

Managing Health and Safety in a Project



[1,874 Words]

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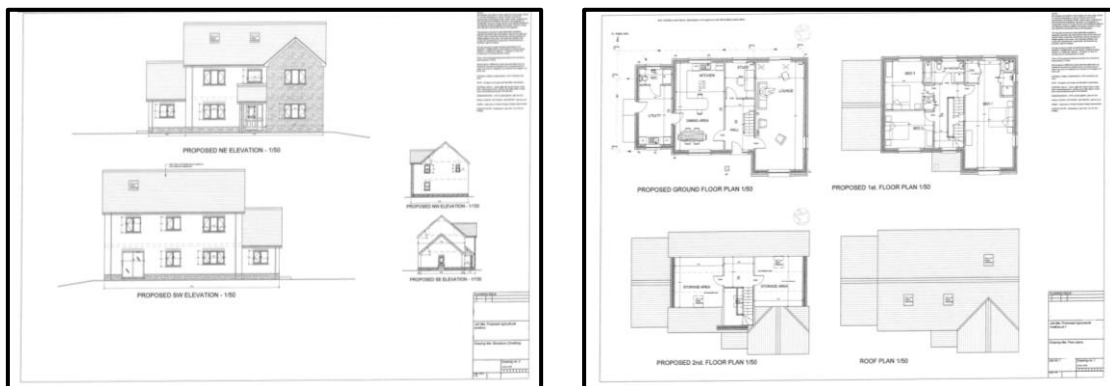
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Introduction:

For the purpose of this assignment I have assumed that University of Wales Trinity Saint David (UWTSD), Swansea Campus has received planning consent for a single, two storey detached domestic building with a loft room. The building will be accommodation for a full-time caretaker of the University and their family. The proposed location for the building is adjacent to the new student accommodation on Swansea's SA1 site, because of its proximity to the university and has direct access to a public highway. Please see image below with the site area outlined:



The proposed foundations are concrete strip to a depth of 1m with standard cavity wall construction; block and block with partial fill cavity insulation and a smooth render externally. Plinths, soldier courses over all openings and porch pillars are to be natural sandstone. There is to be a suspended concrete beam and block ground floor and upper floors are to be traditional solid timber with particleboard sheet covering. Doors and windows are to be light oak wood effect uPVC with sealed Double-glazed units. Roof structure is to be trussed rafters at a 40°pitch with a natural slate covering and closed eaves.



Finally, the work is proposed to commence on May 6th, 2020.

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1. Construction Phase Plan (CPP):

A Construction Phase Plan, more commonly referred to as the 'Construction Programme', is the schedule of works and industrial activities taking place on a construction site. A CPP will consider any and all health and safety arrangements for each scheduled task/activity. The Construction Phase Plan is composed before any site set-up or work has commenced, therefore making itself a comprehensive plan. The principle Contractor of the construction site will be in charge of the CCP, thus including its creation, any adaptations or changes to it, and that it's adhered to by sub-contractors and trades.

Schedule of Works

Single, Two Storey Domestic Building			Month																			
			Weeks		April		May		June		July		August									
Activity	Start Date	End Date	Duration		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Site Set-up	20/04/2020	27/04/2020	1 week																			
Welfare Cabins	20/04/2020	24/04/2020	1 week																			
Demolition Cabins	20/04/2020	24/04/2020	1 week																			
Services Connections	20/04/2020	01/05/2020	2 weeks																			
Security	27/04/2020	01/05/2020	1 week																			
Construction Period																						
Substructure																						
Groundworks																						
Excavation	04/05/2020	08/05/2020	1 week																			
Concrete Foundation	11/05/2020	15/05/2020	1 week																			
Superstructure																						
Frame																						
Timber Frame (Incl. Upper Floors)	18/05/2020	29/05/2020	2 weeks																			
Roof Structure (Trussed Rafter)	25/05/2020	29/05/2020	1 week																			
Roofing																						
Roof Coverings (Felt, Battens & Slate)	01/06/2020	05/06/2020	1 week																			
Floor																						
Suspended Beam & Block Floor	08/06/2020	15/06/2020	2 weeks																			
External Walls																						
Cavity Blockwork	15/06/2020	23/07/2020	7 weeks																			
External Doors & Windows	29/06/2020	10/07/2020	2 weeks																			
Render	09/08/2020	14/08/2020	2 weeks																			
Internal																						
Plasterboard	17/08/2020																					

The above schedule of works was carefully constructed using the specification and drawings provided within the coursework's Task Description. Throughout its creation, careful consideration was undertaken to ensure the programme would comply with the CDM Regulation 2015¹ framework. As stated within '*Section A: Legal and Management of the CITB GE 700*²' in order to meet the standards of health and safety management that the CDM regulations require, sufficient and detailed planning must be done by site management. A disciplined programme is one such method of doing this. In the programme demonstrated above, it is evident that the overlapping of trades and jobs has been minimised. An example of this would be that installation of external doors and windows does not take place whilst the external render is being applied, and that there is an adequate time period separating both activities.

¹ The Construction Design & Management Regulations are the main set of regulations for managing the health, safety and welfare of construction projects.

² CITB. (2017). *A: Legal and Management*. Available: <https://www.citb.co.uk/standards-and-delivering-training/health-and-safety-support-materials-and-forms/ge700-companion-content/weblinks/a-legal-and-management/>. Last accessed 9th Feb 2020.

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2. Method Statements:

In the construction sector, method statements are used to describe a particular construction method, resource(s) and/or the equipment/plant required. Safety measures and procedures are included within method statements for specific tasks and activities, where there is higher risk to employees. Working from height on scaffolding is a great example of this. It is common to see method statements concerning the site layout, explaining routes for vehicles, where the welfare facilities are located or a fire assembly point. Furthermore, adequate waste management requires a method statements for the procedure of removing waste from the site appropriately in an environmentally friendly and sustainable way.

Superstructure – External Wall

The external wall for the dwelling will be constructed using block and block, as per the specifications details. Yet effective for the size of the block and the price, when compared to the weight of a brick, it is far heavier. Because of this, each block will be required to be handled by 2 brick layer operatives therefore complying with the manual handling guidelines instructed in the Manual Handling Regulations 1990. This outlines that any object over the weight of 20kg must be lifted by more than one person to reduce the chance of injury and mitigate strain.

With the erection of a scaffold perimeter to the property, constructing the second floor wall will be easier due to the ability of a machine lifting resources to a loading platform on the scaffold. This will therefore not require operatives to carry bricks from the ground floor of the building/store, up a series of scaffold heights. A pallet truck and trolley will be used in this procedure to reduce injury and strain again. The introduction of a 110V cement mixer to mix the mortar for the laying of the of the blocks would refer back to CDM 2015 Regulations³ and HSE regulations. COSHH assessments will also be required by the blockwork contractor as there are potential risks to the worker's skin and eyes due to the use of cement.

Access Scaffolding

In the specification, the domestic building is said to be two stories in height, with a third floor being provided within the loft. Because of this exceptional height, prior to the timber frame arriving on site, scaffolding will be required to be erected. In order to maintain within the guidelines of SG4⁴, all scaffolding will be designed and constructed by a competent and qualified scaffold engineer. An example of an acceptable and appropriate qualification would

³ Health and Safety Executive. (2015). *The Construction (Design and Management) Regulations 2015*. Available: <https://www.hse.gov.uk/construction/cdm/2015/index.htm>. Last accessed 4th Apr 2020.

⁴ NASC. (2015). *Preventing Falls in Scaffolding Operations*. Available: https://nasc.org.uk/NASC/media/NASC_Library/SG4_15_final_27_11_15_Online_Version.pdf. Last accessed 9th Feb 2020.

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be the CISRS Scaffold training. This would ensure that the scaffold can be constructed and destructed in a safe manor, will not fail any inspections, and abide to health and safety regulations.

To further extent the safety of the scaffold design, the contractor must install it to comply with TG20 - a requirement of the Work at Height Regulations 2005. This entails all relevant documentation from the scaffolding contractor will need to be handed over to the site management team, who will ensure all standards are met and properly conducted. O+M manuals will be included as one such document in this evidence. This is a statement made within Section E of the CITB GE700 collection.

It is to be noted that where applicable, edge protections and 'kicker' boards will be required within the scaffold as this will again meet the object of minimising the risk of an operative, material or plant falling from height. Furthermore, all tools used by the worker will meet British EN standards, should non-conforming materials be present, they must be placed in a segregated area. This will be the responsibility of the main contractor to ensure there is no damage to the scaffolding material and can be done through regular site inspections that occur daily. It will also be mandatory for a manager from the scaffolding company to conduct weekly standard checks and ensure that all scaffold operations comply with TG20 regulations. This often can be a chargeable visit from firms that the Quantity Surveyor should be aware of.

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Risk Assessments:

Risk management is commonly referred to as '*The eradication or minimisation of the adverse effects of risks to which an organisation is exposed*'.

Hazards can range from anything on a construction site, from a simple hole in the ground, to materials being left on site or even height. A hazard is identified as something with the potential to harm, where harm includes ill health, injury or damage to property, etc. This leads me on to discuss risk, which is the likelihood that a specified undesired event will occur due to the realisation of a hazard.

Assessment 1:

Risk Assessment: Ground Works			
Key to Assessment:	Low Risk – Slightly Harmful	Medium Risk – Harmful, Moderate Risk	High Risk – Very Harmful, Serious Consequences
Hazard	Risk	Initial Risk Value	Control Measure
People falling into excavated holes.	Death or severe damage/injury.	Medium Risk	Install barrier surrounding excavated area and ensure it is well marked.
Undermining surrounding services.	Explosion or Electric shock from damaging cable/pipe.	Medium Risk	A site Survey to be undertaken before commencement of works to locate services.
Collapse of unsupported excavated material.	Death or severe damage/injury.	Low Risk	Excavated material to be stockpiled at a suitable distance from point of excavation.
Release of harmful ground gases.	Contamination - onset illness/disease.	Medium Risk	Conduct thorough ground investigation and site survey.

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Assessment 2:

Risk Assessment: Superstructure – Masonry Wall			
Key to Assessment:	Low Risk – Slightly Harmful	Medium Risk – Harmful, Moderate Risk	High Risk – Very Harmful, Serious Consequences
Hazard	Risk	Initial Risk Value	Control Measure
Damage to skin	Cuts and abrasions when handling bricks.	High Risk	Operatives to wear PPE (Gloves) when handling bricks.
Damage to eyesight	Loss of sight.	Medium Risk	Operatives to wear PPE (eye protection) when cutting bricks.
Manual Handling	Strain or injury.	Medium Risk	Carry out manual handling assessment. Designers must design out manual handling risks by specifying lower density or smaller block where possible

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Assessment 3:

Risk Assessment: Access Scaffolding			
Key to Assessment:	Low Risk – Slightly Harmful	Medium Risk – Harmful, Moderate Risk	High Risk – Very Harmful, Serious Consequences
Hazard	Risk	Initial Risk Value	Control Measure
Fall from height	Death or severe damage/injury.	High Risk	Adequate edge protection installed – guardrails. Scaffold to be erected in accordance to SG4.
Material falling from height	Death or severe damage/injury to head.	High Risk	PPE (Hard hat) to be worn at all times on site. Safety Netting installed to catch dropped material.
Scaffold Collapsing	Death or severe damage/injury.	Medium Risk	Scaffold to be erected in accordance to SG4. Alterations to scaffold must only be completed by a competent/qualified person(s).

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Health and Safety Legislation:

Health and Safety at Work Act (1974)

Due to the construction sector still having the highest number of work related fatalities and injuries within the UK, Parliament issued the Health and Safety at Work Act in 1974. The act implements new practises and enforcement to improve the health and wellbeing of workings within a construction environment/workplace. The legislation goes on with protecting other who enter the construction premises as well, including temporary staff, casual workers, the self-employed, clients or visitors and the general public. However, these duties are subject to being qualified with the word '*So far as is reasonably practicable*'.

The act goes on to express the roles and responsibilities of the people, as it says "*It shall be the duty of every employer to conduct his undertaking in such a way as to ensure, so far as is reasonably practicable, that persons not in his employment who may be affected thereby are not thereby exposed to risks to their health or safety.*" This implying that that an employer should consider the responsible of providing training and services to ensure a 'duty of care', minimising the risk of injury or harm to themselves and/or others. The act stresses that that the management and responsibility of health and safety is not solely the responsibility of the management of the site and thus everyone on the workplace has their own responsibility to endure health and safety advice and guidance is followed for themselves, and others.

The management of Health and Safety Regulations 1999.

This act emphasis that employers have a responsibility to correctly manage the health and safety within the company for their workers. In a construction scenario, this could entail ensuring that workers are CSCS competent through physical checks on site during site inductions, or even that important files and records are correctly stored. This also applies to the CDM Regulations of 2015, being more relevant for designers and main contractors as it lays the responsibility onto them. A great example of this is a construction or site manager ensuring new operatives, trades or sub-contractors have attended a site induction prior to commencing work. This will therefore warrant that they are aware of the correct procedures in a case of an emergency.

The CDM regulations also apply to clients, this is because it ensures that the client regularly checks that the main contractor is following the correct Health and Safety procedures. In the event that the main contractor gets caught out and gets themselves in trouble over the enforcement or awareness of health and safety or the lack of it, the client can also share the blame due to not questioning this. For example the HSE states 'employers have a legal duty under the Health and Safety Information for Employees Regulations (HSIER) to display the approved poster in a prominent position in each workplace or to provide each worker with a copy of the approved leaflet Health and safety law: What you need to know that outlines British health and safety law'. This poster is often head office of the site or even the canteen welfare facilities where contractors will eat food and regularly see it. Again this displays the significant amount of responsibility and liability

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that main contractors and employers have, therefore emphasising the importance of correctly following the correct procedures and implementing them to the workplace and ensuring that worker abide by the rules. To further expand on this by following the correct procedures and ensuring that workers have understood the rules, then by referring back to the previous mentioned statement from Health and Safety at Work Act 1974 then Health and Safety can be seen as everybody's responsibility.

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