

# CONSTRUCTION AND THE BUILT ENVIRONMENT

How University Technical Colleges  
can deliver best practice



University  
Technical  
Colleges



Supported by  Edge

# The UTC movement

## Objectives of the Baker Dearing Educational Trust

- ▶ **To promote** the University Technical College concept and secure the opening of 100 UTCs across the country.
- ▶ **To support** University Technical Colleges so they provide a high quality education ensuring excellent outcomes for their students.
- ▶ **To protect** the concept of University Technical Colleges against erosion and contamination, maintaining and sustaining the brand.

## Key Values of University Technical Colleges

- ▶ Technical and academic education are integrated.
- ▶ Progression routes are planned and understood by students.
- ▶ The curriculum is responsive to the needs of employers and universities.
- ▶ Practical work is as highly valued as academic work.
- ▶ Students are given responsibility and accorded the respect which prepares them for employment.



### **The Baker Dearing Educational Trust**

4 Millbank, Westminster, London SW1P 3JA

Telephone: 020 7960 1555

Email: [director@utcolleges.org](mailto:director@utcolleges.org)

Website: [www.utcolleges.org](http://www.utcolleges.org)

# **CONSTRUCTION AND THE BUILT ENVIRONMENT**

**How University Technical Colleges  
can deliver best practice**

Report written by Graham Ball, Alan Bellamy and  
Nick Gooderson with the support of a range of participants  
convened by the CITB-ConstructionSkills.

# Contents

- Foreword .....5**
- Introduction .....6**
- Methodology .....6**
- Selected technical qualifications .....8**
- Further actions .....10**
- Annex A: Summary CBE curriculum content .....11**
- Annex B: Examples of progression .....24**
- Annex C: Exemplar distribution  
of guided learning hours (GLH) .....26**
- Annex D: UTC vision .....28**
- Annex E: Participants .....32**

# Foreword

The construction and the built environment sector is constantly changing before our eyes with new developments that make our world a safe and attractive place. From ultra-modern offices, state-of-the-art sports arenas and sprawling shopping centres to heritage sites, shops and family homes, construction literally shapes the towns and cities we live in. It covers a vast range of the built environment from the infrastructure of transportation to housing, retailing, services, hospitals and schools to commercial aspects. There are many and varied opportunities for young people to develop successful careers in this exciting and dynamic environment.

It is important that University Technical Colleges prepare their students appropriately for further study and employment in their chosen area of work. Employers, universities and UTC work closely together to develop innovative ways to integrate assessment into curriculum delivery and this is why I am pleased to recommend this report by CITB-ConstructionSkills in partnership with the Baker Dearing Educational Trust. It sets out technical qualifications valued by the construction and the built environment sector. A number of UTCs are specialising in construction and we look forward to their engagement with bright young students and their contribution to the construction and the built environment sector.

**The Rt Hon Lord Baker of Dorking CH**

Chairman, The Baker Dearing Educational Trust

# Introduction

1. In October 2011 the Baker-Dearing Trust in conjunction with Edge agreed to support the work of CITB-ConstructionSkills in reporting on technical, and applied qualifications in the construction and built environment sectors that would be respected by employers and the wider community.
2. It is anticipated that respected technical and applied qualifications will be used alongside a range of GCSEs at level 2, also to form the core curriculum for UTCs at Level 3 and individually and in combinations in other schools and colleges.
3. The lists of qualifications have been drawn from an analysis of relevant qualifications listed in Ofqual's Regulated Qualifications Activity Dataset (26/08/2011). The list of regulated qualifications is constantly changing and so it is important to recognise the limitations of working from what is effectively a snapshot of available qualifications. It is, therefore, important to understand that the information that provides the basis for this report is indicative of what is available at the time of writing.

## Methodology

6

4. Formal decisions on which qualifications to select for use in the design and delivery of UTC curriculum must rest with the Principal and their team. But is it hoped that by taking into account the information and advice set out in this report it will be possible to deliver an approach that has widespread support from employers and other partners.
5. The process developed and adopted here has been led by CITB-ConstructionSkills drawing on the feedback and guidance offered by a range of important partners who are listed in Annex E.
6. As previously noted the list of available and regulated qualifications is always changing and therefore what is listed and identified in this report should be considered an initial point of reference. Awarding organisations will, of course, continue to be free to make a case to individual UTCs for the inclusion or substitution of their qualifications over time.
7. The process we have undertaken to develop our shortlists of respected qualifications can be summarised as follows:
  - (a) Define indicators of construction and the built environment 'respect' for technical and applied qualifications.
  - (b) Provide indicators of technical and applied content and standards.
  - (c) Collect information about relevant regulated technical and applied qualifications.
  - (d) Undertake analysis against indicators of 'respect'.
  - (e) Consultation with partners.
  - (f) Check and review to ensure that recommended qualifications meet the indicators.

## Indicators of ‘respect’

8. The principal indicator of respect relates to content (see paragraph 16 below). In addition consideration has been given to issues relating to progression. The most important question concerns the likelihood that specific qualifications will lead to subsequent employment – within the construction and built environment or other sectors: clearly it is also important to consider how likely the qualification is to lead also to further and higher study. This is assigned a high priority.
9. Individual UTCs will also, of course, need to give careful consideration to their local context and it is right that final decisions should, therefore, be left to them.
10. It is also important to note that consideration has not been given to the wide range of specialist qualifications that are available to meet the needs of specific sectors, specific pathways for specialised further, higher and professional progression or specific and local employment progression requirements.
11. Additional indicators include:
  - ▶ Meeting the published UTC vision (see Annex D).
  - ▶ Providing a preparation for an apprenticeship in construction and the built environment. We would also look for evidence where appropriate of promotion of work experience and work related learning within respected qualifications.
12. We have decided not to attempt to weight qualifications by what is known about relative economic returns between types of qualifications. This is mainly because of data limitations, partly because by focusing on the highest qualification an individual has achieved it is not possible to disentangle the relative contributions of each qualification choice a student has made, and partly because most studies do not control for either ability or family background.
13. Competence-based qualifications were not considered to be appropriate target qualifications as these would require substantial experience of work achieved in a range of environments. It is very unlikely that students would be in a position to achieve competence-based qualifications whilst undertaking full-time study in education.
14. It is recognised that some UTCs may wish to include in their offer a range of opportunities to achieve Level 1 qualifications. However, at this stage this is something that was not considered an immediate priority and, therefore, we have not specifically addressed but is an area that maybe be explored at some point in the future.

## Content

15. An area that is considered to be of paramount and critical importance is the extent to which technical and applied qualifications are based on coverage of relevant content. Employers, professional bodies, education and other partners have led the development of a statement of content to support the Diploma in Construction and the Built Environment. Employers such as Lovell, Wates, Kier, Skanska, Balfour Beatty Construction and the Seddon Group, and the professions such as CIBSE, the ICE, the landscape Institute and BIFM are committed to the Diploma because they believe it will open up a career in the construction

industry to a wider range of young people, helping to ensure a better and bigger pool of potential new recruits. In an industry that is fighting for its share of talented people, there is a real need to recruit new employees with the right skills. The Diploma is unique as employers are involved in delivering parts of the curriculum. Employers can provide a range of support including for example, illustrated talks on topics such as modern methods of construction and environmental issues, site visits, careers events, work experience, practical projects and mentoring. Support can be provided by the network of Construction Ambassadors. Construction Ambassadors are people with a passion for construction, and who enjoy sharing that passion with students in schools and colleges. They are employed by local companies who are willing to release their staff to work with schools and colleges to promote construction. The Diploma builds up an understanding of the physical extent and significance of the built environment, and of the activities that shape, develop and influence it. Successful delivery requires employer involvement to bring the curriculum to life for the students. Employers support a combination of academic and practical learning that will give young people joining the industry a better understanding of what is involved.

16. The development of relevant content builds on earlier work that had been undertaken in relation to the development of vocational qualifications and more recently the GCSE in Construction and the Built Environment. The Principal Learning set out in the statement of content articulates a broad thematic vision of content for applied qualifications. It also represents a base standard (much as National Occupational Standards form the basis for NVQs and SVQs) to support those designing qualifications that are not occupationally competence-based and therefore offers a point of reference against which a wide range of qualifications can be considered. This is also considered to be a priority. The summary content is set out in Annex A.

## Selected technical qualifications

17. We have worked through the methodology summarised in Section 2 of this report. Our starting point has been to collect information about available qualifications from Ofqual. More than 56,000 qualifications were: listed on Ofqual's regulated qualifications activity dataset in September; or listed on Ofqual's Register of Regulated Qualifications in November. This dataset was scrutinised and analysed to narrow the potential list of respected qualifications.
18. In the first instance the qualifications were filtered to exclude those that did not appear to be relevant. Next all competence-based qualifications (including NVQs) were screened-out. Qualifications that did not appear to represent a broad-based coverage of construction and the built environment were also eliminated. The next step was to remove from consideration any qualifications that appeared to have expired and then we removed all duplicate qualifications from consideration. Qualifications that did not appear to be at an appropriate level were removed.
19. The remaining qualifications were then considered against the indicators of respect. The following lists of technical and applied qualifications are those which we believe would be respected:
- ▶ Alongside a suite of GCSEs as the technical component of the UTC curriculum at Level 2.
  - ▶ In combinations to form the core of the UTC curriculum at Level 3.
  - ▶ Individually and in combinations in other schools and colleges.

20. The final selection of technical and general qualifications is the responsibility of each UTC acting on the advice of employer and university partners.
21. The order in which qualifications are listed is not significant or based on any ranking. Awarding organisations other than those listed may offer these qualifications or similar variants. The titles may change between awarding organisations and as titles become revised for example as they are incorporated in the Qualifications and Credit Framework.
22. For students wishing to progress to higher education in specific areas there are also a range of smaller, specialist qualifications that may especially valuable to consider including awards such as the OCR Level 3 Certificate in Mathematics for Engineering.
23. Ofqual announced (on 4th November 2011) changes to the Diploma regulations. These included changes that have been designed to allow for the development of new qualifications based on existing Diploma components. The opportunity presented by these changes will be explored through working with awarding organisations and partners. It will be important to consider ways in which the curriculum content set out in Annex A could be reflected within revised or new qualifications to meet the needs of learners within UTCs. It will, therefore, be important to ensure that the advice set out in this document is kept under review and, if required, regularly refreshed so that it reflects the changes over time made to the qualifications framework.
24. Level 2
- ▶ AQA - City & Guilds Level 2 Principal Learning in Construction and the Built Environment
  - ▶ AQA - City & Guilds Level 2 Higher Diploma in Construction and the Built Environment
  - ▶ EDEXCEL Level 2 Principal Learning in Construction and the Built Environment
  - ▶ EDEXCEL Level 2 Higher Diploma in Construction and the Built Environment
  - ▶ OCR Level 2 Higher Diploma in Construction and the Built Environment<sup>1</sup>
  - ▶ WJEC Edexcel Level 2 Principal Learning in Construction and the Built Environment (Wales)
  - ▶ CCEA Level 2 GCSE in Construction and the Built Environment

#### 25. Level 3

- ▶ AQA - City & Guilds Level 3 Principal Learning in Construction and the Built Environment
- ▶ AQA - City & Guilds Level 3 Advanced Diploma in Construction and the Built Environment
- ▶ AQA - City & Guilds Level 3 Progression Diploma in Construction and the Built Environment
- ▶ EDEXCEL Level 3 Principal Learning in Construction and the Built Environment
- ▶ EDEXCEL Level 3 Advanced Diploma in Construction and the Built Environment
- ▶ EDEXCEL Level 3 Progression Diploma in Construction and the Built Environment
- ▶ OCR Level 3 Advanced Diploma in Construction and the Built Environment
- ▶ OCR Level 3 Progression Diploma in Construction and the Built Environment
- ▶ WJEC Edexcel Level 3 Principal Learning in Construction and the Built Environment (Wales)

<sup>1</sup> Note that the OCR Diplomas are listed on the Ofqual Register of Regulated Qualifications but they are 'wrapper' qualifications and do not, therefore, include the Principal Learning component of the Diploma in CBE.

# Further actions

During consultations with partners a range of issues were identified that were considered to be worthy of consideration as part of any future work in this area:

- ▶ **Qualifications development.** Changes announced<sup>2</sup> by Ofqual to the Diploma regulations included changes that have been designed to allow for the development of new qualifications based on existing Diploma components. The opportunity presented by these changes should be explored through working with awarding organisations and partners.
- ▶ **Level 4 provision.** There will be students in a UTC environment that would benefit from working at Level 4 – for example Level 4 degree units. These issues need to be assessed in the light of policies on Higher Education that are currently evolving. There will also be a need to liaise closely with BESA<sup>3</sup> HESDG on this issue.
- ▶ **Exemplifying the role of employers and Higher Education.** Employers and Higher Education staff and students offer much to UTCs in very many ways. Exemplifying this in case studies and advice notes would be helpful to emerging UTCs and other providers of technical education.
- ▶ **Work experience.** Providing students with work experience and experience of work is an important component of technical education. It can be provided in a variety of ways. Exemplifying this in best and future practice case studies and advice notes would be helpful to emerging UTCs and other providers of technical education. There may be a case for better preparation of students which includes the pre-requisites for apprenticeship such as on-site experience. In order to promote and encourage progression opportunities to apprenticeships it is also likely to be helpful to explore ways of working with partners involving local authorities to create apprenticeship opportunities and work experience.
- ▶ **A technical pedagogy.** New and alternative pedagogic practice will continue to emerge in UTCs. A guide to this would help orientate employers and others preparing to engage with UTCs and with wider technical education. Also advice relating to the design and use of the timetable, for example to help align the learning experience to that of employment, could be useful.
- ▶ **Guidance on funding.** Experience to date suggests that the standard formulas for assessing the scale and capital investment costs of equipping a school are not appropriate for UTCs and wider technical education. Variants are required.
- ▶ **Level 1.** As previously mentioned some UTCs may wish to include in their offer a range of opportunities to achieve Level 1 qualifications. This is an area that may need to be explored at some point in the future.

2 Ofqual announces changes to regulation of the Diploma 4th November 2011

3 Built environment Skills Alliance, Higher Education Strategy Delivery Group

# Annex A

## Summary CBE curriculum content

The following summary of curriculum content builds on that developed to support the Diplomas in Construction and the Built Environment. It is relevant for those designing specific programmes of learning in UTCs and in other schools and colleges but is also relevant to awarding organisations and bodies that are designing technical, vocational and applied qualifications in the area of construction and the built environment at foundation, higher and advanced levels.

### Overarching statement

Programmes should:

- ▶ Give opportunities to practise and acquire essential functional skills in English, Mathematics and ICT which are relevant to the level and delivered and assessed in the context of construction and the built environment.
- ▶ Enable individuals to acquire relevant personal, learning and thinking skills in a construction and built environment context.
- ▶ Offer progression to other Diplomas, to transfer laterally and progress to further training, apprenticeships and education.
- ▶ Aid effective transition to further education, work-based learning or higher education and to adult and working life.
- ▶ Provide a motivating learning experience for individuals, through a blend of general education and applied learning within a coherent and motivating programme.

Level 1 programmes should provide a broad introduction to the nature and extent of the built environment, the factors influencing its design and construction and its impact on people and communities.

Level 2 should provide an opportunity to develop and apply a range of skills and knowledge in relation to the design, creation, maintenance and use of the built environment.

Level 3 provide opportunities to analyse, evaluate and explore principles and practices relating to the social, economic and cultural contribution of the built environment and the wider factors influencing the design, creation, maintenance and management of the built environment.

### Design principles

Provision should be made for a breadth of learning opportunities for young people of all abilities who may or may not continue to explore the built environment.

Learners should be presented with a coherent and comprehensive picture of construction and the built environment in terms of the different demands made upon land use over time and the economic, social and environmental factors that influence this use.

Opportunities should be provided for learners to take a holistic view of the built environment: how solutions to needs are designed; the processes involved in creating buildings and structures; the value and uses of those buildings and structures; and the impact they have on communities and individuals. These three key themes should be treated in ways that reflect the complexity and nature of construction and the built environment.

Opportunities should be provided for learners to investigate, explore, analyse and review all aspects of the built environment through focused projects and practical tasks.

Opportunities should be provided for learners to develop a wide range of personal, learning and thinking skills stemming from the learning outcomes which encourage creativity, individual and collective enquiry, team working and reflection on experience.

Comprehensive guidance should be provided on career pathways and job roles across the built environment and the levels of educational attainment required for particular professional routes, early in the programme. It would also include information, advice and guidance on careers and educational opportunities generally, including employment.

Career information is a central part of the young person's entitlement and will:

- ▶ Identify families of job roles and their relationship to each other within the built environment.
- ▶ Explore typical career pathways and progression within each of the job roles.
- ▶ Understand the role of the relevant professional bodies both in personal career and professional development and in setting and maintaining performance and output standards in the sector.
- ▶ Identify the skills, attributes and competences required in a range of specific job roles.
- ▶ Recognise own skills mix and preferences in relation to careers within the built environment.
- ▶ Identify appropriate types of training available to develop skills required for specific job roles and how to access them.
- ▶ Identify the qualifications available for recognition of competence and any related entry requirements in relation to specific career pathways.

Programmes should also aim to:

- ▶ Promote innovative work related learning.
- ▶ Encourage opportunities for work experience.
- ▶ Aim to achieve learning through real or realistic sector situations.
- ▶ Treat sustainability and environmental issues in ways that they are integrated and embedded.
- ▶ Treat health and safety both in terms of specific health and safety issues in work activities and general awareness of health and safety practices and policies.

## Level 1 Foundation (240 glh)

### Design of the built environment - Learning outcomes

#### 1.1 Identify the social, economic and infrastructure factors influencing design

This provides learners with an introduction to the broad human and physical factors to be taken into consideration in the design process. This includes identifying how the size and composition of the community

influences the design of different buildings and structures; the role of the existing infrastructure in influencing future social needs including transport services; examining the impact of intended use and users on design; and the economic influence of materials, labour and land costs on design.

## **1.2 Explain how planning of the built environment impacts on design**

This provides learners with an introduction to how planning plays a major role in the design process. This involves identifying the local and national planning legislation and its impact on design; identifying appropriate ways of presenting designs at each stage of the planning process; recognising the need for different design solutions for different functions and purposes; and understanding how planning takes account of the local environment and local public opinion.

## **1.3 Develop an understanding of sustainability and environmental protection as it applies to the design of the built environment.**

This provides learners with an introduction to the contribution good design can make to creating a sustainable and protected environment. This involves identifying how the needs of flora and fauna are encompassed in the design process; identifying and investigating the types of materials that can be sourced from sustainable supplies; exploring the use of recycled materials and the preservation of limited natural resources; and identifying how local sourcing of materials can be taken into account in the design phases to benefit of the environment and support local communities.

## **1.4 Describe the properties of a range of materials and their impact on the design of the built environment.**

This provides learners with an introduction to how the design process takes into account the properties of different materials. This involves exploring the properties of materials available for construction in terms of their aesthetic impact, strength, durability, sound and thermal insulation and fire resistance; reviewing their suitability in relation to required function; considering their contribution to sustainability and environmental protection; and exploring issues of cost.

## **1.5 Explain why a range of structures are designed in the way they are.**

This provides learners with an introduction to the broad range of factors which will influence the design solution. This involves exploring how the design needs to take account of topography, ground conditions and movement and weather conditions; ways of maximising the use of structures to meet a variety of purposes to meet the needs of local communities; and to develop an understanding of how land availability and the density and nature of the population influence design solutions.

## **1.6 Demonstrate an understanding of design principles through the design of a simple structure.**

This provides learners with an introduction to processes involved in the creation of a realistic design for a specific structure. This involves establishing the function of the structure and exploring alternative design solutions; investigating the possibilities of different materials; evaluating the “buildability” (can it be built) of the design; and establishing the skills needed to implement the design.

## Create the built environment - Learning outcomes

### **1.7 Describe how construction methods and materials have changed over time**

This provides learners with an introduction to how mechanisation and new materials has influenced construction methods. This includes identifying the types of mechanical equipment available and their use and the types of modern materials available and how this has lead to increased productivity.

### **1.8 Apply safe working practices to undertake basic operations within the built environment.**

This provides learners with an opportunity to carry out a range of basic work activities which involves the selection of personal protective equipment (PPE) and safe methods of work .

### **1.9 Identify and describe the major requirements for health and safety and environmental protection.**

This provides learners with an introduction to the contribution good housekeeping makes to safety and protecting the environment. This includes identifying how the segregation and disposal of waste is carried out, and how good lighting, temperature control and welfare facilities contribute to maintaining good methods of working

### **1.10 Use a range of hand tools and equipment used in the construction crafts and building services.**

This provides learners with an introduction on how to use hand tools when working different materials. This involves sharpening and maintaining hand tools, using hand tools and equipment for basic activities.

### **1.11 Describe where and how sustainable materials and processes can be used during the construction of the built environment.**

This provides learners with an understanding of how to make best use of materials and processes to help sustain the built environment. This involves identifying what are sustainable materials and how they are processed and formed for use; identifying which materials can be re-cycled; and re-used and where they can be incorporated in the build process.

### **1.12 Identify a range of specified job roles in the built environment.**

This provides learners with an introduction to career opportunities within the construction and built environment. This involves identifying within construction and the built environment the occupations which make up the areas of craft, technical, supervisory and management, the scope of progressing within each and their relationship with each other including the range and role of Professional Institutions that exist.

### **1.13 Interpret a range of basic technical information.**

This provides learners with an introduction to the use of written and graphical information used in the construction and the built environment industry. This involves interpreting specifications, schedules drawing and manufactures information used at the operative and craft levels.

## Value and use of the built environment - Learning outcomes

### 1.14 Identify how the existing infrastructure and transport services impact on people and places.

This provides learners with an introduction to the visual and social impact of the built environment. This involves understanding the function of different structures and what they contribute to the built environment and the community; assessing the impact and contribution of landmark structures; identifying how the infrastructure affects people's lives including transport; and recognising how individuals and communities can influence the built environment around them.

### 1.15 Describe how the welfare of people who use the built environment can be ensured.

This provides learners with an introduction to how the built environment can add to the well being, happiness, safety, security and wealth of people. It involves understanding the impact of buildings and structures on where we live, how we travel around and the range of activities available to us; identifying ways in which the built environment can be made safer and more secure for people; identifying ways in which the built environment can be changed to improve our health; recognising the relationship between buildings and our quality of life; understanding the role of the built environment in providing us with economic opportunities.

### 1.16 Identify where and how sustainable materials and processes can be used in maintaining the built environment.

This provides learners with an introduction to the ways in which we can maintain a built environment which protects the environment and minimises use of scarce natural resources. This involves understanding the impact of the built environment on the natural environment; identifying where renewable materials can be used which do not harm the environment and can be recycled/re-used; understanding how individuals can contribute to the protection and maintenance of a protected environment.

### 1.17 Describe the life cycle of structures in the built environment and their contribution to economic and social development.

This provides learners with an introduction to how buildings and structures are planned, built, used and removed. This involves understanding the ways in which land is used for different purposes; identifying the stages involved in the design, planning, building, maintenance and operation and demolition of buildings and structures; understanding the commercial value and economic importance of buildings; understanding and exploring how changes in the built environment affect people's lives and change the nature of communities.

## Level 2 Higher (420 glh)

### Design the built environment - Learning outcomes

#### 2.1 Identify and explore the factors influencing the design process.

This provides learners with a good knowledge, understanding and application of the wider factors that need to be taken into consideration during the design process. This involves establishing the needs of community and the social impact of the proposed structure; exploring how economic factors influence design including project funding and the lifespan of the structure; identifying how the infrastructure influences design including transport; examining design can minimise the impact on the environment; examining the impact of intended use and users on design; and investigating the restrictions on design imposed by regulation and development policies.

## **2.2 Identify planning requirements and their impact on design.**

This provides learners with a good knowledge, understanding and application of the processes involved in responding to planning requirements in the design process. This involves identifying and exploring different types of planning requirements for a wide range of developments of different function and scale; understanding the impact of legislation on the design process; exploring a range of alternative design solution; ensuring that designs meet the regulatory requirements; and adapting designs to meet planning requirements

## **2.3 Examine the nature and use of utilities in the design of the built environment.**

This provides learners with a good knowledge, understanding and application of the processes involved in accommodating the availability and location of utilities in the design process. This involves understanding how the location and accessibility of utilities are taken into account; how utilities are distributed and scaled down; identifying how maintenance requirements for utilities are considered; and examining the environmental impact of utilities provision.

## **2.4 Investigate the use and properties of materials used in construction of the built environment.**

This provides learners with a good knowledge, understanding and application of the processes involved in understanding the nature of materials used in construction of the built environment and how they influence the design process. This involves examining the structure and properties of materials and their uses; exploring the different functions materials can perform; establishing the relationship of materials to each other; investigating the manufacture, preparation, location and securing of materials; and practising the use of selected materials.

## **2.5 Identify how the use of sustainable materials can influence the design process.**

This provides learners with a good knowledge, understanding and application of the principles involved in making best use of materials which protect and sustain the built environment. This involves understanding how sustainable raw materials are processed to form materials for sustainable use; exploring which materials are eco-friendly and can be re-cycled; and investigating the structural properties of sustainable materials and their influence on the design process.

## **2.6 Identify and make use of a range of technical information available to design the built environment.**

This provides learners with a good knowledge, understanding and application of the major categories of technical information to be considered in the design process. This involves identifying appropriate standards for material production, quality, methods of working and manufacturers' product information and their impact on design; identifying and interpreting environmental information on climatic conditions; and understanding the impact of local authority guidelines and requirements.

## **2.7 Analyse a range of common structural forms and building elements used in the design process.**

This provides learners with a good knowledge, understanding and application of the various alternative structures and components and their influence on the design process. This involves exploring the benefits of different frame structures and how they impact on design; investigating the nature and use of prefabricated elements and the common structural forms and materials associated with them; and identifying traditional on-site construction processes and their suitability.

## **2.8 Apply design principles through the design and evaluation of a complex structure.**

This provides learners with a good knowledge, understanding and application of the processes involved in the creation of a realistic design for a specific complex structure either in terms of multiple components or function. This involves establishing the function of the structure and exploring alternative design solutions; investigating the possibilities of different materials; evaluating the “buildability” (can it be built) of the design; and establishing the skills needed to implement the design.

## Create the built environment - Learning outcomes

### **2.9 Examine main job roles and their relationship to each other within the built environment and explore typical career pathways, qualifications and progression.**

This provides learners with a good knowledge and understanding of the variety of the job roles, careers and qualifications which are available. This involves identifying the main occupations within the areas of craft, technical, supervisory and managerial levels appropriate to construction and the built environment, career and qualification progression available in each and including how occupations relate to each other and the range and role of Professional Institutions.

### **2.10 Identify and use a range of technical information used in the construction of the built environment.**

This provides learners with a good knowledge, understanding and application of the information available and the ways in which it is presented. This involves identifying and exploring different formats of graphical and written information available and including accessing specifications, schedules and drawings from electronic data bases.

### **2.11 Investigate a range of methods and techniques used in the construction of ground works, substructures, superstructures and external works.**

This provides learners with a good knowledge, understanding and application of the work methods involved in forming the foundations of the structure and erecting the main framework. This involves understanding how structures can be built entirely in-situ or be part fabricated off-site, working below ground level and at height using mechanical equipment and manual work skills.

### **2.12 Identify a range of hazards and risks commonly encountered in the construction of the built environment.**

This provides learners with a good knowledge, understanding and likely hazards and risks encountered on-site and workshop. This involves exploring how materials have inherent hazards associated with their use and how methods of work should be devised to overcome risks associated with work activities in confined spaces, below ground level, at height and using equipment covered by legislation.

### **2.13 Identify and apply good practice in safe working techniques.**

This provides learners with a good knowledge, understanding and application of the principles of safe working.

### **2.14 Select and use a range of tools, materials and personal protective equipment to perform construction activities.**

This provides learners with a good knowledge, understanding and application of skills to use hand powered tools, natural and manufactured materials and associated personal protective equipment. This involves identifying and using appropriate tools and personal protective equipment related to operative, craft and technical occupations for a limited range of basic work activities and associated materials.

## Value and use the built environment - Learning outcomes

### **2.15 Identify and explore the social, environmental and economic components and benefits of sustainability.**

This provides learners with a good knowledge, understanding and application of the principles of sustainability and its contribution to the built environment. This involves exploring how sustainable materials and processes are used and their contribution to environmental protection; identifying how the use of local materials and services can contribute to the local community and reduce emissions and pollution; identifying how the local infrastructure and transport services influence the local environment; exploring the benefits of using materials from renewable sources and which can be re-used; exploring ways of balancing the social, environmental and economic impacts on the environment; and identifying ways in which individuals and organisations can contribute to sustainability

### **2.16 Identify and describe the contribution that the built environment makes to the physical, spiritual and emotional wellbeing and economic prosperity of individuals and communities.**

This provides learners with a good knowledge, understanding and application of the ways in which the built environment influences and impacts on individuals and communities. This involves exploring the contribution that each type of building makes to the quality of life in the local community; exploring how we can improve the built environment to enhance the safety and health of individuals and communities; identifying the impact of the local infrastructure including transport services on the quality of people's lives; exploring ways in which the built environment can promote or act against the wellbeing of individuals and communities; and investigating how the planning and development of the built environment can contribute to the creation of sustainable communities.

### **2.17 Describe the main activities and roles involved in maintenance and service support functions.**

This provides learners with a good knowledge, understanding and application of the processes involved in maintaining and supporting the built environment. This involves exploring the ways in which built structures are operated, managed and protected to ensure effective functioning, health and safety; and investigating how a range of building maintenance and service support functions are provided.

### **2.18 Explain the contribution of facilities management and support services to the maintenance, development and economic benefit of the built environment**

This provides learners with a good knowledge, understanding and application of the processes involved in preserving, maintaining and managing the built environment and how this contributes to wealth creation and quality of life. This involves investigating ways in which a wide range of building maintenance and management services are contracted and delivered; identifying the financial contribution of managed services to the economy; establishing and evaluating the contribution of maintenance and support services to enhancing the lifespan of buildings and structures and the economic and social benefits this brings.

### **2.19 Identify and explore the contribution of property services and housing to the development of the built environment and the wider community**

This provides learners with a good knowledge, understanding and application of the processes involved in the purchase and sale of built assets as well as their use for public and social purposes. This involves identifying the role of public and private housing and its contribution to social policy and the well being of communities; investigating the residential, industrial and commercial property market and its contribution to personal and organisational wealth; and reviewing how the private and public use of built assets makes a direct contribution to local economies and communities.

## Level 3 Advanced (540 glh)

### Design the built environment - Learning outcomes

#### **3.1 Explore the historical, political, infrastructure including transport, economic, social and aesthetic factors influencing the design process.**

This provides learners with the knowledge, understanding and application of the analytical skills involved in evaluating the impact of a wide range of factors influencing the development and design of the built environment. This involves investigating how the built environment has developed and changed over time and the factors influencing changing styles and approaches to design; investigating the impact of different political policies and priorities and their impact on design; identifying and evaluating the impact of different forms of private and public funding on built environment projects and evaluating the influence of the cyclical nature of economic growth and recession; exploring how the built environment responds to community needs, social integration and contributes to social engineering; identifying how infrastructure requirements influence design including transport and exploring various architectural styles, landmark projects and the relationship between function, form and visual appearance.

#### **3.2 Identify and explore the principles and methods involved in urban design and their influence on the urban environment**

This provides learners with the knowledge, understanding and application of the principles and methods involved in urban design and the factors influencing the existing and future spatial structure of urban form. This includes an exploration of the design and governance of urban spaces and their contribution to social inclusion, economic growth, environmental sustainability, transport strategies and the quality of life. Learners will also be given the opportunity to develop and experiment with a range of design skills in order to manipulate space and produce alternative strategic and detailed representations of the urban environment. The interdisciplinary nature of urban design will also be explored.

#### **3.3 Identify and explore the various stages of the design process**

This provides learners with the knowledge, understanding and application of the principles involved in taking a design through the complete design cycle. This involves identifying ways of establishing and verifying client requirements/brief; exploring the visual impact of the proposed design in relation to function; exploring ways of developing preliminary and refined design solutions; identifying the different relationships in the process including client/agent and design team; identifying regulatory and planning requirements in relation to designs; identifying the technical and physical processes involved in realising the design including structural engineers and contractors; and exploring the ways in which the design solution is translated into working drawings and specifications to permit its construction.

#### **3.4 Examine the various stages of the planning process and evaluate the important factors that affect planning procedures and decisions.**

This provides learners with the knowledge, understanding and application of the processes involved in the planning cycle. This includes identifying and evaluating the primary social, political and economic factors that influence the planning process; interpreting planning requirements and developing a strategy to achieve an acceptable design solution; identifying appropriate treatments of the design solution at each stage of the planning process; identifying ways of responding to circumstances to ensure continuing compliance with planning permission; and identify the monitoring and approval requirements to ensure compliance with planning permission.

### **3.5 Examine the health, safety and environmental factors influencing the design of the built environment.**

This provides learners with the knowledge, understanding and application of the principles involved in ensuring that health, safety and environmental protection (HSE) are fully reflected in the design process. This involves identifying ways of incorporating HSE factors which ensure the safety and well being of people using the built environment; identifying ways of responding to regulatory requirements for HSE; investigating ways of conducting risk assessment and incorporating risk management in the design process; investigating ways of ensuring the security of people using the built environment; and investigating the design implications of maximising energy efficiency and environmental protection.

### **3.6 Investigate the provision of primary services utilities to the design of buildings in terms of the main features, basic operating principles and the materials used.**

This provides learners with the knowledge, understanding and application of processes to ensure the external supply of utilities and the functioning of building services are accommodated within the design process. This involves identifying how the provision, location, accessibility and maintenance of utilities influence the design process; understanding how utilities are scaled down to provide effective supply; investigating the implications for design of how utilities are distributed; investigating ways of ensuring that environmental and energy efficiency are taken into account during design; and investigating ways of building in factors which will enhance the management of the built environment.

### **3.7 Identify the impact of projected climate change on the design of the built environment and on ways of minimising energy demand and reducing emissions to air, land and water.**

This provides learners with the knowledge, understanding and application of principles which ensure that the design process takes full account of environmental and climatic changes and future predictions. This involves understanding and evaluating the influence of global warming on the built environment; identifying ways of designing in protection of the built environment against changes in the water table and drought; investigating how design processes can minimise emissions to the air and contribute to energy efficiency; understanding how waste disposal can affect land pollution and how the design process can minimise this; and investigating ways of designing in the most effective form of heat exhaust. Learners will also gain an understanding of the role of energy use, sourcing, management and renewal and their contribution to the built environment. This will involve gaining an understanding of the principles of renewable energy and their impact on technical, economic and social factors in the design process. Different sources of energy will also be explored as well as ways in which energy performance can be enhanced as a contribution to the responsible design of the built environment.

## **Create the built environment - Learning outcomes**

### **3.8 Examine main job roles and their relationship to each other within the built environment and explore career pathways, qualifications and progression.**

This provides learners with the knowledge, understanding to explore relationships between varying occupational job roles their career progression and relevant qualifications. This involves investigating the occupational structure of the construction and the built environment industry in relation to craft, technical, supervisory and management job roles and identifying and linking pathways for career progression and the appropriate qualification routes relating to each and including the range and role of Professional Institutions.

### **3.9 Identify ways of protecting and maintaining the environment during construction of the built environment**

This provides learners with the knowledge, understanding and application of the principles involved in safe guarding structures and their surrounding areas during construction. This involves identifying regulatory requirements and planning conditions governing the construction process and how companies and employees implement procedure to comply with given laid down requirements and conditions.

### **3.10 Identify and evaluate the construction processes required to construct the sub and superstructures of a range of buildings, including finishes and services.**

This provides learners with the knowledge, understanding and application of processes needed to develop a working knowledge of the building technology required to bring a typical construction project to a successful conclusion.

### **3.11 Identify and evaluate a range of project management tools and techniques.**

This provides learners with the knowledge, understanding and application of processes involved in the management of projects. This includes identifying and evaluating personal skills required for dealing with individuals and groups of employees and the recognition of the skills required to manage strengths, weaknesses, opportunities and threats associated with construction and built environment projects.

### **3.12 Identify and evaluate a range of quality assurance and project monitoring processes.**

This provides learners with the knowledge, understanding and application of the procedures needed to ensure the quality of work meets the given specification and how the project is monitored throughout the build process. This involves identifying and evaluating ways to “snag” the work during and on completion of the work programme, and monitoring and evaluating material and labour costs, work in process, plant hire costs and production costs as part of the project process.

### **3.13 Identify and evaluate the health, safety and environmental factors influencing the creation of the built environment.**

This provides learners with the knowledge and understanding to monitor the magnitude of health and safety and environmental issues created by the build process. This involves identifying current legislation and information on non-fatal injuries and fatalities, evaluating their influence on the build process in terms of the cost of safety and evaluating cost implications associated with the supply chain, sustainability of resources and implementation of modern methods of construction.

### **3.14 Compare existing and developing processes used in the creation of the built environment and evaluate their impact.**

This provides learners with the knowledge and understanding of some key methods used in the creation of the built environment. This involves evaluation of traditional techniques in comparison with modern methods, considering their impact on cost, duration of project time, health, safety and environmental risks, and how they impact on the needs of society.

### **3.15 Identify and evaluate the principles of renewable energy and its technical and social implications**

This provides learners with the knowledge, understanding and application of energy production, energy conservation and energy audit with regard to renewable energy sources.

### **3.16 Identify and evaluate ways of conserving natural resources and recycling waste in the creation of the built environment.**

This provides learners with a good knowledge, understanding and application of the principles involved in making best use of materials to sustain resources for the built environment. This involves understanding how sustainable raw materials are processed to form resources for sustainable use; exploring which materials are eco-friendly and can be re-cycled; and investigating the uses of sustainable materials and how they influence the construction of the built environment.

## Value and use of the built environment - Learning outcomes

### **3.17 Describe and evaluate ways of engaging stakeholders and communities in the development and use of the built environment and the local infrastructure including transport.**

This provides learners with the opportunity to analyse, evaluate and explore principles and practices in relation to engagement of the whole community in the creation and use of the built environment. This involves evaluating the role and contribution of the primary stakeholders in the built environment and their different perspectives and interests; investigating ways of balancing the needs of different stakeholders and communities; and evaluating alternative ways in which individuals and communities can contribute to and influence decisions about the development of the built environment.

### **3.18 Identify ways of protecting and maintaining the environment during use of the built environment.**

This provides learners with the opportunity to analyse, evaluate and explore principles and practices in relation to ensuring the use of buildings and structures protects the environment. This involves identifying ways of minimising energy demand and reducing emissions to air, land and water; identifying sustainable processes which optimise social, economic and environmental benefits; identifying the contribution of the local infrastructure including transport services to the maintenance of the built environment; evaluating technologies and materials which can contribute directly to sustainability; exploring ways of engaging stakeholders and communities in protecting the built environment; evaluating methods of ensuring that buildings and structures are protected from damage and kept secure.

### **3.19 Evaluate the social, economic and commercial contribution of the built environment to the wider community.**

This provides learners with the opportunity to analyse, evaluate and explore principles and practices in relation to the contribution of the built environment to economic activity, prosperity and social cohesion. This involves identifying the economic and business drivers within the built environment and how this influences its development; evaluating the financial contribution of built environment activities to the broader economy; and investigating the contribution of the built environment in achieving social objectives and community development. Learners will also gain an understanding of the contribution made by planning to the well being of individuals and communities, social cohesion and community development. Learners will understand the primary social, political and economic factors that influence the planning process and how they relate to other components of the design process.

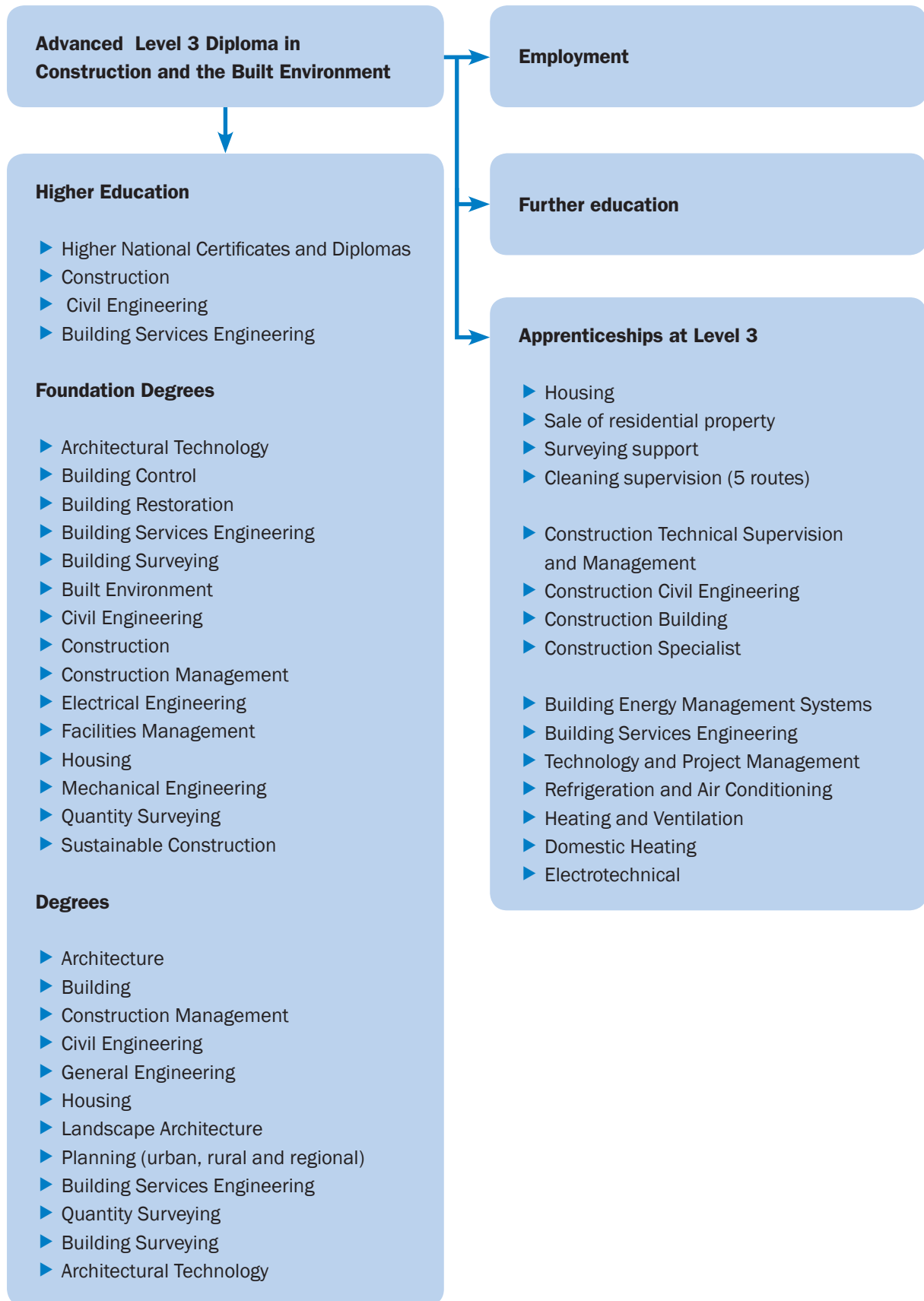
### **3.20 Evaluate the role of asset management in the economic and social development of the built environment**

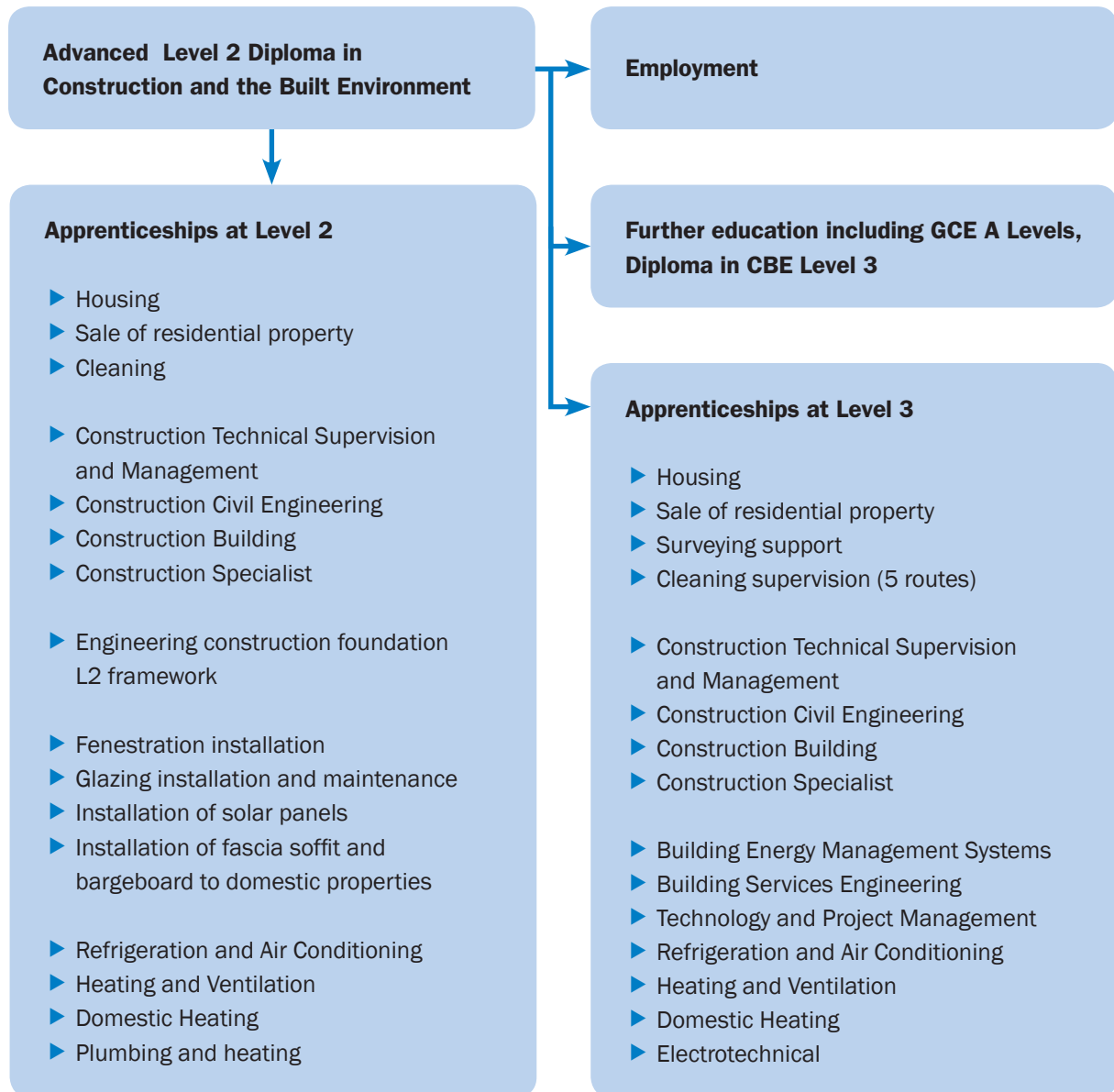
This provides learners with the opportunity to analyse, evaluate and explore principles and practices in relation to the management of built assets to achieve economic and social benefits. This involves identifying the full range of asset management activities for both private and public provision; evaluating the financial value of asset management services and their contribution to the national and local economy; evaluating the impact of asset management services on the lifespan, financial viability and social utility of built assets; and identifying and evaluating the impact of well managed assets on the safety, comfort and well being of individuals and communities.

### **3.21 Identify and evaluate ways of protecting the physical structure of the built environment**

This provides learners with the opportunity to analyse, evaluate and explore principles and practices in relation to how the physical fabric of the built environment is kept secure. This involves identifying and evaluating techniques for maintaining the integrity of the structure from damage from the elements and people; identifying ways of protecting the built environment in order to extend its period of usefulness; identifying and evaluating the contribution of protecting the built environment to social and community objectives.

# Annex B: Examples of progression





# Annex C: Exemplar distribution of guided learning hours (GLH)

The purpose of this annex is to provide an indication of the guided learning hours that could be available for technical studies in a typical UTC. Example 1 refers to 14 to 16 year old students at Key Stage 4 and Example 2 to 16 to 19 year old students.

## Example 1 – students 14 to 16 years

Two years.

40 weeks per year.

School week: 43 hours or 35 hours excluding breaks etc.

1,400 hours per year.

60:40 split general / technical education.

Per year: general 840 hours and technical 560 hours.

### Technical (1120 hours – in this example over two years)

▶ Technical Qualifications (Diploma PL Level 2).....	420 Hours
▶ Project.....	60 Hours
▶ Employment related subjects or skills.....	640 Hours

### General including core GCSEs (1680 hours – in this example over two years)

▶ Science.....	240 Hours
▶ Maths.....	120 Hours
▶ English.....	240 Hours
▶ Language.....	120 Hours
▶ Humanities.....	120 Hours
▶ ICT.....	120 Hours
▶ Personal Learning Thinking Skills.....	60 Hours

### Other studies

▶ PHSCE (may not lead to a qualification).....	80 Hours
▶ PE (may not lead to a qualification).....	180 Hours
▶ Extension or additional studies.....	320 Hours
▶ Careers.....	60 Hours
▶ Financial literacy (may not lead to a qualification).....	60 Hours
▶ Entrepreneurial studies and activities.....	60 Hours

Other distributions could be employed including for example other distributions of core GCSEs could be favoured – such as increasing the time spent on Science , adding further study of ICT, study of related subjects such as art and design or design and technology.

## Example 2 – students 16 to 19 years

Two years.

40 weeks per year.

School week: 43 hours or 35 hours excluding breaks etc.

40:60 split general / technical education.

Per year: general 560 hours and technical 840 hours.

### Technical (1680 hours over two years)

- ▶ Technical Qualifications (Diploma PL Level 3).....540 Hours
- ▶ GCE Maths.....360 Hours
- ▶ Project.....120 Hours
- ▶ Employment or specialist related subjects or skills.....600 Hours
- ▶ Employee rights and responsibilities.....60 Hours

### General (1120 hours over two years)

- ▶ Language.....120 Hours
- ▶ PE (may not lead to a qualification).....180 Hours
- ▶ Extension or additional studies.....500 Hours

## Annex D: UTC vision

Quoting from [www.utcolleges.org](http://www.utcolleges.org):

- ▶ **What is a UTC?** - A college for students aged 14 to 19 which specialises in technical studies and is sponsored by a university. It offers full time courses which combine practical and academic studies.

It would allow a student to study a subject they are really interested in which is taught by teachers with real life practical experience and in industry standard facilities. By the time they are 16 they will be at least two years ahead of where they would be in a normal school.

- ▶ **How will a UTC improve job prospects?** - Employers play a major part in University Technical Colleges. They help plan what students are going to learn and ensure that the qualifications students gain are what employers require. They also meet the students on work placements and so can get to know them.

Students can either go onto to a high level apprenticeship in employment or onto a university. The college will help them decide which is the best route for them.

- ▶ What qualifications will they offer? - This will vary from College to College but all offer a combination of GCSEs in English, maths and science combined with practical and technical qualifications which are recognised by employers and universities.

- ▶ University Technical Colleges are a new concept in education. They offer 14-19 year olds the opportunity to take a highly regarded, full time, technically-oriented course of study. They are equipped to the highest standard, sponsored by a university and offer clear progression routes into higher education or further learning in work.

**“We want to forge a partnership between vocational education and universities, FE colleges and employers” Lord Baker**

- ▶ The students combine hand and mind to learn in a very practical way, integrating national curriculum requirements with the technical and vocational elements. The college ethos and curriculum is heavily influenced by local and national employers who also provide support and work experience for students.
- ▶ University Technical Colleges specialise in subjects that require technical and modern equipment, for example, engineering, product design, health sciences, construction, and land and environmental services. However they all teach business skills and the use of ICT. The chosen specialism reflects the university's areas of excellence and the needs of local employers.
- ▶ A fundamental principle of University Technical Colleges is that they do not judge students on their past performance. Students are given new opportunities and new ways of learning which allow them to achieve to a higher level than they may have done before

Quoting from *A UTC Curriculum Framework – 10th November 2010* (Baker-Dearing Educational Trust)” features of a UTC curriculum include:

- ▶ A school day which runs from 8.30am to 5.30pm except for Mondays and Fridays when the finish would be 4.30 pm.
- ▶ A school year of 40 weeks and have either 4 or 5 terms.
- ▶ A comprehensive CPD policy which requires staff to remain up-to-date including experience of the employment sector.
- ▶ Every student has a mentor provided by local employers and/or the science and engineering ambassadors programme.
- ▶ Students will have completed any “homework” (under supervision) by the end of the school day and not have work to do at home.

### The curriculum model for 14-16 year olds

- ▶ The core national curriculum requirements will be provided. The split of time between general education / bridging core studies and technical studies is 60:40 respectively.

General education / bridging core studies: English; mathematics; science; a modern language; humanities ; sport/PE; PSHE (including personal and employability skills); RE; enrichment activities; Financial literacy; understanding and setting up a business; IT ; and careers education and guidance.

Technical studies: broad technical studies e.g. engineering; experience of work (10% of the total time for this component); projects ( proposed by employers as far as possible); and mentoring.

The modern language would be the technical and general language associated with the technical study, enabling students to be technically competent in the language. For some students a GCSE course may also be followed.

The humanities will cover the history and geography of the development of the technical study, including major developments and the people responsible.

The mathematics and English studies, while aimed at GCSE will be supplemented by material that ensures basic numeracy and literacy are secure to the standard expected by employers. Much of this material will be taught as part of the technical studies, not separately.

The enrichment activities will include a range of experiences from further sport to community service to drama and art.

## The curriculum model for 16 to 19 year olds

- ▶ Post-16 students will be able to continue with their studies or they may choose to do an apprenticeship which might include part-time study at the UTC.

If students choose to continue full-time study at the UTC the split of time between general education/bridging core studies and technical studies will become 40:60 respectively. The technical study will become more specialised and job-related and the content should not only lead to a technical qualification but also to a professional qualification such as “Eng Tech” or “TechSc”, both of which are in the process of being developed and recognized by the professional bodies concerned. These will enhance employability and provide much needed skilled technicians.

General education / bridging core studies: English; mathematics; science ; sport/PE; business understanding; IT; careers education and guidance; modern languages; short courses; employability skills.

Technical studies: Job specific content and professional qualification content; experience of work (equivalent of 1- day per week); projects ( provided by employers) and mentoring.

The English work will centre on report writing and presentation skills, both oral and written (CV etc).

The mathematics should support the requirements of the technical study as should the science. For many students these two subjects may well be studied to A-level or its equivalent, thus ensuring students have as many pathways open as possible. Short courses could include Level 4 units of study drawn from the sponsoring University or from the Open University.

The content of the technical studies should be determined by employers and higher education and also include any content needed to enable students to achieve the technician qualification.

The experience of work both pre and post sixteen is substantial and will have to be planned with the full support of employers. Between 14 and 16 all students will have at least 40 days experience of work increasing to 80 days between 16 and 18. The experience may be in blocks or shorter periods, in term time or in the holidays. It will all be related to the curriculum and assessed. It is recommended that all work place mentors are trained in order that the student receives a very high quality experience.

The curriculum, whether at 14 to 16 or 16 to 19 must provide qualifications at Levels 1 - 2 (GCSE) and 3 (A-level or equivalent) thus providing real progression and no dead ends. It is essential that employers are consulted to ensure that they recognize and value the qualifications the students are studying for. Post-16 the apprenticeship option must also be offered.

The employability skills mentioned should be explicit but integrated into the Mainstream studies as appropriate. These include: team work; problem solving; customer service; oral presentation ; influencing (peers and seniors) self-management/time management; self-awareness/self-reflection; global and cultural understanding; self motivation and importance of values.

Careers advice and guidance should also be explicit but integrated into the normal curriculum. Experience of work can make an important contribution to this. However much work will need to be done to provide high quality information and guidance for students. Current provision in schools falls well short of what is needed.

## Qualifications

All courses will be available to GCSE, A-level or their equivalents as well as some at Level 1 . There will also be the professional qualifications available related to technician level. However it is possible that new courses and qualifications may need to be developed, particularly round the modern language and humanities studies, but whether every study unit should be separately qualified remains an open question.

One possibility is to develop a new “English Tech Bac” in which would sit existing separately qualified subjects while other studies could be assessed less formally. It is intended to investigate this and any new qualifications/courses needed over the coming period.

## Annex E: Participants

Roger Godfrey.....	<i>Alpha Base</i>
Tom Boyle.....	<i>Alphabase</i>
Nigel Powell.....	<i>Anglia Ruskin University</i>
David Bell.....	<i>Asset Skills</i>
Brian Law.....	<i>Association for Project Safety</i>
Jim Rimmer.....	<i>Aston University</i>
Pauline Odulinski.....	<i>Aylesbury College</i>
John Jones.....	<i>Aylesbury College</i>
Sarah Utterson.....	<i>BBCL</i>
Alan Cornthwaite.....	<i>Bolton College</i>
Valerie Everitt.....	<i>British Institute of Facilities Management</i>
Trevor Nicholls.....	<i>Buckinghamshire</i>
Keith Donnelly.....	<i>Carillion Plc</i>
Robert Shore.....	<i>Central Bedfordshire UTC</i>
Carly Taylor.....	<i>Central Bedfordshire University</i>
Angela Ringguth.....	<i>CIBSE</i>
David Cracknell.....	<i>CIC</i>
Rob Roseveare.....	<i>City and Guilds</i>
Gareth Williams.....	<i>ConstructionSkills</i>
Paul Allford.....	<i>ConstructionSkills</i>
Mike Peters.....	<i>ConstructionSkills</i>
Eric Griffiths.....	<i>Consultant</i>
Tim Brown.....	<i>De Montfort University</i>
Steve Franklin.....	<i>ECITB</i>
Steve Franklin.....	<i>ECITB</i>
Jim Dobson.....	<i>Edexcel</i>
Paul Bailey.....	<i>Engineering Council UK</i>
Ruth Wright.....	<i>Engineering Council UK</i>
Rob Moore.....	<i>EU Skills</i>
P Brown.....	<i>Grimsby College</i>
Andrew Stanley.....	<i>Institute of Civil Engineers</i>
Michelle DaCosta.....	<i>Institute of Highway Incorporated Engineers</i>
Ian Dickerson.....	<i>Kier Group</i>
Tracey Buchan.....	<i>Kier Group</i>
Sarah Chaplin.....	<i>Kingston University</i>
Ian Billyard.....	<i>Leeds College of Building</i>
David Keel.....	<i>Leeds Metropolitan University</i>
Francis Stewart.....	<i>Lewisham</i>
Bob Parker.....	<i>Lifelong Learning Network</i>
Barry Symonds.....	<i>London South Bank University</i>
Tony Thorpe.....	<i>Loughborough University</i>
Bruce Boughton.....	<i>Lovell</i>
Jason Snelling.....	<i>MottMac</i>
Brian Cairns.....	<i>MOVE Lifelong Learning Network</i>

John Hoppitt.....	<i>Nottingham Trent University</i>
Peter Ramsay-Dawber.....	<i>Nottingham Trent University</i>
Charlotte Bosworth.....	<i>OCR (Oxford, Cambridge and RSA Examinations)</i>
John Raftery.....	<i>Oxford Brookes University</i>
Dianne Gomery.....	<i>Pearsons</i>
Neil Robinson.....	<i>ProSkills</i>
Dillwyn Rosser.....	<i>QualifyMe Ltd</i>
Nick Evans.....	<i>RICS Education and Qualification</i>
Aled Williams.....	<i>Salford University</i>
Helena Shone.....	<i>Seddon</i>
Roy Cavanagh.....	<i>Seddon</i>
Miriam Lewis.....	<i>Skanska</i>
Mohammed Patwa.....	<i>Southwark</i>
Mark Silverman.....	<i>Southwark College</i>
Anthony Farragher.....	<i>Southwark College</i>
Phil Whitehead.....	<i>Staffordshire University</i>
Catherine Elliott.....	<i>SummitSkills</i>
John Proctor.....	<i>T2000</i>
Lee Nicholls.....	<i>Oxford and Cherwell Valley College</i>
Rhys Holdaway.....	<i>The Engineering and Technology Board</i>
Suzanne Beard.....	<i>The Landscape Institute</i>
Peter March.....	<i>University of Bolton</i>
Anne Boddington.....	<i>University of Brighton</i>
Chris Baker.....	<i>University of Central England in Birmingham</i>
Sarah Fuller.....	<i>University of Central Lancashire</i>
Cliff Nicholls.....	<i>University of East London</i>
Margot Richardson.....	<i>University of East London</i>
Michael Sharp.....	<i>University of Greenwich</i>
Richard Hayward.....	<i>University of Greenwich</i>
Don Gray.....	<i>University of Kent</i>
Jeremy Gould.....	<i>University of Plymouth</i>
Mhairi Mackie.....	<i>University of Plymouth</i>
Geoffrey Cook.....	<i>University of Reading</i>
Buick Davison.....	<i>University of Sheffield</i>
Ian Burgess.....	<i>University of Sheffield</i>
Tom Welsh.....	<i>University of Southampton</i>
Peter Fiddler.....	<i>University of Sunderland</i>
Catherine Higgs.....	<i>University of West of England</i>
Brian Jones.....	<i>University of Westminster</i>
Phil Harris.....	<i>University of Wolverhampton</i>
Anne Hann.....	<i>UWIC</i>
Chris Simpson.....	<i>Wates</i>
Andrew Platten	
Bob Baker	



CITB-ConstructionSkills is the Industrial Training Board (ITB) for the construction industry in Great Britain (Scotland, England and Wales). It works to ensure that construction employers have the right skills, in right place, at the right time by investing funds and providing a wide range of industry-led skills and training solutions.

We are also a partner in ConstructionSkills, the Sector Skills Council (SSC) for the UK construction industry, and we are raising employer engagement in training, providing labour market insights on future skills needs and developing standards and qualifications for the sector.

As an ITB and SSC we are providing vital support to a sector which is central to the UK economy.

For more details on our work please visit [www.cskills.org](http://www.cskills.org).





**University  
Technical  
Colleges**

**Baker Dearing Educational Trust**

Registered charity no 1138894. Registered company no 7390138

© Baker Dearing Educational Trust, 2011