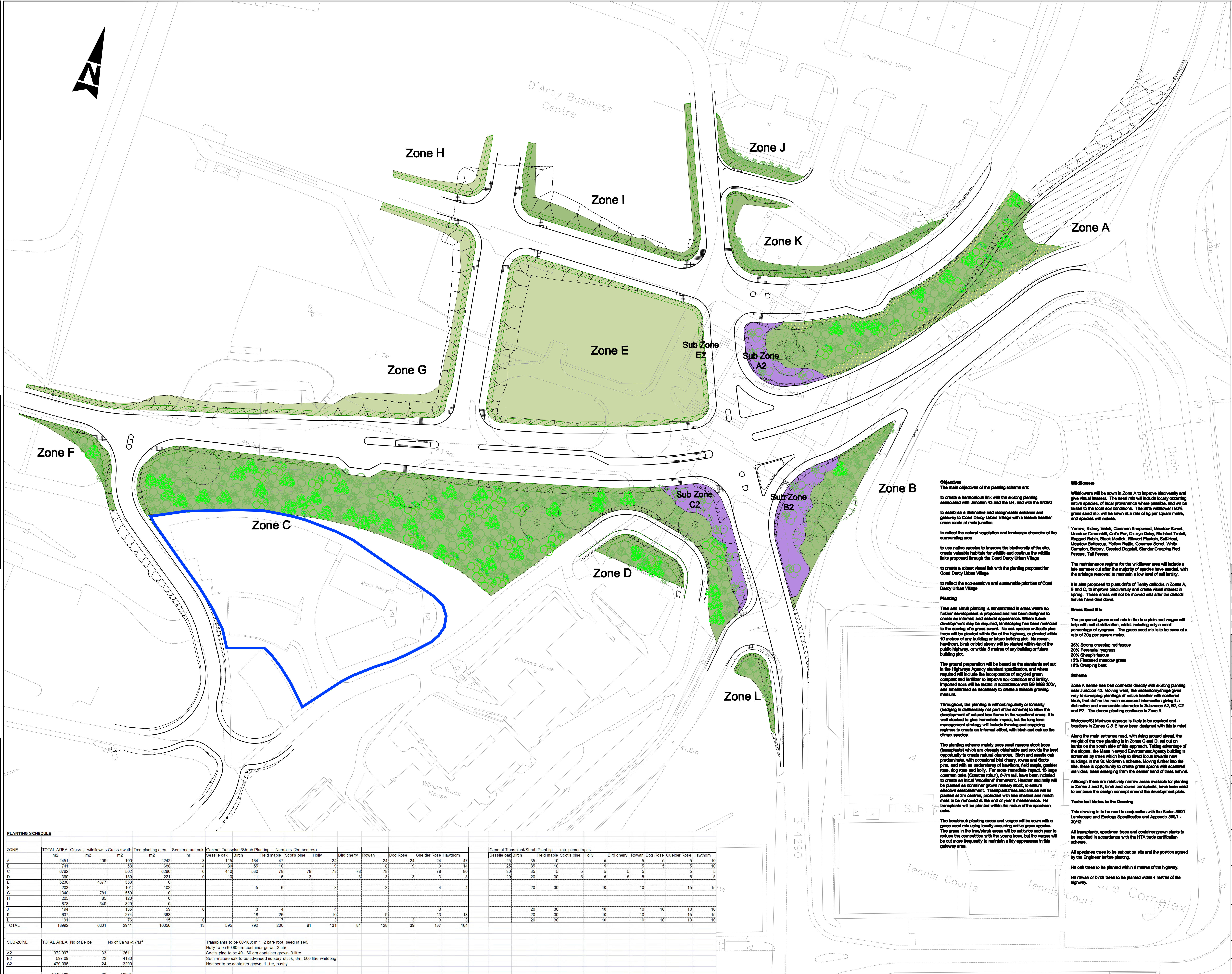




- NOTES:
- FOR DETAILS OF THE EXTENT OF DETAILED DESIGN AND OUTLINE DESIGN FOR TECHNICAL APPROVAL SUBMISSION, REFER TO THE GENERAL ARRANGEMENT DRAWING 5041216/J43A/316.
 - BACKGROUND MAPPING COMBINES SURVEY AND TOPOGRAPHICAL INFORMATION. LEVELS TO BE VERIFIED ON SITE PRIOR TO CONSTRUCTION.

- KEY
- OAK TREE
 - TRANSPLANT AND FEATHER TREES
 - HEATHER PLANTING
 - GRASS SEEDING
 - GRASS CUTTING
 - TEMPORARY LANDSCAPE AREA (GRASS)
 - WILDFLOWERS

Objectives
The main objectives of the planting scheme are:

- to create a harmonious link with the existing planting associated with Junction 43 and the M4, and with the B4290
- to establish a distinctive and recognizable entrance and gateway to Coed Darcy Urban Village with a feature heather cross roads at main junction
- to reflect the natural vegetation and landscape character of the surrounding area
- to use native species to improve the biodiversity of the site, create valuable habitat for wildlife and continue the wildlife links proposed through the Coed Darcy Urban Village
- to create a robust visual link with the planting proposed for Coed Darcy Urban Village
- to reflect the eco-sensitive and sustainable priorities of Coed Darcy Urban Village

Planting

Tree and shrub planting is concentrated in areas where no further development is proposed and has been designed to create an informal and natural appearance. Where future development may be required, landscaping has been restricted to the sowing of a grass sward. No oak species or Scot's pine trees will be planted within 6m of the highway, or planted within 10 metres of any building or future building plot. No rowan, hawthorn, birch or bird cherry will be planted within 4m of the public highway, or within 5 metres of any building or future building plot.

The ground preparation will be based on the standards set out in the Highway Agency standard specification, and where required will include the incorporation of recycled green compost and fertilizer to improve soil condition and fertility. Imported soils will be tested in accordance with BS 3882 2007, and ameliorated as necessary to create a suitable growing medium.

Throughout, the planting is without regularity or formality (hedging is deliberately not part of the scheme) to allow the development of natural tree forms in the woodland areas. It is well suited to give immediate impact, but the long term management strategy will include thinning and coppicing regimes to create an informal effect, with birch and oak as the other species.

The planting scheme mainly uses small nursery stock trees (transplants) which are cheaply obtainable and provide the best opportunity to create natural character. Birch and sessile oak predominate, with occasional bird cherry, rowan and Scots pine, and with an understorey of hawthorn, field maple, guelder rose, dog rose and holly. For more immediate impact, 15 large common oaks (Quercus robur), 8-7m tall, have been included to create an initial 'woodland' framework. Heather and holly will be planted as container grown nursery stock, to ensure effective establishment. Transplant trees and shrubs will be planted at 2m centres, protected with tree shelters and mulch mats to be removed at the end of year 5 maintenance. No transplants will be planted within 4m radius of the specimen oaks.

The tree/shrub planting areas and verges will be sown with a grass seed mix using locally occurring native grass species. The grass in the tree/shrub areas will be cut twice each year to reduce the competition with the young trees, but the verges will be cut more frequently to maintain a tidy appearance in this gateway area.

Wildflowers

Wildflowers will be sown in Zone A to improve biodiversity and give visual interest. The seed mix will include locally occurring native species, of local provenance where possible, and will be suited to the local soil conditions. The 20% wildflower / 80% grass seed mix will be sown at a rate of 5g per square metre, and species will include:

Yarrow, Kidney Vetch, Common Knagweed, Meadow Sweet, Meadow Cranesbill, Cat's Ear, Ox-eye Daisy, Birdfoot Trefoil, Ragged Robin, Black Medick, Ribwort Plantain, Self-Heal, Meadow Buttercup, Yellow Rattle, Common Sorrel, White Campan, Betsy, Crested Dogtail, Slender Creeping Red Fescue, Tall Fescue.

The maintenance regime for the wildflower area will include a late summer cut after the majority of species have seeded, with the arisings removed to maintain a low level of soil fertility.

It is also proposed to plant drifts of Tenby deciduous in Zones A, B and C, to improve biodiversity and create visual interest in spring. These areas will not be mowed until after the daffodil leaves have died down.

Grass Seed Mix:

The proposed grass seed mix in the tree plots and verges will help with soil stabilization, whilst including only a small percentage of ryegrass. The grass seed mix is to be sown at a rate of 20g per square metre.

30% Strong creeping red fescue
20% Perennial ryegrass
20% Sheep's fescue
15% Flattened meadow grass
10% Creeping bent

Scheme

Zone A dense tree belt connects directly with existing planting near Junction 43. Moving west, the understorey/finches gives way to sweeping plantings of native heather with scattered birch, that define the main crossroad intersection giving it a distinctive and memorable character in Subzones A2, B2, C2 and E2. The dense planting continues in Zone B.

Welcome/ST Modwen signage is likely to be required and locations in Zones C & E have been designed with this in mind.

Along the main entrance road, with rising ground ahead, the weight of the tree planting is in Zones C and D, set out on banks on the south side of this approach. Taking advantage of the slopes, the Maes Newydd Environment Agency building is screened by trees which help to direct focus towards new buildings in the ST Modwen's scheme. Moving further into the site, there is opportunity to create grass swards with scattered individual trees emerging from the denser band of trees behind.

Although there are relatively narrow areas available for planting in Zones J and K, birch and rowan transplants, have been used to continue the design concept around the development plots.

Technical Notes to the Drawing

This drawing is to be read in conjunction with the Series 3000 Landscape and Ecology Specification and Appendix 3001 - 3012.

All transplants, specimen trees and container grown plants to be supplied in accordance with the HTA trade certification scheme.

All specimen trees to be set out on site and the position agreed by the Engineer before planting.

No oak trees to be planted within 6 metres of the highway.

No rowan or birch trees to be planted within 4 metres of the highway.

PLANTING SCHEDULE															
ZONE	TOTAL AREA m ²	Grass or wildflowers m ²	Grass sward m ²	Tree planting area m ²	Semi-mature oak nr	General Transplant/Shrub Planting - Numbers (2m centres)									
						Sessile oak	Birch	Field maple	Scot's pine	Holly	Bird cherry	Rowan	Dog Rose	Guelder Rose	Hawthorn
A	2451	109	100	2242	3	115	164	47	24	24	24	24	24	24	47
B	741		53	688	4	30	55	16		9			9	9	14
C	6762		502	6260	6	440	530	78	78	78	78	78	78	78	80
D	360		139	221	0	10	11	16	3		3	3	3	3	3
E	5230	467	563	0											
F	203		101	102		5	6					3		4	4
G	1340		781	559											
H	205	85	120	0											
I	678		349	329											
J	194		135	59	0		3	4			4			3	
K	637		274	363			18	26		10				13	13
L	191		76	115	0		6	7		3			3	3	3
TOTAL	16992	6001	2941	10050	13	595	792	200	81	131	81	128	39	137	164

General Transplant/Shrub Planting - mix percentages															
Sessile oak	Birch	Field maple	Scot's pine	Holly	Bird cherry	Rowan	Dog Rose	Guelder Rose	Hawthorn						
25	35	10	5	5	5	5	5	5	5						
25	35	10			5		5	5	5						
30	35	5	5	5	5	5	5	5	5						
20	20	30	5	5	5	5	5	5	5						
20	30				10		10		15						
20	30				10		10	10	10						
20	30				10		10	10	10						
20	30				10		10	10	10						

SUB-ZONE	TOTAL AREA	No of Ec pe	No of Ca vu @ 71M ²												
A2	372.997	33	2611												
B2	597.09	23	4180												
C2	470.096	24	3290												
TOTAL	1440.183	80	10081												

Transplants to be 80-100cm 1+2 bare root, seed raised.
Holly to be 60-80 cm container grown, 3 litre.
Scot's pine to be 40 - 60 cm container grown, 3 litre.
Semi-mature oak to be advanced nursery stock, 6m, 500 litre whitebag.
Heather to be container grown, 1 litre, bushy.

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

IN ADDITION TO THE HAZARDS/RISKS NORMALLY ASSOCIATED WITH THE TYPES OF WORK DETAILED ON THIS DRAWING, NOTE THE FOLLOWING SIGNIFICANT RESIDUAL RISKS:

CONSTRUCTION	USE	RECOMMENDING/DEMOLITION
NONE	NONE	NONE
MAINTENANCE/CLEANING	NONE	NONE
USE	NONE	NONE
RECOMMENDING/DEMOLITION	NONE	NONE

Rev	Description	By	Date	Check'd	Auth'd
D	FOR PLANNING SUBMISSION - NPT		06/08/10	SN	
D	FOR PLANNING SUBMISSION - NPT		23/04/10	GJ	
D	FOR PLANNING SUBMISSION - NPT		24/03/10	GJ	
D	FOR PLANNING SUBMISSION - SAVILLS		22/12/09	GJ	
D	FOR TECHNICAL APPROVAL - NPT		22/12/09	GJ	
D	FOR TECHNICAL APPROVAL - NPT		08/10/09	MMS	

Rev	Description	By	Date	Check'd	Auth'd
D	NPT COMMENTS INCORPORATED	GS	23/04/10	BC	GJ
C	RE-LABELLED FOR PLANNING SUBMISSION	GS	10/03/10	GS	GJ
B	NPT COMMENTS INCORPORATED	GH	22/12/09	GS	GJ
A	ORIGINAL DRAWING	OMC	09/10/09	BC	MS

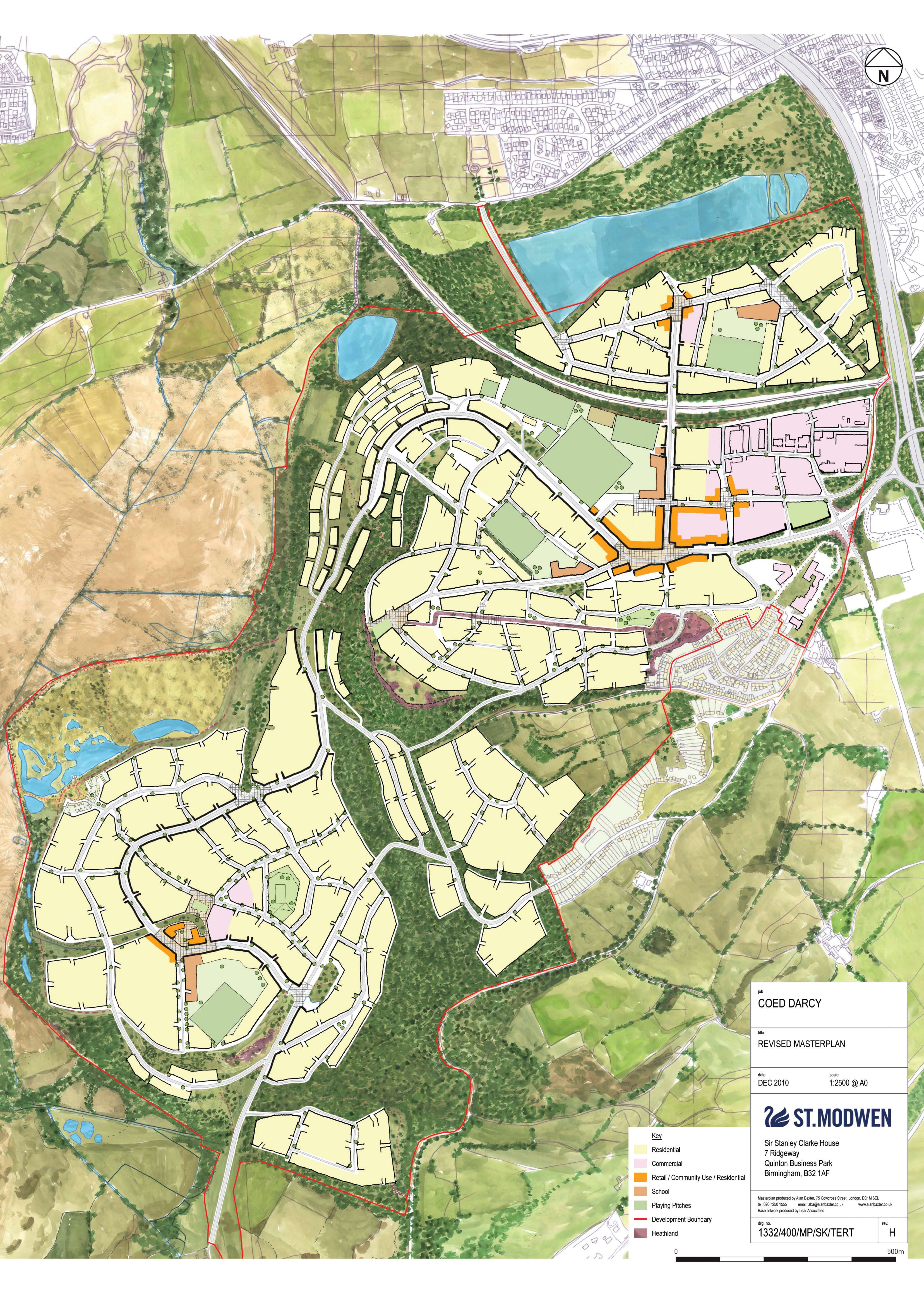
Atkins Limited
Consulting Engineers,
The AXIS
10 Holliday Street
Birmingham, West Midlands
B1 1TF
Tel: (0121) 483 5000
Fax: (0121) 483 5252
www.atkinsglobal.com

ST.MODWEN

Project: COED DARCY URBAN VILLAGE

Title: JUNCTION 43 IMPROVEMENTS
& SITE ACCESS ROAD
LANDSCAPE PROPOSALS

Sheet	Size	Original Scale	Design Scale	Check	Check	Author	MS
A0	A0 @ 1:500	DMC	DMC	29.06.09	29.06.09	29.06.09	29.06.09
A2	A2 @ 1:1000	DMC	DMC	29.06.09	29.06.09	29.06.09	29.06.09
Status	Drawing Number	Rev					
D	5041216/J43A/363	D					



- Key**
- Residential
 - Commercial
 - Retail / Community Use / Residential
 - School
 - Playing Pitches
 - Development Boundary
 - Heathland

job COED DARCY	
title REVISED MASTERPLAN	
date DEC 2010	scale 1:2500 @ A0
 ST.MODWEN	
Sir Stanley Clarke House 7 Ridgeway Quinton Business Park Birmingham, B32 1AF	
Masterplan produced by Alan Baxter, 75 Cowcross Street, London, EC1M 6EL tel: 020 7250 1555 email: aba@alanbaxter.co.uk www.alanbaxter.co.uk Base artwork produced by Lear Associates	
drg. no. 1332/400/MP/SK/TERT	rev. H



APPENDIX B SCHEDULE 8 OF THE SECTION 106 AGREEMENT

SCHEDULE 8

Redevelopment Remediation Works

Purpose, objectives and requirements of the Redevelopment Remediation Works

Part 1

1. Purpose and objectives of the Redevelopment Remediation Works

- 1.1 The purpose and objectives of the Redevelopment Remediation Works are the carrying out of all such Remedial Action over and above that actually carried out as part of the RAP Works that is necessary in order to make each part of the Property suitable within the meaning of paragraph 1.2 below for its Intended Use or such other use as may be determined from time to time.
- 1.2 A part of the Property will only be suitable for its Intended Use or such other use as may be determined from time to time if and when the Phase Works Completion Date is declared in respect of that part of the Property.

Part 2

2. Developer's obligations regarding Redevelopment Remediation Works

- 2.1 The Developer shall carry out or procure the carrying out of all Remedial Action necessary in order to achieve the purpose and objectives set out in Part 1 of this Schedule.
- 2.2 The design and specification of the Redevelopment Remediation Works shall take appropriate account of the principles and objectives (as set out in sub-paragraph 1.3 (including 1.3.1-1.3.5 thereof) of Schedule 7 hereto) and the design assumptions of the RAP Works and shall not prejudice the achievement and future sustainability of these principles and objectives of the RAP Works or the RAP Works themselves.
- 2.3 The Redevelopment Remediation Works may reduce the reliance on the RAP Works to achieve the principles and objectives of the RAP Works set out in sub-paragraph 1.3 (including 1.3.1-1.3.5 thereof) of Schedule 7 hereto but must not increase that reliance.
- 2.4 The RBSLs set out in Tables 1 and 2 below and the aesthetic criteria, remediation quality and scope (including the depth below Final Finished Level to which quality standards are achieved) as also set out in Part 3 below, as the same may be varied in accordance with this Schedule 8, shall be achieved for each part of the Property at the minimum validation frequencies set out in clause 8 of Part 3 (as applicable depending upon whether such part of the Property is intended for use as residential, commercial or recreational land) as a minimum base level standard.
- 2.5 Without prejudice to the requirement to achieve the RBSLs set out in Tables 1 and 2 as a minimum base level standard, the Developer shall ensure that all necessary remediation targets are developed and used to determine the extent and quality of remediation appropriate to the development design and purpose of the Urban Village and the Pre-Transfer Date Contamination.
- 2.6 The Developer shall promptly notify CDL and the Monitor if at any time it or any person acting on its behalf identifies a substance present at, in, on or under the

Property, or has reasonable cause to suspect such presence, for which no RBSL is specified in Tables 1 or 2 of Part 3 below in which case the following procedure shall apply:

- 2.6.1 As soon as reasonably practicable after serving a notice under paragraph 2.6 above, the Developer shall prepare proposals for soil and groundwater RBSLs for the substance identified that are consistent with the purpose and objectives of the Redevelopment Remediation Works as set out in Part 1 of this Schedule and the standards of prevailing Environmental Law and shall provide a copy of such proposals to CDL the Monitor and the Authority. Any such proposal shall contain a detailed statement of the health risk assessment and general methodology from which the proposed RBSLs have been derived.
 - 2.6.2 Not earlier than 10 Working Days after submitting its proposals to CDL the Monitor and the Authority in accordance with sub-paragraph 2.6.1 above, the Developer shall submit a written request to the appropriate Environmental Authorities, copied at the same time to CDL the Monitor and the Authority, for approval of the use of the proposed RBSLs. The Developer shall provide to the appropriate Environmental Authorities with its request copies of the health risk assessment and general methodology referred to in sub-paragraph 2.6.1 above and a copy of this Agreement clearly drawing attention to the purpose, objectives and requirements of the Redevelopment Remediation Works set out therein and the proposed changes thereto.
 - 2.6.3 Each of the Developer, CDL and the Monitor shall be free at any time to make such submissions to the appropriate Environmental Authorities in relation to the Developer's proposals as they see fit, provided such submissions are made in writing and copied to each other and the Authority at the same time.
 - 2.6.4 The Developer shall ensure that the Redevelopment Remediation Works achieve compliance with any RBSLs approved in writing by the appropriate Environmental Authorities pursuant to this paragraph 2.6, as if they were also set out in Tables 1 and 2 of Part 3 of this Schedule.
- 2.7 The Developer may at any time propose variations to the requirements of clauses 3 to 8 inclusive of this Schedule 8 below to the appropriate Environmental Authorities and to the Authority pursuant and to the extent required to comply with the Planning Permission to take account of changes of circumstances since the date of this Agreement, provided no variation shall be proposed that is in any way prejudicial to the achievement of the purpose and objectives of the Redevelopment Remediation Works as set out in Part 1 above and, in particular, the achievement of the RBSLs set out in Tables 1 and 2 above (as previously amended in accordance with paragraph 2.6 above if applicable) and provided further that
- 2.7.1 Any such proposals shall be submitted in writing to CDL the Monitor and the Authority at least 10 Working Days before they are submitted to any Environmental Authority;
 - 2.7.2 Any such proposal submitted to any Environmental Authority shall be copied to CDL the Monitor and the Authority at the same time;
 - 2.7.3 The Developer shall enclose a copy of this Agreement with any such proposal made to any Environmental Authority clearly drawing attention to the

purpose, objectives and requirements of the Redevelopment Remediation Works set out therein and the proposed changes thereto;

- 2.7.4 Each of the Developer, CDL and the Monitor shall be free to make such submissions to the appropriate Environmental Authorities in relation to the Developer's proposals as they see fit, provided such submissions are made in writing and copied to each other and the Authority at the same time.
 - 2.7.5 Subject to paragraph 2.7.6 no such proposed variation shall be implemented unless, it has been approved in writing by the appropriate Environmental Authorities in accordance with the requirements of this clause 2.7.
 - 2.7.6 If the Developer has only oral approval (or non objection) to a proposed variation from the relevant Environmental Authorities, no such proposed variation shall be implemented unless the Developer notifies the relevant Environmental Authorities in writing (copied at the same time to CDL the Monitor and the Authority) that it proposes to proceed with the implementation of the proposed variation to the Redevelopment Remediation Works 10 Business Days after the date of such notice and no written objections of any relevant Environmental Authority are received within such 10 Business Day period in respect of the same.
 - 2.7.7 Any reference in this Agreement to the Redevelopment Remediation Works shall be to the Redevelopment Remediation Works as varied in accordance with this paragraph 2.
- 2.8 The Developer shall, and shall procure that any person acting on its behalf in relation to any aspect of the Redevelopment Remediation Works required by this Schedule 8 shall, at all times comply with the requirements of Schedule 10 (General Remediation Requirements).

Part 3

Table 1 – Summary of Soil RBSLs

Contaminant	Land-Use Specific Soil RBSL Surface to 1m below FFL (mg/kg) ¹			Land-Use Specific RBSL Soil below 1m depth (mg/kg)		
	Residential	Commercial	Recreational	Residential	Commercial	Recreational
METALS & METALLOIDS						
Arsenic	64	500	64	-	-	-
Cadmium	2.6	1400	2.6	-	-	-
Chromium	130	5000	200	-	-	-
Mercury	1	480	1	-	-	-
Nickel	50	5000	75	-	-	-
Selenium	3	8000	3	-	-	-
Lead	337	750	337	-	-	-
Vanadium	416	16000	640	-	-	-
Copper	478	-	478	-	-	-
Zinc	200	-	200	-	-	-
ORGANIC SPECIES						
Benzene	0.12	5	13	0.4	5	48
Benzo(a)pyrene ²	0.9	29	0.9	none	none	none
Toluene	36	1160	8110	52	389	none
Ethylbenzene	41	122000	4740	140	none	none
Xylenes	32	121000	7940	58	none	none
1,2-Dichloroethane	0.04	2	4.5	0.1	0.65	6
Dichloromethane	5	1650	241	84	665	6220
Tetrachloroethene	11	1050	641	34	368	1780
Trichloroethene	1	84	193	2	28	269
Vinyl Chloride	0.01	4	0.7	0.04	1.6	16
1,2 Dichloroethene	4	273	632	7	91	881
1,1,1-Trichloroethane	154	577000	27900	160	3250	none
TPH Aromatic EC>C7-C8	125	1840	21337	146	617	none
TPH Aromatic EC>C8-C10	94	913	4025	257	547	none
TPH Aromatic EC>C10-C12	118	26515	4589	1394	none	none
TPH Aromatic EC>C12-C16	131	64875	4799	none	none	none
TPH Aromatic EC>C16-C21	82	51449	3639	none	none	none
TPH Aromatic EC>C21-C35	1130	51449	3639	none	none	none

TPH Aliphatic EC>C6-C8	8335	8517587	606191	none	none	none
TPH Aliphatic EC>C8-C10	112	158890	12075	158	none	none
TPH Aliphatic EC>C10-C12	3204	163360	12094	none	none	none
TPH Aliphatic EC>C12-C16	4513	169032	12117	none	none	none
TPH Aliphatic EC>C16-C21	94174	3429944	242573	none	none	none
TPH Aliphatic EC>C21-C35	94820	3429944	242573	none	none	none
Total TPH (Phase 1) ³	1717	81413	9061	9182	81956	none
Total TPH (Process Area) ³	2601	44344	10830	4098	35014	none
Total TPH (North Tank Farm) ³	1104	25875	9419	3802	13974	none
Total TPH (South Tank Farm) ²	1015	37230	6349	2792	34797	none
ASBESTOS						
Sum of all Types of ACM	200	300	200	200 ⁴	-	-

“-“ value not applicable to scenario

“none” RSBL value exceeds soil saturation limits and free phase assessment appropriate

¹ Lower value of human health RBSL or Soil Code value if higher than background LCL value (applicable to metals & metalloids only)

² Benzo(a)pyrene RBSL to be compared against sum of 16 US EPA Priority List PAHs using Toxicity Equivalence approach

³ ‘Total’ TPH RBSL derived for an area of development, based on individual RBSLs provided and available mass fraction TPH data in soil at time of derivation, using the inverse weighted average approach.

⁴ See text below for specification of relevant depth ranges

Table 2 – Summary of RBSLs for Groundwater

Contaminant	Land-Use Specific RBSL (mg/l)		
	Residential	Commercial	Recreational
TPH Aliphatic EC>C6-C8	none	none	none
TPH Aliphatic EC>C8-C10	none	none	none
TPH Aliphatic EC>C10-C12	none	none	none
TPH Aliphatic EC>C12-C16	none	none	none
TPH Aliphatic EC>C16-C21	none	none	none
TPH Aliphatic EC>C21-C35	none	none	none
TPH Aromatic EC>C7-C8	20	97	none
TPH Aromatic EC>C8-C10	22	none	none
TPH Aromatic EC>C10-C12	none	none	none
TPH Aromatic EC>C12-C16	none	none	none
TPH Aromatic EC>C16-C21	none	none	none
TPH Aromatic EC>C21-C35	none	none	none
Benzene	0.7	6	198
Benzo(a)pyrene	none	none	none
Toluene	47	229	none
Ethylbenzene	102	506	none
Xylenes	43	607	none
1,2-Dichloroethane	0.2	0.82	45
Dichloromethane	150	624	none
Tetrachloroethene	22	115	none
Trichloroethene	2.6	13	813
Vinyl Chloride	0.06	0.3	18
1,2-Dichloroethene	15	68	none
1,1,1-Trichloroethane	193	989	none

“none”= theoretical RBSL greater than solubility limit

3. Scale of aesthetic criteria

Table 3 – Scale of aesthetic criteria

Class	Visual	Olfactory
0	No visible staining of soil, no visible suspect ACM	No detectable odour on soil
1	Occasional staining of soil, no visible suspect ACM	Faint odour on soil
2	Frequent staining of soil	Distinct but not strong odour on soil
3	Occasional heavy staining of soil	Strong odour on soil
4	Heavy staining of soil	Strong odour discernable in ambient air
5	Visible hydrocarbon product	Overwhelming Odour

3.1 Visible suspect ACM refers to asbestos containing material visible to the naked eye which a reasonable and prudent person used to managing asbestos may suspect to be asbestos containing.

3.2 All references in Table 1 above to depths to which minimum RBSLs are to be achieved are expressed below, relative to FFL following completion of construction of the intended Urban Village.

4. Residential End-Use where Groundwater is Primarily in Rock

4.1 This remediation scenario is intended to refer to residential end-use in areas where there is limited soil material over bedrock, little perched groundwater is present in that soil, and the water table is normally first encountered in bedrock. Areas of the Property with these characteristics include the more elevated parts of the former process area and of the southern tank farm. The minimum Remedial Action required in this scenario is as follows:

4.2 All oil saturated soil should be removed.

4.3 All soils must be remediated so as to meet the RBSLs for TPH, BTEX and PAHs at the relevant depth relative to FFL and the aesthetic criteria Class 2 or better at greater than 1m below FFL.

4.4 The aesthetic quality of soils shall be Class 1 or better for at least the first metre below FFL.

4.5 Soils where there is visible ash and clinker, or metal concentrations above RBSLs, are to be removed so that none is retained within the first metre below FFL in garden areas.

4.6 Where it is not practicable to address groundwater contamination within bedrock this must be controlled, e.g. where seeps, sheens and iron staining discharge from the bedrock. Acceptable methodologies for remediation may include, but are not limited to, the use of land drainage via interceptors. Control measures should result in no visible discharge at surface and little or no odour observable.

4.7 All soil potentially containing dispersed asbestos fibres or visible ACM must be removed or remediated to meet in bulk, considering both dispersed fibres and pieces

of ACM, the appropriate ACM RBSL, or to meet the requirements of relevant Environmental Authorities, whichever is the more conservative.

5. Residential End-Use where Groundwater is in soil

- 5.1 This remediation scenario is intended to refer to residential end-use in areas where there is sufficient soil material over bedrock to commonly contain perched groundwater such that the water table is normally first encountered in soil. Areas of the Property with these characteristics include the lower parts of the former process area and of the southern tank farm and the north site tank farm. The minimum Remedial Action required in this scenario is as follows.
- 5.2 All oil saturated soils and free product shall be removed.
- 5.3 Soils must be remediated so as to meet the RBSLs for TPH, BTEX and PAHs to a minimum depth of 0.5m below the likely seasonal minimum groundwater depth following development of the intended Urban Village. This depth is to be established by consideration of all available groundwater level monitoring data relevant for each area. All soil must meet aesthetic criteria Class 2 or better to the same depth.
- 5.4 All soil must meet aesthetic criteria Class 1 or better to at least 1m below FFL.
- 5.5 Soils where there is visible ash and clinker or metal concentrations above RBSLs to be replaced to at least 1m below FFL.
- 5.6 All soil potentially containing dispersed asbestos fibres or visible ACM must be removed or remediated to meet in bulk, considering both dispersed fibres and pieces of ACM, the appropriate ACM RBSL, or the requirements of relevant Environmental Authorities, whichever is the more conservative, to a minimum depth of 2m below FFL.
- 5.7 Where there is a risk of the migration in ground of hazardous gas or vapour or contaminated liquid into remediated areas, the Developer shall take all necessary measures appropriate to prevent this occurring, including monitoring whatever measures are put in place after their installation to continue to demonstrate their effectiveness. Such measures could include the installation of interception trenches and management of discharge from these.
- 5.8 Where necessary, seeps, sheens and iron rich discharges from the bedrock must be permanently controlled such that there is no visible discharge at surface and little or no odour detectable. Acceptable methodologies for remediation may include, but are not limited to the use of land drainage via interceptors.

6. Commercial End-Use where Groundwater is in soil

- 6.1 This remediation scenario is intended to refer to commercial end-use in areas where there is sufficient soil material over bedrock to commonly contain perched groundwater such that the water table is normally first encountered in soil. The area identified for commercial development in the Masterplan is the lower part of the former process area, which in general terms has these characteristics. Based on the Masterplan, no commercial developments are currently envisaged where groundwater is primarily encountered only in rock; in the event such development is proposed, Remedial Action consistent with the standards specified below would be required, adapted as necessary to local conditions.

- 6.2 All oil saturated soils and soil containing free product other than minor sheens shall be removed to a minimum depth of 2 m FFL or 0.5 m below the likely lowest seasonal groundwater elevation following development of the intended Urban Village, whichever is the deeper. This depth is to be established by consideration of all available groundwater level monitoring data.
- 6.3 All soils must meet the RBSL for TPH to at least 1m below FFL.
- 6.4 All soils must meet in bulk, considering both dispersed fibres and pieces of ACM”, the RBSL for ACM to at least 1m below FFL and any visible ACM encountered during construction in the first 1m below FFL is to be removed.
- 6.5 Where there is a risk of the migration in ground of hazardous gas or contaminated liquid into remediated areas, the Developer shall take all appropriate measures to prevent this occurring. Such measures could include the installation of interception trenches and management of discharge from those. The Developer shall monitor whatever measures are put in place after their installation to continue to demonstrate their effectiveness.
- 6.6 Where necessary, seeps, sheens and iron rich discharges from the bedrock must be controlled such that there is no visible discharge at surface and little or no odour. Acceptable methodologies for remediation may include, but are not limited to the use of land drainage via interceptors.

7. Public Open Space

- 7.1 The Developer shall remediate areas of the Property which will not be developed for residential or commercial end-uses based on those areas falling into one of the following three broad categories of land-use:
- 7.1.1 Well managed parks and public gardens;
- 7.1.2 More lightly managed areas where public access is encouraged;
- 7.1.3 Areas to which access is discouraged but occasional access and/or trespassing is possible.
- 7.2 The degree of protection that will need to be afforded to people will be largely dependent upon how the access to these areas is encouraged/discouraged and managed. For guidance only, access may be discouraged by physical barriers such as fencing, or vegetation, or actively managed by the provision of walkways along which controlled access is encouraged. The topography of the site may encourage children to use bikes, potentially causing rutting of the ground surface and exposing soils at depth. Detailed designs in this regard will be prepared by the Developer approved by CDL and agreed with the Environmental Authorities to (i) protect human health considering the reasonably anticipatable use of the land (ii) achieve the relevant RBSLs (recreational RBSLs being provided in Table 1 above) to an appropriate depth and (iii) include an appropriate scheme of validation testing.

8. Validation

- 8.1 As a minimum validation of RBSL’s will be required to include:
- 8.1.1 Determining the necessary extent of remedial excavations: this will be the responsibility of the Developer;

- 8.1.2 Quality assurance of imported materials, including testing of imported materials for contamination if it is intended to use reclaimed aggregates, top soil, etc: this will be the responsibility of the Developer, however, CDL may elect to validate such materials in-situ, once they are finally placed for construction;
- 8.1.3 Quality assurance of soils treated on the site for re-use: this will be the responsibility of the Developer, however, CDL will validate such materials in-situ, once they are finally placed for construction, and;
- 8.1.4 Quality assurance of soils for which no remedial works are identified: this will be the responsibility of the Developer, however, CDL will validate such materials.

8.2 As a minimum, sampling at the following frequencies should be undertaken.

Table 4 - Minimum Validation Testing Frequencies.

Testing for the Validation Suite at the following frequency:	Shallow Soils (Residential <1m FFL)	Deeper Soils (Residential >1m below FFL)	Soils (Commercial all relevant depths)
Imported quarried material	1 per 500m ³ ex situ, composite of 5 regular sub-samples	1 per 1000m ³ ex situ, composite of 5 regular sub-samples	1 per 1000m ³ ex situ, composite of 5 regular sub-samples
Imported soil from verified greenfield site	1 per 250m ³ ex situ, composite of 5 regular sub-samples	1 per 500m ³ ex situ, composite of 5 regular sub-samples	1 per 500m ³ ex situ, composite of 5 regular sub-samples
Imported soil from characterised brownfield site ¹	1 per 25m ³ ex situ, composite of 5 sub-samples	1 per 50m ³ ex situ, composite of 5 sub-samples	1 per 100m ³ ex situ, composite of 5 sub-samples
0.5-1m below FFL in-situ	Regular grid of 1 per 50m ² , sample over 0.5m depth	n/a	Regular grid of 1 per 400m ² , sample over 0.5m depth
>1m below FFL in-situ	n/a	Regular grid of 1 per 100m ² , sample over 1m depth	Regular grid of 1 per 400m ² , sample over 0.5m depth
Stockpiled excavated site materials for re-use	1 per 50m ³ ex situ, composite of 5 sub-samples	1 per 100m ³ ex situ, composite of 5 sub-samples	1 per 400m ³ ex situ, composite of 5 sub-samples
Face of remedial excavations <1m deep	1 per 10m, minimum of 1 per face, worst case VO sample	n/a	1 per 15m, minimum of 1 per face, worst case VO sample
Face of remedial excavations >1m deep	n/a	1 per 10m ² , minimum of 1 per face, worst case VO sample	1 per 15m ² , minimum of 1 per face, worst case VO sample
Along redundant service excavations	1 per 20m of trench, worst case VO sample	1 per 20m of trench, worst case VO sample	1 per 20m of trench, worst case VO sample
Soil treated ex-situ and homogenised	1 per 200m ³ , composite of 5 regular sub-samples	1 per 200m ³ , composite of 5 regular sub-samples	1 per 500m ³ , composite of 5 regular sub-samples

¹ Validation suite to reflect prior use of the originating brownfield site and the design and purpose of the relevant area of Coed Darcy.

VO = visual / olfactory (ie aesthetic) observation

- 8.3 The quality of all material placed as fill and/or remaining in-situ post-construction of the Urban Village must as a minimum meet the relevant RBSLs and aesthetic standards at the frequencies set out above (in either case as the same may be amended in accordance with this Schedule).
- 8.4 In all circumstances, CDL and/or the Monitor may at its discretion take additional samples if it has reason to suspect that material may not meet the relevant RBSLs and

aesthetic standards (in either case as the same may be amended in accordance with this Schedule).

- 8.5 All validation samples obtained by CDL and/or the Monitor whether according to the above frequencies or on a discretionary basis must on analysis be of the same or better quality than the relevant RBSLs and meet or exceed the relevant aesthetic criteria (in either case as the same may be amended in accordance with this Schedule).

APPENDIX C INFORMATION SOURCES

APPENDIX D REQUESTS FOR INFORMATION (RFI)

Contract Name:	Coed Darcy Monitor	RFI No:
Contract Number:	GNP/NJR/13773-2	Date Raised: 25 June 2015
Subject:	Review of Atkins' Validation Report for Monitor Phase 48 – Northern Access Road	
To:	Michelle Lee	Atkins
Cc:	Mike Poland	Atkins
From:	Rhys Mander	AECOM

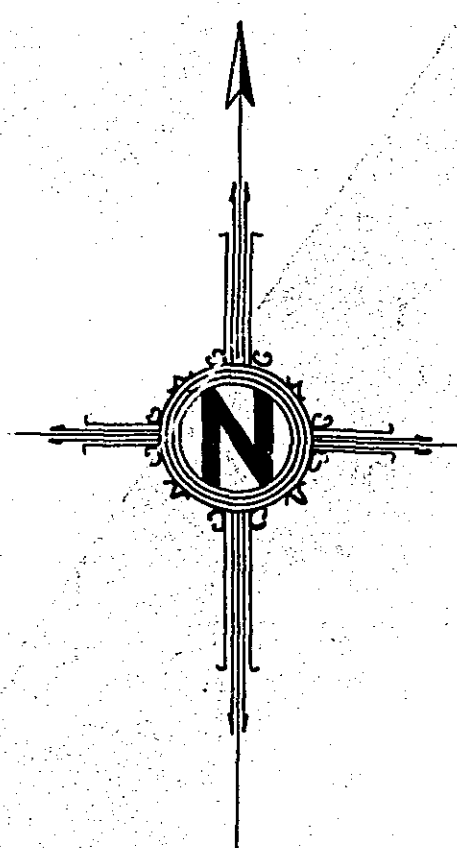
Comments

The following queries are raised in relation to Atkins' Validation Report Phase 48 – Northern Access Road (report ref. 5041216/J43A/RPT/1398):

- The phase boundary is not clearly defined. A number of boundaries are presented on the drawings but some of these overlap with phase boundaries that have already been declared for other phases. Furthermore, the boundaries also extend beyond the site boundary as defined in the Section 106 Agreement and are therefore not relevant to the Monitor's scope of works.
- Section 2.2 – With reference to the above, once the phase boundary has been defined, please also confirm the surface area of the phase.
- Section 3.3 – The report states that free product has been identified and removed during recent investigations however it is not stated in which locations the free product was found. On Drawing 5041216-J43A-DWG-972, free product is noted on one occasion, whereas in Appendix D, free product is reported to have been detected in two locations. Please clarify how many locations had free product.
- Table 3.1 – Exceedances of Lead and Arsenic are reported but the exceedance for Mercury which is noted on Drawing 5041216-J43A-DWG-972 is not included in the table. Please clarify why this is? Also in Table 3.1, it is stated that 129 samples were tested which is higher than the total number of samples stated elsewhere in the report (see below).
- Section 3.4 – Visual and Olfactory evidence of contamination is discussed in this section but does not mention the score of 4,5 at P1TP009 as shown in the logs in Appendix C.
- Section 6.3 – It is stated that a total of 58 samples have been analysed for as part of recent investigations and results for these are presented in Appendix E. However, there are a total of 114 samples from 78 locations reported in Appendix E. Please clarify these discrepancies.
- Section 6.3 – With reference to Drawing 5041216-DWG-972 the sample locations are widely spread and some areas do not appear to have been investigated. Section 2.2 states that the site area is 7 hectares but Section 6.3 states that only 58 samples have been recovered, suggesting that the specified sampling frequency has not been achieved. Given that the redevelopment works are nearing completion it is recognised that it may not be practical to recover further samples. Therefore, given the significant groundworks that have been undertaken, is Atkins able to provide further comment with regards their observations during these works, bearing in mind that the commercial standards are largely driven by the quality of the visual/olfactory observations.
- Drawing 5041216/J43A/316 – The planning boundary line given in the key is not shown on the drawing.
- Drawing 5041216-J43A-DWG-972 – In the key there is no distinction between the square and circular symbols and there is no clarification of what the red colour represents.
- Appendix C – Not all of the logs give VO scores. There are frequently descriptions such as "Strong hydrocarbon odours and black staining" but these are not quantified. If possible, please quantify these descriptions so that they can be judged according to Section 106 requirements.
- Appendix E – Only 4 exceedances for lead are highlighted in the results and none are highlighted for Mercury or Arsenic.
- Appendix E – VOC and BTEX results are sparse and only reported for three locations.
- It is noted that further remediation works are required in order to satisfy the requirements of the Section 106 Agreement. It should be noted that the RRWCC will only be issued once these works have been completed and appropriately validated.

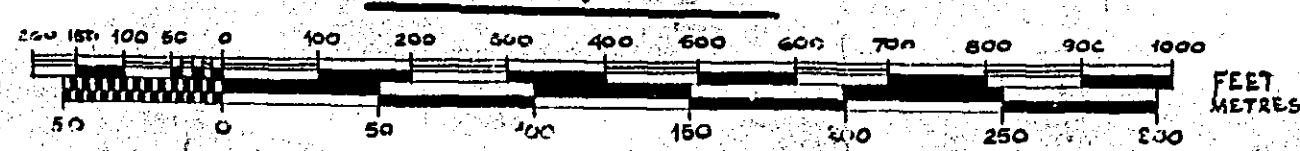
Date: 25 June 2015

APPENDIX E HISTORICAL MAPS

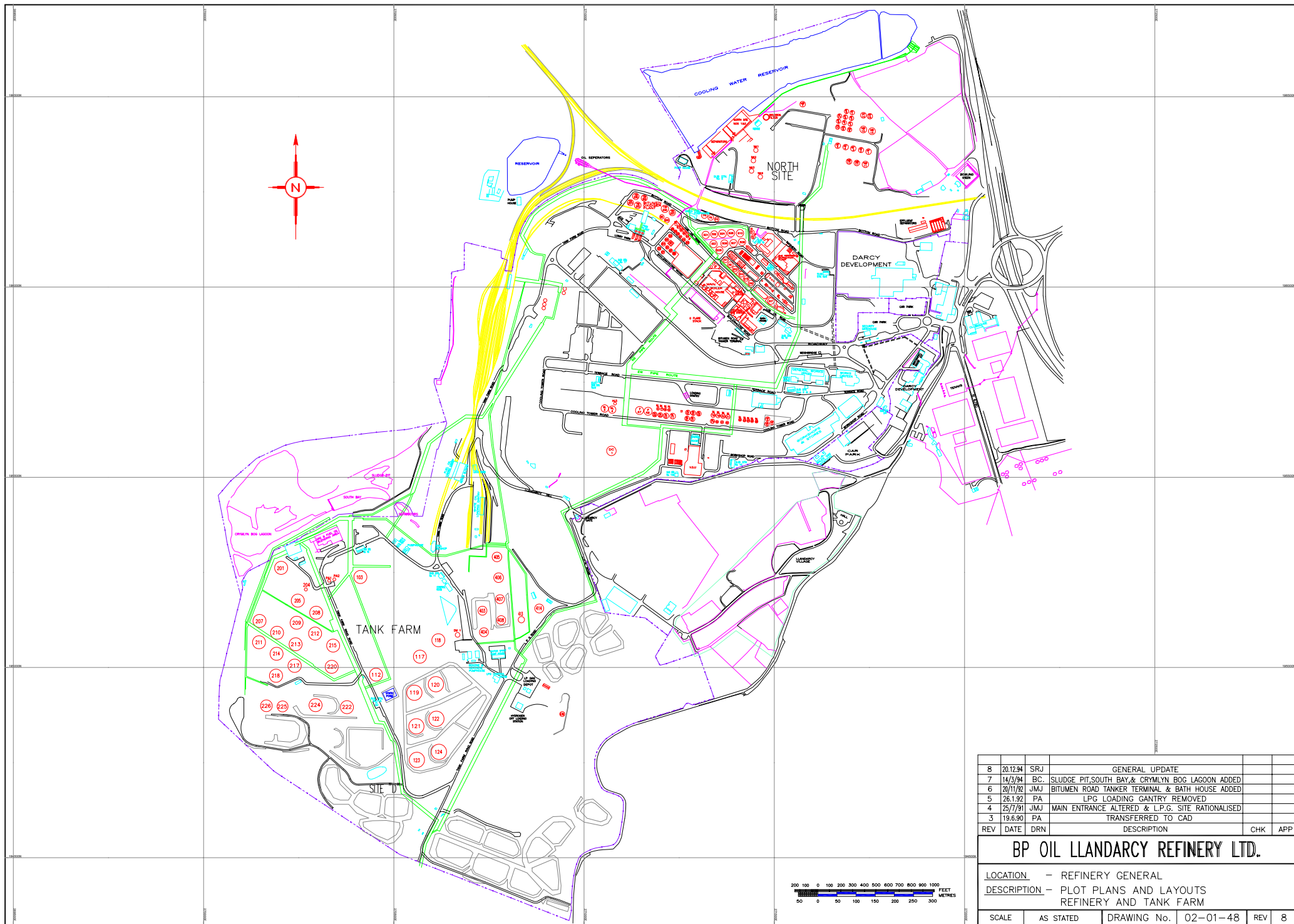


ISSUE 1
 DELETED - MEROX UNIT; POWER STN. N° 2; SUMP SEPARATORS A & B;
 COOLING TOWERS A, B & C; LUB. OIL BLENDING DESPATCH PLANT;
 BOTTLED GAS DESPATCH PLANT;
 TANKS 105, 106, 107, 110, 111, 113, 114, 115; 227 TO 233 INC.;
 301 TO 318 INC.; 400 TO 412 INC. 415 TO 430 INC. 433, 434, 437, 438.
 102, 108, 109, 200, 210.
 ADDED - WILES GAS STATION; VDU PREHEAT & COOLING TOWER;
 WHITE OIL SLACK WAX ROAD LOADING GANTRY; WHITE OIL & LPG.
 RAIL LOADING GANTRIES; TANK D.M.1. TANKS D3, D4, D6, D7, D10.
 E9, F10; LORRY PARK.

SCALE 1/2500



1/2500		DATE		DR.		CH.		APP.	
BP. REFINERY (LLANDARCY) LTD.									
UNIT:		ESTATES		JOB No.		DR.		CH.	
SECTION:		PLOT, PLANS & LAYOUTS.		TR.		D.A.C.		CH.	
DESCRIPTION:		LAYOUT OF REFINERY & TANK FARM.		APP.		J.K.J.		22.7.75	
SCALE 1/2500		DRAWING NUMBER 02-01-43		DRAWER		X02-01-43			



8	20.12.94	SRJ	GENERAL UPDATE		
7	14/3/94	BC	SLUDGE PIT, SOUTH BAY & CRYMLYN BOG LAGOON ADDED		
6	20/11/92	JMJ	BITUMEN ROAD TANKER TERMINAL & BATH HOUSE ADDED		
5	26.1.92	PA	LPG LOADING GANTRY REMOVED		
4	25/7/91	JMJ	MAIN ENTRANCE ALTERED & L.P.G. SITE RATIONALISED		
3	19.6.90	PA	TRANSFERRED TO CAD		
REV	DATE	DRN	DESCRIPTION	CHK	APP
BP OIL LLANDARCY REFINERY LTD.					
LOCATION - REFINERY GENERAL					
DESCRIPTION - PLOT PLANS AND LAYOUTS					
REFINERY AND TANK FARM					
SCALE	AS STATED	DRAWING No.	02-01-48	REV	8

