

Network Rail

**King's Cross Station
Redevelopment
Programme Package 3
GRIP 5**

Listed Building Consent
Application (Reference
2008/2860/L);
Conditions:

**LB 09
Platform Surface Materials**

Document ref
ENG-REP-VCUK-FSW-
CBSA-0004

Condition LB09

Issue 1.0
Issue for Acceptance

Network Rail

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John M'Aslan + Partners

Vinci Constructon UK Limited
Cubitt House,
1 Battlebridge Road
London
N1C 4AH

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Rev	Prepared By		Date	Approved By		Date	Accepted By		Date
	Name	Signature		Name	Signature		Name	Signature	
01	K Maurer		03.12.10	A Bosch		03.12.10	D Jackson		03.12.10

Contents

	Page
1 Introduction	
1.1 Purpose of Submission	1
1.2 Details of Relevant Consent Conditions	1
1.3 Reason for the Consent	1
1.4 Description of Relevant Works	1
1.5 Exclusions	1
2 Understanding the Asset	
2.1 Historical Information	2
2.2 Central Spine Wall	2
2.3 Side walls	2
2.4 Platforms	3
3 Description of Relevant Works	
3.1 Work areas covered in this submission	4
3.2 Main Train Shed - Platforms 1-8 & Southern Concourse	5
3.3 Suburban Train Shed - Platforms 9 to 11	5
3.4 Typical Platform Finishes strategy	6

Appendices

Appendix A

List of Abbreviations

Appendix B

Location Map

Appendix C

General Arrangement Drawings

Appendix D

Samples Schedule

1 Introduction

1.1 Purpose of Submission

This document is a further submission to partially fulfil the requirements of Condition 9 of the Listed Building Consent Reference 2008/2860.

The purpose of this submission is to fulfil requirements of Condition LB09 for Platforms 1 and 4 to 8 in the Main Train Shed, the Southern Concourse in the Main Train Shed and Platforms 9 to 11 in the Suburban Train Shed.

Platform surface materials for Platforms 2 and 3 in the Main Train Shed have already been approved under Ref 2010/2777/L.

1.2 Details of Relevant Consent Conditions

Listed Building Consent Item LB09 states:

Details and samples of the following shall be submitted to and approved in writing by the Council as local planning authority in consultation with English Heritage before any relevant work is begun. The relevant work shall be carried out in accordance with such approved details;

- i) Bird deterrent
- ii) Platform surface materials

This submission relates just to the platform surface materials under item ii)

Detailed working drawings are supplied in related submissions and are not duplicated here.

Samples are not included with this document but are retained on site for inspection. The materials can also be seen on Platforms 2 and 3, already approved.

1.3 Reason for the Consent

The reason given for both consent conditions is 'to safeguard the special architectural and historic interest of the building in accordance with the requirements of polices B6 and KC11 London Borough of Camden Replacement Unitary Development Plan 2006'.

1.4 Description of Relevant Works

Section 2.0 of this report describes the historic background.

Section 3.0 describes the relevant works.

Appendix A lists the abbreviations used.

Appendix B contains the location map.

Appendix C contains the general arrangement drawings.

Appendix D contains the samples schedule.

1.5 Exclusions

Bird deterrent.

Any physical bird deterrent will be the subject of a further submissions.

2 Understanding the Asset

2.1 Historical Information

The station was completed in 1852 to the designs of Lewis Cubitt, for the Great Northern Railway Company, to serve Lincolnshire, Yorkshire and Scotland. The station is one of the earliest major termini, built at a time of considerable expansion of the railways and employing innovative construction technology, similar to that used on the main transept of the Crystal Palace, constructed a year earlier for the Great Exhibition.

The layout of the station was logical and straightforward, with passengers arriving by foot or coach proceeding to the single 'Departure' platform (now Platform 8) on the West side, through a grand Booking Hall. Passengers from the North arrived by train at a single platform (now Platform 1) under the Eastern shed, for onward travel into London via the Cab Road on York Way. The intermediate tracks were used as sidings for rolling stock; transfer from and to the two main lines was assisted by turntables at the south end of the tracks.

From the time of its opening, the station building and adjacent land saw continuous and sustained pressure for expansion to accommodate increased passenger traffic. This was mostly achieved by intermediate platforms and ad hoc additions at the Southern end of the station, culminating with the construction of the 1969 concourse, now generally regarded as inadequate and unsympathetic, given the importance of the historic station building behind.

2.2 Central Spine Wall

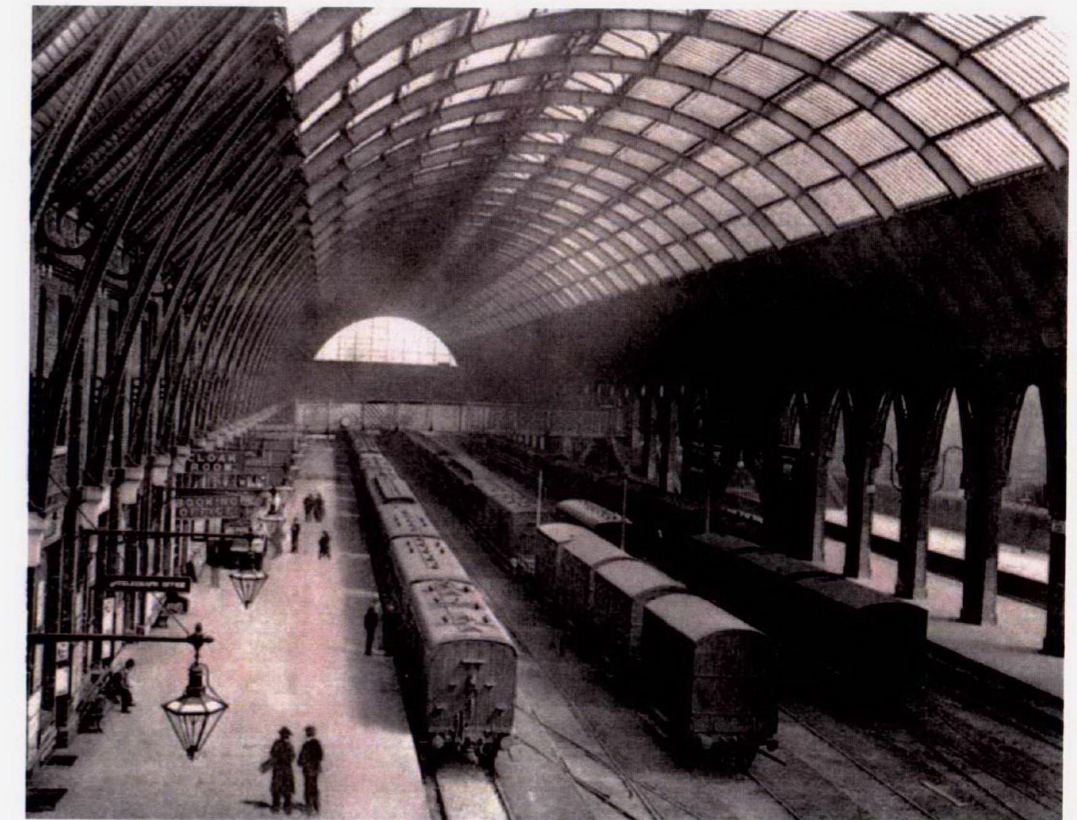
The Spine Wall separating the two Train Sheds is a two storey round arched arcade, with stepped flat arches. Every sixth bay in four locations is a four bay arrangement with a double span arch with strong plat band and central pair of blind arches. The double bay openings originally facilitated the shunting of carriages from one side of the station to the other.

2.3 Side Walls

The side walls of the Train Sheds form the walls of the Western and Eastern Range buildings. The Western Range has housed a mixture of Railway-related uses from its construction, although gradually becoming more office-type uses. The Ground level of the Eastern Range was formerly occupied by the Cab Rank, which was moved to the South end of the station in 1879.



From *The Builder*, Vol X, No 504, 1851, showing the sheds with the front of the station removed and omitting the solid hipped slate roofs terminating the sheds at the north end.



Departure Platform (now Platform 8), after 1893

2.4 Platforms

Having been constructed and adapted several times over the years, the construction of the platforms shows a varied mix of brick wall, with low arches or solid infill to support the surface. More recently, harp and slab and concrete trestle construction have been used.

Platform 1: Record drawings indicate that transverse brick arch walls may support a concrete platform slab within the train shed. There are regular transverse cracks across platform surfacing at 3.5m centres that may indicate the position of the transverse walls within the platform. The concrete slab in the platform varies in thickness and is therefore likely to be cast in-situ over the platform fill. Varying thicknesses of mastic asphalt form the platform surface finish, except for the south end of the platform where there is none and the finish is exposed concrete.

Platforms 4+5: The platform is mainly composed of mass fill with a concrete slab and topped by mastic asphalt surfacing. Settlement of the fill has left the concrete slab partially suspended over the fill in places, i.e. minor voids beneath the slab. There are concrete slot drains down the centre of the platform, outside of the station roof, extending into the roofed area of the station.

Platform 6: The platform is mainly composed of fill with a concrete slab and topped by mastic asphalt surfacing. Settlement of fill has left the concrete slab partially suspended over the fill in places, with possible minor voids beneath the slab.

Platform 7: Platform 7 is on the position of a former track bed and is voided between the underside of the slab and the old track bed. Brick crosswalls, each 225mm wide, and at approximately 2m spacing, support large RC coper units and concrete plank deck units. The former platform wall to the rear of Platform 7, at the back of the voids, is still in place and is a combination of old harp units and brick wall.

Platform 8: Platform 8 abuts directly up against the Western Range and comprises brick crosswalls at 2.5m centres, south of the OBS tunnel. The crosswalls are typically constructed of three arches. In some cases steel RSJ's have been added at a later date in an attempt to relieve some of the arch walls of platform loading.

Platforms 9 to 11: Platforms 9 to 11 are considered to be mass filled with a variety of wall construction types, including harp and plank, brickwork and blockwork walls. The existing surfacing is Terrazzo, with the exception of the northern ends of the platforms which have been surfaced in hot rolled asphalt. There are currently no tactile paving on any of these platforms. The platform walls and surfacing are generally all in good structural condition, although the finishes are in mixed condition having been adapted over time.



Looking towards Platform 8 (then platform 10) c. 1940 prior to the 1941 bomb



1950's view of head of platforms in the main shed

3 Description of Relevant Works

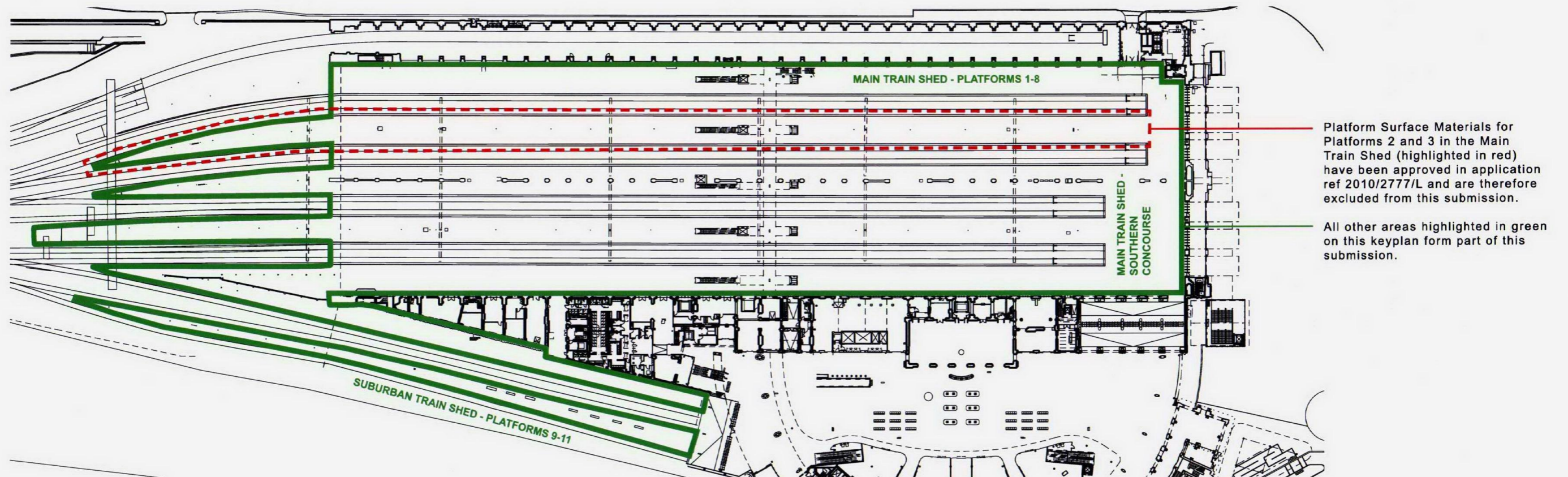
3.1 Work areas covered in this submission

The scope for the work areas covered in this submission is defined as follows:

- Southern Concourse: Installation of a new granite floor finish
- Main Train Shed - Platforms 1 and 4 to 8: Refurbishment of the existing platforms including demolition/ excavation works, installation of new service routes, general repairs to platform riser walls and resurfacing of platforms
- Suburban Train Shed - Platforms 9 to 11: Refurbishment of the existing platforms including patch repair of existing finishes, cleaning and repair of coping stones and installation of new tactiles

Samples are required for flooring materials to the platforms. These materials have been given sample numbers and the physical sample is available for inspection. We have been advised that LoBC do not require the physical samples to be included with the submission. These materials can also be inspected on site, on platforms 2/3. These completed works are offered as workmanship and quality reference installations.

Platform Surface Materials approval for Platforms 2 and 3 in the Main Train Shed has been approved in application ref 2010/2777/L.



3.2 Main Train Shed - Platforms 1 to 8 and Southern Concourse

The scope for platforms 1 to 8 in the Main Train Shed has been reduced since Listed Building Consent was granted from resurfacing and rebuilding the platforms to resurfacing them only. Subsequently the surface material has been changed from granite tiling to mastic asphalt as the depth required for granite tiles cannot be achieved within the existing build-up of the platforms. It is proposed to replace the existing flexible surfacing in mastic asphalt, over the full remaining platform areas, with allowance for a new tactile strip which will generally be a concrete buff tactile. Ceramic tactile tiles are proposed in areas where the depth required for concrete tactiles is not available due to the existing structural condition. This applies to platform 8 along its full length and to platform 1 along the length inside the Main Train Shed (see diagram). In some areas the need for repair will require full reconstruction of areas of the platform including 35mm thickness mastic asphalt flexible surfacing, 100mm thick concrete slab with reinforcement mesh, 150mm thick sub-base and preparation of sub-grade. This is described in the submission for Conditions LB05/06/20B.

Platform levels, including surfacing falls, are to remain as existing as closely as practicable.

New granite flooring is proposed to replace the existing Terrazzo surfacing on the Southern Concourse up to the 4th barrel arch. The granite flooring will also extend over the areas of suspended deck associated with the shortened platforms 5 to 8 and will extend down the sloped portions at the south end of platforms 1 to 8. The granite surfacing will be natural granite stone tiling provided to comply with the architectural specification used within the Western Concourse Public Realm.

The typical finishes strategy for the platforms is reproduced below.

3.3 Suburban Train Shed - Platforms 9 to 11

The existing Terrazzo surfacing and hot rolled asphalt on Platforms 9 to 11 will remain as existing, except a new tactile strip will be installed behind the copers throughout. Minor repairs will be made to the existing Terrazzo. The tactile strip will be installed at a constant distance from the platform edge, which therefore requires a concrete infill between the tactile and the back of the copers in some places where the front to back dimension of the platform edge coping varies. This infill has been selected to match the appearance of the pre-cast concrete units.

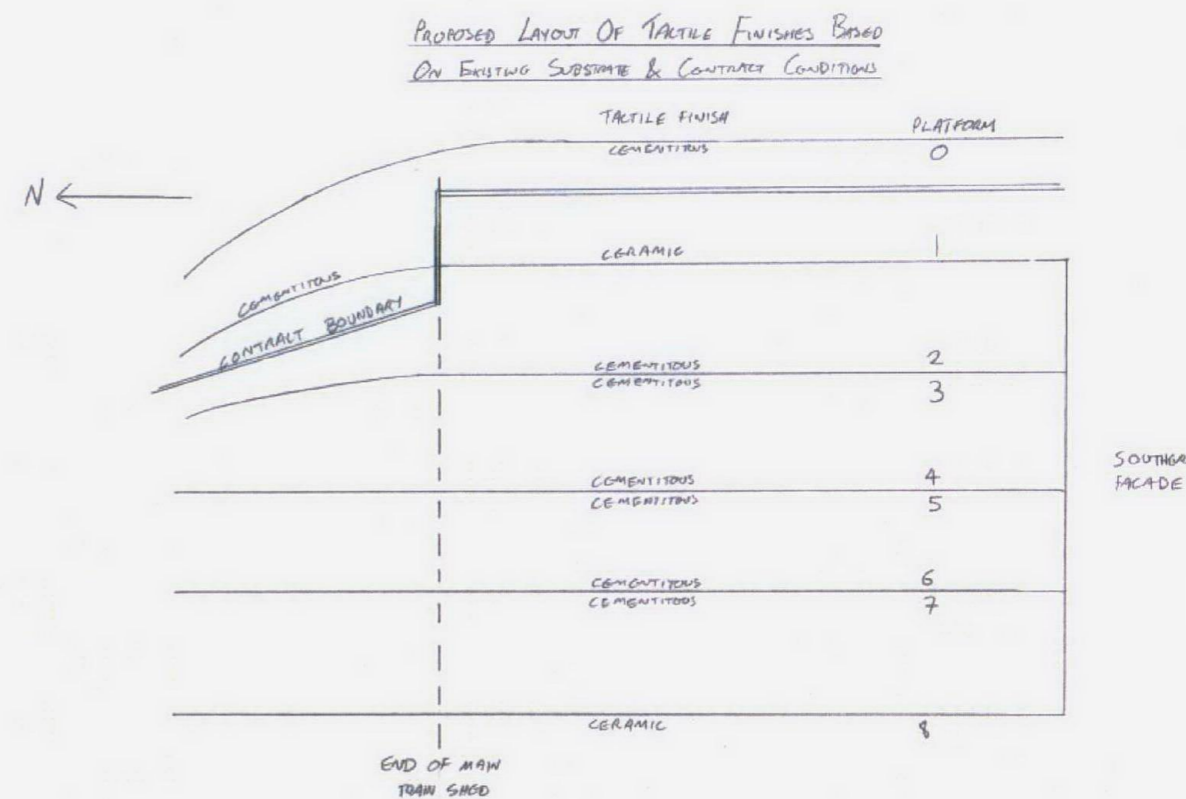
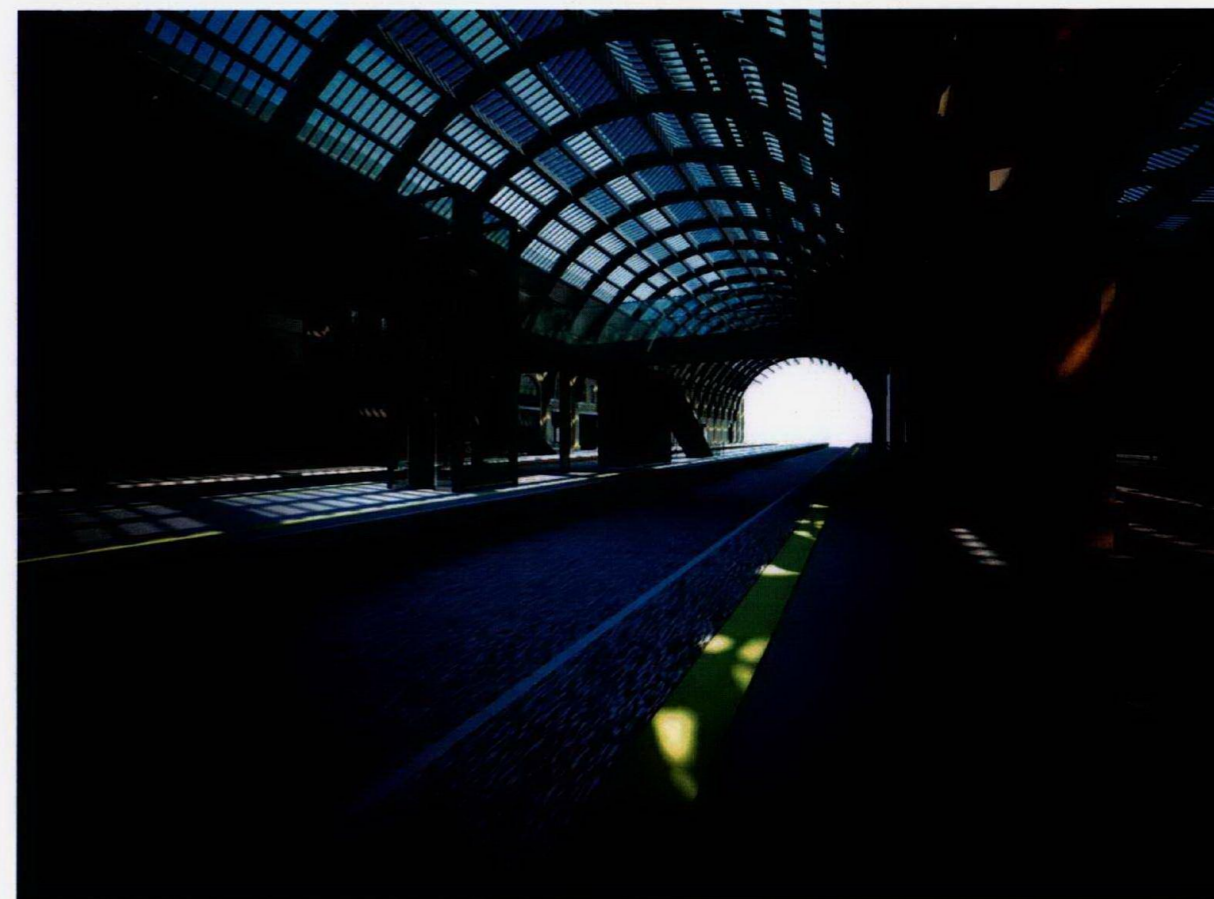


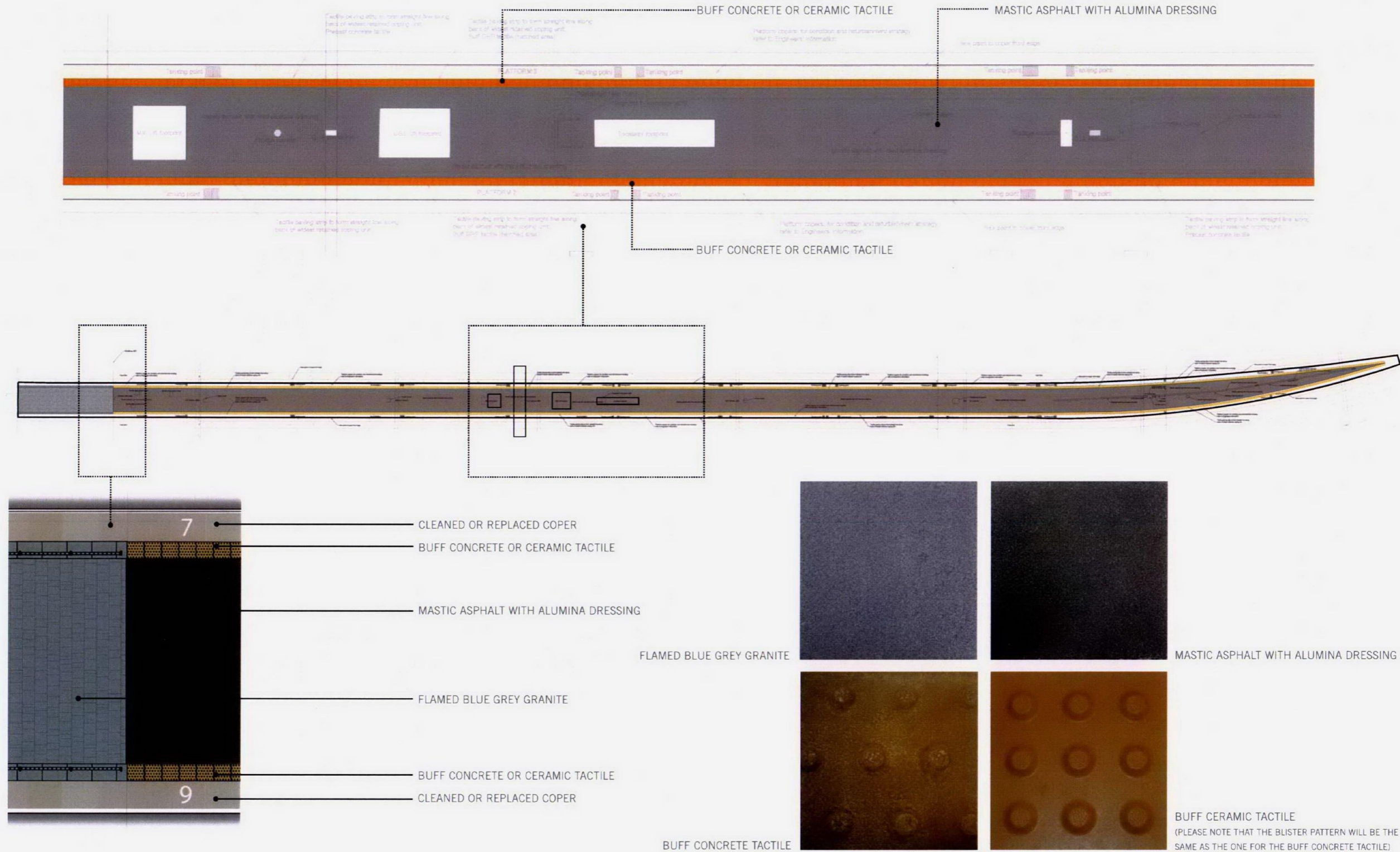
Diagram illustrating proposed materials for tactiles along platforms



Platform 5 looking North - visual for illustrative purposes only

3.6 Typical Platform Finishes strategy

This drawing shows the selected finishes for the platforms and how they relate to one another.



Appendix A

List of Abbreviations

A1 List of Abbreviations

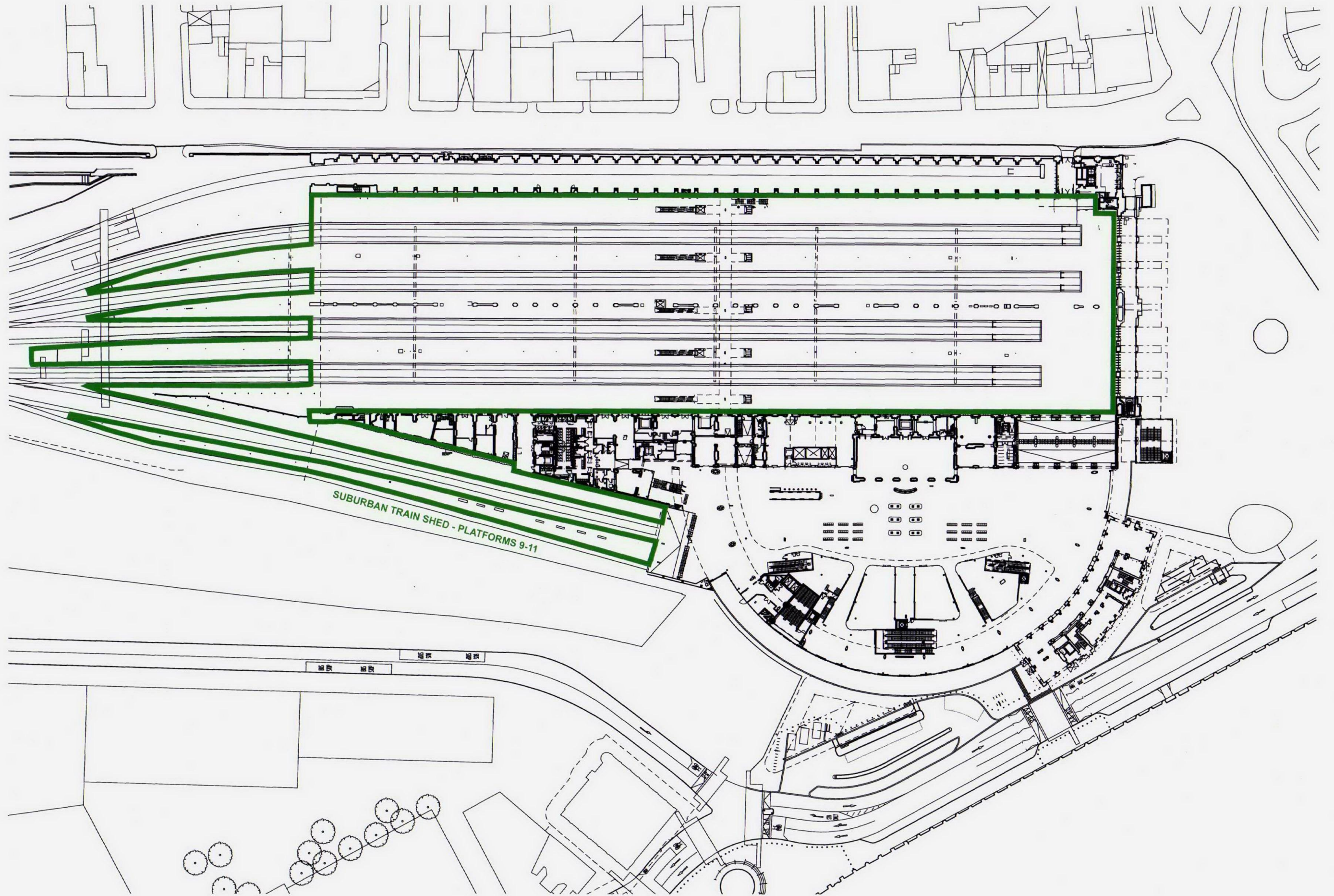
AIP—Approval in Principle
 BS—British Standard
 CAD—Computer Aided Drafting
 C&S – civil and structural
 CCMS—Corporate Content Management system
 CCTV—Closed Circuit Television
 CDM—Construction (Design & Management)
 CIS—Customer Information System
 DDA—Disability Discrimination Act
 DRA—Designer's Risk Assessment
 DfT—Department for Transport
 EACS – Electronic Access Control System
 EMC - Electro Magnetic Compatibility
 ER—Employer's Representative
 ERB – Eastern Range Building
 FCC- First Capital Connect (a TOC)
 FSR – Fire Strategy Report
 FSW - Footbridge and subway works
 FAS - Fire Alarm System,
 GNH - Great Northern Hotel
 GRIP - Guide to Rail Investment Projects
 HAZOP – Hazard Operability Studies
 HAZID – Hazard Identification
 HSQE - Health, Safety, Quality & Environment
 IDC – Inter-Discipline Check
 IP – Ingress Protection
 ITA - Independent Technical Assessment
 ITP - Inspection & Test Plan
 KXRP - King's Cross Station Redevelopment Programme
 LMR - Lift Motor Room
 LNE - London North Eastern
 LPR - Link Plant Room or Network Rail Plant Room
 LUL – London Underground Limited
 MEP – Mechanical Electrical and Public Health Services
 MFTC - Multi Discipline Framework Consultancy
 MIP – Mobility Impaired Person
 MTBF – Mean Time Between Failures
 MTS – Main Train Shed

MTTR – Mean Time to Repair
 NRPR – Network Rail Plant Room or Link Plant Room
 NR - Network Rail
 NRG - Network Records Group
 NRSP - National Rail Security Programme
 NTH - Northern Ticket Hall
 O&M – Operation and Maintenance Manual
 OBS - On Board Servicing
 OLE - Overhead Line Equipment
 PAVA - Public Address / Voice Alarm
 PMO - Programme Management Office
 PPE – Personnel Protective Equipment
 PV – Photo-voltaic
 QA – Quality Assurance
 RAM - Reliability, Availability, Maintainability
 RIBA - Royal Institute of British Architects
 RICS - Royal Institution of Chartered Surveyors
 ROGS - Railway and Other Guided transport Systems
 SCN - Station Change Notice
 SCR – Station Control Room
 SMM7 - Standard Method of Measurement (for Building Works) 7th Edition
 SOR—Station Operations Room (included in and synonymous with Station Control Room)
 SSY – Shared Service Yard
 STS - Suburban Train Shed Buildings
 TBS - Task Briefing Sheet
 TOC - Train Operating Company
 TRANSEC - Transport Security
 VE - Value Engineering
 WCC - Western Concourse (Package 6) – synonymous with WCR
 WCR - Western Concourse (Package 6)
 WI – Works Information
 WRB - Western Range Buildings (Package 6)
 WBS - Work Breakdown Structure
 WPP - Work Package Plan

Appendix B

Location Map

Package 3

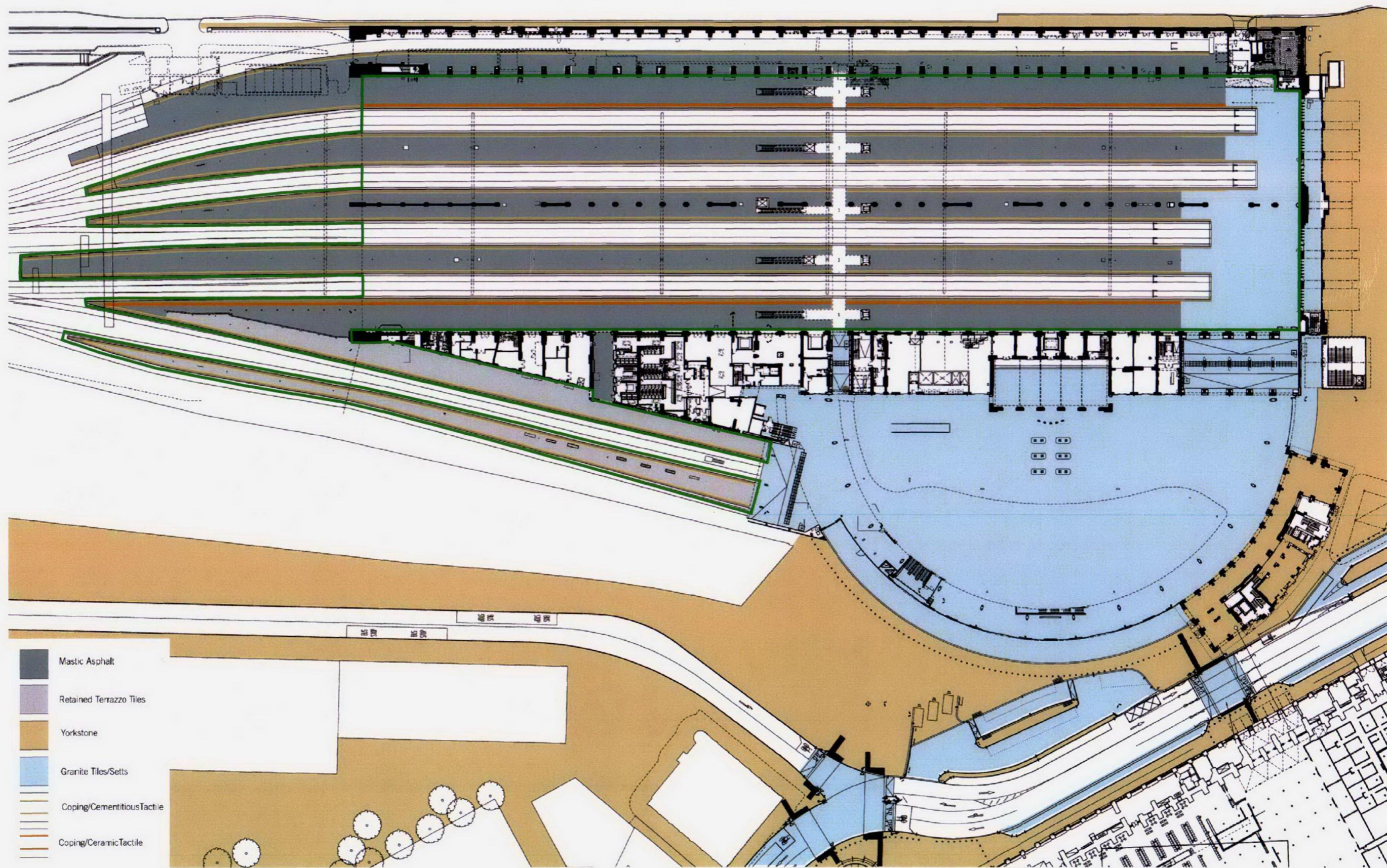


Appendix C

Drawings

ENG-SKT-VCUK-KX3-CAD-0004
Platform Finishes

ENG-SKT-VCUK-KX3-CAD-0004
King's Cross Station
Platform Finishes



Appendix D

Finishes and samples schedule

Item	Material Specification			Manufacturer	Samples for inspection	
	Material	Finish	Colour			
PLATFORM FINISHES						
Platforms	Tactiles (Platforms 2 to 7)	Cementitious	Self finish	Buff	Marshalls	Sample 3
	Tactiles (Platforms 1 + 8)	Ceramic	Semi matt self finish	Buff	Shackerley	Sample 4
	Copers/platform edge	Pre-cast concrete	n/a	Concrete grey	Existing retained and re-used; some new to match existing	See in situ on plat 2/3
	Paint markings	Non slip 2 pack epoxy	Non slip	Traffic White on platform edges; RAL Golden yellow for outlining	n/a	See in situ on plat 2/3
	Infill paving between coper and tactile	In situ concrete fill	Smooth to match appearance of pre-cast concrete copers	Concrete grey	Fosroc paveroc	See in situ on plat 2/3
	Access hatch to lift pit	Galvanised steel	Galvanised chequerplate	Grey	Bilco	See in situ on plat 2/3
	Services access covers	Galvanised steel inset to match adjoining materials	as adjoining materials	as adjoining materials	n/a	See in situ on plat 2/3
	Filler	Polysulphide edge filler (to back of irregular copings)	Smooth pointed	Grey	Nufins Uniseal 200/90	See in situ on plat 2/3
	Flooring	Mastic Asphalt	Fired Alumina	Black	n/a	See in situ on plat 2/3
Southern Concourse and Platform ends	Flooring	Granite	Flamed	Grey	Gormley Azul Pepperino New Rustenberg GRA 902	Sample 1