

## English Partnerships

### Allerton Bywater Millennium Community

Statement for Outline Planning Application on Site Remediation including Extracts from Validation Report for the Remediation Works & Mine Entry Treatment Works

The remediation strategy and ground contamination issues have been subject of extensive discussion and with the Leeds City Council. LCC have agreed the remediation strategy and are currently review the Validation Report for the Remediation Works & Mine Entry Treatment Works may 2005. This report gives extensive information on the remediation strategy, ground conditions and remediation works undertaken. We anticipate that LCC will approve this report. We have include extracts from Validation Report for the Remediation Works & Mine Entry Treatment Works, May 2005 have been include as follow:-

- Executive Summary
- Introduction
- Sources of Information and Appendix A
- Validation Statement
- Recommendations

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## Executive Summary

Parts of the Allerton Bywater Millennium Community site were remediated in 1999 under a Design and Build Contract. At the time programme constraints dictated that the reclamation works be designed and implemented without detailed knowledge of the development proposals. This resulted in parts of the site that remaining untreated. In order to prepare the site for the Millennium Community Development the untreated parts of the site required remediation.

The site has now been prepared for the development of residential and industrial packages, together with landscaped areas and an allotments area. The remediation works have been carried out and the main infrastructure has now been constructed, including roads, a sustainable urban drainage system and basic utility facilities, all as part of the Enabling Works Contract.

The remediation strategy agreed with Leeds City Council, involved the on site treatment and reuse of soils and residual waste materials in an environmentally sustainable manner where practicable. The untreated and disturbed areas of the site were to be remediated for the proposed end uses of a high quality residential and industrial community.

The remediation strategy essentially required the excavation of untreated areas to 2m below existing ground level or natural ground, whichever is shallower. The objectives of the excavation being to characterise the fill, and to remove any buried structures to 2m below ground level and then to refill an engineered manner to provide a more uniform and densified formation.

Materials with contaminant concentrations that were below the site specific threshold levels were suitable for re use. The excavations were then filled and compacted with suitable material so that the finished ground could accommodate loadings of 100kN/m<sup>2</sup> based on a standard 2m wide strip footing at a depth of 0.15m in the capping.

The earthworks were undertaken within the general framework of the Department of Transport 'Specification for Highways Works' with additional Appendices added for specialist activities.

The specified contaminant levels have been approved by Leeds City Council as part of the Planning Approval (ref; 33/383/03/MIN). Testing of the various aspects of the remediation was carried out at appropriate stages of the works and on completion to test whether the specified standards have been achieved and to provide information to assist in development design.

The factual data relating to the contamination and geotechnical aspects of the validation are presented in Volumes 2 to 5 of this report.

The treatment works to the mine entries are described in detail in a separate report entitled 'Mine Entry Treatment Works Undertaken as Part of the Enabling Works Contract'. This report has been approved by WYG IMC Consulting Engineers, who have acted as the technical consultants for the Coal Authority at the Allerton Bywater site. The earthworks associated with these treatment works are included in this report.

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## 1.0 INTRODUCTION

- 1.1 The site of the Allerton Bywater Millennium Community, a former colliery site, is located approximately 2km north of Castleford, West Yorkshire. It covers about 23 hectares and is centred around Ordnance Survey grid reference SE 422 278.
- 1.2 English Partnerships (EP), who own the site, have prepared the site for development of residential and industrial packages, together with landscaped areas and an allotments area. The main infrastructure has now been constructed, including two major (a north south and an east west aligned) roads, a sustainable urban drainage system with landscaped attenuation basins and basic utility facilities, all constructed as part of the Enabling Works Contract.
- 1.3 Parts of the Millennium Community site were the object of remediation contracts in 1999 by Kvaerner Construction Limited (KCL) under a Design and Build contract let by the then owners of the site, Yorkshire Forward. Details of the 1999 reclamation works are summarised in a Land Quality Statement (LQS) produced by White Young and Green (WYG) in September 1999. At the time programme constraints dictated that the reclamation works be designed and implemented without detailed knowledge of the development proposals.
- 1.4 In 2002, Jacobs Babtie (JB), formerly Babtie Group, were commissioned by EP to carry out the additional ground investigation and monitoring works identified by two former audits by Ove Arup and Partners (OAP) and AIG Ltd and to design the additional remediation and treatment works that would prepare the site for development. In addition to the commissioned works, JB carried out a number of supplementary investigations at the site in response to changing infrastructure designs, land use proposals and regulatory requirements or as a follow on to the anomalous findings of the additional investigation.
- 1.5 Jacobs Babtie was in consultation with Leeds City Council throughout the design process and assisted EP with the preparation and submission of planning approvals for the highways, drainage, infrastructure and additional remediation works. The remediation statement submitted by JB was approved on 10<sup>th</sup> November by LCC (ref; 33/383/03/MIN).
- 1.6 At the same time, IMC Consulting Engineers were employed directly by EP to design the appropriate treatment works to Mine Entries F, G, H and Mine Vent J. These treatment works, together with the treatment works to Mine Entries C, D, E and I (designed by JB) were developed in consultation with the Coal Authority to minimise the impact on the proposed Millennium Community. The Coal Authority has also given approval for the treatment works to proceed.
- 1.7 The treatment and planning approvals were incorporated into the Enabling Works Contract that started at the end of September 2004 and completed in February 2005.

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- 1.8 This validation report has been prepared in accordance with the requirements of the Leeds City Council, the Blue Leaflet CL2, for submission to the Council. The report presents the data resulting from the various aspects of work carried out to validate the mine treatment works and the approved remediation works on the site, including an area of the site known as Area C previously 'remediated' under the 1999 Design and Build contract. A brief summary of previous remediation is also given in the report for completeness.

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## 2.0 Sources of Information

### 2.1 Introduction

2.1.1 Throughout this report there are references to historical factual and interpretative reports detailing the investigation and, reclamation works undertaken on site, including the assessment reports produced by JB describing the treatment and remediation methodology/works that would form the Enabling Works Contract. These reports are documented in Appendix A.

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## 9.0 Validation Statement

- 9.1.1 Jacobs Babtie were appointed by English Partnerships to act as Supervising Engineers to verify that the works were carried out in accordance with site remediation and earthworks strategy that was included as part of the Enabling Works Contract. The works have been carried out under the full-time supervision of Jacobs Babtie.
- 9.1.2 The remediation strategy agreed with Leeds City Council, involved the on site treatment and reuse of soils and residual waste materials in an environmentally sustainable manner where practicable. The untreated and disturbed areas of the site were to be remediated for the proposed end uses of a high quality residential and industrial community.
- 9.1.3 Untreated areas were excavated to 2m below existing ground level or natural ground, whichever is shallower. This included any buried structures or redundant services.
- 9.1.4 Materials with contaminant concentrations below the site specific threshold levels were accepted as suitable for re use. Materials with contaminant concentrations above the site specific threshold levels were disposed off site.
- 9.1.5 Excavations were then filled and compacted with suitable material so that the finished ground could accommodate loadings of 100kN/m<sup>2</sup> based on a standard 2m wide strip footing at a depth of 0.15m in the capping.
- 9.1.6 This Validation Report has been prepared in accordance with the requirements of the Leeds City Council, the Blue Leaflet CL2, for submission to the Council. The report presents the data resulting from the various aspects of work carried out to validate the approved remediation works on the site.
- 9.1.7 Jacobs Babtie are satisfied that the remediation and earthworks undertaken as part of the Enabling Works Contract has been carried out in accordance with the agreed strategy requirements. All results of the field and laboratory testing on the materials re-used in the works demonstrate compliance with the remediation and earthwork strategy requirements.

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## 10.0 Recommendations

**10.1.1** The extent of the remediation and engineering works undertaken as part of the original remediation contract in 1999 is detailed in the LQS report produced by WYG. Jacobs Babbie 'Validation Report' only certifies the remediation and engineering works undertaken as part of the Enabling Works Contract in 2003 to 2005, it does not validate the works undertaken as part of the original remediation in 1999. Any potential developer should be aware that English Partnerships considers areas of the site that were remediated and engineered in 1999 'AS SEEN' and will therefore require any developer to satisfy themselves as to the suitability of these areas for their development. Pre Jacobs Babbie information concerning the areas remediated in 1999 is available from English Partnerships.

**10.1.2** Should developers adopt foundation solutions different to the Allerton Bywater scheme foundation design they will need to satisfy themselves that the ground conditions will provide a suitable bearing capacity with acceptable settlements.

**10.1.3** Remediation and engineering of made ground has not been possible at the edge of excavations where temporary slopes were battered at 1 in 1 or to suit ground conditions. The partially engineered areas extend from the edge of the excavation to the toe of the temporary slope are termed as 'areas of substandard bearing capacity'. In addition, all excavations adjacent to site boundaries; existing footpaths / residential gardens / sewage works required a minimum of 1m width of 'safety zone' before commencement of excavation and a 3m wide safety zone was required from the rising main where remediation and engineering has not taken place. As a consequence, the remediation works have resulted in areas within the site where the full bearing pressure and settlement criteria have not been achieved due to the physical or boundary constraints and the nature of excavation and recompaction process. This means that:

*'should development be proposed within or adjacent to any of these zones the typical shallow spread footing design will not be applicable and alternative foundation solutions may be required. If any development takes place in these areas the developers should carry out their own investigation and satisfy themselves that the ground is suitable for the proposed foundations'.*

Where unremediated ground is immediately adjacent to ground remediated in 1999 (e.g. north side of Area C, south side of Demolition Area 1 and Remediation Area M) the excavation extends at least 2m further into the remediated ground to ensure that all unremediated ground is removed.

**10.1.4** Any made ground currently underneath the capping that is excavated during the course of the development will require treatment or disposal off site. Disposal of excavated

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made ground will need to be carried out by the developer in accordance with the statutory regulations and legislation.

- 10.1.5 It will be the responsibility of individual developers to place the minimum 450mm thickness of topsoil within their development plots in order to comply with the remediation strategy approved by LCC.
- 10.1.6 A number of treated mine entries have no build zones from the bottom of the caps to the final ground levels in which no structure is allowed to be founded. Developer must ensure that no structures are founded within the no build zones. In addition, gas venting systems have been installed within manhole chambers in a number of mine entries. Developers must ensure that the Coal Authority have free access to these vents for monitoring and/or maintenance purposes.
- 10.1.7 Mine treatment works have been undertaken to attempt to manage and control mine gas emissions. However gas protection measures will still be required on the site. Developers will be responsible for the design of gas protection measures appropriate to their own buildings, property and the underground services proposed at the site.

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## Appendix A

The following sources of information have been reviewed to produce this report:

- IMC Environmental Consultants, Interim Report on the Proposed Reclamation of Allerton Mine Site to 'Soft End Use', December 1996.
- Carl Bro, *Summary Geo-environmental Evaluation, Allerton Bywater Colliery*, October 1997.
- Bullen Consultants, Allerton Bywater Colliery, Appraisal of Gas Vents, August 1998.
- White Young Green Environmental, *Land Quality Statement of Former Allerton Bywater Colliery at Allerton Bywater, West Yorkshire*, for Kvaerner Construction Ltd., Volumes 1 to 3, September 1999.
- Ove Arup & Partners, *Audit of Land Quality, Allerton Bywater*, October 1999.
- Ove Arup & Partners, *Environmental Statement, Allerton Bywater*, October 2001.
- Ove Arup & Partners, *Master Planning and Concept Design of Water Resources at Allerton Bywater Millennium Community*, June 2001.
- Structural Soils Ltd., *Report on Ground Investigation at Allerton Bywater*, August 2001.
- Ove Arup & Partners, *April 2001, Ground Investigation Report*, September 2001.
- AIG Consultants, *Review of Site Investigation and Remedial Works at Allerton Bywater Colliery*, January 2002.
- AIG Consultants, *Review of Cost Estimates at Allerton Bywater Colliery*, February 2002.
- IMC Consulting Engineers, Allerton Bywater Proposed Energy Centre, April 2002.
- IMC Consulting Engineers, Report on Treatment of Mine Gas Emissions and Risks from Mine Gas, October 2002.
- Specifications for the Treatments of Mine Entries F, G, H and J prepared by IMC

During the assessment of the ground conditions of the site the following reports have been prepared by Babtie Group.

- *Final Assessment of Untreated Ground in Area C- - Remediation Recommendations, Allerton Bywater Millennium Community*, June 2003.
- *Final Assessment of Ground Conditions in the Eastern Commercial Area, Allerton Bywater Millennium Community*, June 2003.
- *Final Assessment of Ground Conditions within Phase 1 and 2 Housing Areas, Allerton Bywater Millennium Community*, June 2003.
- *Contamination Assessment – Buildings Area*, January 2003.
- *Additional Ground Investigation – Frost Susceptibility Assessment of Existing Capping Layer*, January 2003.
- *Additional Ground Investigation – Results of Surface Water Sampling*, May 2003.
- *Final Report on Gas Risk Assessment, Allerton Bywater Millennium Community*, October 2003.
- *Ecological Assessment of Capping Material, Allerton Bywater Millennium Community*, February 2003.

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- *Final Assessment of Ground Conditions and Remediation Strategy, Allerton Bywater Millennium Community, Volumes 1 and 2, May 2003*
- *Assessment of the Proposed Allotment Area, May 2004.*
- *Geotechnical and Geo environmental Assessment Report, July 2004.*

Factual information obtained during the additional ground investigation and monitoring is contained in:

- Ground Investigation at Allerton Bywater Millennium Community, Factual Report, February 2003, Soil Mechanics Ltd.

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