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Background

With the change of government and the publication of the Wolf Report for England and Evans Report for Wales the position of 14 to 19 non-vocational qualifications including the Diploma qualifications had become increasingly insecure. Without DfE support English schools and colleges started to withdraw from delivery of the Diploma: whilst the Principal Learning element of the Diploma had been piloted in Wales take-up was slow. Work with the Baker Dearing Trust to support University Technical Colleges (UTCs) included a report for the Trust on ‘How University Technical Colleges can deliver best practice’: in this report it was proposed that the content of the Diploma would be 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.

Towards the end of 2012 an Advisory Committee for 14 to 19 Construction and the Built Environment Education was established under the chairmanship of Roy Cavanagh MBE (Seddons). The committee is convened by CITB ConstructionSkills and includes membership drawn from a range of organisations representing the breadth of the construction and built environment education. These organisations include employers, professional bodies, sector skills councils/bodies, universities, further education and schools. The committee: has its origins in the Construction and the Built Environment Diploma Development Partnership; is not funded by the UK Government or devolved governments and operates entirely on voluntary effort and employers have chosen to invest their time in it. The committee is focused on providing a public voice for those with a legitimate interest in construction and the built environment education. Its role is to provide strategic direction for a programme of work to support the definition, recognition, use and value of standards for education in construction and the built environment 14 to 19.

At the first meeting of the Advisory Committee in December 2012 it was agreed that consideration should be given to establishing and then promoting credible 14 to 19 standards based on the content for the Diploma in CBE. A small steering group was created (led by Bridget Bartlett, Chief Operating Officer, Chartered Institute of Building) to lead a programme of work to: ensure that the standards meet the needs of 14 to 19 learners and employers and provides a sound basis for progression to apprenticeships, further, higher and professional education and training and employment; ensure that the content not only continues to provide the basis for the content for the Principal Learning Qualification but also forms a unique standard which is a point of reference and specification for school and college-based 14 to 19 learning, curriculum and qualifications in the context of construction and built environment; identify and address any issues concerning content and design and particularly to test that the thematic approach remains one that continues to be supported and valued.

Following from the review of the ‘core standards’ it is proposed that there should be further work to help ensure that the optional or specialist learning relevant to the construction and built environment sector is up to date, comprehensive and relevant.
This document presents proposed draft 14 to 19 core UK standards for construction and the built environment education.

The consultation questions are set out in an annex to this document.
Overarching Purpose

The core standards have been designed to support a programme of applied and practical learning which introduces young people to the fabric of the world in which we live and its impact on individuals and communities. It progressively builds up an understanding of the physical extent and significance of the Built Environment and of the activities that shape, develop and influence it.

Programmes based on these standards should provide different opportunities to explore the Built Environment at different levels and will:

- Offer progression and 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 the basis for a motivating learning experience for individuals, through a blend of general education and applied learning within a coherent and motivating programme.

Standards 1 to 3 together 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.

Standards 4 to 6 together 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.

Standards 7 to 9 together 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

The suite of standards provides opportunities to explore construction and the built environment at different levels.

We recommend that the following design principles should be taken into account by awarding bodies in the future development of relevant qualifications including those designed to replace the Diploma in Construction and the Built Environment in England. These principles will also provide a benchmark against which endorsement could be made.

1. Each qualification should be freestanding and provide a breadth of learning opportunities for young people of all abilities who may or may not continue to explore the built environment.

2. Each qualification should present learners 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.

3. Each qualification should provide opportunities 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.

4. The qualification should provide opportunities to investigate, explore, analyse and review all aspects of the built environment through focused projects and practical tasks.

5. Each qualification programme should promote the provision of guidance on career pathways and job roles across the built environment and the levels of educational attainment required for particular professional routes.

6. Career information is essential 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.

7. Each qualification should promote innovative work related learning.

8. Each qualification should encourage opportunities for work experience.

9. Each qualification should encourage at least 50% of learning through real or realistic sector situations.

10. The qualifications should treat sustainability and environmental issues in ways that they are integrated and embedded.

11. The qualifications should 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.
The Standards
Standards 1 to 3 taken together provide individuals with a motivating programme of study in the context of construction and the built environment.

The purpose of these standards is:

- To explore the nature and extent of the built environment.
- To introduce the phases of the built environment life cycle.
- To explore construction methods and techniques.
- To explore the roles of individuals employed within the built environment.

**Standards 1 to 3: 180 guided learning hours**

**Standard 1: Design of the built environment**

**Learning outcomes**

1.1 Identify social and economic and infrastructure factors influencing design.
1.2 Explain how planning of the built environment impacts on design.
1.3 Develop an understanding of sustainability and environmental protection as it applies to the design of the built environment.
1.4 Describe the properties of a range of materials and their impact on the design of the built environment.
1.5 Explain why a range of structures are designed in the way they are.
1.6 Demonstrate an understanding of design principles through the design of a simple structure.

**Standard 2: Create the built environment**

**Learning outcomes**

2.1 Describe how construction methods and materials have changed over time.
2.2 Apply safe working practices to undertake basic operations within the built environment.
2.3 Identify and describe the major requirements for health and safety and environmental protection.
2.4 Use a range of hand tools and equipment used in the construction crafts and building services.
2.5 Describe where and how sustainable materials and processes can be used during the construction of the built environment.
2.6 Identify a range of specific job roles in the built environment.
2.7 Interpret a range of basic technical information.
Standard 3: Value and use of the built environment

Learning outcomes

3.1 Identify how the existing infrastructure and transport services impact on people and places around them.
3.2 Describe how the welfare of people who use the built environment can be ensured.
3.3 Identify where and how sustainable materials and processes can be used in maintaining the built environment.
3.4 Describe the life cycle of structures in the built environment and their contribution to economic and social development.
Standards 4 to 6 taken together provide an opportunity to develop and apply a range of skills and knowledge in the development, maintenance and use of the built environment.

The purpose of these standards is to provide a broad understanding and working knowledge of:

- Design considerations and architectural features associated with the built environment.
- The specific job roles and skills associated with the key functions in the built environment.
- The preparation and use of drawings and other technical information.
- The properties of materials used in the built environment.
- The tools and practical techniques used in the design, construction, maintenance and management of the built environment.

**Standards 4 to 6: 360 guided learning hours**

**Standard 4: Design the built environment**

**Learning outcomes**

4.1 Identify and explore the factors influencing the design process.
4.2 Identify planning requirements and their impact on design.
4.3 Examine the nature and use of utilities in the design of the built environment.
4.4 Investigate the use and properties of materials used in construction of the built environment.
4.5 Identify how the use of sustainable materials can influence the design process.
4.6 Identify and make use of a range of technical information available to design the built environment.
4.7 Analyse a range of common structural forms and building elements used in the design process.
4.8 Apply design principles through the design and evaluation of a complex structure.

**Standard 5: Create the built environment**

**Learning outcomes**

5.1 Examine main job roles and their relationship to each other within the built environment and explore typical career pathways, qualifications and progression.
5.2 Identify and use a range of technical information used in the construction of the built environment.
5.3 Investigate a range of methods and techniques used in the construction of groundworks, substructure, superstructure and external works.
5.4 Identify a range of hazards and risks commonly encountered in the construction of the built environment and show how they can be minimised.
5.5 Identify and apply good practice in safe working techniques.
5.6 Select and use a range of tools, materials and personal protective equipment to perform construction activities.
Standard 6: Value and use of the built environment

Learning outcomes

6.1 Identify and explore the social, environmental and economic components and benefits of sustainability.
6.2 Identify and describe the contribution that the built environment makes to the physical, spiritual and emotional wellbeing and economic prosperity of individuals and communities.
6.3 Describe the main activities and roles involved in maintenance and service support functions.
6.4 Explain the contribution of facilities management and support services to the maintenance, development and economic benefit of the built environment.
6.5 Identify and explore the contribution of property services and housing to the development of the built environment and the wider community.
Standards 7 to 9 taken together provide a motivating programme of study in the context of construction and the built environment which equips individuals with the practical skills, knowledge and understanding which underpins progression to technical and professional careers and further study.

The purpose of these standards is to develop a range of analytical and investigative skills in relation to:

- The social, economic and cultural contribution of the built environment to individuals and the community.
- The factors and principles influencing the design, creation, maintenance and management of the built environment.
- The contribution of activities within the built environment to sustainability.
- The resourcing and management of projects in the built environment.
- The specific job roles and skills associated with the key functions in the built environment.

**Standards 7 to 9: 540 guided learning hours**

**Standard 7: Design the built environment 3**

**Learning outcomes**

7.1 Explore the historical, political, infrastructure including transport, economic, social and aesthetic factors influencing the design process.
7.2 Identify and explore the principles and methods involved in urban design and their influence on the urban environment.
7.3 Identify and explore the various stages of the design process.
7.4 Examine the various stages of the planning process and evaluate the important factors that affect planning procedures and decisions.
7.5 Examine the health, safety and environmental factors influencing the design of the built environment.
7.6 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.
7.7 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.

**Standard 8: Create the built environment 3**

**Learning outcomes**

8.1 Examine main job roles and their relationship to each other within the built environment and explore typical career pathways, qualifications and progression.
8.2 Identify ways of protecting and maintaining the environment during construction of the built environment.
8.3 Identify and evaluate the construction processes required to construct the sub and superstructures of a range of buildings, including finishes and services.
8.4 Identify and evaluate a range of project management tools and techniques.
8.5 Identify and evaluate a range of quality assurance and project monitoring processes.
8.6 Identify and evaluate the health, safety and environmental factors influencing the creation of the built environment.
8.7 Compare existing and developing processes used in the creation of the built environment and evaluate their impact.
8.8 Identify and evaluate the principles of renewable energy and its technical and social implications
8.9 Identify and evaluate ways of conserving natural resources and recycling waste in the creation of the built environment.

Standard 9: Value and use of the built environment

Learning outcomes

9.1 Describe and evaluate ways of engaging stakeholders and communities in the development and use of the built environment and the local infrastructure including transport.
9.2 Identify ways of protecting and maintaining the environment during use of the built environment.
9.3 Evaluate the social, economic and commercial contribution of the built environment to the wider community.
9.4 Evaluate the role of asset management in the economic and social development of the built environment.
9.5 Identify and evaluate ways of protecting the physical structure of the built environment.
GUIDANCE
Standard 1: Design of the built environment

Learning outcomes and associated guidance

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.
Standard 2: Create the built environment 1

Learning outcomes and associated guidance

2.1 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.

2.2 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.

2.3 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.

2.4 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.

2.5 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 recycled; and re-used and where they can be incorporated in the build process.

2.6 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.

2.7 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.
Standard 3: Value and use of the built environment

Learning outcomes and associated guidance

3.1 **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.

3.2 **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.

3.3 **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.

3.4 **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.
Standard 4: Design the built environment 2

Learning outcomes and associated guidance

4.1 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.

4.2 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 solutions; ensuring that designs meet the regulatory requirements; and adapting designs to meet planning requirements.

4.3 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.

4.4 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.

4.5 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.
4.6 **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.

4.7 **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.

4.8 **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.
Standard 5: Create the built environment 2

Learning outcomes and associated guidance

5.1 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.

5.2 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.

5.3 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.

5.4 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.

5.5 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.

5.6 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.
Standard 6: Value and use of the built environment

Learning outcomes and associated guidance

6.1 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.

6.2 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.

6.3 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.

6.4 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.
6.5 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.
Standard 7: Design the built environment

Learning outcomes and associated guidance

7.1 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.

7.2 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.

7.3 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.

7.4 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, economic, technical and environmental factors that affect planning procedures and decisions.
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.

7.5 **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.

7.6 **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.

7.7 **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.
Standard 8: Create the built environment

Learning outcomes and associated guidance

8.1 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.

8.2 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.

8.3 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.

8.4 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.

8.5 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.

8.6 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.

8.7 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.

8.8 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.

8.9 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.
Standard 9: Value and use of the built environment

Learning outcomes and associated guidance

9.1 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.

9.2 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.

9.3 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.

9.4 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.

9.5 **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
Consultation Questions

Themes
1. The proposed core standards are based on a thematic approach covering three interlinked themes: design of the built environment; create the built environment; value and use of the built environment.

Should the 3 themes be retained? If not please explain why not.

Core and options
2. The core standards offer opportunities to take a holistic view of the built environment and options provide for specialist opportunities for learners to explore particular aspects of the built environment.

Is it helpful to arrange and specify standards in the form of core and options? If not please explain your views and if possible propose an alternative approach that you would favour.

Link to apprenticeships
3. The exploration of a direct linkage of 14 to 19 standards to the achievement of apprenticeships could help to encourage demand for and interest in qualifications that may reflect these standards and in the take-up for apprenticeships. However, there may be difficulties associated with achieving direct links and recognition, for example, across the whole of the UK.

Should the standards lead to credit or recognition towards the achievement of apprenticeship frameworks?

Progression
4. Clearly it is important to try to ensure that the proposed standards encourage progression generally. In this regard, for example, the current qualifications based on the standards have been recognised for purposes of entry to higher education (through UCAS points). It may also be important to establish which specific routes for progression (if any) should be targeted.

(a) What do you think the standards should support progression towards?

(b) To what extent do you think the proposed standards achieve this?
Complete
5. Are the proposed standards complete and accurate, is there anything missing that should be included?

Future skills
6. It is important to ensure that the proposed standards successfully capture and reflect not only existing knowledge and skill requirements but new and emerging skills and technologies.

Are the proposed standards up-to-date and in line with current foreseeable future skills and knowledge requirements?

Clarity
7. In the past some schools and colleges have argued that the standards could be clearer and easier to understand though few specific examples have been raised. This represents an opportunity to re-consider the detailed specification for the standards to help improve clarity where this is possible to do so.

Are the proposed standards clear and is there anything that needs to be expanded or wording improved?

Practical
8. The proposed core standards represent a breadth of coverage of construction and the built environment. They do not reflect a narrow focus on construction alone. However, there have from time-to-time been calls for a more practical, hands-on approach to be adopted.

Do the proposed standards represent an appropriate blend of practical and applied studies that represent the breadth of construction and the built environment?

Weighting
9. The proposed standards include indicative weightings (guided learning hours) that have evolved from the Diploma. They provide users with some indication of the implications for the expected requirement for delivery and learning purposes. It is, however, important to recognise that they are indicative only but will be relevant for those who design and deliver curriculum and qualifications.

Are the guided learning hours appropriate for the content? If not please explain what changes you would propose.

Careers
10. The proposed standards include reference to the need to explore career pathways and job roles across the built environment. Some have questioned whether the inclusion of careers and pathways, especially pre 16, is appropriate in standards.

Do you think that this aspect should be retained?