

# Environmental impact due to the construction works on the development



**ASSIGN  
BUSTER**

## **Introduction**

This statement document is for the proposed new innovative public house in an inner city regeneration and development area by the side of a canal. The development mite also is known as the (Brewery) I have been asked by the client to answer certain issues regarding the new scheme and better ways of making the development eco friendly. It is very interesting that be development is eco friendly as it will gain the support of the neighbouring establishment and people. Since everyone is interested in the bettering of all construction companies methods of construction, therefore planning for the project will be easier to acquire. Once the development has the approval of the local council we then start with the environmental effects that the development may cause to the environment and ways to making it better for the benefit of all as well as designing of the project.

## **ENVIRONMENTAL IMPACT DUE TO THE CONSTRUCTION WORKS ON THE DEVELOPMENT**

The development for the brewery will be conducted in such a manner that development will be very the environmental friendly. The main parts of the environment that may be harmed are as followed.

\* Air

\* Water

\* Soil

\* Wildlife

\* Deforestation

\* Noise

## **AIR**

Construction activities that contribute to air pollution include

\* Land clearing,

\* Operation of diesel engines

\* Demolition,

\* Burning,

\* Working with toxic material

All construction sites generate high levels of dust (typically from concrete, cement, wood, stone, silica) and this can carry for large distances over a long period of time. Construction dust is invisible to the naked eye. Research has shown polluted air penetrates deeply into the lungs and cause a wide range of health problems including respiratory illness, asthma, bronchitis and even cancer. Another major source of air pollution on construction sites comes from the diesel engine exhausts of vehicles and heavy equipment. This is known as diesel particulate matter (DPM) and consists of soot, sulphates and silicates, all of which readily combine with other toxins in the atmosphere, increasing the health risks of particle inhalation[r2].

## **WATER**

Sources of water pollution on building sites include: diesel and oil, paint, solvents, cleaners and other harmful chemicals and construction debris and dirt. When land is cleared it causes soil erosion that leads to silt-bearing run-

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off and sediment pollution. Silt and soil that runs into natural waterways turns them turbid, which restricts sunlight filtration and destroys aquatic life. Surface water run-off also carries other pollutants from the site, such as diesel and oil, toxic chemicals, and building materials like cement. When these substances get into waterways they poison water life and any animal that drinks from them. Pollutants on construction sites can also soak into the groundwater, a source of human drinking water. Groundwater is much more difficult to treat than surface water when contaminated[r3].

### **NOISE**

Construction sites produce a lot of noise, mainly from vehicles, heavy equipment and machinery, but also from people shouting and radios turned up too loud. Excessive noise is not only annoying and distracting, but can lead to hearing loss, high blood pressure, sleep disturbance and extreme stress. Research has shown that high noise levels disturb the natural cycles of animals and reduces their usable habitat.

### **WILDLIFE**

Wildlife mostly depend on there environment to survive and when there Greenland is being developed into accommodations for humans, they are left to migrate to somewhere else or sometimes killed during the cause of development. There source of food and water gets destroyed in some cases where streams and forests are being developed upon. This is a very important issue[r4].

**FORESTERY (trees)**

Trees are being chopped down for construction. This act comes with lot of disadvantages, since the trees serves as a source of purification for the air, prevent erosions and also serves as a wind break[r5].

**SOIL**

Soil is very important to the development of humans since most of our food stocks are derived from the soil. So the pollution of the soil is very crucial for the survival of humans. Erosion and corrosion are very frequent when it comes to construction and since they destroy the soil easily, precautions must be put in place to prevent them from destroying the soil[B6].

**MEASURES TAKEN TO PREVENT IF NOT ELEMIMATE ENVIRONMENTAL IMPACTS ON THE DEVELOPMENT.**

Good construction site practice can help to control and prevent pollution. The first step is to prepare environmental risk assessments for all construction activities and materials likely to cause pollution. Listed below are some of the methods and good practises to prevent pollution and the deterioration of the environment.

\* To prevent erosion and corrosion leave maximum vegetation cover when constructing.

\* Control dust through fine water sprays used to dampen down the site.

\* Screen the whole site to stop dust spreading frequently.

\* Cover skips and trucks loaded with construction materials and continually damp down with low levels of water.

- \* Cover piles of building materials like cement, sand and other powders, regularly inspect for spillages, and locate them where they will not be washed into waterways or drainage areas.
- \* Segregate, tightly cover and monitor toxic substances to prevent spills and possible site contamination.
- \* Cover up and protect all drains on site.
- \* Collect any wastewater generated from site activities in settlement tanks, screen, discharge the clean water, and dispose of remaining sludge according to environmental regulations.
- \* No burning of materials on site.
- \* Replanting new trees of every single tree that was cut down. To make it balance.
- \* Etc.

When the following and more are carefully executed the environment will be safe when constructing and a peaceful and healthy environment for use all.

### **HEALTH AND SAFETY PLANS AND ROLES OF PERSONS INVOLVED WITH THE DEVELOPMENT.**

Health and safety plans for the brewery development. The project is a large development so therefore the occurrence of injuries and accident is very high. So much defined plans have to be established to prevent these happenings from occurring. Has the project manager it is my uphold duty to make sure that a very accident free or an injury free system of work is

introduced. This will be acquired by introducing safe systems of working. The best ways to ensure good health and safety in the work place is by communication and the knowing of once responsibilities and duties.

Therefore I have listed below the roles and responsibility of the people I will be working with on this project from the client to the final users[B7].

Roles and Responsibilities of Persons involved in the development.

### **CLIENT:**

A CDM client is someone who is having construction or building work carried out, unless they are a domestic client. A domestic client is someone who lives, or will live, in the premises where the work is carried out. The premises must not relate to any trade, business or other undertaking. Although a domestic client does not have duties under CDM, those who work for them on construction projects will.

### **On all projects clients will need to:**

- \* Check competence and resources of all appointees
  
- \* Ensure there are suitable management arrangements for the project  
welfare facilities
  
- \* Allow sufficient time and resources for all stages
  
- \* Provide pre-construction information to designers and contractors
  
- \* Appoint a principal contractor
  
- \* Make sure that construction work does not start unless a construction  
phase plan is in place and there are adequate welfare facilities on site

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- \* Provide information relating to the health and safety file to the CDM coordinator

- \* Retain and provide access to the health and safety file

- \* Appoint a CDM coordinator.

**CDM coordinators:**

A CDM coordinator is only required where the project is notifiable. The CDM coordinator has a range of duties which are set out below. It is very essential that the CDM coordinator is competent to carry out the work and the regulation requires him to consider this before accepting the projects. Their main duties are to:

- \* advise and assist the client with their duties;

- \* Notify details of the project to HSE.

- \* co-ordinate health and safety aspects of design work and co-operate with others involved with the project;

- \* facilitate good communication between the client, designers and contractors;

- \* liaise with the principal contractor regarding ongoing design work;

- \* identify, collect and pass on pre-construction information; and

- \* Prepare/update the health and safety file.



**DESIGNERS:**

Designers are those who, as part of their work, prepare design drawings, specifications, bills of quantities and the specification of articles and substances. This could include architects, engineers and quantity surveyors.

**Roles and Responsibility of projects designer is to:**

- \* Eliminate hazards and risks during design
  
- \* Provide information about remaining risks
  
- \* Where projects are notifiable under the Regulations, designers must also:
  - \* Check that the client is aware of their duties and that a CDM coordinator has been appointed
  
  - \* Provide information needed for the health and safety file
  
  - \* Applies the ERI(c) principals

**PRINCIPAL CONTRACTOR:**

The principal contractor's role is to plan, manage and co-ordinate health and safety while construction work is being undertaken. The principal contractor is usually the main or managing contractor for the work.

**Roles and Responsibility of a principal contractor is to:**

- \* Plan, manage and monitor construction phase in liaison with contractor
  
- \* Prepare, develop and implement a written plan and site rules (Initial plan completed before the construction phase begins)
  
- \* Give contractors relevant parts of the plan

- \* Make sure suitable welfare facilities are provided from the start and maintained throughout the construction phase
- \* Check competence of all appointees
- \* Ensure all workers have site inductions and any further information and training needed for the work
- \* Consult with the workers
- \* Liaise with CDM coordinator regarding ongoing design
- \* Secure the site

**CONTRACTOR:**

A contractor is a person who is involved in construction, alteration, maintenance or demolition work. This could involve building, civil engineering, mechanical, electrical, demolition and maintenance companies, partnerships and the self-employed.

Roles and Responsibility of a Contractor on a project is to:

- \* Plan, manage and monitor their own work and that of their workers
- \* Check the competence of all their appointees and workers
- \* Train their own employees
- \* Provide information to their workers
- \* Ensure that there are adequate welfare facilities for their workers

\* In addition, where projects are notifiable under the Regulations, contractors must also:

\* Check that the client is aware of their duties, check that a CDM coordinator has been appointed and ensure that HSE has been notified before the work starts

\* Co-operate with the principal contractor in planning and managing work, including reasonable directions and site rules

\* Provide details to the principal contractor of any contractor engaged in connection with carrying out work

\* Provide any information needed for the health and safety file

\* Inform the principal contractor of any problems with the plan

\* Inform the principal contractor of reportable accidents, diseases and dangerous occurrences.

### **FINAL USERS OR OCCUPIERS**

The final users of the project being developed will acquire the developed project from the client. The final user has to have knowledge about the development from the designing states to the finishing state. Evidence of authenticity should be produced and examine by the occupier or final users of the development.[B8]

The Health and Safety prospects of the development during and after the development must comply with The Health and Safety Act 1974. This act makes sure that the health and safety welfare of the persons or people at <https://assignbuster.com/environmental-impact-due-to-the-construction-works-on-the-development/>

work is not tempered with. The regulations apply to any establishment with three or more workers, and by law this must be abide by. Anything either than that may result to a visit and an investigation from the HSE (Health and Safety Executive). If your establishment does not comply with there cross check they have the authority to shut down your company, and can only be reopened when they are satisfied with the improvement of health and safety on site. Also you need to address the attention of all the contractor and worker on the Hazard and Risk assessment. This is very important and the HSE do ask for report which proves that it has been under taken.

Risk assessment is simply evaluating to see if a workplace is safe for working. The main aim for the risk assessment is to prove by the various assessments is to render the workplace safe for workers if there are more than three workers or employees. Risk assessment has to been shown to the HSE in case of a major catastrophe.

There are a view steps taken into identifying and eradicating the Risks, they are listed below[B9].

Actual identification of Rick: Rick is everywhere in our day to day activities and we can never get ride of it. So if the least risk is found the outmost best most be done to lessen the impact of the Risk if it is not removed.

Prioritising of the Risk: Rick can be priorities from the less severe to the every much severe during the assessment, it is done this way to find out how crucial an injury is or mite be. The risk is graded High, Medium and Low. This is determined by assessing the likelihood of the risk may occur and cross referencing with how bad the impact may be.

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Control measures to prevent if not eradicate the Risk: Control measures are the various ideas used to reduce Risk, it is the same sort of control measure used for every risk. Listed below are those control measures,

Design it out

Eliminate

Substitute

Isolate

Reduce exposure

Enclosure

Safe system of work

Housekeeping

IITS

### **PPE**

The basic of all the control measures is the uses of PPE which will be provided by employers by law. The top of the list is to design a solution out if it cant be acquired then you move to the beneath measure, till it gets to the uses of the PPEs.

Conclusion: To conclude the risk assessment you must first make sure that your control measures applied to the problems is not causing any harm to

the end users. And keep a safe and vivid record of the control measures to assist with any other risk assessment in the future[B10].

Utility services available for the development.

Since the development is present in a brown field it already has most of the major utility services are available. Services like Electricity, Gas, Telecommunication, roads, water and a good drainage system[B11].

**WATER SUPPLY:** Water is a very essential commodity to the development and the need to provide safe and good quality water is crucial. There are two ways of supplying water, water supply in the UK at the moment is a person per day uses 300 litres of clean water. So supplementing the rain water and using it helps save lots of water since there are lot of water lose. Grey water is used to flush the toilet and recycled about three times. Methere and aerobic compost maker ways of recycling our drains. All these are in place to reduce the use from 300 to 80 litres a day. To make the best of the rainwater. We then have introduced the rainwater harvest system to the project which is basically collecting rainwater below ground storage tanks and with the automatic recycling systems to cleanse the rainwater. With this system, water can be used productively[r12][r13].

This diagram illustrates the recycling use of grey water matter and the underground storage and safe disposal of recycled water[B14].

**ELECTRICITY SUPPLY:** Electricity supplies to the development are very easy since electricity is already present on the site. Anyways the development is all about the use of renewable energies. Therefore the main form of

electricity for the project will be derived from the SUN. Solar PV (photovoltaic) this method uses energy from the sun to create electricity to run appliances and lighting. Photovoltaic system requires only daylight, not direct sunlight to generate electricity and so can still generate some power on a cloudy day[r15].

A typical domestic system can save approximately 1.2 tonnes of carbon dioxide per year, adding up to almost 30 tonnes over a system's lifetime. You can use Photovoltaic systems for a building with a roof or wall that faces within 90 degrees of south, as long as no other buildings or large trees overshadow it. If the roof surface is in shadow for parts of the day, the output of the system decreases. Other ideas for energy efficient electrical supply are the use of wind turbine to generate electricity. This source of energy is very environmental friendly and easily maintained too[r16].

HEATING: For the project heating the main aim is to make the development as insulated as possible. To cut down the used of the heating mechanisms this consumes lot of energy. To achieve this aim the thermal mass of the building mass be established to warm the buildings up with the aid of the sun it is sunny. The insulation also stores heat when the heating system is turned on, this maintain the most of the warmth for a very long time[r17].

To achieve the thermal mass it depends on the outdoor ambient temperatures which may significantly rise and fall with the daily cycle, the internal temperatures remain stable. This is known as thermal lag.

SEWAGE: To safely dispose of biological sanitary waste. The development will be issued with septic tanks to safely dispose of all waste produce. The <https://assignbuster.com/environmental-impact-due-to-the-construction-works-on-the-development/>

septic tank uses the natural bacterial action which decomposes human wastes into environmentally acceptable component. The sinks, toilets, washing machines, baths and showers and the pipe work are the most component that make up the septic tank. The parts that are not so obvious are the underground components. There are various types of septic tanks,

**HiPAF Submerged Aerated Filters:**

It is a biological treatment, designed for applications with variable flows and loads. It has to be designed to the requirements of Royal Standard Commission for wastewater treatment.

**BESST Activated Sludge:**

Biological treatment without primary settlement, designed for applications with a high emphasis on nutrient removal.

**Conical Tanks:**

Conical Tanks are designed for the settlement of raw sewage, the tank is resilient to almost all chemicals. There are other more types of septic tanks that can be used for the development[r18].

**TELECOMMUNICATION:**

The UK's telecom markets have developed early, quickly and deeply due to the pioneering innovation, and the early and widespread adoption of new services and standards. It is the main goal of this project to introduce a better way of using the communication services. The connection to these services will be available since the development is situated in vicinity where they are easily acquired. The use of fibre optic cables will help give a better connection to the development. This cable was first developed in the 70s it is



basically strands of optically pure glass. This is very thin and can carry large amount of digital information for a very long distance.

The core is a thin glass centre of the fibre where light travels.

Cladding is the optical material found in the outer surroundings between the core and the buffer coating which reflects the light back into the core.

The buffer coating is the outer most cover which protects the cable from moisture and damages.

## **THE INFULENCE OF CONTRUCTION WORKS ON THE GLOBAL ENVIRONMENT. T**

The construction industries are being accused greatly over global warming, due to the enormous level of pollution the industry produces. And the emissions from heavy machineries, are more likely some of the reasons why the works within the construction industry is being closely examined and made safer.

So it is our great interest to start producing more eco friendly establishment and ways of establishing them, to cut down the use of natural sources which deteriorates the environment.

That is the reason why in genies ideas such as the SIPs (Structural insulated panels) are being introduced to make buildings easy to build and more eco friendly.

This product is used in construction in America for over 50years, it is now becoming popular in the UK. SIPs are environmentally friendly and

ecologically sound. SIPs are the innovative building construction method of <https://assignbuster.com/environmental-impact-due-to-the-construction-works-on-the-development/>

the twenty first century allowing the rapid deployment of buildings for domestic and commercial use. SIPs reduce or eliminate the need for a structural frame using the inherent strengths a SIP can provide. It is constructed with Orientated Strand Board facing boards with a CFC free/ ODP zero closed cell Polyurethane core. Sips are used all over the world because of the tremendous benefits the product provides. Benefits such as

- \* Environmentally Friendly
- \* Speed to which it is constructed and fitted
- \* Strength and how lightweight the product is
- \* Since the product is constructed in the factory it is built to prevent defects and shrinkage.
- \* Maximum recyclability and minimal waste
- \* Retains energy for a very long time, this helps with the energy consumption.

This and many more are the reason why SIPs are highly demanded in the construction industry to help with the protection of the environment. There are various other types of environmentally safe ways of building to better the globe. The modular homes are another safe system of building, just as the SIP panelling home it is built in the factory in modules. It must comply with the building codes of where it will be placed. It is built well faster and less effort is need to develop it. The below pictures shows when the modules is in construction and the complication[B19].

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## **REGULATIONS AND LEGISLATIONS INVOLVED WITH THE DEVELOPMENT**

The local government will be in charge of the supervision of the policy on the building regulations for the project. There are a few legislations that apply to a building they are:

- \* Building Act 1984: It is the primary legislations under which the building regulations and other secondary legislations are derived.
- \* Building Regulations 1998: the building regulations exists to ensure the health and safety, convenience and the welfare of persons that will be occupying the buildings upon completion. Also anyone wanting to carry out building work which is subject to the building regulations by law must comply with the regulations.
- \* The Construction Products Regulations 1991 e. t. c[r20].

They are many other regulations that need to be address in any project such as this. The regulations are there to provide a standard for buildings in the country, this has been in practice for a very long time and failure to comply with these regulations and legislations set will result to demolition of once establishment, fine and even gain prison sentences. So it is very important to abide by these regulations.

If and only if all of this methods or stages of the construction is according to regulation, than can the completion of the development be issued and if the client is interested to hand over the maintenance of the to another company the client can do[r21][r22] so.

All the above methods are to provide an incited of the way things will be done during the process of the development and even after the completion of the development[B23].