

Year 10 Unit 3: Construction & Design
Creative Industries Faculty

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Rationale and Context of Unit:	Core curriculum content:	Tier 2 & Tier 3 vocabulary explicitly taught:						
<p>There are many examples of attractive buildings that have also carefully designed to meet the needs of their occupants. Large cities give companies the opportunity to showcase their expertise by constructing large aesthetically pleasing buildings.</p> <p>In this unit you will explore the range of work undertaken by the construction industry and the industry's contribution to our society. You will also develop the skills to interpret a client's needs, in order to turn their ideas into a feasible design that they will want to build as a lasting part of the built environment. The development of a client's brief has to be conducted thoroughly so that the final design meets their needs.</p> <p>Following the initial design stages you will undertake some design work, producing some sketches of your proposals that will meet the clients brief. This will give you the opportunity to express a design in concept form using colour and three dimensions. This will help a client to make an informed decision on the buildings appearance, the proposed layout and the external materials that you have illustrated for them within your sketches.</p>	<p>Throughout this component, learners will be considering only low-rise construction designs. For clarity to all centres, these are limited to a maximum of two storeys in height.</p> <ul style="list-style-type: none"> Learners will need to understand the client's needs for the building's use, including drawing on knowledge from other components. Additionally, learners will need to understand the differences and key external distinguishable features for the different styles. Learners will need to consider the design requirements for the client's environmental and sustainable objective, which may exceed statutory requirements. Learners will need to understand other influences and constraints on design. Learners will need to analyse the client's needs and constraints on design to create appropriate design solutions 	<table border="1"> <tr> <td> Building Use Industrial Residential Commercial Retail Health Education Leisure </td> <td> Accommodation Rooms Space Orientation Floors Style Aesthetics </td> <td> Sustainability Materials Thermal Efficiency Renewable Energies Carbon Footprint </td> </tr> <tr> <td> Constraints on Designs Budget Site Building Environmental Planning </td> <td> Client Brief Situation Requirements Budget Specification Vision End User </td> <td> Graphical Communication Freehand Two-Point Perspective Isometric projection Annotation </td> </tr> </table>	Building Use Industrial Residential Commercial Retail Health Education Leisure	Accommodation Rooms Space Orientation Floors Style Aesthetics	Sustainability Materials Thermal Efficiency Renewable Energies Carbon Footprint	Constraints on Designs Budget Site Building Environmental Planning	Client Brief Situation Requirements Budget Specification Vision End User	Graphical Communication Freehand Two-Point Perspective Isometric projection Annotation
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<p>Challenge and Support:</p> <p>Unit 3: Construction & Design will bring together knowledge and understanding from Unit 1: Construction Technology in order for students to gain an insight into how to work as a designer.</p> <p>Unit 3: Construction & Design will enable students to demonstrate their subject knowledge by creating a physical designs making reference to specific materials and technologies.</p>	<p>Worldwide learning / links to 21st century:</p> <p>The construction industry is one of the UK's most important sectors. In 2018 it employed, directly or indirectly, around 2.4 million people and accounted for £117 billion of the value to the UK economy. The range of jobs available is large, covering traditional craft trades, large civil engineering infrastructure projects, housebuilding, design and consultancy, and the professions such as architecture, management and surveying</p> <p>Study of this sector at Key Stage 4 will complement GCSE study</p>	<p>Cultural capital/ Industry/ Enrichment:</p> <p>The Wensum Trust have teamed up with Lovell to help tackle the skills and jobs shortage in the construction industry and educate young people about the range of career opportunities in the sector.</p> <p>Lovell invited and included Morgan Sindall Construction as part of the partnership, helping to provide further opportunities for young people across the region.</p>						

<p>Students will be able to independently operate machinery to achieve the highest standard of finish for their scale models. SEND support will be given in line with individual needs and SEND passports.</p> <p>Writing frames; success criteria and WAGOLs (What A Good One Looks Like).</p> <p>VIP strategy for disadvantaged students</p>	<p>through providing an opportunity for practical application alongside conceptual study. There are also strong opportunities for post-16 progressions in this vital sector. Skill shortage</p>	<p>The relationship between the five-star partnership housing expert and the not-for-profit multi-academy education Trust will begin with the sponsorship of two students from Acle Academy commencing in September, which will lead onto apprenticeships the following year. A longer term commitment will provide students at all the Trust's High Schools with opportunities onsite, and the Trust embedding construction into the curriculum for 11 to 16-year-olds.</p>
Historical, Social, Moral, Spiritual, Cultural context:	Cross curricular links/ literacy/numeracy:	Common misconceptions:
<p>Students will develop an understanding as to how the most modern materials can have a positive impact on people's lives such as insulation, double glazed windows.</p> <p>Students will be directed to current televised material to deepen their level of understanding as to ways in which current accommodation can be improved to enable families to eat and socialise together.</p> <ul style="list-style-type: none"> • BBC: Homes under the hammer • Channel 4: Grand Designs • Channel 4: Amazing Places • Channel 4: List it or Love it. 	<p>Numeracy: Students will need to produce models that are to scale using ratios. Students will also need to work out the cost of the building based upon in surface area.</p> <p>Gatsby Benchmark: https://www.bbc.co.uk/bitesize/articles/znmr6v4 https://www.bbc.co.uk/bitesize/articles/zvcf8xs https://www.bbc.co.uk/bitesize/articles/ztt44xs</p>	<p>A common misconception about architecture is that it is only for the rich. Every building needs a designer. While it is true that some firms will specifically market certain types and sizes of projects, every home needs a designer. It certainly is worth noting that the smaller the project, the more challenging it can be to design.</p> <p>The importance of quantity surveyors is also misunderstood as they are involved with all phases of a construction project from start to end. They're the ones who measure how much resources are needed (i.e. materials, time and labour) to get the job done on time and within budget. Providing accurate calculations can reduce delays, minimise risk and ensure the profitability of a project.</p>
Assessment timeline:		
<p>Unit 3: Construction and Design will allow learners to develop their applied knowledge and skills in designing whilst learning in conjunction with Unit 1: Construction Technology. Students will receive regular formative assessments based upon;</p> <ul style="list-style-type: none"> • Performance Requirements • Structural Form • Sub-Structure Groundworks • Scientific and Mathematical Applications <p>This will develop students understanding of the wider range of work undertaken in the construction of a low rise building. Pearson sets assignments(PSA) consist of two tasks;</p> <p>Task 1: learners will use their applied knowledge and understanding throughout this component in addition to the synoptic elements to produce a client brief by analysing information presented in a brief.</p> <p>Task 2: learners will demonstrate practical skills in sketching, projection and communication that have been developed in this component. They will produce a range of 2–3 sketches to clearly communicate a design solution that adheres to the design constraints and client information given to learners.</p> <p>When students are enrolled to take their Pearson Set Assignment (PSA) students will take 2 hours of monitored preparation and approximately 6 supervised hours to complete.</p>		

Task 1: Design Brief

Be able to apply knowledge and understanding of how the client requirements impact on building design.
 Be able to apply knowledge and understanding of the external design constraints, relative to the location and scenario.
 Be able to apply knowledge and understanding of budget and costing to meet the client's requirements.

Exam: 36 marks

Task 2: Concept Sketch's

Be able to graphically communicate internal designs of a low-rise building.
 Be able to graphically communicate external designs of a low-rise building.

Exam: 24 marks

Home learning

Drawing skills are an essential part of Unit 3 and students will be given a range of drawing exercises to develop their communication skills within the subject;
 Graphical Communication Side Elevation 1
 Graphical Communication Side Elevation 2
 One Point Perspective – Residential
 One Point Perspective - Commercial

Feedback

KS4 Construction uses a subject specific front sheet to inform students as to how they are performing within the subject. Students will be given a percentage scores in line with the subject knowledge they are being taught. Through student's creation of practical outcomes students will be assessed in line with the Pearson assessment model 36 marks will be available for the design brief and 24 marks available for the graphical concept sketches.