Planning Delivery Zone 2
Legacy Transformation (Stage 4)
Consolidated Validation Report

ATKINS

London Legacy Development Corporation

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Plan Design Enable

Notice

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Table of contents

Chapter — Pages

List of Abbreviations

1. Introduction **1**
1.1. Scope 1
1.2. Report Objectives 1
1.3. Relevant Planning Conditions 4
1.4. Site Description and Location 4
1.5. Olympic, Transformation and Legacy End Use 4
1.6. Outstanding / Excluded Works 5
1.7. Terminology 5
1.8. Report Limitations 7

2. Basis of Remedial Design **9**
2.1. Background 9
2.2. Scope of Works / Transformation Phase Contractor Design 10

3. Implementation **18**
3.1. Summary of Legacy Transformation Works 18
3.2. Residual Actions transferred from ODA / LOCOG Scope 19
3.3. Safeguarding Remediation / Reinstatement of Protection Measures 22
3.4. Retained Areas Restrictions 22
3.5. Sampling and Analytical Testing 22
3.6. Radiological Material / Unexpected Contamination 22
3.7. Materials Management 23
3.8. Waste Management 23
3.9. Health, Safety and Environment 23

4. Conclusions **24**
4.1. Further Works – Residual List and Issues Affecting Future Development 24

5. References **26**

Figures

Appendices

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

Appendix B. Key Parties

Appendix C. Permit to Proceed Protocol (CD only)

Appendix D. Supporting Information

Appendix E. PPDT / Hyder Document Review Comments and Response

Tables

Table 1-1 PDZ2 Validation Reporting Structure 3
Table 2-1 Summary of Legacy Transformation Phase Contractor Construction Design within PDZ2 11
Table 2-2 Legacy Transformation RMS Addenda relevant to PDZ2 13
Table 2-3 Remediation Slot-In Conditions relevant to PDZ2 17
Table 3-1 Residual Remedial Actions for PDZ2 20
Table 3-2 LTP Piling Environmental Risk Assessments within PDZ2 22
Table 4-1 Works for Incoming Projects and Restrictions on Future Works in PDZ2 25

Figures

Figure 1: Location and Boundary of Planning Delivery Zone 2

Figure 2: Olympic End Use for Planning Delivery Zone 2

Figure 3: Legacy Transformation Phase End Use for Planning Delivery Zone 2

Figure 4: Legacy End Use for Planning Delivery Zone 2

Figure 5: Spatial Coverage of Legacy Transformation Phase Validation Reports within Planning Delivery Zone 2

Figure 6: Sub-Grade Levels for Planning Delivery Zone 2

Figure 7: Extent of Marker Layer within Planning Delivery Zone 2

Figure 8: Extent and Thickness of Human Health Separation Layer within Planning Delivery Zone 2

Figure 9: Final Finished Level for Planning Delivery Zone 2

Figure 10: Retained Areas within Planning Delivery Zone 2

Figure 11: Exceedances requiring Action in Legacy (Not Applicable to PDZ2)

Figure 12: Representative As-built Sections of the Final Remedial Cover System in Planning Delivery Zone 2

List of Abbreviations

Abbreviation	Definition
CDM	Construction (Design and Management)
CSM	conceptual site model
CVR	Consolidated Validation Report
CZ	Construction Zone
DQRA	detailed quantitative risk assessment
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
ODA	Olympic Delivery Authority
OPF	Olympic Park fence line
PAH	polycyclic aromatic hydrocarbons
PDZ	Planning Delivery Zone
PPDT	Planning Policy and Decisions Team
PPE	personal protective equipment
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
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 PDZ2 (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 2.2.6 below. Whilst it is recognised that Condition LTD.16 of the above Permission doesn't 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 to provide confirmation of any enhancement to those measures.

PDZ2 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) and represents the first PDZ to be subject to this stage of CVR production.

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.

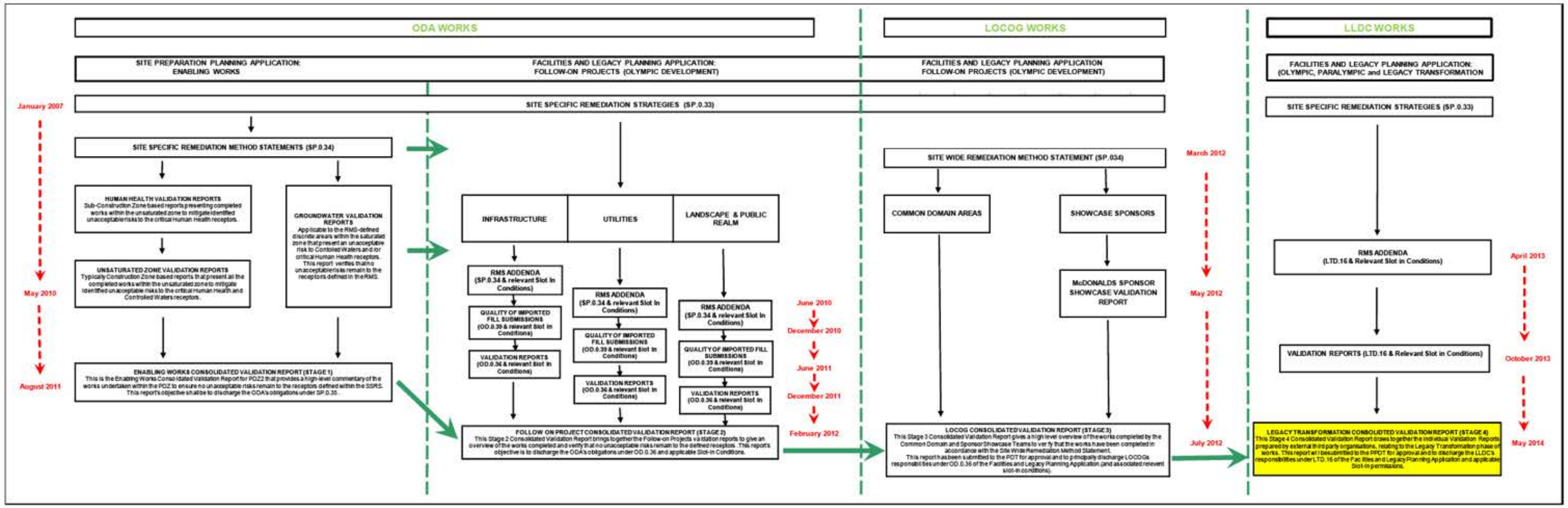
Stage 3 *previously submitted and approved by the LPA* – summarises remediation-related works completed by LOCOG to facilitate the Olympic Games only and the associated temporary construction of tents, cabins, utilities, sponsor showcases and the installation of hardstanding to complete the Human Health Separation Layer (HHSL). The individual Olympic Games Sponsors submitted their own respective Validation Reports to the LPA for approval. 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 PDZ2 validation reporting sequence presenting the stages of the CVR process is presented in Table 1-1 below.

Table 1-1 PDZ2 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. Those separate Permissions relating to works in PDZ2 which include specific validation Conditions comprise:

- 12/00064/FUM: South Park Hub (SPH.61 – Protection and Validation of Remediation);
- 12/00178/AOD: F10B Bridge Widening (Condition 10 – Protection and Validation of Remediation); and
- 12/00227/OUT: South Lawn (SL.60 – Protection and Validation of Remediation).

1.4. Site Description and Location

PDZ2 is an 11.5 hectare triangular parcel of land located in the southern section of the QEOP (the South Park). It lies in an approximately north west to south east orientation and is wholly surrounded by the current QEOP Development with PDZ1 to the east and north, PDZs 3 and 4 to the west and PDZ8 to the south. The zone is delineated by City Mill River, which forms the western boundary, the River Lea adjacent to the northern boundary, the Waterworks River forming the eastern boundary and the southern part of the Site being bounded by railway lines. For Olympic Games construction purposes the Site was split into two Construction Zones (CZs); CZ2a, which forms the larger area in the northern and western sections and CZ2b located in the eastern section. The internal boundary that divided CZ2a and CZ2b was a notional boundary that was not physically present on-site.

The site layout, location and reporting boundary for this PDZ2 (Stage 4) CVR is presented on Figure 1.

For a summary of the wider site context / background of PDZ2, 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 PDZ2, as defined by the remediation designers, are as follows:

Olympic Mode (see Figure 2): The majority of PDZ2 encompassed a Concourse Area with soft and hard landscaping along the boundaries with City Mill River and Waterworks River, whilst a spectator seating area was present in the south eastern section of the Site and the ArcelorMittal Orbit observation tower was present in the western section. The LOCOG works were focused in the southern section of PDZ2 and comprised temporary Sponsor Showcase facilities (McDonalds, various alternative catering outlets and merchandising), hardstanding, temporary welfare facilities and utilities.

Transformation Mode (see Figure 3): The majority of PDZ2 comprises interspersed themed soft landscaping and hardstanding open areas with an area to the south designated as future development plot and the ArcelorMittal Orbit remaining in the western section of the Site. Temporary bridge decks have been removed and the South Park Hub buildings constructed in the eastern central section.

Legacy Mode (see Figure 4): The Legacy design within PDZ2 includes for hard / soft landscape open space areas, including the Olympic Gardens, in the northern section, and mixed residential development, in accordance with the Legacy Communities Scheme (LCS) Planning Application (11/90621/OUTODA) (Ref. 7), in the southern section. The LCS application in PDZ2, to the south of Orbit, includes for predominantly residential use with some retail, leisure and community uses. Non-residential uses are to be integrated within the ground floors of mixed-use buildings on the northern end of the development, opposite the Orbit structure.

1.6. Outstanding / Excluded Works

At the time of writing this report, all Validation Reports, (out of a total of five reports) relating to the Legacy Transformation works in PDZ2, have been submitted to the PPDT for their review and approval. Of these submitted reports a total of three are currently PPDT approved. Any 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, should they be significant. The reports relating to Legacy Transformation works in PDZ2 are as follows:

- Balfour Beatty, F10 Western Bridge Abutment, LLDC Ref. LC403-AQC-ARE-J-REP-0071 (Decision Notice Ref: 13/00452/AOD) **approved**;
- Lagan, F06 Bridge Abutments, LLDC Ref. LC406-HSP-F06-CB-REP-0002 (Decision Notice Ref. 13/00462/AOD) **approved**;
- BAM Nuttall, PDZ2 All Park Validation Report, LLDC Ref. LC402-LCI-SPK-CM-REP-0051 (Decision Notice Ref. 13/00600/AOD) ***submitted***;
- ISG, South Park Hub Validation Report LLDC Ref. LC405-HSP-SPK-T-MST-0002, C01 (Decision Notice Ref. 14/00077/AOD) **approved**; and
- Skanska, Validation Report for Legacy Transformation Works in Planning Delivery Zone 2, 4 (for Bridge F06 only), and 1 (for Bridge F10B only). Report Ref. LC404-HSP-SPK-W-REP-0005 (Decision Notice Ref. ***submitted***).

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 3.1.1.3).

- **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 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 Final Finished Level (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 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 Enabling Works Formation Level (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 Legacy Transformation Phase and continuing throughout the future period of use and occupation of the Legacy development. Includes development of the Legacy Communities Scheme (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 Olympic 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 Construction Zone below).

- **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 sub-zone (see SSAC and SSRT below).

- **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 (December, 2014).

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 temporary bridge decks, minor utility works, construction of the South Park Hub buildings and completion of hard and soft landscaping to Legacy Transformation 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 is 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 Global Remediation Strategy (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 Intrusive Investigation Method Statement (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 PDZ2 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 PDZ2 CSM identified several human health critical receptors associated with the Olympic Park and Legacy end uses. In the context of the overall works these human health receptors comprised adult athletes, workers, officials and visitors of all ages during the Olympic Mode, and residents, workers / office staff and visitors in Legacy Mode.

The two key controlled waters receptors were considered to be the City Mills River to the west of the Site and the Waterworks River to the east (and to a lesser extent the River Lea to the north of the Site). In addition, perched water, a potential contamination source, was identified across the Site above the Alluvium with shallow groundwater present within the River Terrace Deposits (RTD) and deeper groundwater in the Lambeth Group, the Thanet Sands Formation and the Upper Chalk. In the context of the Site and following agreement with the Environment Agency, the groundwater within the RTD and Lambeth Group are not considered to be sensitive receptors on the basis that they have little resource potential and rather constitute potential pathways for contamination migration. The Thanet Sands Secondary Aquifer (previously Minor Aquifer) is in continuity with the Upper Chalk Principal Aquifer (previously Major Aquifer) which is considered the more sensitive receptor. The Upper Chalk is provided protection by a substantial thickness of low permeability soil in the upper overlying Lambeth Group, which acts as an aquitard to downward contaminant migration. On this basis, the Upper Chalk Principal Aquifer is not considered to be a critical receptor within PDZ2.

Following on from this, the ODA issued a series of RMSs that set out how the remedial design will be implemented and subsequently validated to achieve discharge of the prevailing Planning Conditions (Ref. 3).

The Detailed Quantitative Risk Assessment (DQRA) process identified unacceptable risks to both human health and controlled waters receptors across PDZ2 that required excavation, treatment and / or further investigation / delineation. These unacceptable risks were addressed as part of the earthworks and remediation works carried out by the ODA and 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 provides 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 PDZ2 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 further assess 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 PDZ2

Contractor	Task	Description	Scope of Key Earthworks	Final Surface / Works to be Completed
BAM Nuttall South Park	Removal of Bridge F08; Underpass U07 Sludge Mains; Reporting on LOCOG Bump Out and Readily Connectables removal	Temporary Footbridge F08 between PDZ2 and PDZ3 Underpass U07, in south-western corner of PDZ2 Reporting on LOCOG Bump Out – deconstruction of temporary Games Mode facilities and removal of temporary hardstanding	• Removal of temporary bridge F08. • Removal of temporary structure and reinstatement of sludge main pipes beneath riverside path at underpass U07. • Placement of full cover system, including Marker Layer and HHSL in areas of cut at U07. • Removal and capping of 11No. temporary shallow 'readily connectable' services as part of the LOCOG Bump Out and reinstatement with virgin Type 1 material.	Works complete
Lagan	Bridge F06	'Z' shaped bridge connecting north of PDZ2 with south of PDZ4	• Removal of temporary bridge deck, removal of concrete beams, dismantling of Bowl Infill Retaining Wall (BIRW). • Excavation and disposal of east bowl to an off-site facility as hazardous material. • Construction of gabion whiskers containing recycled crushed concrete to the PDZ2 abutments. • Reshaping of east bowl.	To be completed by others: • Lagan completed works to 700 mm below FFL, placement of Marker Layer and HHSL to be completed by Skanska. • Skanska completed landscaping.
Balfour Beatty	Bridge F10B	Footbridge connecting PDZ1 and PDZ2	• Removal of temporary bridge deck between PDZ1 and 2 • Excavation of ~115 m^3 Type 1 soil and ~250 m^3 virgin 6N material and 2100tonne of 6I for reuse on the QEOP	To be completed by others: • It was not in Balfour Beatty's scope to place Marker Layer or HHSL, as agreed with the LPA. • Skanska placed Marker Layer, HHSL and complete landscaping to FFL.
ISG	South Park Hub and Ancillary Buildings	The buildings will provide permanent facilities for the southern areas of the Queen Elizabeth Olympic Park, including: • The Security check area for the ArcelorMittal Orbit;	• Construction of South Park Hub buildings, utilising driven piles to minimise excavation works and the ground beams and slab designed to be installed above the Marker Layer	To be completed by others: • Skanska completed surrounding landscaping to FFL.

		• The South Park Hub Building, which provides ticketing, restaurant, toilet and office areas; • Four refreshment and concession kiosks located in the southern park areas		
Skanska	South Park Landscaping and F10B Bridge widening	• Bridge connecting PDZ1 and 2 and a variety of landscaping works	• Widening of bridge F10B deck, realignment of stairs and seating in PDZ2 and construction of temporary stairs in PDZ1. • Completion of hard and soft landscaping in the Pleasure Gardens, surrounding ArcelorMittal Orbit and Hub and South Events Lawn to FFL.	Works complete

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 PDZ2 (Refs. 11 to 17). 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 PDZ2 are summarised in Table 2-2 below.

Table 2-2 Legacy Transformation RMS Addenda relevant to PDZ2

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.
BAM Nuttall	Remediation Impact Assessment LC401-LCI-APK-CM-ASS-0002 Rev P03 (Ref. 12)	09/90387/FUMODA (Conditions ULT.17 & ULT.6) Approved 12/00128/AOD 08/9019/FULODA (Conditions FLT.12 & FLT.24) Approved 12/00119/AOD 11/90313/VARODA (Conditions LTD.16 & LTD.1.14) Approved 12/00114/AOD	Identified the potential risks / impacts introduced through the Legacy Transformation works.
BAM Nuttall	Remediation Method Statement LC401-LCI-APK-CM-MST-0003 Rev P03 (Ref. 13)	09/90387/FUMODA (Conditions ULT.17 & ULT.6) Approved 12/00128/AOD 08/9019/FULODA (Conditions FLT.12 & FLT.24) Approved 12/00119/AOD 09/90296/FULODA (Condition LLT.25)	Details the methodologies required to protect the remediation already undertaken by the ODA and LOCOG projects and to verify the Transformation works undertaken by Nuttall at the QEOP.

Contractor	Document Title and Reference	Planning Application and Status	Rationale
		Approved 12/00070/AOD 11/90313/VARODA (Conditions LTD.16 & LTD.1.14) Approved 12/00114/AOD	
Skanska	Remediation Method Statement Addendum - South Park Hub South Park Landscaping LC404-HSP-SPK-W-RMS-0001 Rev P03 (Ref. 14)	12/00064/FUM (Condition SPH.58, SPH.59, SL.58, SL.59) Approved 13/00138/AOD	Details Skanska's methodologies to protect the ODA Enabling Works and FoP remedial works, where Skanska's works extend beyond the Enabling Works sub-grade level and for materials reuse, within the South Park Plaza Landscaping and the South Events Lawn.
Skanska	Remediation Method Statement Addendum – Bridge F10B Widening LC404-HSP-SPK-W-RMS-0002 Rev P01. (Ref. 15)	***12/00178/FUL (Condition 9) Awaiting PPDT Approval 14/00280/AOD***	Details Skanska's methodologies to protect the ODA Enabling Works and FoP remedial works and for importation of fill and material reuse, for Skanska's Bridge F10B widening works in PDZ1 & 2.
ISG	South Park Hub Remediation Method Statement LC405-HSP-SPK-T-MST-0001 Rev C01 (Ref. 16)	12/00064/FUM (Conditions SPH.56, SPH.58, SPH.59) Approved 13/00162/AOD	Details ISG's activities that have potential to compromise the integrity of the existing remediation work completed to date, along with proposals to mitigate against such risks, including; the need for a Piling Risk Assessment; reinstatement of the Marker Layer at the appropriate depth and subsequent in-filling with SSRS compliant material, e.g. over permanent service runs. Includes for raising of the Marker Layer to the base of the blinding layer beneath the building slab in accordance with the LPA previously agreed RMS Hardstanding Addendum (Ref. 17) by substituting the HHSL with the concrete floor base and gas protection membrane of the floor slab.
Lagan Construction Limited (LCL)	Central Park Bridge F06, Addendum to Ground Contamination Remediation Method Statements Construction Zones 2a and 4, 7075-SBH-F06-W-ADD-0001 (Ref. 18)	08/90319/FULODA (Condition FOD.26) Approved 10/90491/AODODA	The Site levels are to be raised from the handover levels during the course of LCL's works. No Marker Layer was placed by ODA / LOCOG. Marker Layer and overlying HHSL will be installed as part of LCL's works in certain areas. Sub-grade verification is not required for LCL's works; verification of all unbound fill materials placed will be undertaken by sampling materials *in situ*, post-placement.

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. 17). 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 PDZ2 an RMS addendum to reduce the thickness of the HHSL was submitted by ISG for the areas of permanent concourse beneath the South Park Hub buildings of PDZ2 (Ref. 16). Similarly, Skanska utilised the Enabling Works RMS addendum in their Bridge F10B works (Ref. 15), where no HHSL or Marker Layer was placed beneath the abutment extensions, and along the Promenade Road, where reduced thickness HHSL was placed, 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 Permissions, 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. 19) 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. 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. Pre-validation Remediation Slot-In Conditions

A number of the LTP works were subject to Slot-In Planning Permissions, 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 PDZ2 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 PDZ2

Slot-In Application and Responsible Party	Pre-validation Slot-In Conditions								Protection and Enhancement of Remediation	Protection and Validation of Remediation
	Piling / Foundation Details	IIMS	SSRS	RMS	IIMS, SSRS, RMS	Remediation Monitoring	Unexpected Contamination	Quality of Imported Fill		
Bridge F10B 12/00178/FUL (Skanska)	8, 23 *Not submitted*	N/A	N/A	N/A	9 *Not submitted*	11 N/A	12 N/A	13 *Not submitted*	N/A	10 *Not submitted*
Bridge F06 08/90319/FULODA (Lagan / BAM Nuttall South Park)	N/A	N/A	N/A	N/A	N/A	FLT.10 N/A	FLT.11 N/A	FLT.12 Approved:	FLT.24 Approved: F06 Validation Report submitted by Lagan under 13/00462/AOD	NA Approved via 13/00462/AOD
Underpasses U03 and U07 09/90387/FUMODA (BAM Nuttall South Park)	N/A	N/A PGT.42	N/A	N/A	N/A	ULT.4 N/A	ULT.5 N/A	ULT.6 Approved:	ULT.17 Approved: ODA/OPLC	N/A PGT.47
South Park Hub 12/00064/FUM (Skanska/ ISG)	SPH.53/SPH.45 Approved: (ISG) 13/00162/AOD 13/00110/AOD Approved: (Skanska) 13/00138/AOD	SPH.56 Approved: (ISG) 13/00162/AOD Approved: (Skanska) 13/00138/AOD	SPH.57 Approved: (ISG) 13/00162/AOD Approved: (Skanska) 13/00138/AOD	SPH.58 Approved: (ISG) 13/00162/AOD Approved: (Skanska) 13/00138/AOD	SPH.59 Approved: (ISG) 13/00162/AOD Approved: (Skanska) 13/00138/AOD	SPH.62 N/A	SPH.63 N/A	SPH.64 *Not submitted*	SPH.60 Approved: (ISG) 13/00162/AOD Approved: (Skanska) 13/00138/AOD	SPH.61 *Not Submitted:* (ISG) 13/00162/AOD *Not Submitted:* (Skanska) 13/00138/AOD
South Park Landscaping / South Lawn (Skanska) 12/00227/OUT ArcelorMittal Orbit 10/90250/FULODA	SL.45 / SL53 *Not submitted /* Submitted 02/04/13 AOL.24 *Not submitted*	SL.56 Approved: 13/00138/AOD	SL.57 Approved: 13/00138/AOD	SL.58 Approved: 13/00138/AOD	SL.59 Approved: 13/00138/AOD	SL.61 N/A AOL.11 N/A	SL.62 N/A AOL.12 N/A	SL.63 *Not submitted* AOL.13 *Not submitted*	AOL.35 Approved: for Skanska via 13/00138/AOD	SL60 Approved: 13/00138/AOD N/A Approved via 13/00138/AOD

3. Implementation

3.1. Summary of Legacy Transformation Works

The following sections summarise the key construction earthworks completed during the LTP within PDZ2 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.

3.1.1.1. F10B Western Bridge Abutment

The temporary deck of the F10B Western Bridge was removed between PDZ1 and PDZ2 by Balfour Beatty (Ref. 20). Works completed by Balfour Beatty within PDZ2 included; the removal of temporary bridge deck; excavation of approximately 115 m^3 Type 1 soil, approximately 250 m^3 virgin 6N material and approximately 2100 tonne of 6I material for reuse on the QEOP. No additional chemical sampling / testing was undertaken by Balfour Beatty as no works were carried out below the Marker Layer and no additional material was placed at the F10B site. Additionally, Balfour Beatty did not place Marker Layer or HHSL within their F10B site, as all landscaping works were completed by Skanska (refer to Section 3.1.1.6).

3.1.1.2. F06 Eastern Bridge Abutment

Lagan completed the works for Bridge F06 (Ref. 21) to remove the Games Mode temporary bridge deck and re-profiling of the earthwork bowl features either side of Carpenters Lock. The western abutment of F06 falls within PDZ4, while the eastern side falls within PDZ2. Within PDZ2 the works included; removal of temporary bridge decking and associated infrastructure; excavation and profiling of the east bowl and dismantling of the Bowl Infill Retaining Wall (BIRW); and construction of gabion whiskers to the PDZ2 abutments. Excess excavated materials were classified as hazardous waste material and disposed off-site. Excavation works did not extend beyond the Enabling Works sub-grade level and as a result all excavation and construction works used previously validated materials. As such no additional chemical sampling / testing was undertaken by Lagan, other than the classification and disposal of excavated materials. Lagan's works were completed to 700 mm below FFL, Lagan did not place Marker Layer or HHSL within their F06 site, this was completed by Skanska (refer to Section 3.1.1.6).

3.1.1.3. Underpass U07, Bridge F08, LOCOG Readily Connectables

BAM Nuttall (Ref. 22) carried out a variety of LTP works across PDZ2. These included deconstruction of Bridge F08, the reinstatement of sludge main pipes beneath the riverside path following removal of the temporary structure for the City Mill River Walkway at underpass U07 and reporting on the removal and capping of 11 temporary shallow 'readily connectable' services, installed by LOCOG and reinstatement with virgin Type 1. These LOCOG Bump Out / Reinstatement works are discussed further in Section 3.1.1.4. No verification sampling was required on the limited intrusive works as part of the BAM Nuttall scope of works in PDZ2. No intrusive excavation works were undertaken as part of the Bridge F08 works. The location of the Thames Water sludge mains that were replaced in the south west corner of PDZ2 (at Underpass U07) did not originally include a Marker Layer, however, during the works BAM Nuttall lined the service trench with a Marker Layer at 1265 mm below ground level and below the steps up to within 500 mm of the surface at the trench edges. Service trench excavations were backfilled with imported pea shingle that did not require validation in accordance with the Quality of Imported Fill framework (Ref. 8).

3.1.1.4. LOCOG Bump Out / Reinstatement

The LOCOG Bump Out / Reinstatement works comprised the cutting down of piles to Marker Layer, removal of concrete bases (where necessary) and the removal and capping of 11 temporary shallow 'readily connectable' services, installed by LOCOG and reinstatement with virgin Type 1. As per LOCOG's PPDT approved QoIF Application (Ref. 23), the existing HHSL was reused in these discrete areas as backfill and in instances where there was a requirement for additional material to bring the levels up to existing ground level, virgin-sourced material was imported. Given the discrete nature of the works and use of excavated material as backfill, no chemical testing was deemed necessary. The field record and material conveyance notes for the Bump Out / Reinstatement works, along with the QoIF Application are included in Appendix D.

3.1.1.5. South Park Hub

The South Park Hub, constructed by ISG (Ref. 24) includes the South Park Hub Building, an approximately 1,300 m^2 two storey building which consists of retail shops, ticket sales box office and café. Design aspects include pre-cast piled foundations, a gas membrane, timber structural frame, timber and steel cladding and a green roof. The Ancillary buildings comprise four separate food and beverage kiosks and the Security Check Building. These consist of single storey structures with concrete raft slabs and timber and aluminium panel cladding. The buildings were designed to minimise the impact upon the existing ground conditions. Driven piles were used to minimise excavation works and the ground beams and slabs were designed to be installed above the Marker Layer. The gas protection measures beneath the building slabs include a Visqueen GX Geomaster gas membrane installed to the underside of all the reinforced concrete raft slabs. A 150 mm deep Cordek Ventform gas venting layer was also installed underneath the gas membrane and has been connected to a network of 100 mm diameter gas vent pipes. These vent pipes discharge to atmosphere adjacent to the buildings. Internal finishes to all buildings were completed by other Contractors, and all hard and soft landscaping works external to the buildings were completed to FFL by Skanska, refer to Section 3.1.1.6. Some of the related drainage was installed below the Marker Layer, however excavations did not extend below the Enabling Works sub-grade levels. Above Marker Layer material was segregated and stockpiled, while below Marker Layer material was tested and exported off-site for disposal. New Marker Layer was placed at the base of all drainage excavations and then backfilled with imported virgin shingle as pipe bedding followed by replacement of the existing HHSL.

3.1.1.6. South Park Landscaping & Bridge F10B Widening

The South Park Landscaping works were completed by Skanska (Ref. 25). Skanska completed hard and soft landscaping in the Pleasure Gardens, Orbit and Hub and South Events Lawn to FFL and carried out widening of bridge F10B deck, realignment of stairs and seating in PDZ2 and construction of temporary stairs in PDZ1. Imported soils were used at the new soft landscape areas at Bridge F06, within the Pleasure Gardens, Orbit & Hub and South Events Lawn, and the tree pits along the Promenade Road. In addition to this, sands and gravels for pipe bedding and surround were imported for drainage and ducting works. Earthworks below Marker Layer were generally limited to the building up of the ground levels for construction of the mound soft landscape area north of the Orbit and construction of foul and surface water drainage.

Skanska did not carry out any works below the ODA Enabling Works sub-grade levels. A Marker Layer was placed between all HHSL materials and underlying general backfill materials / existing materials, at depths ranging between 400 and 1200 mm below FFL. As shown on Figure 8, Skanska placed less than 600 mm thickness of HHSL at the landscaped mound, to the north of Orbit, and at the Special Events Lawn, to the south of Orbit. In these areas, however, Skanska placed Marker Layer and 500 mm HHSL directly over the existing ODA FoP placed Marker Layer and HHSL material, resulting in a minimum of 800 mm human health compliant material exists above the ODA FoP placed Marker Layer. Hardstanding as a substitute to the HHSL and Marker Layer was utilised beneath the abutments for Bridge F10B and the Promenade Road. Materials placed by Skanska have been demonstrated, through validation, not to place unacceptable risks to human health or controlled waters.

New sprouts of Japanese knotweed were identified during works at Bridge F06. Skanska notified the wider QEOP specialist invasive species contractor (Home Grown Timber) for removal / treatment.

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 PDZ2 (Ref. 6) and summarises the works undertaken by the LTP Contractors to address these actions, where relevant.

Table 3-1 Residual Remedial Actions for PDZ2

No. (from Table 4.1 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	Future land owners should note that the Southern Plume groundwater monitoring across the southern part of the Olympic Park shall continue for a period of approximately 12 months as soon as reasonably practicable post Games. The groundwater monitoring results and any associated additional remedial actions required by the Regulator / PPDT approval to fully discharge Condition 35 of 07/90011/FUMODA (Olympic, Paralympic and Legacy Transformation Planning Applications: Site Preparation Planning Application) will be defined and actioned accordingly.	Future land owners / developers – London Legacy Development Corporation (LLDC)	N/A – the additional 12 month's monitoring of the Southern Plume is now complete, as per the Groundwater Monitoring Report: Construction Zone 3a Thanet Sand and Chalk Aquifers (Ref. 26) and Banner RTD Southern Plume Study (Ref. 27). Please refer to these reports for details of the works completed and any subsequent monitoring requirements.
3.2	Soil vapour	Future land owners and developers shall be cognisant of the potential below ground contamination in the vicinity of NBHCZ2a-810 (Ref. 2) as part of the design and construction process. It is recommended that a precautionary approach is taken to future works in this section and any re-development within 20 m of borehole location NBHCZ2a-810 should consider the need for additional monitoring and assessment. This would be necessary to evaluate potential risks from vapour inhalation pathways and potential creation of preferential migration pathways to controlled waters from, for example, piling activities and the resultant mitigation measures for the development.	Future land owners and developers / LLDC	No buildings / structures were constructed within 20 m of borehole location NBHCZ2a-810 as part of the LTP of works. The only buildings constructed within PDZ2 were the Hub buildings constructed by, ISG of which the closest is over 150 m from NBHCZ2a-810,. Refer to Section 3.1.1.5 for details.
3.3	Invasive Species Monitoring and Treatment	Ongoing monitoring of invasive species adjacent to the river bank (refer to the Olympic Park Invasive Species plan in Appendix D which highlights these areas).	Future land owners and developers / LLDC	Invasive species were identified by Skanska during their works at Bridge F06. Skanska notified the wider QEOP specialist invasive species contractor (Home Grown Timber) for removal / treatment (Refer to Section 3.1.1.6). No other invasive species were identified within the LTP works within PDZ2.
3.4	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. Future land owners / developers should be cognisant of utilities works below Enabling Works sub-grade completed by McNicholas Utilities. In certain areas the project re-used non validated materials around their utilities. As such below Marker Layer soils around utilities should be treated as potentially contaminated / harmful to health. Health and safety risks to future workers accessing these utilities should be assessed in advance of undertaking works. For details of these works, please refer to the ODA Stage 2 CVR (Ref. 4).	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 utility corridors during the LTP works.
3.5	Placement of Marker Layer and HHSL	Maintain HHSL and installation of Marker Layer during future works and install where omitted by Enabling / FoPs including the eastern bowl of Bridge F06, Bridges F08, F10B and underpass U06 (locations are shown on Figure 5). LTP works associated with removal of bridge structures must also include for the reinstatement of a suitable thickness of HHSL and placement of the Marker Layer.	Those undertaking transformation works and future land owners and developers / LLDC	All works carried out within PDZ2 by LTP Contractors included the placement / replacement of HHSL and Marker Layer, where required. Works carried out as part of the removal of Bridges F06 and F08 included the placement of Marker Layer and HHSL, or the use of hardstanding as a substitute to the HHSL and Marker layer, in the case of Bridge F10B, refer to Section 3.
3.6	Suitable infrastructure design	Future land owners and developers need to consider ground conditions when designing appropriate infrastructure, such as foundations, utilities, etc. 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 PDZ2. 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.
3.7	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. 28). Future land owners and developers need to consider protection of contamination pathways as part of their earthworks design.	Remedial Designers / future land owners and developers / LLDC	No works carried out within PDZ2 by LTP Contractors have extended beyond the Alluvium, with the exception of piling works for Bridge F10B and South Park Hub. The associated Piling Risk Assessments are detailed in Section 3.3.1.
3.8	Ground gas / vapour assessment	Future land owners and developers need to review requirements for ground gas assessment and potential protection measures as part of the design process.	Future land owners and developers / LLDC	ISG placed a gas membrane beneath all buildings constructed as part of the South Park Hub, refer to Section 3.1.1.5 for details. No other buildings / structures were constructed requiring

No. (from Table 4.1 of the Stage 3 CVR)	Title	Description	Responsibility	Action Completed by Legacy Transformation Phase Contractors
				ground gas / vapour assessment as part of the LTP of works.
3.9	Protection of monitoring installations and facilities	Future land owners and developers will be responsible for the protection of any retained monitoring installations and facilities required for ongoing monitoring.	Future land owners and developers / LLDC	LTP Contractors followed PtP protocol 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.
3.10	Completion of unremediated areas & restrictions to remediation	An addendum to the Retained Areas Risk Assessment Report (RARAR) (Ref. 29) has been produced by the remedial designers for details of any areas not remediated as part of the ODA works (Ref. 4). Future developers 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.	Remedial Designers / future land owners and developers / LLDC	No works carried out within PDZ2 by LTP Contractors were completed within RARAR areas, with the exception of a small portion of TPB3 which was removed as part of the F10B Bridge works by Skanska, refer to Figure 10.
3.11	Removal of Olympic Park Fence line (OPF)	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.	Future land owners and developers / LLDC	The OPF within PDZ2 has not been removed during the LTP works, refer to Table 4-1.
3.12	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 PDZ2. For ground gas risk assessment, please refer to Item 3.8 above.
3.13	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. This includes the ODA 'white areas' where the full remedial scope has not been implemented.	Future land owners and developers / LLDC	Not applicable to the LTP Contractors as the proposed land use has not changed. No private gardens or areas for growing edible crops have been constructed.
3.14	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 ODA 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.
3.15	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 CVR (Ref. 6), infrastructure 'bump-out', where necessary, and subsequent LTP stages of the project.	LOCOG, LLDC and future land owners and developers	All LTP Validation Reports for PDZ2 are summarised within this Stage 4 CVR (refer to Section 3 and Appendix A).
3.16	Reinstatement Works	Complete Reinstatement Works.	LOCOG to carry out and LLDC to validate	Reinstatement works completed by BAM, refer to Section 3.1.1.3. See further information regarding the specific LOCOG Bump Out / reinstatement works in Section 3.1.1.3 and Appendix D.

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 PDZ2, they were predominantly limited to the above Marker Layer materials. The only instance where the underlying relatively impermeable Alluvium was penetrated was in the case of the driven piles for the South Park Hub and the Bridge F10B widening. In these instances, where the potential existed for creation of preferential migration pathways to the underlying River Terrace Deposits, the risk was suitably mitigated by the preparation, and subsequent Environment Agency approval, of Piling Risk Assessments for the works (see Table 3-2).

In addition, there are a number of existing boreholes in PDZ2 that currently require decommissioning during the Legacy Transformation phase of works. This is discussed further in Section 4.1

Table 3-2 LTP Piling Environmental Risk Assessments within PDZ2

Task	Document References
ISG South Park Hub	Report Ref. 13-155.01, Rev 02. (Decision Notice Ref. 13/00162/AOD). (Ref. 30)
Bridge F10B	Report Ref. 130815, Rev 1. (Decision Notice Ref. N/A). (Ref. 31)

3.4. Retained Areas Restrictions

There were restrictions to the completion of the ODA Team's remediation works 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. During Skanska's Bridge F10B widening works they removed a small portion of TPB3, overlaying the bridge abutment and utilising hardstanding as a substitute to HHSL and Marker Layer. No other LTP works within PDZ2 have been carried out within these restricted areas. As works extending into TPB3 were minor and only impacted a small portion of this 'low risk' area, 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 PDZ2 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 PDZ2.

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). These works included construction of two temporary holding cells, within PDZ2, for storage of materials classified as 'Exempt'. This material was subsequently removed to licensed off-site facilities and the area subject to a clearance survey which demonstrated concentrations were comparable with background levels.

For the ODA FoP works, the risk associated with encountering radiological materials was considered to be low, based on the extent of the earthworks, in relation to the works completed during the Enabling Works phase. Based on this no further formal radiological assessment was undertaken by the ODA FoPs or LTP

Contractors for their works in PDZ2. It is further noted that where as-dug materials were re-used as general fill within PDZ2 or general fill was re-used from another zone with a known previous radiological land use, that these materials were placed beneath a full thickness HHSL or hardstanding substitute. The full thickness (minimum 600 mm) of HHSL or hardstanding substitute has been shown to provide an effective barrier to underlying materials thus breaking potential pathways to future human health receptors. Within PDZ2 the only areas identified as not having full thickness HHSL or an agreed hardstanding substitute are the two small 'White Areas' in the south eastern section. As per Figures 5 and 8, no further works were carried out in these areas during the LTP and as a result these areas have been subject to placement of between 300 and 600 mm of imported, virgin HHSL, were not subject to excavation, are currently located behind road crash barriers and are not readily accessible by the general public. Future access and use of these areas will need to be considered in terms of potential pathways to underlying existing / unremediated ground and, as such, are identified within item 3.13 of 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

Skanska prepared a Materials Management Plan (MMP) (Ref. 32) for their works, which detailed Skanska's landscaping scope of works across the Site and how excavated material was handled. Re-used materials were validated in accordance with Skanska's RMS documents Ref. 14 and 15,

BAM Nuttall also prepared a MMP which included an earthworks model, stockpile register, materials tracked and the BAM Materials Management Protocol and PtP details.

Approximately 4,000 m^3 of material was disposed off-site as hazardous waste by Lagan as part of their Bridge F06 works (Ref. 21), due to the content of copper, lead and zinc at various concentrations and resulting in H14 (Ecotoxic) properties in accordance with the hazardous Waste Acceptance Criteria. Asbestos was also reported within the excavated material. For further detail refer to Section.3.1.1.2.

It should be noted that neither MMPs nor other Environmental Permits were required for Lagan's or ISG's LTP works.

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 (PPE), 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

The PDZ2 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 PDZ2 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 PDZ2.

4.1. 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, their legal, regulatory and contractual obligations at the time of works.

Table 4-1 Works for Incoming Projects and Restrictions on Future Works in PDZ2

No. (from Table 3.1)	Title	Required Action	Action By
3.2	Soil vapour	Future land owners and developers shall be cognisant of the potential below ground contamination in the vicinity of NBHCZ2a-810 as part of the design and construction process. It is recommended that a precautionary approach is taken to future works in this section and any re-development within 20 m of borehole location NBHCZ2a-810 should consider the need for additional monitoring and assessment. This would be necessary to evaluate potential risks from vapour inhalation pathways and potential creation of preferential migration pathways to controlled waters from, for example, piling activities and the resultant mitigation measures for the development.	Future land owners and developers / LLDC
3.3	Invasive Species Monitoring and Treatment	Ongoing monitoring of invasive species adjacent to the river bank (refer to the Olympic Park Invasive Species plan in Appendix D which highlights these areas).	Future land owners and developers / LLDC
3.4	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 QEOP in to LDP. Future land owners / developers should be cognisant of utilities works below Enabling Works sub-grade completed by McNicholas Utilities. In certain areas the project re-used non validated materials around their utilities. As such below Marker Layer soils around utilities should be treated as potentially contaminated / harmful to health. Health and safety risks to future workers accessing these utilities should be assessed in advance of undertaking works. For details of these works, please refer to the ODA Stage 2 CVR (Ref. 4).	Future land owners and developers / LLDC
3.5	Placement of Marker Layer and HHSL	Maintain HHSL and installation of Marker Layer during future works and install where omitted by ODA / LTP locations are shown on Figures 7 & 8.	Future land owners and developers / LLDC
3.6	Suitable infrastructure design	Future land owners and developers need to consider ground conditions when designing appropriate infrastructure, such as foundations, utilities, etc. 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
3.7	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. 28). Future land owners and developers need to consider protection of contamination pathways as part of their earthworks design.	Remedial Designers / future land owners and developers / LLDC
3.8	Ground gas / vapour assessment	Future land owners and developers need to review requirements for ground gas assessment and potential protection measures as part of the design process.	Future land owners and developers / LLDC
3.9	Protection of monitoring installations and facilities	Future land owners and developers will be responsible for the protection of any retained monitoring installations and facilities required for ongoing monitoring.	Future land owners and developers / LLDC
3.10	Completion of unremediated areas & Restrictions to remediation	An addendum to the RARAR (Ref. 29) produced by the remedial designers for details of any areas not remediated as part of the ODA works (Ref. 4). Future developers 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.	Remedial Designers / future land owners and developers / LLDC
3.11	Removal of OPF	An easement associated with the OPF has meant that remediation and placement of Marker Layer and full HHSL has not been completed by ODA. Should the remaining OPF be removed during future works assessment and corrective actions shall be undertaken to complete the remedial design.	Future land owners and developers / LLDC
3.12	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
3.13	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. This includes the ODA 'white areas' where the full remedial scope has not been implemented.	Future land owners and developers / LLDC
3.14	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 ODA remediation assume that a minimum 600 mm thickness HHSL will be provided.	Future land owners and developers / LLDC
3.15	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.	LLDC and future land owners and developers
3.16	Reinstatement Works	Complete Reinstatement Works.	Works completed during LTP and reported herein.

5. References

1. 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, July 2012 (for the Olympic Delivery Authority). Enabling Works (Stage 1) Consolidated Validation Report, Rev08, Planning Delivery Zone 2. ODA Ref. REP-ATK-PM-ZZZ-ZZZ-ZZZ-E-0193. (Decision Notice Ref. 11/90174/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, October 2012 (for the Olympic Delivery Authority). Olympic Delivery Authority Follow on Project (Stage 2) Consolidated Validation Report – Planning Delivery Zone 2, Rev05. Report Ref. REP-ATK-PM-02Z-ZZZ-ZZZ-Z-0001. (Decision Notice Ref. 12/00034/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 2, Rev01. Report Ref. ATK-WI-O-XX-XX-OPK-REP-XX-0002). (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.
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9. 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*).
12. 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. Skanska, April 2013. Remediation Method Statement Addendum - South Park Hub South Park Landscaping Report Ref. LC404-HSP-SPK-W-RMS-0001 Rev P03. (Decision Notice Ref. 13/00138/AOD).
15. Skanska, March 2014. Remediation Method Statement Addendum – Bridge F10B Widening. Report Ref. LC404-HSP-SPK-W-RMS-0002 Rev P01 (Decision Notice Ref. ***Awaiting PPDT Approval 14/00280/AOD***).
16. ISG, April 2013. South Park Hub Remediation Method Statement. Report Ref. LC405-HSP-SPK-T-MST-0001 Rev C01 (Decision Notice Ref. 13/00162/AOD).
17. Atkins, February 2009. Site Wide RMS Addendum (Use of Hardcover as a Substitute to the Separation Layer). Report Ref. ENW-ATK-LET-00269 (Decision Notice Ref: 08/90292/AODODA)
18. Lagan Construction Limited, October, 2010. Central Park Bridge F06, Addendum to Ground Contamination Remediation Method Statements Construction Zones 2a and 4. Report Ref. 7075-SBH-F06-W-ADD-0001, Rev V2 (Decision Notice Ref. 10/90491/AOD)..
19. 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)
20. Balfour Beatty, August 2013. Validation Report for PDZ2 Sub-area F10 Bridge West Abutment. Report Ref. LC403-AQC-ARE-J-REP-0071, Rev P01 (Decision Notice Ref. 13/00452/AOD).

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22. BAM Nuttall, October, 2013. Validation Report PDZ2 (SC7, SC8, SC9, SC11). Report Ref. LC402-LCI-SPK-CM-REP-0051, Rev P01. (Decision Notice Ref. 13/0060/AOD).
23. 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).
24. ISG, February 2014. Project Specific Validation Report for South Park Hub and Ancillary Buildings in PDZ2. Report Ref. LC405-HSP-SPK-T-MST-0002, C01. (Decision Notice Ref. 14/00077/AOD).
25. Skanska, Validation Report for Legacy Transformation Works in Planning Delivery Zone 2, 4 (for Bridge F06 only), and 1 (for Bridge F10B only). Report Ref. LC404-HSP-SPK-W-REP-0005. (Decision Notice Ref. ***Awaiting PPDT Approval***)).
26. 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***)
27. 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***).
28. Atkins, June 2012. Alluvium Penetration Report for PDZ2. Report Ref. 0241-OPS-SPK-C-REP-0002 Rev P02. (Decision Notice Ref. 12/90156/AOD).
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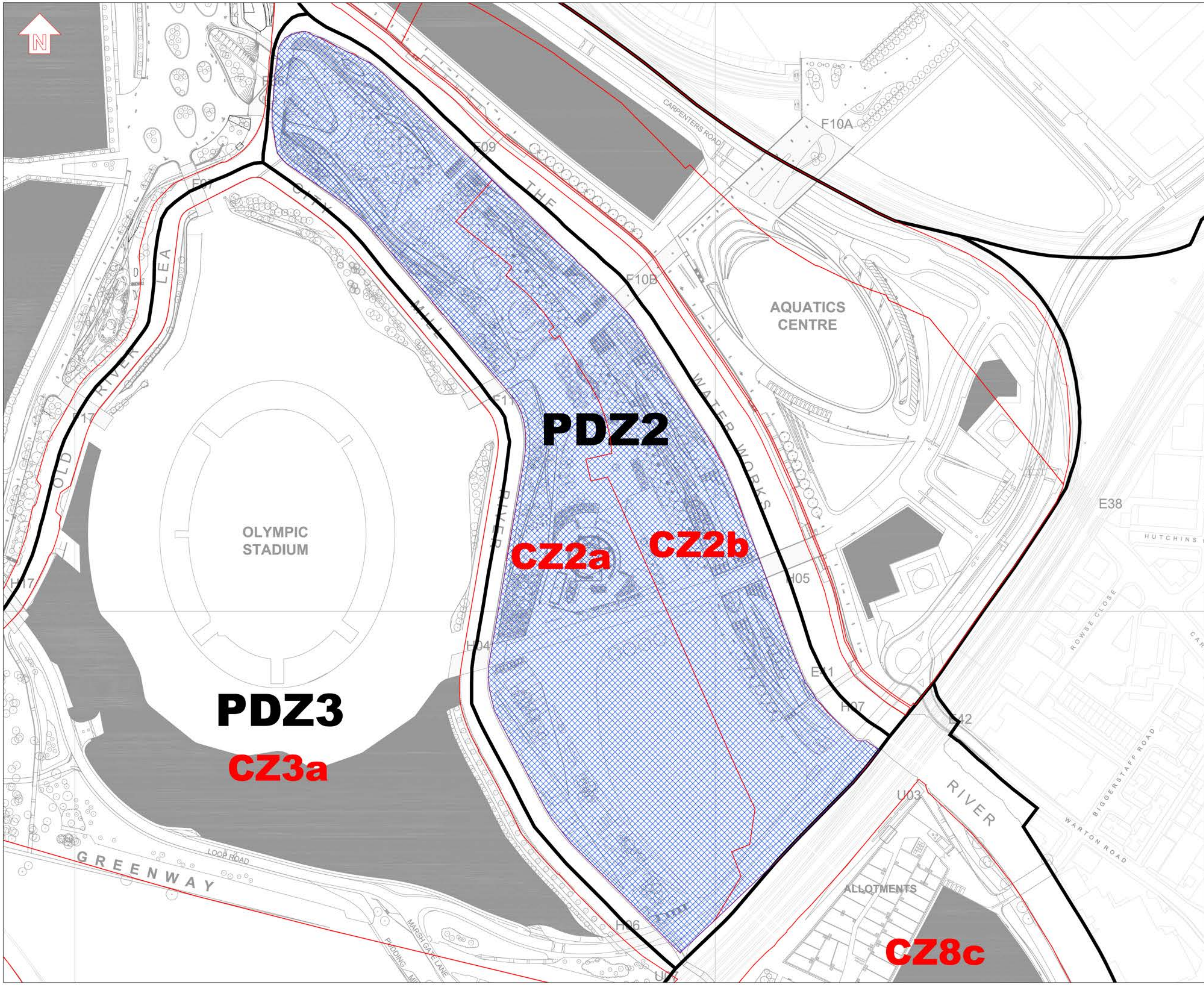
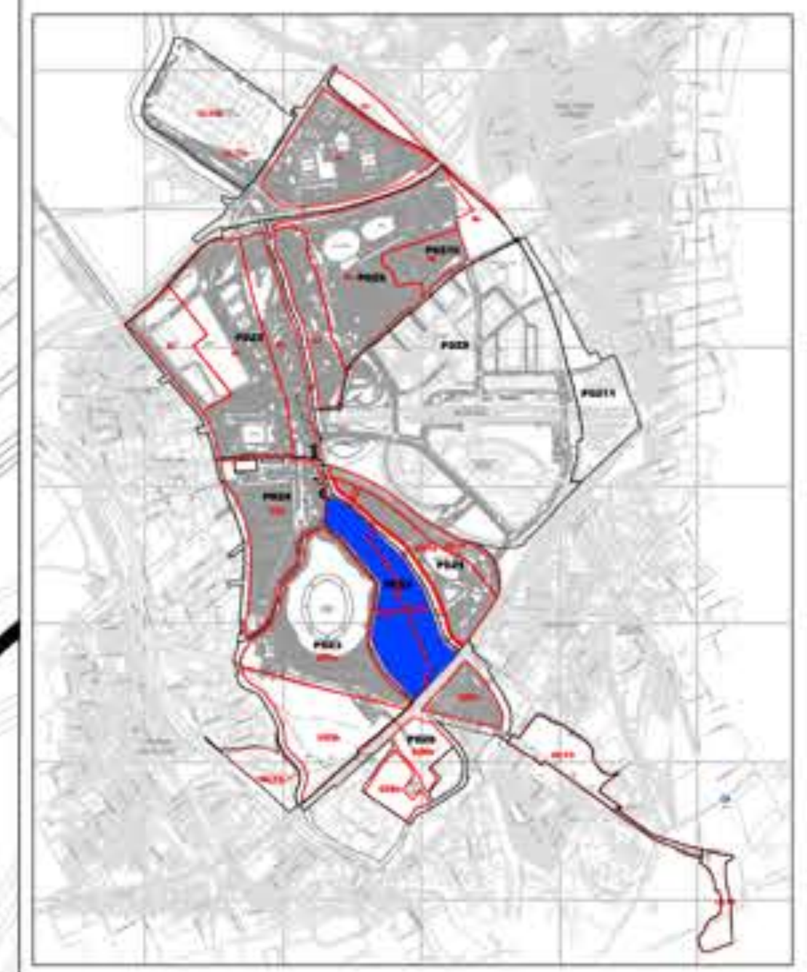
30. Aviron Associates Limited, April 2013 (on behalf of ISG), Environmental Risk Assessment - Foundation & Excavation Details - SPH.53 at South Park Hub, Construction Zone 2a, Olympic Park Stratford. Report Ref. 13-155.01, Rev 02. (Decision Notice Ref. 13/00162/AOD).
31. Martello Piling Ltd, September 2013. Environmental Risk Assessment, Olympic Park Bridge. Report Ref. 130815, Rev 1. (Decision Notice Ref. N/A).
32. Skanska, February, 2014 South Park Materials Management Plan. Report Ref. LC404-HSP-SPK-W-PLN-0003 (Decision Notice Ref. N/A)

Figures



Legend

- Planning Delivery Zone (PDZ) Boundaries
- Construction Zone Boundaries (CZ)
- PDZ 2



Notes:

Post Games Transformation Parkwide Masterplan Drawing No.3322_0078 used as Basemap.

No.	Description	Apvr	N	DD/NN/YY
Rev	Description	Drawn	Chk'd	Date

Safety, Health and Environment Information

In addition to the hazards / risks normally associated with the types of work detailed on this drawing, note the following risks and information:

Construction	Ci. Cii. Ciii.
Dismantling / Demolition (Future) Description	Di. Dii. Diii.

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.

Creator

Prepared by
ATKINS
On behalf of the LLDC

Drawing Title

Location and Boundary of Planning Delivery Zone 2

Project Title

Olympic Park Remediation

Drawn	Checked	Approved
[redacted]	[redacted]	[redacted]

Date	Scale	Size
02/04/2014	1:1250	A1

Purpose of Drawing

FINAL

Drawing No.	Sheet.	Rev.
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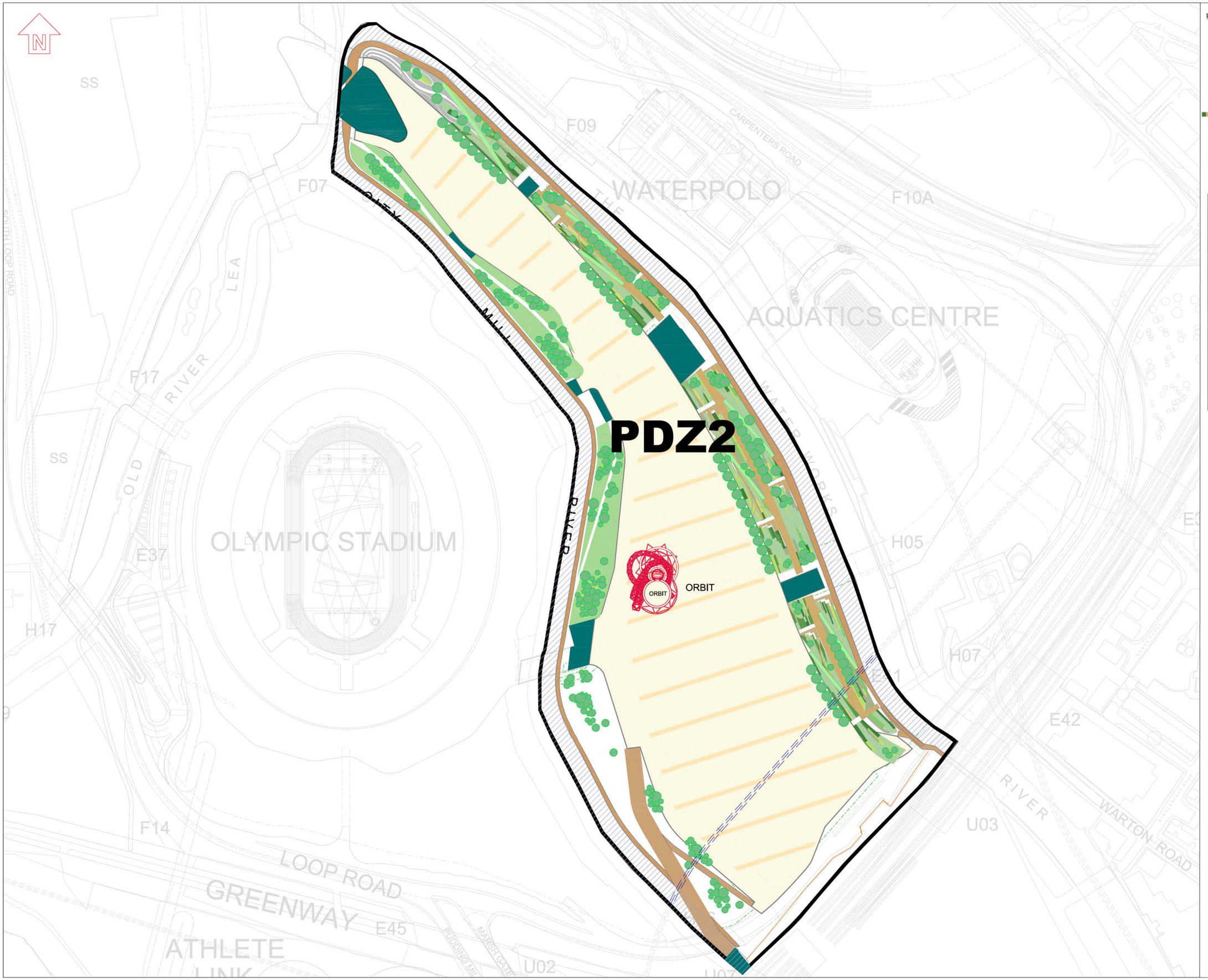
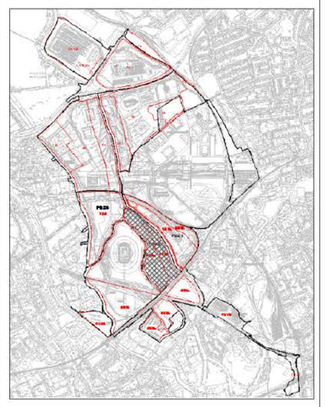


Legend

- PLANNING DELIVERY ZONE (PDZ) BOUNDARY
- SECURITY FENCES
- UTILITY SERVICE CORRIDORS
- RIVER + CANAL (WATERWAYS)
- SPECTATORS AREAS
- TRANSPORT AREAS
- PARKLANDS AND PUBLIC REALM
- NATURE RESERVE
- BRIDGE
- Venue



Notes:
Extract taken from Drawing No: 0239-MPO-URB-T-DSR-5111

No.	Description	Apvr	N	DD/NN/YY
Rev	Description	Drawn	Chk'd	Date

Safety, Health and Environment Information

In addition to the hazards / risks normally associated with the types of work detailed on this drawing, note the following risks and information:

Construction	CI. CII. CIII.
Dismantling / Demolition (Future) Description	DI. DII. DIII.

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.

Creator

Prepared by
ATKINS
On behalf of the LLDC

Drawing Title

Olympic End Use
For Planning Delivery Zone 2

Project Title

Olympic Park Remediation

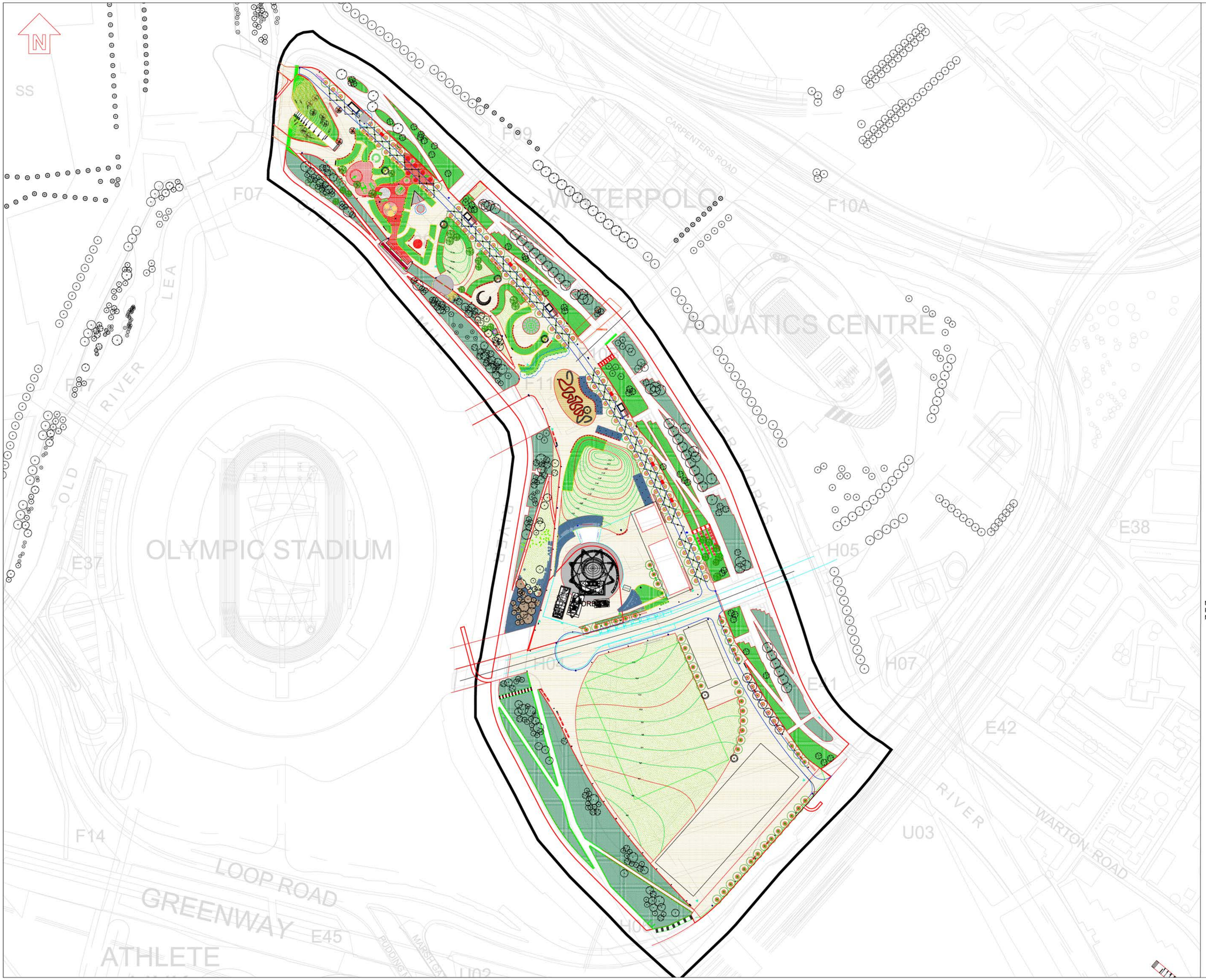
Drawn	Checked	Approved

Date	Scale	Size
22/04/2014	1:1250	A1

Purpose of Drawing

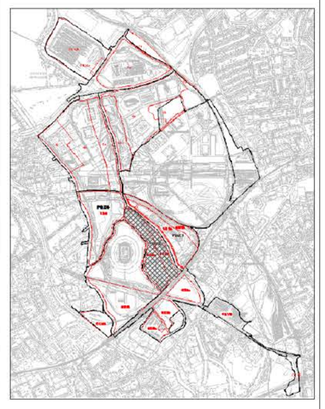
FINAL

Drawing No.	Sheet.	Rev.
FIGURE 2	01	A



LEGEND

- PLANNING DELIVERY ZONE (PDZ2) BOUNDARY
- ASPHALT PAVING - NO SURFACE TREATMENT
- ASPHALT PAVING [SD1] - SURFACE TREATMENT 1
- ASPHALT PAVING [SD2] - SURFACE TREATMENT 2
- RESIN BOUND GRAVEL @ WATER LABYRINTH
- STONE MULCH
- BOUND GRAVEL FINISH [SC5] COLOR A @ TREE PIT
- BOUND GRAVEL FINISH [SC5] COLOR B @ TREE PIT
- BOUND GRAVEL FINISH [SC5] COLOR C
- RUBBER SURFACE
- SAFETY PLAY GRAVEL SURFACE
- SAND
- EXTENT OF "TYPE 2 - PROPOSED TRAFFICKED PAVEMENT" SEE LC205-HSP-SPK-C-DDE-5037
- SPECTATOR LAWN
- GRASSES/PERENNIALS
- TUSSOCKY GRASSLAND
- STONE MULCH UNDER THICKET PLANTING
- SOFT LANDSCAPE IN TRANSFORMATION PROJECT (SEE 9504-LPN-SF4-DGA-1302 [SOUTH PARK LANDSCAPE GA SEEDING AND HERBACEOUS PLANTING])



NOTE:
Post Games Transformation Parkwide Masterplan Drawing No. 3322_0078 used as Basemap.

No.	Description	Apvr	N	DD/NN/YY
Rev	Description	Drawn	Chk'd	Date

Safety, Health and Environment Information

In addition to the hazards / risks normally associated with the types of work detailed on this drawing, note the following risks and information:

Construction	CIL CIL CIIL
Dismantling / Demolition (Future)	DIL DIL DIIL

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.

Creator

Prepared by
ATKINS
On behalf of the LLDC

Drawing Title

Legacy Transformation Phase End Use for Planning Delivery Zone 2

Project Title

Olympic Park Remediation

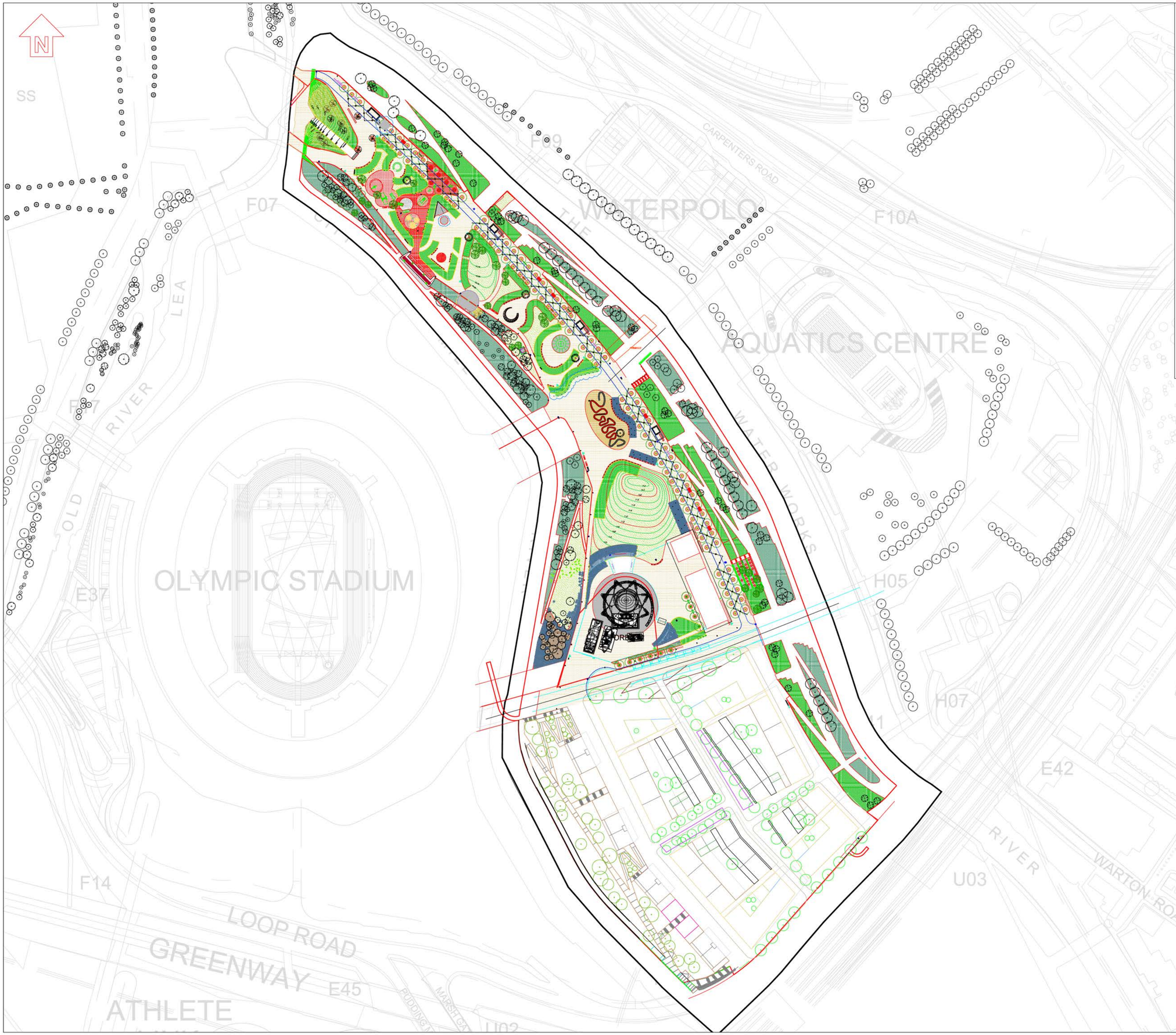
Drawn	Checked	Approved
[redacted]	[redacted]	[redacted]

Date	Scale	Size
22/04/2014	1:1250	A1

Purpose of Drawing

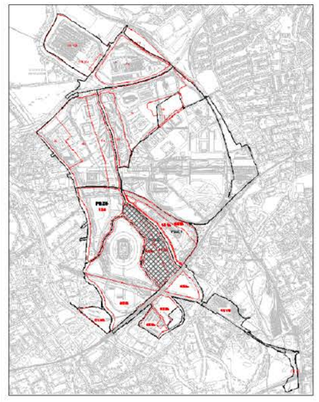
FINAL

Drawing No.	Sheet.	Rev.
FIGURE 3	01	A



Legend

- PLANNING DELIVERY ZONE (PDZ2) BOUNDARY
- RESIDENTIAL BUILT FORM
- ASPHALT PAVING - NO SURFACE TREATMENT
- ASPHALT PAVING [SD1] - SURFACE TREATMENT 1
- ASPHALT PAVING [SD2] - SURFACE TREATMENT 2
- RESIN BOUND GRAVEL @ WATER LABYRINTH
- STONE MULCH
- BOUND GRAVEL FINISH [SC5] COLOR A @ TREE PIT
- BOUND GRAVEL FINISH [SC5] COLOR B @ TREE PIT
- BOUND GRAVEL FINISH [SC5] COLOR C
- RUBBER SURFACE
- SAFETY PLAY GRAVEL SURFACE
- SAND
- EXTENT OF "TYPE 2 - PROPOSED TRAFFICKED PAVEMENT" SEE LC205-HSP-SPK-C-DDE-5037
- SPECTATOR LAWN
- GRASSES/PERENNIALS
- TUSSOCKY GRASSLAND
- STONE MULCH UNDER THICKET PLANTING
- SOFT LANDSCAPE IN TRANSFORMATION PROJECT (SEE 9604-LPR-LSF-L-DGA-1302 [SOUTH PARK LANDSCAPE GA SEEDING AND HERBACEOUS PLANTING])
- Proposed road
- Planting
- Hedge
- Trees park edge
- Residential built form
- Neibourhoold play space
- Path
- Shadow bridge
- Gardens
- Concourse
- Plant bed



Notes:

Post Games Transformation Parkwide Masterplan Drawing No.3322_0078 used as Basemap along side with an overlay of Drawing No.LCS-DWG-ILL-MAS-XXX-GLB-001_Rev5.3

No.	Description	Apvr	N	DD/NN/YY
Rev	Description	Drawn	Chk'd	Date

Safety, Health and Environment Information

In addition to the hazards / risks normally associated with the types of work detailed on this drawing, note the following risks and information:

Construction	CiL CiI. CiIL
Dismantling / Demolition (Future)	DiL DiI. DiIL

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.

Creator

Prepared by
ATKINS
On behalf of the LLDC

Drawing Title

Legacy End Use for
Planning Delivery Zone 2

Project Title

Olympic Park Remediation

Drawn	Checked	Approved
[redacted]	[redacted]	[redacted]

Date	Scale	Size
22/04/2014	1:1250	A1

Purpose of Drawing

FINAL

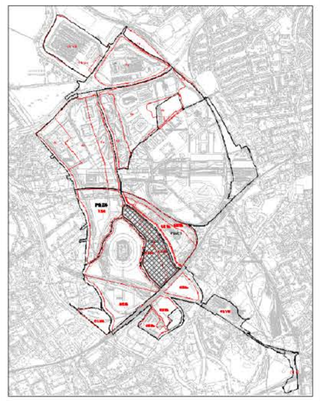
Drawing No.	Sheet.	Rev.
FIGURE 4	01	A

LTP Validation Reports in Planning Delivery Zone 2

Ref	Principal Contractor	Validation Report Title	Validation Report Reference	Decision Notice
1	Balfour Beatty	F10B 'Western Bridge Abutment	LC403-AQC-ARE-J-REP-0071	13/00452/AOD
2	Lagan	F06 Bridge Amendments	LC406-HSP-F06-CB-REP-0002	13/00462/AOD
3	BAM Nuttall	PDZ2 All Park Validation Report	LC402-LCI-SPK-CM-REP-0051	13/00500/AOD
4	ISG	South Park Hub Validation	LC405-HSP-SPK-T-MST-0002	
5	Skanska	South Park Landscaping + F10B Bridge Extension	LC404-HSP-SPK-W-REP-0005	

Legend

- Planning Delivery Zone Boundary
- Construction Zone Boundaries
- Outer Perimeter Fence
- Venue
- South Park Hub
- Landscaping & F10 Bridge
- F06 Bridge
- All Park
- F10 Bridge



Post Games Transformation Parkwide Masterplan Drawing No.3322_0078 used as Basemap.

Notes:

1. Unshaded areas have not been subject to LTP validation.
2 Refer to Figure 10 'retained areas within PDZ2' for further information on these areas.

No.	Description	Apvr	N	DD/NN/YY
Rev	Description	Drawn	Chk'd	Date

Safety, Health and Environment Information

In addition to the hazards / risks normally associated with the types of work detailed on this drawing, note the following risks and information:

Construction	CI. CII. CIII.
Dismantling / Demolition (Future) Description	DI. DII. DIII.

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.

Creator

Prepared by
ATKINS
On behalf of the LLDC

Drawing Title

Spatial Coverage of
Legacy Transformation Phase Validation
Reports Within Planning Delivery Zone 2

Project Title

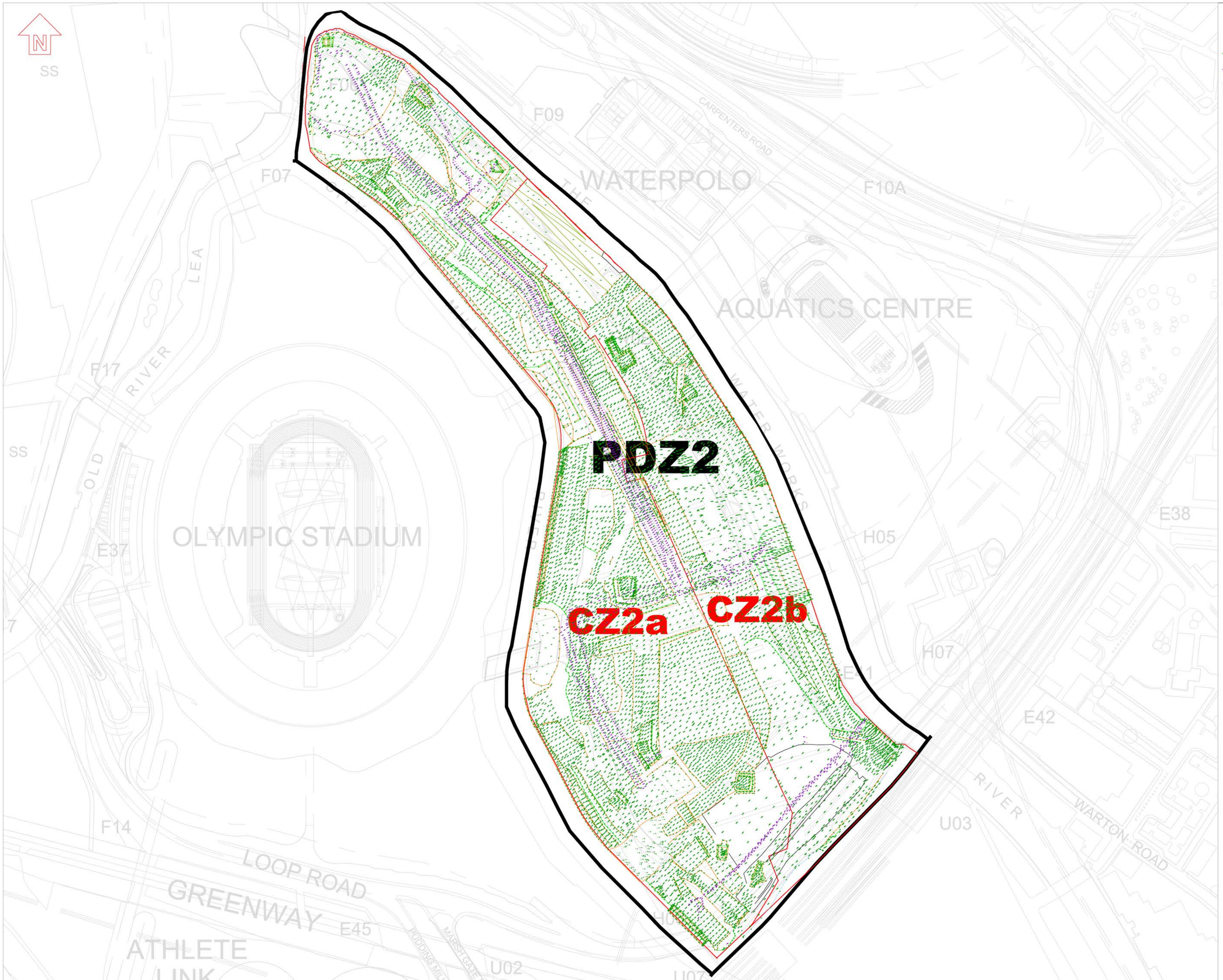
Olympic Park Remediation

Drawn	Checked	Approved
[redacted]	[redacted]	[redacted]

Date	Scale	Size
22/04/2014	1:1250	A1

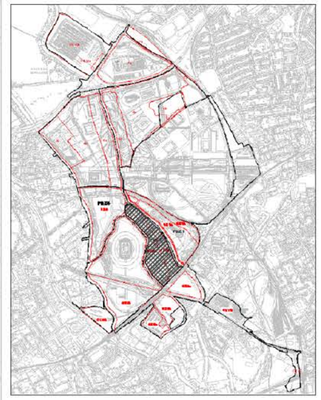
Purpose of Drawing
FINAL

Drawing No.	Sheet.	Rev.
FIGURE 5	01	A



Legend

- Planning Delivery Zone (PDZ2) Boundaries
- Construction Zone Boundaries (CZ)
- +8.935 ODA Enabling works sub grade levels
- +8.935 ODA FoP sub grade levels



Post Games Transformation Parkwide Masterplan Drawing No.3322_0078 used as Basemap.

Note:

1. Further Information on applicable variation for sub-grade levels is available in respective FOP and LTP reports.
2. The LTP contractors did not excavate beyond the ODA Enabling Works or FoP sub-grade levels.
3. Refer to the electronic version of this drawing to view the survey levels.

No.	Description	Aprv	N	DD/NN/YY
Rev	Description	Drawn	Chk'd	Date

Safety, Health and Environment Information

In addition to the hazards / risks normally associated with the types of work detailed on this drawing, note the following risks and information:

Construction	CIL CIIL CIIIL
Dismantling / Demolition (Future) Description	DIL DIIL DIIIL

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.

Creator

Prepared by
ATKINS
On behalf of the LLDC

Drawing Title

Sub-Grade Levels
for Planning Delivery Zone 2

Project Title

Olympic Park Remediation

Drawn	Checked	Approved
[redacted]	[redacted]	[redacted]

Date	Scale	Size
22/04/2014	1:1250	A1

Purpose of Drawing

FINAL

Drawing No.	Sheet.	Rev.
FIGURE 6	01	A

AREAS WHERE MARKER LAYER IS ABSENT IN PLANNING DELIVERY ZONE 2			
Ref	**Area**	**Rationale/Agreement**	**Document Reference no.**
1	No works completed adjacent to the river wall at F06 bowl	Refer to retained area risk assessment report	REP-ATK-CM-ZZZ-OLP-XXX-E-0001 (11/90102/AODODA)
2	Boundary with Network Rail bridge	Refer to Enabling retained area risk assessment report and addendum (ref. 0241-ENW-PWD-CM-REP-0001)	REP-ATK-CM-ZZZ-OLP-XXX-E-0001 (11/90102/AODODA)
3	No works completed, easement/ Network Rail third party boundary and fenceline	Refer to retained area risk assessment report	REP-ATK-CM-ZZZ-OLP-XXX-E-0001 (11/90102/AODODA)
4	No marker layer placed within Orbit construction area	Agreed in Orbit RMS and SSRS	RMS and SSRS (10/90250/FULODA)

1

2

3

4

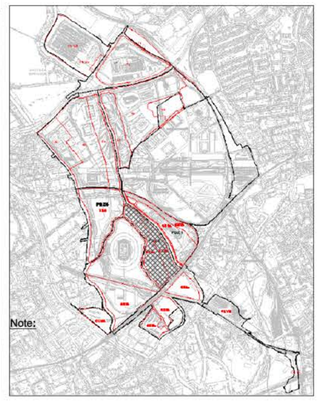
cz2b

cz2a

PDZ2

Legend

- Planning Delivery Zone Boundary
- Construction Zone Boundaries (CZ)
- Marker Layer Placed or Replaced by Follow On Contractors
- Marker Layer placed by Enabling Works
- Marker Layer placed or replaced by Legacy Transformation Phase Contractors
- Marker Layer Absent



Note:

Notes:

Extract taken from Drawing Ref: 0241-ENW-PWD-C-DGA-0206

No.	Description	Apvr	N	DD/NN/YY
Rev	Description	Drawn	Chk'd	Date

Safety, Health and Environment Information

In addition to the hazards / risks normally associated with the types of work detailed on this drawing, note the following risks and information:

Construction	CiL CiL CiIL
Dismantling / Demolition (Future) Description	DiL DiL DiIL

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.

Creator

Prepared by
ATKINS
On behalf of the LLDC

Drawing Title

Extent of Marker Layer within Planning Delivery Zone 2

Project Title

Olympic Park Remediation

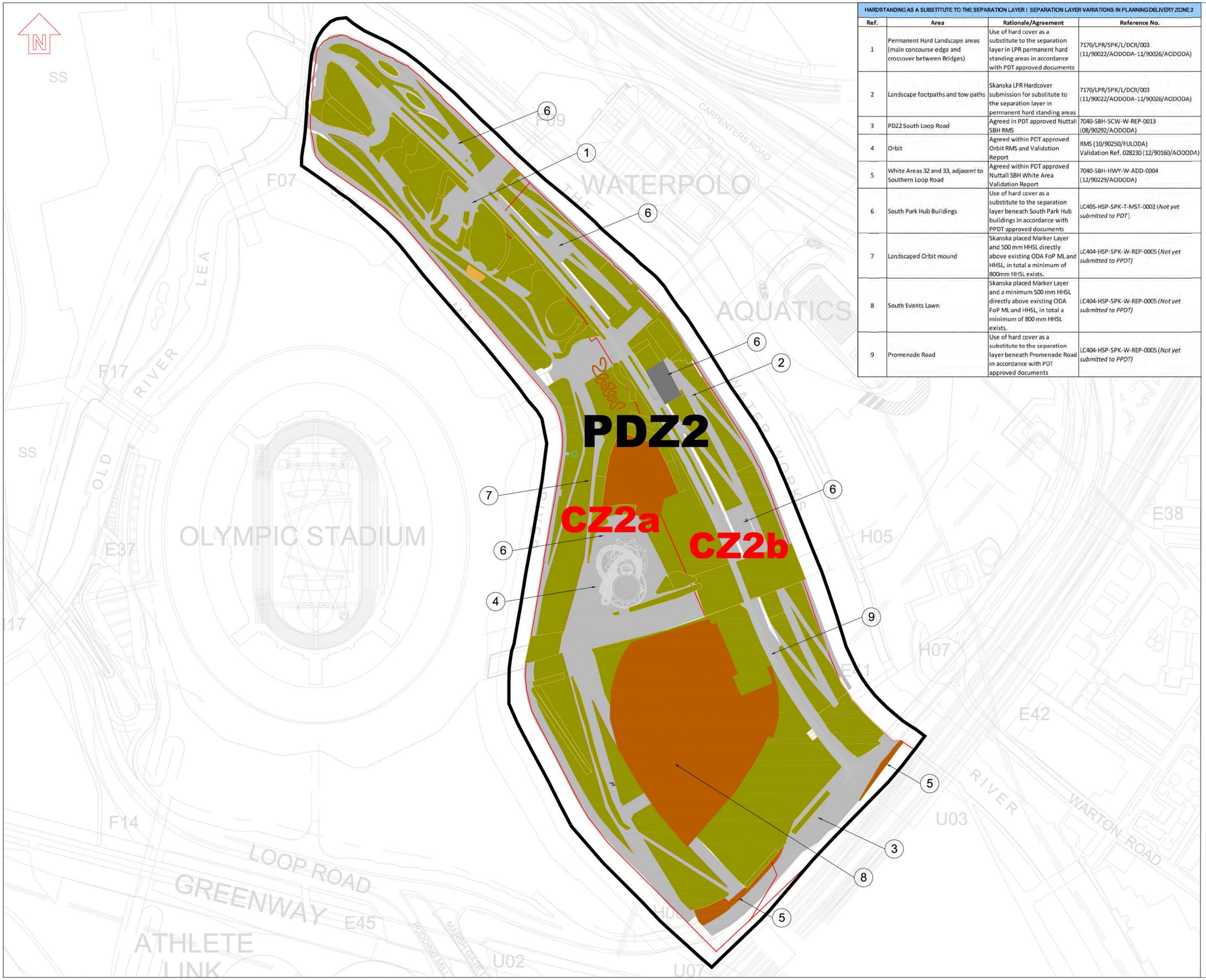
Drawn	Checked	Approved
[redacted]	[redacted]	[redacted]

Date	Scale	Size
22/04/2014	1:1250	A1

Purpose of Drawing

FINAL

Drawing No.	Sheet.	Rev.
FIGURE 7	01	A

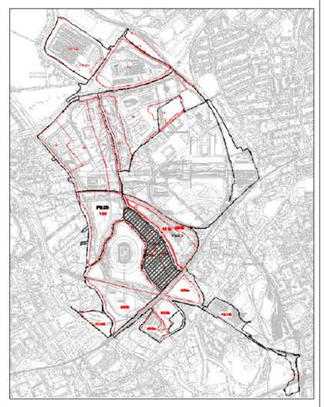


HARDSTANDING AS A SUBSTITUTE TO THE SEPARATION LAYER / SEPARATION LAYER VARIATIONS IN PLANNING DELIVERY ZONE 2

Ref.	Area	Rationale/Agreement	Reference No.
1	Permanent Hard Landscape areas (main concourse edge and crossover between Bridges)	Use of hard cover as a substitute to the separation layer in LPR permanent hard standing areas in accordance with PDT approved documents	7170/LPR/SPK/L/DCR/003 (11/90022/AODODA-11/90026/AODODA)
2	Landscape footpaths and tow paths	Skanska LPR Hardcover submission for substitute to the separation layer in permanent hard standing areas	7170/LPR/SPK/L/DCR/003 (11/90022/AODODA-11/90026/AODODA)
3	PD22 South Loop Road	Agreed in PDT approved Nuttall SBH RMS	7040-SBH-SCW-W-REP-0013 (08/90292/AODODA)
4	Orbit	Agreed within PDT approved Orbit RMS and Validation Report	RMS (10/90250/FULODA) Validation Ref. 028230 (12/90160/AODODA)
5	White Areas 32 and 33, adjacent to Southern Loop Road	Agreed within PDT approved Nuttall SBH White Area Validation Report	7040-SBH-HWY-W-ADD-0004 (12/90229/AODODA)
6	South Park Hub Buildings	Use of hard cover as a substitute to the separation layer beneath South Park Hub buildings in accordance with PPDT approved documents	LC405-HSP-SPK-T-MST-0002 (*Not yet submitted to PDT*)
7	Landscaped Orbit mound	Skanska placed Marker Layer and 500 mm HHSL directly above existing ODA FoP ML and HHSL, in total a minimum of 800mm HHSL exists.	LC404-HSP-SPK-W-REP-0005 (*Not yet submitted to PPDT)*
8	South Events Lawn	Skanska placed Marker Layer and a minimum 500 mm HHSL directly above existing ODA FoP ML and HHSL, in total a minimum of 800 mm HHSL exists.	LC404-HSP-SPK-W-REP-0005 (*Not yet submitted to PPDT)*
9	Promenade Road	Use of hard cover as a substitute to the separation layer beneath Promenade Road in accordance with PDT approved documents	LC404-HSP-SPK-W-REP-0005 (*Not yet submitted to PPDT)*

Legend

- Planning Delivery Zone Boundary
- Construction Zone Boundaries (CZ)
- 0 - 299mm thickness of HHSL
- 300 - 599mm thickness of HHSL
- 600+mm thickness of HHSL
- Hardstanding as a substitute to separation layer (refer to table for details)



Notes:

Extract taken from Drawing Ref: 0241-ENW-PWD-C-DGA-0207

No.	Description	Apvr	N	DD/NN/YY
Rev	Description	Drawn	Chk'd	Date

Safety, Health and Environment Information

In addition to the hazards / risks normally associated with the types of work detailed on this drawing, note the following risks and information:

Construction	CiL CiL CiIL
Dismantling / Demolition (Future) Description	DiL DiL DiIL

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.

Creator

Prepared by
ATKINS
On behalf of the LLDC

Drawing Title

Extent and Thickness of Human Health Separation Layer Within PDZ2

Project Title

Olympic Park Remediation

Drawn	Checked	Approved

Date	Scale	Size
07/04/2014	1:1250	A1

Purpose of Drawing

FINAL

Drawing No.	Sheet.	Rev.
FIGURE 8	01	A

PDZ2

CZ2a

CZ2b

Legend

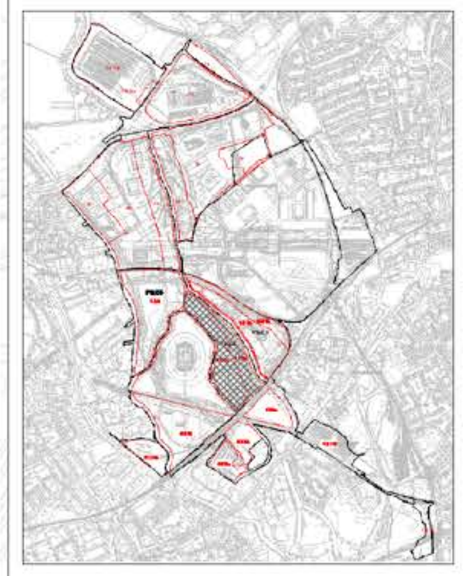
Planning Delivery Zone Boundaries

Construction Zone (PDZ) Boundaries (CZ)

9.0m Topographic Scenario 13C contours

10.453 FOP Spot Heights

10.200 LTP Spot Heights



Post Games Transformation Parkwide Masterplan Drawing No.3322_0078 used as Basemap.

1. Final Finished Levels based on Scenario 13C with applicable variation in respective FOP and LTP reports.
2. LTP spot heights taken from South Park Plaza level plan Drawing No: LC404-HSP-SPK-X-DGA-1000-124 to 125 and QEOP-PH-BP.
3. Please refer to electronic version to view the spot height levels.

No.	Description	Aprv	N	DD/NN/YY
Rev	Description	Drawn	Chk'd	Date

Safety, Health and Environment Information

In addition to the hazards / risks normally associated with the types of work detailed on this drawing, note the following risks and information:

Construction	CI. CII. CIII.
Dismantling / Demolition (Future) Description	DI. DII. DIII.

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.

Creator

Prepared by
ATKINS
On behalf of the LLDC

Drawing Title

Final Finished Levels
for Planning Delivery Zone 2

Project Title

Olympic Park Remediation

Drawn	Checked	Approved
[redacted]	[redacted]	[redacted]

Date	Scale	Size
22/04/2014	1:1250	A1

Purpose of Drawing
FINAL

Drawing No.	Sheet.	Rev.
FIGURE 9	01	A

RR1 (Feature Partially Removed During Enabling Works)

Old Marshgate Lane bridge abutment maintained

TPB3 (Feature Partially Removed)

TPB3

TPB3 (Feature Partially Removed)

TPB2 (Feature Partially Removed)

PDZ2

CZ2a

CZ2b

TPB4 (Feature Partially Removed)

BEZ1 (Feature Partially Removed)

TPB5

TPB5

WATERPOLO

AQUATICS CENTRE

OLYMPIC STADIUM

CARPENTERS ROAD

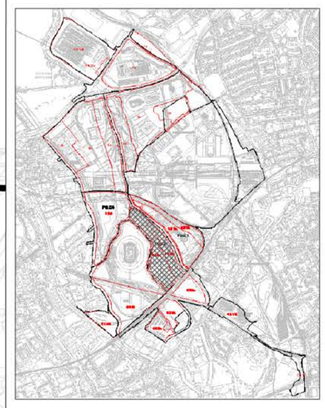
LOOP ROAD

GREENWAY

F06 F07 F08 F09 F10A F10B F11 F17 E37 E41 E42 H04 H05 H06 H07 U03 F14 E45

Legend

- Planning Delivery Zone Boundaries
- Construction Zone (PDZ)Boundaries (CZ)
- Batter Exclusion Zone (BEZ)
- Feature Removed/ Partially Removed During FOP Works
- Third Party Boundary (TPB)
- Retained Road (RR)



Notes:
Extract taken from Drawing No: 0241-ENW-PDW-C-DGA-0209

No.	Description	Aprv	N	DD/NN/YY
Rev	Description	Drawn	Chk'd	Date

Safety, Health and Environment Information

In addition to the hazards / risks normally associated with the types of work detailed on this drawing, note the following risks and information:

Construction	CL CiL CiiL
Dismantling / Demolition (Future) Description	DL DiL DiiL

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.

Creator

Prepared by
ATKINS
On behalf of the LLDC

Drawing Title

Retained Areas Within Planning Delivery Zone 2

Project Title

Olympic Park Remediation

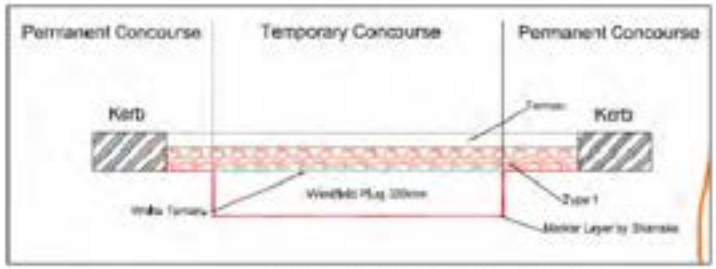
Drawn	Checked	Approved
[redacted]	[redacted]	[redacted]

Date	Scale	Size
09/04/2014	1:1250	A1

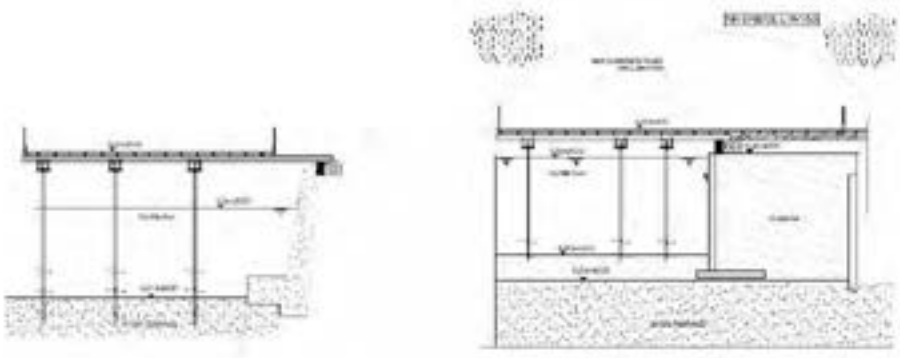
Purpose of Drawing

FINAL

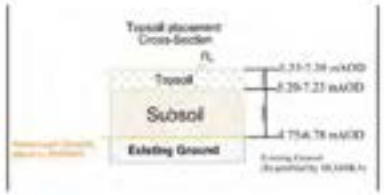
Drawing No.	Sheet.	Rev.
FIGURE 10	01	1



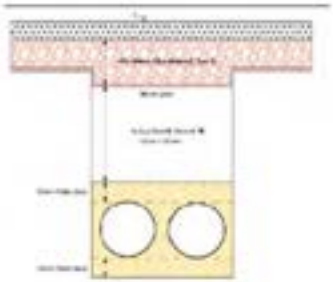
SECTION THROUGH HARD LANDSCAPE
Ref: 7170-LPR-SPK-RSP-0009 (11/90775/AODODA)



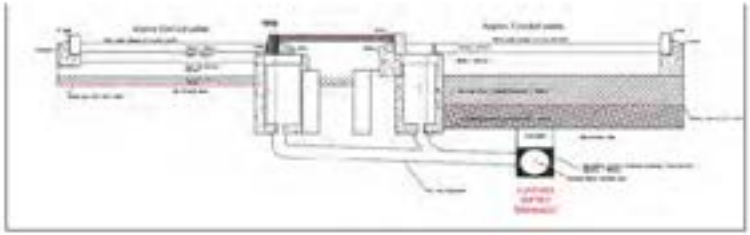
SECTION THROUGH UNDERPASS U07
Ref: 7040-SBH-SPR-W-REP-0042 (12/90043/AODODA)



SECTION THROUGH SOFT LANDSCAPE
Ref: 7170-LPR-SPK-W-REP-0053 (12/90270/AODODA)



SECTION FOR SOFT LANDSCAPE MAIN DUCTING
Ref: 7170-LPR-SPK-REP-0007 (11/90659/AODODA)



SECTION THROUGH SPECTATOR DROP OFF & LOOP ROAD
Ref: 7040-SBH-SCW-W-REP-0013 (10/90394/AODODA)

SECTION THROUGH BRIDGE F06 - SOFT LANDSCAPE
Ref: LC404-HSP-SPK-W-REP-0005

SECTION THROUGH SOUTH PARK
LANDSCAPING TREE PITS

NOTE

Representative sections show 'as constructed' profiles within the RCZ and are taken directly from the referenced approved validation reports.

Prepared by
ATKINS
On behalf of the LLDC

Representative As-built Sections of the Final Remedial Cover System in Planning Delivery Zone 2

Olympic Park Remediation

Date	Scale	Size
22/04/2014	NTS	A3

FINAL

FIGURE 12 | Sheet 01 | Rev. A

Appendices

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 PDZ2. 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 Site Specific Remediation Strategies (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, 08/90219/AODODA, 08/90220/AODODA, 08/90221/AODODA, 08/90222/AODODA 08/90223/AODODA, 08/90281/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-ZZZ-E-0193).

ODA FoP Works Documents

Refer to Appendix B within the FoP (Stage 2) CVR (Ref: REP-ATK-PM-02Z-ZZZ-ZZZ-Z-0001).

LOCOG Works Documents

Refer to Appendix B within the LOCOG (Stage 3) CVR (Ref: ATK-WI-O-XX-XX-OPK-REP-XX-0002).

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 Report 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. Report 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 PDZ2 the main earthworks include, an area of cut on the eastern side of Bridge F06, infilling at an area on the southern side of Bridge F10. Based on the above earthworks, the proposed volumes of cut expected within PDZ2 are approximately 6,300 m^3 and the fill, approximately 1,100 m^3. The bridge deconstruction works in PDZ2 will include deconstruction of the temporary footbridge underneath F06, connecting the northern part of PDZ2 with PDZ4; removal of the temporary elements of Footbridge F09, crossing the Waterworks River between PDZ1 and PDZ2, which will include deconstruction works below ground level; and removal of temporary elements of Bridge F10B, which crosses the Waterworks River connecting the central areas. Break out of sacrificial slab over the structural slab at the new wall and wall/seating units of PDZ1 and PDZ2, will also be carried out at Bridge F10B. Further detail will be provided within the RMS.

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: 12/00128/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 PDZ2 are the dismantling of temporary bridge structures at Bridges F06, F08 and F10B. No specific mitigation measures were identified to be required as part of BAM Nuttall's' works within PDZ2. General mitigation measures in place to ensure the integrity of existing remediation is not compromised include; the Code of Construction Practice (LC001-LTRAPK-K-GUI-0001 Rev P02), PtP Protocol and Materials Management Plans.

Skanska, April 2013. Remediation Method Statement Addendum - South Park Hub South Park Landscaping Report Ref. LC404-HSP-SPK-W-RMS-0001 Rev P03. (Decision Notice Ref: 13/00138/AODODA)

This report details Skanska's methodologies to protect the ODA Enabling Works and FoP remedial works, for Skanska's works at the South Park Plaza Landscaping and the South Events Lawn. Re-used general fill and Human Health Separation Layer material will be subject to SSAC testing on a frequency of one sample per 2,500m^3 placed material. Re-used existing virgin Human Health Separation Layer (HHSL) material will be validated through the use of appropriate field records (including observations and site photographs) and

reference to preceding ODA documents to demonstrate they are from a virgin source. Sub-grade verification sampling is only considered to be required in the following circumstances:

- Where works are undertaken in an area previously undisturbed by Enabling Works.
- Where excavations associated with the works extend to a depth >500mm below the Enabling Works sub-grade level except for linear excavations (e.g. service trenches) where existing adjacent sub-grade validation data for Enabling Works is available.

In Soft Landscaped areas any new Marker Layer will be placed at -600 mm from the FFL, and the remaining area brought up in Human Health compliant material. This new HHSL will be validated as detailed above, and the new Marker Layer that is placed will be recorded using GPS co-ordinates set to the local QEOP Grid and will relate to the FFL to confirm the minimum 600 mm HHSL has been maintained.

Skanska, April 2014. Remediation Method Statement Addendum – Bridge F10B Widening. Report Ref.LC404-HSP-SPKW-RMS-0002, P01. (Decision Notice Ref: *Report not submitted*)

This report details Skanska's methodologies to protect Enabling Works and FoP remedial works, for Skanska's works for the Bridge F10B widening. No sub-grade verification was required because no excavations (except piling) were expected to extend beneath the Enabling Works sub-grade. Where Skanska are instructed to bring the site to FFL the remaining HHSL will be placed. Any proposed deviations to the placement of the Marker Layer and HHSL (e.g. under hard landscaping scenarios) will be discussed with the site wide Remtech support team and agreed with the PPDT. No soft landscaping works will be carried out by Skanska within the Bridge F10B Widening scope of works, these are discussed within Skanska's Landscape & Public realms RMS Addendum. In addition Marker Layer will not be placed in areas of hardstanding, as it is considered that the underside of the hardstanding will effectively represent a substitute to the Marker Layer and HHSL.

ISG, April 2013. South Park Hub Remediation Method Statement. Report Ref. LC405-HSP-SPK-T-MST-0001 Rev C01 (Decision Notice Ref: 13/00162/AODODA)

Details ISG's activities that have potential to compromise the integrity of the existing remediation work completed to date, along with proposals to mitigate against such risks. Mitigation measures proposed include; the need for a Piling Risk Assessment, presented as part of the Foundation and Excavation submission and reinstatement of any breached Marker Layer at the appropriate depth within drainage systems and service connections. Within these excavations, subsequent filling with SSRS compliant material, will also be carried out.

Elevations of the Marker Layer will be raised to the base of the subsequently placed blinding layer beneath the building slabs, in accordance with the PPDT previously agreed RMS Hardstanding Addendum by replacing the HHL with the concrete floor base and gas protection membrane of the floor slab.

A gas protection membrane will be installed by specialist Contractors under each of the building ground slabs, consisting of a gas membrane laid on a 150 mm thick Cordeck Ventform, with above ground venting.

Lagan Construction Limited, October, 2010. Central Park Bridge F06, Addendum to Ground Contamination Remediation Method Statements Construction Zones 2a and 4. Report Ref. 7075-SBH-F06-W-ADD-0001, Rev V2 (Decision Notice Ref: 10/90491/AODODA)

The site levels are to be raised from the handover levels during the course of Lagan Construction Limited's (LCL's) works. No Marker Layer was placed by ODA / LOCOG, as a result Marker Layer and overlying HHSL will be installed as part of the LTP works in certain areas and will be clearly detailed within the applicable Validation Report. In the remaining areas, LCL works will be completed to 700 mm below FFL, and the remaining Marker Layer and HHSL will be placed by Skanska during their Landscaping works.

Sub-grade verification is not considered to be required for LCL's works as no excavations beneath Enabling Works sub-grade levels are to be undertaken by LCL, with the exception of piling and excavation of associated pile caps.

Unbound fill materials are to be imported in accordance with PtP protocols, and verification of all unbound fill materials placed will be undertaken by sampling materials *in-situ*, post-placement. Sampling and testing frequencies for placed fill will be in accordance with the baseline specification for the Olympic Park and site specific remediation strategy (SSRS) requirements for CZ2a and CZ4. Where site derived gabion fill material

is to be used for the gabion reinforcing structures, the approach outlined within the framework agreement for use of site derived gabion fill, as a construction material requiring no verification testing, (Application No. 10/90330/AODODA) will be adopted by LCL.

Validation Reports

Balfour Beatty, August 2013. Validation Report for PDZ2 Sub-area F10 Bridge West Abutment. Report Ref. LC403-AQC-ARE-J-REP-0071, Rev P01 (Decision Notice Ref. 13/00452/AOD)

The temporary deck of the F10 Western Bridge was removed between PDZ1 and PDZ2 by Balfour Beatty (Ref. 20). Works completed by Balfour Beatty within PDZ2 included; the removal of temporary bridge deck; excavation of approximately 115 m^3 Type 1 soil, approximately 250 m^3 virgin 6N material and approximately 2100 tonne of 6I material for reuse on the QEOP. No additional chemical sampling / testing was undertaken by Balfour Beatty as no works were carried out below the Marker Layer and no additional material was placed at the site. Additionally, Balfour Beatty did not placed Marker Layer or HHSL within their F10 site, as all landscaping works are to be completed by Skanska.

Lagan Construction Limited, October 2013. Validation Report F06 Central Park Bridge, East and West Bank. Report Ref. LC406-HSP-F06-CB-REP-0002, C01. (Decision Notice Ref. 13/00462/AOD)

Lagan completed the works for Bridge F06 (Ref. 18) to remove the Games Mode temporary bridge deck and reconstructed the earthwork bowl features either side of Carpenters Lock. The western abutment of F06 falls within PDZ4, while the eastern side falls within PDZ2. Within PDZ2 the works included; removal of temporary bridge decking and associated infrastructure; excavation and profiling of east bowl and dismantling of Bowl Infill Retaining Wall (BIRW); and construction of gabion whiskers to the PDZ2 abutments. Excess excavated materials were classified as hazardous material and disposed off-site. Excavation works did not extend beyond the Enabling Works sub-grade levels and as a result all excavation and construction works used previously validated materials. As a result no additional chemical sampling/testing was undertaken by Lagan, other than the classification and disposal of excavated materials. Lagan's works were completed to 700 mm below FFL, Marker Layer or HHSL have not been placed within their F06 site, this will be completed by Skanska (refer to Section 3.1.1.6).

BAM Nuttall, October, 2013. Validation Report PDZ2 (SC7, SC8, SC9, SC11). Report Ref. LC402-LCI-SPK-CM-REP-0051. (Decision Notice Ref. 13/0060/AOD)

BAM Nuttall (Ref. 22) carried out a variety of transformation phase works across PDZ2. These include deconstruction of Bridge F08, the placement of sludge main pipes beneath the riverside path following removal of the temporary structure for the City Mill River Walkway at underpass U07 and removal and capping of 11 temporary shallow 'readily connectable' services and reinstatement with virgin Type 1. No verification sampling was required on the limited intrusive works as part of the BAM Nuttall scope of works in PDZ2. No intrusive excavation works were undertaken as part of the Bridge F08 works. The location of the Thames Water sludge mains that were replaced in the south west corner of PDZ2 (at Underpass U07) did not originally include a Marker Layer, however, during the works BAM Nuttall lined the service trench with a Marker Layer at 1265 mm below ground level and below the steps up to within 500 mm of the surface at the trench edges. Service trench excavations were backfilled with imported pea shingle that did not require validation. In relation to the readily connectable works, the existing HHSL was reused in these discrete areas as backfill and in instances where there was a requirement for additional material to bring the levels up to existing ground level, virgin-sourced material was imported. Given the discrete nature of the works and use of excavated material as backfill, no chemical testing was deemed necessary.

ISG, February 2014. Project Specific Validation Report for South Park Hub and Ancillary Buildings in PDZ2. Report Ref. LC405-HSP-SPK-T-MST-0002, C01. (Decision Notice Ref. 14/00077/AOD)

The South Park Hub, constructed by ISG (Ref. 24) consists of the South Park Hub Building, approximately 1,300 m^2 two storey building which will consist of retail shops, ticket sales box office and café. Design aspects include pre-cast piled foundation, a gas membrane, timber structural frame, timber and steel cladding and a green roof. The Ancillary buildings comprise of four separate food and beverage kiosks and the Security Check Building. These consist of single storey structures with concrete raft slabs and timber and aluminium panel cladding. The buildings have been designed to minimise the impact upon the existing ground conditions. Driven

piles were used to minimise excavation works and the ground beams and slabs were designed to be installed above the Marker Layer. The gas protection measures beneath the building slabs include a Visqueen GX Geomaster gas membrane installed to the underside of all the reinforced concrete raft slabs. A 150 mm deep Cordek Ventform gas venting layer was also installed underneath the gas membrane and has been connected to a network of 100 mm diameter gas vent pipes. These vent pipes discharge to atmosphere adjacent to the buildings. Internal finishes to all buildings will be done by the other Contractors, and all hard and soft landscaping works external to the buildings will be completed to FFL by Skanska, refer to Section 3.1.1.6. Some of the related drainage was installed below the Marker Layer, however excavations did not extend below the Enabling Works sub-grade levels. Above Marker Layer material was segregated and stockpiled, while below Marker Layer material was tested and exported offsite for disposal. New Marker Layer was placed at the base of all drainage excavations and then backfilled with imported virgin shingle as pipe bedding followed by the existing HHSL.

Skanska, Validation Report for Legacy Transformation Works in Planning Delivery Zone 2, 4 (for Bridge F06 only), and 1 (for Bridge F10B only). Report Ref. LC404-HSP-SPK-W-REP-0005. (Decision Notice Ref. *Awaiting PPDT Approval*)

The South Park Landscaping works were completed by Skanska (Ref. 25). Skanska completed hard and soft landscaping in the Pleasure Gardens, Orbit and Hub and South Events Lawn to FFL and carried out widening of bridge F10B deck, realignment of stairs and seating in PDZ2 and construction of temporary stairs in PDZ1. Imported soils were used at the new soft landscape areas at Bridge F06, within the Pleasure Gardens, Orbit & Hub and South Events Lawn, and the tree pits along the promenade road. In addition to this, sands and gravels for pipe bedding and surround were imported for drainage and ducting works. Earthworks below Marker Layer were generally limited to the building up of the ground levels for construction of the mound soft landscape area north of the Orbit and construction of foul and surface water drainage. Skanska did not carry out any works below the Enabling Works sub-grade levels. A Marker Layer was placed between all HHSL materials and underlying general backfill materials / existing materials, at depths ranging between 400 and 1200 mm below FFL. As shown on Figure 8, Skanska placed less than 600 mm thickness of HHSL at the landscaped mound, to the north of Orbit, and at the Special Events Lawn, to the south of Orbit. In these areas, however, Skanska placed Marker Layer and 500 mm HHSL directly over the existing ODA FoP placed Marker Layer and HHSL material, resulting in a minimum of 800 mm human health compliant material exists above the ODA FoP placed Marker Layer. Hardstanding as a substitute to the HHSL and Marker Layer was utilised beneath the abutments for Bridge F10B and the Promenade Road. Materials placed by Skanska have been demonstrated, through validation, not to place unacceptable risks to human health or controlled waters. New sprouts of Japanese knotweed were identified during works at Bridge F06. Skanska notified the wider QEOP specialist invasive species contractor (Home Grown Timber) for removal / treatment.

Appendix B. Key Parties

Key LLDC Transformation Phase Project Parties for PDZ2

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 Environment Agency London Borough of Newham
CDM Coordinator:	Atkins
Remediation Designer:	Atkins
Chemical Testing Laboratory:	Environmental Scientifics Group (ESG)
Geotechnical Testing Laboratory:	ESGL
Infrastructure Contractor:	Balfour Beatty
Infrastructure Contractor:	Lagan
Infrastructure Contractor:	Nuttall
Infrastructure Contractor:	ISG
LPR Contractor:	Skanska Infrastructure Services

Appendix C. Permit to Proceed Protocol (CD only)

The Permit to Proceed Protocol:
Protection of Assets on the Olympic Park

Notice

Document History

ATKINS JOB NUMBER: 5094113			DOCUMENT REF: LC810-LTR-PWD-CM-REP-0001			
Revision	Purpose Description	Originated	Checked	Reviewed	Authorised	Date
04	For Implementation	[redacted]	[redacted]	[redacted]	[redacted]	16/11/2012
03	For Implementation	[redacted]	[redacted]	[redacted]	[redacted]	18/10/2012
02	For Implementation	[redacted]	[redacted]	[redacted]	[redacted]	03/09/2012
01	For Information	[redacted]	[redacted]	[redacted]	[redacted]	28/08/2012

Contents

Section Page

Definitions **ii**

1. Introduction: Permit to Proceed **1**

1.1 Protection of Assets 1

1.2 Protection of Remediation Works 1

1.3 Compliance Auditing 3

1.4 Non-Conformance Reports 3

2. Permit to Proceed: Implementation **4**

2.1 Section A – Works Information 4

2.2 Section B – Existing Assets 4

2.3 Section C – Permit Approval 4

2.4 Section D – Closeout information 5

2.5 Section E – LLDC Closeout 5

Appendices

APPENDIX A: Permit to Proceed Proforma

APPENDIX B: LLDC Common Standard No.14: Health & Safety standards for protecting buried services and surface laid temporary services (LC001-LTR-XXX-HS-CST-0014)

Definitions

Applicant – Any contractor required to work above or below ground which impacts upon existing assets.

Buried Services Coordinator (not referenced in this document) – the primary custodian of the Principal Contractor's Permit to Dig and Permit to Load processes nominated by the Principal Contractor, coordinates all pre-start, ongoing and close-out activities required by the Principal Contractor's permitting system.

Contractor – Any project involving contractors employed by the Employer to construct infrastructure and venue works on the Olympic Park.

Employer – London Legacy Development Corporation, Level 10, 1 Stratford Place, Montfichet Road, London, E20 1EJ.

Enabling Works – The site clearance, demolition, bulk earthworks and Remediation Works carried out by the Enabling Works Tier 1 Contractors to prepare the Olympic Park platform for construction by Follow on Projects.

Existing / New Assets – Above and below ground structures/infrastructure which were in place prior to ODA involvement or installed during ODA/LOCOG works on the Olympic Park. These include bridges, utilities, above and below ground structures, monitoring points and ground remediation works.

Exported Material – Materials excavated and removed from Follow on Project sites.

Final Finished Level (FFL) – Final ground levels or constructed floor levels under a building, upon completion of works by Follow on Projects.

Final Build Layer – Term referenced in Planning Conditions for the Olympic Park, meaning soil or other material placed to complete the remediation and, with the exception of topsoil, to be at the finished ground levels.

Human Health Separation Layer (HHSL) (or Separation Layer) – Chemically and geotechnically acceptable fill material which satisfies Human Health and Controlled Waters Site Acceptance Criteria (SSAC/SSRT), which lies above the Marker Layer but beneath the final ground cover.

Imported Material – Infill materials brought in by the contractor whether sourced from within or outside the Olympic Park. All permanent fill materials placed within the Park must be compliant with the site specific remediation criteria as established in the Baseline Remediation Strategy and associated Site Specific Remedial Strategies and Specifications.

LLDC Permitting Team – The Team responsible for the initial review of Permit to Proceed applications to ensure contractors have followed the LLDC process.

LOCOG – London Organising Committee of the Olympic and Paralympic Games.

Marker Layer – An orange non woven geo-textile membrane (or similar) placed directly beneath the Separation Layer to clearly delineate the separation layer from potentially contaminated materials below.

ODA – Olympic Delivery Authority.

Responsible Person – A suitably qualified competent person nominated by the Principal Contractor, who will be present throughout the duration of any site works. They shall retain responsibility for overseeing and supervising the works to ensure compliance with site procedures.

1. Introduction: Permit to Proceed

1.1 Protection of Assets

The development of the Olympic Park for both the Olympic Games and Legacy phases has been ongoing since 2006. Existing assets including bridges, utilities and underground structures were present on site prior to works commencing by the Olympic Delivery Authority (ODA), who commissioned additional structures, multi-utility installations and diversions to existing networks. Prior to staging the Olympic Games, further infrastructure was commissioned by the London Organising Committee of the Olympic and Paralympic Games (LOCOG) to service additional venues.

Before any above or below ground works can commence, it is necessary to implement a comprehensive permitting system to protect existing assets, defined as above and below ground structures/infrastructure in place prior to ODA works or installed by the ODA/LOCOG on the Olympic Park. These include bridges, utilities, above and below ground structures, monitoring points and ground remediation works. This system captures all responsible parties associated with works on or adjacent to these assets. Permits are issued by the London Legacy Development Corporation (LLDC) Permitting Team under application by individual Contractors, with subsequent works managed directly by the relevant Principal Contractor. Contractors must also comply with their own safe systems of work including Permit to Dig/Permit to Load procedures.

In applying for a LLDC Permit to Proceed to complete above or below ground works on the site, the Contractor must demonstrate that appropriate works specific documentation is in place, including the Permit boundary, scope of works, method statements, risk assessments and traffic/pedestrian management plans where necessary. The process also ensures the identification of all existing assets prior to works commencing. A responsible person shall be nominated by the Principal Contractor to ensure utilities are marked out on site and a comprehensive site briefing is delivered to all associated works staff. Signed records acknowledging this briefing shall be retained by the Principal Contractor. On completion of intrusive works, remaining utilities shall be re-marked out using the methodology in LLDC guidance document Common Standard No.14 appended to this document.

An inclusive close out system is vital to the continuity of the permit so that as-built drawings are submitted to the employer and accurate records are retained on site. This also ensures the quality of service mark out is maintained through the project.

This permitting system excludes hot works, confined spaces, lifting plans, signage and safety barriers and emergency procedures, which fall under the Principal Contractor's safe systems of work and Permit to Dig procedures.

1.2 Protection of Remediation Works

The Permit to Proceed (PTP) Protocol was established by the ODA to manage works by Follow on Project Teams to regulate any disruption, modification or penetration of ground surfaces and to protect the overall integrity of the previously installed site remediation works across the Olympic Park. The LLDC wish to continue with the Protocol in a slightly modified manner.

1.2.1 Site Remediation Background

It is the responsibility of the contractor to ensure they are familiar with the relevant aspects of the soil and groundwater remediation completed by the ODA, such that their works do not damage or otherwise negate any preceding site remediation works.

A general summary of remediation works completed at the Olympic Park to date is provided below. These descriptions are not exhaustive and are provided for introductory purposes only. Exact details of completed or ongoing remediation works for specific parts of the site are detailed in validation reports previously issued to the ODA Planning Authority (now LLDC Planning Authority) and in ODA site handover documentation.

Completed site remediation works include:

- Removal and treatment of soils below the Final Finish Level (FFL) that contained concentrations of contaminants above the acceptance criteria defined within Site Specific Remediation Specifications (SSRSpec). This material presented a risk to controlled waters and/or human health receptors in either Olympic or Legacy land use phases of the Olympic Park.
- Provision of a remediated ground cover system incorporating:
  - a Marker Layer (ML), in most cases placed 600-800mm below the FFL and typically comprising orange geotextile 'Terram 1000' on horizontal surfaces and 'Signal' geogrid on slopes steeper than 1(V):3(H) and in areas of soft landscaping.
  - Human Health Separation Layer (HHSL) of soil or aggregate placed above the Marker Layer. In areas of permanent hard standing this may represent both Marker Layer and HHSL.
- Treatment of excavated soils to render them suitable for reuse, predominantly as General and Structural Fill beneath the Marker Layer.
- Treatment of contaminated groundwater via pump & treat systems and/or in-situ remediation.
- Groundwater interception and pathway control via construction of below ground barriers and/or installation of pumping systems.
- Method Compaction or End Product Compaction (95% of maximum dry density) of fill materials as appropriate. California Bearing Ratio (CBR) tests (one test per 1,000m^2) were carried out at Marker Layer level to ensure a minimum CBR of 5% on Class 1 and Class 6a (granular fills) and a minimum CBR of 2% on Class 2 materials (cohesive fills).
- Remediation works to address post-construction risks to controlled waters and human health. These works do not address potential risks to the workforce during construction phase arising from exposure to soils, groundwater, ground gases or vapours below the site. The Olympic Park remains a "brownfield site". In accordance with legislation, the contractor must appropriately assess, control and mitigate potential risks to worker health and safety.

1.2.2 Resolution of Borehole Installation Conflicts

The network of monitoring borehole installations located across the Olympic Park must remain intact and accessible in order to verify that remediation objectives have been met or to allow ongoing groundwater remediation works. Conflicts between this network and ongoing development works should be raised with the LLDC Permitting Team via the Permit to Proceed form included in this document.

1.2.3 Reference Documents and Information Sources

It is the responsibility of contractor to be familiar with all applicable planning conditions and relevant site remediation specifications prior to commencing any ground works. These documents are included or referenced within site handover documentation and on the LLDC Document management System.

The following list of generic specification and planning documents is not exhaustive and it remains the responsibility of contractor to be aware of all documents applicable to their works. Site specific remediation and earthworks design documents remain applicable to construction works and provide (chemical) soil acceptance criteria and details of how remediated ground cover systems (ML and HHSL) must be constructed within site formation levels:

- Site Specific Remediation Strategy (SSRS)
- Site Specific Remediation Specification (SSRSpec)
- Site Validation Reports (where available)

1.2.4 Waste Management

The Contractor shall comply with 'Duty of Care' obligations under the Waste Regulations by tracking the movement of excavated materials on the Olympic Park as well as all materials exported for reuse/disposal and the import of engineering materials. All cut / fill materials shall be logged with the relevant Principal Contractor's materials management system for waste licensing purposes.

1.3 Compliance Auditing

The Principal Contactor is responsible for implementing the LLDC Permitting Protocol and will audit works to ensure they conform to approved site remediation strategies and Planning Conditions. This will be supported by additional audits by the LLDC Permitting Team. Members of this Team shall be allowed access to active sites to inspect and audit construction works for compliance against this Protocol.

An audit report will be issued to the Employer, relevant Principal Contractor and contractor detailing performance and any key issues identified in the audit.

1.4 Non-Conformance Reports

Where the contractor fails to conduct works in accordance with this Protocol, or if in the view of the LLDC Permitting Team any works or actions pose a potential risk to the integrity of previous (or ongoing groundwater) remediation works, a Non-Conformance Report will be raised by the LLDC Permitting Team.

Non-conformance reports will be issued to the relevant Principal Contractor and contractor and will be reported to the Employer in monthly Performance Assurance Reports.

2. Permit to Proceed: Implementation

2.1 Section A – Works Information

The Permit to Proceed Protocol applies to any works, above or below ground, which impact upon existing site assets. This section allows the Contractor to provide the necessary information on the proposed works for review. The Applicant and Responsible Person must be stated as well as the works location and the proposed start and end dates. For venue contractors, applications are required for works outside of the building footprint, excluding building modifications.

As a minimum, the Contractor – the Applicant – must provide a description of the works stating which existing assets have the potential to be impacted. This must also include proposed mitigation measures to ensure suitable protection of these assets, noting that a joint inspection between the contractor and Principal Contractor may be required for works on or adjacent to certain assets.

Documentation provided by the Contractor shall include a works location plan, scope of works, LLDC GIS drawings showing any potential conflicts with existing assets (bridges, utilities, above and below ground structures and ground remediation works), as well as suitable method statements and risk assessments for the works. Additional documentation may include traffic / pedestrian management proposals and piling risk assessments as well as any other pertinent documentation.

Documentation is reviewed by the LLDC Permitting Team and either agreed in principle or returned with comments. Where multiple comments are provided by the reviewer the application should be resubmitted. Note that the relevant Principal Contractor is responsible for the subsequent management of the works. The Contractor must also comply with the Principal Contractor's safe systems of work including separate Permit to Dig and Permit to Load procedures.

Applications for works must be submitted to the LLDC Permitting Team a minimum of five working days prior to the proposed works start date via email to permittoproceed@londonlegacy.co.uk, including digital copies of the required documentation.

2.2 Section B – Existing Assets

The contractor is responsible for identifying all ODA assets including bridges, utilities, above and below ground structures and ground remediation works within or adjacent to the works area. Where ground loading or intrusive works are anticipated, pre-works non-intrusive identification of utilities and direct liaison with the relevant owners is required (including the transportation of plant to the works area). Guidance on contacting utility providers is available in LLDC Common Standard No.14. The Permit to Proceed shall remain active between the dates specified, subject to approvals by utilities providers. Where works extend beyond these dates, the contractor will contact the LLDC Permitting Team and apply for a new revision of the permit, confirming any changes to the site conditions that may impact on the works.

The Principal Contractor / Contractor is also responsible for marking out utilities and providing a full briefing to all parties involved in the works. All works shall comply with the LLDC Common Standard No.14 and Health and Safety Guidance 47: Avoiding danger from underground services.

2.3 Section C – Permit Approval

The LLDC Permitting Team reviews the information provided by the Contractor and if approved, presents a series of conditions for the works relevant to the assets detailed above, over and above the following:

- Soil arisings to be stored in a manner that prevents contamination of any remediated Made Ground or Human Health Separation Layer (HHSL) soils. Materials shall be managed to optimise their potential re-use and minimise subsequent processing. Any excavated wastes must not be utilised for backfilling unless appropriate Waste Exemptions or other arrangements are in place with the Environment Agency.

- Where existing Marker Layer and HHSL are removed or damaged, they must be reinstated. If the Marker Layer and HHSL were not installed by the ODA/LOCOG, then confirmation should be sought from the relevant LLDC Project Manager as to whether they should be installed during re-instatement works.
- Any material suspected to contain contamination should be segregated and the Principal Contractor and LLDC Permitting Team should be informed. If additional remedial excavations / works are deemed necessary, the requirements of Planning Condition LTD.1.13 (unexpected contamination) will apply.
- All permanent backfill materials shall be compliant with the relevant Site Specific Remediation Specifications for these works. For imported materials, contractors are required to comply with: Facilities and their Legacy Transformation Planning Application, No. 07/90010/OUMODA, Condition LTD 'Quality of Imported Fill' via liaison with the Planning Decisions Team. Other 'slot-in' planning conditions may also apply.
- All boreholes within the works area should be suitably protected and, if necessary, modified / maintained / otherwise decommissioned in consultation with the relevant Principal Contractor and LLDC Permitting Team.
- Excavations that progress into the alluvium may create a temporary/permanent pathway allowing perched water within the Made Ground to contaminate the minor aquifer in the River Terrace Deposits. The contractor shall consider this risk and if appropriate install measures to ensure that no contamination occurs. This may involve prior consultation with the Remediation Designers and/or Planning Policy and Decisions Team and appropriate mitigation measures should be implemented as agreed with the Project Manager.

2.4 Section D – Closeout information

The contractor is responsible for providing the information requested in Section D. This includes:

- Digital as built information for all works referenced in Sections A and B including on-site survey information.
- Details of any damage to assets and proposed mitigation measures.
- Confirmation that the works area has been left in a safe manner with utilities marked out as per LLDC Common Standard No.14 and reinstatement has been completed to an appropriate standard.
- As built drawings and photographs of all Marker Layer reinstatement / placement and cover systems.
- Final cut and fill volumes for all materials retained within the works areas, moved a LLDC treatment centre (if present) or removed from site. The contractor is also required to confirm that all material movements have been logged with the Principal Contractor's tracking system.

2.5 Section E – LLDC Closeout

The LLDC Permitting Team will close the permit once the information required as part of the close out process has been received and reviewed. Where this information is not judged to be sufficient to close the permit, additional data will be required.

APPENDIX A:

Permit to Proceed Proforma

LONDON LEGACY DEVELOPMENT CORPORATION

PERMIT TO PROCEED

PERMIT REFERENCE: *(Provided by LLDC Permitting Team)*

Dear Sirs,
With respect to any physical works on the Olympic Park, we confirm that the protection and maintenance of assets including bridge, utilities, above and below ground structures and ground remediation works are of utmost priority. We hereby submit this permit application for your acceptance. We understand we are initially required to complete Sections A and B prior to commencement of our works and that we are respons ble for the integrity of all features mentioned above. In addition, upon acceptance of Sections A and B we shall liaise with the Principal Contractor during both the implementation and execution of this permit and comply with their Permit to Dig system.

SECTION A – WORKS INFORMATION *(To be completed & submitted by the contractor 5 days prior to works)*

Prepared by		Responsible Person	
of Company		of Company	
Date		Date	
Project Title		Principal Contractor	
Title of Works		Contractor Reference	
Construction Zone		Works Start Date	
LLDC Reference		Works Finish Date	

Co-ordinates of works	*(state Olympic Grid or Ordnance Survey)*
Description of works (including risk to assets)	*(include information on whether works involve structural changes to existing assets; excavations; ground loading above bridges and/or buried utilities, plant/machinery details)*
Dimension of works (incl. depth)	
Asset protection measures	*(describe methods in place to ensure protection of asset)*

Documentation	Uploaded to BIW**	Comments (see Section C)†
Works location plan	☐	☐
Scope of works	☐	☐
LLDC GIS drawing – Utilities	☐	☐
– Third Party Assets	☐	☐
– Boreholes	☐	☐
Method statements and risk assessment	☐	☐
Traffic / pedestrian management proposal	☐	☐
Piling risk assessment	☐	☐
Asset protection measures *	☐	☐
Additional Information:	☐	☐
.....	☐	☐

* Joint inspection required with Principal Contractor before and after works ** Contractor to complete † Reviewer to complete

Earthworks above marker layer (m^3)	
Earthworks below marker layer (m^3)	

Additional Comments:

SECTION B – EXISTING ASSETS *(To be completed by the contractor)*

Existing Assets within/adjacent to works boundary (see Section A)	Yes / No	Permit Revision	

I can confirm that the Utility owner has been notified and has reviewed and approved all RAMS within the works boundary. *(Please tick all relevant assets within the works boundary)*

Olympic Park Perimeter Fence	☐	IP Gas	☐	EDF	☐
PLUG	☐	BT Communications	☐	District Heating/Cooling	☐
EA Assets	☐	COLT fire optics	☐	Surface Water Drainage	☐
Thames Water (foul)	☐	Thames Water (potable / non potable)	☐	Others (use additional comments section below)	☐

Above / below ground structures: *(state structure reference)*

I confirm that all known existing services in relation to attached up to date service drawings affected by / adjacent to work area will be marked out on site using the correct colour codes.	☐
I confirm that an independent pre work passive power and radio scan will be completed within the works boundary.	☐
I confirm a site briefing for all site staff by the contractor's nominated Responsible Person will take place before any works commence. Records to be signed by the work force.	☐
I understand my ongoing responsibilities in relation to this permit with regards to the LLDC Common Standard No.14 and HSG47.	☐
I confirm that protection measures for all assets including above ground structures affected by the works have been included in the RAMS detailed in Section A.	☐

Additional Comments:

Distribution: *Originating Team, Principal Contractor, LLDC Project Manager, LLDC Permitting Team.*

SECTION C – PERMIT APPROVAL *(To be completed by the LLDC reviewer)*

Prepared by		Authorised by	
of Company		of Company	
Date		Date	
Accepted	Yes / No		

Conditions of acceptance / reason for non-acceptance (over and above those detailed in the guidance document):

Distribution: *Originating Team, Principal Contractor, LLDC Project Manager, LLDC Permitting Team.*

SECTION D – CLOSEOUT INFORMATION *(to be completed by the contractor on completion of works)*

I confirm completion of works in accordance with the methods described in Sections A and B and the conditions described in Section C and the relevant guidance documents. On the basis of the following information and the attached supporting documents, we request that this application be formally closed.

Prepared by		Authorised by	
of Company		of Company (PC)	
Date		Date	

D1: ASSET PROTECTION			
Have Assets been damaged?	Yes / No		
If YES, provide details & rectification plan			
D2: COVER LAYER	**Reinstated**	**Altered**	**Omitted**
Marker Layer	Yes / No	Yes / No	Yes / No
Human Health Separation Layer	Yes / No	Yes / No	Yes / No
Comments or description of cover system reinstatement	*(Detail Marker Layer and Human Health Separation Layer materials and any reasons for specific omission)*		
Photo record of excavation and Marker Layer reinstatement	*(Attach photographic records)*		
As-Built drawings provided	*(Attach as-built drawing or sketch indicating cover system reinstatement)*		

D3: EXCAVATED VOLUMES	Above Marker Layer (m^3)	Below Marker Layer (m^3)
Total cut		
Cut volume retained (on site)		
Cut volume to Treatment Centre		
Cut volume sent off Olympic Park		
Export Application reference		

D4: FILL VOLUMES	Above Marker (m^3)	Chemical Tests (no.)	Below Marker (m^3)	Chemical Tests (no.)
Total fill				
Site won fill (reused)				
Fill from Treatment Centre				
Fill from outside Olympic Park				
Export Application reference				

I confirm that all cut and fill volumes have been logged with the Principal Contractors materials management system for waste licensing purposes.	☐
I confirm that the site has been left in a satisfactory condition with services re-marked out as per LLDC Common Standard No.14 *(Attach photographic records)*	☐
I confirm that any excavations in roads have been suitably reinstated in line with the Specification for Highway Standards unless otherwise agreed with the Project Manager.	☐

Additional Comments:

SECTION E *(Application is closed by the LLDC Permitting Team following review of Section D and returned to Contractor)*

Prepared by		Authorised by	
of Company		of Company	
Date		Date	
Accepted & Closed	Yes / No		

Comments or conditions on closure / reason for non-closure of application:

Distribution: *Originating Team, Principal Contractor, LLDC Project Manager, LLDC Permitting Team.*

APPENDIX B:

LLDC Common Standard No.14: Health and safety standard for protecting buried services (LC001-LTR-XXX-HS-CST-0014)

Appendix D. Supporting Information

LONDON LEGACY DEVELOPMENT CORPORATION

PERMIT TO PROCEED

PERMIT REFERENCE: LC402-LCI-U07-CB-PTP-0001_C04

Dear Sirs,
With respect to any physical works on the Olympic Park, we confirm that the protection and maintenance of assets including bridge, utilities, above and below ground structures and ground remediation works are of utmost priority. We hereby submit this permit application for your acceptance. We understand we are initially required to complete Sections A and B prior to commencement of our works and that we are responsible for the integrity of all features mentioned above. In addition, upon acceptance of Sections A and B we shall liaise with the Principal Contractor during both the implementation and execution of this permit and comply with their Permit to Dig system.

SECTION A – WORKS INFORMATION *(To be completed & submitted by the contractor 5 days prior to works)*

Prepared by	[redacted]	Responsible Person	[redacted]
of Company	BNL	of Company	BNL
Date	21/06/13	Date	21/06/13
Project Title	QEOP	Principal Contractor	BNL
Title of Works	Deconstruction of Temporary Underpass U07 and Reinstatement Works	Contractor Reference	LC402-LCI-U07-CB-PTP-0001
Construction Zone	4	Works Start Date	29/11/12
LLDC Reference		Works Finish Date	19/07/13

Co-ordinates of works	*27966.073, 13738.775 (Olympic Grid)*
Description of works (including risk to assets)	Removal of temporary Underpass U07. The work includes removal of cable net support structure, temporarily remove lighting columns, remove parapet from edge beams, remove timber decking/beams, steel beams, edge beams, screwpile foundations. Break out concrete bases, slabs and Kentledge/ground beams. Remove 170m linear slot drain. Construct concrete capping beams on top of precast units to tie in with existing river wall. Reinstate Thames Water Sludge mains. Make good top of river wall cut for games mode. Post drill and fix new Bespoke parapet. Fix bullhead rubbing strips to capping beams. Install permanent surfacing to toe path.
Dimension of works (incl. depth)	110m long, Timber decking is 10m wide. Toe Path is 4 m wide. Screwpiles are 3m deep.
Asset protection measures	• Temporary works design check carried out for crane loadings on pavement for lifting river equipment • As-built utility drawings, GIS & EMAPs consulted. • Cable detection survey completed. • Services and loading corridors marked on ground and protected from axle loadings greater than 9500kg with NAVI mats • Experienced supervisor in charge of excavation. • Validation reports consulted to establish extent of marker layer • Methodology adapted for risk of encountering marker layer and mitigation measures to prevent ground contamination incorporated into Activity Plans and Risk Assessments. • Hold Point and notification of Verification engineer upon finding the marker layer. • Material taken from below marker layer to be stockpiled separately at designated locations agreed with Verification Engineer and Landscaping Team. • 3rd parties consulted regarding their assets

Documentation	Uploaded to BIW**	Comments (see Section C)†
Works location plan • 0239-LTR-U07-A-DDE-4001 • 0239-LTR-U07-A-DGA-4001	☒	☐
Scope of works • 0240-LTR-SPK-Z-DGA-2406 • 0240-LTR-SPK-Z-DGA-2402 • 0240-LTR-SPK-Z-DGA-2403 • 0240-LTR-SPK-Z-DGA-2407 • 0240-LTR-SPK-Z-DGA-3170 • 0240-LTR-SPK-Z-DGA-3171 • 0240-LTR-SPK-Z-DGA-3172	☒	☐

LLDC GIS drawing – Utilities **Refer to Permit to Dig**	N/A	☐
– Third Party Assets **Refer to Permit to Dig**	N/A	☐
– Boreholes **Refer to Permit to Dig**	N/A	☐
Method statements and risk assessment LC402-LCI-U07-CB-MST-0001 U07 Outline Method Statement	☒	☐
Traffic / pedestrian management proposal To be confirmed in activity plan	☐	☐
Piling risk assessment	N/A	☐
Asset protection measures * Refer to activity plans.	N/A	☐
Additional Information:	☐	☐

* Joint inspection required with Principal Contractor before and after works ** Contractor to complete † Reviewer to complete

Earthworks above marker layer (m^3)	120
Earthworks below marker layer (m^3)	*None*
Additional Comments:	

SECTION B – EXISTING ASSETS *(To be completed by the contractor)*

Existing Assets within/adjacent to works boundary (see Section A)	Yes	Permit Revision	

I can confirm that the Utility owner has been notified and has reviewed and approved all RAMS within the works boundary. *(Please tick all relevant assets within the works boundary)*

Olympic Park Perimeter Fence	☐	IP Gas	☐	EDF	☒
PLUG	☐	BT Communications	☐	District Heating/Cooling	☐
EA Assets	☐	COLT fire optics	☐	Surface Water Drainage	☒
Thames Water (foul)	☒	Thames Water (potable / non potable)	☐	Others (use additional comments section below)	☐

Above / below ground structures: *H06, 2No. London Underground Central Line Tunnels and Network Rail Bridge E46*

I confirm that all known existing services in relation to attached up to date service drawings affected by / adjacent to work area will be marked out on site using the correct colour codes.	☒
I confirm that an independent pre work passive power and radio scan will be completed within the works boundary.	☒
I confirm a site briefing for all site staff by the contractor's nominated Responsible Person will take place before any works commence. Records to be signed by the work force.	☒
I understand my ongoing responsibilities in relation to this permit with regards to the LLDC Common Standard No.14 and HSG47.	☒
I confirm that protection measures for all assets including above ground structures affected by the works have been included in the RAMS detailed in Section A.	☒
Additional Comments:	

Distribution: *Originating Team, Principal Contractor, LLDC Project Manager, LLDC Permitting Team.*

SECTION C – PERMIT APPROVAL *(To be completed by the LLDC reviewer)*

Prepared by	[redacted]	Authorised by	[redacted]
of Company	Atkins	of Company	Atkins
Date	21/06/2013	Date	21/06/2013
Accepted	Yes		

Conditions of acceptance / reason for non-acceptance (over and above those detailed in the guidance document):

- Please note conditions provided in **Remediation Validation Guidance note (LC002-OPS-XXX-Z-EXE-0004)** including LTD.1.13 (Unexpected Contamination) and Section 2.3 of the PTP Protocol ref: LC810-LTR-PWD-CM-REP-0001, paying particular attention to: the segregation of above and below marker layer materials; **Quality of Imported Fill submissions under Transformation Planning Condition LTD.1.14**; and validation works.
- Existing Marker Layer extent is provided in the site Consolidated Validation Reports (Stages 1-3) with elevations available in individual validation reports. Trial trenches to be undertaken within works area to determine the presence and depth of Marker Layer. **Marker Layer to be placed / reinstated to form a continuous layer across the site unless otherwise agreed with the Planning Authority. Reinstated Marker Layer to be tied-in with surrounding Marker Layers where placed.**
- Any unbound fill materials (including type 1) must comply with the relevant Site Specific Remediation Specifications for these works as demonstrate by chemical testing place material or using source data. **For imported materials, contractors are required to comply with: Facilities and their Legacy Transformation Planning Application, No. 07/90010/OUMODA, Condition LTD.1.14 'Quality of Imported Fill'** via liaison with the Planning Decisions Team. Other 'slot-in' planning conditions may also apply.
- Note that the LLDC GIS is accurate as of the end of the Olympic Games and has not been updated with any changes after this period. Any works over and above those referenced in this permit and associated RAMS should be detailed under a new revision / supplementary permit to consider risks the site assets from excavation / loading and the impact on remediation cover systems.

Distribution: *Originating Team, Principal Contractor, LLDC Project Manager, LLDC Permitting Team.*

SECTION D – CLOSEOUT INFORMATION *(to be completed by the contractor on completion of works)*

I confirm completion of works in accordance with the methods described in Sections A and B and the conditions descr bed in Section C and the relevant guidance documents. On the basis of the following information and the attached supporting documents, we request that this application be formally closed.

Prepared by	[redacted]	Authorised by	[redacted]
of Company	BAM Nuttall	of Company (PC)	BAM Nuttall
Date	03/10/13	Date	03/10/13

D1: ASSET PROTECTION

Have Assets been damaged?	No
If YES, provide details & rectification plan	

D2: COVER LAYER	Reinstated	Altered	Omitted
Marker Layer	Yes	No	No
Human Health Separation Layer	N/A	No	No

Comments or description of cover system reinstatement	*Depth from proposed FGL to marker layer will be 1.1 as marker layer was installed below sludge mains*
Photo record of excavation and Marker Layer reinstatement	*Attached; Marker layer place beneath sludge mains*
As-Built drawings provided	*Final pavement construction de-scoped from BAM Nuttall, Skanska to complete*

D3: EXCAVATED VOLUMES	Above Marker Layer (m^3)	Below Marker Layer (m^3)
Total cut	120	
Cut volume retained (on site)	120	
Cut volume to Treatment Centre		

Cut volume sent off Olympic Park				
Export Application reference				
D4: FILL VOLUMES	**Above Marker (m^3)**	**Chemical Tests (no.)**	**Below Marker (m^3)**	**Chemical Tests (no.)**
Total fill	40			
Site won fill (reused)	40			
Fill from Treatment Centre				
Fill from outside Olympic Park	40 (20mmshingle)			
Export Application reference				

I confirm that all cut and fill volumes have been logged with the Principal Contractors materials management system for waste licensing purposes.	☒
I confirm that the site has been left in a satisfactory condition with services re-marked out as per LLDC Common Standard No.14 *(Skanska had taken PC control of the area and commenced work prior to BAM Nuttall finishing works)*	N/A
I confirm that any excavations in roads have been suitably reinstated in line with the Specification for Highway Standards unless otherwise agreed with the Project Manager.	N/A

Additional Comments:

$120m^3$ of material was excavated above marker layer. $40m^3$ of this was concrete from the bases/Kentiledge which was sent to be crushed and re-used as gabion cladding fill for other structures, the rest was capping stone place pre-games. $40m^3$ was re-used at U07 over the shingle surround to the sludge mains. The rest was sent to the warm up track. And $40m^3$ of 20mm shingle was brought in from off of the park as bedding and surround to the sludge mains.

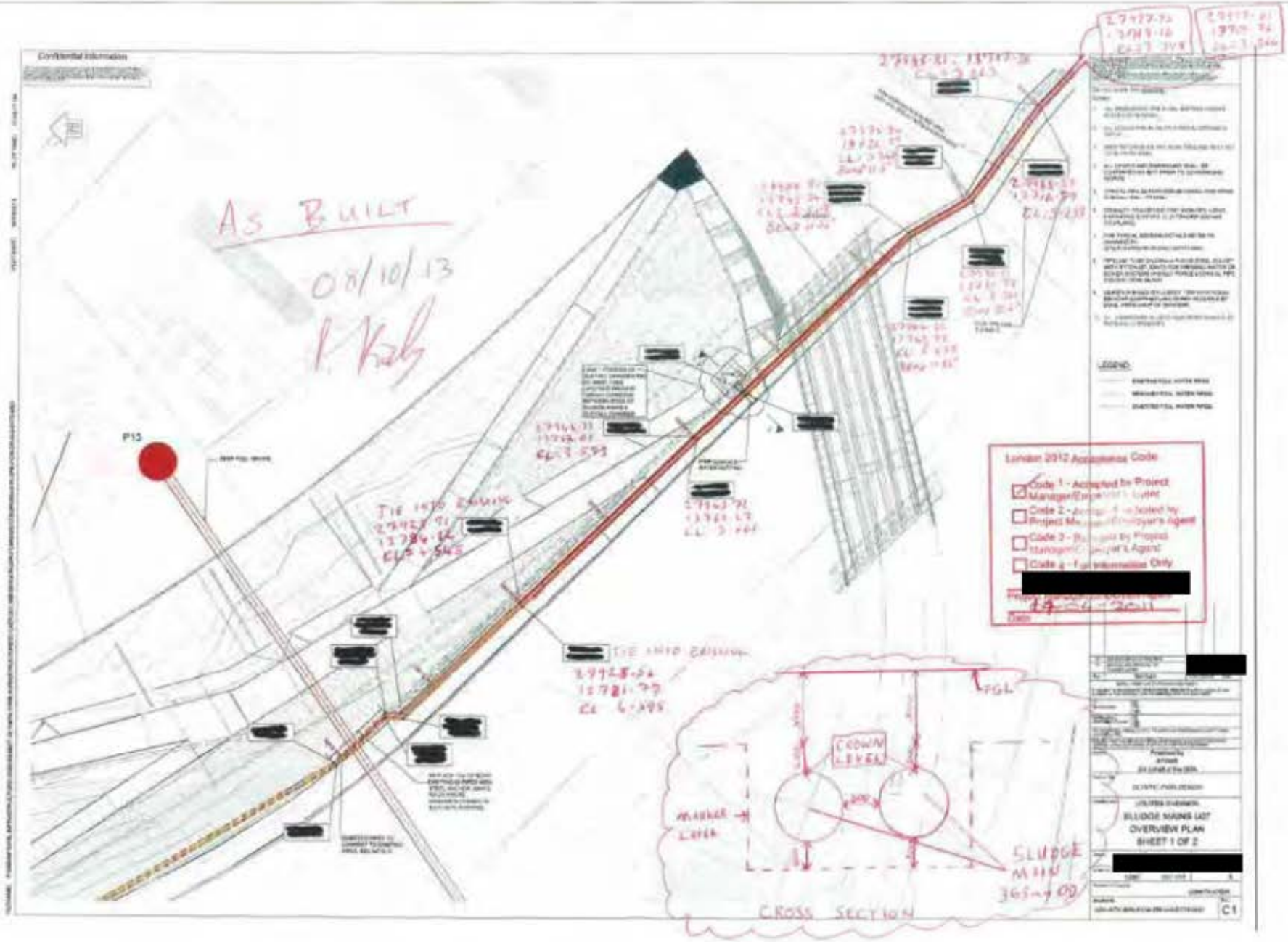
SECTION E *(Application is closed by the LLDC Permitting Team following review of Section D and returned to Contractor)*

Prepared by	[redacted]	Authorised by	[redacted]
of Company	Atkins	of Company	Atkins
Date	10/10/2013	Date	10/10/2013
Accepted & Closed	Yes		

Comments or conditions on closure / reason for non-closure of application: N/A

Distribution: *Originating Team, Principal Contractor, LLDC Project Manager, LLDC Permitting Team.*


CAUTION
WATER PIPE


Confidential Information
AS BUILT
01/10/13
P13
London 2012 Acceptance Code
Code 1 - Accepted by Project Manager/Engineer
Code 2 - Accepted by Project Manager/Employer's Agent
Code 3 - Accepted by Project Manager/Employer's Agent
Code 4 - For Information Only
LEGEND
SLUDGE MAIN LOT
OVERVIEW PLAN
SHEET 1 OF 2
C1
CROWN LEVEL
FGL
MARKER COVER
SLUDGE MAIN
CROSS SECTION

BAP 1150 Queen Elizabeth Olympic Park Transformation

Imported Material Tracker

				Source of Material		Delivery Location			Fill Location				Tonnage					
Date	Contractor	Material Description	Ticket Number	Company	Carrier/ Haulier	Construction Zone	NC/SC Area	Stockpile Reference	Construction Zone	NC/SC Area	Plot/Grid Reference	Description of Works	Mass (tonnes)	Recycled content (%)	Weight of recycled Content	Rail or Road	Weight by Rail	Weight by Road
25/06/2013	BAM LPR Earthworks	10mm Shingle	930104	H Sivyer	H Sivyer		SC9					U07 sludge main	19.48		0.000	Road	0.000	19.480
25/06/2013	BAM LPR Earthworks	10mm Shingle	930105	H Sivyer	H Sivyer		SC9					U07 sludge main	19.34		0.000	Road	0.000	19.340
05/06/2013	BAM LPR Earthworks	10mm Shingle	943829	H Sivyer	H Sivyer		SC9					U07 sludge main	18.46		0.000	Road	0.000	18.460
14/06/2013	BAM LPR Earthworks	10mm Shingle	882382	H Sivyer	H Sivyer		SC9					U07 sludge main	19.90		0.000	Road	0.000	19.900
19/06/2013	BAM LPR Earthworks	10mm Shingle	929633	H Sivyer	H Sivyer		SC9					U07 sludge main	18.86		0.000	Road	0.000	18.860
19/06/2013	BAM LPR Earthworks	10mm Shingle	929634	H Sivyer	H Sivyer		SC9					U07 sludge main	18.36		0.000	Road	0.000	18.360
20/06/2013	BAM LPR Earthworks	10mm Shingle	929641	H Sivyer	H Sivyer		SC9					U07 sludge main	18.72		0.000	Road	0.000	18.720
20/06/2013	BAM LPR Earthworks	10mm Shingle	929654	H Sivyer	H Sivyer		SC9					U07 sludge main	18.22		0.000	Road	0.000	18.220
25/06/2013	BAM LPR Earthworks	10mm Shingle	936400	H Sivyer	H Sivyer		SC17					U07 sludge main	18.92		0.000	Road	0.000	18.920
22/06/2013	BAM LPR Earthworks	10mm Shingle	929646	H Sivyer	H Sivyer		SC9					U07 sludge main	18.32		0.000	Road	0.000	18.320
06/06/2013	BAM LPR Earthworks	20mm Shingle	943835	H Sivyer	H Sivyer		NC29					U07 sludge main	19.44		0.000	Road	0.000	19.440
06/06/2013	BAM LPR Earthworks	20mm Shingle	943836	H Sivyer	H Sivyer		NC29					U07 sludge main	19.54		0.000	Road	0.000	19.540
06/06/2013	BAM LPR Earthworks	10mm Shingle	943837	H Sivyer	H Sivyer		NC29					U07 sludge main	19.36		0.000	Road	0.000	19.360

MEASURE AGREEMENT

Prepared By: [redacted]	*(ISG)*	Date: 01-11-2012
Contractor Reference: Zone 2	Employer Reference: ISG-MA-CZ2-001	
To: The Project Manager – [redacted]		

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:

Pop up / Trench Reference: 2.2

Before Works	During Works	After Works
	 0.400 X 0.400X 0.150 = 0.024	

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

Pop up / Trench Reference: 2.4		
Before Works	**During Works**	**After Works**
	 0.700X1.500X0.450=0.0472	

Pop up / Trench Reference: 2.5		
Before Works	**During Works**	**After Works**
	 0.600X1.100X.0.150=0.099	

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

Pop up / Trench Reference: 2.A		
Before Works	**During Works**	**After Works**
	 0.200X0.200X0.150=0.006	

Pop up / Trench Reference: 2.7		
Before Works	**During Works**	**After Works**
	 1.00X0.700X0.450=0.315	

Pop up / Trench Reference: 2.8		
Before Works	**During Works**	**After Works**
	 0.600X0.400X0.150=0.036	

Authorised By: [redacted]	*ISG*	Date: 05/11/12
Distribution: *Project Manager* (Original), *Employer*, *Supervisor*, *Cost Consultant*, Day File		

MEASURE AGREEMENT

Prepared By: [redacted]	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.

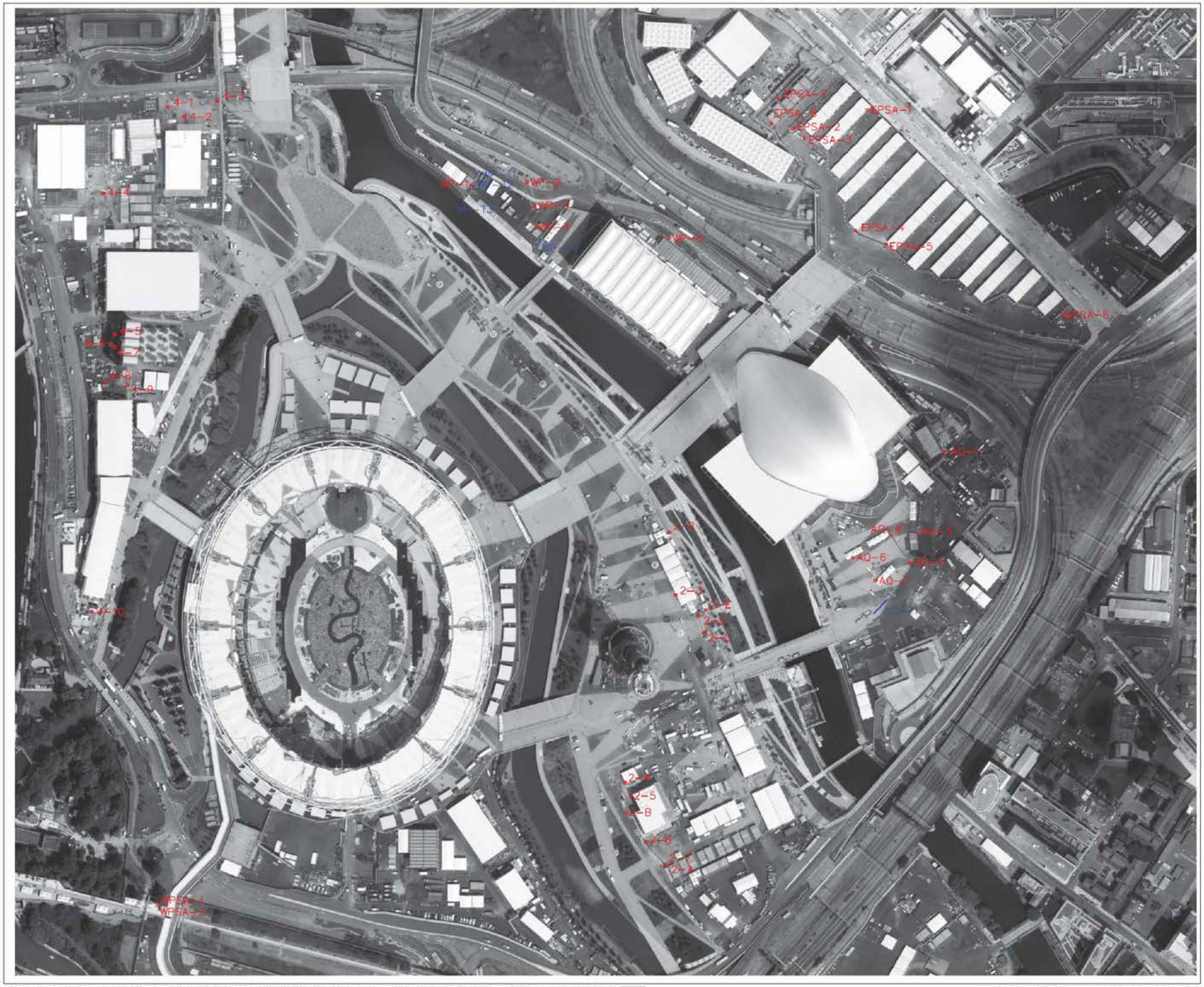
~~* We do not agree to the measure quantities submitted~~

[redacted]

* Delete as appropriate

Authorised By: [redacted]	Date: 06/11/2012
Distribution: *Contractor*(Original), *Employer*, *Supervisor*, *Cost Consultant*, Day File	

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		
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			



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Fax: +44 (0) 203 2012 001
www.london2012.com

CONFIDENTIAL

1. EXTENT OF POP UP REINSTATEMENT IS INDICATIVE AND NOT TO SCALE.
2. FOR DETAILS OF BELOW GROUND DUCT ROUTES PLEASE REFER TO PRE GAMES VENUE AND CDM REDLINE DRAWING.
3. FOR REINSTATEMENT DETAILS IN EACH LOCATION PLEASE REFER TO REINSTATEMENT SCHEDULE: LOC-SCM-001 AND THE STANDARD DETAILS SKETCH: LOC-SK-001.

Legend:

- TRENCH REINSTATEMENT
- POP UP REINSTATEMENT
- P - 6 ITEM CODE

Rev	Description	Drawn	Chk'd	App'd	Date

SAFETY, HEALTH AND ENVIRONMENT INFORMATION
Based on the use of experienced and competent contractors working to an approved method statement for unusual residual hazards / risks are listed below or the statement 'NO UNUSUAL RISKS'

Construction C1 C2	C1 C2 C3
Operations O1 O2	O1 O2 O3
Maintenance M1 M2	
Demolition / Demolition D1 D2	

No.	Description	Appr	N	Date

KEY PLAN

On behalf of the LOCOG
ATKINS
Olympic Park Design

DRAWING TITLE
POST GAMES LOCOG
REINSTATEMENT WORKS
SOUTH PARK

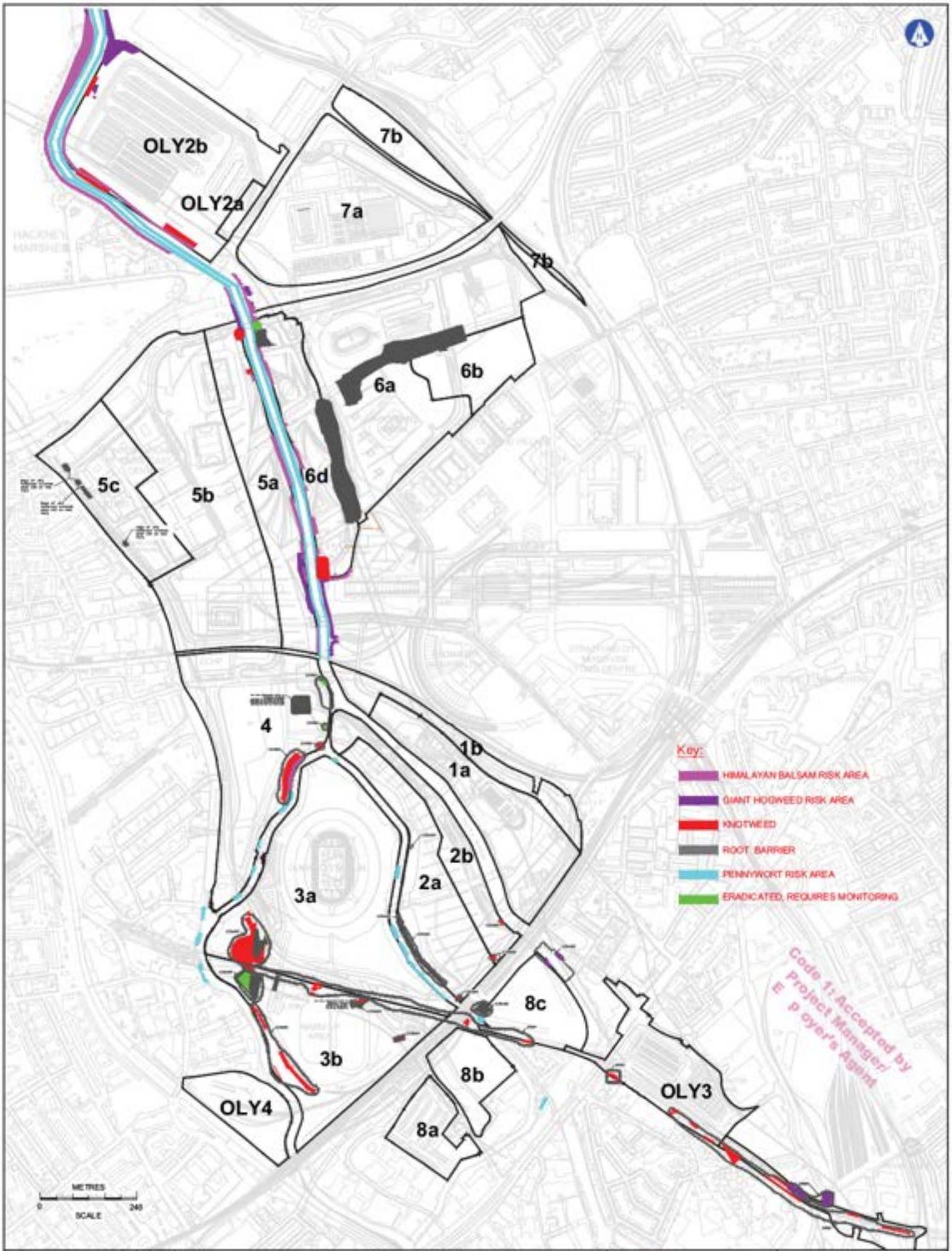
STATUS: AS BUILT
PROJECT NO.

DRAWING NUMBER: SK-POP-2080

DISCIPLINE	ZONE	MODEL	SPORT	ZONE	VENUE	CONTENT	LEVEL	NUMBER

DATE: OCT '12
SCALE @ A3: nts
SIZE: A ORIGINAL
REVISION: 02

CHECKED: [redacted]
APPROVED:
NOTES: USE FIGURED DIMENSIONS IN PREFERENCE TO SCALED. CHECK ALL DIMENSIONS ON SITE BEFORE FABRICATION OR SETTING OUT



OLYMPIC DELIVERY AUTHORITY

bam nuttall

NORTH PARK & SOUTH PARK INVASIVE SPECIES

Landscaping & Public Realm

OLYMP C GR D

7160-LPR-NPK-W-DSK-0471

P06

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: [redacted]

Dear [redacted]

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 m^3.

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.

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 (m^3)	Timing of Import	Reason for Import
Yeoman Aggregates, Aggregate Industries Ltd., Torr Works Quarry, Somerset	Select granular limestone	Category 1	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.
			Type 1	Handball Arena – Warm Up Court PDZ5	320m^3 (300mm deep)	October - November 2012	Reinstatement of the removed ground slab.
			Type 1	McDonalds Central, PDZ4	6m^3	October - November 2012	Backfill of pile voids (150mm dia.)
			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	6m^3	October - November 2012	Backfill of pile voids (150mm dia.)
			Type 1	McDonalds South, PDZ2	9m^3	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 (m^3)	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	42m^3 (<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.

Yours sincerely

[redacted]

[redacted]
Atkins Ltd.

cc. [redacted] (LOCOG)
[redacted] (Atkins)
[redacted] (Atkins)
[redacted] (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).

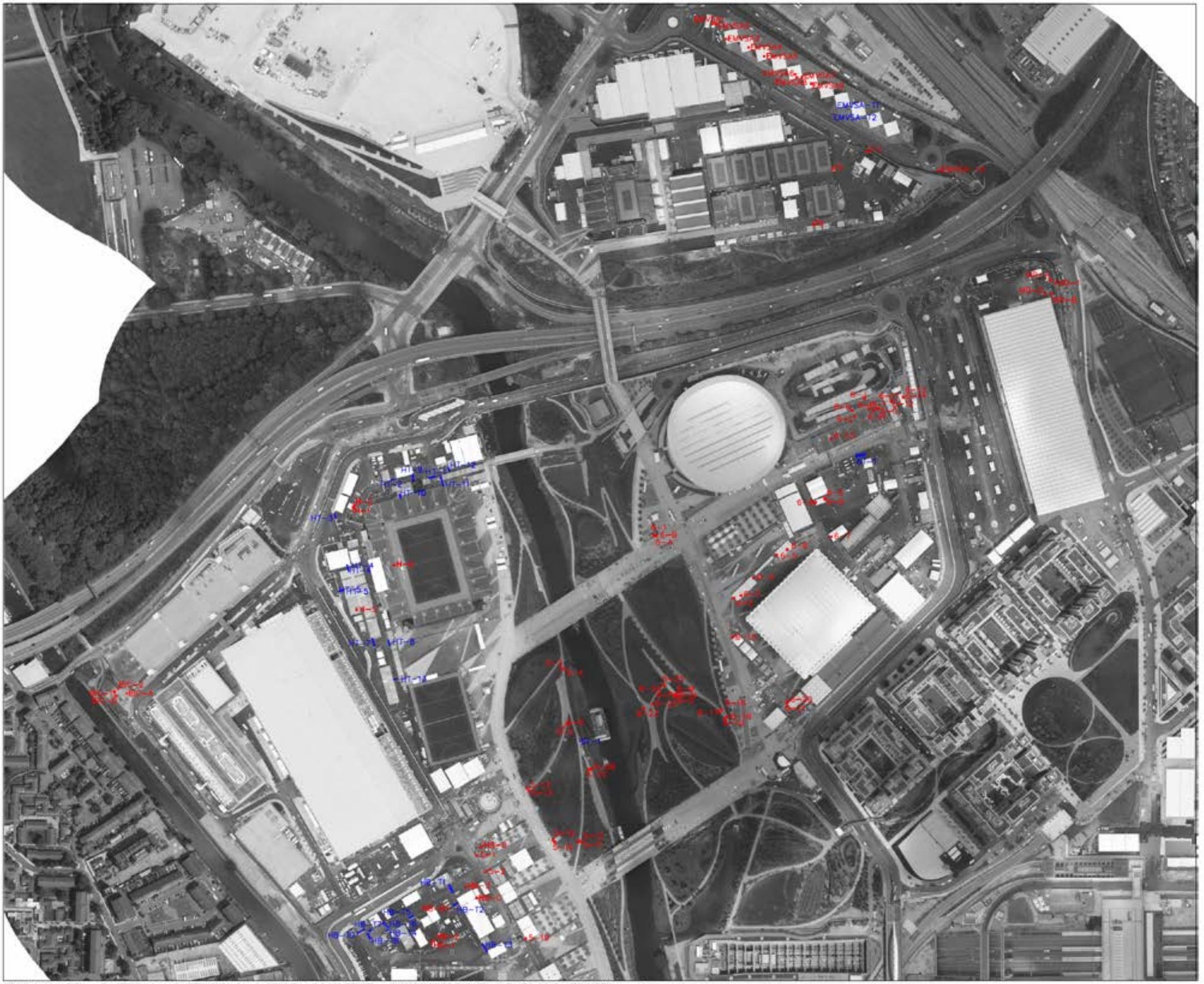
Example conveyance notes for Yeoman Aggregates Type 1 sub-base limestone from Torr Works Quarry.

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)



London Organising Committee of the
Olympic Games and Paralympic Games Ltd
One Churchill Place
London E14 5LN
Switchboard +44 (0) 203 2012 000
Fax: +44 (0) 203 2012 001
www.london2012.com

CONFIDENTIAL

1. EXTENT OF POP UP REINSTATEMENT IS INDICATIVE AND NOT TO SCALE.
2. FOR DETAILS OF BELOW GROUND DUCT ROUTES PLEASE REFER TO PRE GAMES VENUE AND CDM REDLINE DRAWING.
3. FOR REINSTATEMENT DETAILS IN EACH LOCATION PLEASE REFER TO REINSTATEMENT SCHEDULE: LOC-SCM-001 AND THE STANDARD DETAILS SKETCH: LOC-SK-001.

Legend:

- TRENCH REINSTATEMENT
- POP UP REINSTATEMENT
- P - 6 ITEM CODE

Rev	Description	Drawn	Chk'd	Appr'd	Date

SAFETY, HEALTH AND ENVIRONMENT INFORMATION
Based on the use of experienced and competent contractors working to an approved method statement for erection, maintenance, repair and dismantling or the statement "NO UNUSUAL RISKS"

Construction 01 02	CDM	
Operations 01 02	CDM	
Maintenance 01 02		
Dismantling / Demolition 01 02		

No.	Description	Appr.	Initials	Date

KEY PLAN

On behalf of the LOCOG
ATKINS
Olympic Park Design

DRAWING TITLE
POST GAMES LOCOG
REINSTATEMENT WORKS
NORTH PARK

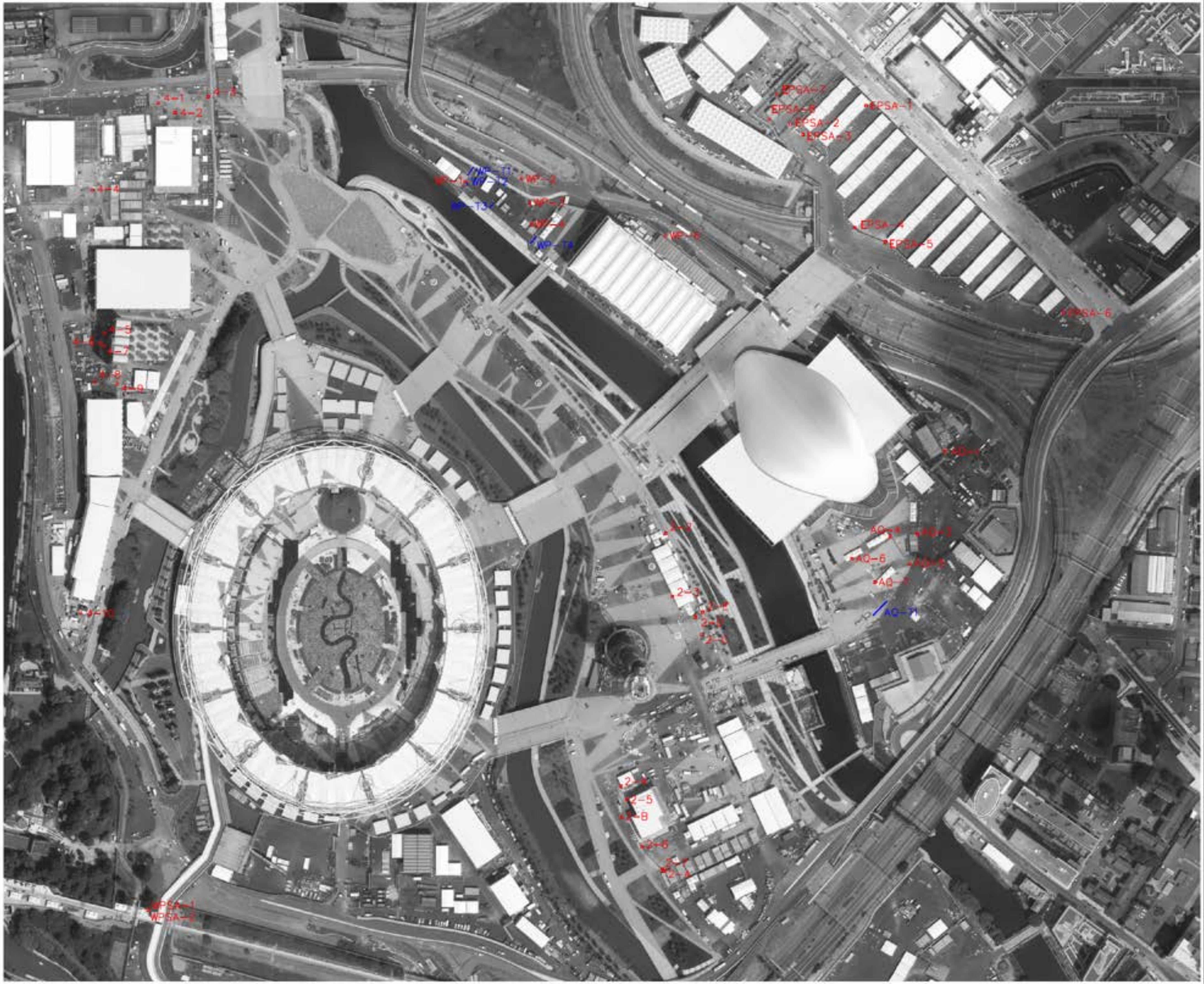
STATUS	PROJECT NO.
AS BUILT	

DRAWING NUMBER: SK-POP-2080

DATE	SCALE @ A3	SIZE	REV.
OCT '12	1:50	A	02

CHECKED	APPROVED	NOTES

OVERLAY DESIGN SET - NOT FOR CONSTRUCTION



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Legend:

- TRENCH REINSTATEMENT
- POP UP REINSTATEMENT
- P - 6 ITEM CODE

On behalf of the LOCOG
ATKINS
Olympic Park Design

DRAWING TITLE

POST GAMES LOCOG
REINSTATEMENT WORKS
SOUTH PARK

STATUS: AS BUILT

DRAWING NUMBER: SK-POP-2080

DATE: OCT '12

A | 02

CHECKED | APPROVED | NOTES

OVERLAY DESIGN SET - NOT FOR CONSTRUCTION

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Olympic Games and Paralympic Games Ltd
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Legend:

TRENCH REINSTATEMENT

POP UP REINSTATEMENT

P - 6 ITEM CODE

SHOWCASE VENUE REINSTATEMENT

Rev	Description	Drawn	Chk'd	App'd	Date

SAFETY, HEALTH AND ENVIRONMENT INFORMATION
Based on the type of experienced and competent contractors working to an approved method statement for unusual residual hazards / risks not listed below or the statement "NO UNUSUAL RISKS"

Construction C1 C2	000
Operations C1 C2	000
Maintenance M1 M2	
Demolition D1 D2	

No.	Description	Appr	H	Date

KEY PLAN

On behalf of the LOCOG
ATKINS
Olympic Park Design

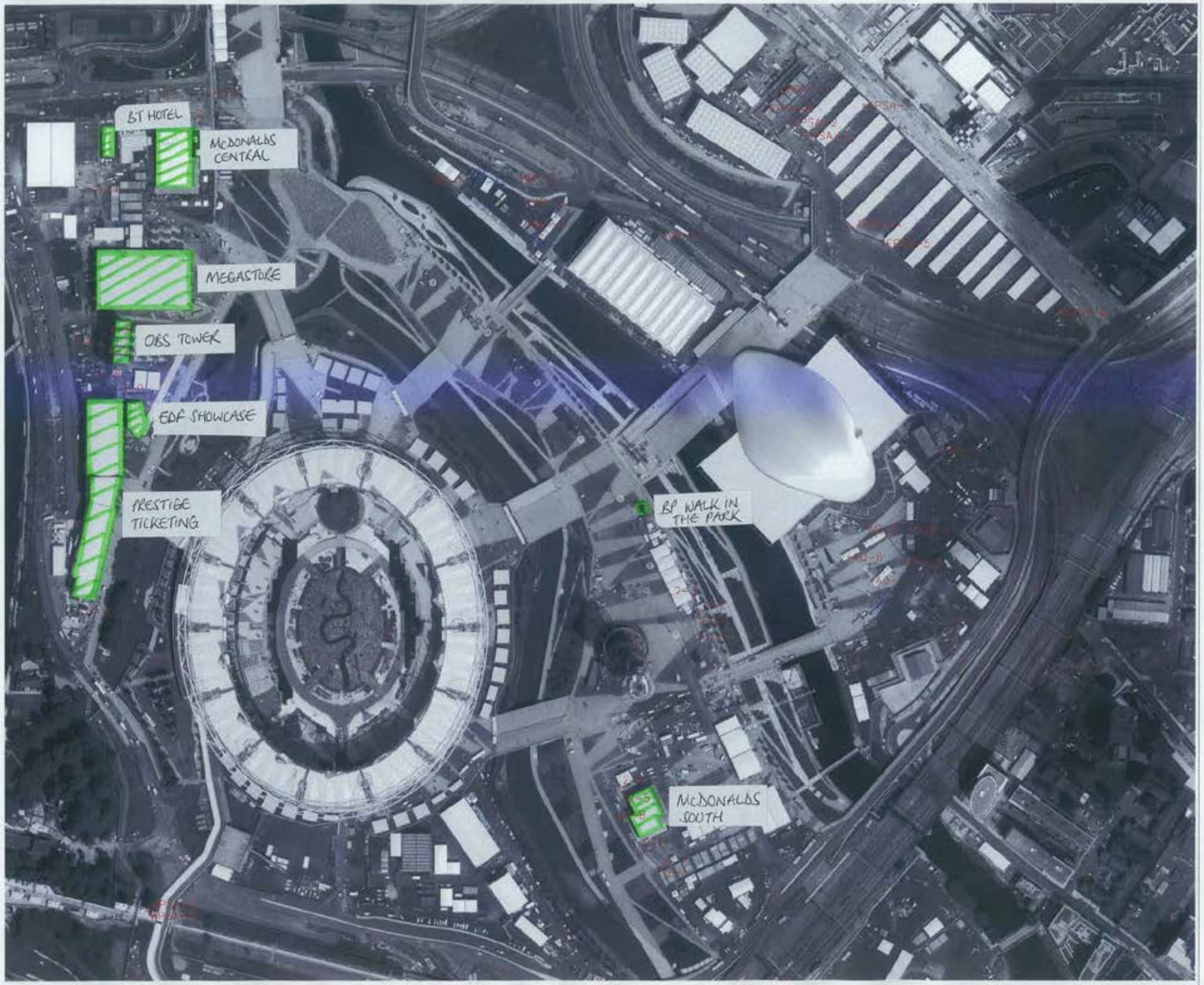
DRAWING TITLE
POST GAMES LOCOG REINSTATEMENT WORKS
NORTH PARK
- SHOWCASE VENUE

STATUS	PROJECT NO.
AS BUILT	

DRAWING NUMBER	
	SK-POP-2080

DATE	SCALE @ A3	SIZE	ISSUE
OCT '12	nts	A	02

CHECKED	APPROVED	NOTES
[redacted]		



London Organising Committee of the Olympic Games and Paralympic Games Ltd
Lea Interchange
Stratford
London E14 5LN
Switchboard: +44 (0) 203 2012 000
Fax: +44 (0) 203 2012 001
www.london2012.com

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Legend:

- TRENCH REINSTATEMENT
- POP UP REINSTATEMENT
- P - 6 ITEM CODE
- SHOWCASE VENUE REINSTATEMENT

Rev	Description	Drawn	Ch'd	App'd	Date

SAFETY, HEALTH AND ENVIRONMENT INFORMATION
Based on the use of equipment and competent contractors working to an approved method statement for unusual residual hazards / risks are listed below or the statement 'NO UNUSUAL RISKS'

Construction C1 C2	C3 C4
Operations O1 O2	O3 O4
Maintenance M1 M2	
Dismantling/ Demolition D1 D2	

No.	Description	Appr.	Date

KEY PLAN

On behalf of the LOCOG
ATKINS
Olympic Park Design

DRAWING TITLE
POST GAMES LOCOG REINSTATEMENT WORKS
SOUTH PARK
- SHOWCASE VENUES

STATUS	PROJECT NO.
AS BUILT	

DRAWING NUMBER	SK-POP-2080

DATE	SCALE @ A3	SIZE	ISSUE
OCT '12	NN	A	02

CHECKED [redacted] APPROVED NOTES

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

conveyance / receipt note

Loaded at:
Bov Rail Head Ship Sth

For all enquiries please telephone
02086966810

Yeoman Aggregates

63927939

Conveyance Note

#63927939*

For any queries please contact
BOV RAIL HEAD SHIP STH
Yeoman Aggregates
Stone Terminal
Horn Lane

W3 9EH

Customer Account No.
1734401

Customer
O'KEEFE CONST (GREENWICH) LTD

Delivery Address
Handball Arena
Olympic Park
London
E15
Stratford
County LONDON
Contact:
Number: [redacted]

Customer Purchase Order No.
C828/51666

Date	Date of Loading	Time Out:	Time due on Site:
06/11/12	06/11/12	1051	800

Contract No: 3306768	Time on Site:		Late	On-Time / early
	Time off Site:		Total Time to unload:	
Call off No: 1764370?	Tot Wait Time		Pre-booked DW time	0
	Tot Daywork Time			
	Returned material	Est Qty: time	Weighed Qty:	
Delivery Qty: 38.86	Reason:			
Qty Ord: 40.00	Print Name:			
	Signature:			

Signed on behalf of Yeoman Aggregates : Carl Jones
Goods received in good condition : OK [redacted] 11.50
Please Print Name :

Collected Loads:
Your Turnaround Time was:
0

Unit.	Product	Product Description	CE	Quantity	UOM	Gross Wt	Tare Wt	Nett Wt	Cash Sale
7878100	EN3243502	Type 1Sub-Base Limestone SHV 803		19.50	TN	32.00	12.50	19.50	

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 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

5255660 3

CE - All goods marked ★ hold an EC Certificate of Conformity which is available on request

Vehicle Reg. No.	Fleet/Haulier	Haulage Indicator	Driver's Name
EU10 OJE	1749966	SOME 8	[redacted]

WHITE - RECEIPT NOTE • YELLOW - CUSTOMER COPY
BLUE - HAULIERS COPY • PINK - OFFICE COPY

conveyance / receipt note

Loaded at:
Bow Rail Head Ship Stn
For all enquiries please telephone
02088966610

Yeoman Aggregates

For any queries please contact

BOW RAIL HEAD SHIP STN
Yeoman Aggregates
Stone Terminal
Horn Lane

W3 9EH
Customer Account No.
1734401
Customer
O'KEEFE CONST (GREENWICH) LTD
Delivery Address
Handball Arena
Olympic Park
London
E15
Stratford
County LONDON
Contact: [redacted]
Number: [redacted]
Customer Account No.
C328/51666

63924797

Conveyance Note

#63924797#

Date	Date of Loading	Time Out:	Time due on Site:
06/11/12	06/11/12	731	800

Contract No: 3306768	Time on Site:		Late	On-Time	early
	Time off Site:		Total Time to unload:		
Call off No: 17643709	Tot Wait Time		Pre-booked DW time	0	
	Tot Daywork Time				
Delivery Qty: 19.38	Returned material	Est Qty: time	Weighed Qty:		
Qty. Ord. 40.00	Reason:				
	Print Name:				
	Signature:				

Signed on behalf of Yeoman Aggregates : [redacted]
Goods received in good condition :
Please Print Name :

Collected Loads:
Your Turnaround Time was:
0

Unit.	Product	Product Description	CE	Quantity	UOM	Gross Wt.	Tare Wt.	Nett Wt.	Cash Sale
7678100	EM3243502	Type 1Sub-Base Limestone SHW 803	-	19.38	TM	31.88	12.50	19.38	

Total Goods	
VAT %	
Amount Payable	
VAT Reg. No. GB 533 2605 71	
Cash Sale Receipt No.	

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

Special Instructions

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

5255565922

CE - All goods marked ★ hold an EC Certificate of Conformity which is available on request

Vehicle Reg. No.	Fleet/Haulier	Haulage Indicator	Driver's Name
EU10 BJE	1740966	ZONE 8	[redacted]

WHITE - RECEIPT NOTE • YELLOW - CUSTOMER COPY
BLUE - HAULIERS COPY • PINK - OFFICE COPY

conveyance / receipt note

Loaded at:

Bow Rail Head Ship Stn

For all enquiries please telephone

02088966810

Yeoman Aggregates

For any queries please contact

BOW RAIL HEAD SHIP STN
Yeoman Aggregates
Stone Terminal
Marsh Lane

W3 9EX

Customer Account No.

1734401

Customer

O'KEEFE CONST (GREENWICH) LTD

Delivery Address

Broadcast Car Park
Media Centre
Olympic Park

Stratford
County LONDON
Contact: [redacted]
Number:

Customer Purchase Order No.

C026/57694

Conveyance Note 63969827

63969827

Date	Date of Loading	Time Out:	Time due on Site:
13/11/12	13/11/12	943	730

Contract No:	Time on Site:		Late	On-Time	early
3306768	Time off Site:		Total Time to unload:		
Call off No:	Tot Wait Time		Pre-booked DW time		
17671515	Tot Daywork Time		0		
Delivery Qty	Returned material	Est Qty:	time	Weighed Qty:	
18.82	Reason:				
Qty. Ord.	Print Name: [redacted]				
20.00	Signature: [redacted]				

Signed on behalf of Yeoman Aggregates : [redacted]

Goods received in good condition :

Please Print Name :

Collected Loads:
Your Turnaround Time was:
1

Unit	Product	Product Description	CE	Quantity	UOM	Gross Wt	Tare Wt	Nett Wt	Cash Sale
7376100	EM3243502	Type 1Sub-Base Limestone SHW 803		18.82	TN	31.32	12.50	18.82	

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 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

52556748

CE - All goods marked ★ hold an EC Certificate of Conformity which is available on request

Vehicle Reg. No.	Fleet/Haulier	Haulage Indicator	Driver's Name
EU10 OJE	1760766	ZONE 4	[redacted]

Aggregate Industries UK Limited T/A Yeoman Aggregates
Registered office: Bardon Hall, Copt Oak Road, Leicestershire, LE67 9PJ

WHITE - RECEIPT NOTE • YELLOW - CUSTOMER COPY
BLUE - HAULIERS COPY • PINK - OFFICE COPY

conveyance / receipt note

Loaded at:

Bow Rail Head Ship Stn

For all enquiries please telephone

02088966810

Yeoman Aggregates

63874557

Conveyance Note

63874557

For any queries please contact

BOW RAIL HEAD SHIP STN
Yeoman Aggregates
Stone Terminal
Horn Lane

W3 9EH
Customer Account No.
1734401

Customer
O'KEEFE CONST (GREENWICH) LTD

Delivery Address
Various LOCOG
Hockey Pitch
Olympic Park

Stratford
County LONDON
Contact: [redacted]
Number:
Customer Purchase Order No.
C828/57694

Date	Date of Loading	Time Out:	Time due on Site:
29/10/12	29/10/12	904	800

Contract No: 3306768	Time on Site:		Late	On-Time	early
	Time off Site:		Total Time to unload:		
Call off No: 17608738	Tot Wait Time		Pre-booked DW time: 0		
	Tot Daywork Time				
	Returned material	Est Qty: time	Weighed Qty:		
Delivery Qty: 39.44 Qty. Ord. 40.00	Reason:				
	Print Name:				
	Signature:				

Signed on behalf of Yeoman Aggregates : [redacted]
Goods received in good condition :
Please Print Name :

Collected Loads:
Your Turnaround Time was: 1

Unit	Product	Product Description	CE	Quantity	UOM	Gross Wt	Tare Wt	Nett Wt	Cash Sale
7878100	EN3243502	Type 1Sub-Base Limestone SHW 803		19.72	TM	32.00	12.28	19.72	

Total Goods	
VAT %	
Amount Payable	
VAT Reg. No. GB 533 2605 71	
Cash Sale Receipt No.	

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

Special Instructions

Driver to call [redacted] when opn route [redacted]

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

5255649 2

CE - All goods marked ★ hold an EC Certificate of Conformity which is available on request

Vehicle Reg. No.	Fleet/Haulier	Haulage Indicator	Driver's Name
EU57 TXT	132999	ZONE 8	[redacted]

conveyance / receipt note

Loaded at:

Bow Rail Head Ship Stn

For all enquiries please telephone

02088966810

Yeoman Aggregates

For any queries please contact

BOW RAIL HEAD SHIP STN
Yeoman Aggregates
Stone Terminal
Horn Lane

W3 9EN
Customer Account No.

1734401

Customer

O'KEEFE CONST (GREENWICH) LTD

Delivery Address

Various LOCOS
Hockey Pitch
Olympic Park

Stratford
County LONDON
Contact: [redacted]
Number:
Customer Purchase Order No.

C828/57694

63873346

Conveyance Note

6387334 6

Date	Date of Loading	Time Out:	Time due on Site:
29/10/12	29/10/12	739	800

Contract No: 3306768

Call off No: 17606736

Delivery Qty: 19.72

Qty. Ord. 40.00

Time on Site:		Late	On-Time	early
Time off Site:		Total Time to unload:		
Tot Wait Time		Pre-booked DW time		
Tot Daywork Time				0
Returned material	Est Qty: time	Weighed Qty:		
Reason:				
Print Name:				
Signature:				

Signed on behalf of Yeoman Aggregates : [redacted]
Goods received in good condition :
Please Print Name :

Collected Loads:
Your Turnaround Time was:
0

Unit.	Product	Product Description	CE	Quantity	UOM	Gross Wt	Tare Wt	Nett Wt	Cash Sale
7878100	EM3243502	Type 1Sub-Base Limestone SHW 803		19.72	TN	32.00	12.28	19.72	

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

Special Instructions

Driver to call [redacted] when ogn route [redacted]

Total Goods	
VAT %	
Amount Payable	
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

5255648 5

CE - All goods marked ★ hold an EC Certificate of Conformity which is available on request

Vehicle Reg. No.	Fleet/Haulier	Haulage Indicator	Driver's Name
EU57 TXT	1329996	ZONE 3	[redacted]

WHITE - RECEIPT NOTE • YELLOW - CUSTOMER COPY
BLUE - HAULIERS COPY • PINK - OFFICE COPY

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

MEASURE AGREEMENT

Prepared By: [redacted]	ISG	Date : 09-11-2012
Contractor Reference: **Main Dining, Zone 4 & Hockey**		Employer Reference: ISG-MA-ALL-001

To: The Project Manager – [redacted]

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
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

Supporting Information:

Pop up / Trench Reference: 4.5

Before Works	During Works	After Works
	 3 no – 150 mm 0.800 x 0.800 x 0.150 = 0.096	

Pop up / Trench Reference: 4.10		
Before Works	**During Works**	**After Works**
	 2 no -150 mm 0.500 x 0.500 x 0.150 = 0.037	

Pop up / Trench Reference: MD 2		
Before Works	**During Works**	**After Works**
	 2 no – 125 mm 1.1 x 0.700 x 0.150 = 0.115	

Pop up / Trench Reference: MD A		
Before Works	**During Works**	**After Works**
	 1 no – 125 mm 0.500 x 0.600 x 0.150 = 0.045	

Pop up / Trench Reference: HT 13		
Before Works	**During Works**	**After Works**
	 6 x 0.250 x 0.150 = 0.225	

Pop up / Trench Reference: HT 14		
Before Works	**During Works**	**After Works**
	 6 x 0.900 x 0.150 = 0.81	

Pop up / Trench Reference: HT 7		
Before Works	**During Works**	**After Works**
	 1.4 x 1.1 x 0.100 = 0.014	

Authorised By: [redacted]	*ISG*	Date: 21/11/2012
Distribution: *Project Manager* (Original), *Employer*, *Supervisor*, *Cost Consultant*, Day File		

MEASURE AGREEMENT

Prepared By: [redacted] *(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~~

[redacted]

* Delete as appropriate

Authorised By: [redacted]	*(Project Manager)*	Date: 21/11/2012
Distribution: *Contractor*(Original), *Employer*, *Supervisor*, *Cost Consultant*, Day File		

Hyder / PPDT document review comments and LOCOG responses

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)
1.1	Documentary evidence must be supplied to the PDT to confirm the origin of all imported soils and infill materials, supported by appropriate chemical analysis test results prior to any import of fill materials.	Yes	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 regarded as Category 1 in terms of the prevailing Atkins quality of fill framework. The Applicant has provided evidence of transport of the material to site by way of example conveyance notes from Yeoman.	N/A

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
2.2	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 relevant to this Import of Fill Submission will be passed BAM Transformation. We expect this complete information to to be part of the final PDZ validation report, where associated with the Transformation works.	We can confirm that the complete field records for the utility trenches and pop-ups, together with the available material conveyance notes and the finalised Quality of Imported Fill submission will be provided to the LLDC Transformation team as part of the handover process. We understand that LLDC have committed to incorporate this information within the next stage of validation reporting, though details of this will need to be confirmed by the LLDC Transformation team. Hyder 28/11/12: No further comment.

Appendix E. PPDT / Hyder Document Review Comments and Response

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	Hyder Task Ref.
Pre-App	Legacy Transformation (Stage 4) Consolidated Validation Report	LC810-LTR-APK-Z-REP-0002, Rev P01	Atkins	21/05/14	REM 380

The above referenced document has been reviewed by Hyder Consulting on behalf of PPDT, as part of a pre-application consultation by the applicant.

Table 1 Hyder Comments

	Hyder Comment		**Applicant response**
	Aspect	**Comment**	
1.1	Validation reports	Some of the constituent validation reports have not yet been submitted to PPDT. It is recognised that this CVR has been provided as a pre-app, but the final CVR should only be submitted once all the validation reports have been submitted to PPDT.	Noted, all validation reports have now been submitted to / approved by the PPDT, as detailed in Section 1.6.
1.2	Figure 9	The survey points appear to 0.00 – is this intentional?	All levels now updated and new figure appended.

[redacted]
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Surrey
KT18 5BW

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