# Unit 92: Large-scale Design

**Unit code:** J/502/5372

**QCF Level 3:** BTEC National

**Credit value:** 10

**Guided learning hours:** 60

## Aim and purpose

The aim of this unit is to develop learners' skills in large-scale design. It enables learners to explore and experiment with the manipulation of ideas and models in specialised areas of study such as architecture and interior design, environmental design, exhibition and display design, urban design and landscape design.

## Unit introduction

When developing and realising large-scale design ideas it is important that designers understand the processes involved in communicating their ideas and producing combinations of 2D and 3D work that not only convey stylistic meaning but demonstrate awareness of functional and aesthetic factors and purpose.

The aim of this unit is to develop learners' skills in large-scale design. It enables learners to explore and experiment with the manipulation of ideas and models in specialised areas of study such as architecture and interior design, environmental design, exhibition and display design, urban design and landscape design. Tutors should engage learners in the analysis of the characteristics of architectural, urban and natural space, and their historical and contemporary development. Learners will have opportunities to develop and present design ideas through 2D design work but will focus on virtual model making.

Learners will develop the required skills of research and analysis, synthesis and time management, as well as teamwork and organisational competency. Learners will be introduced to the design development cycle and its application to specific project briefs.

Learners will be made aware of any relevant legal constraints (such as building regulations and health and safety issues) associated with specific materials, techniques and practices.

Briefs should be designed with stimulating, engaging and realistic intentions that mimic the realities of actual commission scenarios. Better still, learners should be given every opportunity to work on live briefs with all of the benefits, challenges and accelerated learning that a professional project outcome brings.

## Learning outcomes

**On completion of this unit a learner should:**

1 Understand a brief for a large-scale design project

2 Be able to develop design ideas for a large-scale design project

3 Be able to produce design ideas for a large-scale design project

4 Know how to review working methods used to realise outcomes for a large-scale design project.

# Unit content

## 1 Understand a brief for a large-scale design project

*Identify and clarify design opportunities*: consult, eg clients, colleagues, end users; interpret, eg aesthetic, functional, requirements; context, eg architecture, interior, exhibition, display, environment design

*Analysis and clarification of the brief*: eg parameters, criteria, specifics, restrictions, discuss, determine, definitions, establish common understanding, ambiguous areas

*Large-scale design project*: eg architectural space, building, townscape, landscape, built environment, living space, workspace, exhibition space, commercial space

## 2 Be able to develop design ideas for a large-scale design project

*Research and develop ideas*: eg historical, contemporary, record ideas, written notes, sketches, concept models, ideas modification, alternative materials, aesthetic alterations, physical alterations, scale models

*Visual communication*: eg computer-aided designs (CAD), drawings (hand-rendered, technical, perspective, conceptual, isometric); models, eg physical, computer-generated, scale, concept, expressive

*Present ideas*: eg presentations, 3D models, maquettes, on-screen, written analysis, evaluation of outcomes

## 3 Be able to produce design ideas for a large-scale design project

*Concept models*: eg creative models, aesthetic, emotional elements, mood, theme, movement, materials, style, identity, fun, function, philosophy

*Make models and prototypes*: eg scale representations, overview, individual elements, details, final outcome, demonstrate function, utilisation, location models

## 4 Know how to review working methods used to realise outcomes for a large-scale design project

*Review*: specific requirement eg restrictions, definitions; establish common understanding, eg ambiguities, discuss, select, reject, progress, initial ideas; revisions, eg propose, implement; effectiveness, eg project elements, design ethos, project management, outcome(s) against brief, strengths, weaknesses

*Working methods*: eg consult with clients, end users, interested parties, colleagues, initial prototypes, check progress, project timelines, monitor resources processes, media, materials, samples, test pieces, maquettes, print-outs, storyboards, design worksheets

*Realise outcome*: eg design, artefacts, prototypes, models, visuals

# Assessment and grading criteria

In order to pass this unit, the evidence that the learner presents for assessment needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria for a pass grade describe the level of achievement required to pass this unit.

| Assessment and grading criteria | | |
|---|---|---|
| **To achieve a pass grade the evidence must show that the learner is able to:** | **To achieve a merit grade the evidence must show that, in addition to the pass criteria, the learner is able to:** | **To achieve a distinction grade the evidence must show that, in addition to the pass and merit criteria, the learner is able to:** |
| **P1** explain a brief for a large-scale design project [IE, CT, TW, SM, EP] | **M1** consistently carry out purposeful and effective design development when realising a final outcome that meets requirements of the large-scale design brief | **D1** show an individual, exciting and perceptive approach in creating and presenting functionally and aesthetically assured large-scale work. |
| **P2** develop design ideas for a large-scale design project [IE, CT, TW, SM, EP] | **M2** use comparisons, testing and evaluation throughout the project to produce a final outcome that addresses constraints of large-scale 3D design. | |
| **P3** produce design ideas for a large-scale design project [IE, CT, TW, SM, EP] | | |
| **P4** list working methods used to realise outcomes. [IE, CT, RL, TW, SM, EP] | | |

**PLTS**: This summary references where applicable, in the square brackets, the elements of the personal, learning and thinking skills applicable in the pass criteria. It identifies opportunities for learners to demonstrate effective application of the referenced elements of the skills.

| Key | | | |
|---|---|---|---|
| | IE – independent enquirers | RL – reflective learners | SM – self-managers |
| | CT – creative thinkers | TW – team workers | EP – effective participators |

# Essential guidance for tutors

## Delivery

This unit requires evidence of collaboration between the learner, the centre and the professional to produce final outcomes for a large-scale design, working as an individual or as part of a team. They will be assessed on realistic briefing scenarios, which should involve interaction with the client and the end user. Assessment will take place in the centre, for briefing, project analysis, concepts and proposals, as well as in a location context for final outcome realisation.

This unit provides tutors with the opportunity to engage learners in realistic projects through the presentation of professional briefs. Projects should be set to reflect current professional practice and tutors should use a wide range of realistic scenarios to motivate, inspire and stimulate learner.

Health and safety issues relating to studio, workshop and relevant specialist areas should be stressed throughout. Learners need to be guided through current legislation such as the Disability Discrimination Act (DDA) and building regulations and copyright law.

It is important to ensure that learners are able to apply their understanding of the basic principles and practices which underpin large-scale artwork and 3D design work. In particular, they must demonstrate the capacity to conceptualise large-space designs and to convert ideas expressed in 2D into an appropriate 3D form, and vice versa. Model making is likely to play a significant part in this process but tutors should also present learners with the opportunity to work with actual-size spaces and/or to a realistic scale.

This unit relates closely to specialist unit *Large-scale Working* and tutors may consider presenting an integrated programme, with the units running either concurrently or consecutively. It will be possible to integrate, evidence and assess aspects of other specialist and professional specialist units. It is important to relate learning to specific 3D design specialisms and design methodology, throughout the programme so that learners have sufficient time to consider which route they may prefer to take for progression to higher education or to work. Every opportunity should be taken to introduce learners to relevant industrial and commercial practice in order to expand their knowledge and understanding of and capture evidence for professional practice.

Learning outcome 1 covers the concept of design development in response to a given brief. Tutors should encourage learners to participate in the analysis and questioning of the briefs directives. Learners should also be encouraged to question their own and others' outcomes at all stages. Research should be relevant and purposeful with learners showing links between this and their planned intentions and outcomes.

Learning outcomes 2 and 3 are closely linked and cover the analysis and communication of ideas through appropriate methods. This ability is fundamental to the design profession and learners should be given opportunities to communicate their ideas in a number of formats. Learners should be taught to use suitable written and verbal language and to communicate through both 2D and 3D rendered and digital representations as appropriate. Tutors should pay particular attention to the practical skills of model making and 3D computer modelling. Learners should also be encouraged to test their concepts regularly through prototypes, proofs, maquettes or other appropriate development and pre-production models and mock-ups.

Learning outcome 4 is closely linked to all other learning outcomes and is fundamental to the successful completion of design projects. As with learning outcome 1, it is important that learners are encouraged to participate in analysing and questioning the effectiveness of their own and others' concepts and outcomes, working with a clear and proven reflective practice model.

## Outline learning plan

The outline learning plan has been included in this unit as guidance and can be used in conjunction with the programme of suggested assignments.

The outline learning plan demonstrates one way in planning the delivery and assessment of this unit.

| Topic and suggested assignments/activities and/assessment |
|---|
| Group introduction to unit content and potential activities (which may involve working with a client).<br>Group introduction to, and discussion with, specialist tutors, clients and work–related assessment provider(s).<br>Group planning for generic activities and resources in self-managed, directed, team and professional context. |
| Discuss and promote learner-initiated research, experimentation, evaluation and revision methodology, techniques and processes.<br>Discuss the importance of learner-directed methods for documenting research, experimentation, proposals, evaluations, revisions.<br>Demonstrate the importance of learner-directed timelines established, to include research, experimentation, recordings, proposals, evaluations, revisions. |
| **Assignment 1**: Analysing the Brief for a Large-scale Design Project<br>Learners and tutors conduct an initial appraisal of a large-scale design brief, making notes on scenario, content and requirements. This may involve working as an individual or as part of a team and will include discussions with peers and specialist tutors.<br>Learners in groups identify and clarify project parameters in consultation with clients, end users, peers and tutors.<br>Learners document and record discussions in a format for review and analysis and to develop a log of documents, diagrams and recordings that demonstrate useful analysis of the initial brief.<br>Learners and tutors consider analysis findings and discuss methods of implementing any agreed revisions and the rewriting of the design brief.<br>In groups learners, team will work up and submit the amended design brief to include any agreed revisions. This will be approved/amended by the client, end-user and specialist tutor. |
| Learner initiated study. |
| **Assignment 2**: Develop and Communicate Ideas for a Large-scale Design Project<br>Learners research examples of historical and contemporary examples of large-scale artwork/design.<br>Learners discuss their initial ideas with peers and specialist tutors for large-scale artwork/design.<br>Learners in groups develop ideas, producing sketches and concept models demonstrating use of materials, techniques and processes, for discussion.<br>Learners in groups present ideas internally to specialist tutors for ideas modification. |
| Learner initiated study. |

| Topic and suggested assignments/activities and/assessment |
| --- |
| **Assignment 3**: Communicate Development Work for a Large-scale Artwork or Design Project<br><br>Learners communicate development work for a large-scale artwork or design project through concept visuals and models.<br><br>Learners in design groups discuss and agree revisions and confirm any variations with specialist tutors and peers.<br><br>Learners in design groups implement development revisions and any variations.<br><br>Learners in design groups present design proposals which include rendered visuals, scale representations of individual elements, a detailed model of final outcome, in location context to demonstrate function and appropriateness.<br><br>Learners in design groups have taken guidance from peers and specialist tutors, through one to one and group critiques, to influence proposals.<br><br>Learners include health and safety references for working on large-scale design briefs. |
| Learner initiated study. |
| **Assignment 4**: Presenting the Final Outcome for a Large-scale Design Brief<br><br>Group discussion regarding reflective practice.<br><br>Learners devise (or use existing) reflective practice model with the support of specialist tutors, implement in the context design development revision.<br><br>Specialist tutors and learners agree any necessary revision proposals.<br><br>Learners in design groups implement any agreed revisions and present final outcome for large scale design project.<br><br>Learners in design groups produce design analysis report including:<br><br>• effectiveness and sustainability of design outcome<br>• appropriateness of design outcomes for client and end users<br>• time and resource management. |
| Learner initiated study. |
| Review of unit and assessment. |

## Assessment

For P1, learners must demonstrate their awareness and understanding of factors that affect design development. They will need assistance to explain and respond to a brief, as well as listing and describing the work of others, demonstrating which factors have influenced initial ideas and responses. They will need assistance to identify briefing parameters and constraints, and direction to develop a that, which demonstrates useful briefing understanding.

P2 requires learners to establish and communicate their ideas at all stages. They need to demonstrate relevant visual and verbal communication as well as the ability to recognise and record changes to designs and intentions. Initial ideas may be limited and tutor led.

P3 focuses on learners ability to build appropriate models. They are required to construct and utilise models throughout the design process as well as for final presentation.

For P4, learners should list of their working methods towards their final outcome(s).

Assessment evidence for P1, P2 and P4 could come from a combination of written and visual sources such as:

- research and project notes and images of their own and others' work
- ideas, sketched and initial design drawings
- development drawings, models and computer modelling
- models and photographic records of the construction process
- design log
- witness statements of one-to-one and group critiques
- reflective practice model
- design report.

Evidence for P3 could come primarily from the 3D work produced and interim presentation techniques

For M1, learners need to demonstrate consistency and purpose in the development and realisation of design outcomes that meet the requirements of a given brief. Learners must also exhibit a level of self-direction, independent and effective working.

For M2, learners must make clear, continuous and consistent links between independent research, meaningful analysis and evaluation of work, the development of ideas and the final outcome(s). The evidence should make clear the learner's awareness of the limitations as well as the potential of design ideas.

D1 requires a body of work that demonstrates the learner's understanding and individuality in the creation and presentation of large-scale design outcomes. At this level learners are required to produce professional outcomes in response to extensive research and development. Work presented should show the learner's awareness and understanding of functional and aesthetic elements and their ability to meet these with perceptive and creative responses. The tasks set may be the same as those for pass and merit criteria but should be carried out with informed comprehension, sophistication and independence.

## Programme of suggested assignments

The table below shows a programme of suggested assignments that cover the pass, merit and distinction criteria in the assessment and grading grid. This is for guidance and it is recommended that centres either write their own assignments or adapt any Edexcel assignments to meet local needs and resources.

| Criteria covered | Assignment title | Scenario | Assessment method |
|---|---|---|---|
| P1 | **Assignment 1**: Analysing the Brief for a Large-scale Design Project | Designer reviewing brief from client. | Recordings of discussions with clients, end users, peers and tutors to:<br>• review the brief<br>• establish parameters<br>• clarify any ambiguities.<br>Log to include:<br>• documents, diagrams and recordings, which show useful analysis of the brief.<br>Amended brief to include:<br>• any agreed revisions. |
| P2 | **Assignment 2**: Develop and Communicate Ideas for a Large-scale Design Project | Designer creating a pitch to win business. | Portfolio of evidence containing visual and recorded evidence of:<br>• informed research including historical and contemporary examples relating to large-scale design work<br>• development of ideas, including sketches, concept models, ideas modification, use of alternative materials, aesthetic alterations, physical alterations, experimental or scale models. |

| Criteria covered | Assignment title | Scenario | Assessment method |
|---|---|---|---|
| P3<br>M1 | **Assignment 3**: Communicate Development Work for a Large-scale Artwork or Design Project | Designer pitching ongoing work to clients. | Portfolio of evidence including:<br>• concept visuals and models which communicate all aesthetic and physical elements to meet the design briefing requirements.<br>Proposals presentation which includes:<br>• rendered visuals<br>• scale representations of individual elements<br>• detailed model of final outcome, in location context to demonstrate function and appropriateness<br>• health and safety references for working on large-scale design briefs. |
| P1, P2, P3, P4<br>M1, M2<br>D1 | **Assignment 4**: Presenting the Final Outcome for a Large-scale Design Brief | Designer in final stages of project:<br>• agreeing any proposed revisions<br>• implementing any agreed revisions. | Project presentation portfolio including:<br>• evidence of analysis and evaluation through use of reflective practice processes<br>• evidence of revision based on discussion with client, end users, peers and tutors<br>• final outcome for large-scale design project.<br>Reflective practice model and/or design analysis report including:<br>• effectiveness and sustainability of design outcome<br>• appropriateness of design outcomes for client, end users<br>• time and resource management. |

## Links to National Occupational Standards, other BTEC units, other BTEC qualifications and other relevant units and qualifications

This unit forms part of the BTEC Art and Design sector suite. This unit has particular links with:

| Level 1 | Level 2 | Level 3 |
|---|---|---|
| Introduction to 3D Design Crafts | Working in Product Design | Human-scale Design |
| Creative Use of Materials, Techniques and Processes | Working in Spatial Design | Large-scale Working |
| | Materials, Techniques and Processes | Public Art |

## National Occupational Standards

This unit also provides development opportunities for some of the underpinning skills, knowledge and understanding of the following National Occupational Standards:

**CCSkills Sector Skills Council**

Design (revisions in draft form June 2009)

- DES1 Apply research on the history and theory of design to your own design activities
- DES2 Apply design industry knowledge to inform your own design work practice and work
- DES3 Use Critical Thinking Techniques in your design work
- DES4 Communicate the importance of the design brief
- DES5 Follow a design process
- DES6 Work effectively with others in a creative environment
- DES7 Contribute to the production of prototypes, models, mock-ups, samples or test pieces.

## Essential resources

For design and production, learners must have access to 3D design workshops for hand and machine tools. Provision of malleable and non-malleable materials is essential for learners' design experimentation, development and design outcomes.

Equipment for cutting, shaping, modelling, carving, forming, constructing and moulding and for digital working practice is essential.

Learners also require photographic or video equipment for recording purposes, which will include gathering primary source material and keeping a record of models, maquettes and work in progress.

Access to design studios for group teaching and evaluation sessions, including large-scale design ideas origination and development, is essential. Facilities with both specialist and general learning support materials, including books, journals and periodicals, are vital for research purposes. Computers with appropriately updated design software are required to support learners' digital ideas, technical development and expertise. Access to the internet is required for historical, cultural and contemporary contextual research.

## Employer engagement and vocational contexts

Centres should develop links with practising artists, craftspeople and designers, to deliver assignments to learners or to provide work experience.

Links with employers are essential to the delivery of the programme for work experience and future employment.

Vocational learning support resources:

- Learning and Skills Network – www.vocationallearning.org.uk

Business and finance advice:

- local and regional Business Link – www.businesslink.gov.uk

Assignments should be vocationally relevant; centres should consider the delivery of 'live projects', for example, to support the vocational content of the unit and programme.

Creative and Cultural Skills (www.ccskills.org.uk), the Sector Skills Council for Arts, Crafts and Design, has launched the web portal Creative Choices (www.creative-choices.co.uk). This portal has a range of information about careers in the arts, crafts and design sector, including job descriptions.

## Indicative reading for learners

### Textbooks


Fuad-Luke A – *The Eco-Design Handbook: A Complete Sourcebook for the Home and Office* (Thames & Hudson, 2005) ISBN 978-0500285213

Lailach M – *Land Art: The Earth as Canvas* (Taschen 2007) ISBN 978-3822856130

Lefteri C – *Materials for Inspirational Design* (RotoVision, 2006) ISBN 978-2940361502

Mills C B – *Designing with Models: A Studio Guide to Making and Using Architectural Design Models* (John Wiley & Sons, 2005) ISBN 978-0471648376

Pearson L F – *Public Art Since 1950* (Shire Publications, 2006) ISBN 978-0747806424

Pipes A – *Drawing for Designers: Drawing skills, Concept sketches, Computer systems, Illustration, Tools and materials, Presentations, Production techniques* (Laurence King, 2007) ISBN 978-1856695336

Stace A – *Sculpture Parks and Trails of England* (A&C Black, 2008) ISBN 978-0713679526

Trudeau N – *Professional Modelmaking: A Handbook of Techniques and Materials for Architects and Designers* (Whitney Library of Design, 1995) ISBN 978-0823040988

Winslow C – *The Handbook of Model-Making for Set Designers* (The Crowood Press, 2008) ISBN 978-1847970190

**Journals**

*Architects Journal*

*Blueprint*

*Design Council Magazine*

*Design Week*

*Eco Design*

*FX*

*Fine Scale Modeller*

*Frame*

*Modelmaker*

*New Design*

**Websites**

| | |
|---|---|
| www.cfsd.org.uk/journal | The journal of product design |
| www.designcouncil.org.uk/en/about-design/design-disciplines/product-design | Product Design |
| www.digimation.com | Digimotion 3D models |
| www.modelshop.co.uk | 4D modelshop |
| www.publicartonline.org.uk | Public Art Resource |

## Delivery of personal, learning and thinking skills

The table below identifies the opportunities for personal, learning and thinking skills (PLTS) that have been included within the pass assessment criteria of this unit.

| Skill | When learners are ... |
|---|---|
| **Independent enquirers** | planning and carrying out research into specialist projects, analysing and evaluating briefs |
| **Creative thinkers** | exploring the design process and generating ideas |
| **Reflective learners** | reviewing, reflecting on and evaluating their own and others work |
| **Team workers** | collaborating with others to develop ideas, concepts, proposals, techniques and processes |
| **Self-managers** | organising time, planning resources, handling budgets when working to a specialist project brief, whether working on their own or as part of a design team |
| **Effective participators** | allowing for their own and others' requirements and proposals to be respected, considered, reviewed and actioned where appropriate. |

## Functional Skills – Level 2

| Skill | When learners are ... |
|---|---|
| **ICT – Use ICT systems** | |
| Select, interact with and use ICT systems independently for a complex task to meet a variety of needs | scanning and developing large-scale design ideas digitally<br>using software to develop large-scale design ideas<br>researching contextual and other information for the development of ideas for large-scale design brief |
| Use ICT to effectively plan work and evaluate the effectiveness of the ICT system they have used | planning project briefs and where and how ICT might be used when appropriate<br>evaluating outcomes and the appropriateness of medium |
| Manage information storage to enable efficient retrieval | researching from internet sources<br>downloading information<br>creating folders for storage and retrieval |
| Follow and understand the need for safety and security practices | undergoing induction period – introduction to the ICT centre and systems and working practices |
| Troubleshoot | |
| **ICT – Find and select information** | |
| Select and use a variety of sources of information independently for a complex task | researching internet sources, selecting from their research and developing their own response informed by research |
| Access, search for, select and use ICT-based information and evaluate its fitness for purpose | researching information for different briefs and activities<br>evaluating results of using digital research methods |
| **ICT – Develop, present and communicate information** | |
| Enter, develop and format information independently to suit its meaning and purpose including:<br>• text and tables<br>• images<br>• numbers<br>• records | designing digitally<br>using scanners<br>inputting and formatting information from sources |
| Bring together information to suit content and purpose | developing design ideas digitally<br>importing visual and textual information relevant to brief/activity |
| Present information in ways that are fit for purpose and audience | using digital means to plan, create and give presentations to different audiences |
| Evaluate the selection and use of ICT tools and facilities used to present information | assessing their progress and commenting on the appropriateness of their selection of ICT tools and facilities, eg use of software |
| Select and use ICT to communicate and exchange information safely, responsibly and effectively including storage of messages and contact lists | using email to submit written work<br>downloading information from internet sources<br>storing of information – creating folders for access |

| Skill | When learners are ... |
|---|---|
| **Mathematics** | |
| Understand routine and non-routine problems in a wide range of familiar and unfamiliar contexts and situations | recording visually: scaling, timing, measuring<br>using perspective and other methods of projection |
| Identify the situation or problem and the mathematical methods needed to tackle it | using measuring and orthographic projection for accuracy, and scaling<br>using software to observe and modify large-scale design ideas from different viewpoints |
| **English** | |
| Speaking and listening – make a range of contributions to discussions and make effective presentations in a wide range of contexts | discussing the project brief<br>describing the physical properties and characteristics of different large-scale design materials<br>contributing to group discussions and the sharing of ideas<br>evaluating their own and others' large-scale design ideas and finished work<br>presenting to target audiences |
| Reading – compare, select, read and understand texts and use them to gather information, ideas, arguments and opinions | researching, reading, selecting text and images annotating, commenting and comparing<br>using contextual texts and images to relate to their own large-scale design ideas<br>evidencing understanding through discussion, crit sessions, evaluations and presentations |
| Writing – write documents, including extended writing pieces, communicating information, ideas and opinions, effectively and persuasively | evaluating results of large-scale design ideas to meet the brief<br>annotating recordings and ideas for judgement of qualities and appropriateness in the use of selected large-scale design media, materials and techniques<br>analysing and evaluating selected artists' images for the purpose of developing their own work, using personal judgements and relating research to their own ideas<br>preparing presentations of final work. |