

Planning Delivery Zone 1 Legacy Transformation (Stage 4) Consolidated Validation Report

London Legacy Development Corporation

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Notice

This document and its contents have been prepared and are intended solely for London Legacy Development Corporation's (LLDC) information and use in relation to summarising the Legacy Transformation Phase (LTP) remediation and validation works within Planning Delivery Zone (PDZ) 1 of the Queen Elizabeth Olympic Park (QEOP) site.

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List of Abbreviations

Abbreviation	Definition
Atkins	Atkins Ltd
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
MMP	Materials Management Plan
NAPL	non-aqueous phase liquid
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
PIP	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
UXO	unexploded ordnance

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 PDZ1 (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.

PDZ1 is located in the southern section of the QEOP, in Stratford, East London (refer to the Site description in Sections 1.4 and 1.5).

1.2. Report Objectives

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

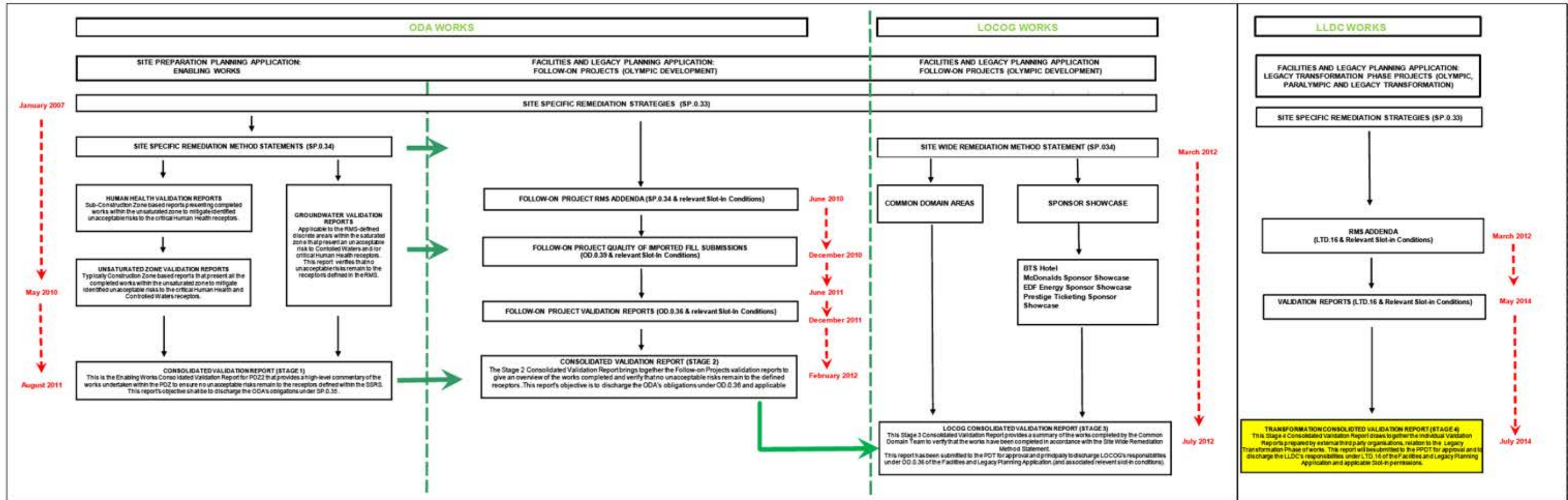
Stage 3 *previously submitted and approved by the LPA* – summarises remediation-related works completed by LOCOG to facilitate the Olympic Games only and the associated temporary construction of tents, cabins, utilities, sponsor showcases and the installation of hardstanding to complete the Human Health 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 PDZ1 validation reporting sequence presenting the stages of the CVR process is presented in Table 1-1 below.

Table 1-1 PDZ1 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 PDZ1 which include specific validation Conditions comprise:

- 12/00178/AOD: F10B Bridge Widening (Condition 10 – Protection and Validation of Remediation).

1.4. Site Description and Location

PDZ1 is an 11 hectare triangular parcel of land located in the southern section of the Olympic Park (the South Park). It lies in an approximately north west to south east orientation and is surrounded by the current Olympic Park Development to the south (PDZ8) and west (PDZ2 and PDZ4), with the Stratford City Development (PDZ9) to the north, and commercial and residential land use to the east. The zone is bounded by the River Lea to the north west, the Waterworks River to the west, and railway lines to the north, east and south. For construction purposes the site was split into two Construction Zones (CZs); CZ1a which forms the larger area in the southern and western sections, and CZ1b located in the northern and eastern sections. The internal boundary that divided CZ1a and CZ1b followed an existing road.

The site layout, location and reporting boundary for this PDZ1 (Stage 4) CVR is presented on Figure 1.

For a summary of the wider site context / background of PDZ1, 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 PDZ1, as defined by the remediation designers, are as follows:

Olympic Mode (see Figure 2): Approximately two-thirds of PDZ1 was used for the Aquatics Centre and Water Polo with surrounding areas of hard and soft landscaping, forming the 'Front and Back of House' areas

respectively for which LOCOG completed the hardcover areas. Sections of the site were occupied by roads or transport areas along with a head-house located in the southern section of the site.

Transformation Mode (see Figure 3): The majority of the north of PDZ1 comprised an area designated as a future development plot, with two further future development plot areas in the south of PDZ1, in close proximity to the head-houses. The Aquatic Centre remains in use in the central / southern portion of the site, with the temporary stands removed, while the remainder of the site is interspersed themed soft landscaping and hardstanding open areas. The temporary bridge decks of F10B and H08 have been removed and modified.

Legacy Mode (see Figure 4): In accordance with the Legacy Communities Scheme (LCS) Planning Application (11/90621/OUTODA) (Ref. 7), the Legacy design within PDZ1 includes, the Aquatics Centre remaining in use as a legacy facility, with the surrounding areas having been earmarked for a mix of land uses including: residential mixed use (with no private gardens), soft landscaping and hard landscaping (including a road). The head-houses located in the southern section of the site are to be retained.

1.6. Outstanding / Excluded Works

At the time of writing this report, all Validation Reports relating to the Legacy Transformation works in PDZ1 have been submitted to the PPDT and await their review and approval. 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 PDZ1 are as follows:

- 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**);
- Atkins (on behalf of Buckingham) Stratford Waterfront, PDZ1 Validation Report. Report Ref. LC810-LCI-SPK-CM-REP-001, Rev P01 (Decision Notice Ref: **Awaiting PPDT approval**);
- Balfour Beatty, Aquatics Centre – Legacy Phase, Report Ref. LC403-AQC-ARE-J-REP-0080, P01 (Decision Notice Ref: **Awaiting PPDT approval**); and
- BAM Nuttall, Validation Report for PDZ1. Report Ref. LC402-LCI-SPK-CM-REP-0056 (Decision Notice Ref: **Awaiting PPDT approval**).

1.7. Terminology

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

- **'Bump Out'** - works completed by LOCOG, relates to the removal and decommissioning of all the temporary structures (particularly Sponsor Showcases) and features installed by LOCOG prior to handover to LLDC (please see Section 3.1.1.2).
- **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 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)** – was 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 the temporary bridge deck and southern abutment and approach for H08 and temporary Water Polo venue, widening of Bridge F10B deck, minor utility works 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 LTP 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 GRS for the Olympic development (Ref. 9). The GRS is a high level roadmap that was further developed by the Construction Zone SSRS. The SSRSs were informed by the investigation works completed in accordance with the IIMS that presents a framework and provides a generic specification for undertaking contamination intrusive investigations across the QEOP. The design documentation was further refined in a series of SSRS Addenda as new data became available, to ensure the remedial works were reflective of the encountered ground conditions. These documents are discussed in further detail within the appendices in the preceding CVRs (Refs. 2, 4 and 6).

Within the related SSRS and SSRS Addenda, a Conceptual Site Model (CSM) was developed for PDZ1 presenting potential contamination sources, pathways and receptors. Individual SSACs, protective of either controlled waters or human health, were derived through the SSRS risk assessment process. The risk assessment process identified significant risks to controlled waters receptors across PDZ1 that required excavation, treatment and / or further investigation / delineation.

The PDZ1 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 Phase, and residents, workers / office staff and visitors in Legacy Phase. The key sources and pathways to these receptors included dermal contact / ingestion / inhalation of placed soils, especially within soft landscape areas in the residential development plots (no private gardens or vegetable growing areas were proposed for the Legacy end use – see below).

The remediation design allowed for placement of a HHSL or hard standing in the proposed Olympic and Legacy end uses within PDZ1. This measure reduces the human health pathways including dermal contact, ingestion and dust inhalation.

The remedial strategy was based on a number of assumptions and/or limitations with the primary two human health assumptions, as follows:

- no private gardens or vegetable growing areas are proposed for Legacy end use thus reducing risks associated with the ingestion pathway; and
- incorporation of ground gas / vapour protection measures within the fabric of building structures reduces risks associated with the ingress of ground gas and / or vapour.

The Waterworks River and the Chalk Primary (Major) Aquifer were considered the main controlled waters receptors since perched waters within the Made Ground are not considered to be 'Controlled Waters' under current legislation. The shallow aquifer was considered by the Environment Agency to represent a source and/or pathway for contaminants but not a receptor. The primary controlled waters objectives of the remedial design included; excavation of unsaturated soils (including hotspots), construction of a sheet pile river wall to prevent migration to the adjacent Waterworks River and groundwater treatment of dissolved phase hydrocarbons and light non-aqueous phase liquid (NAPL) within the River Terrace Deposits (RTD).

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 PDZ1 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 PDZ1 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 PDZ1

Contractor	Task	Description	Scope of Key Earthworks	Final Surface / Works to be Completed
BAM Nuttall South Park	Bridge H08; Water Polo venue; Reporting on LOCOG Bump Out and Readily Connectables removal; Reporting on Cofely CDF Suez (Cofely)'s District Heating and Cooling (DHC) network removal / validation	Removal of temporary bridge H08 in northwest of PDZ1; Removal of temporary Water Polo venue; Hard and soft landscaping; Reporting on LOCOG Bump Out and DHC validation	<ul style="list-style-type: none"> Removal of temporary Bridge H08 Removal of temporary Water Polo venue and back of house tarmac and the installation of tree pits, lamp columns, kerbs and drainage Construction of earth mounds, removal of Type I Stone above marker layer and installation of above marker layer fill to FFL construction of drainage runs, new roads and associated infrastructure Reporting on removal and capping of temporary shallow 'readily connectable' services as part of the LOCOG Bump Out and reinstatement with virgin Type 1 material, for further details refer to Section 3.1.1.3 Appending details of removal of temporary sections of Cofely's DHC network and associated validation sampling. For further details refer to Section 3.1.1.4 	<i>Works complete – report awaiting PPDT approval</i>
Balfour Beatty	Bridge F10B	Footbridge connecting PDZ1 and PDZ2	<ul style="list-style-type: none"> Removal of temporary bridge deck between PDZ1 and 2 	<p>Works completed by others:</p> <ul style="list-style-type: none"> 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 or utilised hardstanding as a substitute RMS, refer to Section 3.1.1.5.
Balfour Beatty	Aquatic Centre	Removal of temporary Aquatic Centre stands, completion of landscaping works	<ul style="list-style-type: none"> Removal of Temporary stands Installation of external curtain walling Hard and soft landscaping 	<i>Works complete – report awaiting PPDT approval</i>

Skanska	F10B Bridge widening	Bridge connecting PDZ1 and 2 and a variety of landscaping works	<ul style="list-style-type: none"> Widening of bridge F10B deck, realignment of stairs and seating in PDZ2 and construction of temporary stairs in PDZ1. 	<p><i>LTP works complete – report awaiting PPDT approval</i> A marker layer and full thickness HHSL will need to be placed upon the removal of the temporary stairs and concrete pads by any future land owners / developers, refer to Table 4-1.</p>
Buckingham	Stratford Waterfront	Future Development Plot area in north of PDZ1	<ul style="list-style-type: none"> Regrading, using existing materials. Excavation and installation of drainage including slot drains and associated pipework, manholes and gullies), a petrol interceptor and new sections of kerbing; replacing of orange geotextile Marker Layer. <i>In-situ</i> sampling Completion of surfacing works to FFL. 	<p><i>Works complete – report awaiting PPDT approval.</i> <i>Residual items added to Table 4-1</i></p>

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 PDZ1 (Refs. 11 to 15). 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 PDZ1 are summarised in Table 2-2 below.

Table 2-2 Legacy Transformation RMS Addenda relevant to PDZ1

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 (PP-03554515)	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.

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. 16). 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.

The entire Stratford Waterfront site was generally constructed with hardstanding as a substitute to HHSL for Games Mode, in line with the Site Wide RMS Addendum (Use of Hardcover as a Substitute to the Separation Layer) (Ref. 16). Buckingham's LTP works also utilised the RMS Addendum in this area, due to the temporary nature of the development platform which will undergo further works in Legacy Mode.

Skanska utilised the Enabling Works RMS addendum in their PDZ1 Bridge F10B works, where no HHSL or Marker Layer was placed beneath the F10B Bridge temporary stairs, 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 the 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. 18) 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 PDZ1 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 PDZ1

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 <i>Not submitted</i>	N/A	N/A	N/A	9 <i>Not submitted</i>	11 N/A	12 N/A	13 <i>Not submitted</i>	N/A	10 <i>Not submitted</i>
Water Polo / Water Polo Drop-off / Surface Water Drainage Pumping Station / 2007 OLY Sitewide 10/90643/FULODA 09/90387/FUMODA (BAM Nuttall South Park)	N/A	N/A	N/A	N/A	N/A	WPLT.7 <i>Not submitted</i> WLT.07 <i>Not submitted</i> PLT.09 <i>Not submitted</i> LTD.1.12 <i>Not submitted</i>	WPLT.8 <i>Not submitted</i> WLT.08 <i>Not submitted</i> PLT.10 <i>Not submitted</i> LTD.1.13 <i>Not submitted</i>	WPLT.9 <i>Not submitted</i> WLT.09 <i>Not submitted</i> PLT.11 (Discharged ODA/OPLC) LTD.1.14 (Hackney submission outstanding)	- WLT.21 <i>Not submitted</i> PLT.20 (Discharged ODA/OPLC) LTD.1.16 (Hackney submission outstanding)	N/A
Balfour Beatty	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

3. Implementation

3.1. Summary of Legacy Transformation Works

The following sections summarise the key construction earthworks completed during the LTP within PDZ1 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 Eastern Bridge Abutment and Aquatic Centre

The temporary deck of the F10B Bridge was removed between PDZ1 and PDZ2 by Balfour Beatty (Ref. 19). However no earthworks were completed within PDZ1 as part of these works.

Aquatic Centre works (Ref. 20) comprised internal modifications and fit-out, removal of the temporary stand structures and subsequent completion of curtain walling and hard & soft landscaping to the surrounding areas. A total of 5,579t of 6F5 was imported to the QEOP for use as a temporary crane platform, to remove the temporary Aquatic Centre stands. Of the 6F5 material generated following the removal of the LAC003 crane platform, a total of 1,395t was reused below Marker Layer in the 'South Bump' landscaping works completed in LAC006, and the remaining 4,184t was exported offsite, back to the supplier, Cemex. A total of 1,623 t of subsoil and topsoil was imported for placement above Marker Layer across the site. Imported material comprised 421t subsoil placed in LAC007, 252t subsoil placed in LAC008, 535t of topsoil placed in LAC007 and 416t topsoil placed in LAC008. No excavations below existing Marker Layer were carried out by Balfour Beatty.

A total of six soil samples were collected from the above Marker Layer soils (2no. required for volume of soil imported) and all six were found to be statistically clean (Grubbs test). The soil leachate results showed exceedances of both zinc and ammoniacal Nitrogen. After running through the Grubbs test, all parameters were found to be statistically acceptable, with the exception of ammoniacal nitrogen. Elevated concentrations of ammoniacal nitrogen were present in five samples, as a result of the application of fertilizer to the topsoil to improve nutrient levels. The concentrations of ammonium will decrease over time as the organic content breaks down / is taken up by vegetation.

3.1.1.2. Draft Removal of temporary Bridge H08 and Water Polo venue, completion of utilities and landscaping

BAM Nuttall (Ref. 21) carried out a variety of LTP works across PDZ1. These included deconstruction of Bridge H08 (SC13 / SC20), removal of temporary Water Polo venue foundations and sheet piles (SC20), removal of back of house hardstanding, construction of utilities and hard and soft landscaping (SC13, SC22 and SC25), In addition to construction works BAM Nuttall were responsible for reporting on the LOCOG Bump Out / Reinstatement works (discussed further in Section 3.1.1.3) and validation of the temporary portions of the DHC network services which were completed by Cofely (discussed further in Section 3.1.1.4).

Bridge H08 was removed during the LTP Works. The work involved the removal of Span 1 (over Carpenters Road) and Span 2, (over Network Rail infrastructure) and removal of the southern approach ramp, all located within SC13 / SC20. The works involved the removal of the southern approach ramp, the excavation of which was completed to the Enabling Works FFL with tarmac and stone. To protect the exposed road surface a temporary layer of Type 1 stone was laid to create a crane platform for the removal of Span 2. This temporary fill layer (10,255 m³) was excavated back to the Enabling Works tarmac road surface once the bridge had been removed. No works were completed below the Enabling Work FFL.

Earthworks within SC20 included the removal of the reinforced concrete foundation, screw and sheet piles within the footprint of the temporary water polo venue building, removal of tarmac to the west (Back of House) and the installation of tree pits, lamp columns, kerbs and drainage. The pre-existing Marker Layer was left unchanged to the north of the zone. However, the Marker Layer was reinstated in the areas of soft landscaping along the river bank and verges adjacent to Carpenters Road and a new Marker Layer was laid to the south,

as shown on Figure 7. A total of 1,453 m³ below Marker Layer material and 7,874 m³ above Marker Layer was placed within SC20 and 206 m³ of above Marker Layer material was imported.

Within SC13 and SC25 new roads were constructed, with associated pedestrian footpath, drainage, ducting, signs and street lighting. The Marker Layer beneath the road and the UKPN service duct was not disturbed during the SC13 works. BAM Nuttall placed a new Marker Layer under the road verges. A total of 1,238 m³ of low nutrient topsoil was imported for placement in areas of SC13 soft landscaping to FFL. A total of 1,365 m³ of topsoil and subsoil was imported and placed within SC25.

The construction of soft landscaped earth mounds, the removal of Type 1 stone above the Marker Layer, installation of HHSL, construction of a drainage ducts and 20 manhole chambers, tree pits, street lights and a new road were carried out in SC22. The Marker Layer under the two mounds located south of the Aquatic Centre was reinstated at 600 mm below LTP FFL. The extent of the Marker Layer laid is shown on Figure 7. The material used for the soft landscaped mounds and hard landscaping comprised site won soils (6,626 m³) and imported soil from outside the QEOP (4,736 m³).

Chemical testing was carried out on the material placed across the BAM Nuttall LTP works. No exceedances of the human health or controlled waters SSAC were reported. Ammoniacal nitrogen exceeded the leachate SSAC in two out of 16 samples tested, however the concentrations were not considered to be significant, and as a result were not considered to represent an unacceptable risk to human health or controlled waters, in accordance with the Quality of Imported Fill framework (Ref. 8).

3.1.1.3. 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 temporary shallow 'readily connectable' services, installed by LOCOG and reinstatement with virgin Type 1. As per LOCOG's PPDT approved QoIF Application (Ref. 22), 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 to be included in Appendix D of the Final version of this CVR.

3.1.1.4. Removal of temporary DHC Pipework

The decommissioning works of the temporary portions of the DHC Network were completed by Cofely. Works involved the excavation of the pipes across zones; CZ1a, CZ3a, CZ4, CZ5a, CZ5b, and CZ6a. Upon removal the trenches were backfilled with compliant HHSL material. Environment Scientifics Group (ESG) completed validation sampling of the earthworks. The results of the validation sampling indicated that excavated soil and the backfill material did not pose a risk to controlled water receptors or the health of future site users. Further detail is appended to the BAM Nuttall Validation Report for PDZ1.

3.1.1.5. Bridge F10B Widening

The F10B Bridge widening works were completed by Skanska (Ref. 23), including construction of temporary stairs in PDZ1. Earthworks on the eastern side (PDZ1) of bridge F10B involved localised excavation to a depth of up to 400 mm below existing ground level (in total approximately 50 m³) for installation of concrete pads to support a new temporary staircase. The concrete pads were considered to provide a suitable substitute to the separation layer and as such no new Marker Layer was placed under these structures. A Marker Layer and full thickness HHSL will need to be placed upon the removal of the temporary stairs and concrete pads by any future land owners / developers, refer to Table 4-1. Skanska did not carry out any works below the ODA Enabling Works sub-grade levels. Materials placed by Skanska have been demonstrated, through validation, not to pose unacceptable risks to human health or controlled waters.

3.1.1.6. Draft Stratford Waterfront

The Stratford Waterfront development site works were completed by Buckingham (Ref. 24). Works included, re-grading of existing ground to acceptable formation levels. During these works, low spots were noted and filled with a suitable material (removed Type 1 already on site was used to backfill the soft spots and compacted in layers).

Excavation and installation of surface water drainage (including slot drains and associated pipework, manholes and gullies), a petrol interceptor and new sections of kerbing; replacing of orange geotextile Marker Layer, where breached below the linear channel drain; and localised lowering of the Marker Layer below the filter drain was completed. The filter drain was also surrounded by a geotextile membrane, to prevent fines entering the drainage trenches. This geotextile membrane was not installed as a Marker Layer and was black in colour.

A total of 495 m³ of material excavated from below Marker Layer in the areas of deeper granular drainage trenches was exported from site.

The Stratford Waterfront surface was completed to FFL, with the placement of 150 mm of imported Type 1 sub-base, 70 mm of asphalt base course and 30 mm asphalt wearing course, in accordance with design drawings.

A small portion of the Stratford Waterfront site was left with unbound, compacted Type 1 material at surface (as opposed to hardstanding across the remainder of the site). Two *in-situ* validation samples within areas of insufficient cover (i.e. HHSL / Marker Layer) were collected. The additional sampling indicated that this material was suitable based on current land use, noting that an asbestos concentration of 0.003%w/w was identified in sample SW-2 between 0.3 and 0.5m bgl. The requirement for a full thickness HHSL and action relating to the asbestos will need to be addressed by any future land owners / developers, refer to Table 4-1.

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 PDZ1 (Ref. 6) and summarises the works undertaken by the LTP Contractors to address these actions, where relevant.

Table 3-1 Residual Remedial Actions for PDZ1

No. (from Table 4.1 of the Stage 3 CVR)	Title	Description	Responsibility	Action Completed by Legacy Transformation Phase Contractors
3.1	Maintenance of River Wall cut-off	The ODA / FoP have maintained the integrity of the river wall cut-off during their works by placing lightweight fill only above the River Wall and by sealing any pipes or openings made during their works. Future land owners and developers should be aware of the river wall cut off during future works and continue to maintain its integrity.	Future land owners and developers / LLDC	Not Applicable, as no works have been undertaken by LTP Contractors in the river wall zone.
3.2	Rate of infiltration / recharge	Future land owners and developers are required to comply with the infiltration / recharge requirements specified in the SSRs.	Future land owners and developers / LLDC	Not Applicable. LTP Contractors have, where required, completed the final finishes as set out in the Design.
3.3	Removal of Temporary Structures	Removal of the Water Polo venue and temporary seating 'wings' at the Aquatics Centre and subsequent placement of Marker Layer and full HHSL to FFL. The location of the temporary structures are shown in Figure 4 of the Stage 2 CVR for PDZ1 (Ref. 4).	LLDC	Completed by LTP Contractors, refer to Sections 3.1.1.1 and 3.1.1.2 and 3.1.1.5.
3.4	Removal of Temporary Bridges	Removal of temporary Bridges F10A, F10B and H08 together with subsequent placement of Marker Layer and full HHSL to FFL. The location of the temporary bridges are shown in Figure 4 of the Stage 2 CVR for PDZ1 (Ref. 4).	LLDC	Completed by LTP Contractors, refer to Sections 3.1.1.1 and 3.1.1.2.
3.5	Completion of HHSL	Hard standing surfacing is to be completed and suitably validated by LLDC within the back of house area to the south east of the Aquatics Centre. The area is highlighted on Figure 7 of the Stage 2 CVR for PDZ1 (Ref. 4). As Water Polo and Aquatics temporary stands are removed there will be a requirement either to reinstate or complete the HHSL and Marker Layer.	LOCOG / LLDC	Partially completed by LTP Contractors, refer to Section 3.1.1.1 and 3.1.1.2.
3.6	Invasive Species Monitoring	Ongoing monitoring of invasive species adjacent to the river bank. The location of invasive species requiring ongoing monitoring is shown in Appendix E of the Stage 2 CVR for PDZ1 (Ref. 4).	Future land owners and developers / LLDC	Not applicable as no works have been undertaken by LTP adjacent to the river bank.
3.7	NAPL plume	Enabling Works identified a NAPL plume to the north of the Aquatics Centre, which was demonstrated not to present an unacceptable risk based on the SSRS Legacy design. Any change to this design which may include deep excavations or piling works in proximity to this feature must consider this and include for appropriate risk assessment e.g. piling risk assessment and potentially further down gradient monitoring to demonstrate no unacceptable risks exist (refer to Stage 1 CVR (Ref. 2)).	Future land owners and developers / LLDC	Refer to Section 3.3.1.
3.8	Placement of Marker Layer where omitted	FoPs were required to provide survey plans within two months of completion of the entire HHSL to demonstrate to the PPDT an acceptable thickness of HHSL (minimum 600 mm thickness). These survey plans also identified areas where the Marker Layer was not laid (Ref. 4). Reference should be made to Figures 6 and 7 of the PDZ1 Stage 2 CVR (Ref. 4) for the extent of Marker Layer and HHSL placed or replaced during the ODA works and the updated non-remediated areas drawing. Future works must consider the areas where Marker Layer has been omitted and take applicable corrective actions. This includes the area of the Olympic Park Fence – see 3.17 below.	Future land owners and developers / LLDC	A Marker Layer and full thickness HHSL will need to be placed upon the removal of the F10B Bridge temporary stairs and concrete pads by any future land owners / developers (Ref. 23). Refer to Section 3.1.1.5 and Figure 7.
3.9	Suitable infrastructure design	Future land owners and developers need to consider ground conditions when designing infrastructure, such as services, utilities and foundations.	Future land owners and developers / LLDC	LTP Contractors have designed and implemented their works accordingly to take account of known ground conditions.
3.10	Incorporation of vapour protection to building structures	Future land owners and developers should consider assessment of soil and gas vapour hazard and incorporate the appropriate vapour protection in their design and construction. The SSRS assumes that vapour protection will be required for all buildings / structures wherever indoor air is present.	Future land owners and developers / LLDC	Not applicable. No permanent structures have been installed by LTP Contractors.
3.11	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 (for details please refer to the ODA Stage 2 CVR (Ref. 4). In certain areas the project re-used non validated materials around utilities. As such below Marker Layer soils around utilities should be treated as potentially contaminated / harmful to health. This is highlighted in the applicable Asset Holders health and safety file. Health and safety risks to future workers accessing these utilities should be assessed in advance of undertaking works. Future land owners / developers should also be aware of the reduced thickness of HHSL within areas across PDZ1, as detailed in Section 3.3 and shown in Figure 7 the ODA Stage 2 CVR (Ref. 4).	Future land owners and developers / LLDC	Below ground works carried out by LTP Contractors have been subject to the PtP process. See Section 3.9 for further details.
3.12	Risk assessments	Future land owners and developers shall complete appropriate risk assessments with respect to unexploded ordnance (UXO), pathogens, asbestos, radiation and ground gas / vapours when undertaking excavations and / or construction activities during their work.	Future land owners and developers / LLDC	Appropriate Risk Assessments were carried out by LTP Contractors, where applicable. Refer to Sections 2.2.1 and 3.9.

No. (from Table 4.1 of the Stage 3 CVR)	Title	Description	Responsibility	Action Completed by Legacy Transformation Phase Contractors
3.13	Restrictions to remediation	An addendum to the Retained Areas Risk Assessment Report (RARAR) has been produced by the remedial designers detailing any areas not remediated as part of the ODA works (Ref. 26). Contractors shall be cognisant of the Residual Actions detailed in this report and in particular when working in the proximity of the features referenced in this report. Future developers need to consider what additional information is required in these areas.	Remedial designers / future land owners and developers / LLDC	Not applicable, RARAR areas were not impacted by LTP works.
3.14	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.	Future land owners and developers / LLDC	Not Applicable, no change in proposed land-use within the LTP areas of works.
3.15	Future Services	Future land owners and developers shall ensure that future services are installed within appropriately resistant / sealed utility corridors constructed as per the SSRS. Note, where this cannot be maintained, consideration must be given to suitable infrastructure design (see point 3.9 above).	Future land owners and developers / LLDC	Services installed by BAM Nuttall and Buckingham were completed as per the design, refer to appropriate Validation Reports for further details, Appendix A.
3.16	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	Not Applicable, no change in proposed FFL within the LTP areas of works. Refer to Section 3.
3.17	Olympic Park Fence Line (OPF) Removal	An easement associated with the OPF has meant that remediation and placement of Marker Layer and full HHSL has not been completed by ODA. The area of the OPF shall be assessed and corrective actions undertaken to complete the remedial design as part of the Legacy / Transformation phase. The location of the OPF is shown in Figure 4 of the ODA Stage 2 CVR (Ref. 4).	Future land owners and developers / LLDC	Not Applicable, the OPF was not removed by the LTP Contractors.
3.18	Protection of monitoring installations and facilities and Borehole Decommissioning	Undertaking measures required to protect monitoring and groundwater remediation installations and facilities. Any damage to such installations or facilities is to be reported to the PtP Team (see Appendix C) as soon as practicable so that remedial works / decommissioning (as appropriate) can be undertaken. Correct decommissioning of boreholes, in accordance with applicable guidance, is required to prevent the generation of migration pathways.	Future land owners and developers / LLDC	All LTP Contractors followed the appropriate guidelines during their works and ensured that access to monitoring locations and facilities were maintained. PtP documentation is included in the corresponding Validation Reports, listed in Appendix A.
3.19	Piling Risk Assessments	Piling risk assessments are required for any future structures constructed across the site.	Future land owners and developers / LLDC	Refer to Section 3.3.1 for details of Piling Risk Assessments completed for PDZ1 LTP works.
3.20	Final Validation Report	The ODA / FoP / LOCOG / LLDC / future land owners and developers shall produce and gain approval of final validation report on completion of construction to complete above remediation requirements, primarily the provision of the full HHSL.	Future land owners and developers / LLDC	LTP works within PDZ1 have been captured within this Stage 4 CVR.

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 PDZ1, 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 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 three remaining boreholes in PDZ1 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 PDZ1

Task	Document References
Bridge F10B	Report Ref. 130815, Rev 1. (Decision Notice Ref. <i>awaiting</i>). (Ref. 27)

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. No LTP works within PDZ1 have been carried out within these restricted areas, as a result the previously recorded details and residual risks associated with these areas remain valid.

3.5. Sampling and Analytical Testing

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

Test suites were designated by the individual LTP Contractors to capture the relevant compounds listed within the zonal SSAC for HHSL and general backfill, as outlined within the SSRs for PDZ1 as listed in the Stage 1 CVR (Ref. 2).

3.6. Radiological Material / Unexpected Contamination

Details of the works completed during the Enabling Works phase, to assess potential radiological materials, are summarised in the Stage 1 CVR (Ref. 2). For the FoP works, the risk associated with encountering radiological materials at the site was considered to be low based on the extent of the earthworks, in relation to the works completed during the Enabling Works phase. Consequently, no further formal radiological assessment was undertaken by the FoPs for their works in PDZ1. It is further noted that where as-dug materials were re-used as general fill within PDZ1 or general fill was re-used from another zone with a known previous radiological land use, that these materials have been placed beneath a full thickness Human Health Separation Layer or hard standing substitute. The full thickness (minimum 600mm) of HHSL or hard standing substitute has been shown to provide an effective barrier to underlying materials thus breaking potential pathways to future human health receptors. Within PDZ1 the only areas identified as not having full thickness HHSL or an agreed hard standing substitute are the two small WSAs 29 and 30, as detailed in Section 3.3. 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 they are identified within Table 4-1 below.

During the construction of surface water drainage outfall S01-07, Nuttall SBH recorded a small quantity of granite aggregate was used, which contains naturally occurring levels of radioactivity. Nuvia, the radiological specialists, produced a survey of granite kerb blocks on site, which concluded that the recorded levels

presented a 'negligible hazard' (Ref. 28). In addition, the small amount of granite aggregate used within outfall S01-07 has been covered by a full thickness of HHSL. The use of this granite aggregate is therefore considered to be of insignificant risk to human health and controlled waters with respect to radionuclide 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 PDZ1.

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. 29) 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.

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 PDZ1 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 PDZ1 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 PDZ1.

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 PDZ1

No. (from Table 3.1)	Title	Required Action	Action By
3.1	Maintenance of River Wall cut-off	The ODA / FoP have maintained the integrity of the river wall cut-off during their works by placing lightweight fill only above the River Wall and by sealing any pipes or openings made during their works. Future land owners and developers should be aware of the river wall cut off during future works and continue to maintain its integrity.	Future land owners and developers / LLDC
3.2	Rate of infiltration / recharge	Future land owners and developers are required to comply with the infiltration / recharge requirements specified in the SSRSs.	Future land owners and developers / LLDC
3.3	Removal of Temporary Structures	Removal of the Water Polo venue and temporary seating 'wings' at the Aquatics Centre and subsequent placement of Marker Layer and full HHSL to FFL. The location of the temporary structures are shown on Figure 4 of the Stage 2 CVR for PDZ1 (Ref. 4).	LLDC Action completed during LTP
3.4	Removal of Temporary Bridges	Removal of temporary Bridges F10A, F10B and H08 together with subsequent placement of Marker Layer and full HHSL to FFL. The location of the temporary bridges are shown in Figure 4 of the Stage 2 CVR for PDZ1 (Ref. 4).	LLDC Action completed during LTP
3.5	Completion of HHSL	Hard standing surfacing is to be completed and suitably validated by LLDC within the back of house area to the south east of the Aquatics Centre. The area is highlighted on Figure 7 of the Stage 2 CVR for PDZ1 (Ref. 4). As Water Polo and as the Aquatics temporary stands are removed there will be a requirement to either reinstate or complete the HHSL and Marker Layer.	LOCOG / LLDC LOCOG bump out to be reported by BAM Nuttall
3.6	Invasive Species Monitoring	Ongoing monitoring of invasive species adjacent to the river bank. The location of invasive species requiring ongoing monitoring is shown in Appendix E of the Stage 2 CVR for PDZ1 (Ref. 4).	Future land owners and developers / LLDC
3.7	NAPL plume	Enabling Works identified a NAPL plume to the north of the Aquatics Centre, which was demonstrated not to present an unacceptable risk based on the SSRS Legacy design. Any change to this design which may include deep excavations or piling works in proximity to this feature must consider this and include for appropriate risk assessment e.g. piling risk assessment and potentially further down gradient monitoring to demonstrate no unacceptable risks exist (refer to Stage 1 CVR (Ref. 2)).	Future land owners and developers / LLDC
3.8*	Placement of Marker Layer where omitted	FoPs were required to provide survey plans within two months of completion of the entire HHSL to demonstrate to the PPDT an acceptable thickness of HHSL (minimum 600 mm thickness). These survey plans also identified areas where the Marker Layer was not laid (Ref. 4). Reference should be made to Figures 6 and 7 of the PDZ1 Stage 2 CVR (Ref. 4) for the extent of Marker Layer and HHSL placed or replaced during the ODA works and the updated non-remediated areas drawing. Future works must consider the areas where Marker Layer has been omitted and take applicable corrective actions. This includes the area of the Olympic Park Fence – see 3.17 below. *A Marker Layer and full thickness HHSL will need to be placed upon the removal of the F10B Bridge temporary stairs and concrete pads and within the Stratford Waterfront area by any future land owners / developers.	Future land owners and developers / LLDC
3.9	Suitable infrastructure design	Future land owners and developers need to consider ground conditions when designing infrastructure, such as services, utilities and foundations.	Future land owners and developers / LLDC
3.10	Incorporation of vapour protection to building structures	Future land owners and developers should consider assessment of soil and gas vapour hazard and incorporate the appropriate vapour protection in their design and construction. The SSRS assumes that vapour protection will be required wherever indoor air is present.	Future land owners and developers / LLDC
3.11	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 (for details please refer to the ODA Stage 2 CVR (Ref. 4). 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. This is highlighted in the applicable Asset Holders health and safety file. Health and safety risks to future workers accessing these utilities should be assessed in advance of undertaking works. Future land owners / developers should also be aware of the reduced thickness of HHSL within areas across PDZ1, as detailed in Section 3.3 and shown in Figure 7 the ODA Stage 2 CVR (Ref. 4).	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	Restrictions to remediation	An addendum to the RARAR has been produced by the remedial designers detailing any areas not remediated as part of the ODA works (Ref. 26). Contractors shall be cognisant of the Residual Actions detailed in this report and in particular when working in the proximity of the features referenced in this report. Future developers need to consider what additional information is required in these areas.	Remedial designers / future land owners and developers / LLDC
3.14	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.	Future land owners and developers / LLDC
3.15	Future Services	Future land owners and developers shall ensure that future services are installed within appropriately resistant / sealed utility corridors constructed as per the SSRS. Note: where this cannot be maintained, consideration must be given to suitable infrastructure design (see point 3.9 above).	Future land owners and developers / LLDC
3.16	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

3.17	OPF Removal	An easement associated with the OPF has meant that remediation and placement of Marker Layer and full HHSL has not been completed by ODA. The area of the OPF shall be assessed and corrective actions undertaken to complete the remedial design as part of the Legacy / Transformation phase. The location of the OPF is shown in Figure 4 of the ODA Stage 2 CVR (Ref. 4).	Future land owners and developers / LLDC
3.18	Borehole Decommissioning	Correct decommissioning of boreholes, in accordance with applicable guidance, is required to prevent the generation of migration pathways.	Future land owners and developers / LLDC
3.19	Piling Risk Assessments	Piling Risk Assessments are required for any future structures constructed across the site.	Future land owners and developers / LLDC
3.20*	Asbestos exceedances	Future land owners and developers shall ensure that asbestos identified at the Stratford Waterfront site is dealt with accordingly. A small portion of the Stratford Waterfront site currently remains temporarily unsealed site use in lieu of further development. Any site use (events) will be based on short term exposure (usually over a single weekend) and good housekeeping shall be carried out for any events scheduled to take place on the site prior to / during events (such as damping down, dust management, road sweepers). Also refer to Item 3.8.	Future land owners and developers / LLDC

Note: * newly identified item following on from LTP works.

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 1. Report Ref. REP-ATK-PM-ZZZ-ZZZ-ZZZ-E-0192. (Decision Notice Ref. 11/90151/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 1, Rev03. Report Ref. REP-ATK-PM-01Z-ZZZ-ZZZ-Z-0001. (Decision Notice Ref. 12/00037/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-0001). (Decision Notice Ref. 12/00068/AOD).
7. Planning Application Approval (Legacy Community Scheme, Application No – 11/90621/OUTODA, Date of Application – 5th October 2011). Report Ref. LC810-LCI-APK-CM-STM-0001.
8. Atkins, November 2009. Quality of Imported Fill – Framework: Quality of Imported Fill – Framework Letter. Condition SP.0.37 and OD.0.39. Report Ref. 0241-ENW-ATK-LET-00328. (Decision Notice Ref. N/A).
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. **Not yet submitted to PPDT**).
16. 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)
17. Skanska Infrastructure Services, July 2010. Landscape and Public Realm: South Park Works, Change of notice for areas of permanent hard standing – substitution of separation layer and raising of Marker Layer. Report Ref. 7170-LPR-SPK-L-DCR-002.
18. 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).
19. 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. **Awaiting PPDT approval**).
20. Balfour Beatty, June 2014. Validation Report for PDZ1 Sub-area Aquatics Centre – Legacy Phase. Report Ref. LC403-AQC-ARE-J-REP-0080, Rev P02 (Decision Notice Ref. **Awaiting PPDT approval**).

21. Capita (on behalf of BAM Nuttall), November, 2014. Validation Report PDZ1. Report Ref. LC402-LCI-SPK-CM-REP-0056, Rev P02. (Decision Notice Ref. **Awaiting PPDT approval**).
22. 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).
23. Skanska, April 2014. Validation Report for Legacy Transformation Works in Planning Delivery Zones 2, 4 (for Bridge F06 only) and 1 (for Bridge F10B only). Report Ref. LC404-HSP-SPK-W-REP-0005, Rev P01. (Decision Notice Ref. **Awaiting PPDT approval**).
24. Atkins (on behalf of Buckingham), November 2014. Stratford Waterfront, PDZ1 Validation Report. Report Ref. LC810-LCI-SPK-CM-REP-0001, Rev P01. (Decision Notice Ref. **Awaiting PPDT approval**).
25. Atkins, May 2012. Alluvium Penetration Report for PDZ1. Report Ref. 0241-OPS-SPK-C-REP-0001 Rev P02. (Decision Notice Ref. 12/90156/AODODA).
26. Atkins, October 2012. Retained Areas Risk Assessment Addendum. Report Ref, 0241-ENW-PWD-CM-REP-0001. (Decision Notice Ref. 12/00159/AOD).
27. Martello Piling Ltd, September 2013. Environmental Risk Assessment, Olympic Park Bridge. Report Ref. 130815, Rev 1. (Decision Notice Ref. **awaiting details**).
28. Nuvia, September 2010. Addendum No. 1 to the Summary Report of Radiological Surveys Conducted in Olympic Park South (Additional Works in CZ2a, CZ3a and OLY3). Report Ref. REP-ENL-CE-ZZZ-OLP-SP1-E-0365. (Decision Notice Ref. **awaiting details**).
29. Skanska, February, 2014 South Park Materials Management Plan. Report Ref. LC404-HSP-SPK-W-PLN-0003(Decision Notice Ref. **Awaiting PPDT Approval**)

Figures

- Figure 1: Location and Boundary of Planning Delivery Zone 1
- Figure 2: Olympic End Use for Planning Delivery Zone 1
- Figure 3: Legacy Transformation Phase End Use for Planning Delivery Zone 1
- Figure 4: Legacy End Use for Planning Delivery Zone 1
- Figure 5: Spatial Coverage of Legacy Transformation Phase Validation Reports within Planning Delivery Zone 1
- Figure 6: Sub-Grade Levels for Planning Delivery Zone 1
- Figure 7: Extent of Marker Layer within Planning Delivery Zone 1
- Figure 8: Extent and Thickness of Human Health Separation Layer within Planning Delivery Zone 1
- Figure 9: Final Finished Level for Planning Delivery Zone 1
- Figure 10: Retained Areas within Planning Delivery Zone 1
- Figure 11: Exceedances requiring Action in Legacy (Not Applicable to PDZ1)
- Figure 12: Representative As-built Sections of the Final Remedial Cover System in Planning Delivery Zone 1

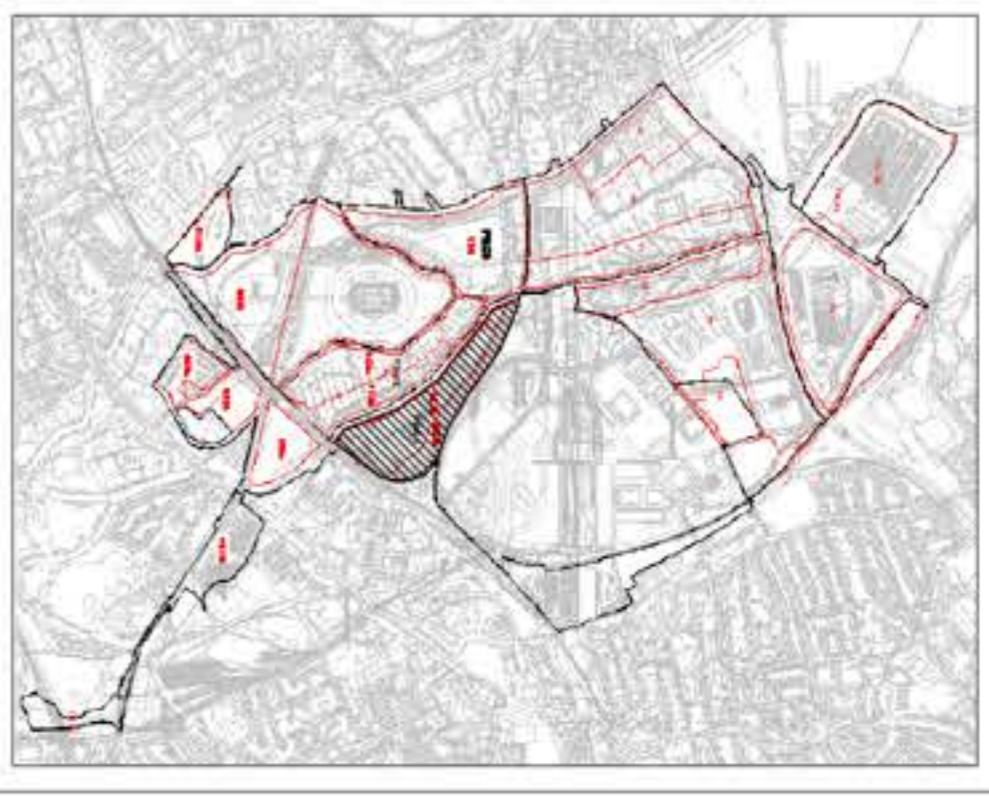


L03A

STRATFORD CITY
MIXED-USE
TOWN CENTRE

Legend

- Planning Delivery Zone (PDZ1) Boundaries
- Construction Zone Boundaries (CZ)
- PDZ 1



Notes:
 Post Games Transformation Parkwide Masterplan Drawing No.3352_0078 used as Basemap.

No.	Description	Appr.	N.	DATE
Rev	Description	Drawn	Checked	Date
Safety, Health and Environment Information				
In addition to the hazards / risks normally associated with the types of work outlined on this drawing, note the following risks and information:				
Construction	CA			
Demolition /	DA			
Excavation /	DE			
Foundation (piling)	DF			
Roof	DR			
Structure	DS			
Water	DW			

For information relating to Use, Cladding and Maintenance see the Health and Safety File. For information relating to the proposed works, see the Construction Method Statement and Construction Working, where appropriate, to an approved method statement.

Created by
Prepared by
 ATKINS
 On behalf of the LLDC

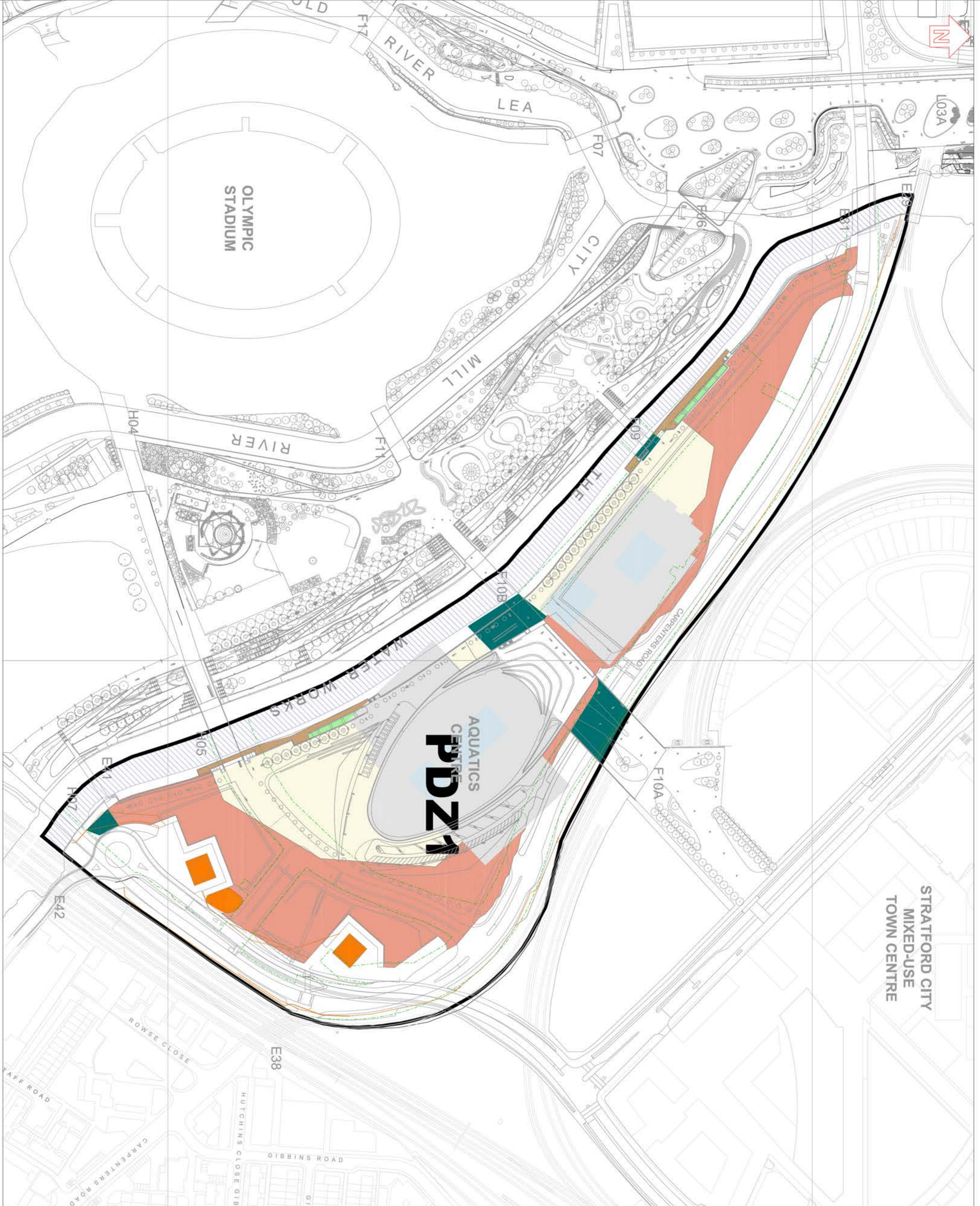
Drawing Title
**Location and Boundary of
 Planning Delivery Zone 1**

Project Title
Olympic Park Remediation

Drawn	Checked	Approved
10/08/2014	1:1250	A1
Date	Scale	Size

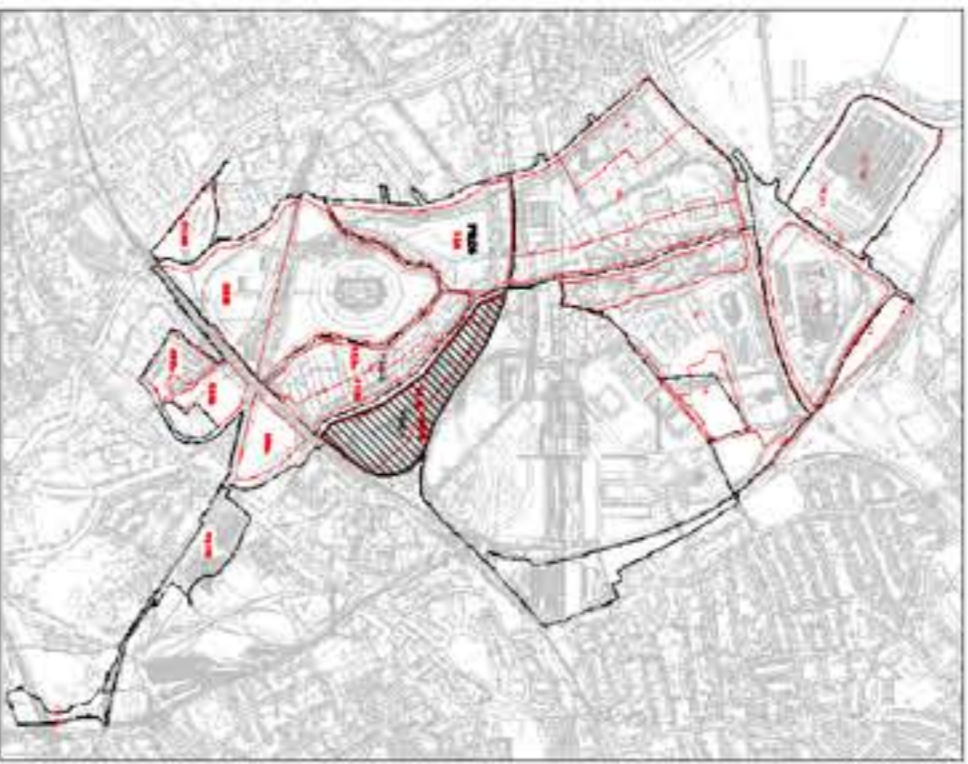
Purpose of Drawing
FINAL

Drawing No. **FIGURE 1** Sheet No. **01** Rev. **A**



STRATFORD CITY
MIXED-USE
TOWN CENTRE

- Legend**
- PLANNING DELIVERY ZONE (PDZ1) BOUNDARIES
 - UN-NAMED POND/CW
 - SECURITY FENCES
 - UTILITY SERVICE CORRIDORS
 - RIVER + CANAL (WATERWAYS)
 - FIELD OF PLAY
 - SPECTATORS AREAS
 - VENUES
 - PARKLANDS AND PUBLIC REALM
 - BRIDGE
 - UTILITIES



NOTE:
Extract taken from drawing Ref: 0239-MW-QUIR-1-030-9-111

No.	Description	Appr.	N.	DATE
Rev	Description	Drawn	Checked	Date
Safety, Health and Environment Information				
In addition to the hazards / risks normally associated with the type of work outlined on this drawing, note the following risks and information:				
Construction	CA			
Demolition /	CA			
Excavation /	CA			
Use of	CA			
Plant /	CA			
Equipment /	CA			
Materials /	CA			
Substances /	CA			
Other	CA			

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ATKINS
On behalf of the LLDC

Drawing Title
**Olympic End Use
Planning Delivery Zone 1**

Project Title
Olympic Park Remediation

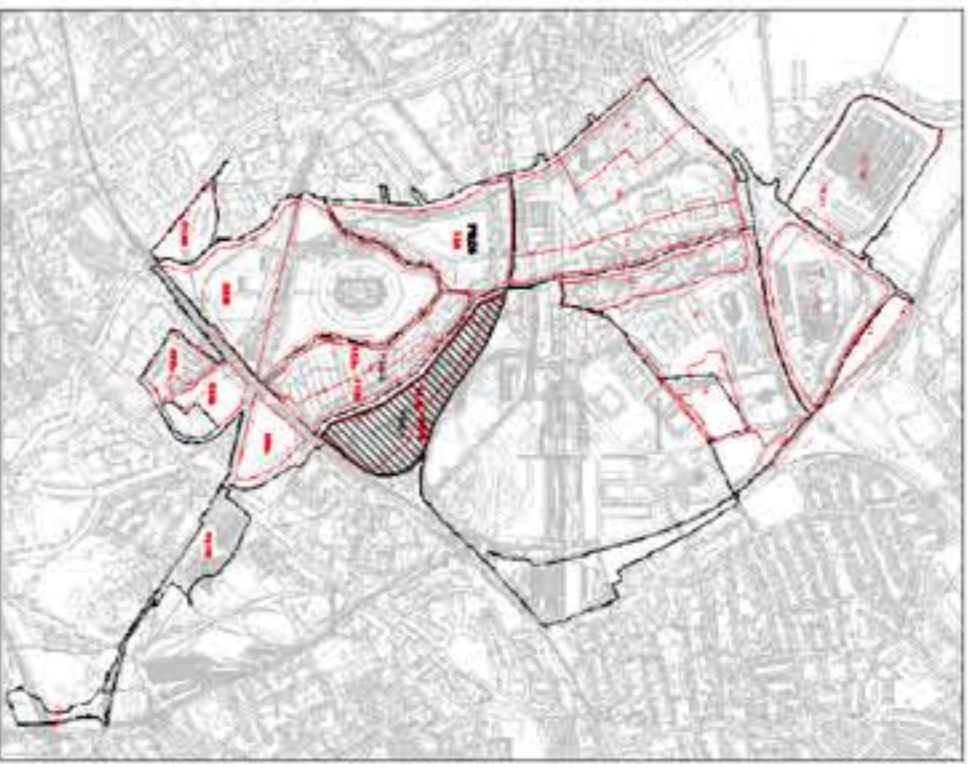
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10/08/2014	1:1250	A1
Date	Scale	Size

Purpose of Drawing
FINAL

Drawing No. **FIGURE 2** Sheet No. **01** Rev. **A**



- Legend**
- Planning Delivery Zone (PDZ) boundary
 - Construction Zone (CZ) boundary
 - River and canal (waterways)
 - ▨ Transport areas
 - ▨ Parks and public realm
 - ▨ Nature reserve
 - ▨ Unassigned development jobs
 - ▨ H1SC-CGRS



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

No.	Description	Author	Date
1	Safety, Health and Environment Information	N. DONOVAN	
2	In addition to the hazards / risks normally associated with the types of work outlined on this drawing, note the following risks and information:		
3	Construction		
4	Demolition / (re)use		
5	Disassembly / (re)use		
6	For information relating to Use, Cladding and Maintenance see the Health and Safety Information (H&S) document, which is available on the project website.		
7	For information relating to the proposed remediation, see the Remediation Statement, which is available on the project website.		

Prepared by
ATKINS
 On behalf of the LLDC

Drawing Title
**Legacy Transformation Phase
 Olympic End Use
 For Planning Delivery Zone 1**

Project Title
Olympic Park Remediation

Drawn	Checked	Approved

Date
 10/08/2014

Scale
 1:1250

Purpose of Drawing
FINAL

Drawing No.
FIGURE 3

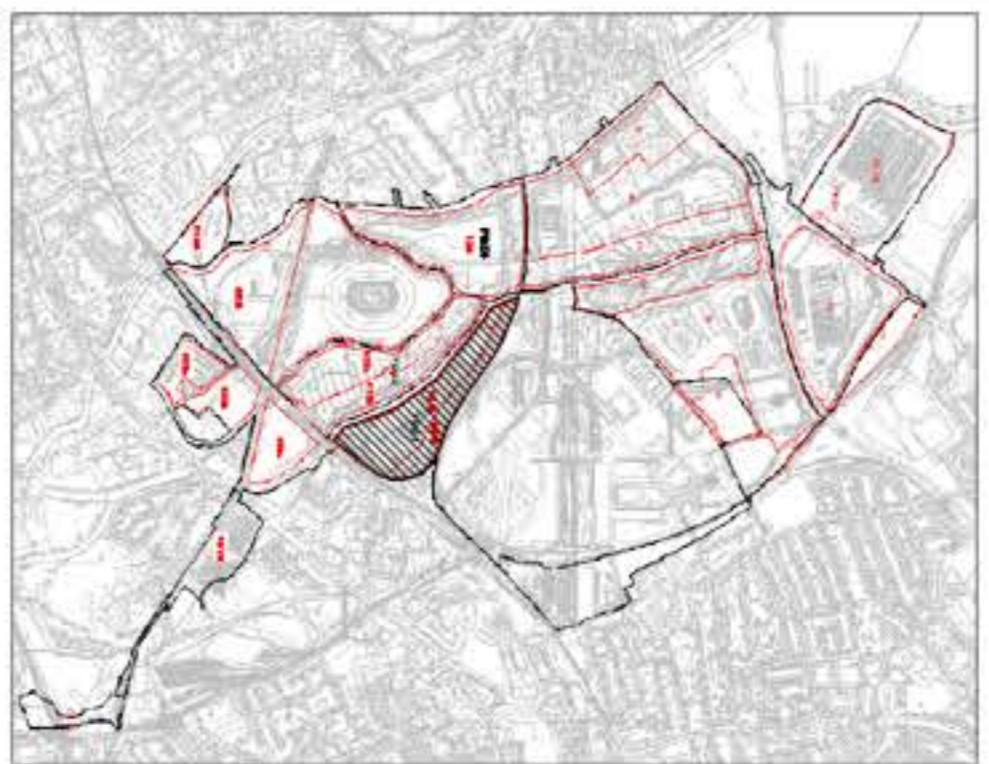
Sheet No.
01

Rev.
A



STRATFORD CITY
MIXED-USE
TOWN CENTRE

- Legend**
- Planning Delivery Zone (PDZ) boundary
 - Construction Zone (CZ) boundary
 - Asphalt paving - no surface treatment
 - Proposed road
 - Planting
 - Trees park edge
 - Residential built form
 - Courtyard
 - Grass pitch lines
 - Neighbourhood play space
 - Path
 - Shadow bridge
 - Gardens
 - Courcourse
 - Plant bed
 - Wetlands
 - Road marking
 - Bench
 - Shared surfaces



NOTE:
Extract taken from drawing Ref:
LCS-DWG-ILL-MAS-XXX-GLB-001_Rev5.3

No.	Description	Author	Date
1	Issue for Health and Environment Information	APR N DONNANY	
2	Issue for Health and Environment Information		
3	Issue for Health and Environment Information		
4	Issue for Health and Environment Information		
5	Issue for Health and Environment Information		
6	Issue for Health and Environment Information		
7	Issue for Health and Environment Information		
8	Issue for Health and Environment Information		
9	Issue for Health and Environment Information		
10	Issue for Health and Environment Information		

Prepared by
ATKINS
On behalf of the LLDC

Legacy End Use for
Planning Delivery Zone 1

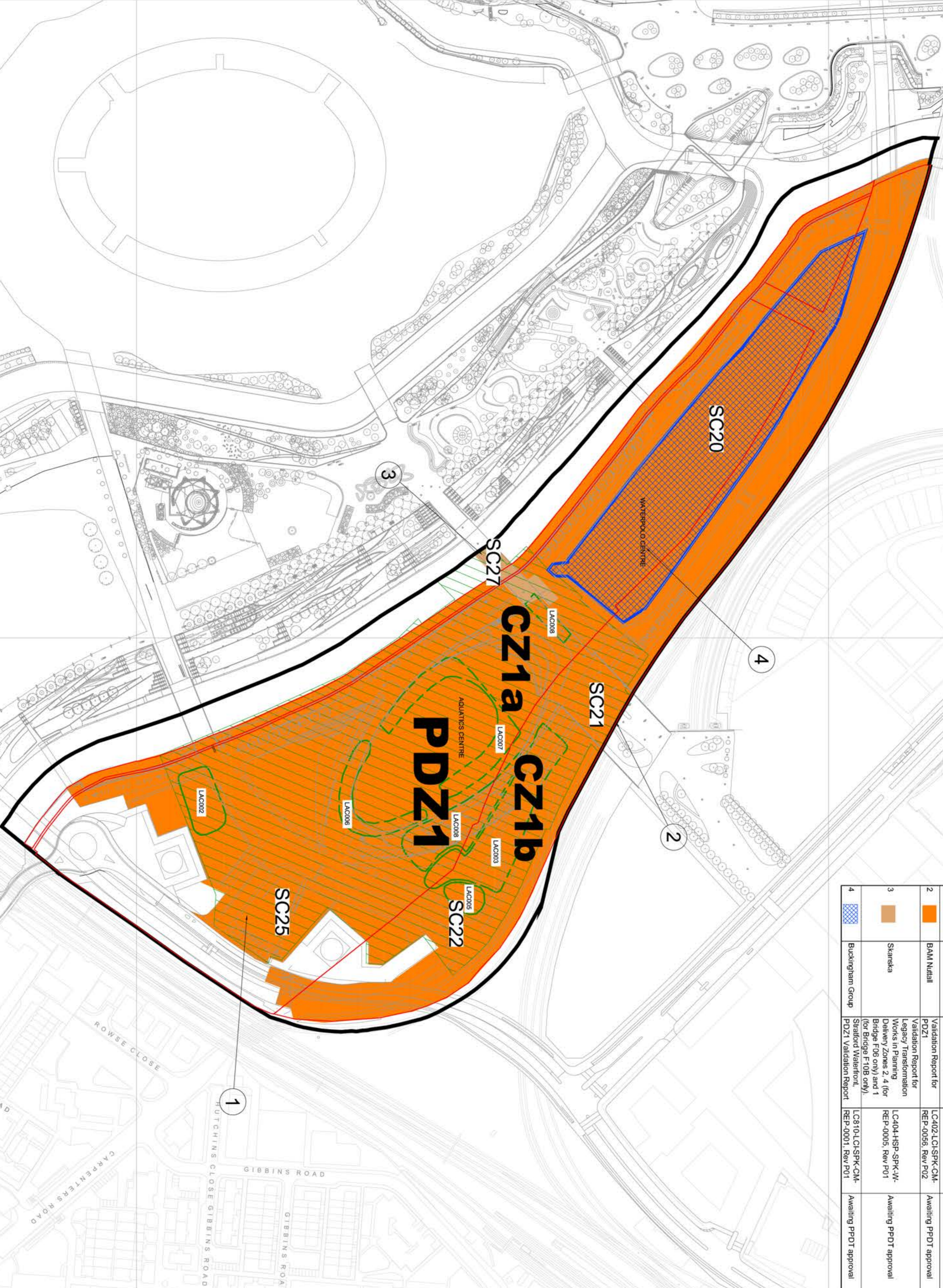
Olympic Park Remediation

Drawn	Checked	Approved
16/06/2014	Scale	Size
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LTP Validation Reports in Planning Delivery Zone 1				
Ref	Principal Contractor	Validation Report Title	Validation Report Reference	Decision Notice
1	Balfour Beatty	Validation Report for PDZ1 Sub-area Aquatics Centre – Legacy/Phase	LC403-AQC-ARE-J-REP-0080, Rev P02	Awaiting PPDT approval
2	BAM Nuttall	Validation Report for PDZ1	LC402/LC1-SPK-CM-REP-0056, Rev P02	Awaiting PPDT approval
3	Skanska	Validation Report for Legacy Transformation Works in Planning Delivery Zones 2, 4 (for Bridge F06 only) and 1 (for Bridge F10B only), Stratford Waterfront, PDZ1 Validation Report	LC404-HSP-SPK-W-REP-0005, Rev P01	Awaiting PPDT approval
4	Buckingham Group	PDZ1 Validation Report	LC810-LC1-SPK-CM-REP-0001, Rev P01	Awaiting PPDT approval

Legend

- Planning Delivery Zone (PDZ1) Boundaries
- Construction Zone Boundaries



- NOTES:**
- Unshaded areas have not been subject to FQP validation.
 - Refer to figure 9 'Retained Areas Within PDZ1' for further information.

Project Title
Olympic Park Remediation

Legacy Transformation Phase Validation Reports for Planning Delivery Zone 1

Prepared by
ATKINS
On behalf of the LLDC

Drawing Title
Spatial Coverage of Legacy Transformation Phase Validation Reports for Planning Delivery Zone 1

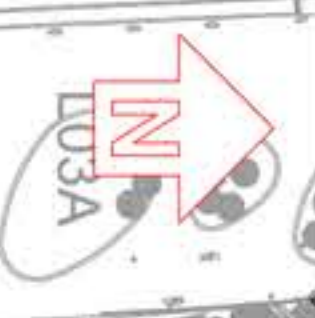
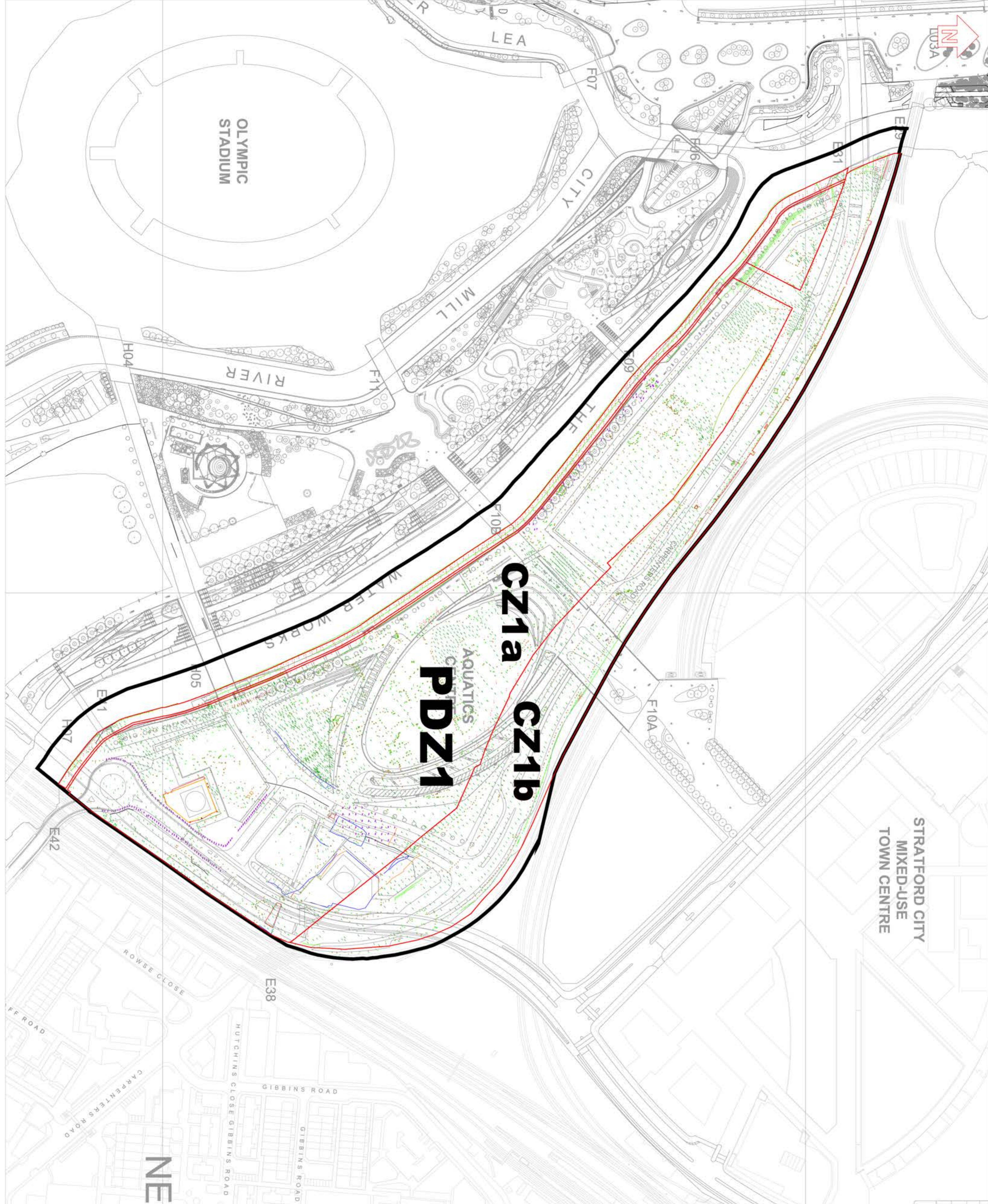
No.	Description	Appr.	N.	DDMMYY
Rev	Description	Drawn	Checked	Date

Drawn [] **Checked** [] **Approved** []

Date 16/08/2014 **Scale** 1:1250 **Size** A1

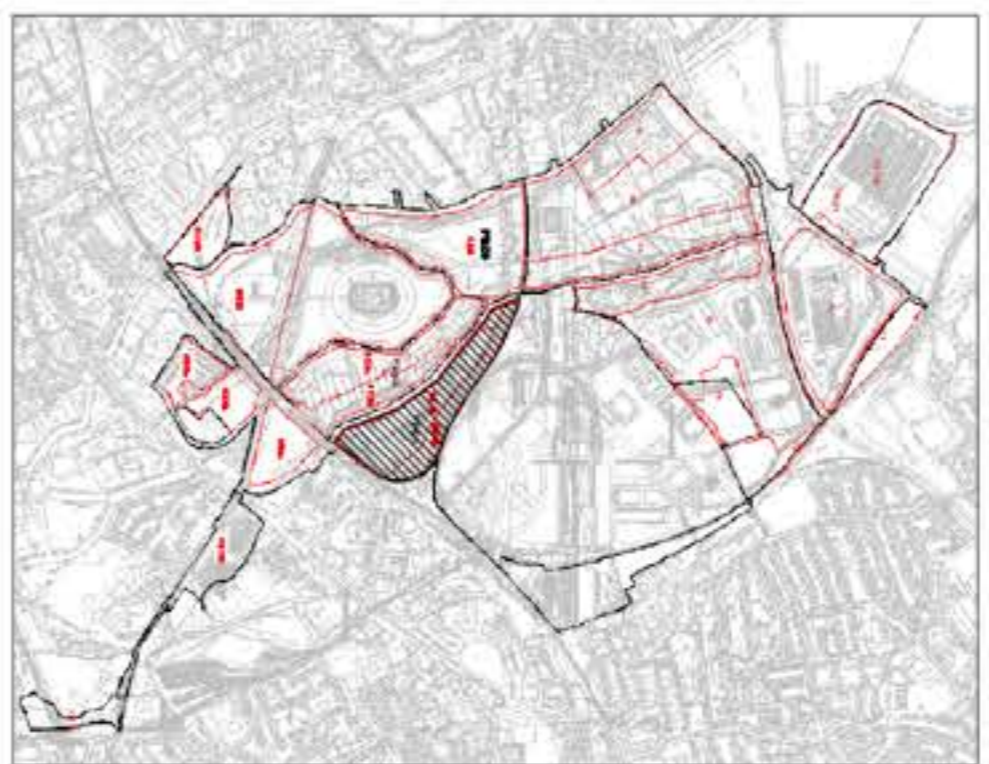
Purpose of Drawing
FINAL

Drawing No. FIGURES 01 **Sheet** Rev. A



STRATFORD CITY
MIXED-USE
TOWN CENTRE

- Legend**
- Planning Delivery Zone (PDZ) Boundary
 - Construction Zone (CZ) Boundary
 - 8,935 Existing works sub-grade levels
 - 8,935 LTP sub-grade levels
 - 8,935 F&P sub-grade levels



- Note:**
1. Further information on applicable variation for sub-grade levels is available in respective LTP reports.
 2. The LTP contractors did not excavate beyond the ODA Existing Works or F&P sub-grade levels.
 3. Refer to the electronic version of this drawing to view the survey levels.

No.	Description	Appr.	N.	DATE
Rev	Description	Drawn	Checked	Date

Safety, Health and Environment Information
In addition to the hazards / risks normally associated with the types of work outlined on this drawing, note the following risks and information:

Construction

Demolition / Dismantling (if any)

Excavation (if any)

For information relating to Use, Cleaning and Maintenance see the Health and Safety file and the Construction file. For information relating to the Health and Safety and Construction working, where appropriate, to an approved method statement.

Creator

Prepared by
ATKINS
On behalf of the LLDC

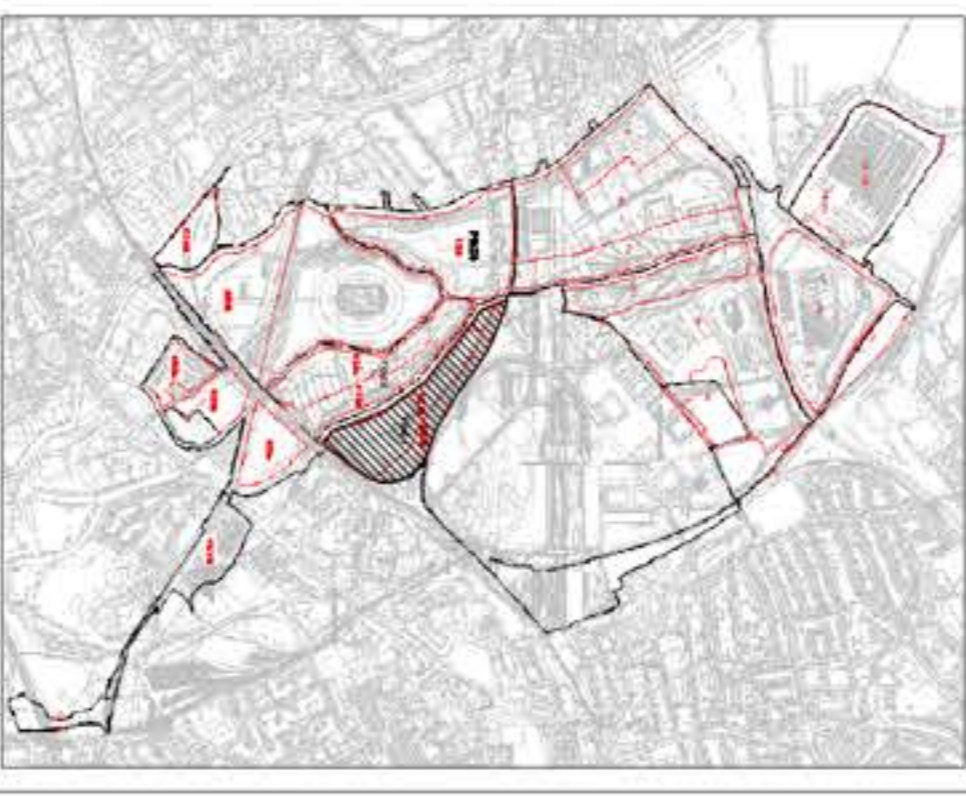
Drawing Title
**Sub-Grade Levels
for Planning Delivery Zone 1**

Project Title		Olympic Park Remediation	
Drawn	Checked	Approved	
Date	Scale	Size	
16/08/2014	1:1250	A1	
Purpose of Drawing		FINAL	
Drawing No.	Sheet	Rev.	
FIGURE 6	01	A	



AREAS WHERE MARKER LAYERS IS ABSENT IN PLANNING DELIVERY ZONE 1		
Ref	Area	Document Reference no.
1	EDF2 Head House (Marker Layer absent)	REP-ATK-CM-ZZ-01P-XXX-E-001 (11/90102/A0000A)
2	NS12 Head House (Marker Layer absent)	REP-ATK-CM-ZZ-01P-XXX-E-001 (11/90102/A0000A), 0241-ENV-PWD-CM-REP-0001
3	Aquatics (Marker Layer absent)	6001-ADC-ARE-CK-REP-0002 (10/90102/A0000A)
4	Eastern boundary of CZ1b against Network Rail assets (Marker Layer absent)	REP-ATK-CM-ZZ-01P-XXX-E-001 (11/90102/A0000A), 0241-ENV-PWD-CM-REP-0001
5	E31 bridge abutments (Marker Layer absent)	REP-ATK-CM-ZZ-01P-XXX-E-001 (11/90102/A0000A)

- Legend**
- Planning Delivery Zone (PDZ1) Boundaries
 - Construction Zone Boundaries (CZ)
 - Stratford Waterfront Boundary
 - Marker Layer Placed or Replaced by Follow On Contractors
 - Marker Layer placed by Enabling Works
 - Marker Layer Absent
 - Marker Layer placed by BAM Nutall during Legacy Transformation Phase



No.	Description	Appr.	Date
Rev	Description	Drawn	Checked

Author: N. DONOVAN
Drawn: []
Checked: []
Date: []

Project Title: Olympic Park Remediation
Within Planning Delivery Zone 1

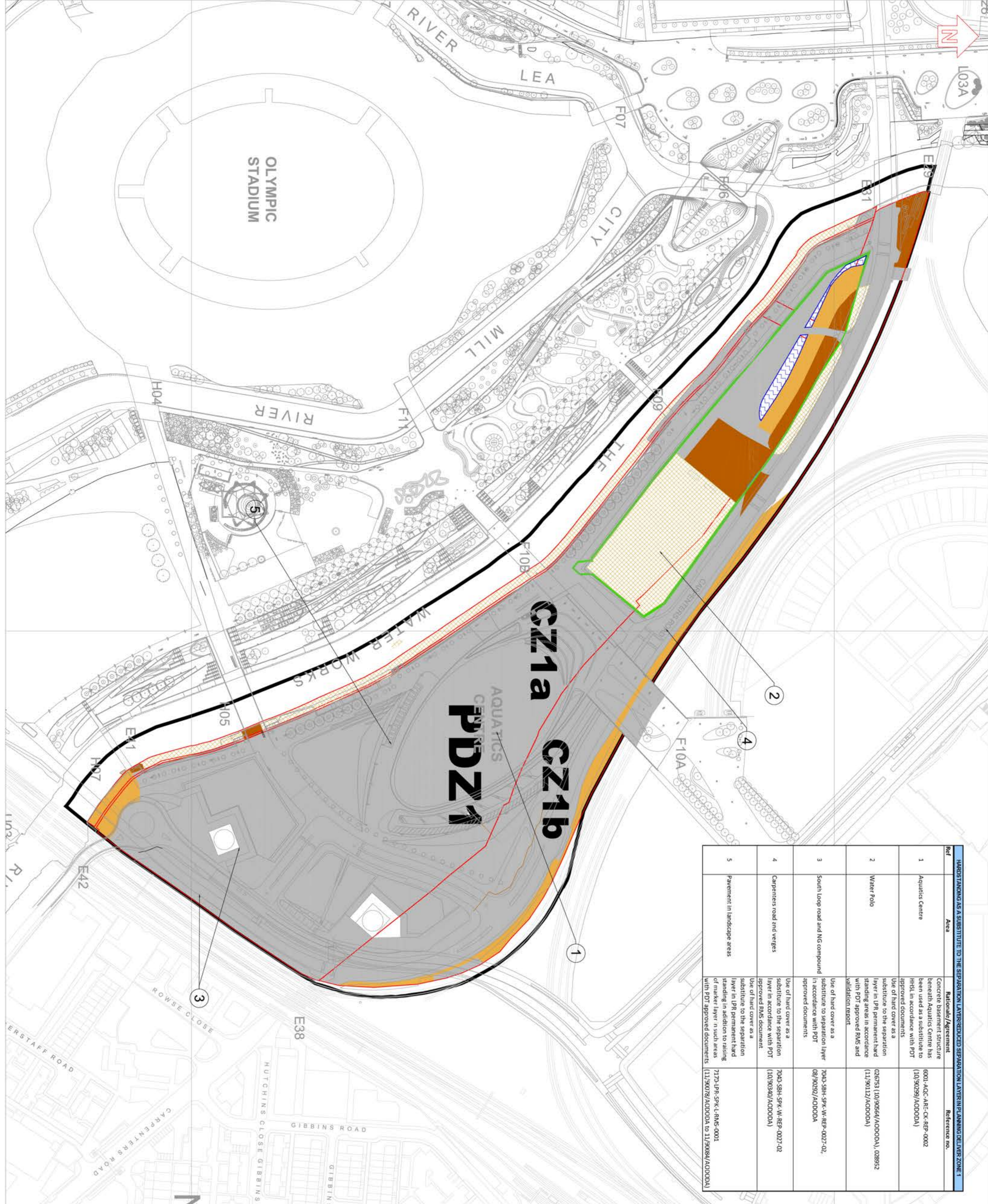
Prepared by: ATKINS
On behalf of the: LLDC

Project Title: Olympic Park Remediation
Within Planning Delivery Zone 1

Date: 16/08/2014
Scale: 1:1250
Size: A1

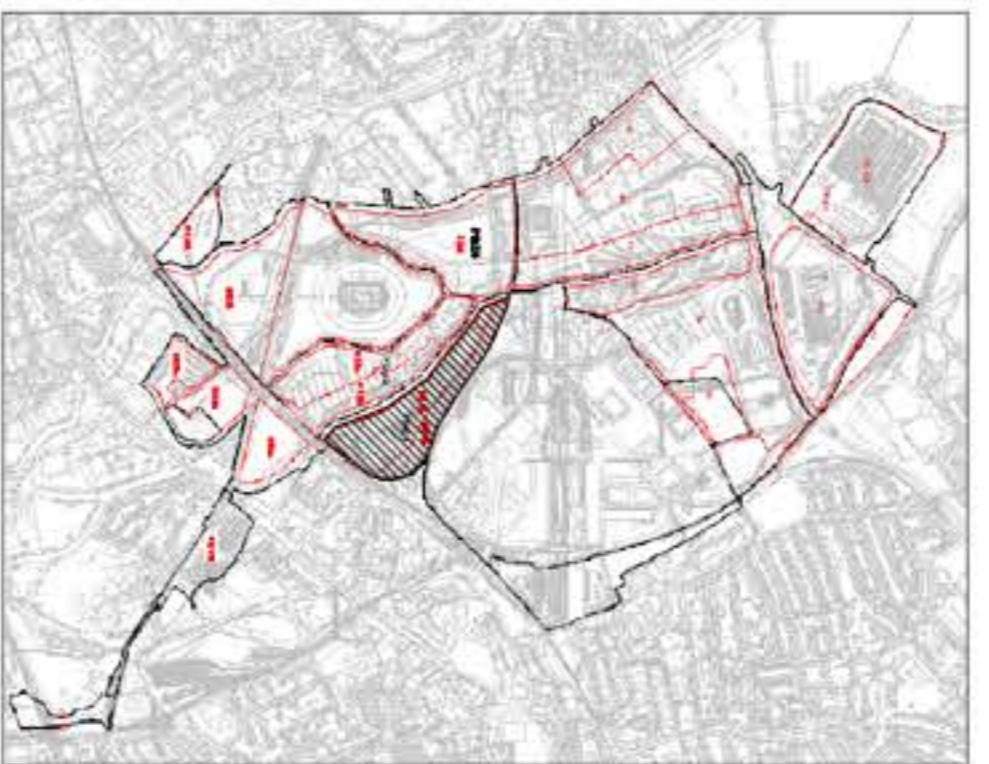
Purpose of Drawing: FINAL

Drawing No.: FIGURE 7 01
Sheet: 01
Rev: A



Ref	Area	National Agreement	Reference no.
1	Aquatics Centre	Concrete basement structure beneath Aquatics Centre has been used as a substitute to HHSL in accordance with PDT approved documents	6001-ACQ-AR-CK-REP-0002 (10/90299/AOD00A)
2	Water Polo	Use of hard cover as a substitute to the separation layer in IPR permanent hard standing areas in accordance with PDT approved RMS and validation report	026753 (10/90664/AOD00A), 028952 (11/90112/AOD00A)
3	South Loop road and NG compound	Use of hard cover as a substitute to separation layer in accordance with PDT approved documents	7045-SBH-SPK-W-REP-0027-02, 08/90392/AOD00A
4	Carpenters road and verges	Use of hard cover as a substitute to the separation layer in IPR permanent hard standing in accordance with PDT approved RMS document	7045-SBH-SPK-W-REP-0027-02 (10/90340/AOD00A)
5	Pavement in landscape areas	Use of hard cover as a substitute to the separation layer in IPR permanent hard standing in addition to raising of marker layer in such areas with PDT approved documents	7170-IPR-SPK-L-RMS-0001 (11/90729/AOD00A to 11/9084/AOD00A)

- Legend**
- Planning Delivery Zone (PDZ1) Boundaries
 - Construction Zone Boundaries (CZ)
 - 0 - 298mm thickness of HHSL
 - 300 - 699mm thickness of HHSL
 - 600-719mm thickness of HHSL
 - Handstanding as a substitute to separation layer
 - Stratford Waterfront Boundary
 - Unbound Compact Type 1



Note
Areas without shading have not been subject to ODA validation.

No.	Description	Appr.	N.	Date
Rev	Description	Drawn	Checked	Date

Safety, Health and Environment Information
In addition to the hazards / risks normally associated with the types of work indicated on this drawing, note the following risks and information:

Construction

Demolition / Dismantling (as applicable)

For information relating to Use, Changing and Maintenance see the Health and Safety Information (H&S) document (11/90112/AOD00A) and the Construction and Contractor Working, where applicable, to an approved method statement.

Creator

Prepared by
ATKINS
On behalf of the LLDC

Project Title
Olympic Park Remediation

Extent and Thickness of Human Health Separation Layer within Planning Delivery Zone 1

Drawn **Checked** **Approved**

Date 16/08/2014 **Scale** 1:1250 **Size** A1

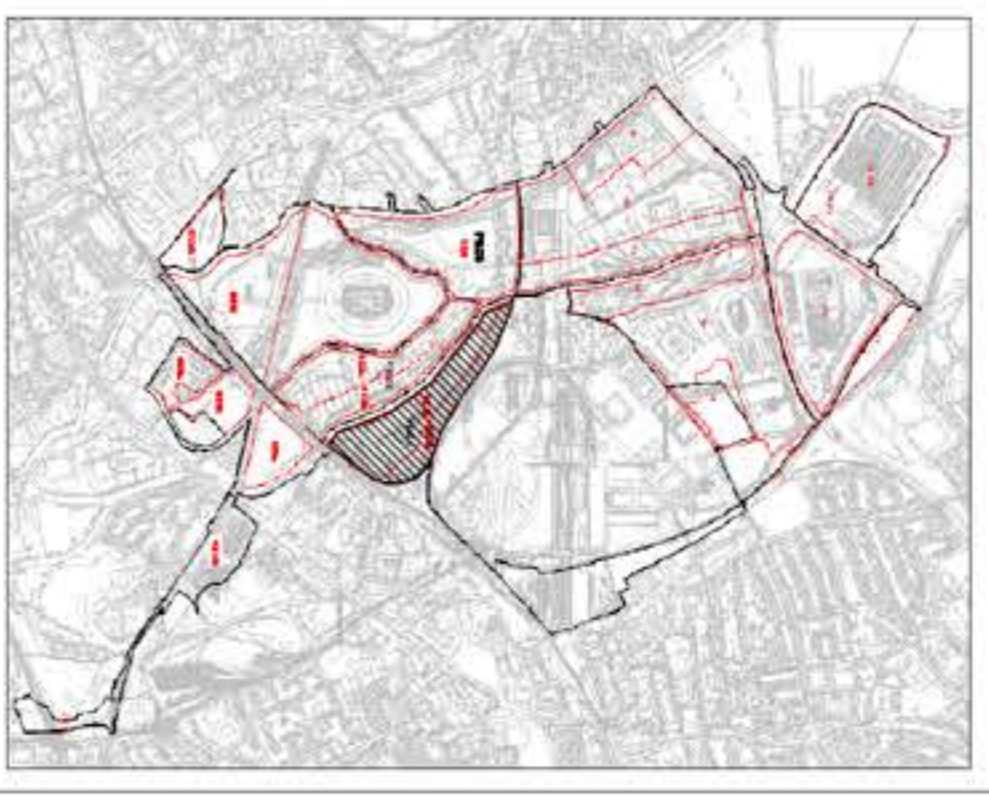
Purpose of Drawing
FINAL

Drawing No. **Sheet** 01 **Rev.** A

FIGURE 8



- Legend**
- Planning Delivery Zone (PDZ1) Boundaries
 - Construction Zone Boundaries (CZ)
 - 6.0m - Topographic Scenario 13C contours
 - 3.99 FOP Spot Heights
 - 3.20 LTP Spot Heights



Final Finished Levels based on Scenario 13C with applicable variations in respective FOP and LTP report.

No.	Description	Appr.	N.	DATE
Rev	Description	Drawn	Checked	Date
Safety, Health and Environment Information				
In addition to the hazard / risks normally associated with the types of work outlined on this drawing, note the following risks and information:				
Construction	CA			
Demolition (Future)	DA			
Demolition (Current)	DB			

For information relating to Use, Cladding and Maintenance see the health and safety information provided in the relevant FOP and LTP reports. For information relating to contractor working, where appropriate, to an approved method statement.

Creator

Prepared by
ATKINS
On behalf of the LLDC

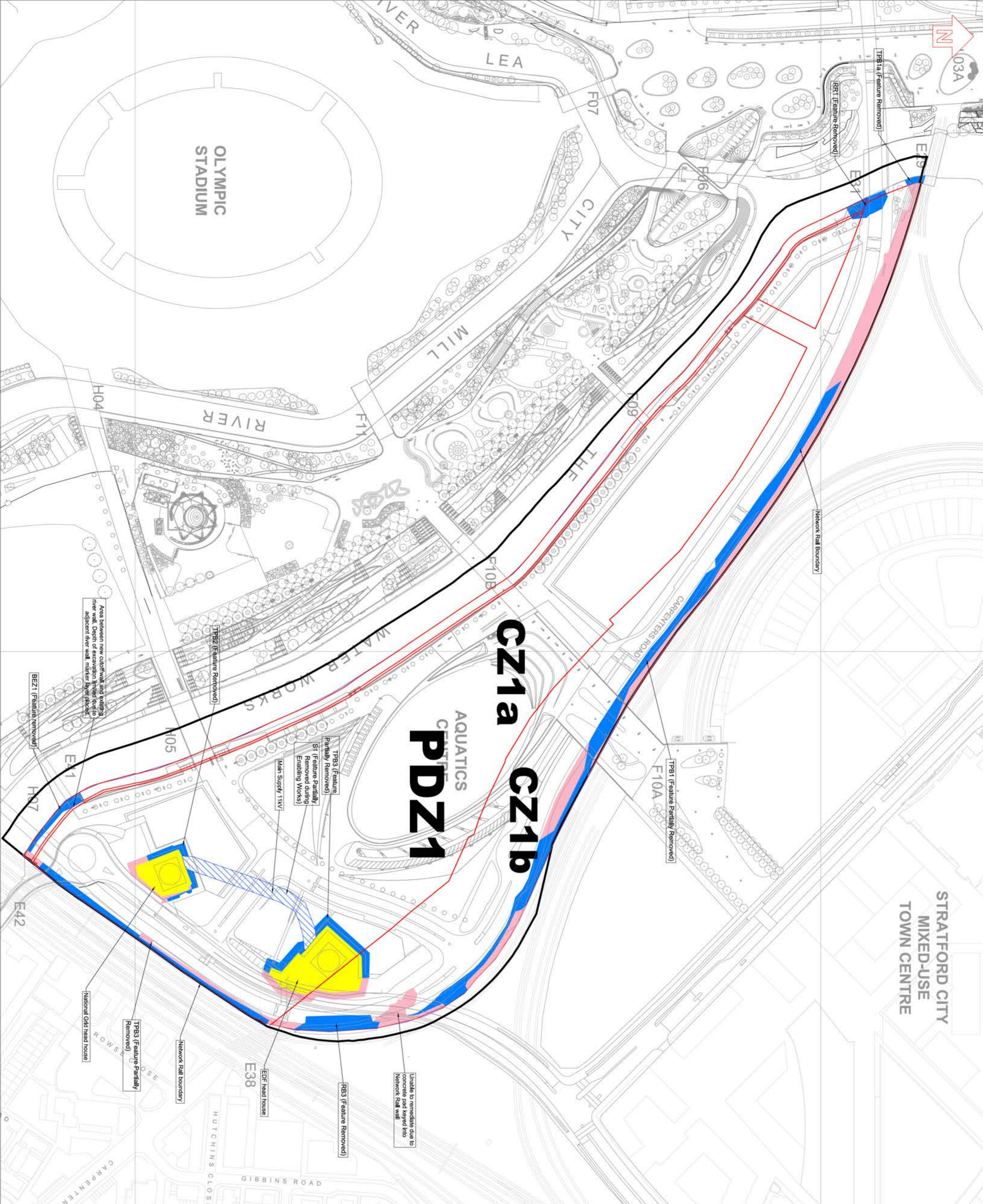
Drawing Title
**Final Finished Levels
for Planning Delivery Zone 1**

Project Title
Olympic Park Remediation

Drawn: [] Checked: [] Approved: []

Date: 16/08/2014 Scale: 1:1250 Size: A1

Purpose of Drawing
FINAL



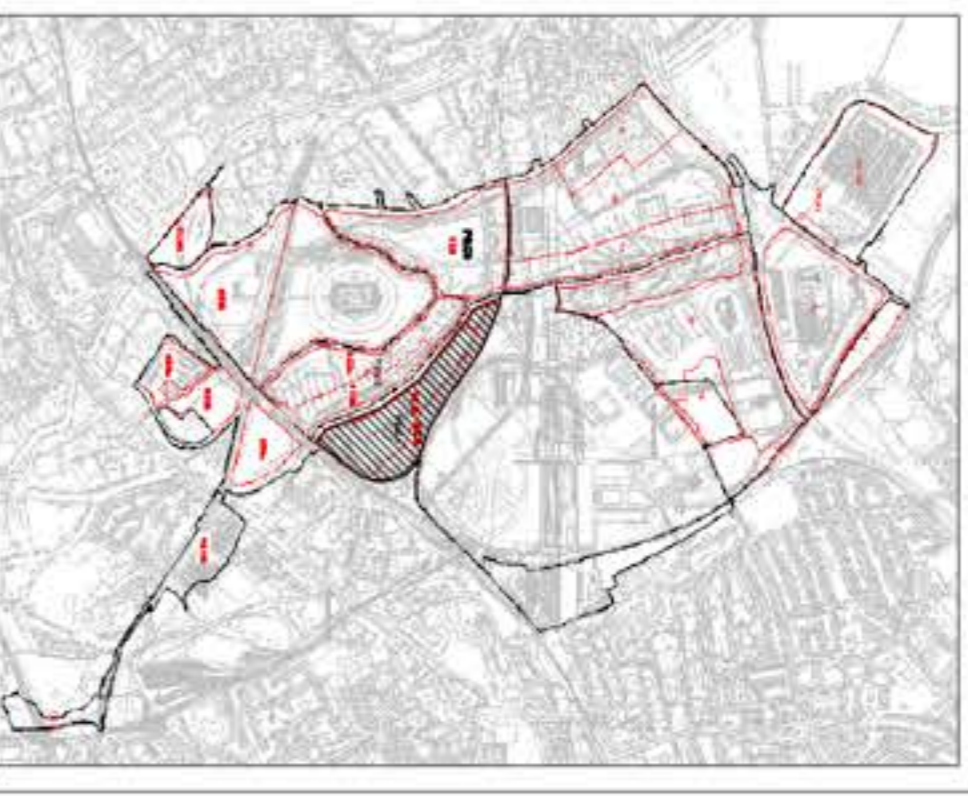
STRATFORD CITY
MIXED-USE
TOWN CENTRE

CZ1a
CZ1b
PDZ1
AQUATICS CENTRE

OLYMPIC STADIUM



- Legend**
- Planning Delivery Zone (PDZ1) Boundaries
 - Construction Zone Boundaries (CZ)
 - Services
 - Retained Building (RB)
 - Third Party Boundary (TPB)
 - Feature Removed/Partially Removed During FOP Works



No.	Description	Author	Date
1	Initial Design	Apr N. DONOVY	
2	Final Design	Apr N. DONOVY	

Prepared by
ATKINS
On behalf of the LLDC

Project Title
Olympic Park Remediation

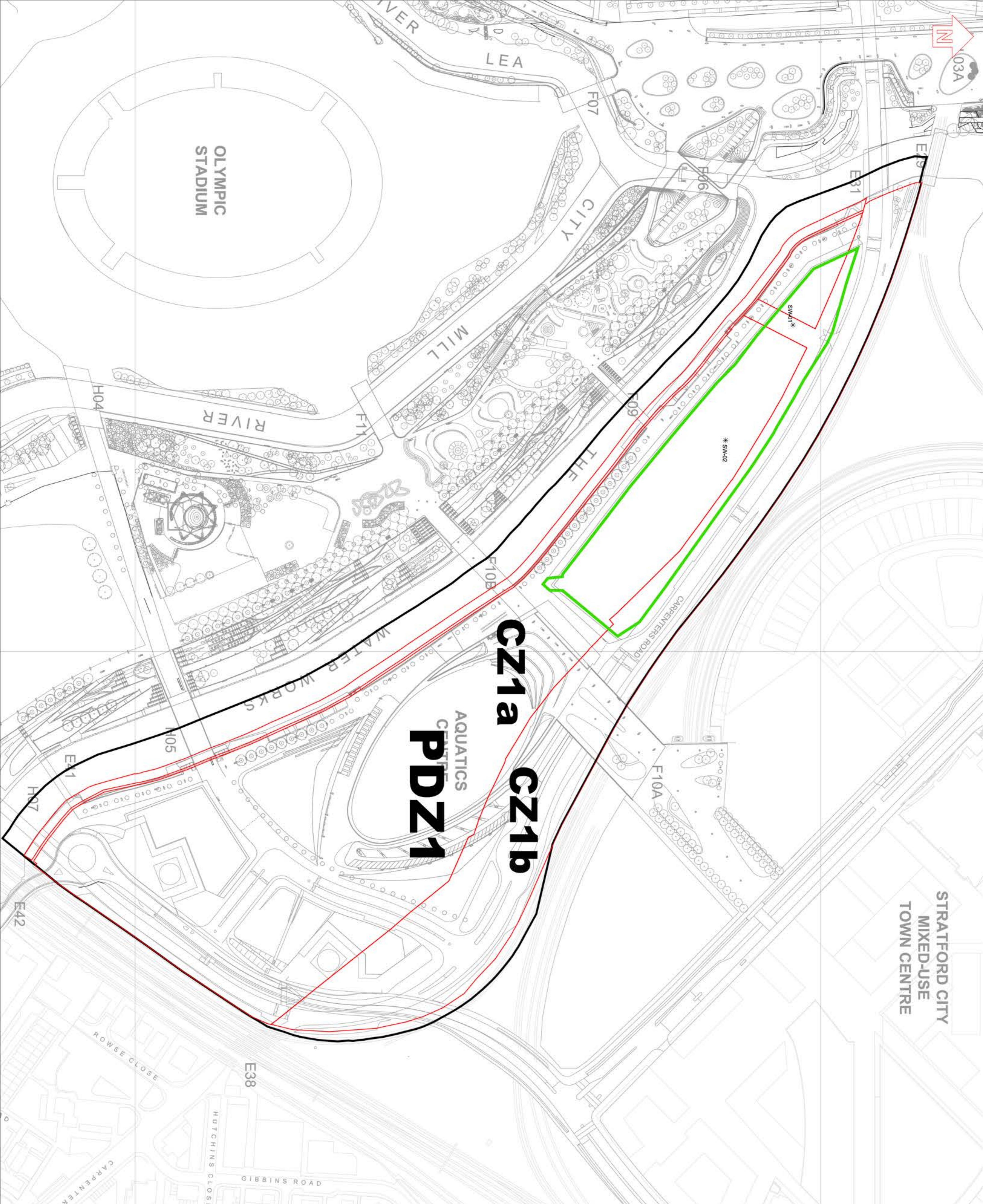
Retained Areas within
Planning Delivery Zone 1

Date
29/11/2012

Scale
1:1250

Size
A1

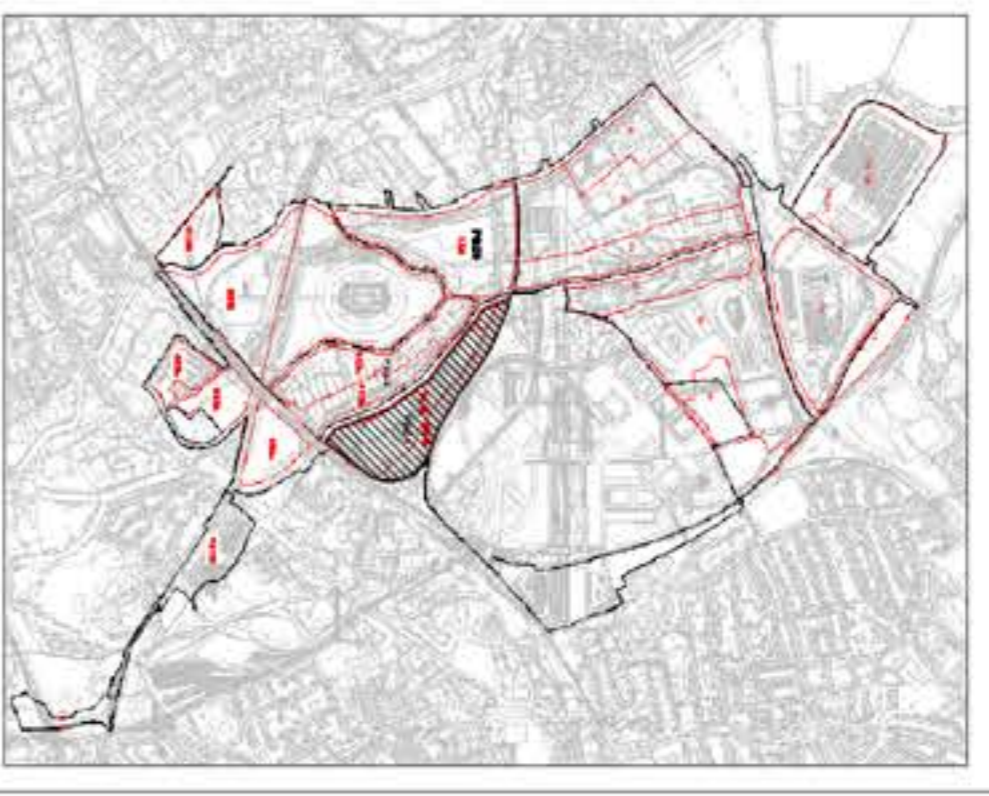
Purpose of Drawing
FINAL



STRATFORD CITY
MIXED-USE
TOWN CENTRE

CZ1a
CZ1b
PDZ1

- Legend**
- Planning Delivery Zone (PDZ1) Boundaries
 - Construction Zone Boundaries (CZ)
 - Stratford Waterfront Boundary
 - * Validation Sampling Location



No.	Description	Appr.	N.	DATE
Rev	Description	Drawn	Checked	Date
Safety, Health and Environment Information				
In addition to the hazards / risks normally associated with the types of work outlined on this drawing, note the following risks and information:				
Construction	CA			
Dismantling / Demolition (if any)	DA			
Excavation (if any)	EX			

For information relating to Use, Changing and Maintenance see the Health and Safety file. For information relating to Construction, see the Construction file. For information relating to Demolition, see the Demolition file. For information relating to Excavation, see the Excavation file. For information relating to other work, where appropriate, to an approved method statement.

Creator: **Prepared by**

On behalf of the LLDC

Drawing Title
On behalf of the LLDC

Related Areas Within
Planning Delivery Zone 1

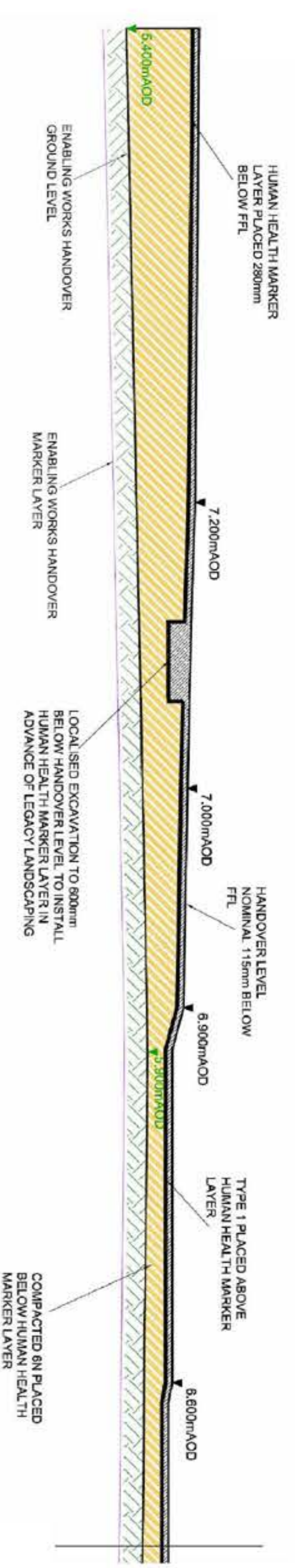
Project Title
Olympic Park Remediation

Drawn: Checked: Approved:

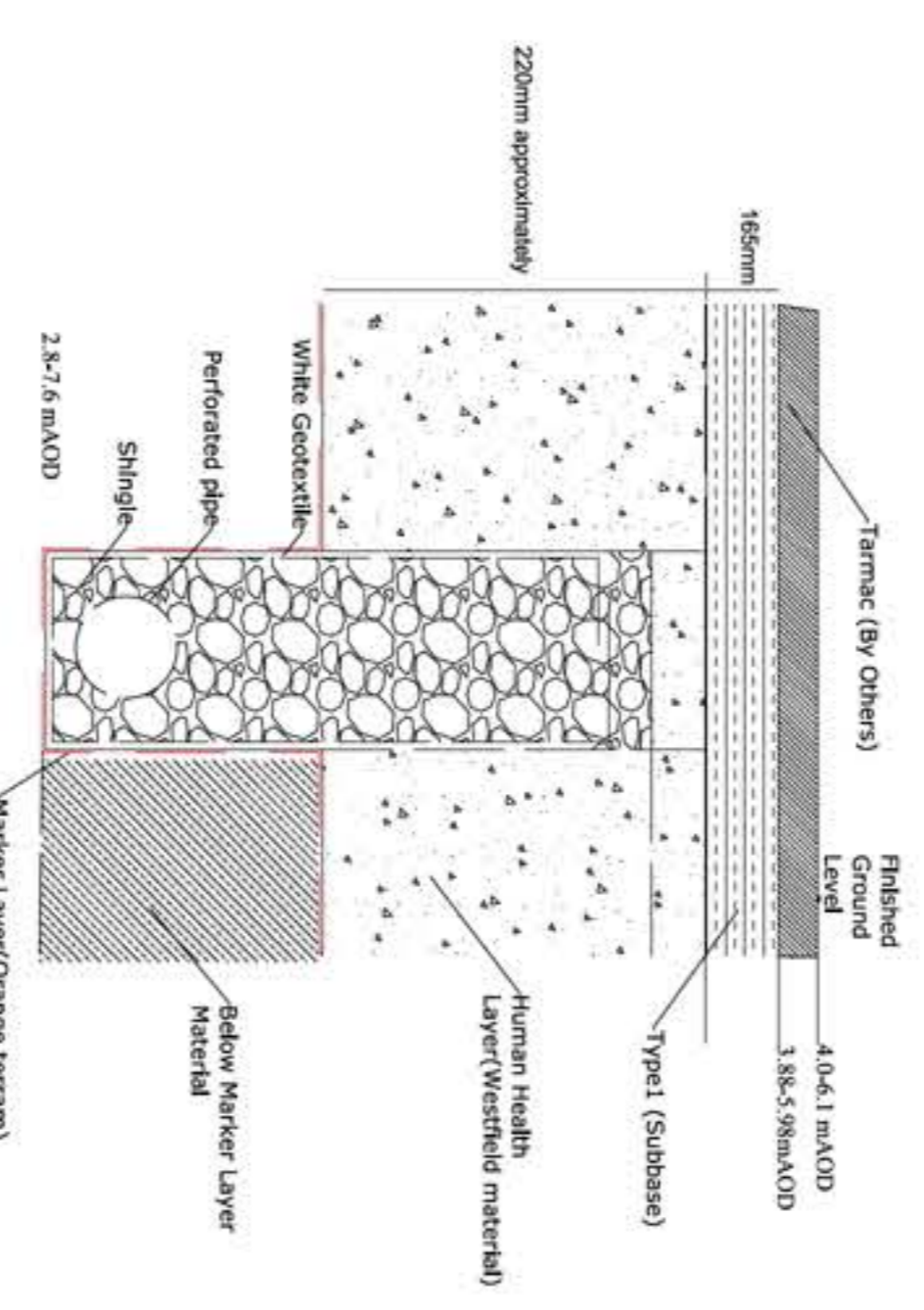
Date: 29/11/2012 Scale: 1:1250 Site: A1

Purpose of Drawing
FINAL

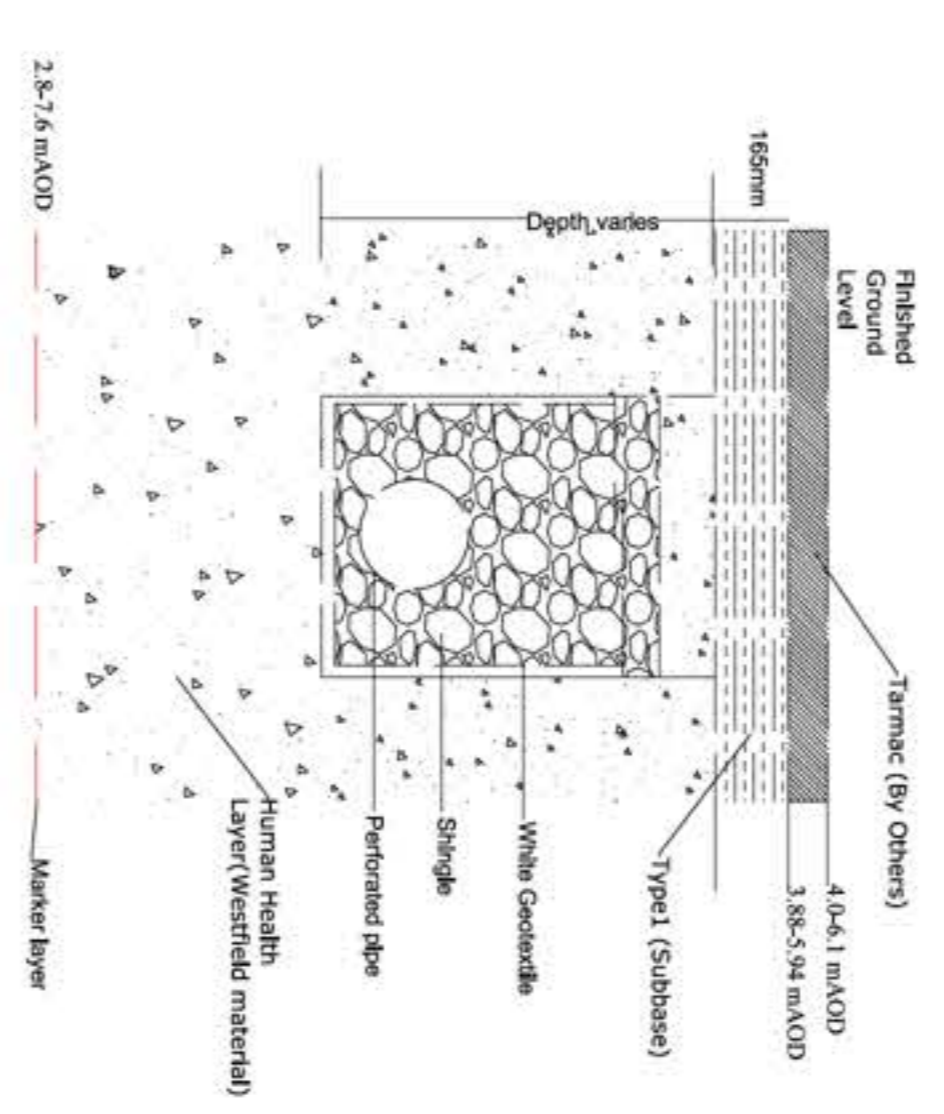
NOTE
 Representative sections show as constructed profiles within the PDZ and are taken directly from the referenced approved validation reports. These reports are outlined in Figure 4.



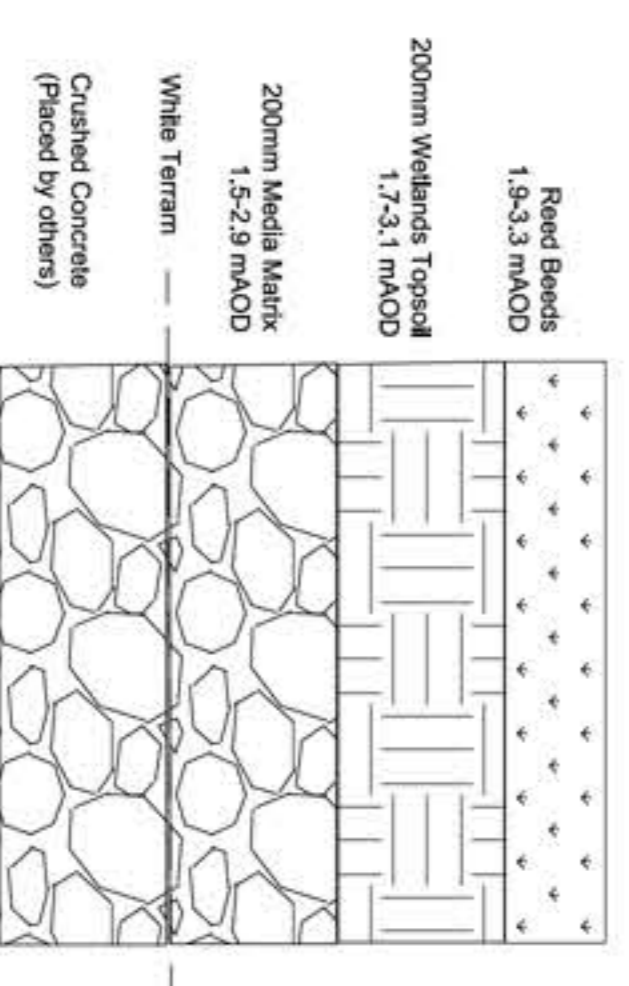
SECTION THROUGH AQUATICS LANDSCAPING
 Ref: 6001-AQC-ARE-CK-REP-0004 (11/90766/AODODA)



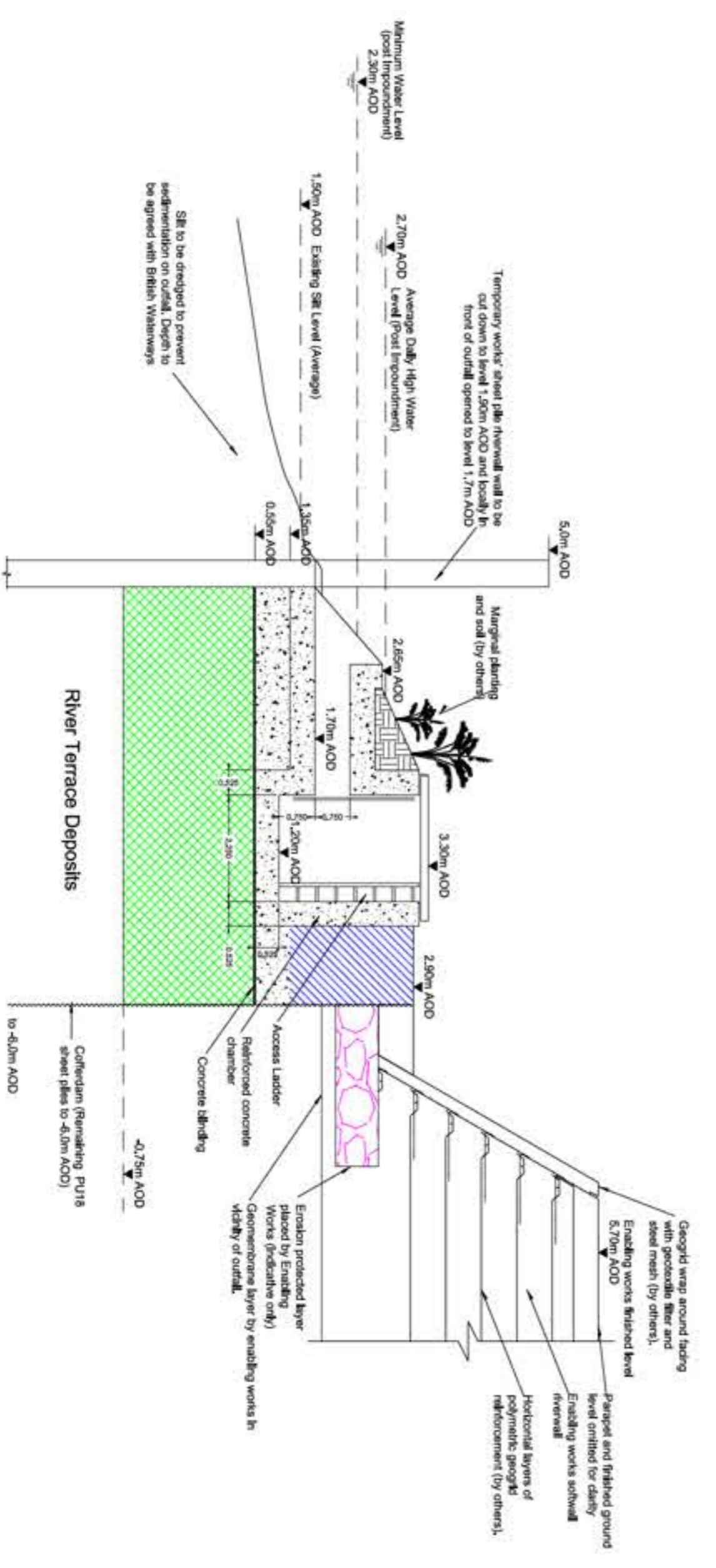
SECTION THROUGH HARD LANDSCAPE SHOWING FILTER DRAIN
 Ref: 7170-LPR-SPK-REP-0031 (11/90790/AODODA)



SECTION THROUGH HARD LANDSCAPE SHOWING FILTER DRAIN WITHIN HUMAN HEALTH SEPARATION LAYER
 Ref: 7170-LPR-SPK-REP-0031 (11/90790/AODODA)



SECTION THROUGH WETLANDS
 Ref: 7170-LPR-SPK-REP-0031 (11/90790/AODODA)



SECTION THROUGH OUTFALL S01-07
 Ref: 7040-SBH-SCW-REP-0035 (11/90413/AODODA)

Project Title		Olympic Park Remediation	
Drawn	Checked	Approved	
Date	Scale	NTS	Size
16/08/2014			A1
Purpose of Drawing		FINAL	
Drawing No.	Sheet	Rev.	
FIGURE 12	01	A	

Prepared by
 ATKINS
 On behalf of the LLDC

Representative As-Built Sections of the Final Remedial Cover System in Planning Delivery Zone 1

No.	Description	Appr.	N.	DDMMYY
Rev	Description	Drawn	Checked	Date
Safety, Health and Environment Information				
In addition to the hazards / risks normally associated with the types of work outlined on this drawing, note the following risks and information:				
Construction	CA			
Demolition /	CA			
Excavation /	CA			
Foundation /	CA			
Other	CA			

For information relating to Use, Change and Maintenance see the Health and Safety File. For information relating to the design of the remedial cover system and contractor working, where appropriate, to an approved method statement.

Creator

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 PDZ1. 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-01Z-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-0001).

Legacy Transformation Phase Project Documents

Remediation Method Statements

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

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

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

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

Transformation development includes re-profiling works within the Olympic Park following the completion of the Olympic Games in 2012. This will be achieved largely through the excavation and re-distribution of site-derived soils (subject to assessment of suitability), minimising the requirement for import of materials. Within 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 m³ and the fill, approximately 1,100 m³. 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. LLDC Ref. LC401-LCI-APK- CM-MST-0003 Rev P03 (Decision Notice Ref: 12/00128/AOD, 12/00114/AOD, 12/00119/AOD, 12/00070/AOD)

Details the methodologies required to protect the remediation already undertaken by the ODA projects and to verify the Transformation works undertaken by Nuttall at the QEOP. As described in the Remediation Impact Assessment, the main works BAM Nuttall are carrying out within 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 LLDC 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 2,500m³ 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. LLDC 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.

Validation Reports

Balfour Beatty, June 2014. Validation Report for PDZ1 Sub-area Aquatics Centre – Legacy Phase. Report Ref. LC403-AQC-ARE-J-REP-0080, Rev P02 (Decision Notice Ref. *Awaiting PPDT approval*).

The temporary deck of the F10B Bridge was removed between PDZ1 and PDZ2 by Balfour Beatty (Ref. 19). However no earthworks were completed within PDZ1 as part of these works.

Aquatic Centre works (Ref. 20) comprised internal modifications and fit-out, removal of the temporary stand structures and subsequent completion of curtain walling and hard & soft landscaping to the surrounding areas. A total of 5,579t of 6F5 was imported to the QEOP for use as a temporary crane platform, to remove the temporary Aquatic Centre stands. Of the 6F5 material generated following the removal of the LAC003 crane platform, a total of 1,395t was reused below Marker Layer in the 'South Bump' landscaping works completed in LAC006, and the remaining 4,184t was exported offsite, back to the supplier, Cemex. A total of 1,623 t of subsoil and topsoil was imported for placement above Marker Layer across the site. Imported material comprised 421t subsoil placed in LAC007, 252t subsoil placed in LAC008, 535t of topsoil placed in LAC007 and 416t topsoil placed in LAC008. No excavations below existing Marker Layer were carried out by Balfour Beatty.

A total of six soil samples were collected from the above Marker Layer soils (2no. required for volume of soil imported) and all six were found to be statistically clean (Grubbs test). The soil leachate results showed exceedances of both zinc and ammoniacal Nitrogen. After running through the Grubbs test, all parameters were found to be statistically acceptable, with the exception of ammoniacal nitrogen. Elevated concentrations of ammoniacal nitrogen were present in five samples, as a result of the application of fertilizer to the topsoil to improve nutrient levels. The concentrations of ammonium will decrease over time as the organic content breaks down / is taken up by vegetation.

Capita (on behalf of BAM Nuttall), November, 2014. Validation Report PDZ1. Report Ref. LC402-LCI-SPK-CM-REP-0056, Rev P02. (Decision Notice Ref. *Awaiting PPDT approval*)

BAM Nuttall (Ref. 21) carried out a variety of LTP works across PDZ1. These included deconstruction of Bridge H08 (SC13 / SC20), removal of temporary Water Polo venue foundations and sheet piles (SC20), removal of back of house hardstanding, construction of utilities and hard and soft landscaping (SC13, SC22 and SC25), In addition to construction works BAM Nuttall were responsible for reporting on the LOCOG Bump Out /

Reinstatement works (discussed further in Section 3.1.1.3) and validation of the temporary portions of the DHC network services which were completed by Cofely (discussed further in Section 3.1.1.4).

Bridge H08 was removed during the LTP Works. The work involved the removal of Span 1 (over Carpenters Road) and Span 2, (over Network Rail infrastructure) and removal of the southern approach ramp, all located within SC13 / SC20. The works involved the removal of the southern approach ramp, the excavation of which was completed to the Enabling Works FFL with tarmac and stone. To protect the exposed road surface a temporary layer of Type 1 stone was laid to create a crane platform for the removal of Span 2. This temporary fill layer (10,255 m³) was excavated back to the Enabling Works tarmac road surface once the bridge had been removed. No works were completed below the Enabling Work FFL.

Earthworks within SC20 included the removal of the reinforced concrete foundation, screw and sheet piles within the footprint of the temporary water polo venue building, removal of tarmac to the west (Back of House) and the installation of tree pits, lamp columns, kerbs and drainage. The pre-existing Marker Layer was left unchanged to the north of the zone. However, the Marker Layer was reinstated in the areas of soft landscaping along the river bank and verges adjacent to Carpenters Road and a new Marker Layer was laid to the south, as shown on Figure 7. A total of 1,453 m³ below Marker Layer material and 7,874 m³ above Marker Layer was placed within SC20 and 206 m³ of above Marker Layer material was imported.

Within SC13 and SC25 new roads were constructed, with associated pedestrian footpath, drainage, ducting, signs and street lighting. The Marker Layer beneath the road and the UKPN service duct was not disturbed during the SC13 works. BAM Nuttall placed a new Marker Layer under the road verges. A total of 1,238 m³ of low nutrient topsoil was imported for placement in areas of SC13 soft landscaping to FFL. A total of 1,365 m³ of topsoil and subsoil was imported and placed within SC25.

The construction of soft landscaped earth mounds, the removal of Type 1 stone above the Marker Layer, installation of HHSL, construction of a drainage ducts and 20 manhole chambers, tree pits, street lights and a new road were carried out in SC22. The Marker Layer under the two mounds located south of the Aquatic Centre was reinstated at 600 mm below LTP FFL. The extent of the Marker Layer laid is shown on Figure 7. The material used for the soft landscaped mounds and hard landscaping comprised site won soils (6,626 m³) and imported soil from outside the QEOP (4,736 m³).

Chemical testing was carried out on the material placed across the BAM Nuttall LTP works. No exceedances of the human health or controlled waters SSAC were reported. Ammoniacal nitrogen exceeded the leachate SSAC in two out of 16 samples tested, however the concentrations were not considered to be significant, and as a result were not considered to represent an unacceptable risk to human health or controlled waters, in accordance with the Quality of Imported Fill framework (Ref. 8).

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 temporary shallow 'readily connectable' services, installed by LOCOG and reinstatement with virgin Type 1. As per LOCOG's PPDT approved QoIF Application (Ref. 22), 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 to be included in Appendix D of the Final version of the Stage 4 CVR.

The decommissioning works of the temporary portions of the DHC Network were completed by Cofely. Works involved the excavation of the pipes across zones; CZ1a, CZ3a, CZ4, CZ5a, CZ5b, and CZ6a. Upon removal the trenches were backfilled with compliant HHSL material. ESG completed validation sampling of the earthworks. The results of the validation sampling indicated that excavated soil and the backfill material did not pose a risk to controlled water receptors or the health of future site users. Further detail is appended to the BAM Nuttall Validation Report for PDZ1 (Ref. 21).

Skanska, April 2014. Validation Report for Legacy Transformation Works in Planning Delivery Zones 2, 4 (for Bridge F06 only) and 1 (for Bridge F10B only). Report Ref. LC404-HSP-SPK-W-REP-0005, Rev P01. (Decision Notice Ref. Awaiting PPDT approval).

The F10B Bridge widening works were completed by Skanska (Ref. 23), including construction of temporary stairs in PDZ1. Earthworks on the eastern side (PDZ1) of bridge F10B involved localised excavation to a depth

of up to 400 mm below existing ground level (in total approximately 50 m³) for installation of concrete pads to support a new temporary staircase. The concrete pads were considered to provide a suitable substitute to the separation layer and as such no new Marker Layer was placed under these structures. A Marker Layer and full thickness HHSL will need to be placed upon the removal of the temporary stairs and concrete pads by any future land owners / developers, refer to Table 4-1. Skanska did not carry out any works below the ODA Enabling Works sub-grade levels. Materials placed by Skanska have been demonstrated, through validation, not to place unacceptable risks to human health or controlled waters.

Atkins (on behalf of Buckingham), November 2014. Stratford Waterfront, PDZ1 Validation Report. Report Ref. LC810-LCI-SPK-CM-REP-0001, Rev P01. (Decision Notice Ref. *Awaiting PPDT approval*).

The Stratford Waterfront development site works were completed by Buckingham (Ref. 24). Works included, re-grading of existing ground to acceptable formation levels. During these works, low spots were noted and filled with a suitable material (removed Type 1 already on site was used to backfill the soft spots and compacted in layers).

Excavation and installation of surface water drainage (including slot drains and associated pipework, manholes and gullies), a petrol interceptor and new sections of kerbing; replacing of orange geotextile Marker Layer, where breached below the linear channel drain; and localised lowering of the Marker Layer below the filter drain was completed. The filter drain was also surrounded by a geotextile membrane, to prevent fines entering the drainage trenches. This geotextile membrane was not installed as a Marker Layer and was black in colour.

A total of 495 m³ of material excavated from below Marker Layer in the areas of deeper granular drainage trenches was exported from site.

The Stratford Waterfront surface was completed to FFL, with the placement of 150 mm of imported Type 1 sub-base, 70 mm of asphalt base course and 30 mm asphalt wearing course, in accordance with design drawings.

A small portion of the Stratford Waterfront site was left with unbound, compacted Type 1 material at surface (as opposed to hardstanding across the remainder of the site). Two *in-situ* validation samples within areas of insufficient cover (i.e. HHSL / Marker Layer) were collected. The additional sampling indicated that this material was suitable based on current land use, noting that an asbestos concentration of 0.003%w/w was identified in sample SW-2 between 0.3 and 0.5m bgl. The requirement for a full thickness HHSL and action relating to the asbestos will need to be addressed by any future land owners / developers, refer to Table 4-1.

Appendix B. Key Parties

Key LLDC Transformation Phase Project Parties for PDZ1

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:	BAM Nuttall
Infrastructure Contractor:	Buckingham
Infrastructure 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

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Document History

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01	For Information	■	■	■	■	28/08/2012

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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 1,000m²) 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 Contractor 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 reinstatement 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

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

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

* 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 <i>(To be completed by the contractor)</i>				
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. <i>(Please tick all relevant assets within the works boundary)</i>				
Olympic Park Perimeter Fence	<input type="checkbox"/>	IP Gas	<input type="checkbox"/>	EDF <input type="checkbox"/>
PLUG	<input type="checkbox"/>	BT Communications	<input type="checkbox"/>	District Heating/Cooling <input type="checkbox"/>
EA Assets	<input type="checkbox"/>	COLT fire optics	<input type="checkbox"/>	Surface Water Drainage <input type="checkbox"/>
Thames Water (foul)	<input type="checkbox"/>	Thames Water (potable / non potable)	<input type="checkbox"/>	Others (use additional comments section below) <input type="checkbox"/>
Above / below ground structures: <i>(state structure reference)</i>				
I confirm that <u>all</u> 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.				<input type="checkbox"/>
I confirm that an independent pre work passive power and radio scan will be completed within the works boundary.				<input type="checkbox"/>
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.				<input type="checkbox"/>
I understand my ongoing responsibilities in relation to this permit with regards to the LLDC Common Standard No.14 and HSG47.				<input type="checkbox"/>
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.				<input type="checkbox"/>
Additional Comments:				
Distribution: <i>Originating Team, Principal Contractor, LLDC Project Manager, LLDC Permitting Team.</i>				
SECTION C – PERMIT APPROVAL <i>(To be completed by the LLDC reviewer)</i>				
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: <i>Originating Team, Principal Contractor, LLDC Project Manager, LLDC Permitting Team.</i>				
SECTION D – CLOSEOUT INFORMATION <i>(to be completed by the contractor on completion of works)</i>				
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		

Permit Reference:

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	<i>(Detail Marker Layer and Human Health Separation Layer materials and any reasons for specific omission)</i>			
Photo record of excavation and Marker Layer reinstatement	<i>(Attach photographic records)</i>			
As-Built drawings provided	<i>(Attach as-built drawing or sketch indicating cover system reinstatement)</i>			
D3: EXCAVATED VOLUMES	Above Marker Layer (m³)		Below Marker Layer (m³)	
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 (m³)	Chemical Tests (no.)	Below Marker (m³)	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.				<input type="checkbox"/>
I confirm that the site has been left in a satisfactory condition with services re-marked out as per LLDC Common Standard No.14 <i>(Attach photographic records)</i>				<input type="checkbox"/>
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.				<input type="checkbox"/>
Additional Comments:				
SECTION E <i>(Application is closed by the LLDC Permitting Team following review of Section D and returned to Contractor)</i>				
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: <i>Originating Team, Principal Contractor, LLDC Project Manager, LLDC Permitting Team.</i>				

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

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 m³.

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

Atkins Limited is a WS Atkins plc company

Registered office: Woodcote Grove Ashley Road Epsom Surrey KT18 5BW England Registered in England Number 688424

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 ⁹	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 ⁸	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 deposition⁸ 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 Signature]

[Redacted Name]
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).

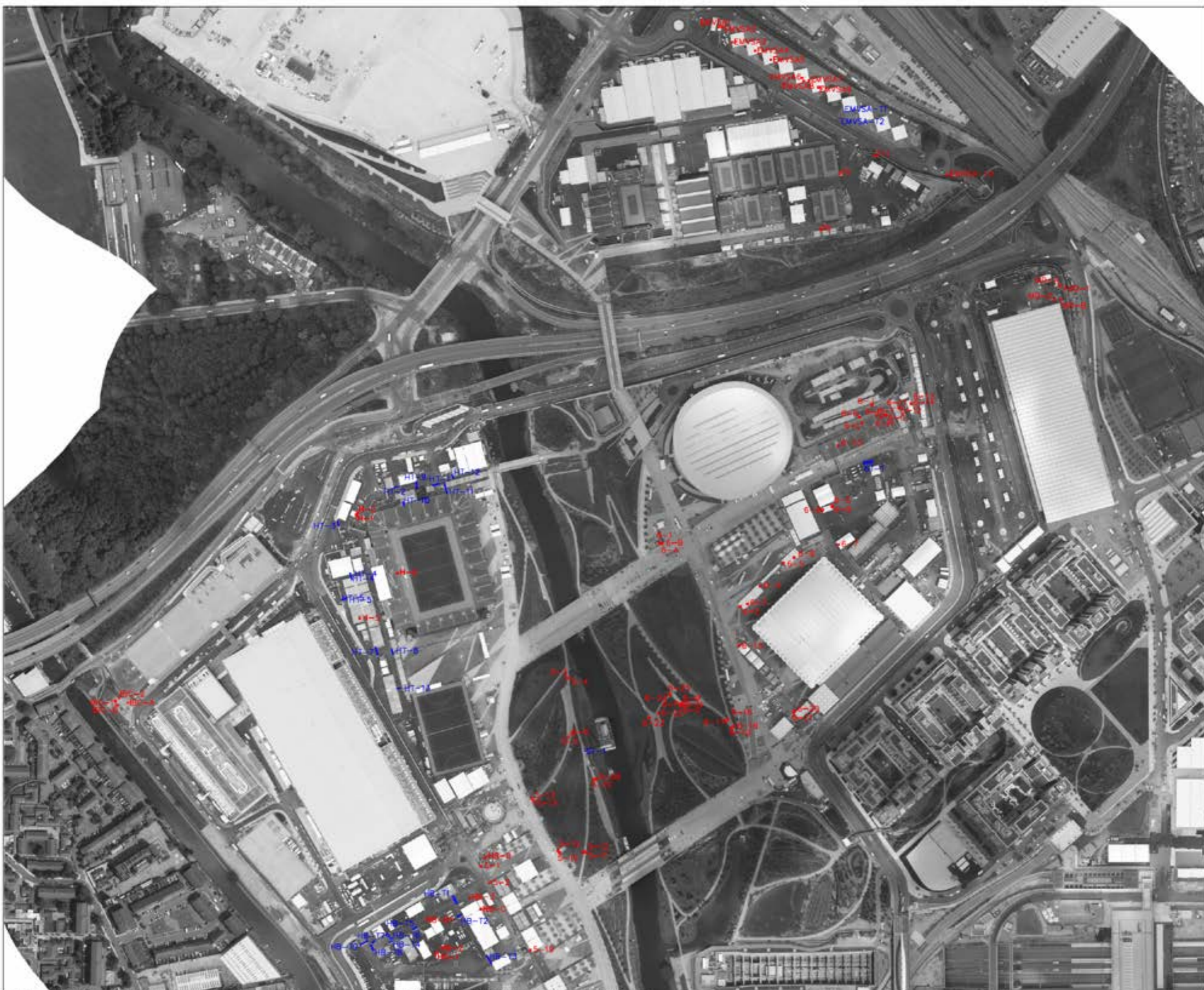
Example conveyance notes for Yeoman Aggregates Type 1 sub-base limestone from Torr Works Quarry.

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
 London, E14 3TA
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 Fax: +44 (0)20 2012 001
 www.london2012.com

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- 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 GDM 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

No.	Description	Author	Date
01	SAFETY, HEALTH AND ENVIRONMENT INFORMATION	Green, DICK	April 2010

Based on the use of approved and licensed contractors working to an approved method statement for trench reinstatement, this will detail the location of the reinstatement works.

Construction	01
01	01

Operations	01
01	01

Maintenance	01
01	01

Demolition /	01
01	01

No.	Description	Appr. By	Date
NOT PLAN			

On behalf of the LOCOG
 ATKINS
 Olympic Park Design

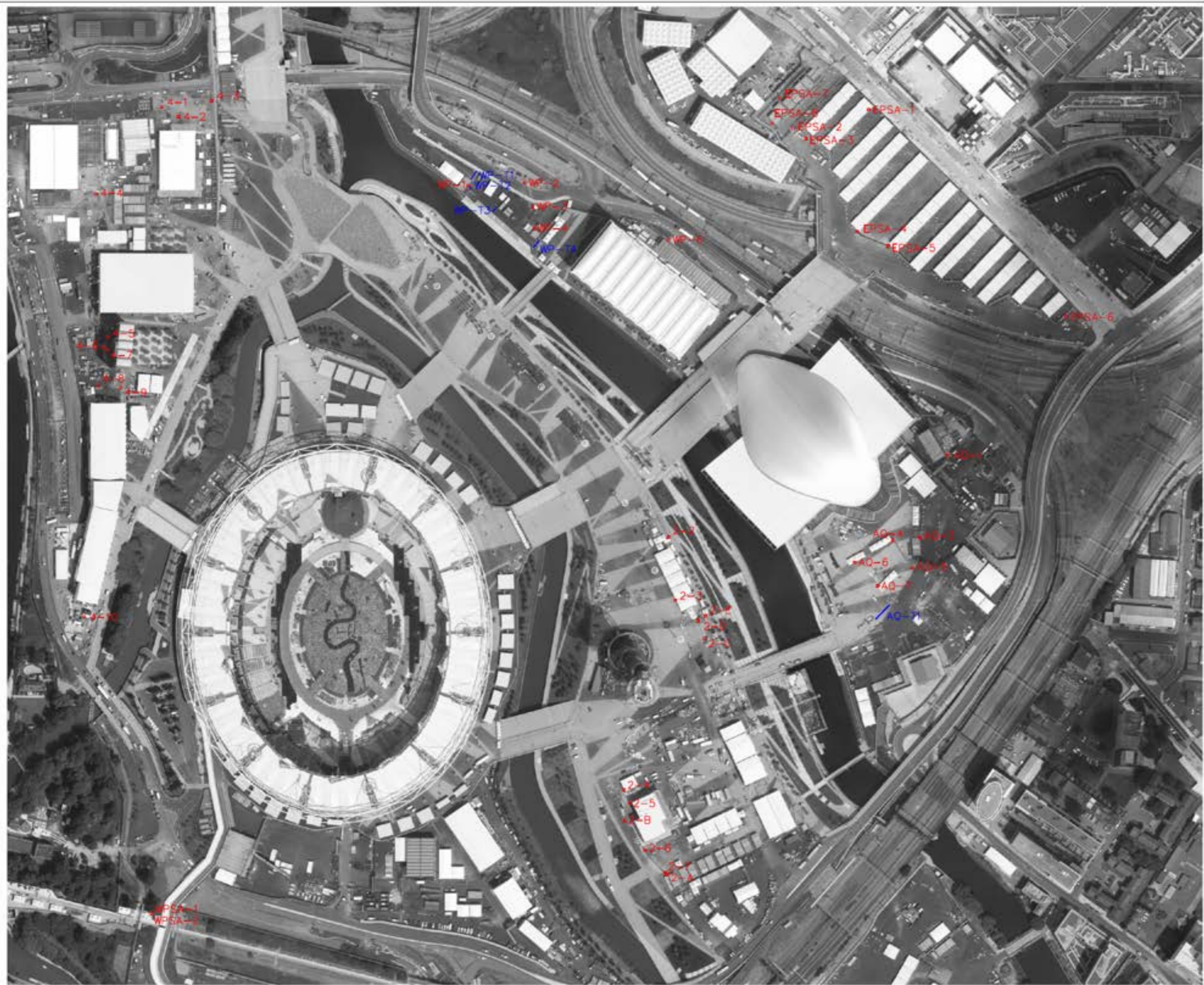
DRAWING TITLE
 POST GAMES LOCOG
 REINSTATEMENT WORKS
 NORTH PARK

STATUS
 AS BUILT

DRAWING NUMBER
 SK-POP-2080

DATE	SCALE @ AS	SHEET	TOTAL
OCT '12	1:5	A	02

APPROVED



London Organising Committee of the Olympic Games and Paralympic Games Ltd
 London, U.K. 14 12 L N
 Paralympic: 020 300 2012 000
 Fax: +44 (0) 20 300 2012 001
 www.london2012.com

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- 2. FOR DETAILS OF BELOW GROUND DUCT ROUTES PLEASE REFER TO PRE-GAMES VENUE AND COM 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

No.	Description	Drawn	Check	Appr	Date
	SAFETY, HEALTH AND ENVIRONMENT INFORMATION				
Construction	CL				
OS	OS				
Operations	OP				
OS	OS				
Maintenance	M				
OS	OS				
Demolition /					
OS	OS				

No.	Description	Appr	Date
NCP PLAN			

On behalf of the LOCOG
 ATKINS
 Olympic Park Design

DRAWING TITLE:
**POST GAMES LOCOG
 REINSTATEMENT WORKS
 SOUTH PARK**

STATUS	PROJECT NO.		
AS BUILT			
DRAWING NUMBER	SK-POP-2080		
DATE	SCALE @ AS	SHEET	TOTAL
OCT '12	1:50	A	02
DESIGNED	APPROVED	NOTES	

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

conveyance / receipt note

Loaded at:
Bow Rail Head Ship Stn
For all enquiries please telephone
02088966810



63927939

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]
Numbers: [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: 3306766	Time on Site:	Late	-On-Time
	Time off Site:	Total Time to unload:	
Call off No: 17643709	Tot Wait Time	Pre-booked DW time	
	Tot Daywork Time	0	
Returned material	Est Qty: time	Weighed Qty:	
Delivery Qty	Reason:		
38.88			
Qty. Ord.	Print Name:		
40.00	Signature:		

Signed on behalf of Yeoman Aggregates : [REDACTED] LATE JONES
Goods received in good condition : [REDACTED] OK
Please Print Name : [REDACTED] B... 11.50

Collected Loads:
Your Turnaround Time was: 0

Unit	Product	Product Description	CE	Quantity	UO M	Gross Wt	Tare Wt	Nett Wt	Cash Sale
7678100	EN3243502	Type 1Sub-Base Limestone SHU 803		10.50	TM	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

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



Vehicle Reg. No. EU10 03E	Fleet/Haulier 1740966	Haulage Indicator ZONE 8	Driver's Name [REDACTED]
------------------------------	--------------------------	-----------------------------	-----------------------------

Loaded at:
Bow Rail Head Ship Stn
For all enquiries please telephone
02066966610



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
E16
Stratford

County LONDON
Contact: [REDACTED]
Number: [REDACTED]
Customer Account No.
0328751666

Conveyance Note 63924797



Date	Date of Loading	Time Out	Time due on Site
06/11/12	06/11/12	731	800
Contract No: 3306766	Time on Site:	Late	On-Time
	Time off Site:	Total Time to unload:	
Call off No: 17643709	Tot Wait Time	Pre-booked DW time	
	Tot Daywork Time	0	
Delivery Qty	Returned material	Est Qty: time	Weighed Qty:
	Reason:		
19.38 Qty. Ord.	Print Name:		
40.00	Signature:		

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

Collected Loads:
Your Turnaround Time was:
0

Unit	Product	Product Description	CE	Quantity	UD M	Gross Wt.	Tare Wt.	Nett Wt.	Cash Sale
7678100	EM3243502	Type 1Sub-Base Limestone SHW 803	-	19.38	FM	31.68	12.50	19.38	

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



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

Vehicle Reg. No.	Fleet/Hauler	Haulage Indicator	Driver's Name
EU10 B3E	1740966	ZONE 8	[REDACTED]

conveyance / receipt note

Loaded at:

Box Hill Head Ship Stn

For all enquiries please telephone

0206896613



For any queries please contact

BOX HILL HEAD SHIP STN
Yeoman Aggregates
Stone Terminal
Rons Lane

WS 9EN
Customer Account No.

1724401

Customer

B'KEEFE CONST (GREENWICH) LTD

Delivery Address

Broadcast Car Park
Media Centre
Olympic Park

Stratford

County LONDON

Contact: [REDACTED]

Number: [REDACTED]
Customer Purchase Order No.

C028/57694

Conveyance Note

63969827



63969827

Date	Date of Loading	Time Out:	Time due on Site:
13/11/12	13/11/12	943	730
Contract No: 3306768	Time on Site:	Late	On-Time
	Time off Site:	Total Time to unload:	
Call off No: 17671515	Tot Wait Time	Pre-booked DW time	
	Tot Daywork Time	0	
Delivery Qty	Returned material	Est Qty: time	Weighed Qty:
	Reason:		
18.82	Print Name:	[REDACTED]	
Qty. Ord.	Signature:	[REDACTED]	
26.00			

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
7374100	EM3243502	Type 1 Sub-Bass Limestone SN 003		18.82	TR	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.



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 03E	1740766	ZONE 4	[REDACTED]

conveyance / receipt note

Loaded at:

90w Rail Head Ship Stn

For all enquiries please telephone

02088966810



For any queries please contact

80W 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

Street/road
County LONDON
Contact: [REDACTED]
Number: [REDACTED] No.
C828/57694

Conveyance Note

63874557



63874557

Date	Date of Loading	Time Out:	Time due on Site:
29/10/12	29/10/12	90%	800
Contract No:	Time on Site:	Late	On-Time
3306768	Time off Site:	Total Time to unload:	
Call off No:	Tot Wait Time	Pre-booked DW time	
17608738	Tot Daywork Time	0	
Delivery Qty:	Returned material	Est Qty: time	Weighed Qty:
	Reason:		
	39.44	Print Name:	
	Qty. Ord.		
	40.00	Signature:	

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

Collected Loads:
Your Turnaround Time was: 1

Unit	Product	Product Description	CE	Quantity	UO M	Gross Wt	Tare Wt	Nett Wt	Cash Sale
7878100	EN3243502	Type 1 Sub-Base Limestone SHW 803		19.72	TM	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 open 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



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
EUS7 TKT	1329996	ZONE 3	[REDACTED]

conveyance / receipt note

Loaded at:

BoV Rail Head Ship Stn

For all enquiries please telephone

02088966810



For any queries please contact

BOV 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 LOC06
Hockey Pitch
Olympic Park

Stanhope

County LONDON

Contact: [REDACTED]
Number: [REDACTED]
Customer Reference Code No.

C828/57694

Conveyance Note

63873345



63873346

Date	Date of Loading	Time Out:	Time due on Site:
29/10/12	29/10/12	739	800
Contract No: 3306768	Time on Site:	Late	On-Time
	Time off Site:	Total Time to unload:	
Call off No: 17608738	Tot Wait Time	Pre-booked DW time	
	Tot Daywork Time	0	
Returned material	Est Qty: time	Weighed Qty:	
Delivery Qty: 19.72	Reason:	Print Name:	
Qty. Ord. 40.00	Signature:		

Signed on behalf of Yeoman Aggregates : [REDACTED]

Goods received in good condition : [REDACTED]

Please Print Name : [REDACTED]

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		19.72	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 on 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



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

Vehicle Reg. No. EUS7 T4T	Fleet/Haulier 1329996	Haulage Indicator TONE 3	Driver's Name [REDACTED]
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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
	 <p data-bbox="630 520 976 577">2 no -150 mm $0.500 \times 0.500 \times 0.150 = 0.037$</p>	




Pop up / Trench Reference: MD 2

Before Works	During Works	After Works
	 <p data-bbox="630 1087 976 1144">2 no - 125 mm $1.1 \times 0.700 \times 0.150 = 0.115$</p>	




Pop up / Trench Reference: MD A

Before Works	During Works	After Works
	 <p data-bbox="630 1635 976 1692">1 no - 125 mm $0.500 \times 0.600 \times 0.150 = 0.045$</p>	




Pop up / Trench Reference: HT 13

Before Works	During Works	After Works
	 $6 \times 0.250 \times 0.150 = 0.225$	

Pop up / Trench Reference: HT 14

Before Works	During Works	After Works
	 $6 \times 0.900 \times 0.150 = 0.81$	

Pop up / Trench Reference: HT 7

Before Works	During Works	After Works
	 $1.4 \times 1.1 \times 0.100 = 0.014$	

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
<p>THE PROJECT MANAGERS AGREEMENT OR NOTIFICATION OF MEASURE SUBMISSION</p> <p>* We agree with the measure quantities submitted.</p> <p>* We do not agree to the measure quantities submitted</p> <p style="text-align: right;">* Delete as appropriate</p>		
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"

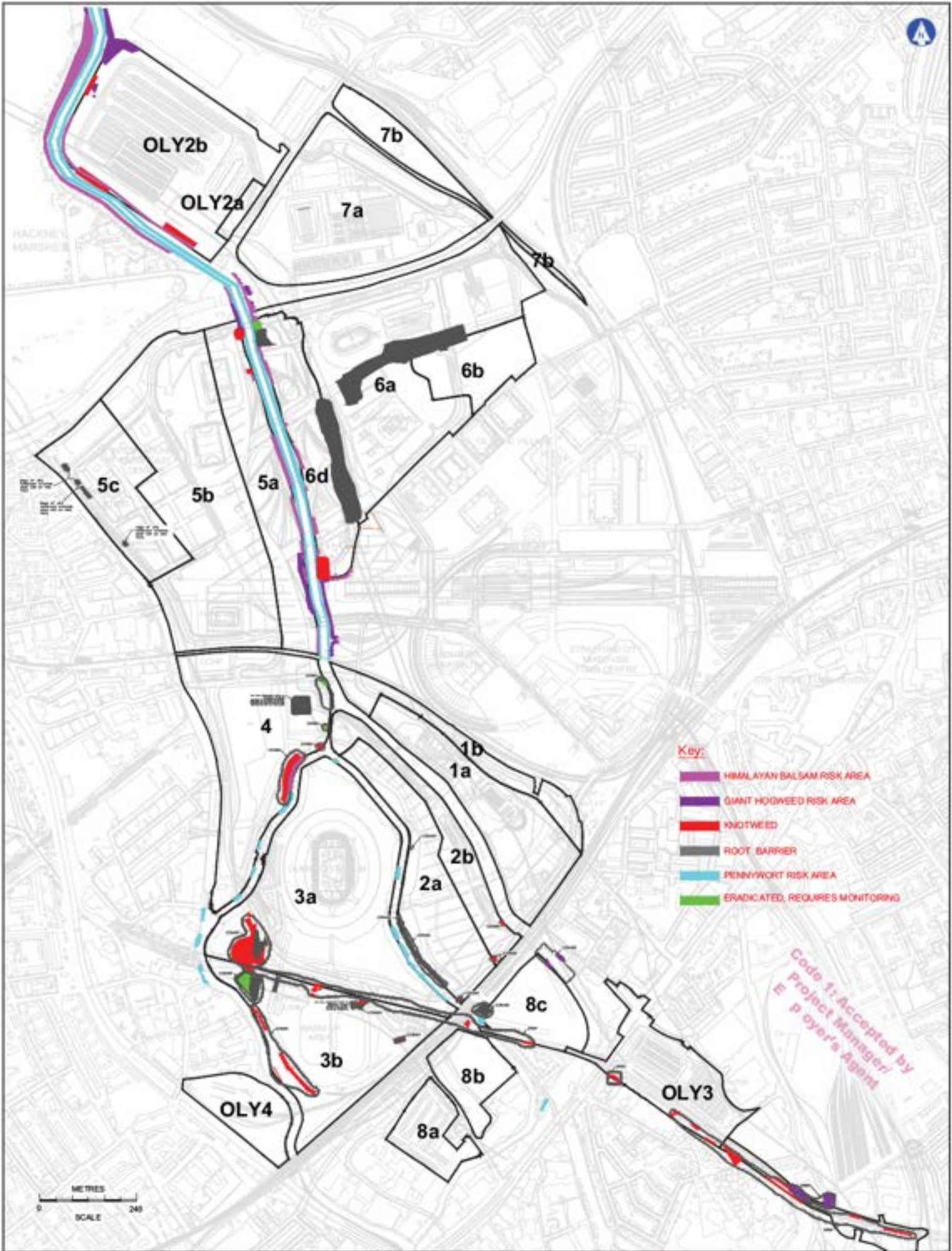
Ref.	Import of Fill Requirement	Compliant?	Comment	Applicant response (28/11/12)
1.1	Documentary evidence must be supplied to the PDT to confirm the origin of all imported soils and infill materials, supported by appropriate chemical analysis test results prior to any import of fill materials.	Yes	The 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 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.



- Key:**
- █ HIMALAYAN BALSAM RISK AREA
 - █ GIANT HOGWEED RISK AREA
 - █ KNOTWEED
 - █ ROOT BARRIER
 - █ PENNYWORT RISK AREA
 - █ ERADICATED, REQUIRES MONITORING

Code 1: Accepted by Project Manager/ E p oyer's Agent



<p>Revisions</p> <table border="1"> <thead> <tr> <th>No.</th> <th>Description</th> <th>Date</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	No.	Description	Date										<p>Project Information</p> <p>Client: OLYMPIC AUTHORITY</p> <p>Project Name: NORTH PARK & SOUTH PARK INVASIVE SPECIES</p> <p>Location: North Park & South Park, Olympic Delivery Authority</p> <p>Contract Reference: 7160-LPR-NPK-W-DSK-0471</p>	<p>Project Details</p> <p>Project No: 7160-LPR-NPK-W-DSK-0471</p> <p>Revision: 001</p> <p>Date: 2024-11-01</p> <p>Author: [Name]</p> <p>Checked: [Name]</p> <p>Approved: [Name]</p> <p>Scale: 1:1000</p> <p>Sheet: 1 of 1</p>
No.	Description	Date												

Appendix E. PPDT / Hyder Document Review Comments and Response

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