Planning Delivery Zone 8 Legacy Transformation (Stage 4) Consolidated Validation Report



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Table of contents

Chap	ter	P	ages
List of	Abbre	viations	V
1. 1.1. 1.2.	Scope Report	t Objectives	1 1
1.3. 1.4.		ant Planning Conditions escription and Location	4
1.5.		ic, Transformation and Legacy End Use	4
1.6.		inding / Excluded Works	5
1.7.	Termir	•	5
1.8.	Report	t Limitations	7
2. 2.1.	Basis Backg	of Remedial Design	8
2.2.	_	of Works / Transformation Phase Contractor Design	9
3.		mentation	15
3.1. 3.2.		ary of Legacy Transformation Works ual Actions transferred from ODA / LOCOG Scope	15 16
3.3.		uarding Remediation / Reinstatement of Protection Measures	19
3.4.	_	ed Areas Restrictions	19
3.5.	Sampl	ing and Analytical Testing	19
3.6.		ogical Material / Unexpected Contamination	19
3.7.		als Management	20
3.8.		Management	20
3.9.		, Safety and Environment	20
4 .		usions and Further Works	21 21
4.1. 4.2.	Conclu	r Works – Residual List and Issues Affecting Future Development	21
5.	Refere		24
Anner	ndices		
Appen Appen		Schedule of Key Documentation (including summary of contents)	
Appen		Key Parties	
 Appen		Permit to Proceed Protocol (CD only)	
Appen	dix D.	PPDT / Hyder Document Review Comments and Response	
Tabl	es		
Table 1 Table 2 Table 2 Table 2 Table 3 Table 4	2-1 2-2 2-3 3-1	PDZ8 Validation Reporting Structure Summary of Legacy Transformation Phase Contractor Construction Design within PDZ8 Legacy Transformation RMS Addenda relevant to PDZ8 Remediation Slot-In Conditions relevant to PDZ8 Residual Remedial Actions for PDZ8 Works for Incoming Projects and Restrictions on Future Works in PDZ8	3 8 10 11 14 17 22

Figures

Figure 1:	Location and Boundary of Planning Delivery Zone 8
Figure 2:	Olympic End Use for Planning Delivery Zone 8
Figure 3:	Legacy Transformation Phase End Use for Planning Delivery Zone 8
Figure 4:	Legacy End Use for Planning Delivery Zone 8
Figure 5:	Spatial Coverage of Legacy Transformation Phase Validation Reports within Planning Delivery Zone 8
Figure 6:	Sub-Grade Levels for Planning Delivery Zone 8
Figure 7:	Extent of Marker Layer within Planning Delivery Zone 8
Figure 8:	Extent and Thickness of Human Health Separation Layer within Planning Delivery Zone 8
Figure 9:	Final Finished Level for Planning Delivery Zone 8
Figure 10:	Retained Areas within Planning Delivery Zone 8
Figure 11:	Exceedances requiring Action in Legacy
Figure 12:	Representative As-built Sections of the Final Remedial Cover System in Planning Delivery Zone 8

List of Abbreviations

Abbreviation	Definition
bFFL	Below Final Finished Level
CDM	Construction (Design and Management)
CSM	Conceptual Site Model
CVR	Consolidated Validation Report
CZ	Construction Zone
EWFL	Enabling Works Formation Level
FFL	Final Finished Level
FOC	fraction of organic carbon
FoP	Follow-on Project
GRS	Global Remediation Strategy
HHSL	human health separation layer
IIMS	Intrusive Investigation Method Statement
LCS	Legacy Communities Scheme
LLDC	London Legacy Development Corporation
LOCOG	London Organising Committee of the Olympic and Paralympic Games
LPA	Local Planning Authority
LTD	Legacy Transformation Development
LTP	Legacy Transformation Phase
MCertS	Monitoring Certification Scheme
MMP	Materials Management Plan
ODA	Olympic Delivery Authority
OPF	Olympic Park fence line
PAH	polycyclic aromatic hydrocarbons
PDZ	Planning Delivery Zone
PPDT	Planning Policy and Decisions Team
PtP	permit to proceed
QEOP	Queen Elizabeth Olympic Park
QoIF	quality of imported fill
RARAR	Retained Areas Risk Assessment Report
RemTech	remediation technical team
RMS	Remediation Method Statement
RTD	River Terrace Deposits
SSAC	site specific assessment criteria
SSRS	Site Specific Remediation Strategy
SSRT	site specific remediation target
SPSA	Southern Pedestrian Screening Area
SVSA	Southern Vehicle Screening Area
UKAS	United Kingdom Accreditation Service

1. Introduction

1.1. Scope

In order to discharge the prevailing remediation Planning Conditions, including Slot-In conditions, for the Legacy Transformation Phase (LTP) of works on the Queen Elizabeth Olympic Park (QEOP), the Local Planning Authority (LPA), the London Legacy Development Corporation (LLDC) Planning Policy and Decisions Team (PPDT) has confirmed that Stage 4 Consolidated Validation Reports (CVRs) shall be produced. These Stage 4 CVRs are designed to amalgamate and summarise the already PPDT-approved project specific Validation Reports for the LTP works. This is in order to produce an overarching high level summary of the remediation works undertaken within each Planning Delivery Zone (PDZ) of the QEOP during the LTP, building upon the works completed under the Olympic Development by the Olympic Delivery Authority (ODA) and London Organising Committee of the Olympic and Paralympic Games (LOCOG). This report does not, however, reproduce or re-evaluate any of the detailed testing, results or assessments that have been previously reported and are contained therein. This document provides a summary of existing LTP validation information only: no new information is presented herein.

This document has been prepared to discharge LLDC's obligations for the Legacy Transformation works within PDZ8 (herein referred to as the "Site") of the QEOP under Condition LTD.16 ('Protection and Enhancement of Remediation') of the 2007 (varied in 2011) Olympic, Paralympic and Legacy Transformation Planning Applications: Facilities and Their Legacy Transformation Planning Application (Ref. 1), as well as a number of related validation Planning Conditions, as outlined in Sections 1.3 and 2.2.7 below. Whilst it is recognised that Condition LTD.16 of the above Permission does not specifically require provision of validation reporting it does require details confirming how the integrity of remediation measures, installed for the Olympic Development, will be maintained and confirmation of any enhancements to those measures.

PDZ8 is located in the southern section of the QEOP in Stratford, East London (refer to the Site description in Sections 1.4 and 1.5).

1.2. Report Objectives

As the focus of the CVRs is to discharge the relevant Planning Conditions associated with Validation Reporting on the QEOP, the CVRs are to be issued in stages to provide clarity and ensure progressive regulatory approval is achieved. To date, three stages of CVR production have been completed and approved by the LPA, with this report representing the fourth stage. This staged process is set out below and shall discharge the planning obligations as stated:

Stage 1 previously submitted and approved by the LPA – comprises Part I (Background) and Part II (Implementation of Design – Site Preparation (Enabling Works)) (Ref. 2). Part I sets out the completed remediation works within the context of the preceding remedial design. Part II discusses the implementation and validation works completed by the Enabling Works Team, which provided the development platform for construction of the Olympic Development on behalf of the ODA. The objective of this CVR (Stage 1) was to discharge the ODA's obligations under Condition SP.0.35 of the Olympic, Paralympic and Legacy Transformation Planning Applications: Site Preparation Planning Application (Ref. 3).

Stage 2 previously submitted and approved by the LPA – comprises Part III (Implementation of Design – Olympic Development (Follow-on Projects (FoPs)) (Ref. 4). Part III presents the ODA completed construction and remediation works as required to facilitate the development aspects of the works i.e. infrastructure, venues and landscaping. This Stage 2 CVR was submitted and subsequently approved pursuant to the ODA's obligation under Condition OD.0.36 of the Olympic, Paralympic and Legacy Transformation Planning Applications: Facilities and Their Legacy Transformation Planning Application (Ref. 5) and subsequent applicable Slot-In Planning Conditions for Permissions relating to construction variations.

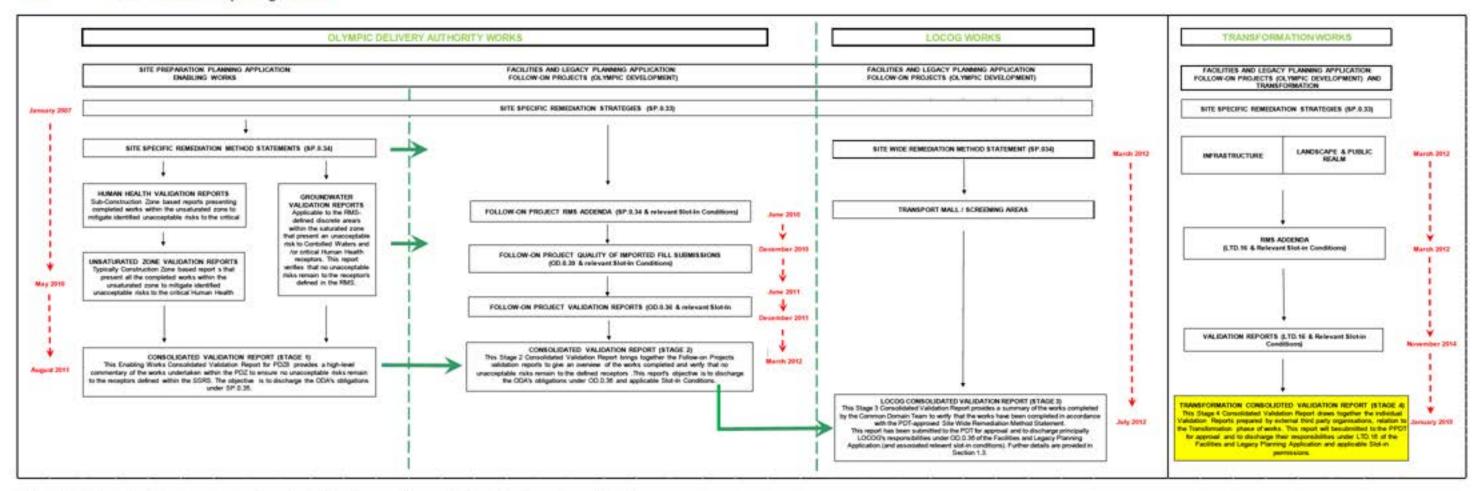
Stage 3 previously submitted and approved by the LPA – summarises remediation-related works completed by LOCOG to facilitate the Olympic Games only and any alteration to the Marker Layer / Human Health Separation Layer (HHSL) across PDZ8. The associated LOCOG temporary works in PDZ8 included installation of tents, cabins and crowd flow barriers. The Stage 3 CVR (Ref. 6) fully discharged LOCOG's obligations under Condition OD.0.36 of the Olympic, Paralympic and Legacy Transformation Planning Applications: Facilities

and Their Legacy Transformation Planning Application (Ref. 5) and subsequent applicable Slot-In Planning Conditions for Permissions relating to construction variations.

Stage 4 this document – together with the ODA Enabling Works (Stage 1) CVR (Ref. 2), the ODA FoP (Stage 2) CVR (Ref. 4) and the LOCOG (Stage 3) CVR (Ref. 6), this report is intended to inform future developers / owners / operators at the QEOP, including the LLDC, of the remediation and validation works completed up to the end of the LTP works. In addition, these reports provide a summary of the residual actions which have been closed out by the previous works phases and those which need to be considered as part of future development.

The PDZ8 validation reporting sequence presenting the stages of the CVR process is presented in Table 1-1 below.

Table 1-1 PDZ8 Validation Reporting Structure



^{*} Please refer to Appendix A for a summary of each report and the development of the remedial design, implementation and validation.

1.3. Relevant Planning Conditions

This CVR is submitted to PPDT pursuant to Condition LTD.16 of Planning Permission 07/90010/OUMODA and its more recent variation 11/90313/VARODA (Ref. 1) for the QEOP LTP.

Permission 11/90313/VARODA does not include a specific Legacy Transformation Validation Condition, however, LTD.16 requires details to be recorded regarding maintaining and enhancing existing remediation measures installed as part of the Olympic Development. The specific Condition wording is as follows:

Before 31 December 2012, a method statement shall be submitted to the Local Planning Authority for approval, indicating how the integrity of the remediation measures installed for the Olympic Development will be maintained and any necessary enhancement or alterations to those measures are to be installed. This condition may be discharged on a Legacy Transformation Work Zone basis.

Reason: To protect human health and avoid contamination of controlled waters.

In addition, this document seeks to discharge validation Planning Conditions from a number of subsequent Planning Permissions, including Slot-In Permissions, relating to specific variations in the construction of certain infrastructure, buildings and landscaping from those set out in the original 2007 Permission and in the 2011 variation (Ref. 1). These Conditions have similar wording to Validation Condition OD.0.36 of the 2007 Permission and are written so as to dovetail with this Condition. Planning Condition OD.0.36 of the 2007 Permission states:

'Validation of the Remediation Works for the purposes of human health protection must be provided within two months of completion of the Final Build Layer within any Construction Zone. When all works for the protection of human health are completed within each Planning Delivery Zone, a consolidated Validation Report, drawing together the Construction Zone validations, shall be submitted to the Local Planning Authority. This shall include topographic mapping of the final finished ground levels.

Reason: To ensure the protection of human health and avoidance of pollution of controlled waters.'

The validation Slot-In Conditions are detailed in Table 2-3. There are no separate validation specific Permissions relating to works in PDZ8.

1.4. Site Description and Location

PDZ8 comprises three portions of land (Construction Zones (CZ) 8a, CZ8b and CZ8c), separated by the existing road and surface water network. In combination the three construction zones total an area of approximately 10 hectares. The wider QEOP development is present to the north, north-west and east (of CZ8c), and residential and commercial buildings are present to the south and south-west

The site layout, location and reporting boundary for this PDZ8 (Stage 4) CVR is presented on Figure 1.

For a summary of the wider site context / background of PDZ8, including the history, geology, hydrogeology, hydrology and site investigations completed, please refer to the Enabling Works (Stage 1) CVR (Ref. 2).

1.5. Olympic, Transformation and Legacy End Use

The Olympic, Transformation and Legacy end uses for PDZ8, as defined by the remediation designers, are as follows:

Games Mode (see Figure 2): The majority of PDZ8 comprised hard standing, CZ8a comprised the Southern Sponsors Coach Park (SSCP), CZ8b an "Accreditation Checking Area" the Southern Vehicle Screening Area (SVSA) and a small area in the north designated as an internal shuttle bus terminal. Similarly, CZ8c contained an accreditation area along with spectator services and the Southern Pedestrian Screening Area (SPSA).

Transformation Mode (see Figure 3): The majority of PDZ8 comprised interspersed themed soft landscaping and hardstanding open areas, with an area in the north of CZ8c transformed to allotments and an area in the

south designated as a future development plot. The Bow Substation remains in the east of CZ8a and Pudding Mill Lane Station is located to the north of CZ8a of CZ8b.

Legacy Mode (see Figure 4): In accordance with the Legacy Communities Scheme (LCS) Planning Application (11/90621/OUTODA) (Ref. 7), the Legacy design within CZ8a will include office buildings with commercial / employment land uses including amenities for the surrounding employment premises. The northern portion of CZ8b comprises an area designated for the DLR expansion of Pudding Mill Lane Station to accommodate the Crossrail portal and mainline route in the northern part of CZ8b. The remainder of the site will be used for residential / office buildings and a car park. CZ8c will consist of residential mixed use development in the south and soft and hard landscaping including allotments in the north. The Crossrail/DLR expansion of the mainline railway will be located in the northern section of CZ8c.

1.6. Outstanding / Excluded Works

At the time of writing this report, the two Validation Reports relating to the Legacy Transformation works in PDZ8, are awaiting submission to the PPDT for their review and approval. Any significant amendments made to submitted reports, as a consequence of PPDT's review, which are not currently incorporated herein, will be captured in a revision to this document. The reports relating to Legacy Transformation works in PDZ8 are as follows:

- Capita (on behalf of BAM Nuttall), November 2014. Validation Report for PDZ8, Report Ref. LC402-LCI-SPK-CM-REP-0055 (Decision Notice Ref. Awaiting PPDT approval); and
- PJ Carey, August 2014. Project Specific Validation Report for: Highway, Footpaths & Landscaping Works. Report Ref. LC417-MAR-SPK-W-PLR-0002 (Decision Notice Ref. *Awaiting PPDT approval*).

1.7. Terminology

Several key terms have been used in this and preceding CVRs, as defined below:

- 'Bump Out' works completed by LOCOG, relates to the removal and decommissioning of all the temporary structures (particularly Sponsor Showcases) and features installed by LOCOG prior to handover to LLDC (please see Section 3.1.1). Bump out works were not required in PDZ8.
- Construction Zone (CZ) sub-divisions of the PDZs used for the organisation of construction works, initially under the ODA Enabling Works contract and which formed the basis for design of the remediation strategies and related documentation.
- **Enabling Works Formation Level** (EWFL) is the platform that the ODA Enabling Works typically completed to, which is usually 500 mm below the Final Finished Level (FFL).
- **Final Build Layer** (also known as the Final Construction Finishes) forms the upper 300 to 500 mm of the HHSL. The EWFL is at its base and the FFL forms its upper surface.
- **Final Finished Level** (FFL) this represents the final finished surface to which the human health receptors will be exposed, in general this consists of either soft cover surfaces (gardens, verges, open space etc.) or hardstanding (including buildings). It forms the surface of the HHSL.
- General Fill is the chemically and geotechnically acceptable backfill materials placed by previous work streams below the HHSL and Marker Layer. The majority of these materials were placed by the ODA Enabling Works team and comprise predominantly remediated Made Ground soils demonstrated to be compliant with the prevailing Site Specific Remediation Strategy (SSRS) and Remediation Method Statement (RMS) requirements.
- Global Remediation Strategy (GRS) sets out site wide principles and procedures for taking forward the Site Specific Remediation Strategies (SSRSs), which have been prepared for individual CZs, to provide a common resource for remediation strategy related work, thus minimising duplication of design, regulatory requirements and programme risk.

- **Human Health Separation Layer** (HHSL) this is the agreed term for the surface materials placed above the general fill / *in situ* undisturbed material. The HHSL provides the main barrier to prevent direct contact with the underlying materials in terms of potential risks to human health. This HHSL typically consists of topsoil, subsoil and / or hardstanding and the overall thickness varies based on the defined end use of an area. Unless otherwise agreed with the LPA the thickness of the HHSL is no less than 600 mm. In addition, the LPA has subsequently agreed that in areas of hardstanding the HHSL thickness can be reduced should there be justification to do so and with explicit LPA agreement via a separate submission.
- Interim Separation Layer forms the base layer (100 to 300 mm) of the HHSL. The EWFL forms its upper surface.
- Intrusive Investigation Method Statement (IIMS) provides a generic specification for undertaking
 intrusive investigations across the Olympic Park to gather sufficient information to support planning
 applications and scheme design.
- **Legacy Communities Scheme** (LCS) establishes land use proposals for the QEOP site post-Games Transformation from 2013 and beyond.
- **Legacy Phase** the period beginning with the end of the LTP and continuing throughout the future period of use and occupation of the Legacy development. Includes development of the LCS.
- Legacy Transformation Development (LTD) refers to development relating to the Transformation Phase following the 2012 Games (Olympic and Paralympic) and prior to implementation of the Legacy Community Scheme.
- Legacy Transformation Phase (LTP) commenced following the 2012 Paralympic Games closing ceremony and ends on 31st December 2014 and encompasses the LTD.
- London Organising Committee of the Olympic and Paralympic Games (LOCOG) was responsible
 for completing the temporary overlay of the London 2012 Olympic Games to facilitate its operation during
 the Games Mode. This included the provision of temporary services, facilities (including Sponsor
 Showcases) and the installation of certain of the overlay (hardcover) with limited excavations in discrete
 areas of the QEOP.
- London Legacy Development Corporation (LLDC) is responsible for managing and delivering the LTP and Legacy Phase at the QEOP.
- **Marker Layer** a brightly coloured (typically orange) geogrid and / or geotextile placed immediately below the HHSL (including hardstanding) to mark the base of the separation layer (unless otherwise stated).
- Olympic Delivery Authority (ODA) were responsible for delivering the landform and associated infrastructure and venues for the QEOP. The ODA works were split into two key work streams:
 - Enabling Works, which was responsible for the demolition, ground contamination assessment and remediation and the delivery of a chemically and geotechnically acceptable platform for construction of the Games overlay; and
 - Follow-on Projects (FoPs), which were responsible for the delivery of the venues, infrastructure and landscaping for the Games, such as the Aquatics, Main Stadium, bridges, highways and gardens / soft landscaping.
- **Planning Delivery Zones** (PDZs) are the established planning zones across the QEOP and segregate the site into specific areas of development / delivery. Certain of the PDZs were subsequently sub-divided to facilitate construction (see CZ).
- **Permit to Proceed** (PtP) a permitting system put in place by ODA and applied across the QEOP, which aimed to ensure the completed remediation works were protected from subsequent works.

- Quality of Imported Fill (QoIF) No soils or infill materials (including silt dredged from watercourses), shall be imported onto the QEOP until it has been satisfactorily demonstrated that they present no risk to human health, planting and the environment. Documentary evidence to confirm the origin of all imported soils and infill materials, supported by appropriate chemical analysis test results, shall be submitted to and approved by the Local Planning Authority prior to that import.
- Remediation Method Statement (RMS) document prepared by Contractors detailing the methodologies required to protect the remediation already undertaken by the ODA projects and to verify the works to be undertaken by that Contractor at the QEOP.
- Site Specific Assessment Criteria (SSAC) the contamination / chemical criteria derived through the SSRS, which show the upper bound contaminant concentrations considered to be protective of either controlled waters or human health. As with site specific remediation targets (SSRTs) chemical concentrations above the SSAC are likely to necessitate further consideration or action.
- Site Specific Remediation Strategy (SSRS) the remedial design that sets out the requirements for
 protection of both human health and controlled waters receptors including specific remedial actions based
 on quantitative risk assessment and derivation of acceptability criteria and remedial targets. This
 document also presents the acceptability criteria to be adopted for earthworks for the specific zone or subzone (see SSAC and SSRT).
- Site Specific Remediation Target (SSRT) the combined contamination / chemical criteria protective of both controlled waters and human health established by the SSRS. As with the SSAC chemical concentrations above these criteria will typically require further consideration.
- **Sub-formation** this is the level at which the Marker Layer has been installed (or where it would have been installed if it has been agreed with the LPA that it can be omitted).
- **Sub-grade** this is the lowest level of excavation (cut) in an area. The sub-grade is always underlain by undisturbed materials and may be coincident with sub-formation in areas of excavation.

1.8. Report Limitations

This CVR is based on information received from third party Contractors made available to Atkins, which is assumed to be accurate and complete at the time of preparing this report (February, 2015).

This CVR does not present new information or re-evaluate any of the data previously assessed within the approved documents summarised herein. Neither does this document present information from third parties working within the Planning Boundary, but whose works are outside of LLDC's control or scope.

Sampling by its very nature provides only a general indication of contaminants on site. It is possible that compounds not identified during the LTP works may be present at the site and any residual concentrations of compounds will vary spatially across the Site.

This CVR should be read in light of the legislation, statutory requirements and / or industry good practice applicable at the time of the works being undertaken. Any subsequent changes in this legislation, guidance or design may necessitate the findings to be reassessed in the light of these circumstances.

2. Basis of Remedial Design

2.1. Background

The LTP works comprised removal of the temporary elements of underpass U07 and the abutments and fill associated with bridge T12, construction of allotments and associated community buildings in CZ8c and completion of hard and soft landscaping to LTP FFL. This infrastructure was built on a platform constructed by the ODA Enabling Works and FoP teams and, to a lesser extent, LOCOG's overlay works. The objective of the earthworks was to ensure the Site has been remediated to an agreed standard which is protective of both human health and controlled waters receptors as defined by the Legacy Masterplan.

The remedial strategy for the QEOP was set out in a series of increasingly focussed documents which commenced with a GRS for the Olympic development (Ref. 9). The GRS is a high level roadmap that was further developed by the Construction Zone SSRS. The SSRSs were informed by the investigation works completed in accordance with the IIMS that presents a framework and provides a generic specification for undertaking contamination intrusive investigations across the QEOP. The design documentation was further refined in a series of SSRS Addenda as new data became available, to ensure the remedial works were reflective of the encountered ground conditions. These documents are discussed in further detail within the appendices in the preceding CVRs (Refs. 2, 4 and 6).

Within the related SSRS and SSRS Addenda, a Conceptual Site Model (CSM) was developed for PDZ8 presenting potential contamination sources, pathways and receptors. Individual SSACs, protective of either controlled waters or human health, were derived through the SSRS risk assessment process.

The risk assessment and remediation for PDZ8 was divided into CZ8a, 8b and 8c as a result of phased vacant possession and the construction programme. Consequently, the CSM was developed on an individual CZ basis and identified unacceptable risks to both human health legacy and controlled waters receptors in CZ8a, 8b and 8c that required excavation, treatment and / or further investigation / delineation.

The remedial design was developed in tandem with remedial works in PDZ8 as more data from further site investigation became available. In accordance with good practice and to ensure a robust CSM was maintained, the design documentation was further refined to ensure the remedial works were reflective of the encountered ground conditions.

Following on from this, the ODA issued a series of RMSs that set out how the remedial design would be implemented and subsequently validated to achieve discharge of the prevailing Planning Conditions (Ref. 3). The physical completion of the Enabling Works scope was in mid-2010. At completion of the Enabling Works phase of the programme all identified remedial hotspots within PDZ8 had been addressed through appropriate removal or risk assessment such that the FoPs were not required to complete hotspot remediation. A number of residual remedial issues were, however, identified by the Enabling Works which required consideration / action by the FoPs and / or future parties working on the site as detailed in the Enabling Works (Stage 1) CVR (Ref. 2) and further reviewed in Sections 3.2 and 4.2.

In broad terms, the FoP remedial design comprised completion of the remedial cover system, placement of compliant fill materials and validation of localised excavations to facilitate construction e.g. service corridors and foundation excavations. The remedial cover system comprised HHSL and a Marker Layer, demarcating the 'clean' soil of the HHSL from the underlying 'general fill' and / or *in situ* soils. Further, where projects encountered *in situ* soils there was a requirement for the FoPs to assess further what remediation and validation would be required to ensure the areas were suitable for Legacy use.

All previous earthworks and remediation works carried out by the ODA / LOCOG were verified in a series of Validation Reports (Refs. 2, 4 and 6). However, due to a number of factors, it emerged that a limited number of actions (residual actions) that were originally intended to have been completed during these previous phases of work were transferred to LLDC to complete. These are set out in Table 3-1 below. Additionally, the LLDC and its contractors are required to adhere to the established remedial design, complete their own RMSs (refer to Section 2.2.1) and validate their works.

2.2. Scope of Works / Transformation Phase Contractor Design

Guidance to assist the LTP Contractors with their remedial works and production of planning related documents was produced by the LLDC Remediation Technical (RemTech) Team (Ref. 10). This document provided a framework to follow when considering remedial requirements, sets out the anticipated contents of remedial planning submissions and includes tools to support the completion of these documents.

At completion of the ODA Enabling Works phase of the programme, all identified remedial hotspots within PDZ8 had been addressed through appropriate removal or risk assessment such that the ODA FoPs were not required to complete hotspot remediation. A number of residual remedial issues were, however, identified by ODA / LOCOG which required consideration / action by the LTP Contractors and / or future parties working on the Site as detailed in the Enabling Works (Stage 1) CVR (Ref. 2), FoP Phase (Stage 2) CVR (Ref. 4) and LOCOG (Stage 3) CVR (Ref. 6) and further discussed in Section 3.2 and summarised in Table 3-1.

The LTP Contractors' remedial design comprised completion of the remedial cover system, placement of compliant fill materials and validation of localised excavations to facilitate construction e.g. service corridors and foundation excavations. The remedial cover system comprised HHSL and Marker Layer, demarcating the 'clean' soil of the HHSL (see Sections 3.3 and 3.3.1) from the underlying general fill and / or *in situ* soils. Further, where LTP Contractors encountered *in situ* soils, below Enabling Works sub-grade levels, there was a requirement to assess further what remediation and validation would be required to ensure the areas were suitable for Legacy use.

A summary of the design for the LTP works is provided within Table 2-1 below.

Table 2-1 Summary of Legacy Transformation Phase Contractor Construction Design within PDZ8

Contractor	Task	Description	Scope of Key Earthworks	Final Surface / Works to be Completed
BAM Nuttall	Creation of allotment gardens and small community building	Removal of temporary hardstanding and construction of allotments and associated community buildings.	Removal of abutments and fill associated with Bridge T12 and temporary elements of underpass U07. Removal of temporary Olympic use hardstanding and placement of full cover system, including Marker Layer and HHSL (600mm subsoil and 400mm topsoil) in areas of allotments. Construction of allotment community buildings with a Tyvek SD2 vapour barrier. Removal of lighting columns, pits, ducting, boundary fence and channel drain; and Installation of a drainage system. Raising of ground level at underpass U06, construction of footpath; and two concrete bases.	A portion of the allotment site remains incomplete due to clash with the Crossrail/DLR site boundary. DLR are required to complete works in this area following the completion of their works. All other works have been completed by BAM Nuttall. Report awaiting PPDT approval
PJ Carey	South Plaza hard and soft landscaping	Construction of new carriageway joining Stratford High Street and the southern entrance to the QEOP and related soft landscaping.	 Construction of 7 m wide roadway and 2 m wide footpaths finished with resin bond surfacing, either side. Importation and placement of 27 m³ topsoil for soft landscaping between the hoarding and pavement. Installation of 11 No. lighting columns and street signage. Marker Layer was not exposed during PJ Carey's site works, and as a result, PJ Carey did not place / replace any Marker Layer across the Marshgate Lane site. All excess soils excavated during works (60 m³) were transported off-site. 	Works complete – Report awaiting PPD approval.

2.2.1. Addenda to the ODA Remediation Method Statements

A number of addenda to the established ODA South Park RMSs were completed and approved for works undertaken by the LTP Contractors in PDZ8 (Refs. 11 to 14). These RMS addenda established methodologies for undertaking their LTP earthworks so as to complete the remedial strategy, whilst protecting / maintaining the existing ODA and LOCOG remediation and detailing validation of their works. These documents were submitted to PPDT to discharge the Planning Condition covering provision of RMS (LTD.16) in addition to seeking discharge of related Slot-In Planning Conditions. The relevant LTP RMS addenda and Applications for PDZ8 are summarised in Table 2-2 below.

Table 2-2 Legacy Transformation RMS Addenda relevant to PDZ8

Contractor	Document Title and Reference	Planning Application and Status	Rationale	
BAM Nuttall	Approach to the Discharge of Legacy Transformation Remediation Related Planning Conditions LC401-APK-XXX-CM- REP-0001 Rev P02 (Ref. 11)	For Information	Details the proposed approach to the discharge of remediation related Planning Conditions associated with the QEOP Legacy Transformation Works.	
		09/90387/FUMODA (Conditions ULT.17 & ULT.6), Approved, 12/00128/AOD		
BAM Nuttall	Remediation Impact Assessment LC401-LCI- APK-CM-ASS-0002	08/90194/FULODA (Conditions FLT.12 & FLT.24) Approved, 12/00119/AOD	Identified the potential risks / impacts introduced through the Legacy	
	Rev P03 (Ref. 12)	11/90313/VARODA (Conditions LTD.16 & LTD.1.14), Approved 12/00114/AOD	Transformation works,	
		09/90387/FUMODA (Conditions ULT.17 & ULT.6) Approved, 12/00128/AOD		
BAM Nuttall	Remediation Method Statement LC401-LCI-	08/90194/FULODA (Conditions FLT.12 & FLT.24) Approved, 12/00119/AOD	Details the methodologies required to protect the remediation already undertaker by the ODA and LOCOG	
DAW NULLAN	APK- CM-MST-0003 Rev P03 (Ref. 13)	09/90296/FULODA (Condition LLT.25), Approved, 12/00070/AOD	projects and to verify the Transformation works undertaken by Nuttall at the	
		11/90313/VARODA (Conditions LTD.16 & LTD.1.14), Approved 12/00114/AOD	QEOP.	
PJ Carey	Marshgate Lane Remediation Method Statement LC810-SBH- HWY-CH-MST-0002 Rev P02 (Ref. 14)	11/90313/VARODA (Conditions LTD.16, LTD.1.12, LTD.1.13 and LTD.1.14) Approved, 14/00031/AOD	Details PJ Carey's methodologies to protect the ODA Enabling Works and FoP remedial works for the Marshgate Lane works.	

2.2.2. Hard standing as a Substitute to the Separation Layer

Under a site wide RMS addendum completed by the ODA Enabling Works remedial designers, a framework was established for reducing the thickness of the HHSL under suitably robust hardstanding (Ref. 15). The basic premise behind this design change was that hardstanding would act as a suitable barrier to certain pollution pathways (namely ingestion, dermal contact and dust inhalation) and reduce the requirement for a full-thickness HHSL.

The framework document required individual projects to provide information of where this approach was being adopted and provide details with regards to the extent of the area and the transition from reduced to full-thickness separation.

For PDZ8 an RMS addendum to reduce the thickness of the HHSL was submitted by PJ Carey for the areas of permanent concourse within their works; refer to the RMSs within Table 2-2 above and Figure 8.

2.2.3. Quality of Imported Fill Submissions

Under the 2011 Planning Permission (LTD.1.14) and a number of the subsequent Slot-In Conditions, a requirement existed for projects which intended to import unbound fill materials from off-Park to confirm suitability of the material for use on the project in advance of importation to demonstrate the material did not constitute a waste. A framework document, setting out the information required to satisfy the discharge of these 'Quality of Imported Fill' Planning Conditions was established by the ODA Enabling Works Team and subsequently adopted by the ODA FoPs and LTP Contractors (Ref. 8). Planning applications, in accordance with the framework, were submitted by a number of the FoPs and those applications submitted in relation to Slot-In conditions are summarised in Table 2-3 below.

2.2.4. Gabion Material

A site wide framework (Ref. 17) was approved by the LPA (Decision Notice: 10/90330/AODODA), which addressed the use of site-derived gabion material in the FFL and established that no chemical testing of the material for human health or controlled waters verification purposes was required to be undertaken. This framework was based on the principle that the nature and placement of gabion material mitigates pathways to human health receptors. Regarding potential risks to controlled water receptors, the Environment Agency agreed that visual inspection of the material during hand placement was sufficient to ensure no fines or visual signs of contamination or deleterious material were apparent.

2.2.5. Site-wide (QEOP-wide) SSAC Amendments

Following derivation of the original SSAC for HHSL and general backfill materials for the individual zones / sub-zones across the Park, as provided in the remedial designer's SSRS documents, a number of amendments were subsequently discussed and agreed in consultation with the LPA. These Olympic Park wide SSAC amendments included the following key documents:

- Site Wide RMS Addendum (Asbestos in the Sub-grade & General Fill). MST-ENL-CE-ZZZ-OLP-SP1-E-0159 Rev 05 (08/90083/AODODA, 08/90181/AODODA, 08/90216/AODODA, 08/90217/AODODA, 08/90218/AODODA, 08/90219/AODODA, 08/90220/AODODA, 08/90221/AODODA, 08/90222/AODODA 08/90223/AODODA, 08/90281/AODODA and 08/90326/AODODA). This document details the sampling strategy to be utilised when an asbestos value of >0.1% w/w is encountered within the HHSL or General Fill.
- Site Wide SSRS Addendum (Justification of deviation from the GRS in the derivation of SSAC). MEM-ATK-CM-ZZZ-OLP-ZZZ-0004 Rev 2 (09/90233/AODODA). This memorandum documents the changes Atkins applied in the derivation of SSAC from the methodology or data sources presented in the GRS along with justification for the changes.
- Proposed changes to the Human Health SSAC values for lead, general metals, and polycyclic aromatic hydrocarbons (PAHs) in the Separation Layer, and to the SSAC values for General Fill. REP-ATK-CM-ZZZ-OLP-ZZZ-E-0004 (08/90265/AODODA). Revised SSAC were calculated for lead using the Provisional Tolerable Weekly Intake method for the Soft Landscaping Legacy end use, for general metals

using a single Soil Ingestion Rate, and for PAHs assessing the potential contribution from each of the vapour inhalation pathways based on the Henry's Law Constant.

• Errata to the document entitled 'Proposed changes to the Human Health SSAC values for lead, general metals, and polycyclic aromatic hydrocarbons (PAHs) in the Separation Layer, and to the SSAC values for General Fill'. REP-ATK-CM-ZZZ-OLP-ZZZ-E-0004 (08/90265/AODODA). Atkins recalculated the inhalation Tolerable Daily Intake for lead; but the inhalation pathway was still not considered to be significant. The dermal pathway for lead was also calculated, resulting in a new SSAC for areas of soft landscaping not associated with commercial buildings. In addition, Atkins further justified the use of a fraction of organic carbon (FOC) of 0.01.

2.2.6. PDZ8 SSAC Amendments

Following the introduction of a more sensitive Legacy end use to that reported in the SSRS (from residential (without garden areas) to allotments), and a review of the original SSAC for HHSL, as provided in the remedial designer's SSRS documents, a number of amendments were subsequently discussed and agreed in consultation with the LPA. These amendments included the following:

• Atkins, March 2012. Design Note for Allotments in CZ7a and CZ8c. Report Ref. 0241-LCI-PWD-C-REP-004, Rev P02 (Ref. 16). This document provides an outline technical design and updated human health SSACs for legacy phase allotment end use within CZ7a and CZ8c, only. The minimum total depth of the allotment soil profile should be no less than 1000 mm, which will permit the site users to 'double dig' soils within the allotments to the approximate depth of two spades, and ensure that the design does not place limitations on the end user (e.g. restricted growth potential (i.e. fruit trees), installation of ponds etc.). The presence of a permeable and flexible geotextile root barrier is required at both the base and sides (at allotments boundaries) of the allotments soils to ensure that the roots of crops grown on the site are not able to penetrate underlying soils for which the suitable criteria may not be met. The root barrier specification also needs to meet the requirements of the landscape designers. A Marker Layer is to be placed directly above the root barrier at the base, and on either side of the root barrier on the vertical sections (at the allotment boundaries).

2.2.7. Pre-validation Remediation Slot-In Conditions

A number of the LTP works were subject to Slot-In Planning Conditions, which generally related to structural design changes rather than changes to remediation, and retained the key remediation Conditions from the 2007 Permission. Table 2-2 above provides details of the RMS Slot-In Conditions discharged by the LTP Contractors in PDZ8 and a summary of the discharge of the remaining remediation Slot-In Conditions is provided in Table 2-3 below.

Table 2-3 Remediation Slot-In Conditions relevant to PDZ8

				Pre-validatio	n Slot-In Conditions				Protection and Enhancement of Remediation	Protection and Validation of Remediation
Slot-In Application and Responsible Party	Piling / Foundation Details	IIMS	SSRS	RMS	IIMS, SSRS, RMS	Remediation Monitoring	Unexpected Contamination	Quality of Imported Fill		
Underpass U06 09/90022/FULODA (BAM Nuttall South Park)	N/A	N/A	N/A	N/A	N/A	ULT.7 Compliance Condition	ULT.8 Compliance Condition	ULT.9 Approved: ODA/OPLC	ULT.22 & ULT.26 Approved: ODA/OPLC	N/A
Underpasses U03 and U07 09/90387/FUMODA (BAM Nuttall South Park)	N/A	N/A	N/A	N/A	N/A	ULT.4 Compliance Condition	ULT.5 No submission required	ULT.6 Approved: ODA/OPLC	ULT.17 Approved: ODA/OPLC	N/A
South Plaza (PJ Carey)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

3. Implementation

3.1. Summary of Legacy Transformation Works

The following sections summarise the key construction earthworks completed during the LTP within PDZ8 with further details from each third party Validation Report provided within Appendix A, including which residual actions were addressed (see also Section 3.2 below). Details of the LTP works, including sub-grade excavations, extent and the elevation of Marker Layer and HHSL and the final topography are included in Figures 7 to 10, respectively.

3.1.1. Underpass U07, Bridge T12, allotments and community buildings and LOCOG Readily Connectables

BAM Nuttall (Ref. 18) carried out a variety of LTP works across PDZ8 (CZ8c only). These included deconstruction of Bridge T12 abutments and associated fill, removal of temporary features of underpass U07 (details reported within the BAM Nuttall PDZ2 Validation Report), raising the existing ground level and the construction of two concrete bases and a footpath associated with underpass U06 and the creation of allotments and associated community building.

There was a minimal requirement for general fill and its placement was restricted to the backfill of excavated material during the construction of drainage trenches. Backfill material was generally compliant with the QoIF framework (Ref. 8). Where excavation reached the HHSL boundary a full cover system comprising a Marker Layer, root barrier and HHSL (imported subsoil and topsoil) was placed. The existing Marker Layer was retained beneath the retained paving of the central access and southern open space. A new Marker Layer was laid below the locations of new deep drainage. Excavations beneath the Marker Layer were managed through the PtP System.

LTP works in the allotment gardens (SC18) area included the removal of hard landscaping (tarmac) and sub-base to a maximum thickness of 1,000 mm, placement of a root barrier and Marker Layer and the backfilling with 600 mm sub-soil (totalling 4,223.25 m³) and 400 mm topsoil (totalling 1,684.65 m³) to FFL. A Tyvek SD2 vapour barrier was installed during the construction of the allotment garden community building to satisfy the provision for soil gas protection, which was outlined as a Residual Remediation Item in earlier documentation.

LTP works associated with underpass U06 included raising the existing ground level using Type 1 material, and the construction of two concrete bases and a footpath. No Marker Layer was laid in this area during the Enabling Works Phase of works and during LTP no excavation works were completed, resulting in BAM Nuttall not placing any Marker Layer.

Two samples, cslt-8tp-06 and cslt-8aml-01, were collected from re-used topsoil/AML material used to backfill service trenches in CZ8c. Results indicated arsenic was below the laboratory limit of detection in one sample <0.1 mg/kg and 350 mg/kg in the other, compared to the SSAC for soft landscaping of 131 mg/kg. The average of the measured arsenic concentrations was found to be below the applicable SSAC and this, combined with the overlying, uncontaminated topsoil capping in that area, resulted in the conclusion by Capita/BAM Nuttall that the reported arsenic concentrations did not represent an unacceptable risk to human health. No other chemical parameters were reported exceeding the applicable SSAC.

3.1.2. Marshgate Lane – Highways, footpaths and landscaping

PJ Carey constructed areas of both hard and soft landscaping across Marshgate Lane, CZ8b (Ref. 20). Works included: construction of a 7 m wide roadway joining Stratford High Street and the southern entrance to the QEOP and 2 m wide footpaths finished with resin bond surfacing, either side of this roadway; completion of soft landscaping between the hoarding and pavement; and installation of 11 No. lighting columns and street signage.

A total of 81 m³ of subsoil and 433 m³ topsoil was imported by PJ Carey for placement in areas of soft landscaping. Imported topsoil was tested at source and verified by PJ Carey as suitable for use on site.

Previous phases of works at the QEOP installed Marker Layer at approximately 1.3 m below FFL (bFFL) across portions of PJ Carey's Marshgate Lane works. The majority of PJ Carey's works were completed within the top 600 mm and none of PJ Carey's works extended beyond 1.2 m bFFL. As a result no Marker Layer was placed / replaced by PJ Carey. Marker layer was however installed in the section of Marshgate Lane outside the QEOP boundary beneath the Low Voltage ducting to power the new lighting columns. No instances of unexpected contamination were reported during PJ Carey's works.

3.2. Residual Actions transferred from ODA / LOCOG Scope

Table 3-1 below presents the residual actions identified at the end of the LOCOG Works stage of the project, as summarised within the Stage 3 CVR for PDZ8 (Ref. 6) and summarises the works undertaken by the LTP Contractors to address these actions, where relevant.

Table 3-1 Residual Remedial Actions for PDZ8

No. (from Table 1 of the Stage 3 CVR)	Title	Description	Responsibility	Action Completed by Legacy Transformation Phase Contractors
3.1	Completion of groundwater monitoring for the Southern Plume	Southern Plume groundwater monitoring across the southern part of the Olympic Park shall continue for a period of 12 months (commencing as soon as reasonably practicable post-Games). Although it should be noted that no specific groundwater monitoring shall be undertaken in PDZ8.	Future land owners and developers / LLDC	N/A – groundwater monitoring is currently being undertaken in the former banner Chemicals area, although the scope has been reduced to exclude any further works in PDZ8. Refer to Groundwater Monitoring Report: Construction Zone 3a Thanet Sand and Chalk Aquifers (Ref. 21), Banner RTD Southern Plume Study (Ref. 22) and Quarterly Monitoring Report 1 – July 2014 to September 2014 for the current status of these works. Groundwater Monitoring Report Construction Zone 3a (Ref. 23) provide further information on the works completed and any subsequent monitoring requirements.
3.2	FoP SSAC exceedance assessment / removal	There was an exceedance of benzo(a)pyrene identified within imported fill used as HHSL in the south of CZ8c (Ref. 24). It was deemed suitable for the Games use of hardstanding, but further assessment / consideration will be required post-Games if the end use changes. Additional information is contained within the Skanska IS Validation Report for the Construction of Hard Landscaping, Soft Landscaping and drainage network in CZ8c (Ref. 25). Further information regarding this exceedance is provided in the Stage 2 CVR (Ref. 4).	Future land owners and developers / LLDC	No LTP works were completed in the vicinity of the benzo(a)pyrene exceedance.
3.3	Excavation of soils at the Site	Future land owners and developers shall take appropriate health and safety measures to protect workers involved in excavation of soils. It is likely that a permitting system similar to PtP shall be implemented within the Olympic Park in post-Games mode in order to protect the existing remediation works that have been undertaken across the site.	Future land owners and developers / LLDC	LTP Contractors followed PtP guidelines during their works and ensured that access to monitoring locations and facilities was maintained. Further information is provided within the LTP Validation Reports, summarised within Appendix A. No works were undertaken within the previous McNicholas constructed utility corridors during the LTP works.
3.4	Restrictions to remediation	Due to site constraints across certain portions of PDZ8 the remediation works could not be fully completed. (Ref. 26). An addendum to the Retained Areas Risk Assessment Report (RARAR) (Ref. 31) has been produced by the remedial designers for details of any areas not remediated as part of the ODA works (Ref. 4). Future developers / land owners need to consider what additional information is required in these areas. These include certain of the ODA 'white areas' and loop road verges where the full remedial scope has not been implemented.	Future land owners and developers / LLDC	No works carried out within PDZ8 by BAM Nuttall were completed within RARAR areas. PJ Carey completed works within RARA areas RR1 and S1 (see Figure 10) as part of their Marshgate Lane works. Further details will be provided in the Final version of this CVR.
3.5	Suitable infrastructure design	Future land owners and developers need to consider ground conditions when designing appropriate infrastructure, such as services, utilities and foundations. Infrastructure installed beneath the Marker Layer should assume ground conditions are impacted by chemical contamination and appropriate mitigation measures should be taken (e.g. use of barrier pipes for potable water, sulphate resistant concrete etc.)	Future land owners and developers / LLDC	Limited intrusive works were completed as part of the LTP Phase within PDZ8. Where required, details of design taking ground conditions in to account are provided in the individual LTP Contractors RMS documents, as listed in Table 2-2.
3.6	Suitable methods to protect contamination pathways	In agreement with PPDT the remedial designers have completed a Park-wide assessment of risks to controlled waters from removal of Alluvium (Ref. 27). Future land owners and developers need to consider protection of contamination pathways as part of their earthworks design.	Future land owners and developers / LLDC	No works carried out within PDZ8 by LTP Contractors have penetrated the base of the Alluvium.
3.7	Ground gas / vapour assessment	Future land owners and developers need to review requirements for ground gas / vapour assessment and potentially protection measures as part of the design process. It is noted that an area in CZ8a (Ref. 28) in particular is likely to required vapour membrane installation or further vapour monitoring.	Future land owners and developers / LLDC	BAM Nuttall placed a membrane beneath all buildings constructed in association with the allotments. No other buildings / structures were constructed requiring ground gas / vapour assessment as part of the LTP of works.
3.8	Decommissioning / Protection of monitoring installations and facilities		Future land owners and developers / LLDC	LTP Contractors followed PtP guidelines during their works and ensured that access to monitoring locations and facilities was maintained. Further information is provided within the LTP Validation Reports, summarised within Appendix A.
3.9	Future land use	Future land owners and developers shall ensure that areas designated for different land uses are not amended without reassessment of the soil conditions and that the Site is not used for growing edible crops or for private gardens without further assessment / remediation being undertaken.	Future land owners and developers / LLDC	The land use has changed in the north of CZ8c from residential (without garden areas) to allotments. Works in this area have been completed in line with the PPDT approved Design Note for Allotments in CZ7a and CZ8c (Ref. 16). Not applicable to any other areas within PDZ8 as land use has not changed from that originally proposed.
3.10	Changes in final level	Any works by future land owners and developers involving a reduction of FFL will require a reassessment of the underlying soil and potentially additional investigation or remediation. The design levels used for the Enabling Works remediation assume that a minimum 600 mm thickness HHSL will be provided.	Future land owners and developers / LLDC	Final levels and HHSL thicknesses are detailed in the Validation Reports, summarised in Appendix A, and shown in Figures 9 and 8 respectively.

No. (from Table 1 of the Stage 3 CVR)	Title	Description	Responsibility	Action Completed by Legacy Transformation Phase Contractors
3.11	OPF removal	An easement associated with the OPF has meant that remediation and placement of Marker Layer and full HHSL has not been completed by ODA. The area of the OPF shall be assessed and corrective actions undertaken to complete the remedial design as part of the Legacy / Transformation phase. The location of the OPF is shown in Figure 4.	Future land owners and developers / LLDC	The OPF within PDZ8 has not been removed during the LTP works, refer to Table 4-1.
3.12	Piling Risk Assessments	Piling risk assessments will be required for any future structures that required piled foundations on the site.	Future land owners and developers / LLDC	N/A - No works carried out within PDZ8 by LTP Contractors have extended beyond the Alluvium
3.13	Invasive Species Monitoring	Ongoing monitoring for invasive species adjacent to river bank will be required	Future land owners and developers / LLDC	Invasive species were not identified by the LTP Contractors during their works in PDZ8. Discussions were undertaken with the LLDC Environmental Manager (Jon Tivey) prior to works commencing to ensure that no known invasive species were present.
3.14	River Wall Integrity	Future development must maintain integrity of river wall to prevent potential direct pathways to the river.	Future land owners and developers / LLDC	Not applicable to the LTP Contractors, as works have not been completed within close proximity to the river walls.
3.15	Placement of Marker Layer and separation layer	FoPs were required to provide survey plans within two months of completion of the entire HHSL to demonstrate to the PPDT an acceptable thickness of HHSL (600 mm thickness) was placed. If any residual areas of Marker Layer and separation layer require placement these shall be completed.	Future land owners and developers / LLDC	All works carried out within PDZ8 by LTP Contractors included the placement / replacement of HHSL and Marker Layer, where required. Further detail is provided in Item 3.18 below.
3.16	Radiological Materials	Radiological materials were previously encountered in the north of CZ8c, as discussed in Section 3.6. Whilst they were not encountered elsewhere on the site there still remains a potential risk of radiological materials being present.	Future land owners and developers / LLDC	BAM Nuttall did not monitor radioactivity in PDZ8 during the LTP Works. PJ Carey did not complete any LTP works in CZ8c.
3.17	Risk Assessments	Future land owners and developers shall complete appropriate risk assessments with respect to UXO, pathogens, asbestos, radiation, and ground gas / vapours when undertaking excavations and / or construction activities during their work.	Future land owners and developers / LLDC	Section 3 describes the risk assessments undertaken by LTP Contractors in relation to excavation of soils in PDZ8. For ground gas risk assessment, please refer to Item 3.7 above.
3.18	Placement of Marker Layer and separation layer around outfall S08-02 and U07	Placement of Marker Layer and HHSL in area of S08-02 outfall chamber and surrounding cofferdam, where his been omitted, will be completed during Legacy Transformation. Walkway tie-in with surrounding Marker Layer and HHSL will also be completed in the Legacy Transformation Phase.	To be completed by LLDC	All works carried out within PDZ8 by LTP Contractors included the placement / replacement of HHSL and Marker Layer, where required. BAM carried out works to remove the temporary elements of Underpass U0 detail of U07 works are provided in their PDZ2 Validation Report.
3.19	Validation Reporting	Future works will need to be captured and recorded through the established validation process including further stages of CVR production on a zonal basis. This includes the already established LOCOG Stage 3 CVRs, infrastructure 'bump-out', where necessary and subsequent Transformation and Legacy stages of the project.	LOCOG, LLDC and future land owners and developers	All LTP Validation Reports for PDZ8 are summarised within this Stage 4 CVR. LOCOG 'bump out' works were not required in PDZ8.

3.3. Safeguarding Remediation / Reinstatement of Protection Measures

3.3.1. Mitigation Measures for Contamination Migration

Whilst there were a number of below ground works in PDZ8, they were predominantly limited to the above Marker Layer materials. During the LTP works there were no instances where the underlying relatively impermeable Alluvium was penetrated. There are a number of existing boreholes in PDZ8 that currently require decommissioning during the Legacy Transformation phase of works. This is discussed further in Section 4.2.

3.4. Retained Areas Restrictions

Restrictions to the completion of the ODA Team's remediation works occurred as a result of constraints such as third party boundaries and retained vegetation, which are recorded on the ODA as-built drawings and summarised in Figure 9 of the Stage 2 CVR (Ref. 4) and Figure 10 herein. No details were provided within the LTP Validation Reports of works carried out within the PDZ8 RARA areas. As a result the previously recorded details and residual risks, associated with these areas, remain valid.

3.5. Sampling and Analytical Testing

In situ sampling and validation chemical testing, where undertaken by the LTP Contractors, was in accordance with recognised UK industry guidance and Park-wide protocols. Analysis of samples was undertaken by United Kingdom Accreditation Service (UKAS) accredited laboratories and soils were analysed using Monitoring Certification Scheme (MCertS) accredited methods.

Test suites were designated by the individual LTP Contractors to capture the relevant compounds listed within the zonal SSAC for HHSL and general backfill, as outlined within the SSRSs for PDZ8 as listed in the Stage 1 CVR (Ref. 2).

3.6. Radiological Material / Unexpected Contamination

No instances of unexpected contamination, in accordance with the applicable Planning Condition definition (Condition LTD.1.13, Ref. 1), were recorded during the LTP works in PDZ8, to date.

Details of the works completed during the Enabling Works phase, to assess and address potential radiological materials, are summarised in the Stage 1 CVR (Ref. 2). During the removal of hardcover at CZ8c during the ODA Enabling Works, elevated readings above background were recorded in a localised area from concrete spoil. The elevated readings were identified to be associated with concrete adjacent to the Network Rail boundary. This concrete amounted to 187 m³ and was moved to a temporary holding facility in PDZ2 before appropriate removal off-site. Following its removal Nuvia conducted a clearance survey of the sub-grade and recorded activity levels below background (Ref. 28).

The temporary holding facility in PDZ2 was constructed in May / June 2009 consisting of two individual cells. These cells were constructed to receive radioactive materials classified as Exempt (in accordance with the Radioactive Substances [Phosphatic Substances, Rare Earths etc.] Exemption Order 1962 made pursuant to the Radioactive Substances Act 1993) materials encountered in PDZ2 and elsewhere on the Olympic Park. These temporary cells held a total volume of 193 m³ of 'exempt' materials and were removed from site in August 2009 to an appropriately licensed off-site facility. Following off-site disposal a clearance survey of the temporary holding area was conducted by the specialist sub-contractor. All survey results were comparable with background levels and no further action was considered necessary (Ref. 29).

Where as-dug materials were re-used as general fill within PDZ8 these materials were located beneath a full thickness HHSL or hard standing substitute. The full thickness (minimum 600 mm) of HHSL or hard standing substitute has been shown to provide an effective barrier to underlying materials thus breaking potential pathways to future human health receptors. Within PDZ8 the only area identified as not having full thickness HHSL or an agreed hard standing substitute is the small soft landscape retained area in CZ8c. However, in this area no material was excavated or re-used and a 300 mm thickness of HHSL compliant topsoil was placed,

providing a degree of cover. This area has been assessed as part of the update to the RARAR (see Section 3.10) and is identified within Table 4.1 below.

3.7. Materials Management

Temporary stockpiling of materials was managed by all LTP Contractors in accordance with the established Park-wide guidance and included segregation of different types of material and, where required, sheeting and appropriate bunding of potentially contaminated material to reduce rainwater infiltration / run-off and the release of odours and dust. Stockpiles were located to be clear of waterways and public places where practical and were constructed so as to shed water.

3.8. Waste Management

BAM Nuttall prepared a Materials Management Plan (MMP) (Ref. 32) for their works, which included an earthworks model, stockpile register, materials tracker and the BAM Materials Management Protocol and PtP details. All off-site management of contaminated and surplus material was undertaken within the framework of the MMP.

A total of 2,295 m³ of excess above Marker Layer material was disposed of off-site from BAM Nuttall's SC18 works area as hazardous waste (Ref. 18). Further details on this material with be included in the final revision of this report.

3.9. Health, Safety and Environment

LTP works were completed in accordance with Construction (Design and Management) (CDM) Regulations. Permit to work, permit to dig and PtP systems were in operation for the duration of the LTP Contractors works. Staff wore, as a minimum, suitable personal protective equipment with gloves, helmets, boots, eye protection and high visibility clothing. All details regarding Health and Safety, environmental controls and monitoring are provided within the various LTP Contractors construction risk assessments and method statements.

Baseline environmental monitoring across the QEOP is outside of the LTP Contractors' scope.

4. Conclusions and Further Works

4.1. Conclusions

The PDZ8 Legacy Transformation Validation Reports conclude that the placed and validated soils do not pose an unacceptable risk to the SSRS defined critical controlled waters and human health receptors. On this basis this Legacy Transformation Phase (Stage 4) CVR seeks to discharge LLDC's obligations under Condition LTD.16 of the Facilities and Their Legacy Transformation Planning Application and the additional Validation Planning Conditions referenced in Section 1.3.

Residual remedial actions for completion during future Legacy, including LCS, works and / or restrictions to future development within PDZ8 are summarised in Table 4-1 below. The incoming Contractors / Project Teams should be cognisant of these residual actions together with the underlying assumptions of the SSRS design. Aside from the residual actions identified in Table 4-1 below, LLDC, and its fore-runners, ODA and LOCOG, has completed the SSRS remedial scope within PDZ8.

4.2. Further Works – Residual List and Issues Affecting Future Development

Table 4-1 below records the outstanding works that were generated from the ODA and LOCOG pre-Games scope and additional LTP scope that have subsequently been transferred for completion during future site redevelopment. This table updates similar tables presented in the ODA and LOCOG CVRs (Refs. 2, 4 & 6).

In addition, Table 4-1 records some key aspects for future developers to consider as part of their works. It is further noted that this table does not in any way alleviate the incumbent Contractors / Project Teams from complying with the full requirements of the remediation documentation, in addition to their legal, regulatory and contractual obligations at the time of works.

Table 4-1 Works for Incoming Projects and Restrictions on Future Works in PDZ8

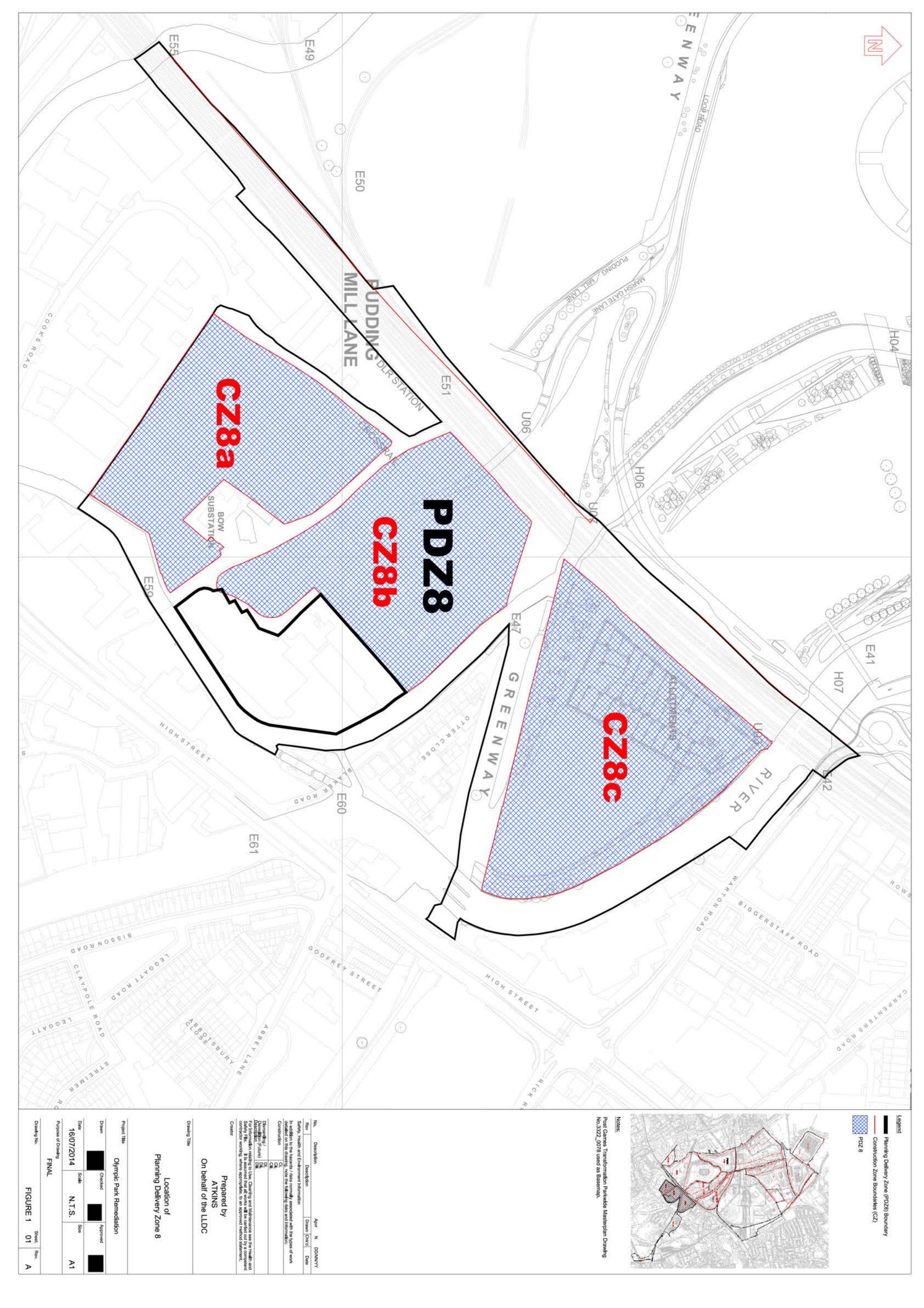
No. (from Table 3.1)	Title	Required Action	Action By
3.1	Completion of groundwater monitoring for the Southern Plume	Southern Plume groundwater monitoring across the southern part of the Olympic Park shall continue for a period of 12 months (commencing as soon as reasonably practicable post- Games). Although it should be noted that no specific groundwater monitoring shall be undertaken in PDZ8 the Southern Plume boreholes shall be retained in case the lateral extent of the monitoring needs to be expanded.	Future land owners and developers / LLDC
3.2	There was an exceedance of benzo(a)pyrene identified within imported fill used as HHSL in the south of CZ8c (Ref. 24). It was deemed suitable for the Games use of hardstanding, but further assessment / consideration will be required post-Games if the end use changes.		Future land owners and developers / LLDC
3.3	Excavation of soils at the Site	Future land owners and developers shall take appropriate health and safety measures to protect workers involved in excavation of soils. It is likely that a permitting system similar to PtP shall be implemented within the Olympic Park in post-Games mode in order to protect the existing remediation works that have been undertaken across the site.	Future land owners and developers / LLDC
3.4	Restrictions to remediation	Due to site constraints across certain portions of PDZ8 the remediation works could not be fully completed. (Ref. 26). An addendum to the RARAR (Ref. 31) has been produced by the remedial designers for details of any areas not remediated as part of the ODA works (Ref. 4). Future developers / land owners need to consider what additional information is required in these areas. These include certain of the ODA 'white areas' and loop road verges where the full remedial scope has not been implemented.	Future land owners and developers / LLDC
3.5	Suitable infrastructure design	Future land owners and developers need to consider ground conditions when designing appropriate infrastructure, such as services, utilities and foundations. Infrastructure installed beneath the Marker Layer should assume ground conditions are impacted by chemical contamination and appropriate mitigation measures should be taken (e.g. use of barrier pipes for potable water, sulphate resistant concrete etc.)	Future land owners and developers / LLDC
3.6	Suitable methods to protect contamination pathways	In agreement with PPDT the remedial designers have completed a Park-wide assessment of risks to controlled waters from removal of Alluvium (Ref. 27). Future land owners and developers need to consider protection of contamination pathways as part of their earthworks design.	Future land owners and developers / LLDC
3.7	Ground gas / vapour assessment	Future land owners and developers need to review requirements for ground gas / vapour assessment and potentially protection measures as part of the design process. It is noted that an area in CZ8a (Ref. 28) in particular is likely to required vapour membrane installation or further vapour monitoring.	Remedial Designers / future land owners and developers / LLDC
3.8	Decommissioning / Protection of monitoring installations and facilities	Future land owners and developers will be responsible for either decommissioning of any monitoring installations and facilities no longer required for monitoring purposes, or the protection of any retained monitoring installations and facilities, required for ongoing monitoring.	Future land owners and developers / LLDC
3.9	Future land use	Future land owners and developers shall ensure that areas designated for different land uses are not amended without reassessment of the soil conditions and that the Site is not used for growing edible crops or for private gardens without further assessment / remediation being undertaken.	Future land owners and developers / LLDC
3.10	Changes in final level	Any works by future land owners and developers involving a reduction of FFL will require a reassessment of the underlying soil and potentially additional investigation or remediation. The design levels used for the Enabling Works remediation assume that a minimum 600 mm thickness HHSL will be provided.	Remedial Designers / future land owners and developers / LLDC
3.11	OPF removal	An easement associated with the OPF has meant that remediation and placement of Marker Layer and full HHSL has not been completed by ODA. The area of the OPF shall be assessed and corrective actions undertaken to complete the remedial design as part of the Legacy / Transformation phase. The location of the OPF is shown in Figure 4.	Future land owners and developers / LLDC
3.12	Pilling Risk Assessments	Pilling risk assessments will be required for any future structures that required piled foundations on the site.	Future land owners and developers / LLDC
3.13	Invasive Species Monitoring	Ongoing monitoring for invasive species adjacent to river bank will be required.	Future land owners and developers / LLDC
3.14	River Wall Integrity	Future development must maintain integrity of river wall to prevent potential direct pathways to the river.	Future land owners and developers / LLDC
3.15	Placement of Marker Layer and separation layer	FoPs were required to provide survey plans within two months of completion of the entire HHSL to demonstrate to the PPDT an acceptable thickness of HHSL (600 mm thickness) was placed. If any residual areas of Marker Layer and separation layer require placement these shall be completed.	Future land owners and developers / LLDC
3.16	Radiological Materials	Radiological materials were previously encountered in the north of CZ8c, as discussed in Section 3.6. Whilst they were not encountered elsewhere on the site there still remains a potential risk of radiological materials being present.	Future land owners and developers / LLDC
3.17	Risk Assessments	Future land owners and developers shall complete appropriate risk assessments with respect to UXO, pathogens, asbestos, radiation, and ground gas / vapours when undertaking excavations and / or construction activities during their work.	Future land owners and developers / LLDC
3.18	Placement of Marker Layer and separation layer around outfall S08-02 and U07	Placement of Marker Layer and HHSL in area of S08-02 outfall chamber and surrounding cofferdam, where his been omitted, will be completed during Legacy Transformation. Walkway tie-in with surrounding Marker Layer and HHSL will also be completed in the Legacy Transformation Phase.	Future land owners and developers / LLDC
3.19	Validation Reporting	Future works will need to be captured and recorded through the established validation process including further stages of Consolidated Validation Report production on a zonal basis. This includes the already established LOCOG Stage 3 CVRs, infrastructure 'bump-out', where necessary and subsequent Transformation and Legacy stages of the project.	Works completed during LTP and reported herein. Any future works will be captured in a separate report.

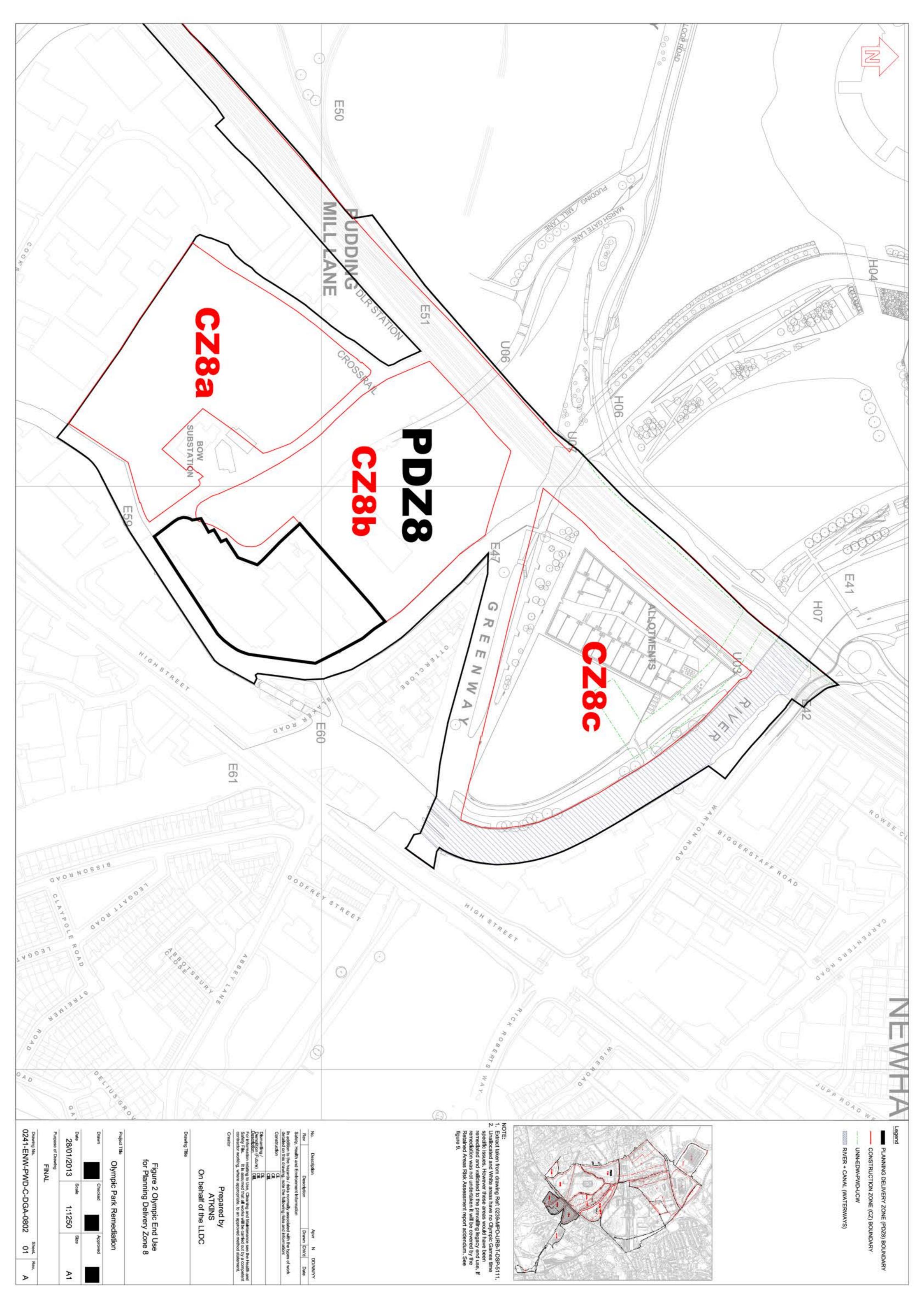
			
3.20	Allotments Completion	Due to a clash in boundary, the northern portion of the allotment site in CZ8c has been transferred to Crossrail/DLR to complete.	Crossrail/DLR

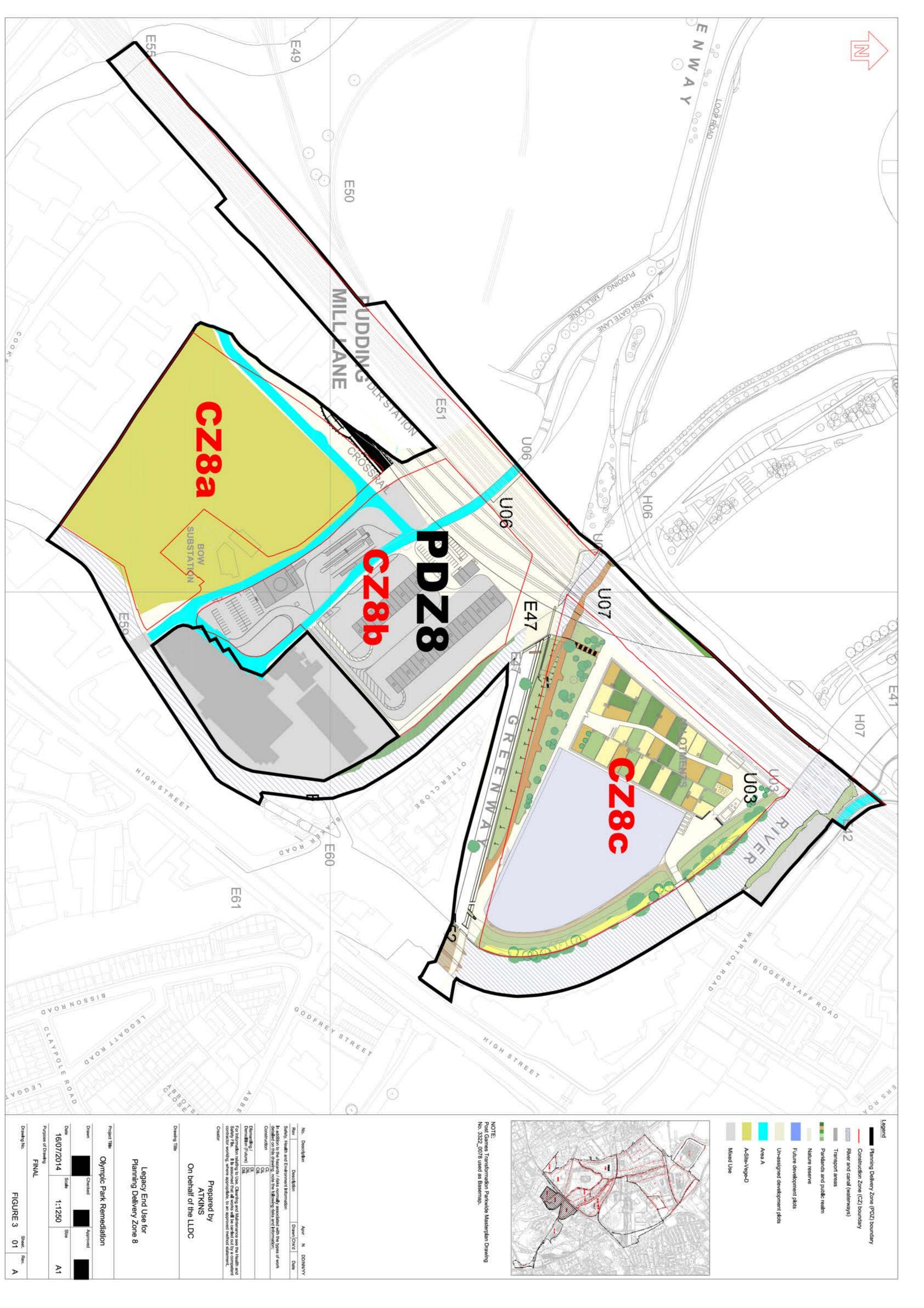
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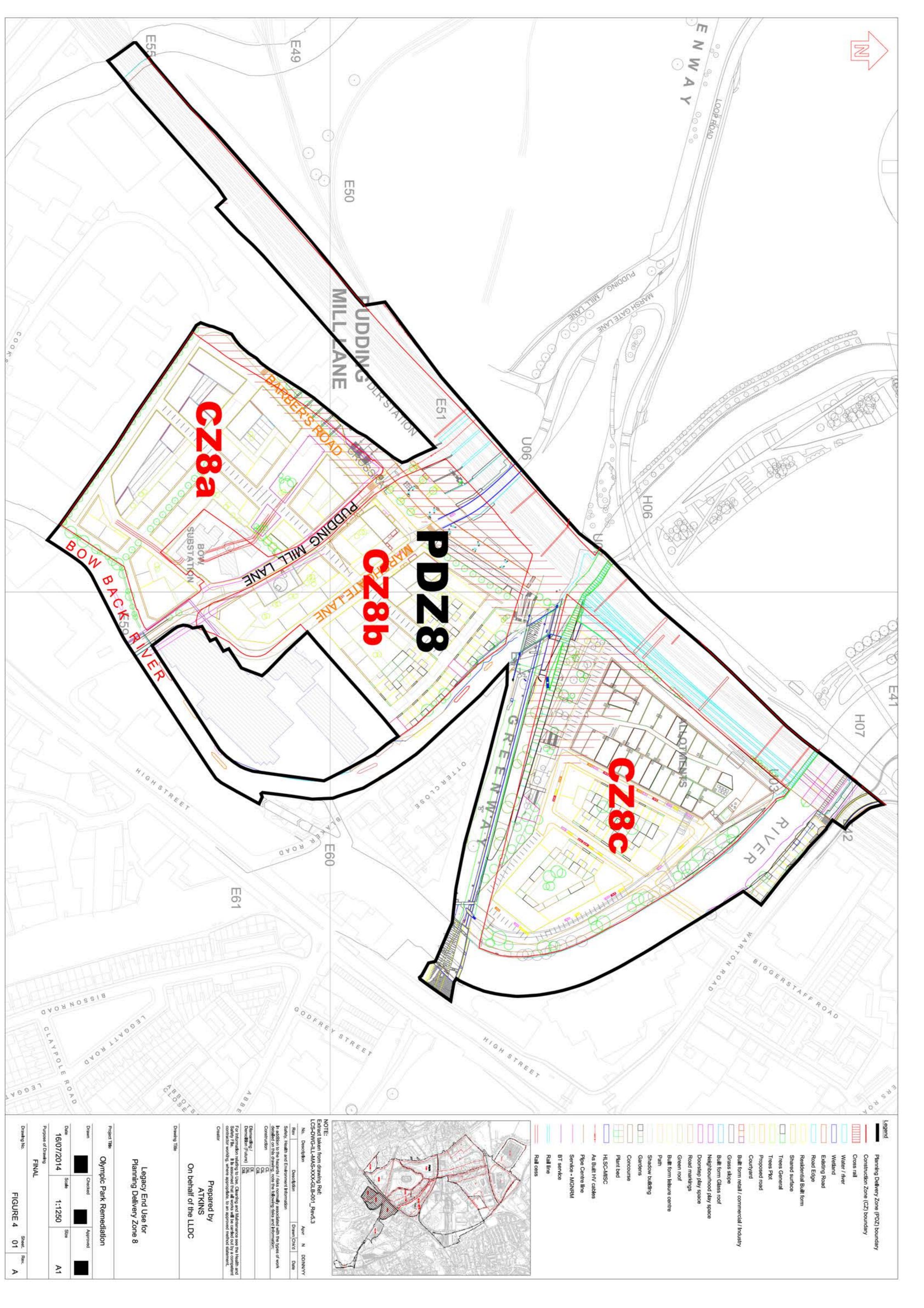
- Planning Application Approval (Olympic, Paralympic and Legacy Transformation Planning Applications: Facilities and their Legacy Conditions Planning Application, Application No – 07/90010/OUMODA, Date of Application - 7th February 2007, varied in 2011 to 11/90313/VARODA): Condition LTD.16.
- 2. Atkins Limited, December 2011 (for the Olympic Delivery Authority). Enabling Works (Stage 1) Consolidated Validation Report, Rev04, Planning Delivery Zone 8. Report Ref. REP-ATK-PM-ZZZ-ZZZ-E-0199. (Decision Notice Ref. 11/90294/AODODA).
- 3. Planning Application Approval (Olympic, Paralympic and Legacy Transformation Planning Applications: Site Preparation Planning Application, Application No 07/90011/FUMODA, Date of Application 7th February 2007): Condition SP.0.35.
- 4. Atkins Limited, February 2013 (for the Olympic Delivery Authority). Olympic Delivery Authority Follow on Project (Stage 2) Consolidated Validation Report Planning Delivery Zone 8, Rev04. Report Ref. REP-ATK-PM-08Z-ZZZ-ZZZ-Z-0001. (Decision Notice Ref. 12/00053/AOD).
- 5. Planning Application Approval (Olympic, Paralympic and Legacy Transformation Planning Applications: Facilities and their Legacy Conditions Planning Application, Application No 07/90010/OUMODA, Date of Application 7th February 2007): Conditions OD.0.35 and OD.0.36
- 6. Atkins Limited, December 2012 (for the Olympic Delivery Authority). LOCOG Consolidated Validation Report (Stage 3) Planning Delivery Zone 8, Rev01. Letter Ref. LET-ATK-PM-08Z-XXX-XXX-0-0001). (Decision Notice Ref. 12/00068/AOD).
- 7. Planning Application Approval (Legacy Community Scheme, Application No 11/90621/OUTODA, Date of Application 5th October 2011). Report Ref. LC810-LCI-APK-CM-STM-0001.
- 8. Atkins, November 2009. Quality of Imported Fill Framework: Quality of Imported Fill Framework Letter. Condition SP.0.37 and OD.0.39. Letter Ref. 0241-ENW-ATK-LET-00328. (Decision Notice Ref. N/A).
- Capita Symonds, January 2007. Global Remediation Strategy, Version 2.0, Rev B. Report Ref. REP-CSP-VZ-ZZZ-OLP-XXX-E-0076. (Submitted as part of the 2007 Planning Permission, Decision Notice Ref. 07/90011/FUMODA).
- 10. Atkins, December 2012. Queen Elizabeth Olympic Park: Remediation Validation Guidance Note, Rev01. Report Ref. LC002-OPS-XXX-Z-EXE-0004. (Submitted for Contractor information only).
- 11. Capita Symonds, March, 2012. (on behalf of BAM Nuttall). Approach to the Discharge of Legacy Transformation Remediation Related Planning Conditions. Report Ref. LC401-APK-XXX-CM-REP-0001 Rev P02. (Decision Notice Ref. Submitted for information only).
- Capita Symonds, January, 2013 (on behalf of BAM Nuttall). Remediation Impact Assessment. Report Ref. LC401-LCI-APK-CM-ASS-0002, Rev P03. (Decision Notice Ref. 12/00114/AOD, 12/00119/AOD, 12/00128/AOD).
- 13. Capita Symonds, February, 2013 (on behalf of BAM Nuttall). Remediation Method Statement. Report Ref. LC401-LCI-APK-CM-MST-0003, Rev P03 (Decision Notice Ref. 12/00070/AOD, 12/00114/AOD, 12/00119/AOD, 12/00128/AOD).
- 14. Atkins (on behalf of PJ Carey), March 2014. Marshgate Lane Remediation Method Statement. Report Ref. LC810-SBH-HWY-CH-MST-0002 Rev P02. (Decision Notice Ref. 14/00031/AOD).
- 15. Atkins, February 2009. Site Wide RMS Addendum (Use of Hardcover as a Substitute to the Separation Layer). Report Ref. 0241-ENW-ATK-LET-00269. (Decision Notice Ref. 08/90292/AODODA).
- 16. Atkins, March 2012. Design Note for Allotments in CZ7a and CZ8c. Report Ref. 0241-LCI-PWD-C-REP-004, Rev P02 (Decision Notice Ref. Submitted for information only).
- 17. Atkins, July 2010. Site wide use of Crushed Concrete for filling of Gabion Baskets & Mattresses. Report Ref. 0241-ENW-ATK-LET-00659. (Decision Notice Ref: 10/90330/AODODA).
- 18. Capita (on behalf of BAM Nuttall), September, 2014. Validation Report for PDZ8 (SC18 & U06) Report Ref. LC402-LCI-SPK-CM-REP-0055, Rev P01. (Decision Notice Ref. *Awaiting PPDT Approval*).
- 19. Atkins, December 2012. LOCOG Reinstatement Works Quality of Imported Fill Application (Rev 2, Final). Report Ref. 5082494/2006236/C003 rev2. (Decision Notice Ref. 12/00229/AOD).
- 20. PJ Carey, August 2014. Project Specific Validation Report for: Highway, Footpaths & Landscaping Works. Report Ref. LC417-MAR-SPK-W-PLR-0002 (Decision Notice Ref. *Awaiting PPDT Approval*).
- 21. Atkins, February 2014. Groundwater Monitoring Report: Construction Zone 3a Thanet Sand and Chalk Aquifers. Report Ref: LC810-LTR-APK-CM-REP-0002. (Application Ref. 14/000/67/AOD, *Awaiting PPDT Approval*).

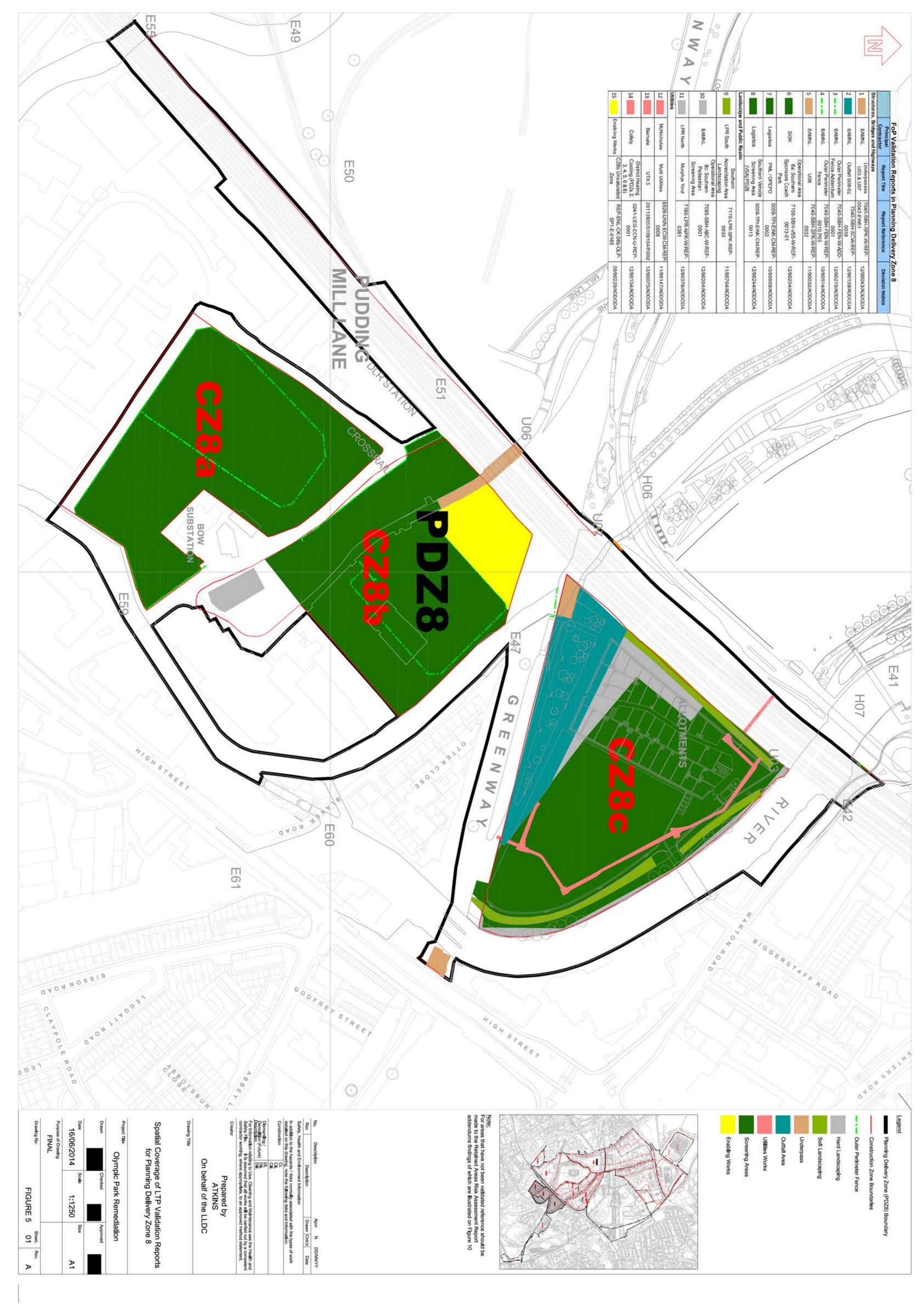
- 22. Atkins, February 2014. Groundwater Monitoring Report: Construction Zone 3a Banner RTD and Southern Plume Study. Report Ref: LC810-LTR-APK-CM-REP-0001. (Application Ref. 14/000/67/AOD, *Awaiting PPDT Approval*).
- 23. Atkins, December 2014. Quarterly Monitoring Report 1 July 2014 to September 2014. Groundwater Monitoring Report Construction Zone 3a. Report Ref: Technical Note. (Application Ref., *Awaiting PPDT Approval*).
- 24. BAM Nuttall LPR, August 2012. Validation Report for former Murphy's Compound, Planning Delivery Zone 8, Construction Zone 8b. Report Ref. 7160-LPR-NPK-W-REP-0381 C03. (Decision Notice Ref. 12/90376/AODODA.
- 25. Skanska Infrastructure Services May 2012. ODA Landscape and Public Realm South Park Works. Validation Report for Construction of Hard Landscape, Soft Landscape and drainage Network in Construction Zone 8c. Report Ref: 7170-LPR-SPK-REP-0030 P02. (Decision Notice Ref. 11/90764/AODODA.
- 26. BAM Nuttall, May 2012. Planning Delivery Zone 8 Operational Area 8c: Southern Pedestrian Screening Area Validation Report. Report Ref: 7085-SBH-A8C-W-REP-0001. (Decision Notice Ref. 12/90234/AODODA).
- 27. Atkins, September 2012. Technical Note Alluvium Penetration Report for PDZ8. Report Ref: 0241-OPS-NPK-C-REP-0005 Revision P03. (Decision Notice Ref: 12/90201/AODODA).
- 28. BAM Nuttall, October 2009. CZ8c Unsaturated Zone Validation Report. Report Ref: REP-ENL-CK-08c-OLP-SP1-E-0223, Rev01. (Decision Notice Ref: 09/90378/AODODA
- 29. BAM Nuttall. November 2009. CZ2a and 2b Unsaturated Zone Validation Report. Report Ref: REP-ENL-CK-02Z-OLP-SP1-E-0091. (Decision Notice Ref: 09/90399/AODODA
- 30. BAM Nuttall, September 2010. CZ8a Unsaturated Zone Validation Report. Report Ref: REP-ENL-CK-08a-OLP-SP1-E-0208. (Decision Notice Ref: 10/90340/AODODA
- 31. Atkins, October 2012. Retained Areas Risk Assessment Addendum. Report Ref, 0241-ENW-PWD-CM-REP-0001. (Decision Notice Ref. 12/00159/AOD).
- 32. Capita (on behalf of BAM Nuttall), September, 2012 Queen Elizabeth Olympic Park Legacy Transformation Materials Management Plan. Report Ref. LC401-LCI-APK-CM-LAC-0004, Rev P01. (Decision Notice Ref. *Awaiting PPDT Approval*).

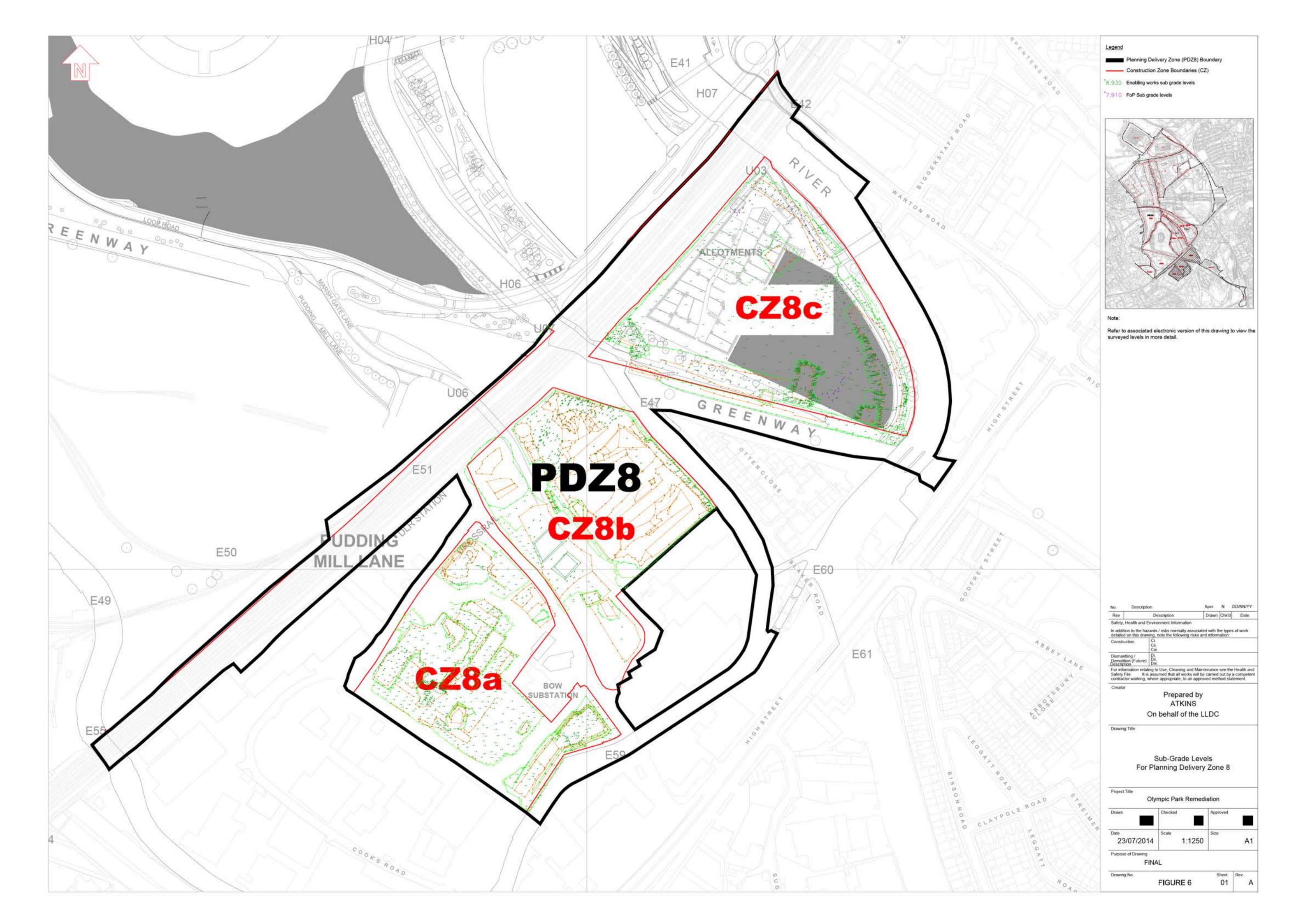


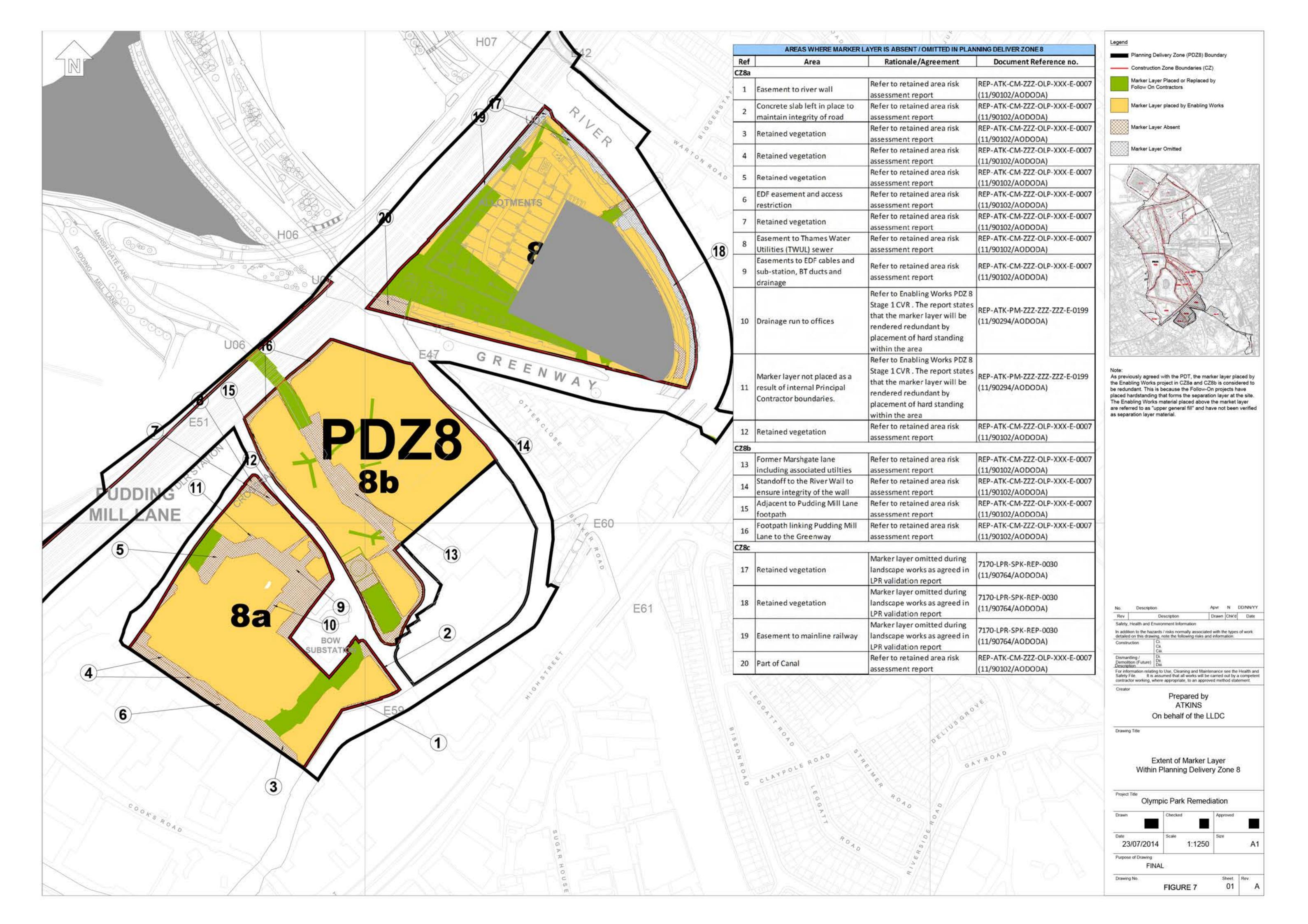


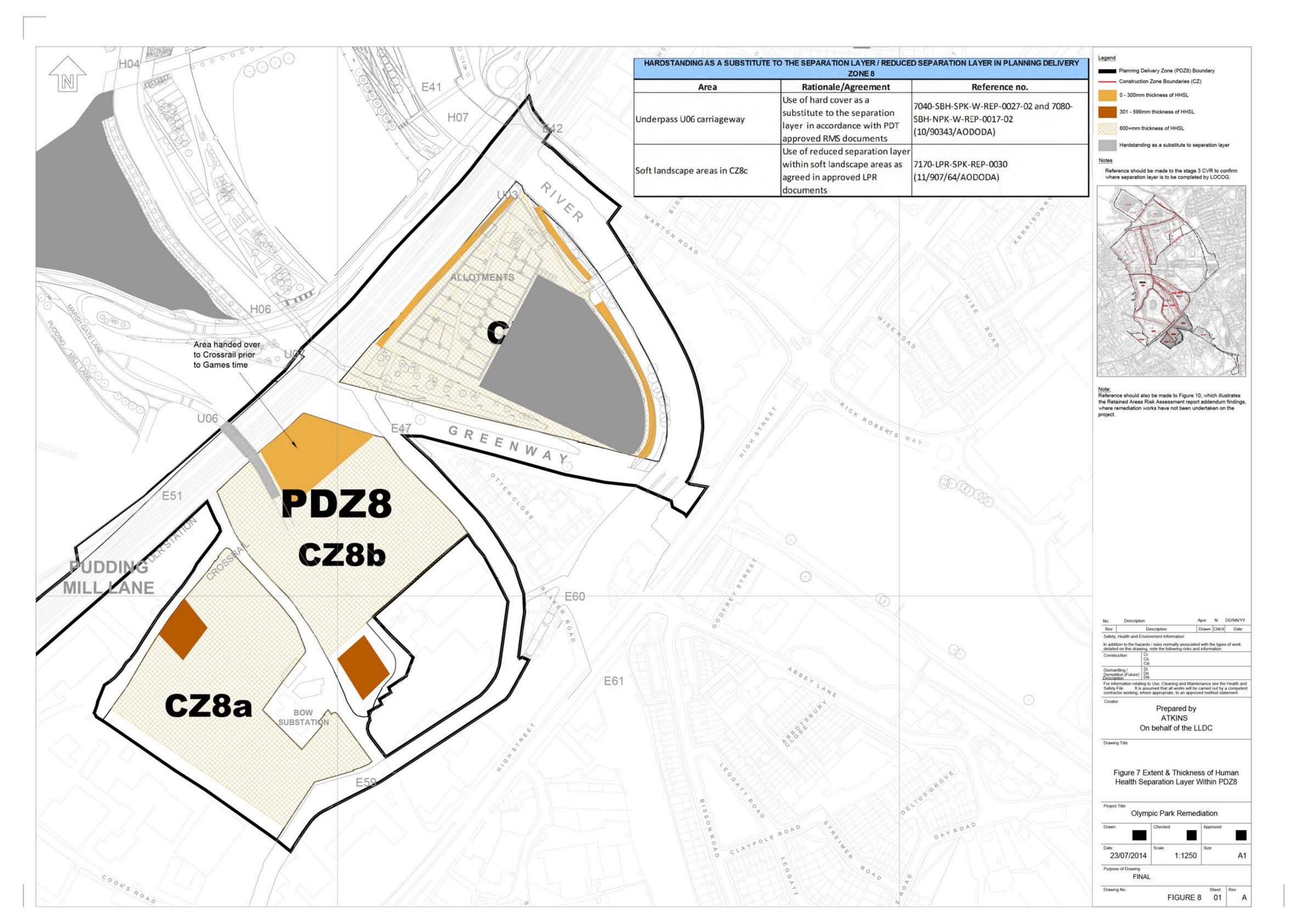


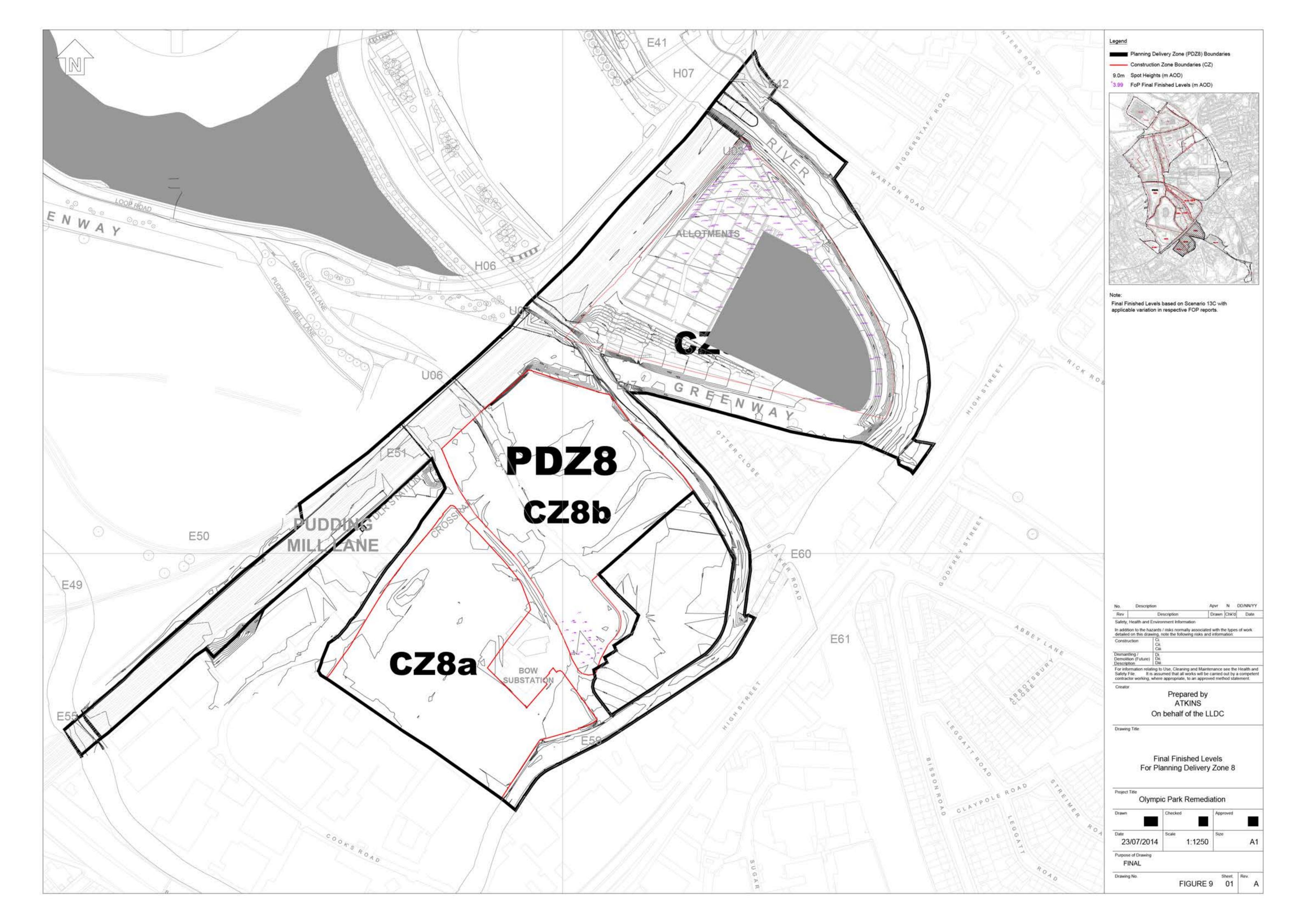


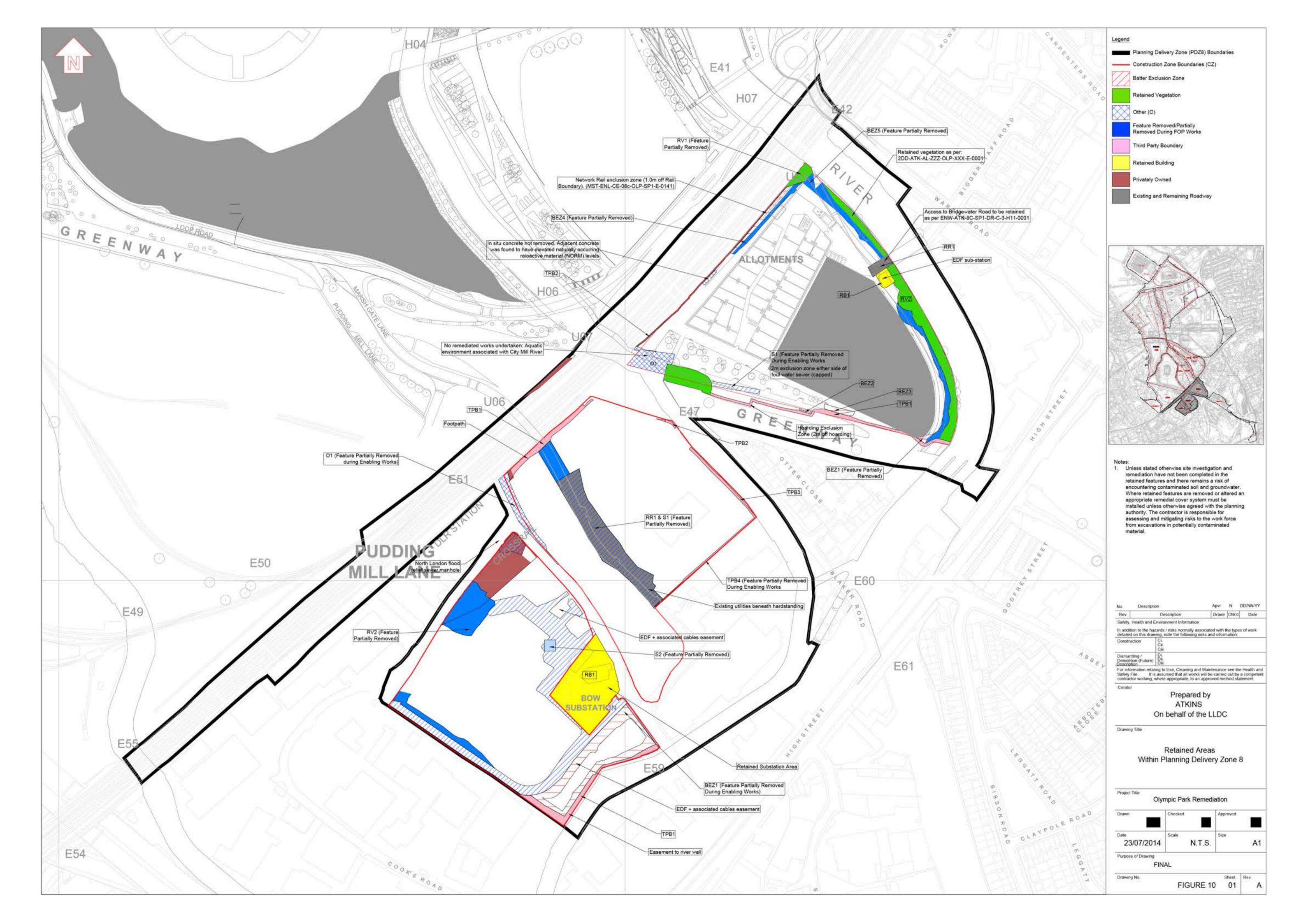


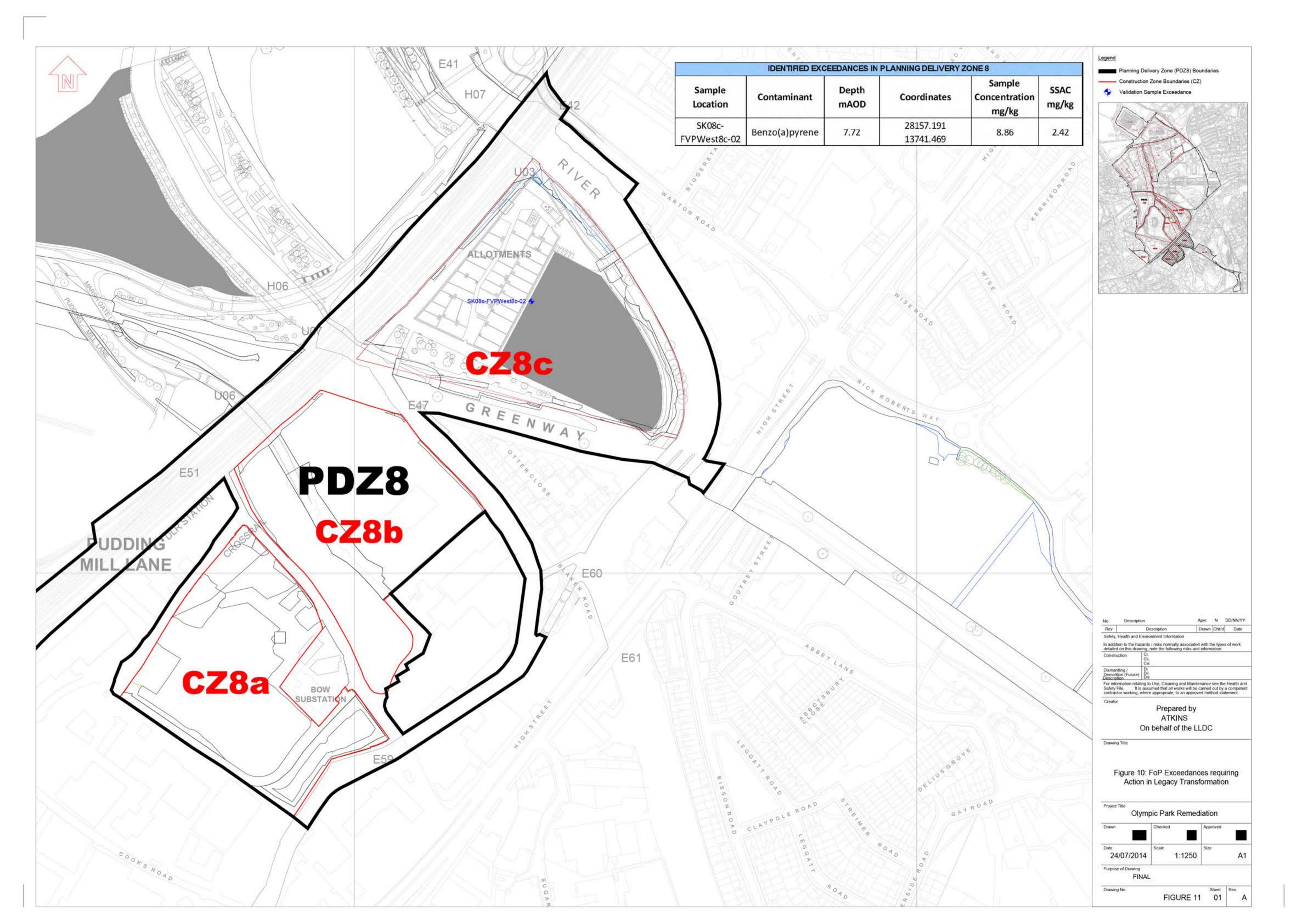


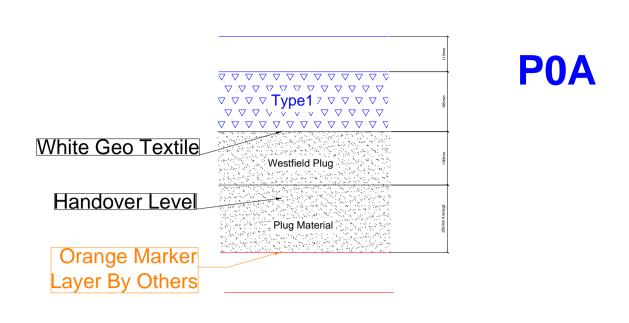




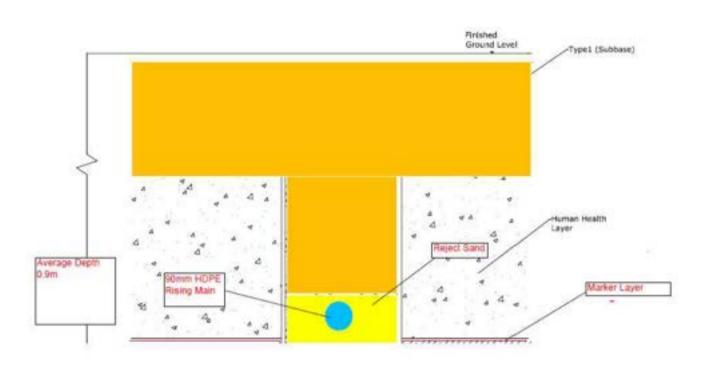




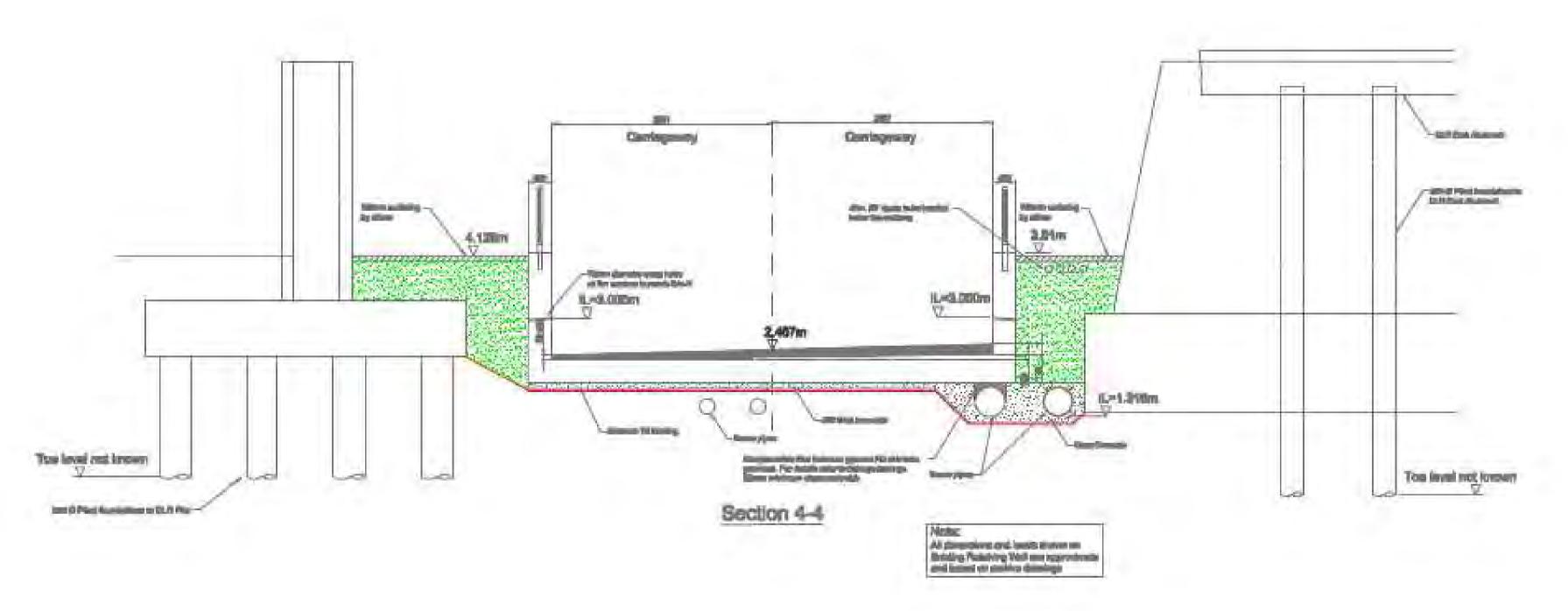




SECTION THROUGH HARD LANDSCAPING (Ref: 7170-LPR-SPK-REP-0030)



SECTION THROUGH LANDSCAPE DRAINAGE (Ref: 7170-LPR-SPK-REP-0030)



Section through Underpass U06 (Ref: 7040-SBH-SPK-W-REP-0032)

Apvr N DD/NN/YY Drawn Chk'd Date Safety, Health and Environment Information In addition to the hazards / risks normally associated with the types of work Construction Dismantling / Industrial Demolition (Future) Description For information relating to Use, Cleaning and Maintenance see the Health and Safety File. It is assumed that all works will be carried out by a competent contractor working, where appropriate, to an approved method statement. Prepared by ATKINS On behalf of the LLDC Drawing Title Figure 11 Representative As-Built Sections of the Final Remedial Cover System in Planning Delivery Zone 8 Olympic Park Remediation 24/07/2014 Purpose of Drawing Drawing No. Sheet. Rev. FIGURE 12 01



Appendix A. Schedule of Key Documentation (including summary of contents)

Summary of Contents

This section provides a summary of the development of documentation relevant to PDZ8. In addition, several site wide documents forming the basis for remedial design are included for clarity. This section should be read in conjunction with the text of this CVR and the Reference List presented in Section 5.

Site Wide Documents

Capita Symonds. MST-CSP-CM-ZZZ-OLP-XXX-E-0040. Intrusive Investigation Method Statement (IIMS). November 2006. (Decision Notice Ref: 07/90216/AODODA)

The IIMS presents a framework and provides a generic specification for undertaking contamination intrusive investigations across the Olympic Park to gather sufficient information to support planning applications and scheme design. It has been prepared with reference to the Environment Agency Model Procedures for the Management of Land Contamination CLR 11.

The intrusive investigation works outlined in this document gathered sufficient information to inform production of SSRS to support planning application requirements and detailed design.

In particular the intrusive investigation works provided sufficient information to:

- (i) assess the nature, extent and source of soil and groundwater contamination;
- (ii) assess the soil gas generation potential;
- (iii) prepare site conceptual model;
- (iv) undertake generic and detailed quantitative risk assessment; and
- (v) identify of areas requiring remediation.

Capita Symonds. REP-CSP-VZ-ZZZ-OLP-XXX-E-0076. Global Remediation Strategy, (Version 2.0, Rev B), January 2007. (Decision Notice Ref: 07/90011/FUMODA)

Given the scale and the strict delivery requirements of the Olympics, the GRS has been prepared to provide a common resource for remediation strategy related work, thus minimising duplication of design, regulatory requirements and programme risk.

To this end the GRS sets out site wide principles and procedures for taking forward the SSRSs, which are, and have been, prepared for individual Construction Zones/Sub Zones. Specifically the following principles and technical resources have been established:

- (i) a 'Global Conceptual Site Model' (GCSM) for the Olympic Park identifying the major potential contamination related risks; and
- (ii) a wide range of soil and groundwater 'Generic Assessment Criteria' (GAC) for screening of chemical testing results to identify potential contamination risks.

With regard to (ii) above computer based generic quantitative risk assessment (QRA) has been undertaken to derive generic screening values for areas potentially requiring remediation.

The Environment Agency document 'Model Procedures for the Management of Land Contamination' (CLR11) has been consulted in production of this document. In this respect this document broadly represents the Generic Quantitative Risk Assessment process outlined within CLR 11.

Atkins. REP-ATK-CM-ZZZ-OLP-ZZZ-E-0004. Proposed changes to the Human Health SSAC values for Lead, General Metals, and PAHs in the Separation Layer and General Fill. August 2008. (Decision Notice Ref: 08/90265/AODODA)

Revised SSAC were calculated for lead using the Provisional Tolerable Weekly Intake method for the Soft Landscaping Legacy end use, for general metals using a single Soil Ingestion Rate, and for PAHs assessing the potential contribution from each of the vapour inhalation pathways based on the Henry's Law Constant.

Atkins. REP-ATK-CM-ZZZ-OLP-ZZZ-E-0004. Errata to Document entitled 'Proposed changes to the Human Health SSAC values for Lead, General Metals, and PAHs in the Separation Layer and General Fill'. September 2008. (Decision Notice Ref: 08/90265/AODODA)

This report recalculated the lead SSAC using the inhalation Tolerable Daily Intake and the dermal pathway. This resulted in a new SSAC for areas of soft landscaping not associated with commercial buildings.

Atkins. ENW-ATK-LET-00269. Site Wide RMS Addendum (Use of Hardcover as a Substitute to the Separation Layer). February 2009. (Decision Notice Ref: 08/90292/AODODA)

Under this site wide RMS addendum the remedial designers developed a framework for reducing the thickness of the HHSL under suitably robust hardstanding. The basic premise behind this design change was that hardstanding would act as a suitable barrier to certain pollution pathways (namely ingestion, dermal contact and dust inhalation) and reduce the requirement for a full-thickness HHSL.

Nuttall. MST-ENL-CE-ZZZ-OLP-SP1-E-0159 Rev 05. Site Wide RMS Addendum (Asbestos in the Sub-grade & General Fill), March 2009. (Decision Notice Refs: 08/90083/AODODA, 08/90181/AODODA, 08/90216/AODODA, 08/90217/AODODA, 08/90218/AODODA, 08/90221/AODODA, 08/90222/AODODA, 08/90223/AODODA, 08/90221/AODODA, 08/90222/AODODA 08/90223/AODODA, 08/902281/AODODA and 08/90326/AODODA)

The SSACs and methodology for assessing asbestos in the HHSL and below Marker Layer materials was further developed as the works progressed as set out in the Site Wide SSRS Addendum - Criteria for Asbestos in Fill Material (0241-ENW-ATK-LET-00276) detailed below. In addition, this RMS details the sampling strategy to be utilised when an asbestos value of >0.1 % w/w is encountered within emplaced materials.

Atkins. MEM-ATK-CM-ZZZ-OLP-ZZZ-0004 Rev 2. Site Wide SSRS Addendum (Justification of Deviation from the GRS in the Derivation of SSAC). September 2009. (Decision Notice Ref: 09/90233/AODODA)

This document details the changes applied in the derivation of SSAC from the methodology or data sources presented in the GRS along with justification for the changes.

This memorandum has been produced to support any deviations from the GRS specifically in relation to TPH and PAH. It documents the changes Atkins has applied in the derivation of the SSAC from the methodology or data sources presented in the GRS. Where changes have been made from the GRS, these have been justified. Updated versions of the TPH and PAH criteria summary tables are appended to this document and in the case of TPH is based on differing FOC.

ODA Enabling Works Documents

Refer to Appendix B within the Enabling Works (Stage 1) CVR (Ref: REP-ATK-PM-ZZZ-ZZZ-E-0199).

ODA FoP Works Documents

Refer to Appendix B within the FoP (Stage 2) CVR (Ref: REP-ATK-PM-08Z-ZZZ-ZZZ-Z-0001).

LOCOG Works Documents

Refer to Appendix B within the LOCOG (Stage 3) CVR (Ref: LET-ATK-PM-08Z-XXX-XXX-0-0001).

Legacy Transformation Phase Project Documents

Remediation Method Statements

Capita Symonds, March, 2012. (on behalf of BAM Nuttall). Approach to the Discharge of Legacy Transformation Remediation Related Planning Conditions LLDC Ref. LC401-APK-XXX-CM-REP-0001 Rev P02. (*Prepared For Information only*)

Details the proposed approach to the discharge of remediation related Planning Conditions associated with the QEOP Legacy Transformation Works. Significant remediation works in support of the Legacy Transformation land uses were not expected to be required. Furthermore, a significant volume of remediation design, implementation and validation reporting had previously been prepared for the QEOP which forms a solid basis for the Legacy Transformation approvals and works. A preliminary review indicated that for the vast majority of the QEOP, the land use assumptions made in the preceding SSRSs remain valid for the Legacy Transformation phase. As such, in order to streamline the document preparation and approvals process, the proposed approach comprises the preparation of site wide documents to support the discharge of Legacy Transformation remediation related Planning Conditions, including the submission of a Remediation Impact Assessment and a Remediation Method Statement.

Capita Symonds, January, 2013. (on behalf of BAM Nuttall). Remediation Impact Assessment. LLDC Ref. LC401-LCI-APK-CM-ASS-0002 Rev P03 (Decision Notice Ref: 12/00128/AOD, 12/00114/AOD, 12/00119/AOD)

Identified the potential risks / impacts introduced through the Legacy Transformation works to determine whether the scope of the proposed works are likely to pose a risk to, or compromise the effectiveness of existing remediation works and whether the existing remediation measures are effective in the context of the Transformation end use proposals.

Transformation development includes re-profiling works within the Olympic Park following the completion of the Olympic Games in 2012. This will be achieved largely through the excavation and re-distribution of site-derived soils (subject to assessment of suitability), minimising the requirement for import of materials. Within PDZ8 the main earthworks include, deconstruction of temporary footbridge T12, spanning the Waterworks River, linking PDZ12 and PDZ8 (CZ8c), removal of sheet pile retaining structure and associated surfacing/fill/manholes relating to underpass U07 connecting PDZ8 to PDZ2, construction of allotment gardens and associated, naturally ventilated community buildings to service the allotment areas within CZ8c.

At PDZ8 specific changes in end use are proposed as part of the Transformation Works that did not form part of the original SSRS remediation design. There is a change in use (i.e. introduction of a more sensitive end use) from mixed residential end use (without private gardens) to allotments.

Ongoing groundwater monitoring works for a 12 month period post-games is required to be undertaken during Legacy Transformation associated with the Southern Groundwater Plume RTD groundwater (PDZ2, PDZ3, PDZ8). The Nuttall Enabling Works validation report (Ref.6) details the works and the proposed monitoring locations.

Capita Symonds, February, 2013. (on behalf of BAM Nuttall). Remediation Method Statement. LLDC Ref. LC401-LCI-APK- CM-MST-0003 Rev P03 (Decision Notice Ref: 12/00128/AOD, 12/00114/AOD, 12/00119/AOD, 12/00070/AOD)

Details the methodologies required to protect the remediation already undertaken by the ODA projects and to verify the Transformation works undertaken by Nuttall at the QEOP. As described in the Remediation Impact Assessment, the main works BAM Nuttall are carrying out within PDZ8 are deconstruction of temporary footbridge T12, removal of sheet pile retaining structure and associated surfacing/fill/manholes relating to underpass U07, and construction of allotment gardens and associated community buildings within CZ8c.

The RMS was prepared further to the RIA (above) which identified the potential risks / impacts introduced through the LTP works. As such the main purpose of the RMS was to detail the methodologies to protect the remediation already undertaken by the ODA projects and to verify the Transformation works undertaken by Nuttall at the QEOP, including:

i. how the integrity of the remediation measures installed for the Olympic development was to be maintained; and

ii. necessary enhancement or alterations to the existing remediation measures that may be required.

Atkins (on behalf of PJ Carey), March 2014. Remediation Method Statement – Marshgate Lane Report Ref. LC810-SBH-HWY-CH-MST-0002 Rev P02. (Decision Notice Ref: 14/00031/AOD)

The purpose of this RMS is to detail the methodologies adopted by PJ Carey to protect and maintain the remediation completed pre-Games by the ODA Enabling Works, FoPs and LOCOG and imported unbound materials to be utilised within the construction, in accordance with the previously agreed QoIF Framework for their Marshgate Lane works, the southern part of Marshgate Lane running through CZ8b and the Pudding Mill Lane / Marshgate Lane junction in the south of CZ8a and CZ8b.

Validation Reports

Capita (on behalf of BAM Nuttall), November 2014. Validation Report for PDZ8, Report Ref. LC402-LCI-SPK-CM-REP-0055 (Decision Notice Ref. *Awaiting PPDT approval*).

BAM Nuttall (Ref. 18) carried out a variety of transformation phase works across PDZ8. These included deconstruction of Bridge T12 abutments and associated fill, removal of temporary features of underpass U07 (details reported within the BAM Nuttall PDZ2 Validation Report), raising the existing ground level and the construction of two concrete bases and a footpath associated with underpass U06 and the creation of allotments and associated community building.

There was a minimal requirement for general fill and its placement was restricted to the backfill of excavated material during the construction of drainage trenches. Backfill material was generally compliant with the Quality of Imported Fill framework (Ref. 8). Where excavation reached the HHSL boundary a full cover system comprising a Marker Layer, root barrier and HHSL (imported subsoil and topsoil) was placed. The existing Marker Layer was retained beneath the retained paving of the central access and southern open space. A new Marker Layer was laid below the locations of new deep drainage. Excavations beneath the Marker Layer were managed through the PtP System.

LTP works in the allotment gardens (SC18) area included the removal of hard landscaping (tarmac) and subbase to a maximum thickness of 1,000 mm, placement of a root barrier and Marker Layer and the backfilling with 600 mm sub-soil (totalling 4,223.25 m³) and 400 mm topsoil (totalling 1,684.65 m³) to FFL. The provision for soil gas protection requirements is outlined as a Residual Remediation Item and during the construction of the allotment garden community building a Tyvek SD2 vapour barrier was installed.

LTP works in associated with underpass U06 included raising the existing ground level using Type 1 material, and the construction of two concrete bases and a footpath. No Marker Layer was laid in this area during the Enabling Works Phase of works and during LTP no excavation works were completed, resulting in BAM Nuttall not placing any Marker Layer.

Two samples, cslt-8tp-06 and cslt-8aml-01, were collected from re-used topsoil/AML material used to backfill service trenches in CZ8c. Results indicated arsenic was below the laboratory limit of detection in one sample <0.1 mg/kg and 350 mg/kg in the other, compared to the SSAC for soft landscaping of 131 mg/kg. The average of the measured arsenic concentrations was found to be below the applicable SSAC and this, combined with the overlying, uncontaminated topsoil capping in that area, resulted in Capita/BAM Nuttall not considering the reported arsenic concentrations to represent an unacceptable risk to human health. No other chemical parameters were reported exceeding the applicable SSAC.

PJ Carey, August 2014. Project Specific Validation Report for: Highway, Footpaths & Landscaping Works. Report Ref. LC417-MAR-SPK-W-PLR-0002 (Decision Notice Ref. Awaiting PPDT Approval).

PJ Carey constructed areas of both hard and soft landscaping covering the southern part of Marshgate Lane running through CZ8b and the Pudding Mill Lane / Marshgate Lane junction located to the south of CZ8a and CZ8b (Ref. 20). Works included construction of a 7 m wide roadway joining Stratford High Street and the southern entrance to the QEOP and 2 m wide footpaths finished with resin bond surfacing, either side of this roadway. Completion of soft landscaping between the hoarding and pavement and installation of 11 No. lighting columns and street signage.

A total of 27 m³ of subsoil and 75 m³ topsoil was imported by PJ Carey's for placement in areas of soft landscaping. Imported topsoil was tested at source and verified by PJ Carey's as suitable for use on site.

Previous phases of works at the QEOP installed Marker Layer at approximately 1.3 m bFFL across the CZ8c portions of PJ Carey's Marshgate Lane works. The majority of PJ Carey's works were completed within the top 600 mm of strata and none of PJ Carey's works extended beyond 1.2 m bFFL. As a result no Marker Layer was placed / replaced by PJ Carey. Marker layer was installed to the section of Marshgate Lane outside the QEOP boundary beneath the Low Voltage ducting to power the new lighting columns. No instances of unexpected contamination were reported during PJ Carey's works.

Appendix B. Key Parties

Key LLDC Transformation Phase Project Parties for PDZ8

Responsibility	Organisation
Client;	London Legacy Development Corporation (LLDC)
Land owner:	LLDC
Local Planning Authority:	LLDC Planning Policy and Decisions Team (PPDT)
Project Manager	MACE
Key Stakeholders:	Canal and River Trust (formerly British Waterways)Environment Agency London Borough of Newham Transport for London London Borough of Tower Hamlets London Borough of Waltham Forest Thames Water Transport for London UK Power Networks
CDM Coordinator:	Atkins
Remediation Designer:	Atkins
Chemical Testing Laboratory:	Environmental Scientifics Group (ESG) Chemtest
Geotechnical Testing Laboratory:	ESGL BAM Ritchies
Infrastructure Contractor:	Nuttall
Infrastructure Contractor:	PJ Carey

Appendix C. Permit to Proceed Protocol (CD only)

Appendix D. Supporting Information



Reference: 5082494/2006236/C003 rev2

London Legacy Development Corporation Planning Policy and Decisions Team Level 10 1 Stratford Place Montfichet Road Stratford London E20 1EJ

Atkins Olympic Park Project 17th Floor One Churchill Place London E14 5LN

18/12/2012

FAO:

Dear

Project: Olympic Park – LOCOG Reinstatement Works
Subject: Quality of Imported Fill Application (Rev 2, Final)

Further to previous discussions regarding the importation of materials for reinstatement works by the London Organising Committee of the Olympic and Paralympic Games (LOCOG), please find below and attached details of this material import. The information collated herein is submitted to the London Legacy Development Corporation Planning Policy and Decisions Team (LLDC PPDT) pursuant to Condition OD.0.39 (Quality of Imported Fill) of the 2007 Olympic, Paralympic and Legacy Transformation Planning Applications: Facilities and Their Legacy Transformation Planning Application (ref. 11/90313/VARODA).

Condition OD.0.39 of 11/90313/VARODA states the following:

No soils or infill materials (including silt dredged from watercourses), shall be imported onto the Site until it has been satisfactorily demonstrated that they present no risk to human health, planting and the environment. Documentary evidence to confirm the origin of all imported soils and infill materials, supported by appropriate chemical analysis test results, shall be submitted to and approved by the Local Planning Authority prior to that import. The import onto the Site of material classified as "waste" is only acceptable with the prior approval of the Local Planning Authority.

Reason: To ensure that no contaminated material is brought onto Site.

Background

LOCOG's Showcase Sponsor and Common Domain Contractors are undertaking works to remove the various Games phase temporary structures and overlay infrastructure (Showcase structures, tents, portacabins, temporary utilities etc) to facilitate the next phase of development of the Olympic Park by the LLDC Transformation team. As per correspondence from our Nin Prakash to yourself and Hyder Consulting Ltd. on 19th October 2012, these LOCOG works include reinstatement of shallow excavations following removal of temporary utilities, ground slabs, pile tops etc across the main Planning Delivery Zones (PDZ) of the Olympic Park. As part of these works certain materials have been imported from off-Park or are in the process of being imported, to backfill the various excavations. These backfill operations are limited and the total volume of material imported across the project for all these works is approximately 700 m³.

This submission is intended to cover all the materials imported by LOCOG's Contractors associated with the reinstatement works Park-wide, as outlined within Table 1 below. It is recognised that certain of these materials have already been imported and, as such, this application is at least in part retrospective.

Atkins Limited is a WS Atkins plc company

Information provided herein is in accordance with the requirements of the Olympic Park Quality of Imported Fill Framework (ref. 0241-ENW-ATK-LET-00328), which was agreed by the Planning Authority via letter (dated 9th November 2009). This document required subsequent submission of Quality of Imported Fill details to include; the source of the material, quantity, location of deposition, the timeframe for importation and, where applicable, appropriate quality test data.

Details of Material Import

A summary of the material details, as required by the Quality of Imported Fill Framework (ref. 0241-ENW-ATK-LET-00328) for the LOCOG reinstatement works, is presented in Table 1. These reinstatement works include slab and pile void backfill associated with the Showcase sponsor structures and also utility pop-up connections and trench backfill at various locations across the Park. Imported materials were placed above the marker layer with the exception of a very small volume used as below marker layer backfill where certain of the driven piles were partially extracted. As set out in the email from Nin Prakash to PPDT / Hyder Consulting Ltd., dated 19th October 2012 all imported materials are virgin / primary aggregates (Torr Works Quarry limestone).

Relevant supporting information is appended to this submission and includes example material delivery tickets, example reinstatement field record for utility pop-ups and trenches and plans outlining the location of material deposition for both the Showcase structures and utility pop-ups and trenches. Details regarding how this information is to be reported are set out in the section below Table 1.

Table 1 – LOCOG Reinstatement Imported Material Details (cont. overleaf)

Supplier & Material Source	Material Type	Material Category*	Material Class	Deposition Location*	Quantity (m³)	Timing of Import	Reason for Import
			Type 1	EDF Showcase, PDZ4	160m ³ (400mm deep)	October - November 2012	Reinstatement of the removed ground slab.
			Type 1	BT Hotel, PDZ4	85m ³ (300mm deep)	October - November 2012	Reinstatement of the removed ground slab.
			Type 1	Coca-Cola Beatbox, PDZ5	31m ³ (300mm deep)	October - November 2012	Backfill of pad footings.
Yeoman			Type 1	Handball Arena – Warm Up Court PDZ5	320m ³ (300mm deep)	October - November 2012	Reinstatement of the removed ground slab.
Aggregates, Aggregate Industries Ltd.,	Select granular limestone	Category 1	y Type 1	McDonalds Central, PDZ4	6m ³	October - November 2012	Backfill of pile voids (150mm dia.)
Torr Works Quarry, Somerset	300000000000000000000000000000000000000		Type 1	Prestige Ticketing, PDZ4	14m ³	October - November 2012	Backfill of pile voids (175mm dia.)
			Type 1	Megastore, PDZ4	3m ³	October - November 2012	Backfill of pile voids (150mm dia.)
			Type 1	OBS Tower, PDZ4	6m³	October - November 2012	Backfill of pile voids (150mm dia.)
			Type 1	McDonalds South, PDZ2	9m³	October - November 2012	Backfill of pile voids (150mm dia.)
			Type 1	BP Walk in the Park, PDZ2	20m ³ (400mm deep)	October - November 2012	Reinstatement of the removed ground slab.

Table 1 - LOCOG Reinstatement Imported Material Details

Supplier & Material Source	Material Type	Material Category*	Material Class	Deposition Location	Quantity (m³)	Timing of Import	Reason for Import
Yeoman Aggregates, Aggregate Industries Ltd., Torr Works Quarry, Somerset	Select granular limestone	Category 1	Type 1	Utility pop- ups and trenches, Park-wide	42m³ (<300mm deep)	October - November 2012	Reinstatement of shallow temp utility pop-ups and trenches

Notes:

- The Material Category* is taken from the Quality of Imported Fill Framework (ref 0241-ENW-ATK-LET-00328).
- In accordance with this document, Category 1 material (as produced crushed or broken rock) does not require in situ testing.
 This particular material, Torr Works Quarry limestone, has been imported extensively by the ODA Enabling and Follow-on
 Projects and has approval from the previous Planning Authority, the ODA Planning Decisions Team (PDT, refer to Application
 refs, 10/90090/AODODA, 10/90343/AODODA, 11/90350 90363/AODODA).
- The location of material deposition[®] is provided on the attached sketches. Materials were placed above the marker layer
 except for a small volume used for backfill of extracted piles at Prestige Ticketing, Megastore, OBS Tower and McDonalds
 Central / South.

Testing and Reporting

In accordance with the Quality of Imported Fill Framework, as all materials outlined in Table 1 are 'Category 1' (i.e. virgin as produced crushed or broken rock), they are not subject to in situ quality testing. However, to demonstrate the source of these materials is the Torr Works Quarry, example delivery tickets are appended to this letter. The Torr Works Quarry limestone has been widely used on the Olympic Park by the ODA Enabling and Follow-on Projects and has approval for importation and use from the Planning Authority (formerly ODA PDT). The imported products are inspected upon supply from the source to ensure that the material requested and received are consistent.

The information contained herein is to be provided to the LLDC Transformation team as part of the handover process and collated for inclusion in their Stage 4 Validation Reporting. No separate validation reporting covering this importation is to be completed by LOCOG.

Summary

This submission provides details regarding the materials imported from off-Park for use in the LOCOG reinstatement of temporary overlay works within the Olympic Park. The details provided herein are submitted to satisfy Planning Condition OD.0.39 (Quality of Imported Fill) of Permission 11/90313/VARODA. The material imported is virgin, Torr Quarry limestone, which has been widely used on the Park by previous projects and has prior PDT approval. Supporting information is appended and the entire submission is to be provided to the LLDC Transformation team for inclusion within their validation reporting.

Should you have any queries regarding the content of this submission or require any further information, please do not hesitate to contact the undersigned.



(Atkins)

Attachments: Drawings:

- SK-POP-2080_Post Games Reinstatement Works_NP_02 (showing the location of utility pop-up and trench reinstatement in North Park);
- SK-POP-2080_Post Games Reinstatement Works_SP_02 (showing the location of utility pop-up and trench reinstatement in South Park);
- SK-POP-2080_Showcase_Post Games Reinstatement_NP_mark up (mark-up showing the location of Showcase venue reinstatement in North Park); and
- SK-POP-2080_Showcase_Post Games Reinstatement_SP_mark up (mark-up showing the location of Showcase venue reinstatement in South Park).

Example conveyance notes for Yeoman Aggregates Type 1 sub-base limestone from Torr Works Quarry.

Example reinstatement field record (including photo record) for utility pop-ups and trenches.

LLDC PPDT and Hyder document comments and LOCOG responses.

Drawings

- SK-POP-2080_Post Games Reinstatement Works_NP_02 (showing the location of utility pop-up and trench reinstatement in North Park)
- SK-POP-2080_Post Games Reinstatement Works_SP_02 (showing the location of utility pop-up and trench reinstatement in South Park)
- SK-POP-2080_Showcase_Post Games Reinstatement_NP_mark up (mark-up showing the location of Showcase venue reinstatement in North Park)
- SK-POP-2080_Showcase_Post Games Reinstatement_SP_mark up (mark-up showing the location of Showcase venue reinstatement in South Park)



CONFIDENTIAL

- LEXTENT OF POP UP RENSTATEMENT IS INDICATIVE AND NOT TO SCALE.
- POR REINSTATEMENT DETAILS IN EACH LOCATION PLEASE REFER TO REINSTATEMENT SCHEDULE: LOC-SCM-601 AND THE STANDARD DETAILS SKETCH: LOC-SK-601.



TRENCH REINSTATEMENT



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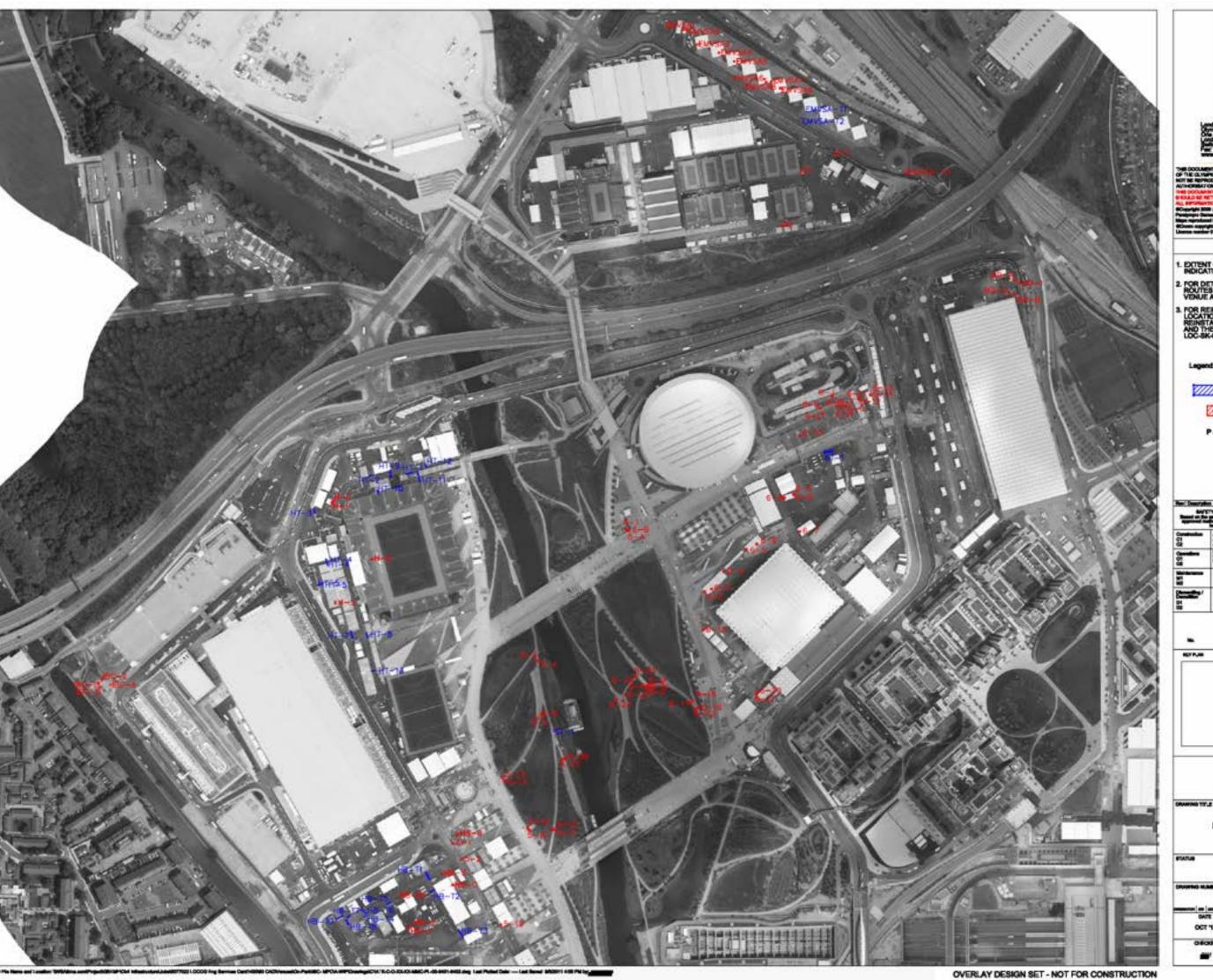
MOT PLAN		

On behalf of the LOCOG ATIONS Olympic Park Design

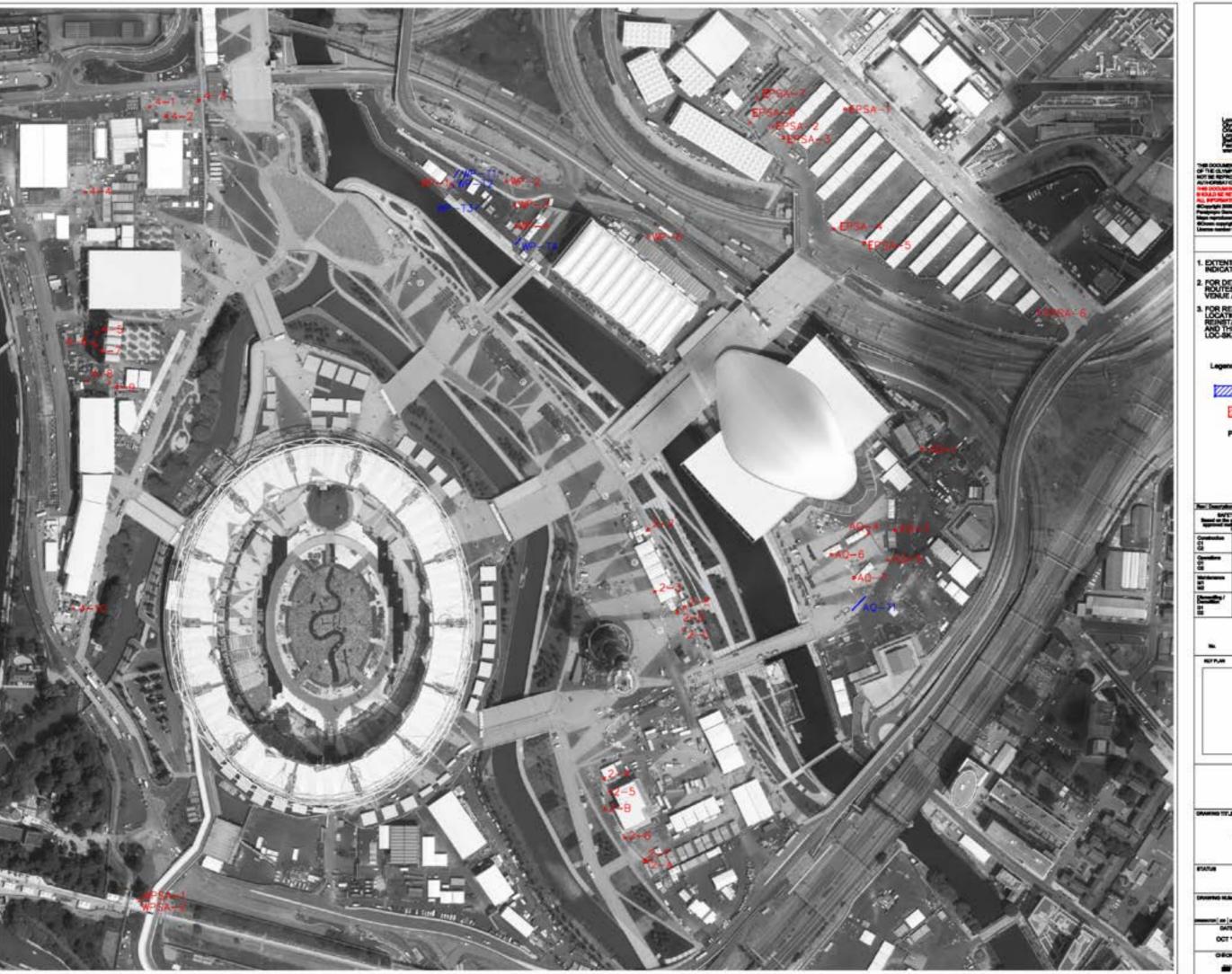
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- FOR DETAILS OF BELOW GROUND DUCT ROUTES PLEASE REFER TO PRE GAMES VENUE AND COM REDURE DRAWING.
- L FOR REINSTATEMENT DETAILS IN EACH LOCATION PLEASE REFER TO REINSTATEMENT SCHEDILE: LOC-SCH-801 AND THE STANDARD DETAILS SKETCH: LOC-SK-801.

P-6 ITEM CODE

TRENCH REINSTATEMENT



POP UP REINETATEMENT



SHOWCASE VENUE REINSTATEMENT

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On behalf of the LOCOG ATKING Olympic Park Design

POST GAMES LOCOG REINSTATEMENT WORKS NORTH PARK - SHOWCASE VENUES

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SK-POP-2080

Example conv	eyance notes for Yeo Torr Wo	man Aggregates Ty rks Quarry, Somer	ype 1 sub-base lime set	stone from

conveyance / receipt note Loaded at Bow Rall Head Ship Sth For all enquiries please telephone For any queries please contact 02068955510 BOW BAIL HEAD SMIP STN Yeonán Aggregates 63927939 Stone Terminal Horn Lane #3 9EH Customer Account No. 1734401 Date of Loading Time Out: : Time due on Site: Date Customer 1051 800 -08/11/12 06/11/12 O'KEEFE CONST (BREENWICH) LTD On-Jime early Time on Site: Contract No: Late *Delivery Address* 3306768 Time off Site: Total Time to unload: Handball Arena Olyapic Part Pre-booked DW time Tot Wait Time 0 Call off No: London Tot Daywork Time 17643709 £15 Returned material Est Qty: Weighed Qty: Stratford Reason: Delivery Qty Contact: 38.88 Print Name Nueber: Qty. Ord. Customer Purchase Order No. 40.00 C828/51666 ature: Collected Loads: Signed on behalf of Yeoman Aggregates Your Turnaround Time was: Goods received in good condition Please Print Name Œ UO Cash Sale Gross Wt Product _ Product Description Quantity Tare Wt Nett Wt Unit. 12.50 10.50 19.50 32.60 7878100 EM3243502 Type 1Sub-Base Linestons TH SHU 803

All sales are subject to our terms and conditions of sale, copies of which are available on request.

Special Instructions

Total Goods
VAT %
Amount Payable

VAT Reg. No. GB 533 2605 71

Cash Sale
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Any recycled materials supplied are manufactured in accordance with a documented management system which conforms to the requirements of the WRAP quality protocol for the production of aggregate from inert waste.



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conveyance / receipt note Bow Rail Head Ship Stn For all enquiries please telephone For any queries please contact 02088966610 BOW RAIL HEAD SHIP STM Yeoman Aggregates 63924797 Stone Terminal Conveyance Note Horn Lane W3 PEH Customer Account No. 1734401 Time Out: Time due on Site: Date of Loading Date Customer 06/11/12 731 800 06/11/12 O'KEEFE CONST (SREENWICH) LTD On-Time early Late Time on Site: Contract No: **Delivery Address** Time off Site: Total Time to unload: 3306768 Handball Arena Tot Walt Time Pre-booked DW time Blynpic Fart Call off No: Tot Daywork Time London Weighed Qty Returned material Est Qty: 17643709 £15 Reason: Stratford Delivery Qty County LONDON 19.38 Print Name: Contact: Qty. Ord. Numbersom Signature: 40.00 C328/51666 Collected Loads Signed on behalf of Yeoman Aggregates Your Turnaround Time was: Goods received in good condition ĝ Please Print Name Cash Sale UD Œ Gross Wt. Tare Wt. Nett WI Quantity Product-Description Unit **Product** M 19.38 12.50 19.38 FB. 31,66 EM3243502 Type 1Sub-Base Limestons 7878100 SHW 803 Total Goods All sales are subject to our terms and conditions of sale, copies of which are available on request. VAT % Amount Payable Special Instructions VAT Reg. No. GB 533 2605 71 Cash Sale Receipt No. Any recycled materials supplied are manufactured in accordance with a documented management system which conforms to the requirements of the WRAP quality protocol

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for the production of aggregate from inert waste

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Vehicle Reg. No. Fleet/Haulier 1329996

Haulage Indicator

Driver's Name

TONE &



WHITE - RECEIPT NOTE **BLUE - HAULIERS COPY** YELLOW - CUSTOMER COPY

Aggregate industries UK Limited T/A Yeoman Aggregates Registered office: Bardon Hall, Copt Oak Road, Leicestershire, LE67 9PJ conveyance / receipt note Loaded at Boy Rail Head Ship Stm For all enquiries please telephone For any queries please contact 02088966810 BOW RAIL HEAD SHIP STN Yesman Agoregates 53573345 Stone Terminal Conveyance Note Horn Lane #3 9EN Customer Account No. 1734401 Time due on Site: Time Out: Date Date of Loading Customer 739 800 29/10/12 29/10/12 D'KEEFE COMST (GREENWICH) LID On-Time early Late Contract No: Time on Site Delivery Address Total Time to unload Time off Site: 3306768 Various LOCOS Pre-booked DW time Tot Wait Time Hockey Pitch Call off No: Tot Daywork Time Olympic Park Weighed Qty: Returned material Est Qty 17808738 County LONDON 19.72 Print Name: Contact: Qty. Ord. Mueberia 40.00 Signature: C828/57694 Collected Loads: Signed on behalf of Yeoman Aggregates Your Turnaround Time was: Goods received in good condition 0 Please Print Name Cash Sale Œ Tare Wt Nett Wt Quantity Gross Wt Product Product Description Unit. M 32.00 12.28 19.72 TH. 19.72 Type 1Sub-Base Limestone EM3243502 7878100 SHW 803 Total Goods All sales are subject to our terms and conditions of sale, copies of which are available on request. VAT % Amount Payable Special Instructions Oriver to call when opn route VAT Reg. No. GB 533 2605 71 Cash Sale Receipt No.

Any recycled materials supplied are manufactured in accordance with a documented management system which conforms to the requirements of the WRAP quality protocol for the production of aggregate from inert waste

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Example reinstatement field record for utility pop-ups and trenches in the M Dining, Zone 4 and Hockey areas	ain

OLYMPIC PARK - REINSTATEMENT

LOCOG

MEASURE AGREEMENT

Prepared By: ISG Date: 09-11-2012

Contractor Reference: Main Dining, Zone 4 & Hockey | Employer Reference: ISG-MA-ALL-001

To: The Project Manager -

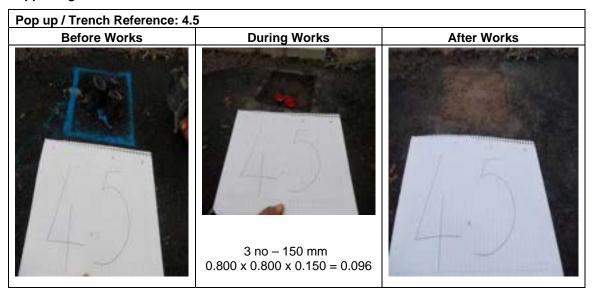
Dear Sirs,

We hereby submit for your agreement the following measured works in respect of the following item, items or part of the works.

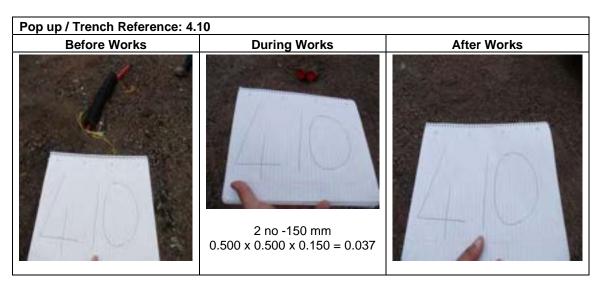
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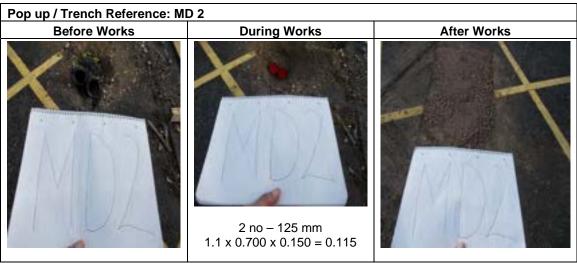
Pop up / Trench Reference	Reinstatement Detail	Date Completed
4.5	Detail A	06-11-2012
4.10	Detail A	12-11-2012
MD 2	Detail A	13-11-2012
MD A	Detail A	13-11-2012
HT 13	Detail C	20-11-2012
HT 14	Detail C	20-11-2012
HT 7	Detail C	20-11-2012

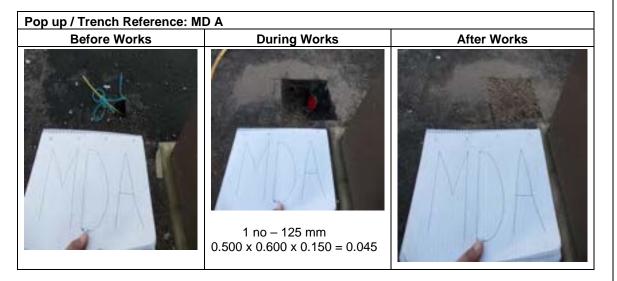
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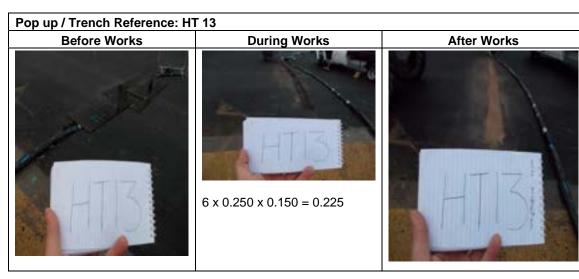


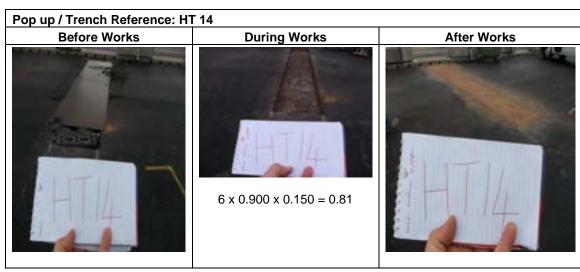
Form No: CON011 Revision: 02 Issued: Feb 2011

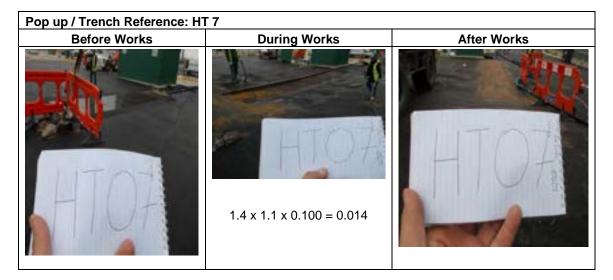












ISG

ISG Authorised By: Date: 21/11/2012 Distribution: Project Manager (Original), Employer, Supervisor, Cost Consultant, Day File **MEASURE AGREEMENT** Prepared By: (for the PM) Date: 21/11/12 PM Reference: PG-PMI0001 & PG-PMI0004 THE PROJECT MANAGERS AGREEMENT OR NOTIFICATION OF MEASURE SUBMISSION * We agree with the measure quantities submitted. * We do not agree to the measure quantities submitted * Delete as appropriate Authorised By: (Project Manager) Date: 21/11/2012

Distribution: Contractor(Original), Employer, Supervisor, Cost Consultant, Day File

Form No: CON011 Revision: 02 Issued: Feb 2011

LOCOG





London Legacy Development Corporation Planning Policy and Decisions Team

EIA & Site Remediation Advisory Services Call Off Contract

DOCUMENT REVIEW

Application No.	Submission Title	Submission Ref.	Applicant Author	Date of Document Review	HCL Task Ref.
PP-02321528	LOCOG reinstatement Quality of Imported Fill	5082494/2006236/C003	Atkins	23/11/12 23/11/12	REM 310

The document entitled Olympic park – LOCOG Reinstatement Works Quality of Imported Fill Application has been reviewed by Hyder Consulting on behalf of LLDC PPDT to determine compliance with Condition OD.0.39 (Quality of Imported Fill) of Olympic, Paralympic & Transformation Planning Application 11/90313/VARODA).

Table 1 Compliance with Annex 5, Section 1.14 "Quality of Imported Fill / Importation of Materials"

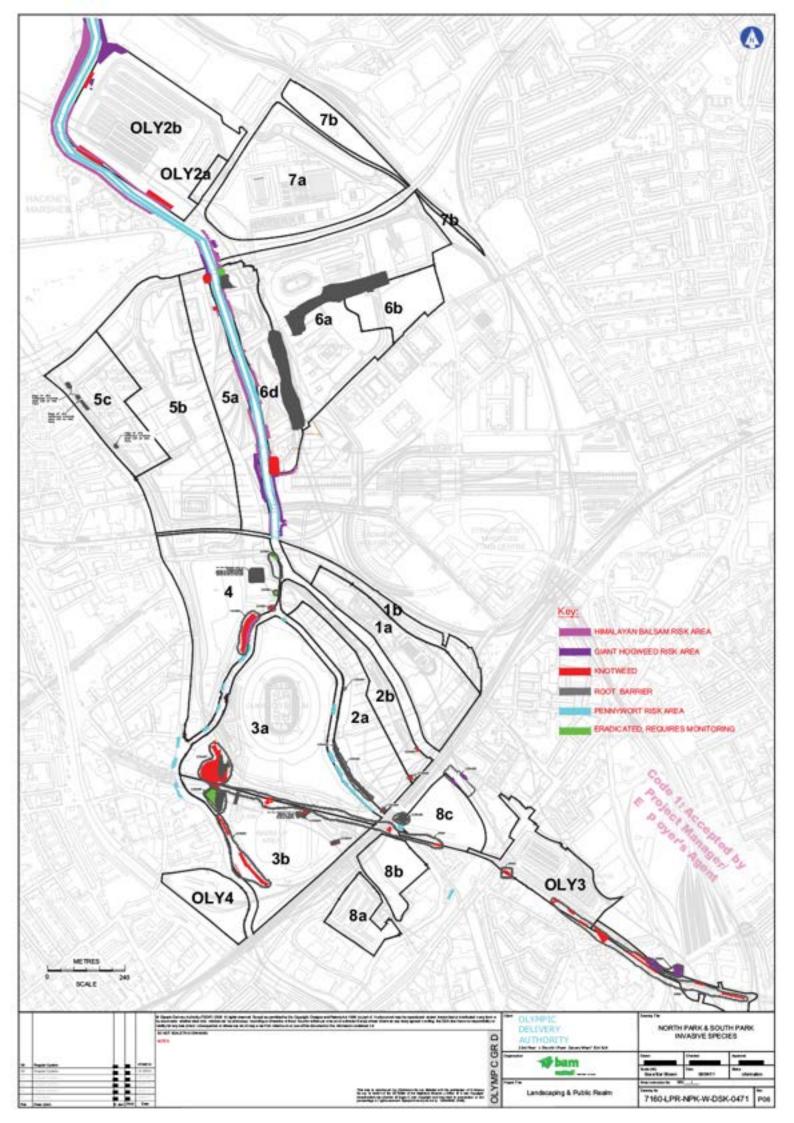
Ref.	Import of Fill Requirement	Compliant?	Comment	Applicant response (28/11/12)
	Documentary evidence must be supplied to the PDT to confirm the origin of all imported soils		The document confirms the source of material as Type 1 granular crushed limestone from the Torr Works Quarry operated by Yeoman Aggregates. This material is	N/A
	and infill materials, supported by appropriate		regarded as Category 1 in terms of the prevailing Atkins quality of fill framework. The	
	chemical analysis test results prior to any import		Applicant has provided evidence of transport of the material to site by way of example	
	of fill materials.		conveyance notes from Yeoman.	

Table 2 Compliance with Annex 5, Section 1.15 "Expected Contents of Submissions – Importation of Fill Materials"

Ref.	Import of Fill Requirement	Compliant?	Comment	Applicant response (28/11/12) Hyder review (28/11/12)
2.1	GIS shape file, showing area affected.	Yes	4 marked-up drawings have been provided showing the location of the affected areas	N/A
	Details of quantities to be imported, location of placement and quality.	-	Whilst Table 1 presents the location of the deposited materials, this information cannot be easily cross referenced with the marked-up drawings – i.e. some venues (McDonalds x 2, Prestige, Megastore etc) are not denoted on this plan. Can these venues be added to the marked-up drawing.	The hand marked-up drawings showing the Showcase reinstatement do include the venues indicated but we acknowledge that these are not clearly annotated. The marked-up drawings have been revised as separate North and South Park sketches which now clearly show the venue reinstatement locations. Hyder 28/11/12: Revised drawings provided. No further comment.
2.3	Timescale	Yes	Timescales are presented in Table 1.	N/A:

Table 3 Additional Hyder Comments

_										
Ref.	Comment	Comment	Applicant response (28/11/12)							
			Hyder review (28/11/12)							
2.1	Field Records	Please confirm that a complete set of re-instatement field records for all areas	We can confirm that the complete field records for the utility trenches and pop-ups,							
1		relevant to this Import of Fill Submission will be passed BAM Transformation. We	together with the available material conveyance notes and the finalised Quality of							
1		expect this complete information to to be part of the final PDZ validation report, where	Imported Fill submission will be provided to the LLDC Transformation team as part of							
1		associated with the Transformation works.	the handover process. We understand that LLDC have committed to incorporate this							
1			information within the next stage of validation reporting, though details of this will							
1			need to be confirmed by the LLDC Transformation team.							
			Hyder 28/11/12: No further comment.							



OLYMPIC PARK - REINSTATEMENT

LOCOG

MEASURE AGREEMENT

Prepared By: (ISG) Date: 01-11-2012

Contractor Reference: Zone 2 Employer Reference: ISG-MA-CZ2-001

To: The Project Manager -

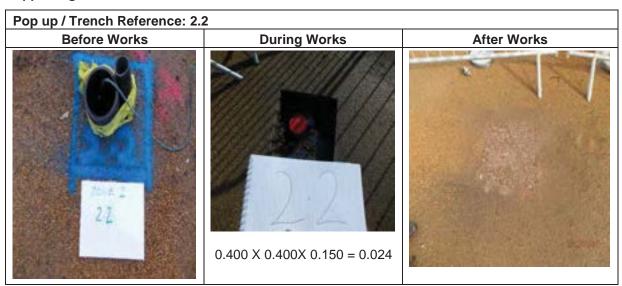
Dear Sirs,

We hereby submit for your agreement the following measured works in respect of the following item, items or part of the works.

Description:

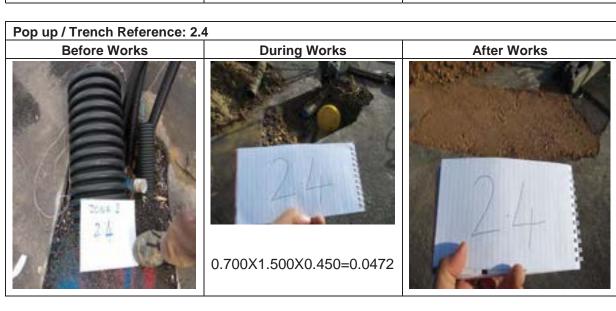
Pop up / Trench Reference	Reinstatement Detail	Date Completed
2.2	Detail - A	30-10-2012
2.3	Detail - A	30-10-2012
2.4	Detail - A	30-10-2012
2.5	Detail - A	30-10-2012
2.6	Detail - A	30-10-2012
2.A	Detail - A	30-10-2012
2.7	Detail - A	30-10-2012
2.8	Detail - A	30-10-2012

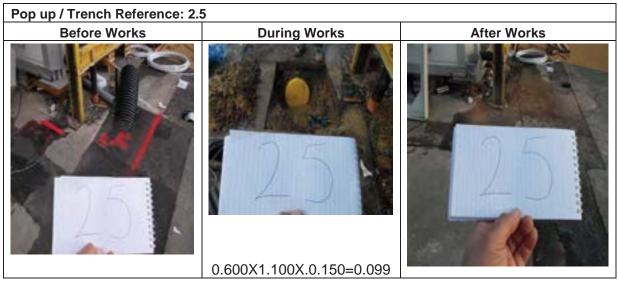
Supporting Information:



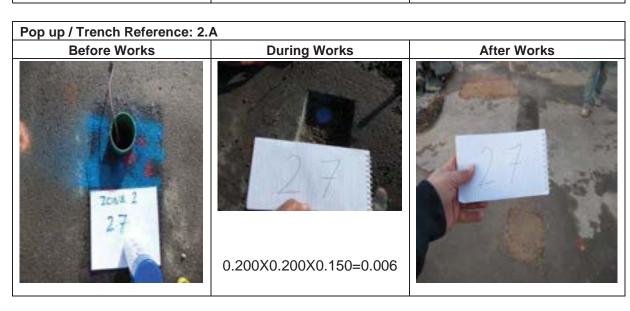
Form No: CON011 Revision: 02 Issued: Feb 2011

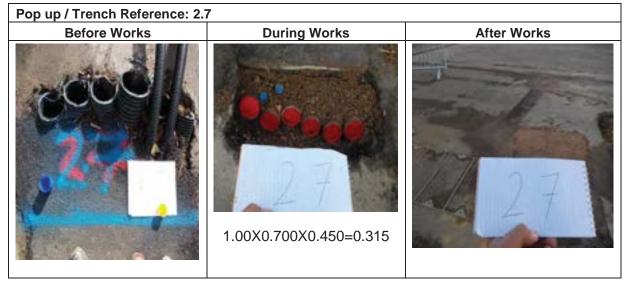
Pop up / Trench Reference: 2.3 Before Works During Works After Works 0.300X0.300X0.150=0.0135





Pop up / Trench Reference: 2.6 Before Works During Works After Works 0.700X1.200X0.300=0.252



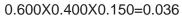


Pop up / Trench Reference: 2.8



During Works







Authorised By:

ISG

Date: 0

05/11/12

Distribution: Project Manager (Original), Employer, Supervisor, Cost Consultant, Day File

MEASURE AGREEMENT

Prepared By:

Date: 06/11/12

PM Reference: PG-PMI0001 & PG-PMI0004

THE PROJECT MANAGERS AGREEMENT OR NOTIFICATION OF MEASURE SUBMISSION

* We agree with the measure quantities submitted.

* We do not agree to the measure quantities submitted



* Delete as appropriate

Authorised By:

By:

Date: 06/11/2012

Distribution: Contractor(Original), Employer, Supervisor, Cost Consultant, Day File

Form No: CON011 Revision: 02 Issued: Feb 2011

SNO	POP UP / TRENCH	LOCATION NO	Zone	DETAIL	DATE COMPLETED	Compilance	Volume	50 mm	100 mm	125 mm	150 mm	225 mm	300 mm
1	POP UP	2.2	Zone 2	Detail A	30-Oct	DONE	0.024	1			1		Ī
2	POP UP	2.3	Zone 2	Detail A	30-Oct	DONE	0.0135	1					
3	POP UP	2.4	Zone 2	Detail A	30-Oct	DONE	0.0472	3	1				1
4	POP UP	2.5	Zone 2	Detail A	30-Oct	DONE	0.099	3					1
5	POP UP	2.6	Zone 2	Detail A	30-Oct	DONE	0.252	2			6		
6	POP UP	2.7 a	Zone 2	Detail A	30-Oct	DONE	0.006	2			6		
7	POP UP	2.7 b	Zone 2	Detail A	30-Oct	DONE	0.315		1				
8	POP UP	2.8	Zone 2	Detail A	30-Oct	DONE	0.036	2		2			

LOCOG IN CONFIDENCE



CONFIDENTIAL

- . EXTENT OF POP UP RENSTATEMENT IS INDICATIVE AND NOT TO SCALE.

TRENCH REINSTATEMENT POP UP REINSTATEMENT

P-6 ITEM CODE

Ray Description		Dresen Chit'd App'd Date		
Based on the approved on	TY, HEALTH AND EX- use of experienced a chool statement list or below or the statement	AVECHMENT INFORMATION and competent continuous working to an unusual resistant homostary feets are feeted at NO UNUSUAL RESIST.		
Construction C1 C2	CL CL	Pittorio (1997 diversible		
Operators O1 O2	DL DE			
Maintenance M1 M2				
Demoition / Demoition 01 02				

KEY PLAN		
		-7

On behalf of the LOCOG ATKINS Olympic Park Dealgn

POST GAMES LOCOG REINSTATEMENT WORKS SOUTH PARK

ratue AS B	UILT		PROJEC				
RAWING HUMBER		SK-POP-2080					
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DATE	BCALE	@AS	8425	1064			
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	2.4004	20.000	1 4 4 4 4 4 4 4	_			

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Appendix E. PPDT / Hyder Document Review Comments and Response

Atkins Woodcote Grove Ashley Road, Epsom Surrey KT18 5BW

@atkinsglobal.com

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