



Planning Application for New Buildings,  
Part of an Upgrade of the  
Llwyn Onn Water Treatment Works

Design & Access Statement,  
incorporating Planning Statement

June 2011



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**PLANNING APPLICATION FOR NEW BUILDINGS,  
PART OF AN UPGRADE OF THE LLWYN ONN WATER TREATMENT WORKS**

**DESIGN & ACCESS STATEMENT, INCORPORATING PLANNING STATEMENT**

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B&amp;V project no. 173668

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## 1. INTRODUCTION

### Purpose

- 1.1 This Design and Access Statement has been prepared by Black & Veatch Ltd on behalf of Dee Valley Water plc, in support of Dee Valley Water's planning application for new buildings, which form part of an upgrade of the Llwyn Onn Water Treatment Works (WTW). The purpose of the upgrade scheme is to enable the continued treatment of public water supplies.
- 1.2 Section 42 of the Planning and Compulsory Purchase Act 2004 requires that a statement covering design concepts and principles, as well as access issues, be submitted with an application for planning permission. The purpose of the statement is to allow applicants to demonstrate an integrated approach that will deliver inclusive design and address a full range of access requirements through the design process.
- 1.3 The following guidance has informed the preparation of this Statement:
- Design Commission for Wales: Design and Access Statements in Wales: Why, What and How (2008);
  - Technical Advice Note 12 Design (2009), and
  - The Wrexham County Borough Council Planning Information Sheet: Design and Access Statements.

### The Applicant

- 1.4 Dee Valley Water was formed in 1997 with the merger of the former Chester Water Company and Wrexham Water Company. Dee Valley Water is a statutory water undertaker. It serves around 258,000 customers in a supply area that covers 831 square kilometres (km<sup>2</sup>) in North East Wales and the North West of England. Dee Valley Water operates eight impounding reservoirs, two river abstractions and two groundwater sources, which supply approximately 62 million litres per day<sup>1</sup>.
- 1.5 To enable the company to continue meeting its statutory duties to provide safe drinking water, it has appointed Black & Veatch Ltd as its Principal Contractor with responsibility for carrying out the upgrade of the Llwyn Onn WTW.

### The Decision Making Framework

- 1.6 Llwyn Onn WTW is located within the administrative area of the Wrexham County Borough Council (WCBC), which is the relevant planning authority responsible for determining this planning application.
- 1.7 Environmental Impact Assessment is not required.

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<sup>1</sup> <http://www.deevalleywater.co.uk/category.php?id=1> (Accessed 20/04/11)

## **Land Ownership**

- 1.8 The proposed development is entirely on land owned by Dee Valley Water (refer to drawing 173668-10006). The Llwyn Onn WTW is sited on 'operational land' as defined in the Town and Country Planning Act (as amended). Operational land is specifically used and held for the purposes of carrying out Dee Valley Water's statutory undertaking.
- 1.9 Therefore this planning application is accompanied by a Certificate A.

## **Format of the Statement**

- 1.10 The upgrade scheme comprises proposals for which planning permission is being applied for, and other components which are permitted development under the Town and Country Planning (General Permitted Development) Order 1995 (as amended) (GPDO). The Table in Appendix 2 describes the individual components of the scheme that are permitted and those that are the subject of this planning application.
- 1.11 This statement outlines the background to the upgrade scheme and describes those components of the scheme that are the subject of this planning application. It includes a design component and an access component. It describes the relevant policy background and provides an appraisal of the proposed development against planning policy. It should be read in conjunction with the following technical reports:
- Baseline Ecology Report
  - Landscape and Visual Impact Appraisal
  - Ecological Mitigation Table
  - Tree Survey Report
  - Noise Assessment Report
  - Llwyn Onn Phase 1 Contamination Report
  - Llwyn Onn WTW Laboratory Results Analysis
- 1.12 It should be noted that these technical reports have considered the impacts of the scheme as a whole, including the permitted development components, and not simply those parts of the scheme that are the subject of this planning application.

## **2. THE PROPOSED DEVELOPMENT**

### **Location**

- 2.1 Llwyn Onn WTW, Cefn Road, Abenbury, Wrexham, LL13 9TT.

### **Background**

- 2.2 Llwyn Onn WTW is approximately 2.5 km to the south east of Wrexham town centre, and 1 km to the north of the village of Marchwiell. It is accessed from Cefn Road. The site covers a total area of 5.2 hectares (ha). The site comprises a large covered reservoir, water treatment buildings and associated pump infrastructure.

- 2.3 It is Dee Valley Water's main water treatment works and supplies the majority of Wrexham.

### **Description**

- 2.4 The upgrade of the WTW comprises components that are permitted development and other components that are the subject of this planning application.
- 2.5 The proposed development, which is the subject of this planning application, comprises:
- Main Treatment Building
  - Booster Pump Building
  - Centrifuge Building
  - Relift Pumps Building
  - Static Mixer Chamber Building
  - MCC Building
  - Lamella Pump Kiosk
  - Orthophosphate Tank and Pumps Kiosk
  - Kiosk for Thickener Pumps
  - Lime Batching Plant Building
- 2.6 Further information and dimensions for these buildings is available in Appendix 2.
- 2.7 The following works, which will be located on operational land and of which, none of the plant exceeds 15 metres in height, is permitted under Schedule 2, Part 17, Class E (g) of the GPDO:
- Lime storage silo;
  - Chlorine contact tank;
  - Installation of lamella tanks;
  - An underground waste washwater tank;
  - Polymer dosing pumps;
  - Installation of underground pipework;
  - Construction of manholes and small chambers;
  - Access roads around the site for new tanks and equipment;
  - Installation of lighting around the site including columns 4m high, and
  - Site clearance, excavation, landscaping using excavated material from the site and planting.
- 2.8 A new 800mm diameter underground inlet main will be installed outside the WTW boundary. This underground main, will exit the WTW site on the southern boundary and then cross under agricultural land. It is permitted development under Schedule 2, Part 17, Class E (a).
- 2.9 Llwyn Onn WTW operates on a 24-hour basis throughout the year, and it will continue to do so when the upgrade scheme is commissioned. The proposals are therefore consistent with the existing land use and hours of operation currently employed at the WTW.

## Construction

- 2.10 It is estimated that the construction of the upgrade scheme will be carried out over a 19 month period. Table 1 highlights the indicative sequence of construction activities.

Table 1: Construction Programme

| Activity                        | 2011 |     |     | 2012 |     |     |     |     |     |     |     |     |     |     |     | 2013 |     |     |     |
|---------------------------------|------|-----|-----|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|-----|-----|-----|
|                                 | Oct  | Nov | Dec | Jan  | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan  | Feb | Mar | Apr |
| Main earthworks - excavations   |      |     |     |      |     |     |     |     |     |     |     |     |     |     |     |      |     |     |     |
| Concrete works                  |      |     |     |      |     |     |     |     |     |     |     |     |     |     |     |      |     |     |     |
| Building steelwork and cladding |      |     |     |      |     |     |     |     |     |     |     |     |     |     |     |      |     |     |     |
| Mechanical and electrical works |      |     |     |      |     |     |     |     |     |     |     |     |     |     |     |      |     |     |     |
| Commissioning                   |      |     |     |      |     |     |     |     |     |     |     |     |     |     |     |      |     |     |     |
| Reinstatement and landscaping   |      |     |     |      |     |     |     |     |     |     |     |     |     |     |     |      |     |     |     |

- 2.11 A temporary compound and car park sited within the WTW boundary, with a temporary access road from the public highway, is required to facilitate the construction activities. The compound will include temporary offices, welfare and toilet facilities and storage containers. These temporary works are permitted development under Part 4 Temporary Buildings and Uses, Class A “The provision on land of buildings, moveable structures, works, plant or machinery required temporarily in connection with and for the duration of operations being or to be carried out on, in under or over that land or on land adjoining that land”, and therefore do not form part of the planning application.
- 2.12 The normal construction working hours will be from 0730 - 1800 Monday to Friday, between 0800 -1400 on Saturdays and at no time on Sundays and Bank Holidays. The switchover of the inlet water main to the new facility will be conducted overnight to avoid disruption to water supplies for the local population.

## Site Environmental Plan

- 2.13 Construction activities will be managed through the implementation of a Site Environmental Plan (SEP). A SEP sets out the identified environmental actions pre-construction, during construction and post construction. It will include measures to address the following environmental issues:
- General Environmental Guidelines, including the proposed environmental management and mitigation measures and any additional requirements set by the consenting authorities.
  - Environmental monitoring procedures during the works.
  - Best Practice Guidance.
  - Normal working hours.
  - Communication and training methods.
  - Environmental Incident Reporting Systems.
  - The roles of environmental staff and others in implementing the SEP.

### **3. NEED FOR THE SCHEME**

#### **Background**

- 3.1 Dee Valley Water PLC supplies water to approximately 258,000 customers in North East Wales, Chester and North West England. Dee Valley Water abstracts 62 million litres of untreated water every day, of this 83% is derived from the River Dee at two major abstraction points, 10% comes from upland reservoirs and the remaining 7% from two underground sources.
- 3.2 The Llwyn Onn WTW is the largest water treatment works operated by Dee Valley Water. The current maximum throughput of the WTW is 47.5 million litres per day.
- 3.3 It was originally built in 1940, soon after the outbreak of the second world war, by the then Ministry of Works, to supply water to a nearby Royal Ordnance munitions factory.
- 3.4 Whilst there have been a series of upgrades and modifications at the site, the main treatment plant structures have remained broadly the same for the past 70 years. Those structures were constructed in wartime; understandably in some haste and economic restraint, and it is unlikely that a 70 year life span was expected. The structural concrete used in its construction has reached the end of its useful life and the WTW urgently needs refurbishment if serious supply interruptions to customers are to be avoided.

#### **Scheme Drivers**

- 3.5 The primary driver of the upgrade scheme is Dee Valley Water's statutory responsibility for the abstraction, treatment and supply of clean safe drinking water. This duty is enforceable by the Secretary of State and the industry's financial regulator, the Water Services Regulation Authority (Ofwat). It also has a duty to promote the efficient use of water both by itself and by its customers.
- 3.6 Concrete used to form the water retaining tanks at the Llwyn Onn WTW has reached the end of its useful life.
- 3.7 There have been a series of leaks and minor failures at the site. Moreover recent major refurbishment works has highlighted the fragility of the old structures; resulting in and revealing that water is leaking from treatment plant. This water is washing out the supporting soils and silt material from beneath the treatment structures, which is creating voids. There is a high risk that this will lead to structural failures, which would prevent the WTW operating normally and therefore Dee Valley Water's ability to continue to supply water to Wrexham and surrounding area, in accordance with its statutory responsibilities.

#### **Structural Surveys**

- 3.8 Dee Valley Water commissioned a structural survey of the site. This identified extensive cracks in concrete structures and evidence of water seepage from

them. The concrete was generally found to be in poor condition. Rust staining on structures indicates that reinforcement steel in the concrete is corroding due to carbonation. Carbonation of concrete is a process by which carbon dioxide from the air or water penetrates into concrete and reacts with calcium hydroxide to form calcium carbonates. This attacks the concrete and reduces its alkalinity, which leads to corrosion of the reinforced steel.

- 3.9 The structural survey concluded that key concrete structures have exceeded their design life and are vulnerable to leaks. Crack repairs have taken place in the past, but the original concrete reinforcement does not meet modern day European standards. The affected structures are beyond the stage where piecemeal repairs and refurbishment can address the fundamental problems economically or effectively.

### **Conclusions**

- 3.10 Llwyn Onn is the main water treatment works and sole public water supply for most of Wrexham. There is no alternative supply of water for most of the district. The consequences of failure of the WTW as a result of structural failures at the site would be serious and it is vital that preventative work is carried out. There is no alternative to major reconstruction of the works, which must be delivered whilst the existing WTW continues to operate. The outcome of the scheme will be the assurance of a reliable treatment works producing water to modern standards. The treatment capacity of the upgraded WTW will be the same as the existing site.
- 3.11 As a regulated water company, Dee Valley Water has a legal obligation to ensure that it invests sufficiently in its assets to maintain their serviceability. The upgrade scheme is included in the company's capital expenditure plan for 2010 to 2015.

## **4. ASSESSMENT OF THE SURROUNDINGS OF THE PROPOSED DEVELOPMENT**

- 4.1 Llwyn Onn WTW is an operational water treatment works. The proposed development, which is the subject of this planning application, is entirely contained to the existing operational land.

### **The Surroundings**

- 4.2 The WTW, which is accessed from the Cefn Road, is located approximately 1 km to the north of the village of Marchwiel and 500m to the east of the suburban edge of Wrexham. The Five Fords Wastewater Treatment Works (WwTW) is located less than 1km to the south of the site and the Wrexham Industrial Estate is approximately 1.5km to the east.
- 4.3 The WTW is located in an elevated position (approximately 70m AOD) on the edge of an escarpment and ridge of high ground. The WTW overlooks surrounding pasture farmland and the Afon Clywedog.

- 4.4 The topography of the land surrounding the WTW is a mix of higher ground to the west and lower lying ground to the east. There is agricultural land to the north, east and south with field boundaries defined by scattered, isolated trees and copses and substantial hedgerows, which include hawthorn, blackthorn, hazel, field maple and bramble. There are also woodland blocks and hedgerow trees in the area surrounding the WTW, which comprise predominantly oak, ash, hazel and sycamore species. To the immediate west of the site is an area of woodland.

### **The WTW Site**

- 4.5 The WTW comprises a large above-ground water reservoir (Photograph 1, Appendix 3), office building, pump-house building (Photograph 2), an electricity substation/ transformer building, an enclosure housing backup generator (with integral diesel tank), chemical house and two long wooden storage sheds (Photograph 3).
- 4.6 To the east of the reservoir is the existing treatment building, lime silo and LPG tank (refer to photograph 5). South of this are two concrete wash-water tanks and a series of settlement and sludge storage lagoons (Photograph 6).
- 4.7 A tar macadam access road loops from the site entrance at the north east, around the reservoir and treatment building and back to the entrance.

## **5. CONSULTATIONS**

- 5.1 Representatives of Dee Valley Water met with officers of WCBC on 8 May 2011 and 27 May 2011 to discuss the proposals and the scope of the planning application.
- 5.2 Should the proposals be granted planning permission, letters will be issued to local residents to notify them of the commencement of development, to keep them informed about the construction activities, and to inform them when construction activities are complete.

## **6. DESIGN COMPONENTS**

### **Introduction to the Design Component**

- 6.1 The design component of this Design and Access Statement outlines the design process that has been undertaken in the context of the physical, social and economic environment of the site and its surroundings. This includes descriptions of the amount and density of development proposed, the layout, the scale of development, the landscaping scheme and the appearance of the proposed scheme and the permitted development.

### **Proposed Use**

- 6.2 The planning application is for the construction of a new water treatment building, new booster pump station and several kiosks to house pump equipment, which form part of an upgrade of this operational WTW.

### **The Design Process**

- 6.3 The design rationale for the scheme has been informed and constrained by:
- The need for the existing WTW to remain fully operational during the construction.
  - Operational parameters, including the layout of the existing WTW and the location and function of plant.
  - The nature and volume of water to be treated.
  - Demand and supply variations, which result in fluctuations in flows.
  - The function the plant needs to perform to effectively treat public water supplies.
  - The importance of providing robust, tried and tested plant due to the implications of plant failure.
  - The aim to minimise energy requirements.
  - The need to carry out regular routine maintenance of plant.
  - The need to provide a safe and secure working environment for Dee Valley Water operatives and contractors, and to ensure public safety.
  - The existing topography, ground conditions and above ground features at the site.
  - The context of the surrounding landscape.
  - The potential environmental and economic effects of the construction and operation of the proposed scheme.
  - Making effective use of physical resources, including the use of established infrastructure and an operational site.
- 6.4 Providing a safe and secure working environment for both the construction team and the operators of the scheme, and ensuring public safety, has been integral to the development of the engineering design. The health and safety considerations that affect the construction and operation of the scheme include:
- Working with water
  - Working in confined spaces
  - Working with electrical equipment
  - Preventing unauthorised access

### **Amount and Density of Development**

- 6.5 The Llwyn Onn WTW site is approximately 5.2 ha in area. The total footprint of planning application proposals is 0.3ha.
- 6.6 The location, footprint, and amount of the upgrade scheme is dictated by the function the WTW plant needs to perform for the process of treating public water supplies, the need to carry out regular routine maintenance of plant, and the requirements of health and safety legislation. The proposed scheme is therefore considered to be appropriate in size and in respect of its functional requirements.

## Layout

- 6.7 The existing site layout includes a large covered reservoir, treatment plant and buildings, sludge settling lagoons and compound areas. Access is via an access road which joins Cefn Road at the eastern boundary of the site. The site plan (refer to Appendix 1), illustrates the location of the proposed and permitted development components of the upgrade scheme.
- 6.8 The proposed layout is constrained by the amount of land owned by Dee Valley Water, the existing built infrastructure within the site, and the need to locate new buildings adjacent to plant relevant to current on-site processes. The layout is also a product of the function it needs to perform through the process of water treatment, the need to carryout regular routine maintenance, as well as the requirements of health and safety legislation.

## Scale

- 6.9 The site plan (Appendix 1), illustrates the relationship between existing site structures and those proposed components that are the subject of the planning application. Descriptions of the individual scheme components, including dimensions, are provided in Appendix 2 of this planning application.
- 6.10 The overall scale of the development is a function of a number of variables, including the volume of water to be treated, which is a consequence of the size of the catchment, and the plant necessary to achieve the standard of treatment to meet regulatory requirements.

## Landscaping

- 6.11 The WTW is surrounded by agricultural land and areas of woodland. Within the site there are areas of mown grass and scattered trees.
- 6.12 The WTW boundary is defined by a chain link fence with security gates and a mixture of hedgerows and trees that provide visual screening. A mature conifer hedge forms the eastern boundary, a shelterbelt of maturing broadleaved woodland (comprising of Scots pine, oak, ash, cherry, sycamore, beech, lime and hawthorn) lies to the north and there are hedgerows with mature trees along the south west and southern boundaries.
- 6.13 The existing perimeter hedgerow, trees and boundary planting will be retained as far as reasonably practical. The existing vegetation and mature trees adjacent to, and forming the northern and western boundaries will be protected during the works in accordance with BS5837:2005 Trees in Relation to Construction.
- 6.14 The creation of a temporary construction access route necessitates the removal of an area of small trees, shrubs and a short section of hedge. Following completion of construction work the fenceline will be reinstated and during the first planting season locally indigenous woodland species will be planted.

- 6.15 The construction of the upgrade scheme will generate approximately 5000m<sup>3</sup> of excavated material, which will be used beneficially on site to create landscaped screening bunds. Additional tree planting throughout the site is also proposed. This will both enhance biodiversity and complement the landscape characteristics of the area, in time providing effective visual screening. Details of the landscaping proposals are set out in the Landscape and Visual Impact Assessment Report that accompanies this planning application.

### **Appearance**

- 6.16 The layout of the WTW, the locations of the permitted development and the proposed buildings have been dictated by the engineering processes that the solution is mandated to achieve. The proposed development is naturally aligned with the existing infrastructure.
- 6.17 The new buildings will be similar in nature and no higher than the existing plant or buildings at the site, matt and green coloured cladding materials are proposed. These proposals complement the scale, form and exterior finish of the existing water treatment buildings. The design conveys the common architectural language of this fully operational WTW.
- 6.18 Ensuring the security of public water supplies is of paramount importance; therefore security is a key design parameter. The level of security provided at individual sites is set by Government produced standards and is audited under arrangements set out by Defra and government security agencies. At Llwyn Onn WTW the required security features include security-rated doors and a secure boundary fence. This also reflects the objectives of Unitary Development Plan (UDP) Policy GDP 1 (b) and draft Local Development Plan Policy SP1.

## **7. ACCESS COMPONENTS**

### **Introduction**

- 7.1 The access component of this statement explains the vehicular and transport links to the development and how the principles of inclusive design, including the specific needs of disabled people, have been integrated into the proposed scheme. It does not extend to consideration of the internal aspects of individual buildings.

### **Planning Policy and Guidance**

- 7.2 The following relevant planning policies and guidance have been reviewed and used to inform the access arrangements for the proposed scheme:
- Planning Policy Wales (Edition 4, February 2011)
  - Technical Advice Note (TAN) 18: Transport (2007)
  - Regional Transport Plan (Edition 3, April 2007)

### **Access to the Site**

- 7.3 Vehicular and pedestrian access to Llwyn Onn WTW is via Cefn Road, which is a minor road leading from Wrexham. Cefn Road connects with the B5130 and the A525 approximately 4km to the south east of the site. This existing site access will not be changed by the upgrade scheme.

### **Degree of Access Within the Site**

- 7.4 A site access road and a network of footpaths provide Dee Valley Water operatives with safe access to buildings and plant. The upgrade scheme includes new site roads to enable safe access to the new buildings and plant. Those works, which are being carried out under permitted development rights, reflect the objectives of UDP Policy GDP 1 (d).

### **Emergency Access**

- 7.5 For security and safety reasons, the site is only accessible to employees of Dee Valley Water and its contractors who are involved in the operation of the WTW or in routine maintenance. Dee Valley Water's health and safety requirements govern access and movement around the site. Routine maintenance and servicing associated with the site and plant is undertaken in accordance with the normal site operating procedures and in accordance with normal health and safety policy. The proposal has been designed to allow all parts of the plant to be served in a safe and secure manner. The site is accessible to emergency vehicles.

### **The Disability Discrimination Act 1995 (DDA)**

- 7.6 The DDA places positive duties on organisations and employees to think carefully about the needs of people with disabilities. It ensures that employers have to make reasonable adjustments to the workplace to ensure disabled workers are not disadvantaged.
- 7.7 In formulating the proposals, Dee Valley Water has had regard to both the relevant provisions of the DDA and to its own written Disability Policy. Dee Valley Water seeks to meet the highest standards of accessibility and inclusion within its proposals within the parameters of the safety and security of its operational infrastructure.
- 7.8 The layout and form of the upgrade scheme is primarily determined by its function. Where plant is accessible from ground level and does not require ladders and external staircases for operation, inspection and maintenance, disabled access will be provided. This will include the removal of unnecessary physical barriers to the movement of people. However, due to the nature of the proposals, the residual health and safety risk for disabled employees, and the costs involved, it is considered unreasonable for Dee Valley Water to provide disabled access to all structures.

## **8. DEVELOPMENT PLAN**

## Planning Policy Context

- 8.1 The statutory development plan together with UK Government policy on sustainable development, Welsh Assembly Government documents such as Planning Policy Wales and Technical Advice Notes (TANs), other statutory and non-statutory guidance documents have been used to inform the design of the proposed scheme.
- 8.2 Planning authorities are required in determining applications to have regard to the provisions of the development plan, so far as material to the applications; to any other material planning considerations, and to take into account any representations made to them.
- 8.3 This section of the Design and Access Statement identifies the statutory development plan, relevant national policy and guidance and emerging policies that are material.

## Welsh Planning Policy

### ***The Wales Spatial Plan***

- 8.4 Planning Policy Wales – The Wales Spatial Plan, sets out the strategic framework to guide future sustainable development of Wales over a 20 year period. Under section 62 of the Planning and Compulsory Purchase Act 2004 (as amended) local planning authorities, in preparing a local development plan, must have regard to the Wales Spatial Plan; however, it does not form part of the statutory development plan.
- 8.5 The Wales Spatial Plan emphasises the importance of local authorities working with others to tackle regional infrastructure problems on issues like water. It acknowledges both the constraints on water infrastructure and the importance of infrastructure to the establishment and growth of business.

### ***Planning Policy Wales***

- 8.6 National planning policy is set out in Planning Policy Wales (PPW) (Edition 4, February 2011).
- 8.7 PPW acknowledges the importance of providing adequate and efficient water supply infrastructure for economic, social and environmental sustainability, and the need for timely investment in such infrastructure. It sets out objectives for the delivery of infrastructure including the protection and improvement of water resources. PPW advises local planning authorities to “*encourage the use of sites where existing water supply and/or drainage provision problems can be solved*”, paragraph 12.4.1.
- 8.8 PPW is supplemented by a series of TANs, Circulars and policy clarification letters. These are material to decisions on individual planning applications. The following TANs are relevant to this development:
- Technical Advice Note (TAN) 5: Nature Conservation and Planning (2009)
  - Technical Advice Note (TAN) 11: Noise (1997)
  - Technical Advice Note (TAN) 12: Design (2009)

- 8.9 The West Cheshire/North East Wales Sub-Regional Spatial Strategy, adopted in 2006, is also relevant.

### **The Statutory Development Plan**

- 8.10 The Wrexham Unitary Development Plan (UDP) 1996 – 2011, which was adopted in February 2005, is the statutory development plan.
- 8.11 The following UDP policies are of relevance to determination of the planning application:

#### **Part 1: Strategic Policies**

##### *The Broad Location of the Development*

- Policy PS2
- Policy PS3
- Policy PS4
- Biodiversity*
- Policy PS11

#### **Relevant General Development Principles**

- Policy GDP1 Development Objectives
- Policy EC1 Green Barrier
- Policy EC4 Hedgerows, Trees and Woodland
- Policy EC5 Special Landscape Areas
- Policy EC6 Biodiversity Conservation
- Policy EC12 Development and Flood Risk
- Policy EC13 Surface Water Run-off
- Policy MW9 Protection of Mineral Resources

- 8.12 The UDP will in due course be replaced by the Wrexham Local Development Plan (LDP), expected September 2012. The Deposit LDP was subject to public consultation between 4 June 2010 and 16 July 2010. Consultation on alternative sites for development took place in Spring 2011. The Council aims to submit the DPD to the Welsh Assembly in August 2011, which will be followed by an independent Examination in Public during Spring 2012.

- 8.13 Relevant LDP policies include:

- Policy SP1: General Development Principles
- Policy SP2: Broad Location of Development
- Policy SP9: Development Proposals and Transport
- Policy SP10: Protecting and Enhancing the Natural Environment
- Policy SP12: Safeguarding Mineral Resources
- Policy SP14: Green Barriers
- Policy P12: Community Facilities Provision
- Policy P33: Special Landscape Areas
- Policy P43: Flood Risk
- Policy P45: Design Principles

### **Evaluation**

8.14 The following planning and environmental issues have been identified and analysed against relevant planning policy:

- The acceptability of the principle of the development
- Landscape character and visual amenity
- Biodiversity
- Contamination
- Water resources
- Archaeology and heritage
- Operational traffic and transport
- Construction amenity issues – noise, air quality, traffic, lighting

***Acceptability of the principle of development***

*(UDP Policies: PS2, PS3, PS4, GDP1, MW9*

*Draft LDP Policies: SP2, SP12, P12)*

8.15 Llwyn Onn WTW supplies water to Wrexham and surrounding area, it is essential infrastructure that supports sustainable communities. The upgrade scheme is necessary to secure the continued supply of water and is therefore in the public interest. In accordance with UDP Policy PS3 the scheme makes use of previously developed land at an existing WTW, and in accordance with LDP Policy P12 the scheme improves an existing community facility.

8.16 In accordance with UDP Policy PS2, the upgrade scheme has been carefully designed; it incorporates sensitively considered landscaping proposals and appropriate construction management measures, which will minimise potential detrimental affects on the surrounding environment. In accordance with Policies PS4, GDP1 and SP2, the proposed design reflects and maintains the existing character of the area. It is considered that the proposals will make a positive contribution to the locality through security of public water supplies and in terms of the landscape and biodiversity enhancements that form an integral part of the scheme design. The proposals also incorporate measures designed to make the upgraded WTW more energy efficient.

8.17 The WTW is located in an area safeguarded from non-mineral development under UDP Policy MW9. However the proposals are confined to 'operational land', which is specifically held for the purposes of the water company's statutory duties. Moreover the land is developed and therefore the proposals will not further sterilise unworked minerals deposits.

8.18 It is concluded the principle of this development in this location, which is necessary to secure public water supplies for the Wrexham area, accords with relevant planning policy and is acceptable.

***Landscape character and visual amenity***

*(UDP Policies: GDP1, EC4, EC5*

*LDP Policies: SP1, SP14, P33, P45)*

8.19 The WTW is located within the 'Green Barrier'. UDP Policy EC1 seeks to maintain the openness of the Green Barrier. The landscape character of the WTW and its immediate surroundings, as defined in the Local Planning Guidance Note No.19 Wrexham Town's Character Areas is considered to

comprise '4c – Recent Estate and 5 - Mixed Non-Residential Area'. For both of these character types, associated design guides have been produced by the Council, which recommend landscape enhancement and encouragement of biodiversity, this has been incorporated into the scheme landscape proposals.

- 8.20 Approximately 600m to the north of the application site lies Llwyn Onn Hall, an area of estate parkland and along the southern boundary is Mill Wood, both designated as Special Landscape Area, within which priority is given to its protection and enhancement (Policy EC5).
- 8.21 A Landscape and Visual Impact Assessment (LVIA) of the upgrade scheme has been carried out and the report accompanies this planning application. The LVIA considered the landscape characteristics of the WTW and its surroundings, assessed the landscape features and includes a daytime and night-time visual appraisal.
- 8.22 The LVIA concludes that the landscape character in the vicinity of the WTW is of low sensitivity to change and will not be adversely affected by the proposals. Distant, glimpsed views towards the site can be gained due to its elevated position from residential receptors and the surrounding network of public footpaths and minor roads. However the majority of the development will not be visible from the wider landscape due to the existing tree cover and the undulating nature of the surrounding topography. The LVIA concludes that the proposals will not cause unacceptable visual impacts.
- 8.23 The LVIA considers that, with careful design, exterior lighting for the WTW will not increase the levels of light pollution or night glow already experienced from the existing works.
- 8.24 The LVIA recommends additional tree and vegetation planting and this has been taken forward into the landscape mitigation proposals, which include:
- **Protection of existing trees and perimeter vegetation.** Existing perimeter hedgerow, trees and boundary planting on all boundaries of the site will, in accordance with Policy EC 4 be retained as far as is reasonably practicable. Following construction, boundary trees and vegetation will be appropriately managed to maintain the amenity and nature conservation value of these landscape features.
  - **Shelterbelt reinstatement and gap planting.** Creation of the temporary construction access road requires removal of an area of vegetation. It is proposed to replant an equivalent section of shelterbelt along the work's northern boundary after the removal of the temporary access track and to plant in vegetative gaps.
  - **Height of ridgeline.** The proposed roofline of the main treatment building will be at, or below the mature tree canopy horizon line thereby minimising the visual impact and screening the development, when viewed from neighbouring receptors.
  - **Colours and Materials.** The choice of matt cladding materials and green colour scheme will complement the exterior finish of existing buildings at the WTW.

- **Exterior Lighting.** Where external operational lighting is required a restriction of luminare height, lux level and inclusion of appropriate shielding will prevent light pollution.

8.25 It is considered that these measures will, in accordance with Policy GDP1 make a positive contribution to the appearance of the locality.

### **Biodiversity**

*(UDP Policies GDP1, PS11, EC4, EC6*

*Draft LDP Policy SP10)*

8.26 A preliminary environmental appraisal and an ecological appraisal of the upgrade scheme have been carried out; the resulting report accompanies this planning application. This identifies that there are no designated nature conservation areas within or adjacent to Llwyn Onn WTW. Mill Wood, an area of ancient woodland, runs along the western and south western boundaries of the site. However the proposals will not encroach or have any impact upon it. Afon Clywedog flows into the River Dee, which is part of the River Dee and Bala Lake Site of Special Scientific Interest (SSSI) and Special Area of Conservation (SAC), the boundary of which is approximately 5.2km east of the site.

8.27 The ecological appraisal confirms that construction of the upgrade scheme will result in the loss of a small amount of foraging habitat for bats and potential day/night roost/commuting route, as well as the loss of a small amount of nesting and foraging bird habitat and reptile habitat. The ecological appraisal also noted the presence of giant hogweed at the site, which is an invasive species under the Wildlife and Countryside Act.

8.28 To avoid potential ecological impacts, the following measures will be implemented:

- Pre-construction check for badgers.
- Pre-construction check/surveys for bats within the wooden sheds to be demolished.
- No vegetation/scrub removal to be conducted within the breeding bird season unless checked by an ecologist prior to removal. Breeding bird surveys if site clearance works take place in the breeding bird season (March-September inclusive depending upon current climatic conditions).
- Site supervision and checks for reptiles prior to vegetation clearance. Avoid disturbing any potential hibernacula during the species overwintering period (November to February depending on temperatures).
- Best practice methodologies for the removal/disposal and/or control of any invasive species found on site.

8.29 In accordance with UDP Policies PS11 and EC6 and Draft LDP Policy SP10, the proposed scheme incorporates measures to improve biodiversity value through the introduction of locally indigenous species of trees and hedgerow plants, provision of bat boxes, and the creation of habitat/refugia areas for reptiles. The full ecological mitigation proposals are detailed in the accompanying Ecology Report and will be incorporated into the SEP.

- 8.30 Should protected species be encountered during construction, then work in that location will cease and a trained ecologist will visit the site and advise on appropriate mitigation measures to be employed before work recommences.
- 8.31 An arboriculture assessment has been carried out and accompanies this planning application. The proposals in accordance with UDP Policy EC4 seek to conserve as far as reasonably practicable existing trees and vegetation at the site and include new planting to enhance the landscape. Trees will be protected during construction through implementation of a tree protection plan. However in total 11 trees require removal; this impact will be mitigated with replacement planting. The arboriculture assessment concludes that the overall quality and longevity of the amenity contribution provided by the trees and groups of trees within and adjacent to the site will not be adversely affected by the proposed development.

**Contamination**  
(UDP Policy GDP1)

- 8.32 A Phase 1 Contamination Report has been prepared, which accompanies this planning application. Tests for heavy metals and organic compounds found levels which are within acceptable limits for both commercial and residential developments.
- 8.33 The report concludes that during the temporary construction activity there is a medium risk to off-site residents and livestock from the inhalation and ingestion of dust containing elevated levels of contaminants from shallow Made Ground across site. However in accordance with the recommendations of that report the SEP will include dust control measures to minimise dust generation. Delivery of these measures will, in accordance with UDP Policy GDP1, safeguard public amenity and the environment from the potential adverse effects of pollution during the construction phase.

**Archaeology and heritage**  
(UDP Policy EC11)

- 8.34 None of the existing buildings or structures at the site or within 0.5km of the WTW are considered to be of architectural merit, they do not benefit from Listed or Schedule Monument status, and the WTW is not located in a Conservation Area.
- 8.35 Clwyd-Powys Archaeological Trust was consulted and confirmed the following:
- There are no Scheduled ancient Monuments, historic parks and gardens or historic landscapes affected by the proposed works at the site.
  - There are no listed buildings on the site, and the site is not within any Conservation Area.
  - There would be no archaeological implications arising from the proposed works.
- 8.36 Therefore it is concluded that in accordance with Policy EC11, the proposals will not adversely affect the site or setting of a Scheduled Monument or archaeological site of national significance, or the site or setting of any non-scheduled sites of archaeological importance.

**Water resources – flood risk, surface water and groundwater***(UDP Policies GDP1, EC12, EC13**Draft LDP Policy P43)**Flood risk:-*

- 8.37 Llwyn Onn WTW is not located within the indicative flood zone; the proposed new development is less than 1 hectare in size, and will not alter local flood cells. Therefore a flood risk assessment is not required to be carried out.
- 8.38 In accordance with Policy EC12, the development will not be subject to or result in an unacceptable risk of flooding on or off site, nor will it adversely affect flood management schemes.

*Surface water drainage:-*

- 8.39 Surface water from the WTW drains to a series of soakaways, which are located around the site. Additionally, some surface water is directed to the treatment lagoons at the site, and is subsequently discharged to the Afon Clywedog.
- 8.40 Surface water from the proposed buildings will drain to a number of new soak-aways at the site, which will be designed in accordance with BRE 365 during the detailed design stage. From the initial calculations undertaken it is anticipated that a trench soakaway, which takes the shortest time to drain half of its volume, will be preferred. This strategy accords with the objectives of UDP Policy EC13 and LDP Policy P43.

*Groundwater protection:-*

- 8.41 The WTW is not located within the inner or outer groundwater protection zone. The groundwater level is known to be approximately 20m below ground and will not be affected by the proposed works.
- 8.42 The SEP will include appropriate control measures, in accordance with Policy GDP1, to manage the potential pollution risks associated with construction. This will minimise the risk of pollution of water.

**Operational traffic and transport***LDP Policy SP 9 and TAN 18*

- 8.43 Llwyn Onn WTW, which operates 24 hours a day, benefits from an existing safe access off Cefn Road. The entrance has excellent sightlines in both directions and the access requires no highway improvements. Operation of the WTW currently generates on average two to five operational light vehicle movements per week. In accordance with Policy SP9, it is not anticipated that the proposed scheme will increase vehicle movements, therefore a transport assessment has not been prepared and no junction improvements to the existing junction are considered necessary.
- 8.44 The internal road network will be extended to provide safe access to the new buildings and treatment equipment. There are five parking spaces provided at the WTW; no site vehicles are permitted to park on Cefn Road.

**Construction amenity issues – noise, air quality, traffic, lighting**  
(UDP Policy GDP1, TAN11, TAN18)

8.45 Marchwiell village is located approximately 0.5km to the south. The nearest residential properties are located at:

- Sedgfield Close located 65m to the north-west of the site
- Taunton Road located 100m to the north
- Old Llwyn Onn (farmhouse) located 130m to the north-east
- Elwyn Drive, Taliesin Close and Berwyn Close in Marchwiell located approximately 670m to the south

8.46 An SEP will be prepared and implemented, which will, in accordance with Policy GDP1, include measures to minimise and manage the potential effects of construction activities on the environment, general amenity and existing land uses.

*Noise:-*

8.47 A noise survey has been carried out; this quantified the ambient noise levels of the current site and assessed the potential noise generation from the scheme. The noise assessment report accompanies this planning application.

8.48 The noise assessment predicts that average noise levels at some receptor locations during construction could exceed 70 dB LAeq, 10hrs. However, it is highly unlikely that all construction plant will operate at the same time during construction, and therefore it is considered highly unlikely that 70 dB will be exceeded during construction. Significant adverse impacts on sensitive receptors are not predicted. Construction activities will be managed in accordance with *BS 2558-1:2008 Code of practice for noise and vibration control on construction and open sites: Noise*, which requires that noise control measures should be adopted, including ensuring that efficient plant and machinery is used on site. Generic mitigation measures will be included in the SEP.

*Air Quality:-*

8.49 The SEP will set out the dust suppression measures to be implemented during construction, including: dampening down excavated material, and implementing on-site speed limits to avoid the generation of excessive dust.

*Traffic:-*

8.50 Llwyn Onn WTW is accessed via Cefn Road, which is a minor road leading from Wrexham.

8.51 It is anticipated that construction activities will generate approximately 38 vehicle movements per day (one vehicle entering and then leaving the site equals 2 movements), during the peak of construction (a period of approximately 6 months). Of these it is anticipated 18 will be HGVs. The timing of HGV deliveries to the site will be proactively managed to avoid congestion. Table 2 sets out an estimate of vehicle movements during the different phases of construction:

Table 2: Traffic Movements by Construction Phase

| Construction Phase | Period (months) | Deliveries (HGV) | Deliveries (LGV & Cars) | Total Vehicle Movements |
|--------------------|-----------------|------------------|-------------------------|-------------------------|
|--------------------|-----------------|------------------|-------------------------|-------------------------|

|                                                              |        |    |    |    |
|--------------------------------------------------------------|--------|----|----|----|
| Prepare site and Earthworks                                  | 1      | 4  | 12 | 16 |
| Concrete Works                                               | 2 - 9  | 14 | 16 | 30 |
| Concrete Works, Mechanical and Electrical Works              | 2 -16  | 18 | 20 | 38 |
| Mechanical & Electrical Works, Building Steelwork & Cladding | 10 -16 | 6  | 20 | 26 |
| M & E Works & Commissioning                                  | 13 -19 | 2  | 18 | 20 |
| Commissioning, Reinstatement & Landscaping                   | 17 -19 | 2  | 10 | 12 |

8.52 It is not anticipated that the construction of the proposed scheme will generate significant transport impacts and therefore a Transport Assessment was not considered to be appropriate. This was confirmed by officers during a meeting between Dee Valley Water and WCBC Highways Department on 23 September 2010.

8.53 In accordance with TAN 18 and Draft LDP Policy SP9, a traffic management plan will be implemented during the construction phase. This will include site signage guidelines and haulage routes.

### ***Lighting***

8.54 Temporary directional task lighting is likely to be required to provide a safe working environment for staff during the construction phase. The lighting will only be switched on when required and it will be directed towards tasks to avoid light spill.

## **9. CONCLUSIONS**

9.1 Llywn Onn WTW is the largest treatment works operated by Dee Valley Water, it is vital community infrastructure that supplies water to Wrexham and the surrounding area. Surveys have identified that there is a high risk of structural failures in concrete treatment plant at the site which have reached the end of their useful life. Major reconstruction work is required. The proposed upgrade scheme will deliver a reliable WTW which will meet the community's water needs.

9.2 The scheme has been reviewed against the requirements of the national and local planning framework. The principle of the development is considered to be acceptable. The proposed design and the methods of construction represent a well considered development that responds positively to the relevant planning policies and sensitively to the surrounding context.

9.3 On completion, the upgraded WTW, including landscape proposals, will generally become part of the well screened existing operational development. It will therefore be seen in the context of existing land-use and will represent a very modest change to the existing view. At longer distances, the development will become indistinguishable in the wider context of the site and surrounding uses due to the landscaping and planting that will be provided as part of the proposed development.

## **Appendix 1 – Site Plan**



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173668050.0200050.0201173668-10010-B1.V6>173668-10010-C.V1(S.P.13.06.11) - X(173668\_gw\_g\_estbh)

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Note: The limits, including the height and depths of the Works, shown in this drawing are not to be taken as limiting the obligations of the contractor under Contract.

NOTES

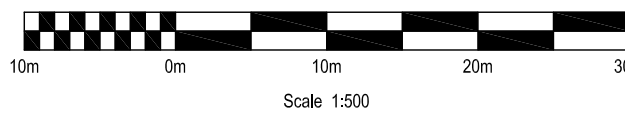
1. ALL DIMENSIONS IN MILLIMETRES UNLESS STATED OTHERWISE.
2. ALL LEVELS IN METRES ABOVE ORDANCE DATUM (m OD) UNLESS STATED OTHERWISE.

BUILDINGS INCLUDED IN PLANNING APPLICATION

- 1 MAIN TREATMENT BUILDING
- 3 WREXHAM BOOSTER PUMP BUILDING
- 4 CENTRIFUGE BUILDING
- 5 RELIFT PUMPS BUILDING
- 13 STATIC MIXER CHAMBERS
- 16 MCC BUILDING
- 18 LAMELLA PUMP KIOSK
- 19 RELOCATED ORTHOPHOSPHATE TANK AND PUMPS (IN KIOSK)
- 20 KIOSK FOR THICKENER PUMPS
- 24 LIME BATCHING PLANT BUILDING

CONSTRUCTION CONSIDERED TO BE PERMITTED DEVELOPMENT

- 2 LIME STORAGE SILO
- 6 TEMPORARY SITE OFFICES
- 7 CHLORINE CONTACT TANK
- 8 LAMELLA SETTLERS
- 9 DIRTY WASHWATER STORAGE TANKS
- 10 ACCESS ROADS
- 11 SITE CLEARANCE / LANDSCAPING
- 12 ALL PIPEWORK
- 14 POLYMER DOSING PUMPS
- 15 INLET MAIN
- 17 WRC TANKS
- 21 2.8m HIGH SECURITY FENCE
- 22 TEMPORARY ACCESS ROAD
- 23 PROPOSED SITE CAR PARK (TEMPORARY)



|     |       |      |     |        |           |                       |
|-----|-------|------|-----|--------|-----------|-----------------------|
| C   | SPJ   | PNa  | BMa | RAF    | 13.JUN.11 | PLANNING              |
| B   | SPJ   | GMP  | BMa | RAF    | 07.JUN.11 | FOR COMMENT           |
| A   | SPJ   | GMP  | BMa | ADu    | 27.MAY.11 | PERMITTED DEVELOPMENT |
| Rev | Drawn | Chkd | Rwd | Apprvd | Date      | Description           |

Designed by: SPC Date: 24.MAY.11

Client



Client Drawing No. Revision



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Project  
LLWYN ONN WTW

Drawing title

SITE PLAN

Drawing scale: 1:500 Sheet size: A1

Drawing no. 173668 - 10010 Revision C

## Appendix 2 - Description of the individual items of plant and buildings to be constructed as part of the Llwyn Onn WTW Upgrade

Please note that only those items in bold form part of the scheme for which planning permission is being applied for, the other items are permitted under the Town and Country Planning (General Permitted Development) Order 1995 (as amended).

Table 3: Description of proposed installations

| Ref | Name                                 | Description                                                                                                                                                                                                                                                                                                                                              | Length | Height | Width | Colours and Materials                                | Count |
|-----|--------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------|-------|------------------------------------------------------|-------|
| 1   | <b>Main Treatment Building</b>       | <b>This is a concrete structure, partially buried, covered with steelwork with a ridge height 10m above finished ground level. The building will contain tanks and equipment for clarifying and filtering water before it is disinfected. The building will also contain a control room, electrical control equipment, toilet, shower and mess room.</b> | 68m    | 10m    | 32m   | Concrete and profiled steel cladding (mineral green) | 1     |
| 2   | Lime storage silo                    | A 3.5m diameter silo for storing lime, for use in the treatment process.<br><br><i>Permitted development under Part 17, Class E (g) any other development in, on, over or under operational land other than the provision of a building but including the extension or alteration of building</i>                                                        | 3.5m   | 14.4m  | 3.5m  | Glass coated steel (mineral green)                   | 1     |
| 3   | <b>Wrexham Booster Pump Building</b> | <b>New pump building to accommodate new booster pumps for supply to Wrexham. The new pumps are required to increase the efficiency of the works and reduce electricity usage.</b>                                                                                                                                                                        | 16m    | 6m     | 13m   | Profiled steel clad building (mineral green)         | 1     |
| 4   | <b>Centrifuge Building</b>           | <b>A replacement to the existing centrifuge building (3m by 3m by 2.5m high) with a slightly larger</b>                                                                                                                                                                                                                                                  | 5m     | 2.5m   | 3m    | Profiled steel clad building (mineral green)         | 1     |

| Ref | Name                         | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Length     | Height                     | Width     | Colours and Materials                                 | Count    |
|-----|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------------------------|-----------|-------------------------------------------------------|----------|
|     |                              | <b>building to allow an additional centrifuge to be housed. The additional centrifuge improves reliability of the treatment process.</b>                                                                                                                                                                                                                                                                                                                                      |            |                            |           |                                                       |          |
| 5   | <b>Relift Pumps Building</b> | <b>A building to house pumps which take treated water from the chlorine contact tank to the storage reservoir.</b>                                                                                                                                                                                                                                                                                                                                                            | <b>12m</b> | <b>1m to 4m on incline</b> | <b>6m</b> | <b>Concrete</b>                                       | <b>1</b> |
| 6   | Temporary site compound      | The compound will include site cabins and welfare facilities for the construction team. Cabins will be removed on completion of the construction contract.<br><br><i>Permitted development under Part 4, Class A The provision on land of buildings, moveable structures, works, plant or machinery required temporarily in connection with and for the duration of operations being or to be carried out on, in, under or over that land or on land adjoining that land.</i> | 30m        | 3m                         | 10m       | Portable cabins. Colour not defined.                  | 10       |
| 7   | Chlorine contact tank        | Concrete tank used to retain water when chlorine is added to the water, to allow time for disinfection.<br><br><i>Permitted development under Part 17, Class E (g) any other development in, on, over or under operational land other than the provision of a building but including the extension or alteration of building</i>                                                                                                                                              | 30m        | 2m to 4m on incline        | 12m       | Concrete                                              | 1        |
| 8   | Lamellas Settlers            | Equipment used for thickening sludge removed from the raw water during the treatment process.<br><br><i>Permitted development under Part 17, Class E (g) any other development in, on, over or under operational land other than the provision of a building but including the extension or alteration of building</i>                                                                                                                                                        | 6.5m       | 5.5m                       | 2.5m      | GRP Exterior finish shall be green (BS 4800 12 C 39). | 3        |

| Ref | Name                                                                | Description                                                                                                                                                                                                                                                                                                                                                                                                        | Length      | Height | Width | Colours and Materials                     | Count |
|-----|---------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|--------|-------|-------------------------------------------|-------|
| 9   | Dirty washwater storage, supernatant storage and DAF sludge storage | <p>This tank is compartmentalised into 6 sections and is used as buffer storage for dirty water waiting for treatment or disposal. These tanks will be buried below ground level.</p> <p><i>Permitted development under Part 17, Class E (g) any other development in, on, over or under operational land other than the provision of a building but including the extension or alteration of building</i></p>     | 46m         | 0.5m   | 15m   | Concrete                                  | 1     |
| 10  | Access roads                                                        | <p>Access roads are required around the site to reach the new equipment being installed and buildings being erected.</p> <p><i>Permitted development under Part 17, Class E (g) any other development in, on, over or under operational land other than the provision of a building but including the extension or alteration of building</i></p>                                                                  | 100m approx | N/A    | 4m    | Tarmac surfaced road                      | 1     |
| 11  | Landscaping                                                         | <p>Refer to landscaping drawings of new screening planting and landscaping. No trees with TPOs are to be removed and the ancient woodland to the west of the site will be unaffected.</p> <p><i>Permitted development under Part 17, Class E (g) any other development in, on, over or under operational land other than the provision of a building but including the extension or alteration of building</i></p> |             |        |       |                                           | 1     |
| 12  | Buried pipework (General)                                           | <p>Process pipework will run around site to connect various process units. The pipework will be buried except at connections to buildings, which are shown on the building elevation drawings. Pipework diameter varies from 80mm to 800mm.</p>                                                                                                                                                                    | 300m approx |        |       | Polyethene, ductile iron and carbon steel | 1     |

| Ref | Name                               | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Length | Height | Width | Colours and Materials                 | Count |
|-----|------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------|-------|---------------------------------------|-------|
|     |                                    | <p><i>Permitted development under Part 17, Class E (a) development not above ground level required in connection with the supply of water or for conserving, redistributing or augmenting water resources, or for the conveyance of water treatment sludge.</i></p> <p>&amp;</p> <p><i>Permitted development under Part 17, Class E (g) any other development in, on, over or under operational land other than the provision of a building but including the extension or alteration of building</i></p>                                                                                                |        |        |       |                                       |       |
| 13  | Static mixer chamber building      | The static mixer chamber also includes chemical dosing lances. It is used to ensure chemicals are fully mixed with the water within the pipelines to ensure treatment is successful. The mixer chamber is concrete below ground, but a steel clad building is positioned above the chamber for security. The building is 2.5m high.                                                                                                                                                                                                                                                                      | 10m    | 2.5m   | 5m    | Mineral green profiled steel cladding | 2     |
| 14  | Polymer dosing pump room extension | <p>Small additional room extending the existing polymer building to house dosing pumps for polymer, which is used in the thickening of sludge from the site. This small extension will not materially affect the design or external appearance of the existing polymer building. The extension will not exceed the height of the original building; it will not exceed the cubic content of the original building by more than 25%, and the floor space of the original building will not be exceeded by more than 1000m<sup>2</sup>.</p> <p><i>Permitted development under Part 17, Class E (g)</i></p> | 3m     | 3m     | 2m    | Masonry to match exiting structure.   | 1     |

| Ref | Name                      | Description                                                                                                                                                                                                                                                                                                                                                                          | Length | Height | Width | Colours and Materials                        | Count    |
|-----|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------|-------|----------------------------------------------|----------|
|     |                           | <i>any other development in, on, over or under operational land other than the provision of a building but including the extension or alteration of building</i>                                                                                                                                                                                                                     |        |        |       |                                              |          |
| 15  | Inlet main                | A 800mm ductile iron inlet main will be laid from the existing raw water pipe across a field to the WTW.<br><br><i>This is Permitted development under Part 17, Class E (a) development not above ground level required in connection with the supply of water or for conserving, redistributing or augmenting water resources, or for the conveyance of water treatment sludge.</i> | 150m   |        |       | Ductile iron                                 | 1        |
| 16  | MCC building              | <b>The motor control centre controls the pumps located to the south of the site.</b>                                                                                                                                                                                                                                                                                                 | 12m    | 3.5m   | 6m    | <b>Mineral green profiled steel cladding</b> | <b>1</b> |
| 17  | WRC Tanks                 | Circular tanks for thickening sludge generated in the treatment process.<br><br><i>Permitted development under Part 17, Class E (g) any other development in, on, over or under operational land other than the provision of a building but including the extension or alteration of building</i>                                                                                    | 4.5m   | 3m     | 4.5m  | Glass coated steel, mineral green.           | 3        |
| 18  | Lamella Pump Kiosk        | <b>A building to house pumps to feed the lamella settlers with dirty washwater from the filters.</b>                                                                                                                                                                                                                                                                                 | 7m     | 3m     | 3m    | <b>Mineral green profiled steel building</b> | <b>1</b> |
| 19  | Orthophosphate Pump Kiosk | <b>A building to house chemical feed pumps for water treatment.</b>                                                                                                                                                                                                                                                                                                                  | 2m     | 2.5m   | 2m    | <b>Mineral green GRP building</b>            | <b>1</b> |
| 20  | Thickener Pump Kiosk      | <b>A building to house pumps to feed the WRC thickeners</b>                                                                                                                                                                                                                                                                                                                          | 7m     | 3m     | 3m    | <b>Mineral green profiled steel building</b> | <b>1</b> |
| 21  | 2.8m High Security Fence  | Security fence to be erected around the service reservoir and sludge treatment areas.<br><br><i>Permitted development under Part 17, Class E (g) any other development in, on, over or under operational land other than the provision of a building but including the extension or alteration of building</i>                                                                       | 550m   | 2.8m   | N/A   | Steel security fencing                       | 1        |

| Ref | Name                         | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Length     | Height    | Width      | Colours and Materials                        | Count    |
|-----|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-----------|------------|----------------------------------------------|----------|
| 22  | Temporary Access Road        | Construction of a surfaced temporary access road for the construction period.<br><br><i>PART 4 TEMPORARY BUILDINGS AND USES<br/>Class A Permitted development A. The provision on land of buildings, moveable structures, works, plant or machinery required temporarily in connection with and for the duration of operation being or to be carried out on, in, under or over that land or on land adjoining that land.</i>                                      | 100m       | N/A       | 4.5m       | Macadam surfaced road                        | 1        |
| 23  | Temporary Site Car Park      | Construction of a surfaced car park for site staff during the construction period, including a temporary soakaway.<br><br><i>PART 4 TEMPORARY BUILDINGS AND USES<br/>Class A Permitted development A. The provision on land of buildings, moveable structures, works, plant or machinery required temporarily in connection with and for the duration of operation being or to be carried out on, in, under or over that land or on land adjoining that land.</i> | 35m        | N/A       | 30m        | Macadam surfaced car park                    | 1        |
| 24  | Lime Batching Plant Building | <b>A building to house tanks and pumps to make up lime slurry, used in the water treatment process</b>                                                                                                                                                                                                                                                                                                                                                            | <b>10m</b> | <b>6m</b> | <b>10m</b> | <b>Mineral green profiled steel building</b> | <b>1</b> |

## Appendix 3 – Site Photographs



Photograph 1: View of centre of site looking west from near the entrance gate. Showing access road in centre, raised water reservoir (to left of photograph) and generator compound (right, front) and chemical house (right, back).



Photograph 2: View of pump house looking from water reservoir towards site entrance.



Photograph 3: View of wooden storage sheds located on northern side of water reservoir and access road. Wooden storage sheds are to be removed as part of the development to allow temporary construction access and storage area to be built.



Photograph 4: View of western perimeter of site from water reservoir, showing storage area (wooden pallets, plastic pipes and empty water drinking tanks) and telephone mast.



Photograph 5: View of the lime silo attached to current water treatment building located along the eastern side of the site.



Photograph 6: View of the settling lagoon within south eastern portion of site.