is recommended that the learner should have completed or be in the process of completing the following Units aims prior to undertaking this Graded Unit:

Unit code	Unit title
HR6P 47	Architectural CADT: Principles and Practice
HR7H 47	CAD: User Systems
HR6M 47	Architectural CADT: Residential Design
HR70 47	Architectural CADT: Construction Detailing
HR6Y 47	Architecture: Form, Order and Composition
HR6V 47	Architectural Professional Practice: Design Management
HT89 47	Computer Aided Architectural Design and Technology: Graded Unit 1
HR3T 47	Statutory Control of Buildings
HT88 47	Site Administration
HR6H 47	CAD: Visualisation, Rendering and Presentation
HP6M 47	Personal Development Planning
HR7D 48	Architectural CADT: Structural Design and Detailing
HR7C 48	Architectural CADT: Commercial Building Systems
HR78 48	Architectural CADT: Advanced Digital Media
HR7K 48	Building Information Modelling (BIM): Building Science
HR3N 48	Conversion and Adaptation of Buildings

Additionally, it would be beneficial to acquire supporting skills by completing a range of Units from the SQA Advanced Diploma in Computer Aided Architectural Design and Technology optional Units.

Core Skills

Opportunities to develop aspects of Core Skills are highlighted in the support notes of this Graded Unit specification.

There is no automatic certification of Core Skills or Core Skill components in this Graded Unit.

Equality and inclusion

This Graded Unit has been designed to ensure that there are no unnecessary barriers to learning or assessment. The individual needs of learners should be taken into account when planning learning experiences, selecting assessment methods or considering alternative evidence.

Further advice can be found on SQA's website:
www.sqa.org.uk/assessmentarrangements

SQA Advanced project-based Graded Unit specification: designing the project and assessing learners

Graded Unit title: Computer Aided Architectural Design and Technology: Graded Unit 2 (SCQF level 8)

Assessment

This Graded Unit will be assessed by the use of a project-based *practical assignment* developed by centres. The project should provide the learner with the opportunity to produce evidence that demonstrates she/he has met the aims of this Graded Unit.

The project undertaken by the learner must be a complex task which involves:

- ◆ variables which are complex or unfamiliar
- ◆ relationships which need to be clarified
- ◆ a context which may be unfamiliar to the learner

The project must require the learner to:

- ◆ analyse the task and decide on a course of action for undertaking the project
- ◆ plan and organise work and carry it through to completion
- ◆ reflect on what has been done and draw conclusions for the future
- ◆ produce evidence of meeting the aims which this Graded Unit has been designed to cover

Conditions of assessment

The learner should be given a date for completion of the project. However, the instructions for the project should be distributed to allow the learner sufficient time to assimilate the details and carry out the project. During the time between the distribution of the project instructions and the completion date, assessors may answer questions, provide clarification, guidance and reasonable assistance. The project should be marked as soon as possible after the completion date. The final grading given should reflect the quality of the learner's evidence at the time of the completion date.

The evidence for the project is generated over time and involves three distinct stages, where each stage has to be achieved before the next is undertaken. Thus any re-assessment of stages must be undertaken before proceeding to the next stage.

If a learner fails the project overall or wishes to upgrade, then this must be done using a *substantially different* project, ie all stages are undertaken using a new project, assignment, case study, etc. In this case, a learner's grade will be based on the achievement in the re-assessment, if this results in a higher grade.

At this level, learners should work independently within the context of a typical working environment. Centres should encourage learners to bring their specialist knowledge and experience to the project. Learners should be allowed to use appropriate technology within and outwith the college environment.

To ensure authentication of work, learners must complete a log diary recording progress and tasks completed. There should be regular meetings between the tutor and learner(s) to review progress and these meetings should be recorded.

The final evaluation should include questioning of each learner's understanding of the evidence submitted. Where possible, the involvement of an employer in the questioning is encouraged.

Evidence Requirements for this Graded Unit

The project undertaken by learners will consist of three stages: planning; developing; and evaluating. The following table specifies the minimum evidence required to pass each stage.

Project stage	Minimum Evidence Requirements	% Mark allocation
Stage 1 — Planning	<ul style="list-style-type: none"> ◆ Develop a timeline action plan (project schedule) ◆ Create/commence log book recording ◆ Consider project primary data/influences ◆ Project aims, objectives and targets (output of Stage 2) ◆ Establish verification strategy ◆ The project primary data/influences should provide an outline of: <ul style="list-style-type: none"> — identification of resource sources — client requirements/preferences — site information and constraint identification — design influences — regulatory constraints — other constraints <p>Such requirements might consider and include accommodation types and needs, stylistic and aesthetic factors pertaining to client preferences or other local factors, as well as technical restraints imposed by site conditions, regulatory bodies, anticipated engineering limitations, and other design restrictions relating to environment, material, financial or administrative constraints.</p> <p>A minimum word count for project brief document of 1,200 words or equivalent.</p> <p><i>The learner must achieve all of the minimum evidence specified above in order to pass the Planning stage.</i></p>	20% Maximum 20 marks

Project stage	Minimum Evidence Requirements	% Mark allocation
Stage 2 — Developing	<ul style="list-style-type: none"> ◆ Create project portfolio for proposed solution, incorporating: ◆ Illustrative output <ul style="list-style-type: none"> — conceptual design ideas — concept evaluation/selection — scheme design development: <ul style="list-style-type: none"> - 2-dimensional (floor plans, area plans, elevations and sections) - 3-dimensional (pictorial, axonometric, planometric, hidden detail, shaded details, rendered details, interiors, exteriors) - construction drawings - presentation graphics ◆ Written output <ul style="list-style-type: none"> — executive summary or abstract — rationale and justification for concept and scheme design proposals submitted — justification of processes underpinning the project recommendations — additional supporting evidence (schedules, references, regulations, calculations, specifications) ◆ Presentation <ul style="list-style-type: none"> — oral presentation of solutions — presentation graphics (visual aids) — questioning of design solutions and project recommendations by simulated client/client group ◆ Maintenance of log book recording ◆ Demonstrated independence in management of project <p>A minimum word count for portfolio document 2,500 words or equivalent is suggested.</p> <p><i>The learner must achieve all of the minimum evidence specified above in order to pass the Developing stage.</i></p>	60% Maximum 60 marks 50 marks portfolio: <i>40 design details</i> 10 <i>documentation</i> + 10 presentation

Project stage	Minimum Evidence Requirements	% Mark allocation
Stage 3 — Evaluating	<ul style="list-style-type: none"> ◆ Critical reflection and analysis of evidence achieved compared with project schedule time lines — review of the project progress ◆ Reflective comparison of submitted solutions against initial brief objectives — review of the project implementation ◆ Analysis of decisions in determining project progression ◆ Action taken to overcome unforeseen circumstances, if any ◆ Assessment on strength and weakness of practical output (CAD, visuals, details, graphics) ◆ Evaluation of extent to which project brief and objectives have been overtaken, if at all ◆ Reflection on response to questioning ◆ Identification of knowledge and skills gained by learner ◆ Determination to what extent original project brief has been met <p>A minimum word count of 1,000 words or equivalent is suggested.</p> <p><i>The learner must achieve all of the minimum evidence specified above in order to pass the Evaluating stage.</i></p>	20% Maximum 20 marks

Assessing and grading learners

The overall project will be marked out of **100**. Only whole marks should be used.

The percentage of marks allocated to each stage of the project is outlined in the **Evidence Requirements**.

Learners must meet the minimum *Evidence Requirements* for the *Planning* stage before progressing to the *Developing* stage before progressing to the *Evaluating* stage. Learners may produce evidence over and above that specified in the minimum *Evidence Requirements* and deserve more than half the available marks for that stage. Assessors should use the Grade-related criteria outlined below to judge learner performance.

Learners are required to work independently to meet the *Evidence Requirements* of the Graded Unit. At the same time, learners need appropriate support. SQA uses the term reasonable assistance to describe the balance between supporting learners in their project and not providing too much assistance.

At the end of *each* stage there should be opportunities for remediation and re-assessment of learners for that particular stage. This includes the final *Evaluation* stage. Any re-assessment should be carried out in line with the centre's own assessment policy.

Grade-related criteria	
Grade A	Grade C
<p>Is a seamless, coherent piece of work which has many more strengths than weaknesses and for a significant building project:</p> <ul style="list-style-type: none"> ◆ accurately details the project objectives and fully reflects the key long-term project targets and goals in a consistent and fully comprehensive manner ◆ contains a project schedule detailing a comprehensive timeline of activities and critical events/targets ◆ the project schedule is used consistently and monitored on an ongoing basis to inform project planning and development ◆ provides considerably more than the minimum evidence for each of the three essential phases of the project ◆ summarises conceptual development and details concepts for early client approval, supported by strengths and weakness in each instance ◆ determines a solution from conceptual activities, supported by a clear, well justified rationale ◆ evidence is produced to a high standard, is clearly inter-related and demonstrates an accurate and particularly insightful interpretation of the project brief ◆ has continuously accessed available research/data/trends in arriving at the evidence submitted and this has resulted in solutions which embody non-traditional and innovative solutions ◆ provides feedback to supervisor on a regular basis, updating on progress made and actions for next stages of project 	<p>Is a co-ordinated piece of work which has a balance of strengths and weakness and for a significant commercial building project:</p> <ul style="list-style-type: none"> ◆ identifies the project objectives and long-term project targets ◆ contains a project schedule containing essential project activities and timings ◆ the project schedule has been monitored on at least three occasions during the project lifespan ◆ provides the evidence for each of three essential phases of the project at a basic level ◆ summarises conceptual development and details a minimum of THREE concepts for early client approval ◆ determines proposed solutions from conceptual activities without justification ◆ evidence provided demonstrates an acceptable interpretation of the project brief ◆ has not amplified the initial project brief in arriving at the evidence submitted and solutions embody only routine and traditional solutions ◆ provides feedback to supervisor on at least three occasions, providing indication of progress made

Grade-related criteria (cont)	
Grade A	Grade C
<ul style="list-style-type: none"> ◆ contains a regularly maintained, detailed informal record of critical thinking, including reflective comments as a logged record ◆ demonstrates clear, explicit links between the three stages of the investigation ◆ drawings and language used are of a high standard in terms of level, accuracy and technical content ◆ demonstrates independence in management of time, effort and resources ◆ visual information produced is of a high standard in terms of impact, clarity and expression ◆ contains extensive, accurate and comprehensive construction drawings of the building design ◆ supporting graphics are produced to a presentation standard ◆ effectively consolidates and integrates required knowledge and skills and considers possible conflicts in integrating solutions in relation to constraints imposed ◆ contains only well-structured, relevant information — has clear and accurate conclusions and recommendations and uses language of high standard in terms of accuracy and technical content ◆ includes rationale and justification and clearly addresses a 'fit for purpose' objective, when answering questions regarding the evidence produced ◆ identifies clear and full details of the new knowledge and skills developed as a result of completing the project 	<ul style="list-style-type: none"> ◆ contains an acceptable level of detail about project development and ideas, and evidence that logged record made on at least six occasions during the project lifespan ◆ demonstrates links between the three stages of the investigation ◆ drawings and language used are adequate in terms of level, accuracy and technical content ◆ seeks additional tutor support ◆ visual information produced is of an acceptable standard ◆ contains construction drawings for the key elements of the building design ◆ supporting graphics are produced ◆ consolidates and integrates knowledge and skills proposing system solutions in isolation ◆ contains the project report, written to acceptable standards in terms of structure, use of English and clarity, and has accurate conclusions and recommendations ◆ presents proposed solutions with justification when answering questions regarding the evidence produced ◆ identifies some details of new knowledge and skills developed as a result of doing the project

Grade-related criteria (cont)	
Grade A	Grade C
<ul style="list-style-type: none"> ◆ demonstrates a high level of learner's self-motivation throughout the project ◆ details the additional research undertaken by the learner well beyond that demanded by the project ◆ key areas for improvement when undertaking the work to the defined time line action plan and clearly identifies key areas for improvement when reflecting on the technical solutions chosen compared with the initial objectives 	<ul style="list-style-type: none"> ◆ demonstrates an acceptable level of motivation throughout the project ◆ none ◆ achieves Outcomes with minimum evaluation against the time line plan and assumes the technical solutions chosen as the 'most appropriate' with minimal retrospective comparison with initial brief objectives

The marks allocated to each stage will then be aggregated to arrive at an overall mark for the project. Assessors will then assign an overall grade to the learner for this Graded Unit based on the following grade boundaries.

- A = 70%–100%
- B = 60%–69%
- C = 50%–59%

These grade boundaries are fixed and should **not** be amended.

If a learner does not achieve a pass or wishes to upgrade, then this must be done using a substantially different project, ie all stages are undertaken using a new project (case study, investigation or practical assignment). In these circumstances, the highest grade achieved should be awarded.

More information on reasonable assistance, remediation and re-assessment may be found in the SQA publication *Guidance for the Implementation of Graded Units in Higher National Certificates and Diplomas* (SQA, 2008).

SQA Advanced project-based Graded Unit support notes

Graded Unit title: Computer Aided Architectural Design and Technology: Graded Unit 2 (SCQF level 8)

Guidance on approaches to delivery and assessment of this Graded Unit

This Graded Unit has been designed to help learners achieve the principal aims of the SQA Advanced Diploma in Computer Aided Architectural Design and Technology award, and to assess their knowledge and skills relative to the mandatory subjects of the course framework. This will be achieved typically by the resolution of an architectural design problem, allowing learners to explore a range of solutions, arrive at an appropriate and effective resolution, and communicate the solutions in an effective manner.

This Graded Unit is intended to be driven by the learner and other than the Unit introduction, requires only guidance and direction from the lecturer. Course tutors may wish to take on the roles of client, local authority or other professional routinely involved in an architectural design project. Where possible, engagement with industry professionals taking on these roles would be beneficial. During each stage, the local authority could be invited in to give their comments on the project as it progresses. This could also be an opportunity for past students to keep involved taking on various fictional or real world roles if they are in the construction industry. The presentation/exhibition during the evaluation stage could be to the professionals who have been involved at other stages.

The nature of the project would nominally be along the lines of the SQA Advanced Diploma course, ie that of a small commercial building. The topic could be residential, however would need to be a large residential building employing commercial building systems.

There are three distinct phases to the project, Planning, Developing and Evaluating, worth respectively 20%, 60% and 20% of the total marks awarded for the Unit.

In the Planning stage of the project, learners will be expected to consider the nature of the design brief set, including factors related to a wide variety of aesthetic, administrative and technical constraints, and in response to these, preparation of an action plan and a project brief setting the parameters of the project.

In the Developing stage of the project, learners will be expected to adhere to the action plan, explore and consider possible solutions, and using computer-aided technological approaches, arrive at an appropriate design solution for the project brief set. The solutions will be communicated visually, pictorially and in hard copy or electronic format, and substantiated by clear, supporting documentation, including the rationale for the solutions reached.

In the Evaluating stage of the project, learners will be expected to consider the success and efficacy of their solution, providing a presentation of their final solutions and recommendations, and reflect upon the experience.

While the introduction should last approximately 2 hours, be robust with clear deadlines for all three stages given at the outset of the project and time for questions and answers, the remaining time spent on each stage could be:

Stage 1: 16 hours

Stage 2: 48 hours

Stage 3: 14 hours

The Unit is graded, and this Grade (A–C) quantifies and qualifies the quality of the SQA Advanced Diploma award. A checklist and guidance on completion of the checklist is included below.

Opportunities for developing Core and other essential skills

There are opportunities to develop the Core Skills of *Communication, Problem Solving, Literacy, Numeracy and Information and Communication Technology (ICT)* all at SCQF level 6, although there is no automatic certification of Core Skills or Core Skills components.

Scottish Qualifications Authority

**Computer Aided Architectural Design and Technology:
Graded Unit 2**

Grading Unit Checklist

Centre's name: _____

Centre's number: _____

Learner's name: _____

Learner's number: _____

No	Grade C criteria	Grade C	Grade B	Grade A	Grade A criteria
Stage 1 — Planning					
	The project brief includes sufficient information to identify the client's principal requirements.	Yes	Yes	Yes	The project brief includes all relevant information, is clearly presented and has been agreed fully with the client.
	The initial project schedule or timeline (likely a Gant Chart) shows all essential project activities. Some evidence of monitoring the schedule to inform project development is available.	Yes	Yes	Yes	The initial project schedule or timeline (likely a Gant Chart) contains a comprehensive list of project activities and timings. The information in the initial schedule is used to assess if the project can be completed within timescales. The schedule is monitored on a regular basis to inform ongoing project planning and development.
	The project brief includes sufficient information to identify principal design influences.	Yes	Yes	Yes	The project brief includes an extensive range of design stimuli appropriate to the preferences of the client.
	The project brief considers the range of data and constraints from the site.	Yes	Yes	Yes	The project brief develops key design influences from the range of site data constraints.
	The project brief outlines principal statutory constraints for the planned project.	Yes	Yes	Yes	The project brief identifies and evaluates specific statutory constraints for the planned project.
	The log book contains essential details of project development and there is evidence that it is maintained.	Yes	Yes	Yes	The log book is regularly maintained and provides a detailed, informal record of the learner's thinking as the project develops including reflective commentary.
	The learner develops an adequate knowledge base to support the demands of the project.	Yes	Yes	Yes	The learner develops a substantial knowledge base to support the demands of the project.
	The learner assesses a range of hardware and software options to meet the demands of the project.	Yes	Yes	Yes	The learner fully justifies the selection of hardware and software options suitable to the demands of the project.

No	Grade C criteria	Grade C	Grade B	Grade A	Grade A criteria
Stage2 — Developing					
	The learner feeds back to his/her supervisor on at least three occasions, providing an indication of progress made.	Yes	Yes	Yes	The learner feeds back to his /her supervisor on a regular basis, updating the supervisor on progress made and actions for the next stage of the project.
	The learner outlines additional design constraints for the planned project.	Yes	Yes	Yes	The learner develops substantial ideas for consideration in the planned project.
	Practical activities are carried out to an acceptable level of health and safety.	Yes	Yes	Yes	Practical activities are carried out in a totally safe and healthy manner.
	The design solutions explored are functional, adequate and sufficient to meet the needs of the client.	Yes	Yes	Yes	The design solutions explored are aesthetically and technically well observed, of consistently high quality and exceed the minimum client requirements.
	The proposed solution meets all the principal objectives laid down by the project brief.	Yes	Yes	Yes	The proposed solution exceeds all the principal objectives laid down by the project brief and considers additional unforeseen factors.
	The CAD details produced for the proposed solution are well-organised, correctly detailed and adequate to illustrate the principal aims of the solution.	Yes	Yes	Yes	The CAD details produced for the proposed solution are well-organised, correctly detailed and referenced and communicate a range of ideas through the production of enhanced details.
	The portfolio document meets acceptable standards in terms of structure, use of English and clarity, and has accurate conclusions and recommendations.	Yes	Yes	Yes	The portfolio document is well-structured, contains only relevant information, and has clear and accurate conclusions and recommendations.
	None	Yes	Yes	Yes	The learner introduces a significant novel feature into the project.
	The learner demonstrates an acceptable level of motivation throughout the project.	Yes	Yes	Yes	The learner demonstrates a high level of self-motivation throughout the project.
	None	Yes	Yes	Yes	The learner undertakes additional research well beyond that demanded by the project.

No	Grade C criteria	Grade C	Grade B	Grade A	Grade A criteria
Stage2 — Developing (continued)					
	The project includes an evaluation of the project strategy and activities and includes an evaluation of what the learner has learned from undertaking the project.	Yes	Yes	Yes	The project report includes a clear and comprehensive evaluation of the project strategy and activities and includes clear evaluation of what the learner has learned from undertaking the project.
	The question responses contain broad responses.	Yes	Yes	Yes	The question responses are well-structured, confirm relevance and integrity of information.
	The learner provides technically correct answers to questions raised.	Yes	Yes	Yes	The learner provides clear, concise and technically correct answers to questions raised.
	The learner includes some reflection of the success, or otherwise, of the project in response to questioning.	Yes	Yes	Yes	The learner includes a clear reflective account of the success, or otherwise, of project activities against project objectives in response to questioning.
	The learner undertakes the project with an acceptable level of supervision.	Yes	Yes	Yes	The learner undertakes the project with minimum supervision.
	The learner provides some details of the new knowledge and skills he/she has developed as a result of doing the project.	Yes	Yes	Yes	The learner identifies clear and full details of the new knowledge and skills he/she has developed as a result of doing the project.

Guidance on the completion of the checklist

Centre staff are asked to read the following guidance notes before completing the grading checklist.

The checklist for the Practical Assignment has been designed to help the assessor(s) decide what grade should be awarded to a learner for the Design Project. It will also be used by external moderators as part of the external moderation of project work. **A grading checklist form should be completed for each learner who has been entered for the Computer Aided Architectural Design and Technology: Graded Unit 2 (Design Project).**

In completing the Practical Assignment checklist assessor(s) should take note of the following points:

- 1 For each item shown in the checklist, the 'Yes', which most closely reflects the learner's performance, should be circled. It can be seen from the checklist that the grade criteria for Grade C and Grade A have been included in the checklist.
- 2 A Grade B should be awarded where the learner's performance lies approximately mid-way between a Grade C and a Grade A (ie better than a Grade C (competent), but not good enough to be a Grade A (highly competent)).
- 3 No grade should be awarded where a learner's performance is not good enough to satisfy a Grade C pass (ie competent level of performance).
- 4 Once centre assessors have completed the 21 items, they should then apply their own professional judgement to decide what grade to award a learner.
- 5 In arriving at the grade, due account should be taken of the distribution of circles around 'Yes'. For example, if 17 out of 21 items have been circled under the Grade B column and the other four have been circled under the Grade C column, then it is likely that the assessor(s) will award the learner a Grade B. Professional judgement is much more involved where, for example, if 'Yes' is circled 11 times under the Grade A column, and 10 times under the Grade B column. The assessor's first-hand knowledge of the learner's performance will influence whether the learner is awarded a Grade A or Grade B. External moderators are unlikely to overturn the grading awarded by the centre assessor(s) unless they are not happy that grading judgements have been awarded in a fair, consistent and rigorous manner.
- 6 Centres may provide additional comments and/or evidence in support of their grading decisions.

History of changes

Version	Description of change	Date

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SQA acknowledges the valuable contribution that Scotland's colleges have made to the development of SQA Advanced qualifications.

FURTHER INFORMATION: Call SQA's Customer Contact Centre on 44 (0) 141 500 5030 or 0345 279 1000. Alternatively, complete our Centre Feedback Form.

General information for learners

Graded Unit title: Computer Aided Architectural Design and Technology: Graded Unit 2 (SCQF level 8)

This Unit has been designed to help you achieve the principal aims of the SQA Advanced Diploma in Computer Aided Architectural Design and Technology award, and to assess your knowledge and skills relative to the mandatory subjects of the course framework. This will be achieved typically by the resolution of an architectural design problem, allowing you to explore a range of solutions, arrive at an appropriate and effective resolution, and communicate the solutions in an effective manner.

The Unit will be taught with your lecturer in the role of facilitator, and at times, engaging you as client, local authority or other professional routinely involved in an architectural design project. The nature of the project would nominally be that of a residential, or small commercial, building.

There are three distinct phases to the project, Planning, Developing and Evaluating, worth respectively 20%, 60% and 20% of the total marks awarded for the Unit. In the Planning stage of the project, you will be expected to consider the nature of the design brief set, including factors related to a wide variety of aesthetic, administrative and technical constraints, and in response to these, prepare an action plan and a project brief setting the parameters of the project.

In the Developing stage of the project, you will be expected to adhere to the action plan, explore and consider possible solutions, and using computer-aided technological approaches, arrive at an appropriate design solution for the project brief set. The solutions will be communicated visually, pictorially and in hard copy format, and substantiated by clear, support documentation, including the rationale for the solutions reached.

In the Evaluating stage of the project, you will be expected to consider the success and efficacy of your solution, providing a presentation of your final solutions and recommendations, and reflect upon the experience.

The Unit is graded, and this Grade (A–C) quantifies and qualifies the quality of your SQA Advanced Diploma award.

The Unit is largely practical in nature, requiring you to have individual access to a CAD system. A CAD system is defined as hardware and software, which will enable an operator to generate (and regenerate) drawings at an acceptable processor speed. A typical minimum hardware configuration would be a current single user PC fitted with suitable peripherals attached such as a printer/plotter to produce hard copies of your work. Alternatively other configurations such as networked CAD stations are acceptable provided they can satisfy the Unit's criteria.

Additionally, because you will be working continuously with CAD systems and manipulating numerical and graphical data, and responding to a design brief, and liaising with external stimuli, you will have the opportunity within this Unit to develop Core Skills in *Information and Communication Technology (ICT)*, *Numeracy*, *Communication*, and *Problem Solving*, all at SCQF level 6.