T-LEVELS | Institute for Apprenticeships & Technical Education

T Level Technical Qualification in Onsite Construction (8711-30)

8711-033 Employer-Set Project

Exemplar – A Grade

Summer 2022

City & Guilds | eal

Contents

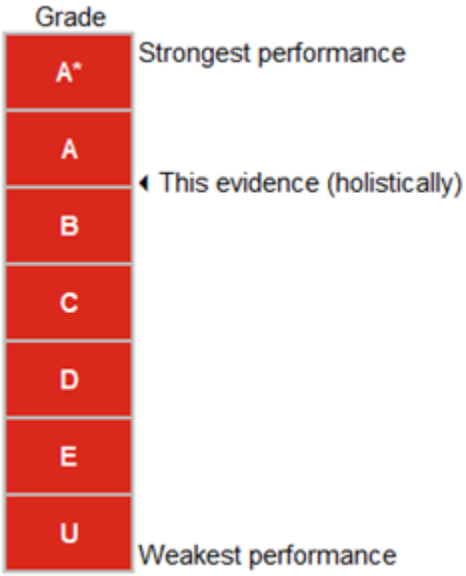
0. Introduction

This document is aimed at providers and learners to help understand the standard that was required in the summer 2022 assessment series to achieve an A grade for the 8711-033 Onsite Construction Employer-Set Project (ESP).

Providers and learners may wish to use it to benchmark the performance in formative assessment against this to help understand a potential grade that may be achieved if a learner was to attempt the next summative assessment series.

The Employer-Set Project is graded A* to E and Unclassified.

The exemplar evidence provided for the 8711-033 Onsite Construction Employer-Set Project (ESP) for the A grade displays the holistic standard required across the tasks to achieve the A grade boundary for the **summer 2022 series**.



The Employer-Set Project brief and tasks can be downloaded from here.

Important things to note:

- The standard required of the A grade for summer 2022 was lower than what will be expected in the summer 2023 series and beyond. This was due to a generosity that was applied in the awarding of the summer and autumn 2022 T Level assessments in recognition of the continued impact of the pandemic on teaching and learning as well as the introduction of these new qualifications.
- The exemplar evidence presented, as a whole, was sufficient to achieve the A grade. However, performance across the tasks may vary (i.e. some tasks completed to a higher/lower standard than an A grade).

Marking of this Employer-Set Project is by task and Assessment Objective, below is a summary of these along with the mark achieved by the evidence presented and the maximum mark available for each aspect.

Task	Assessment Objectives	Mark achieved	Max mark available
Task 1.1 Research	- AO1 Planning skills and strategies - AO2a Apply knowledge to the context of the project - AO3 Analyse contexts to make informed decisions - AO4c Use digital skills	4	9
Task 1.2 Report	- AO1 Planning skills and strategies	5	6
	- AO2 Apply knowledge and skills to the context of the project	11	12
	- AO3 Analyse contexts to make informed decisions	2	2
	- AO4 Use maths, English and digital skills	3	6
Task 1.3 Plan	- AO1 Planning skills and strategies - AO3 Analyse contexts to make informed decisions - AO4a Use maths skills	4	8
	- AO2 Apply knowledge and skills to the context of the project	9	16
Task 1.4 Presentation	- AO1 Planning skills and strategies - AO3 Analyse contexts to make informed decisions - AO4b Use English skills	5	6
	- AO2 Apply knowledge and skills to the context of the project	11	12

Task	Assessment Objectives	Mark achieved	Max mark available
Task 2.1 Collaborative problem-solving	- AO2 Apply knowledge and skills to the context of the project - AO3 Analyse contexts to make informed decisions - AO5 Carry out tasks and evaluate for fitness for purpose	9	15
Task 2.2 Evaluation	- AO4b Use English skills - AO5 Carry out tasks and evaluate for fitness for purpose	7	8

1. Task 1.1 Research

Assessment number (eg 1234-033)	8711-033
Assessment title	Employer-Set Project

Candidate name	<first name> <surname>
City & Guilds candidate No.	ABC1234

Provider name	<provider name>
City & Guilds provider No.	999999a

Task(s)	Task 1.1
Evidence title / description	Research on the project brief
Date submitted by	DD/MM/YYYY

Legislation and building regulations throughout the project

Throughout the entire project building regulations will need to be adhered to and followed to ensure a smooth and efficient project. There are several building regulations that will need to be followed throughout the project, which will include Part A, F, L, S, and approved document seven.

Part A Structure

Structure will be a massive part of this project, especially about what materials we will use on this project. The materials used in the build will all have to be eco-friendly and sustainable. We will use traditional brick and block, as these are particularly good materials for insulation as they are thick materials which make it excellent for the conservation of heat within a building. As well as the roof will follow the same sustainable rules and will be built from sustainable timber and Corallite lightweight metal roofing which will be all locally sourced to cut down on carbon emissions from travelling.

Part F Ventilation

Ventilation will be a big part of this project as having natural clean air coming into the building helps prevent mould from developing within the house which could be harmful to the inhabitants of the house later. All buildings within this project will have natural ventilation through several air ducts within the house placed within the upstairs bedrooms and bathroom. Having natural air ducts within the house instead mechanical ventilation will save on energy that will be powering the mechanical vents which could be used for powering more important devices down the line. All windows on this project will also have trickle vents which will add another source of ventilation to the property. Extractor fans will be also installed within the bathrooms of every property as this helps remove the build up condensation within a bathroom which will help prevent mould from developing within the bathroom. Air vents within the walls will help the wall breathe and help prevent mould from developing on the walls.

Part L Conservation of Fuel and Power

The conservation of fuel and power will be a big part of this project as the saving of power within a building will dramatically reduce energy bills for heating as having materials that help reduce heat loss will reduce the amount of energy needed to heat a property and how long after it will stay heated and affectively reducing the amount property owner must spend on heating their home. Furthermore, having more efficient materials that help limit heat loss through the walls, floors and windows is vital. Also, Part S Infrastructure for charging electric vehicles, can also be considered as many people might want an electric or hybrid car which

will need appropriate infrastructure in place to charge their cars which is a sustainable option for transport, and we will give them the option to have this installed within their property.

Approved Document 7

Approved Document 7 is all about materials within a building, sustainable materials is the main point within this project and be followed throughout. Starting with the main structure of the building, we will use traditional brick and block construction as we find this is the most sustainable way of construction as it provides excellent heat loss protection as well as requiring little maintenance and very durable lasting a very long time but, within the cavity walls there will be insulation which will be Sheep's wool which is very eco-friendly and has amazing insulating properties and can be recycled as well. As well as having the ability to help purify the air which can help reduce the risk of mould from spreading throughout the house but downside of this is that is it expensive compared to other sustainable insulations but makes up for this in its insulation properties. It will also be used in the floor and the roof.

Quote from Insulation-info.co.uk

"Nowadays, one applies sheep's wool quite frequently. Unfortunately, it is not the cheapest insulation material. Nevertheless, it has excellent insulating and air-purifying capacities. Sheep's wool is entirely recyclable, vapour-permeable and moisture-regulating too."

In addition, we will also be using double glazed windows within all properties as they provide great insulating properties to a building. As well as having two pains of glass providing double the protection of regular singular window as well as having a low price compared to triple glazed windows which are better insulators but costing a lot more than double glazed windows. We will be using plastic windows for this project as they are a lot cheaper than timber-based windows and require little maintenance compared to timber framed windows as the require constant maintenance for painting or sealing them, so they are degraded overtime from the weather which plastic windows do not suffer from. Furthermore, timber will be used throughout the project which as we know is a very sustainable and eco friendly building material but as off 2022 the prices for timber have increased dramatically because of the covid lockdown of 2020, which will end up costing the project more overall. Plastic will also be used throughout the project which is not very sustainable but is exceptionally long lasting and durable material compared to timber as well as being unbelievably cheap. Plastic will be used for the facia and soffit as well as the guttering and windows.

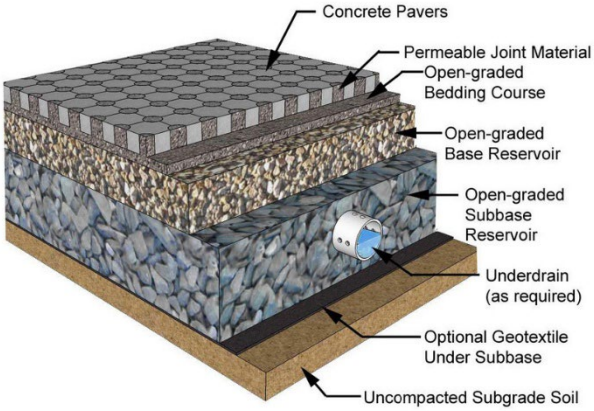
Sustainable and renewable technologies

Several sustainable and renewable technologies will be used throughout the project, one of the biggest is solar panels, property owners will have the choice of having solar panels fitted

onto their roofs if wanted at an increase of cost, but they then have a free source of electricity within their house that they can either use to power their homes or can sell to electricity companies. This is wonderful way of getting free energy for homeowners that produces no fossils fuels or has any downsides and is an exceptionally good renewable source of energy for the homeowner.

Sustainable Urban Drainage

SUDS or sustainable urban drainage will be used throughout the project, we plan to use this sustainable way of drainage in this project. Permeable pavements are a pavement type that has a porous surface that can be made up off composed concrete or pore block pavers that allow water to seep through them and onto aggregate base that seeps into a pipe that then leads to a reservoir which then can be slowly released into the ground below.



Its main purpose is to allow the runoff of water, so it does not build up overtime and create puddles or fill up drains which then causes drains to overfill and creates puddles. Its sustainable design allows it to be constructed from recycled materials like a concrete and sand. **“There are new techniques that allow manufacturers to use the by products, such as slag cement from iron manufacturers, to make concrete that can be used as a component of the green pavement. This helps in reducing landfill space as well.”**

Permeable pavements are an excellent way of removing enormous amounts of water from storms.

Quote from greenblue.com

stormwater, which otherwise would have gone to waste, to clever use at your home or company.”

Some benefits of using recycled materials cuts down on new materials needing to be constructed which is an eco-friendly and sustainable way of constructing new infrastructure as well as through out winter the pavements will be ice free as if any water comes onto the pavements it seeps through the permeable surface, so no ice develops onto it reducing the

number of falls on pavements due to ice. In addition, through out summer the pavements stay nice and cool due to the circulation of water and precipitation in the drainage as well the light colours of the surface reflecting light of the surface and causing the pavement surface to stay nice and cool throughout summer. Because of its design permeable pavements clean any water going through it.

Quote from greenblue.com

“The stone or gravel acts as a natural filter and clears the water of pollutants.”

Some downsides off this are that is expensive to install compared to traditional pavements as well as not being extraordinarily strong which under pressure can collapse but only under a significant amount of weight on the pavement. The permeable drains are quite prone to clogging up if the water in the reservoir is not properly drained off which can lead to the permeable pavement flooding and creating puddles.

Combating the flooding of rivers

There are several solutions that can help combat the flooding of the river, both solutions will make an excellent defence against the flooding of the river and help protect people’s homes from flooding.

Levees and embankments

Quotes From www.bbc.co.uk/bitesize

“Artificial levees can be built along riverbanks so that if the river floods, the water will not be able to breach the wall and cause damage. Levees can be expensive and can spoil the look of rivers.”

“Flood embankments are usually used in rural areas. They can accept a lot of space and are cheaper than flood walls, but they can also cause the speed of the water in the river to be increased which will just move any potential flooding further downstream.”

Greenspaces and Infrastructure

Several green spaces will be built through the 10-year building phase, its vital that people have parks to go to and enjoy the outdoors and is a very sustainable as many trees and plants will be planted helping the eco-system to thrive and creating habitats for animals and inspects.

Infrastructure will have to be built which could include parks, shops and places of entertainment which will also be in walking distance of all the homes which will hopefully allow people to work there instead of using a car or fuel powered

machine. Public transport will have to be built for the area to allow people to move around more quickly and go out of the area as well.

Impacts of sustainable and renewable technologies

The impacts of sustainable and renewable technologies are that the cost of them which will cause the overall price of the project to increase as well as taking a lot longer to complete with the modern technologies but overtime the benefits will come and help the become more sustainable and rely on non-renewable/sustainable technologies.

2. Task 1.2 Report

Assessment number (eg 1234-033)	8711-033
Assessment title	Employer-Set Project

Candidate name	<first name> <surname>
City & Guilds candidate No.	ABC1234

Provider name	<provider name>
City & Guilds provider No.	999999a

Task(s)	Task 1.2
Evidence title / description	Complete a report on the research you carried out
Date submitted by	DD/MM/YYYY

Report

Quick Summary of my research

During my research I have collected information relating to the task I have been set which includes information relating to building regulations and how they will impact the project overall as well as any information that will help us in making our project more sustainable and renewable and which materials are the most sustainable for our project as well as what renewable technologies we can use in the project to get us towards the UK'S zero carbon targets which helps combats the effects of climate change.

My Findings

Throughout my research on sustainability, I believe that we can definitely improve this project to become more sustainable as well as more renewable by changing certain aspects within the project, by changing the materials we use to Aline more with the UK's zero carbon targets, this will include sourcing materials locally to the building site as this cuts down on travel to the site reducing the time taken on a project as materials will arrive quicker meaning building can go up faster making the project more efficient as well as cutting down on amount of CO2 released as the transport trucks delivering the materials will be closer to the site and needing less time to the site effectively reducing the CO2 emissions. In addition, using more hard wearing and durable materials throughout the project can make properties last longer and require little maintenance such as using traditional brick and block construction, while not being the most sustainable materials they make up for this on their properties to be long lasting and durable as well as being a very good insulator of heat, keeping the heat within the properties will help home owners keep the homes warmer for longer and requiring less energy to due so reducing their energy bills overall and requiring less energy to be made which could be from fossil fuels. Which can also be said for materials such as sheep's wool which we will being using for this project as it also has great insulating properties and can be used for insulation the wall, floor as well as in the roof which could all help keep the heat in properties as well being a sustainable material. In addition, is quite expensive compared to other insulators but makes up for this in its insulating properties as well as using locally sourced Corallite lightweight metal roofing which is a very sustainable material that is durable and hard-wearing.

Quote from - www.britishwool.org.uk

"The average greasy price of 87.2p per kg reflected a higher quality offering of wools and that demand for speciality types and organic wool remained strong."

Furthermore, renewable, and sustainable technologies such as solar panels should be integrated within this project as it provides a wonderful way off collecting renewable energy that does not produce any fossil fuels in the process, making it a clean and efficient energy. But some downsides off this, is that they can be quite expensive and require several of them to get a reliable source of energy but offers homeowners a chance to a make renewable

energy that is free which they can either use to power their properties or sell to an energy company for money, this will all be included in the price of the property and will be fitted if that what the client wants. This all helps with achieving government is zero carbons targets by not needing to rely on fossil fuels powered sources of energy like coal or oil.

Solar PV system size	Number of solar panels	Average cost	Roof space	Annual electricity output	Suitable for	Annual CO2 savings
1kWp	3	£1,440	6m²	895kWh	1 adult	0.16 tonnes
2kWp	6	£2,880	12m²	1,790kWh	2 adults	0.32 tonnes
3kWp	9	£4,320	18m²	2,685kWh	Family of 3	0.49 tonnes
4kWp	12	£5,760	24m²	3,580kWh	Family of 4+	0.65 tonnes

Graph Explaining the Average Price and performance of Solar panels

From - www.theecoexperts.co.uk

“Based on our findings, if you purchased a 3.5kW solar PV system today, you'd break even in 11.7 years, then earn a profit of £5,500 in energy bill savings and SEG revenues”.

In this project we also want to use a type of SUDS (Sustainable Drainage systems) which is called Permeable Pavements which will help combat the effects of severe weather and heavy rainfall.

In addition, we also plan to use permeable pavements which will help combat the effects of severe weather or flooding within the area as well as helping to reduce the build-up of water on a street or pavement. This would be a great idea as they land is located next to a river that is know for flooding which could help combat the effects of flooding if it did ever flood. Its main advantages are that it has an excellent ability to absorb water through it is pours surface that allows water to slowly seep into the ground through several layers which also helps to clean the water through its technologies. Which then seeps into a reservoir slowly allowing the water to seep into the ground. The benefits of this are that the permeable pavements can be entirely made from recycled materials that are the by-products from iron manufacturers which is called sag cement, which can be made into cement and used within our project. Other benefits of this are that because of its permeable features no ice can develop on the pavements through winter and helps reduce the number of falls people may suffer. In addition, throughout summer the pavements stay nice and cool due to the circulation of water and precipitation in the drainage as well the light colours of the surface reflecting light of the surface and causing the pavement surface to stay nice and cool throughout summer.

Quote from greenblue.com

“There are new techniques that allow manufacturers to use the by-products, such as slag cement from iron manufacturers, to make concrete that can be used as a component of the green pavement. This helps in reducing landfill space as well.”

Some downsides off this are that is expensive to install compared to traditional pavements as well as not being extraordinarily strong under pressure which then can lead to collapse but only under a significant amount of weight on the pavement. The permeable drains are quite prone to clogging up if the water in the reservoir is not properly drained off, which can lead to the permeable pavement flooding and creating puddles.

Example: Driveway block paving cost – 50 m²

	1 m²	50 m²
Concrete blocks	£10	£500
Lay edging stones	£5 per metre	£200
Sub-base (MOT type 1 stone, sharp sand)	£23	£1,150
Excavation and waste disposal	£10	£500
Labour cost	£33	£1,650
Total cost		**£4,000**

Image from greenblue.com

In my option for these sustainable technologies will help the hit the UK’s zero carbon targets as all these renewable technologies help the country develop to be more reliant on renewable sources of energy instead of relying on fossil fuels and other finite fuel sources. For example, take the permeable pavement it can be made from recycled by-products from steal manufacturers that if not recycled, will be taken to landfill, and buried which is not very sustainable at all. It also reduces the number of new materials being made also making our project more sustainable.

The negative impacts of sustainable and renewable technologies are the cost of them which will cause the overall price of the project to increase as well as taking a lot longer to complete with the modern technologies but overtime the benefits will come and help the UK become more sustainable and not reliant on non-renewable/sustainable technologies.

My other finding includes, building regulations and how they will affect our project. The main building regulations that will affect our project are Part A, F, L, S, and approved document seven.

Part A Structure will affect our project as the buildings has to be structurally sound and durable as well as they also must be sustainable for the future which links into the materials that we will have to use that have to be durable and be suitable for our sustainable approach. Part F, Ventilation will be a big part of this project as having natural clean air coming into the building helps prevent mould from developing within the house which could be harmful to the inhabitants of the house later down the line. We will follow this building regulation as its vital that all properties always stay ventilated and keep inline with the current building regulations. Part L, the conservation of fuel and power will be a big part of this project as the saving of power within a building will dramatically reduce energy bills for heating, as having materials

that help reduce heat loss will reduce the amount of energy needed to heat a property and how long after it will stay heated and effectively reducing the amount property owners must spend on heating their homes as well as keeping inline with current building regulations. In addition, Part S, which is Infrastructure for electric vehicles, can also be considered as many people might want an electric or hybrid car which will need appropriate infrastructure in place to charge their cars which is a sustainable option for transport, and we will give them the option to have this installed within their property at a price. Having infrastructure like electric car charging points will help us prepare for the future of electric cars.

Approved document seven is also especially important to this project as it governs what materials you can use as well as what labour you can use for the project. It states that all materials will have to be to an excellent quality and any work must be up to a good standard. This links to our project as any materials we decide to use must be to a good standard as well as be effectively use for construction. The sustainable materials we use must be to a high quality as if they are not, it could cause problems for us down the line, so this is vital. Furthermore, all windows on this project will also have trickle vents which will add another source of ventilation to the property. Extractor fans will be also installed within the bathrooms of every property as to helps remove the build up condensation within a bathroom which will help prevent mould from developing within the bathroom. Air vents within the walls will help the wall to breathe and help prevent mould from developing on the walls.

In addition, we will also be using double glazed windows within all properties as they provide great insulating properties to a building. As well as having two pains of glass providing double the protection of regular singular windows. Furthermore, having a low price compared to triple glazed windows which are better insulators but costing a lot more than double glazed windows. We will be using plastic windows for this project as they are a lot cheaper than timber-based windows and require little maintenance compared to timber framed windows which require constant maintenance through painting or sealing them. Slowly overtime they are degraded from the weather which plastic windows do not suffer from.

<u>Suggestions About the Project</u>

There are several solutions that can help combat the flooding of the river, both solutions will make an excellent defence against the over flooding of the river and help protect people's homes from flooding. Levees and embankments are great ways to help protect properties from flooding if the river suddenly overflows.

So, I advise when in construction you construct one of these two to help prevent flooding and property damage. Levees are natural embankments that are naturally formed when a river floods and helps stop the flooding in the future. Embankments are long ridges usually made from rock or stone and placed around a river to help stop it flooding by placing them next to the river and help preventing flooding. Both options should be a cost effective and efficient way of protecting properties from flooding as well helping to prevent the flooding of the river.

Some disadvantages of using river embankments are that they deprive people from being able to use their boats or going fishing in the river as well as having high maintenance costs and are quite prone to erosion over time by the river. In addition, if the embankments are breached, the water will then sit around causing more flooding and taking longer to dry away as well as destroying any animal habitats located near the river.

Height band	Wall raising (£/m)	All wall types (£/m)
<1.2m	1,029	1,419
1.2–2.1m	2,177	2,905
2.1–5.3m	–	3,577
>5.3m	–	11,168
All heights	1,526	2,984

Average Prices for embankments in the UK

From - assets.publishing.service.gov.uk

I also advise that you during construction, that you plan for several green spaces like parks and outdoor areas. It is vital that people have parks to go to and enjoy the outdoors and is it very sustainable as many trees and plants will be planted helping the eco-system to thrive and creating habitats for animals and inspects. It is also known that having access to green spaces help people's mental health positively and helps reduce the chances of developing health conditions.

Furthermore, staff facilities should also be put in place such as welfare facilities for people as well as a canteen for eating and car parks for workers to be installed and a compound for materials and space for the site supervisors should be built near phase one area of the project.

In addition, as you are building on previous farmland there will be lots of animal and inspects habitats on there, so I advise to move all animals in the area and relocate them someplace else.

As well as all previous infrastructure will have to be demolished such as buildings, but the roads can be used for transporting of materials to the site and all new infrastructure will have to connect to previous roads within the area.

Conclusion

So, in conclusion, this report holds all my findings through my research, which includes building regulation and how they might impact the project, Sustainable materials, and renewable technologies we might want to use in our project as well as how all this will towards the UK's zero carbon targets. I feel the sustainable and renewable technologies and materials within this report will help our project become more sustainable overall, like having better insulated houses means property owners will have to pay less for their heating and saving them money overtime. As well as providing solutions to problems that might occur such as if the river decided to burst, we could prepare for this and put protective barriers around it to help prevent to flooding of properties. So overall, this report holds my findings and suggestions for the project and how to can be more sustainable and inline the UK's net zero targets.

3. Task 1.3 Induction plan

Assessment number (eg 1234-033)	8711-033
Assessment title	Employer-Set Project

Candidate name	<first name> <surname>
City & Guilds candidate No.	ABC1234

Provider name	<provider name>
City & Guilds provider No.	999999a

Task(s)	Task 1.3
Evidence title / description	Creating an induction plan around your site.
Date submitted by	DD/MM/YYYY

Task 1.3 – Project Plan

Summary Of the Rules That Will Be Used Throughout the Project

There are several rules that will need to be followed throughout the project, which will be included within the site induction and toolbox talks at the start of the project. Other rules such as following the health and safety regulations and rules (HASWA) is vital to keeping a fit and healthy workforce. Risk assessments and methods statements will also be included within this project as they help warn workers on what risks to look out for and how to avoid them.

Health and safety are also an excessively big part of this project and should always be considered throughout this project. Wearing PPE on site is a mandatory task for all staff onsite such as the wearing of steel capped boots, hard hat and a high viz onsite helps protects workers from injuring themselves and others while onsite. Workers should be advised that they should always wear the correct PPE suited to their task. Regular visits from the HSE will be also happening to the site ensuring everyone onsite is following the health and safety rules as well as checking the overall site for any hazards and risks as well as checking the safety of certain structures like scaffolds on a building.

Order In Which Rules Will Be Set Out

The first task on the building site should be to write a risk assessment, which is a document that provides information about what risks might occur onsite during the project and presiding this the method statement should then also be done ensuring that workers know how to avoid these risks while onsite and the best way to prevent them. Presiding this, infrastructure like the compound should be built as well as welfare facilities like toiletries and a canteen for the workers, should be built as well as storage for materials. Furthermore, infrastructure like roads should also be built as soon as possible for workers as well as delivery drivers. In addition, notice boards should be installed around site that should hold vital information such as the fire and emergency plans in case of an emergency as well as health and safety information about what PPE should be warn and who is the designated health and safety officer on site. Following this, safety signs should be installed around the site informing the public of work happening and how to be safe while near a building site as well as

installing any first aid boxes and fire extinguishes around the site in case of any emergencies. In addition, skips should be placed around the site for waste from construction and be taken to the appropriate skip such as recycling or general waste. Through out the entire project the site will be always protected from the public ensuring the proper signs are put in place telling the public that the area is off limits as well as metal fencing and gates will be installed around the entire building site ensuring that no-one unallowed can enter as well as several security cameras should be installed around the site to ward off any intruders from entering the site. In addition, at the end of a working day the site is to be closed using locks to seal any gates.

After this, a site induction should take place and involve all staff onsite from the workers to the Forman and should always outline all health and safety rules onsite like the wearing of PPE and where essential facilities are such as where the toiletries and the canteen is located and where the compound is located onsite. Furthermore, regular toolbox talks will take place outlining how to use tools in the safest way possible as well as how to not injure your self while using this.

The site office buildings are to be located near to phase one construction as it is vital that the materials are near to any construction as they can be easily brought to the buildings via a forklift or by hand. The materials are also to be located next to the office building either outdoors or in a secure container depending on their value.

During the project vehicles will be inevitability used onsite and it is essential that they are looked after throughout the project as well being properly secured up preventing and theft of vehicles. In addition, any specialist equipment onsite must be securely locked up after use to prevent theft. Furthermore, any visitors to the site are to be pointed in the direction of the compound upon arrival, as well as being careful to not injure themselves or anyone else while onsite.

Following this, work than can commence on the site ensuring all workers follow all rules on site.

Site Preparation Timeline

Stage	Activity Name	Time Scale (Weeks)					
		1	2	3	4	5	6
Stage 1	Before Site Prepration						
	Getting Permission to Build						
	Finding a Workforce						
	Risk Assesement						
	Method Statement						
Stage 2	Site Preparation						
	Instaling Fences and Gates						
	Constructing the Compound and Material Storage						
	Installing Welfare facilities						
	Making a Staff Car Park						
	Materials being delivered						
	Notice Boards and Safety Signs Installed						
	Site Induction and Tool Box Talk						
	Work Begins						

This will be the intended timeline for our site preparation, we plan this to take us a month and half and be split into two stages that being stage 1 and stage 2. Stage 1 is about everything before site preparation which will include getting planning permission to start building and the gathering a workforce for the new site as well as then completing a risk assessment as well as method statement before starting preparation. Stage 2 is about preparing the site for construction which will include securing of the site with metal fencing and gates as well as starting to build the site compound and welfare facilities for all the staff.

Furthermore, building of the staff car park will start as well as essential building materials for construction will be delivered and all health and safety information will be installed around the site. After this the workers will arrive and have a site induction and learn everything about the site including where essential infrastructure is located such as the toilets and first aid and any relevant health and safety information. Carrying on from this all workers will have to go through a mandatory tool-box talk ensuring they know exactly how to use their tools and how to prevent accidents while using them and how to effectively use them. After all this work can finally start on the building site

Stage	Activity Name	Time Scale (Weeks)					
		1	2	3	4	5	6
Stage 1	Before Site Prepration						
	Getting Permission to Build						
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	Materials being delivered						
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	Site Induction and Tool Box Talk						
	Work Begins						

4. Task 1.4 Presentation

Employer-Set Project - Observation Record (Task 1.4 Presentation)

8711-30 T Level Technical Qualification in Onsite Construction

8711-033 Employer-Set Project (Summer 2022)

Candidate name	<first name> <surname>
City & Guilds candidate No.	ABC1234
Date	DD/MM/YYYY

Provider name	<provider name>
City & Guilds Provider No.	999999a

Record observation notes below to inform external marking. Notes must be detailed, accurate and differentiating. They should identify areas of strength and weakness to distinguish different levels of performance quality for each of the prompts below.

Structure/detail
The presentation is structured and follows a logical approach most of the time in response to the task because of effective planning.

Techniques
Techniques used to deliver the presentation are mostly effective. The technical information provided is accurate most of the time with valid reasoning.

Terminology
Terminology used is accurate and error free. The content provided is clear, grammatically correct and easily understood by the target audience.

Theories and concepts
Theories and concepts relating to the core knowledge and core skills are coherent throughout the presentation to meet the requirements of the brief set.

Communication
Concepts and theories are communicated effectively most of the time in an appropriate manner for the target audience. There are minor inaccuracies in the delivery of information which causes a lack of clarity in some instances.

Tutor questions to candidate	Candidate responses
How did you find the costing element?	Researched using Google sources, easy.
Which part did you find most challenging?	Researching and sourcing reliable figures.
Do you think that what you have presented today will impact on the carbon targets?	With the technologies use it will go a long way to meeting targets set.

Any other aspects

Tutor signature	Date
X _____	DD/MM/YYYY

If completing electronically, double click next to the 'X' to add an electronic signature once the record is **finalised**.

Task 1.4 Presentation (slide deck)

Assessment number **(eg 1234-033)**	8711-033
Assessment title	Employer-Set Project

Candidate name	<first name> <surname>
City & Guilds candidate No.	ABC1234

Provider name	<provider name>
City & Guilds provider No.	999999a

Task(s)	Task 1.4 Presentation
Evidence title / description	PowerPoint slides
Date submitted by candidate	DD/MM/YYYY


Sustainability in the Longforth Developments Project

Summary of My Work

- During my research I have collected information relating to the task I have been set which includes information relating to building regulations and how they will impact the project overall as well as any information that will help us in making our project more sustainable and renewable and which materials are the most sustainable for our project as well as what renewable technologies we can use in the project to get us towards the UK'S zero carbon targets which helps combats the effects of climate change. As well as what building regulations will be involved in the project and how it will effect it.
- Furthermore, the preparation involved with the project for example setting up the site and cordinating staff and materials for the project.

Information that I have been researching

Building Regulation and Approved Documents

Building Regulations where my first port of call, they will be a massive part of this project as these will dictate what we can do in the project its self. Some notable building regulations and approved documents are Part A, which is structure and will dictate how we build buildings, Part F which is ventilation into the house, Part L which is how to conserve fuel and power throughout the project and finally approved document 7 which what building materials can be used for and how structures are built using these materials.

-Part A

-Part F

-Part L

-Approved Document 7

Information that I have been researching

How Will Building regulation/ Approved documents effect the project?

Part A - Structure will affect our project as the buildings has to be structurally sound and durable as well as they also must be sustainable for the future which links into the materials that we will have to use.

Part F - Part F, Ventilation will be a big part of this project as having natural clean air coming into the building helps prevent mould from developing within the house which could be harmful to the inhabitants of the house later down the line.

Approved document 7 is also very important to this project as it governs what materials you can use as well as what labour you can use for the project. It states that all materials will have to be to a good quality and any work must be up to a good standard.

Part L, the conservation of fuel and power will be a big part of this project as the saving of power within a building will dramatically reduce energy bills for heating, as having materials that help reduce heat loss will reduce the amount of energy needed to heat a property and how long after it will stay heated and keeping inline with current building regulations

Part S, which is Infrastructure for electric vehicles, can also be considered as many people might want an electric or hybrid car which will need appropriate infrastructure in place to charge their cars which is a sustainable option for transport, and we'll give them the option to have this installed within their property at a price.

Information that I have been researching

Sustainable Materials

-Using more hard wearing and durable materials throughout the project can make properties last longer and require little maintenance such as using traditional brick and block construction, while not being the most sustainable materials they make up for this on their properties to be long lasting and durable as well as being a very good insulator of heat, keeping the heat within the properties will help home owners keep the homes warmer for longer and requiring less energy to due so reducing their energy bills overall and requiring less energy.

Double Glazed Windows – Help keep in heat through having two panes of glass making it excellent for conserving energy and keeping heat within the household

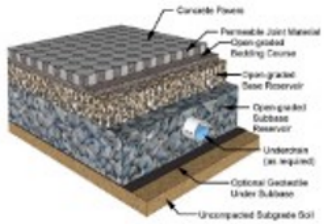
Sheep's Wool – Placed in the walls, floor and roof to keep heat in and conserve energy
-Naturally Sourced

Corallite lightweight metal roofing – Made from recycled metal and placed on the roof of properties

Information that I have been researching

Sustainable Technologies

-Furthermore, renewable and sustainable technologies such as solar panels should be integrated within this project as it provides a great way off collecting renewable energy that doesn't produce any fossil fuels in the process, making it a clean and efficient energy. But some downsides off this, is that they can be quite expensive and require several of them to get a reliable source of energy but offers homeowners a chance to a make renewable energy that is free which they can either use to power their properties or sell to an energy company for money, this will all be included in the price of the property and will be fitted if that what the client wants. This all helps with achieving government's zero carbons targets by not needing to rely on fossil fuels powered sources of energy like coal or oil.



Permeable Pavements

- These Pavements are very good at combating the effects of flooding by slowly letting rainwater seep into the ground as well being made from sustainable materials.

$0.50 to $40.00 per square metre

Solar Panels

-These solar panels help produce clean renewable energy and produces no fossils fuels in the process being very sustainable and renewable overall.

Average cost- £300 - £500 (per 1)

Information that I have been researching

Green Spaces

Several green spaces will be built through the 10-year building phase, its vital that people have parks to go to and enjoy the outdoors and is a very sustainable as many trees and plants will be planted helping the eco-system to thrive and creating habitats for animals and inspects.

Infrastructure will have to be built which could include parks, shops and places of entertainment which will also be in walking distance of all the homes which will hopefully allow people to work there instead of using a car or fuel powered machine. Public transport will have to be built for the area to allow people to move around more quickly and go out of the area as well.

Information that I have been researching

Impacts of Sustainable materials and Renewable Technologies

In my opion these sustainable technologies will help the hit the UK's zero carbon targets as all these renewable technologies help the country dev elop to be more reliant on renewable sources of energy instead of relying on fossil fuels and other finite fuel sources. For example, take the permeable pav ement it can be made from recycled by-products from steal manufacturers that if not recycled, will be taken to landfill and buried which is not v ery sustainable at all. It also reduces the number of new materials being made also making our project more sustainable.

The negativ e impacts of sustainable and renewable technologies are the cost of them which will cause the ov erall price of the project to increase as well as taking a lot longer to complete with the new technologies but ov ertime the benefits will come and help the UK become more sustainable and not reliant on non renewable/sustainable technologies.

By using sustainable materials it will help reduce the amount of carbon emissions being produced by reducing the amount of new materials being produced and by reusing recycled materials.

Negativ es of sustainable materials that they are v ery expensiv e compared to non renewable materials.

Health and Safety

Health and safety is also a very big part of this project and should always be considered throughout this project and follow HASWA at all times as well. Wearing PPE on site is a mandatory task for all staff onsite such as the wearing of steel capped boots, hard hat and a high vise onsite helps protects workers from injuring themselves and others while onsite. Workers should be advised that they should always wear the correct PPE suited to their task. Regular visits from the HSE will be also happening to the site ensuring everyone onsite is following the health and safety rules as well as checking the overall site for any hazards and risks as well as checking the safety of certain structures like scaffolds on a building.

Rules that will be followed

-HASWA

-Wearing of PPE

-Risk and Method Statement

Suggestions about the Project

There are several solutions that can help combat the flooding of the river, both solutions will make an excellent defence against the over flooding of the river and help protect people's homes from flooding. Levees and embankments are great ways to help protect properties from flooding if the river suddenly overflows. So, I advise when in construction you construct one of these two to help prevent flooding and property damage. Levees are natural embankments that are naturally formed when a river floods and helps stop the flooding in the future. Embankments are long ridges usually made from rock or stone and placed around a river to help stop it flooding by placing them next to the river and help preventing flooding. Both options should be a cost effective and efficient way of protecting properties from flooding as well helping to prevent the flooding of the river.


Thanks for
Listening

5. Task 2.1 Collaborative problem-solving

Assessment number (eg 1234-033)	8711-033
Assessment title	Employer-Set Project

Candidate name	<first name> <surname>
City & Guilds candidate No.	ABC1234

Provider name	<provider name>
City & Guilds provider No.	999999a

Task(s)	Task 2.1
Evidence title / description	Email
Date submitted by candidate	DD/MM/YYYY

To whoever this may concern,

Following on from our discussion, there are several options that I would like you to consider regarding the flooding of the river. Firstly, levees and embankments are a good physical barrier against flooding, levees are naturally made by the river every time it floods and helps build a barrier overtime to help prevent flooding and costs no money to build or maintain but is unreliable to help prevent flooding. Embankments are another physical barrier that consists of concrete or stone that is placed next to a river and raises the height of the river and tries to stop and alleviate flooding. They are quite expensive to build and maintain as well as preventing people from using the river to fish or using it to harbour their boats, on the other hand they are extremely durable and are impervious to erosion. We could also employ the uses of grey water systems which recycles water from the sink and the shower and then reuses it around the house, this could help alleviate the amount waste in the sewage pipes as recycling the grey water around their house means less wastewater in being transported into the sewage pipes and if flooding does occur and causes waste to overflow into the streets it means less waste is being pumped out and less clean up.

Furthermore, flood plains can also be constructed and are big holes in the ground that allow water to fill them up and prevent flooding of people's homes, which is a cost-effective way of reducing the effects of flooding.

In addition, SUDS can be implemented into our build as they are an excellent way to help alleviate extreme rainfall on the roads and pavements. One of these SUDS are called permeable pavements which are pavements that are semi-permeable which allows water to slowly seep through into the ground and help reduce the number of poodles occurring on a street or pavement. Positives of using this are that excellent way of reducing poodles on a pavement and can help prevent people from falling over in extreme weather as well as being made from recycled materials which is called "sag" which is the by-product of making steel and this can be recycled to make the pavements and provides an excellent sustainable option to making pavements. Negatives of this is that they are expensive to make and maintain and are not durable as under any significant amount of pressure they can break. This can also be implemented into permeable block pavers which can be used for people driveway.

Yours Sincerely

<first name> <surname>

Employer-Set Project - Observation Record (Task 2.1 Collaborative)

8711-30 T Level Technical Qualification in Onsite Construction

8711-033 Employer-Set Project (Summer 2022)

Candidate name	<first name> <surname>
City & Guilds candidate No.	ABC1234
Date	DD/MM/YYYY

Provider name	<provider name>
City & Guilds Provider No.	999999a

Record observation notes below to inform external marking. Notes must be detailed, accurate and differentiating. They should identify areas of strength and weakness to distinguish different levels of performance quality for each of the prompts below.

Communication skills
Actively contributed throughout the task to discussions. Methods proposed in solving the issue were relevant, logical, technically correct and thought through most of the time so progress in the task was made but not always timely.

Collaboration/contribution
Communication skills are well developed and clear. Asks probing questions of others in the group that brings about details that supports effective progress in the task. Levels of engagement are high with an indication of wanting to take the lead throughout but in a measured way.

Methods to solve the problem
Evidence content is structured, flows and mostly addresses the issues raised in the task. Proposed methods will go some way to addressing these issues in the task and have some form of reasoning to them.

Any other aspects

Tutor signature	Date
X	DD/MM/YYYY

If completing electronically, double click next to the 'X' to add an electronic signature once the record is **finalised**.

6. Task 2.2 Self Evaluation

Assessment number (eg 1234-033)	8711-033
Assessment title	Employer-Set Project

Candidate name	<first name> <surname>
City & Guilds candidate No.	ABC1234

Provider name	<provider name>
City & Guilds provider No.	999999a

Task(s)	Task 2.2
Evidence title / description	Self evaluation
Date submitted by	DD/MM/YYYY

Task 1.1 – Research

During my research task I found it quite easy to research about the project as having done two previous research tasks in practice employer set projects it prepared me for doing this one. The brief we were given was full of information that helped me write and research information for the project. Finding the information for my research was extremely easy as I used Google for most of it as well as my own memory of the subject. Things I researched include building regulations and approved documents which I found on the government website which included Part A Structure, Part F Ventilation, Part L Conservation of Fuel, Part S Electric Car infrastructure and finally Approved document seven which is about materials and labour for our project. Furthermore, I also researched about sustainable materials what we materials we can use during the project for example Sheep's wool and Double-glazed windows as well as researching renewable technologies like solar panels and SUDS. Through the research it has helped me understand about sustainability a lot more and using certain things can help the country be more sustainable.

Task 1.2 – Report

I found the report to be easy as using the information I acquired from task 1.1 gave me a good starting ground on what to write about within the report. In my report I evaluated a lot on what was in my research such as the building regulation and how they will affect the project as well as what sustainable materials and renewable technologies we can use within our project to help the UK help hit its zero carbon goals. In addition, I touched on suggestions that I have about the project such as the inclusion of green spaces like parks and community areas as well as how we may combat the effects of the river and how to mitigate the effects of it flooding in which I suggested using physical barriers called embankments as well as SUDS which I chose to use semi permeable pavements that help get rid of poodles on pavements and people's driveways which can help against the effects of extreme weather and flooding.

Task 1.3 – Induction Plan

During this task I had to make a site induction plan for our building site in which I had to outline on how we are going to prepare the site for building which includes installing security fences and gates and installing staff facilities like car parks and welfare facilities. In addition, making of the site compound and the delivering of materials and where they will be kept. Furthermore, I also made a Gantt chart about the setting up of a building site starting from doing the risk assessment and method statement to toolbox talk and starting construction.

Task 1.4 – Presentation

I found making the presentation to be good as I had done so much preparation for it and had done a lot of research for it, I felt very prepared to do it. I used my report as a guide for my presentation starting from a summary going on to building regulations then sustainable materials and renewable technologies and then health and safety and finally suggestions

Abou the project. I found the presenting of my presentation to be all right I was quite nervous to do it, but it turned out all right I went over all key areas from my research and report and think I covered everything I set out to.

Task 2.1 – Problem Solving

During this task I was put in a group of three including myself and we had to cover ways to help prevent the flooding of houses near the rivers and ways to mitigate this and how to stop sewage contamination occurring. We firstly covered on ways to help stop the river from flooding and is said about leaves and embankments and explained what they are and how they can be used to help stop the flooding of the river and the went on to the advantages and disadvantages of them. After this, we brought up ways to help stop sewage contamination and I proposed that we can use grey water systems that recycle water from your sink and shower and turn it into reusable water again and said that if we use them it will help with the amount of water within our drains and help less come out of the drains if flooding does occur. In addition I also said about SUDS and semi permeable pavements and driveways which helps water seep through them and slowly releases it into the ground which I said was a great idea to help minimise the effects of flooding and also explained that it was entirely made from the by-product of steel and which is very sustainable as instead of getting rid of this by-product we can use it which is very sustainable but some downsides are that is very weak under pressure and is very expensive to build.

Get in touch

City & Guilds Technicals Quality Team

We are here to answer any queries you may have regarding your T Level Technical Qualification delivery.

Should you require assistance, please contact us using the details below:

T: 0300 303 53 52 (Monday - Friday | 08:30 - 17:00 GMT)

E: technicals.quality@cityandguilds.com

W: cityandguilds.com/tlevels

The T Level is a qualification approved and managed by the Institute for Apprenticeships and Technical Education.