

# Design, Engineer, Construct! Level 2:

## 1.3. The candidate can understand the constraints on the project



| Unit  | Incomplete (U) | Secure (C) | Exceptional (A) | Comments: |
|-------|----------------|------------|-----------------|-----------|
| 1.3.1 |                |            |                 |           |
| 1.3.2 |                |            |                 |           |
| 1.3.3 |                |            |                 |           |
| 1.3.4 |                |            |                 |           |
| 1.3.5 |                |            |                 |           |
| 1.3.6 |                |            |                 |           |

Name:

Date:

Deadline for Submission:



3. The candidate can understand the constraints on the project



### 3.1 I can identify constraints associated with the site location and present solutions.

#### 1. Diagram of Site Plan:

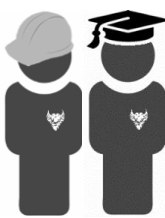


#### Summary of site (including main features and potential concerns)

- Feature – Modern reception with great features.
- Concern – Other buildings and electrical boxes blocking site.
- Feature – Location is near central Manchester meaning it's easy to find.



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## 3.1 I can identify constraints associated with the site location and present solutions.

### 2. Discuss your site in relation to the following:

**Orientation, aspect, exposure** - It's important to have your building facing towards the direction of sunlight so if you have solar panels they can perform 100% effectively due to the building being faced in a sustainable position. This could save me large amounts of money since the solar panels generate electricity and warm water which could then decrease my costs for energy use for both factors which could help my building in the future by using the saved money for other facilities.

**topography, geography and geology** – My building is located close to central Manchester and judging by my second hand research it rains around 140 times per year for Manchester in 2012 and 2013, so this has given me a great idea for the location I'm in, I could build a rain harvester for the surrounding area I'm in which could generate half a year of electricity or water for a year.

**prevailing wind and microclimate** – My building offers amazing sustainable options which include solar panels located on the south side of the building to grant as much sunlight to the panels, I'll also have a water drainage system, I have a slanted roof so the rain water flows towards the system and helps use the water for toiletries etc. Wind panels however are an issue on my site as it's located alongside building which will block the incoming wind which means they are not an option.

**surrounding buildings and local context / vernacular** – I have gone with the surrounding style of architecture of 'first street' as seen in my previous slides, this is to stick with the whole style of a modern Manchester area as the other buildings are the same style of façade as mine, this allows me to stick to a scheme and work off which makes building the project a little harder but allows the building to have a great camouflage with the others.

**transport and infrastructure** – My site is well orcastrated with the community as my amenities offer great advantages for the customers such as the Gym and sport facilities which help them to improve fitness, along with the café which offers food etc. Transport is not an issue as my building is very close to a train station and the road is accessible from a main road, bus stops are also located nearby.

**accessibility** – On my site there is no physical factors that could affect the accessibility of wheelchair and elderly users as my site offers a 100% accessible environment through the fitting of ramps, elevators etc.. There's will be a variety of signs and speakers fitted for blind and deaf people which is also helps with there understanding of the building.

### Summary of site (including main features and potential concerns)

- **Main features is the giant basketball and football room.**
- **Feature, the walkway above the reception.**
- **Feature the solar panels powering the building.**
- **Concern, accessibility of the building.**
- **Concern, the site being off measurements.**



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## 3.2 I can test initial ideas against planning protocol

### 1. What are Planning Policies and why are they important to a project?

Planning policies are important since it helps preserve other buildings from being affected by another building, for example there is a limit of surface area for parts of an area to help the environment, it also helps keep every building in check. During the building of our projects we need to keep a close eye on the policies as it'd make our building useless without obeying them. Who inspects the building you ask? Simple, planning inspectors. They decide whether the building meets the policies requirements in order to be built so every architect needs to prepare a file of statistics during the making of the project in order for their building to be built.

### 2. Why is it important to involve the Community in the planning phase?

It's important to involve the community in my planning since the building is after all dedicated to the community since it's a Gym and Sport Hall. I'd also like to make sure the community is satisfied with the design and that they enjoy their visits. It also allows us to generate results from them so we can further improve the building from the community's suggestions.

### 3. What is the Local Development Framework (LDF)?

Local development framework is the spatial planning strategy introduced in England and Wales by the Planning and Compulsory Purchase Act 2004 and given detail in Planning Policy Statements 12.

### Summary in five points what you have learnt about planning and how it relates to your project:

- **Planning helps keep your building safe.**
- **Helped me keep my building legal.**
- **Helped me in the design of my building.**
- **Helps me create an organised step by step.**
- **Helps me understand how my building will turn out in the end result.**



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## 3.3 I can explain the principles of legislation relevant to the Project

#### 1. What is **planning legislation**?

Planning legislation is the act of establishing framework for the use and development and also the protection of the land at First Street.

#### 2. Why is it important to **adhere to legislation** during a project?

It's to ensure the safety of the builders which are building the building and most vital to this is too ensure the building is built safely, legally and securely so there would be no negative outcomes, failure to comply with this act would lead to serious consequences.

#### 3. List **3 environmental policies** that apply to your project and summarise them:

A Tree Preservation Order is an order made by a local planning authority in England to protect specific trees, groups of trees or woodlands in the interests of amenity. This policy is to help protect the amount of trees being cut down in the area to keep natural beauty high and to generally help preserve trees. This applies to my project since there are trees surrounding the building.

The Wildlife and Countryside Act 1981 consolidates and amends existing national legislation to implement the Convention on the Conservation of European Wildlife and Natural Habitats, technically this policy helps to prevent the loss of birds or plants habitats since they are either very rare in England or they are near extinct.

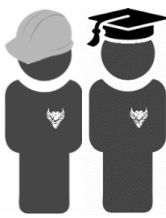
The Equality Act 2010 helps to keep equality for my building since the building needs to be accessible for every kind of person which includes the disabled, elderly and children along with other smaller assets. This applies to my building since if the building is not accessible for all then we're not getting the full potential of customers we could be getting which would decrease profit.

#### Summary in four points what you have learnt about legislation and how it relates to your project:

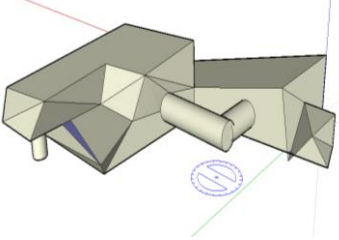
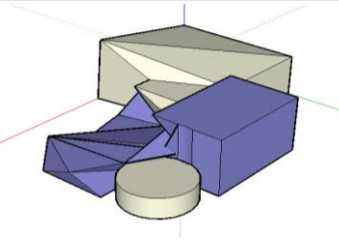
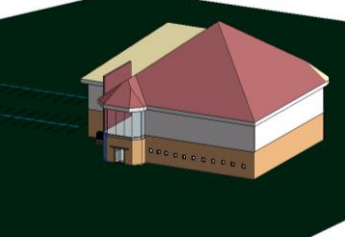





















- **Learned what planning legislation actually is.**
- **Learned that we need this policy to ensure safety on the site.**
- **I've learned that planning policies help keep buildings to a safe legal level.**
- **Legislation has helped me plan out my building more accordingly which has helped me understand about legislation in the future.**



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### 3.4 I can carry out a feasibility study and present the results

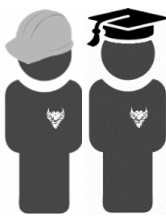
| Assessment of:  |    |    |    |
|---|---|--|---|
| Function - how do the proposals meet the end-user requirements identified in the project brief?   |    |    |    |
| Quality - how do the proposals meet the design aspirations identified in the project brief? Students can use precedent images, sketches and models to describe their ideas. |    |    |    |
| Policy - how do the proposals broadly fit the relevant policies that have been identified?  |   |   |   |
| Budget - how do the proposals broadly fit the budget that has been identified?  |  |  |  |
| Programme - has an outline programme been formulated that we know to be achievable?   |  |  |  |
| Team - Are the right people with the right skills available and on board to help us make progress?  |  |  |  |
| The Way Forward - what needs to happen next and what challenges must be overcome to enable the project to succeed?  |  |  |  |

#### Key findings from the Feasibility Study

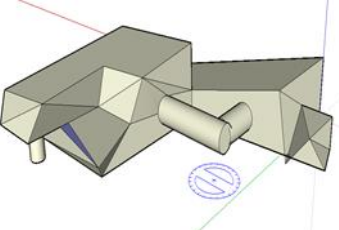
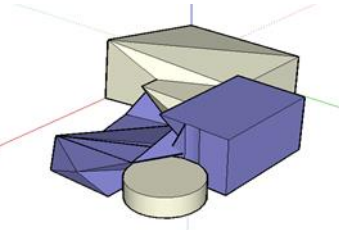
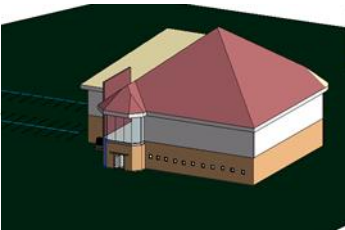





















- Increase quality even after building is built.
- Increase work standards of the team.
- Careful on the budget and improve on spending's.
- Stay within the legislations and policy.



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### 3.5 I can make a judgement on project viability based on evidence.

| Key Criteria based on Project Brief/ Vision      |    |    |    |
|--|---|--|---|
| Inclusive of all ages                            |    |    |    |
| Use minimal amount of energy                     |    |    |    |
| Task advantage of natural light                  |   |   |   |
| Sustainable and durable materials                |  |  |  |
| In café and restaurant have high quality service |  |  |  |
| Multiple access points to get in and out         |  |  |  |
| Offer free parking                               |  |  |  |

The idea I am carrying forward is a sports centre and three reasons for this:

- Manchester needs more gyms.
- It allows me to make a large building meaning more furniture can be added.
- A sports centre is a key and innovative idea for any part of any where.
- 





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**3.6 I can explain how the building design helps minimise energy use.**

1. Why is it important to minimise energy use?

**It's important to minimise energy use since it would save the building a enormous amount of money, not only will it decrease the cost to run the building in the long run it will help minimise pollution to the environment which is a great source of sustainability for the building.**

2. Case Study on Existing Sustainable Building

## Manitoba Hydro Place



Manitoba Hydro Place is the headquarters of 'Manitoba Hydro', the electric power and natural gas utility in the area of Canada. This building received the award 'LEED certification' in May 2012 making it the most energy efficient office tower in North America. How is it sustainable you ask? Well the building's bioclimatic, energy-efficient design features a 377 ft (115 m) tall solar chimney, a geo-thermal HVAC system using 280 five-inch tubes bored 380 feet into an underground aquifer. So technically it generated 100% fresh air and can control how much heat enters the building.

**5 Key Criteria for your building to minimise Energy use:**

**One of the key criteria's to minimise energy use is to use; solar panels which use solar energy to transform into useable energy, wind turbines which transfers kinetic energy, motion sensor lights, energy efficient bulbs**

