

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 1 (SCQF level 7)

Graded Unit code: HT89 47

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 routes
- ◆ develop key skills for employability while building on previously acquired transferable skills 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 vocation 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 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
- ◆ allow a degree of flexibility within subject-specific disciplines, such as building services, history and conservation, construction management

Credit points and level

1 SQA Advanced Credit at SCQF level 7: (8 SCQF credit points at SCQF level 7)

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 relating to the above principal 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	Architectural Design: Form, Order and Composition
HR6V 47	Architectural Professional Practice: Design Management

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 1 (SCQF level 7)

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 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 learners 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	<p>Produce an action plan to include:</p> <ul style="list-style-type: none"> ◆ a timeline action plan (project schedule) ◆ a project brief response document, incorporating: <ul style="list-style-type: none"> — client requirements, schedule of accommodation — client preferences (stylistic, aesthetic, material) — site information and constraint identification — design influences (stylistic, aesthetic, material) — regulatory constraints (planning, building) — other constraints (environmental, financial, administrative, design) — project aims (output of Stage 2) <p>Commencement of recording of processes underpinning the assignment in a log book.</p> <p><i>The learner must achieve all of the minimum evidence specified above in order to pass the Planning stage.</i></p> <ul style="list-style-type: none"> ◆ A minimum word count of 800 words is suggested, however learners may increase on this as long as the information is relevant. 	<p>20%</p> <p>Maximum 20 marks</p>
Stage 2 — Developing (cont)	<p>Produce output to include:</p> <ul style="list-style-type: none"> ◆ project portfolio for proposed solution, incorporating: <ul style="list-style-type: none"> — executive summary or abstract — rationale and justification for design proposal submitted — justification of processes underpinning the project recommendations — additional supporting evidence (schedules, references, regulations, calculations, specifications) 	<p>60%</p> <p>Maximum 60 marks</p> <p>50 marks portfolio:</p> <p><i>40 design details</i></p>

	<ul style="list-style-type: none"> — range of CAD details illustrating the solution(s) — 2-dimensional (floor plans, area plans, elevations and sections) — 3-dimensional (pictorial, axonometric, planometric, hidden detail, shaded details, rendered details, interiors, exteriors) ◆ maintenance of log book recording ◆ questioning of design solutions and project summary ◆ demonstrated independence in management of project 	<p>10 documentation</p> <p>+</p> <p>10 oral questioning</p>
	<p><i>The learner must achieve all of the minimum evidence specified above in order to pass the Developing stage.</i></p> <ul style="list-style-type: none"> ◆ A minimum word count of 1,200 words is suggested, however learners may increase on this as long as the information is relevant. 	
<p>Stage 3 — Evaluating</p>	<p>Produce an evaluation report which should include:</p> <ul style="list-style-type: none"> ◆ reflection and analysis of evidence achieved compared with project schedule time lines ◆ reflective comparison of submitted solutions against initial brief objectives ◆ analysis of decisions in determining project progression ◆ action taken to overcome unforeseen circumstances ◆ assessment on strength and weakness of practical output ◆ evaluation of extent to which project brief and objectives have been overtaken ◆ identification of knowledge and skills gained or developed to inform future tasks 	<p>20%</p> <p>Maximum 20 marks</p>
	<p><i>The learner must achieve all of the minimum evidence specified above in order to pass the Evaluating stage.</i></p> <ul style="list-style-type: none"> ◆ A minimum word count of 600 words is suggested, however learners may increase on this as long as the information is relevant. 	

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**.

It is a requirement that 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 small commercial building, or a residential project involving one (or more) houses:</p> <ul style="list-style-type: none"> ◆ provides considerably more than the minimum evidence for each of the three essential phases of the project ◆ 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 ◆ has accessed a wide range of available data and design guidance which has incorporated original ideas into proposed solutions ◆ drawings and language used are of a high standard in terms of level, accuracy and technical content ◆ visual information produced is of a high 	<p>Is a co-ordinated piece of work which has a balance of strengths and weakness and for a small commercial building, or a residential project involving one (or more) houses:</p> <ul style="list-style-type: none"> ◆ provides the evidence for each of three essential phases of the project at a basic level ◆ evidence is 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 ◆ accesses data and design guidance ◆ drawings and language used are adequate in terms of level, accuracy and technical content ◆ visual information produced is of an acceptable standard ◆ seeks additional tutor support to keep project on course ◆ consolidates and integrates knowledge and skills proposing system solutions in isolation

<p>standard in terms of impact, clarity and expression</p> <ul style="list-style-type: none"> ◆ demonstrates independence in management of project ◆ effectively consolidates and integrates required knowledge and skills and considers possible conflicts in integrating solutions in relation to constraints imposed ◆ includes rationale and justification and clearly addresses a 'fit for purpose' objective, cost and quality issues in arriving at proposed solutions when answering questions regarding the evidence produced ◆ clearly identifies 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 ◆ has accessed a wide range of available data and design guidance which has incorporated original ideas into proposed solutions ◆ drawings and language used are of a high standard in terms of level, accuracy and technical content ◆ visual information produced is of a high standard in terms of impact, clarity and expression ◆ demonstrates independence in management of project ◆ effectively consolidates and integrates required knowledge and skills and considers possible conflicts in integrating solutions in relation to constraints imposed ◆ includes rationale and justification and clearly addresses a 'fit for purpose' objective, cost and quality issues in arriving at proposed solutions when answering questions regarding the evidence produced ◆ clearly identifies 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"> ◆ presents proposed solutions with justification when answering questions regarding the evidence produced ◆ achieves Outcomes within time line plan and assumes the technical solutions chosen as the 'most appropriate' with retrospective comparison with initial brief objectives <hr/> <ul style="list-style-type: none"> ◆ visual information produced is of an acceptable standard ◆ seeks additional tutor support to keep project on course ◆ consolidates and integrates knowledge and skills proposing system solutions in isolation ◆ presents proposed solutions with justification when answering questions regarding the evidence produced ◆ achieves Outcomes within time line plan and assumes the technical solutions chosen as the 'most appropriate' with retrospective comparison with initial brief objectives
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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 1 (SCQF level 7)

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 Certificate in Computer Aided Architectural Design and Technology, and to enable the learner to draw on the knowledge and skills gained in the other Units in the course, and accordingly should be delivered towards the end of the course. It is nominally a 40-hour Unit, but it is expected that learner will spend the same time again on private study. 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.

It is a project-based design assessment, comprising three distinct phases: Planning, Developing and Evaluating, worth respectively 20%, 60% and 20% of the total marks awarded for the Unit. Learners should be given clear, fixed deadlines at the start of the project, for the date on which each stage is to be submitted.

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. It may be beneficial to provide instruction on project planning, which may also include the use of specialist software to assist in creating project timelines.

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. It is recommended that instruction be given the compiling of formal reports, and in a recognised form of referencing, (eg Harvard).

Centres should provide suitable resources for the delivery of the Unit, which will include, but is not restricted to, advanced industry-standard CAD software and adequate hardware to run it, including printers.

Opportunities for developing Core and other essential skills

There are opportunities to develop the Core Skills of *Communication*, *Problem Solving*, *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 1**

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 meets with the client requirements.
	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 (cont)					
	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 Unit 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 Unit checklist form should be completed for each learner who has been entered for the Computer Aided Architectural Design and Technology: Graded Unit 1 (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 1 (SCQF level 7)

This Unit has been designed to help you achieve the principal aims of the SQA Advanced Certificate in Computer Aided Architectural Design and Technology, 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. Output should be in the form of CAD visuals, details, and or graphics.
- ◆ 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 Certificate.

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*, *Problem Solving* and *Working with Others*, all at SCQF level 6.