



Network Rail

King's Cross Station Redevelopment Programme

**Listed Building Application for
Southern Screen at King's Cross Station**



ENG-APP-COR-MSR-CBSA-1119

Project No.: B60214

Version 2.0 for Approval

November 2009

Authorisation Sheet	
Client:	Network Rail
Project Title:	King's Cross Station Redevelopment Programme
Address:	Cubitt House, 1 Battle Bridge Road, London, N1C 4AH
Prepared By:	
Name:	Pauline Nee
Signature:	<i>Pauline Nee</i>
Position:	Historic Building Advisor
Date:	30/11/2009
Checked By:	
Name:	Andrew Wilkinson
Signature:	<i>A. Wilkinson</i>
Position:	Engineer
Date:	30/11/2009
Authorised By:	
Name:	John Oldridge
Signature:	<i>J. Oldridge</i>
Position:	Senior Project Engineer
Date:	30/11/09

For Acceptance by Network Rail:	
Accepted by:	
Name:	GILES BAYRAM <i>G. Bayram</i>
Position:	Scheme Project Manager
Date:	3rd Dec '09

Notice:

It should be clearly understood that this document is the intellectual property and copyright of Corus Rail Consultancy Limited trading as Corus Railway Infrastructure Services. It may not be used by any person for any other purpose other than that specified without the express written permission of Corus Railway Infrastructure Services. Any liability arising out of use by a third party of this document for purposes not wholly connected with the above shall be the responsibility of that party who shall indemnify Corus Railway Infrastructure Services against all claims, costs, damages and losses arising out of such use.

Document History

Revision No.:	Date:	Description:	Prepared By:	Reviewed By:	Approved By:
1.0	20/11/09	First Issue	PN	AGW	JO
2.0	30/11/09	Client comments addressed	PN	AGW	JO

Table of Contents

	Page No.
1.0 Design Statement	4
1.1 Background	4
1.2 Structure of the Screens	4
1.3 Why Work is Required	4
1.4 Phasing of the Work	5
2.0 Photographs	6
3.0 Drawings	9

References:**Appendices:**

Appendix A:

Letter from Camden Council dated 10th March 2009

Appendix B:

Letter from British Transport Police

1.0 Design Statement

1.1 Background

This Listed Building Application is for works to the southern glazed screens at Kings Cross Station. This work was originally incorporated in Application Reference No. 2008/2860/L. While most of the works in that application were consented, work related to the screens was rejected (Appendix A, Letter dated 10th March 2009). Since that time design work has taken place, in consultation with English Heritage and Camden, to address the concerns raised in relation to detailing of the elements to be replaced. This new application is based on the revised detailing arising from that process.

Kings Cross Station was constructed in 1852 to the design of Lewis Cubitt. The main train shed roof comprises two vaults of clear arch construction. The arched southern glazed screens were designed to reflect the structure behind. When first constructed the upper panels were unglazed (see photo ref. 2) to aid the exhaust of smoke and steam. The larger of these panels were glazed some time later and today only the curved sections at the top of each screen are unglazed. The screens have been subject to adaptation, refurbishment and repair from the outset, resulting in a variety of materials and profiles. Recording by the Museum of London Archaeology Service (MOLAS) while the works are progressing will identify all original/early elements.

1.2 Structure of the Screens

Each semi-circular screen consists of 6 separate panels, separated by timber clad steel mullions. The screens are stiffened by cast iron transoms connecting the mullions behind the glazing. Each screen is fixed to a concrete cill by cast iron cleats located to each side of the mullions. Vertical and horizontal glazing bars provide glazed panes approximately 1300mm by 800mm.

Many elements of the screens have been replaced or adapted over the years. The attached drawings illustrate our assessment of the existing, based on inspection of British Rail record drawings supplemented by site inspection. The most significant elements that we know have changed include the cills which are now concrete, the mullions which have been plated with additional steel and the metal glazing bars some of which have been replaced with timber. The glazing includes Georgian wired and cast. Whether any of the original glass is still part of the screen will be clarified by MOLAS prior to removal.

1.3 Why Work is Required

Despite its Grade 1 status, and the high passenger numbers, Kings Cross Station has suffered from insufficient investment throughout the years. In recognition of this it is now undergoing an extensive refurbishment and repair programme. The screens are one element of this.

In addition to repair and refurbishment the British Transport Police require the glazing to be upgraded to deal with potential bomb blast. Kings Cross has been identified as a Category A terrorist target (see BTP letter Appendix B). The upgrading involves:

- i. Strengthening of the timber clad mullions to resist the forces associated with blast loading
- ii. Modification of the glazing bars to reduce the spread of debris in the event of a blast.

These adaptations are illustrated in the attached drawings. The steel encased in the timber clad mullions can be increased in size without affecting their appearance as the cladding can be reproduced to match the existing profile. The vertical and horizontal glazing bars will look marginally different (on close inspection) as they require a deeper rebate, of 20mm, so that the glass can be silicon bonded to the frame. A comparison of the proposed metal glazing bar with the various existing profiles is illustrated in Drawing No ENG-DWG-COR-MSR-CSS-1140. The replacement metal glazing bars are similar in profile to the earlier metal glazing bars but with a slightly increased rebate. The later timber profiles were not constructed to match the earlier metal glazing bars. In these instances the proposed replacement will be more closely match the early versions.

1.4 Phasing of the Work

The phasing of the work is outlined below:

NOTE: All removals will be carried out in accordance with the salvage strategy

1. Recording of the existing screens by MOLAS
2. Removal of glazing and mesh
3. Removal of glazing bars
4. Removal of cast iron transoms, prior to cleaning and painting
5. Detailed measurement of timber clad mullions – for purpose of reproduction
6. Removal of mullions
7. Fixing of new strengthened mullions, to match existing
8. Refixing of decorated transoms
9. Fixing of new metal glazing bars
10. Reglazing and fixing of mesh to unglazed openings

The replacement glass will be 7.5mm thick laminated glass.

The screen will be painted white – DULUX 30YY 68/024

2.0 Photographs

The following Historic Images are included:

1	Painting showing original elevation of south façade
2	Photograph showing central glass panes removed to aid ventilation
3	South Façade photographed from the north
4	South Façade blacked out during the Second World War



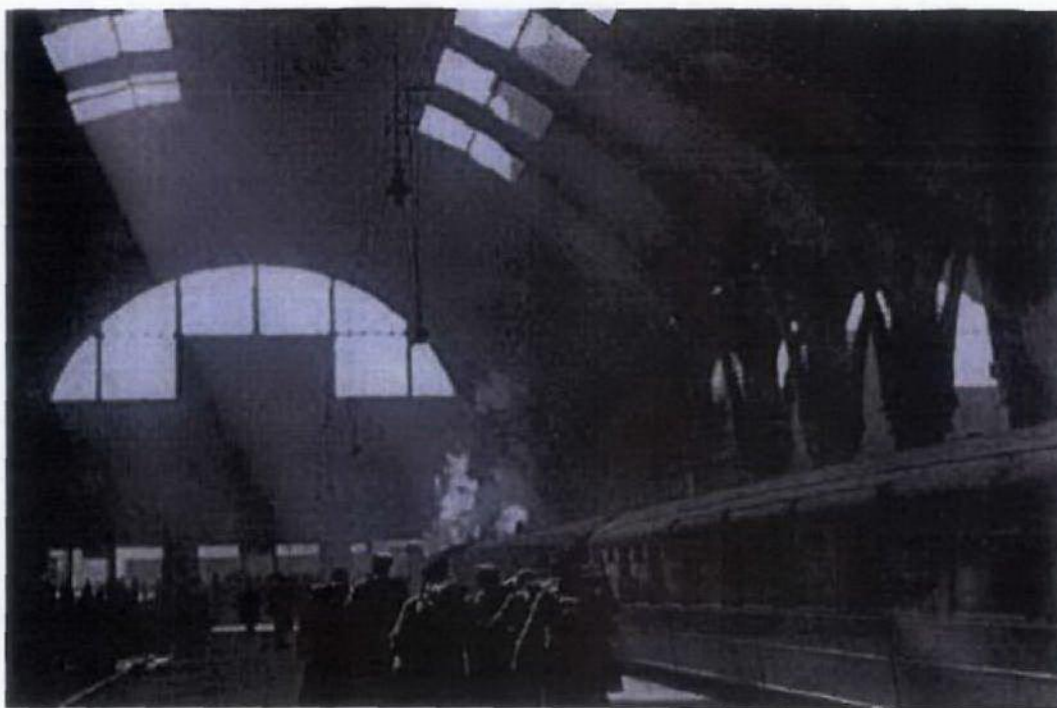
1. Painting showing the original elevation of the South Façade



2. Photograph showing glass removed from centre sections



3. South Façade viewed from the North

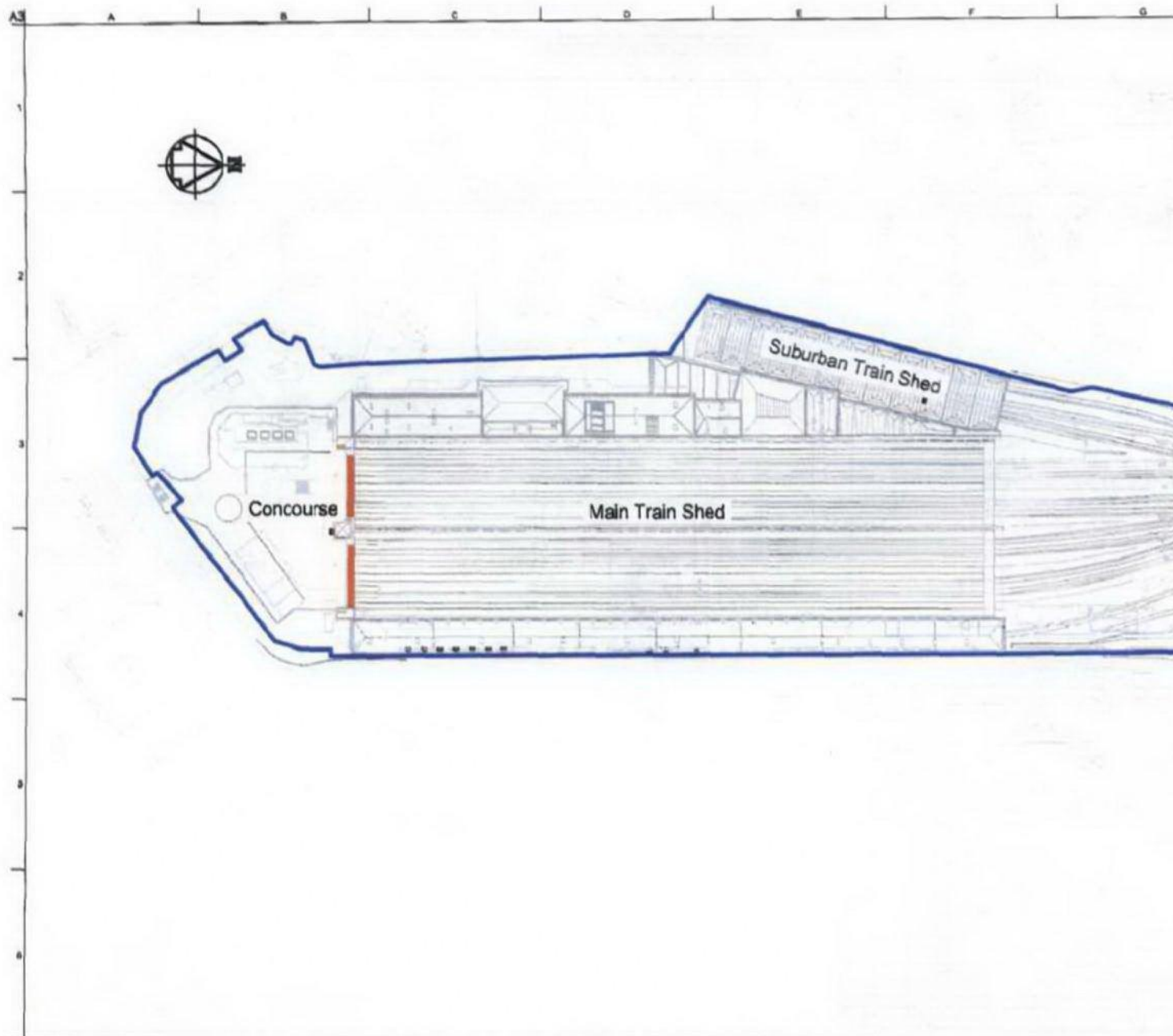


4. South Façade 'Blacked Out' during the Second World War

3.0 Drawings

The following drawings are included in this order:

1	Location Plan	ENG-DWG-COR-MSR-CSP-1141
2	Existing Elevation and Details	ENG-DWG-COR-MSR-CSS-0127
3	South Façade Key Plan	ENG-DWG-COR-MSR-CSP-1139
4	Proposed Works Elevation and Details	ENG-DWG-COR-MSR-CSS-0180
5	Existing and Proposed Details	ENG-DWG-COR-MSR-CSS-0136
6	Existing Glazing Bar Cross Section	ENG-DWG-COR-MSR-CSS-1136
7	Existing Glazing Bar Photographs	ENG-DWG-COR-MSR-CSD-1137
8	Proposed Glazing Bar Cross Sections	ENG-DWG-COR-MSR-CSS-1138
9	Glazing Bar Overlay Sections	ENG-DWG-COR-MSR-CSS-1140



Key:

— Application Site

— Kings Cross Station Site

01	19/11/09	TG	A.G.W.	L.O.
----	----------	----	--------	------

First Issue

Issue	Date	By	Check	Appr
-------	------	----	-------	------



Railway Infrastructure
Services
PO Box 298
York
YO1 6YH
T: 01904 454600
F: 01904 454601

Client



Job Title

Kings Cross Station
Redevelopment Programme
Package 2

Drawing Title

South Facade
Listed Building Application
Location Plan.

Scale at A1

1:1

Discipline

Infrastructure

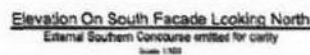
Drawing Status

For Information

Job No	Drawing No	Status
B60214	MSR-CSP-1141	01

Summary of Defects

Summary of Defects



1. All dimensions are in millimetres unless stated otherwise.
2. For sections and depth 300 drawing is to be read in conjunction with drawing 300A/C01-0120 and 120 and 135.
3. Details based on "South End Screen 42000 Survey and Visual Survey Report" dated 5 Oct. 2003. Plus internal inspection by Census art 20 Nov. 2007.

Building Design (continued)
 10/10/2000
 10/10/2000
 10/10/2000

Kings Cross Station
Redevelopment Programme
Package 2

South Facade Existing Elevation and Defects

Figure 6

Introduction

For Construction

Job No.	Location	Notes
101	101	101
102	102	102
103	103	103
104	104	104
105	105	105
106	106	106
107	107	107
108	108	108
109	109	109
110	110	110
111	111	111
112	112	112
113	113	113
114	114	114
115	115	115
116	116	116
117	117	117
118	118	118
119	119	119
120	120	120
121	121	121
122	122	122
123	123	123
124	124	124
125	125	125
126	126	126
127	127	127
128	128	128
129	129	129
130	130	130
131	131	131
132	132	132
133	133	133
134	134	134
135	135	135
136	136	136
137	137	137
138	138	138
139	139	139
140	140	140
141	141	141
142	142	142
143	143	143
144	144	144
145	145	145
146	146	146
147	147	147
148	148	148
149	149	149
150	150	150
151	151	151
152	152	152
153	153	153
154	154	154
155	155	155
156	156	156
157	157	157
158	158	158
159	159	159
160	160	160
161	161	161
162	162	162
163	163	163
164	164	164
165	165	165
166	166	166
167	167	167
168	168	168
169	169	169
170	170	170
171	171	171
172	172	172
173	173	173
174	174	174
175	175	175
176	176	176
177	177	177
178	178	178
179	179	179
180	180	180
181	181	181
182	182	182
183	183	183
184	184	184
185	185	185
186	186	186
187	187	187
188	188	188
189	189	189
190	190	190
191	191	191
192	192	192
193	193	193
194	194	194
195	195	195
196	196	196
197	197	197
198	198	198
199	199	199
200	200	200

B40734	MSR-CSS-0127	C
--------	--------------	---

Key To Colours Shown On Elevation Below

- Timber clad steel mullions to be removed and replaced to provide resistance to bomb blast as required by British Transport Police, given the stations status as a category 'A' terrorist target, finished timber profile as existing.
- Cast iron transoms to be taken down, cleaned, painted and reinstated.
- Timber arch and top transoms to be cleaned and painted. Damaged sections to be repaired or replaced like for like.
- Window frames to be replaced to meet British Transport Police security requirements.



Elevation Looking South
Julius 1982

02	1011100	T.O.	A.G.M.	L.O.
Revised to contract				
01	1011100	T.O.	A.G.M.	L.O.
FIRST ISSUE				

Issue Date No. Date

CORUS
Railway Infrastructure
Services
PO Box 204
FPA
FPA 8704
T: 01462 430000
F: 01462 430001

Network Rail

For the
Kings Cross Station
Redevelopment Programme
Package 2

Issued for
South Facade
Key Plan

Drawn by: Ali Smith

Checked by: Infrastructure

Issued for:

For Approval

000000 000000

000000 000000

