

Ysgol Y Deri Expansion CEMP Appendix 5

Management of surface water run-off during the construction phase

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1. Introduction

The proposed Ysgol Y Deri Expansion development is a project which consists of the construction of the new SEN school in Cosmeston.

The super-structure works include the construction of the main school building, which encompasses a main entrance, school hall and plantroom, as well as 14 no. classrooms and associated offices and breakout spaces.

Externally the new facilities include foul and storm drainage routes with attenuation tanks, a MUGA, an artificial pitch, a staff car park, a bus drop off facility and a grass sports field.

2. Environmental Risks

The external works have the potential to introduce contaminants from the associated machinery, infrastructure, transportation, importation of construction materials and maintenance and storage of plant equipment as per the below list:

- **Excavated ground and exposed ground**

Recently disturbed and vegetation free ground allows for relatively low velocity runoff to erode the surface. This leads to increased runoff and sedimentation of receiving waters, thereby increasing flood risk.

- **Stockpiles**

Rainfall could lead to erosion of material should a stockpile be uncovered. This could lead to siltation of receiving watercourses and therefore an increase in flood risk.

- **Haul roads**

The run-off from haul roads contains a large amount of suspended solids as well as hydrocarbons. This could lead to siltation of receiving watercourse and therefore an increased risk. This could also impact upon water quality.

- **Oils and hydrocarbons**

The use of oils and hydrocarbons on construction sites provide a risk of leakages and spillages, leading to pollution incidents. This could affect the water quality in the receiving watercourses and aquifers.

- **Weather (storms)**

The runoff from heavy rainfalls could cause flash flooding.

- **Concrete wash out**

During construction the washing out of the concrete delivery vehicles placement shoots will be required and this will be controlled by the site team. This will, as a minimum, be a lined skip which can be dewatered and broken out at regular intervals.

- **Dewatering**

During construction there will be occasions when excavations left overnight could be susceptible to collecting rainfall.

3. Project Control Measures

The following control measures will be reviewed and the most appropriate used throughout the different phases of the project:

• Excavated ground and exposed ground

Due to the on-going nature of the work it is generally not possible to protect all exposed surfaces until the project is complete.

At YYDE we will use the temporary measures listed below to control storm water run-off and these will be used until any new hard surfaces are installed. Prior to the installation of the new hard surfaces the project team will ensure that the permanent features and permanent drainage solutions are installed.

To help limit the volume of runoff reaching the exposed ground we will implement the following protection measures:

- Run-off diversion or interception devices
- Silt fences such as the Hy-TEX Terrastop Silt fence
 - This is a special high quality permeable technical filter fabric that be installed as an entrenched vertical barrier fence that is designed to intercept and detain run-off trapping harmful silt
- Temporary hay bales and / or sediment entrapment mats
 - Hay bales or entrapment mats will be used to capture sediment if temporary holding ponds are required
- Gully Guards
 - These will be placed in all existing gullies in Fort Road that could receive surface water run-off, although this will be unlikely due to site levels
 - If used, the guards will be inspected daily and cleaned as appropriate to ensure that silt or debris collected in the guards do not impede the flow water into them
- Temporary catch pits
 - Using a terram and clean stone we will form temporary catch pits at the lowest points of each construction zone to control water flows

• Stockpiles

Stockpiles will be located away from existing drainage points to prevent the leaching of contaminants. They will be capped once formed to reduce run off or erosion.

- A combination of cut-off ditches and silt fencing

• Haul Roads

Haul roads will be designed so that the length is kept to a minimum, but still serves its purpose. The gradient will be shallow to prevent increasing runoff velocity and, if possible, bunds and / or discrete ditches constructed to intercept the runoff.

Haul roads will be sprayed regularly to keep down dust or until the surface treatment can be laid. If any section of a haul road is hard surfaced, then it will be swept on a regular basis to prevent accumulation of dust and mud.

Haul roads will be constructed using the final construction build up to Base course level. This is an open base and therefore allows drainage through its make up to the installed drainage system.

Once constructed, there could be a residual risk of silt run off from haul roads and stones surfaces. These risks will be controlled by;

- Constructing suitable channels on haul roads to channel water away from any watercourses, surface drains, or green areas.
- Regular environmental inspections of these areas to ensure controls are effective.
- All operatives will receive a toolbox talk on silt prevention.
- Suitably sized spill kit will be available with spill action plan.
- ISG will consider the use of sustainable drainage systems on site. Features such as permeable surfaces reduce soil sealing, help to increase water infiltration, and can increase groundwater recharge, while swales and retention basins can temporarily collect surface water and reduce soil erosion from surface water runoff.

• Oils and Hydrocarbons

Simple measures can be taken to prevent oil and hydrocarbons becoming pollutants, such as:

- Maintenance of machinery and plant
- Drip trays below all stationary plant
- Regular checking of machinery and plant for oil leaks
- Correct storage facilities
- Check for signs of wear and tear on tanks
- Care with specific procedures when refuelling
- Designated areas for refuelling
- Emergency spill kit located near refuelling area
- Spill kits located in all machinery / plant

• Weather / Storm

ISG have an internal system for weather alerts to projects. These are sent to warn sites and allow preparation time before any significant rainfall.

- Stockpiles of stone and aggregates will be sheeted during times of heavy rain.
- Stockpiles of stone and aggregates will be located as far as practical away from rivers, ditches, or surface water drains. Ideally this will be on level ground.
- Developing a robust environmental action plan with emergency controls.
- Fuel and COSHH substances will be stored in a designated area. They will be in double bunded units with 110% capacity and appropriate spill kit. The designated area will be away from any watercourses, surface water drains

• Concrete wash out

Simple measures can be taken to ensure no concrete wash out pollutes the ground around:

- Discharge of water into a lined or proprietary concrete washout skip
- Concrete washout skip is to be placed in it's own bunded area

• Dewatering

Simple measures can be taken to ensure that dewatering of excavations can be controlled as per the guidance set out below:

- Phasing of the works to ensure that no excavation is left open for more than 48 hours
- Trenches to be backfilled after works are complete
- Ensure that we only have short term and temporary discharge of uncontaminated water which is wholly or mainly rainwater, from an excavation to surface water
- Comply with all the conditions in the regulatory position statement (RPS)

- Tanks are used to ensure pumped water filtered for silts and contaminants
- Only clean water (e.g. rain water) will be permitted to discharge
- Localised temporary soakaways will be used to filter and store dewatering, although this may be limited due to low infiltration rates

4. Emergency Response Plan

In the unlikely event that our control measures fail then the ISG emergency response plan will be followed.

- Check watercourses during periods of high rainfall or construction activities with potential for significant run-off.
- Check for broken field drains which could lead to pollution at any time.
- Take immediate action if you identify any high sediment which is causing pollution or if unsure if it is significant consult with the environmental manager(s) who should determine who is to be notified
- Implement mitigation measures immediately. Control pollution at source wherever possible. Consider whether the site activity should be halted.
- Consult the ISG Environmental Team if in doubt.
- Place straw bales, silt screens etc to help control sediment immediately and/or check measures already in place for efficacy.
- Monitor the effectiveness of protection measures daily and re-plan as necessary.
- Always remove silted bales/screens etc regularly so they do not make problems worse.
- Talk to Officers regularly and check your plans for emergency procedures.
- Reconsider working practices which may be causing pollution in poor weather conditions and re-plan / re-programme accordingly.
- Plan in water activities to take account of the risk of flooding (eg when constructing water crossings).

5. Monitoring

The following monitoring arrangements will be implemented by the site team:

- Daily checks of all gulley guards
- Daily checks of silt fencing
- Daily weather checks

6. Training

All personnel from the site manager to engineers, plant operatives, sub-contractors, tradesmen and labourers have a part to play in preventing pollution and harm to the water environment during construction. It is crucial that each member of the site team is aware of the potential impact of their activities and is equipped with the knowledge of how to eliminate or reduce that impact.

7. Repair works and improvements to existing site features

N/A - there is no existing stormwater drainage on site.

The large DCWW combined sewer which runs approximately 10m beneath the site will not be altered in any way during the works.

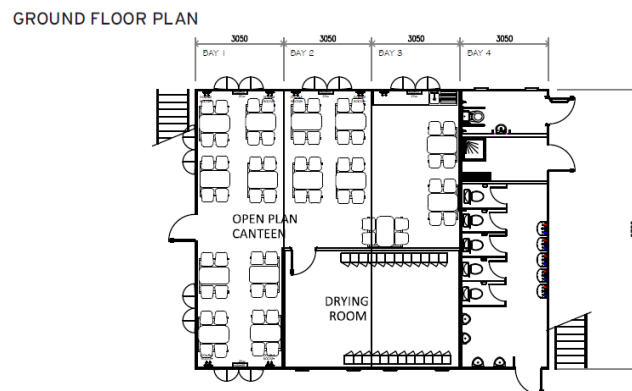
The existing storm drainage in Fort Road will be removed and replaced as per the S278 design.

8. Programme and Phasing

Appendix 5 of the CEMP (this document) should be read in conjunction with the “YYDE Phasing Sequence” and “YYDE surface water control plans” documents which are Appendix 2 and 6 respectively.

9. Site Welfare and Office

During the construction phase it is a CDM requirement to provide welfare facilities for our staff and operatives. For the delivery of YYDE our site welfare will be placed on the future staff car parking area. The designed paving sub-base will be installed with a temporary permeable asphalt base course on top to provide a clean and safe surface. The welfare set up will comprise of 4 on 4 32ft cabins and will be approximately 118m².



At the end of the main works the cabins will be removed and an oasis unit used to deliver final completion of the car park, similarly to how the initial works will be serviced.

10. Dealing with change

Any changes that occur during the construction stage will be communicate to the SAB officers for review.