

## CONTRACT DATA

### Part one – Data provided by the *Employer*

Completion of the data in full, according to the Options chosen, is essential to create a complete contract.

Statements given in all  
contracts  
1 General

- The *conditions of contract* are the core clauses and the clauses for main Option A, dispute resolution Option . . . . . and secondary Options . . . . . of the NEC3 Engineering and Construction Contract April 2013.
- The *works* are  
.....
- The *Employer* is  
Name .....  
Address .....  
.....
- The *Project Manager* is  
Name .....  
Address .....  
.....
- The *Supervisor* is  
Name .....  
Address .....  
.....
- The *Adjudicator* is  
Name .....  
Address .....  
.....
- The *Works Information* is in  
.....  
.....  
.....
- The *Site Information* is in  
.....  
.....  
.....
- The *boundaries of the site* are .....
- The *language of this contract* is. ....
- The *law of the contract* is the law of. ....
- The *period for reply* is ..... weeks.
- The *Adjudicator nominating body* is .....
- The *tribunal* is .....  
.....

- The following matters will be included in the Risk Register

.....  
 .....  
 .....

### 3 Time

- The *starting date* is .....
- The *access dates* are

Part of the Site	Date
------------------	------

1.....	.....
2.....	.....
3.....	.....

- The *Contractor* submits revised programmes at intervals no longer than ..... weeks.

### 4 Testing and Defects

- The *defects date* is ..... weeks after Completion of the whole of the *works*.
- The *defect correction period* is ..... weeks except that
  - The *defect correction period* for ..... is ..... weeks
  - The *defect correction period* for ..... is ..... weeks.

### 5 Payment

- The *currency of this contract* is the .....
- The *assessment interval* is ..... weeks (not more than five).
- The *interest rate* is ..... % per annum (not less than 2) above the ..... rate of the ..... bank.

### 6 Compensation events

- The place where weather is to be recorded is .....  
 .....
- The *weather measurements* to be recorded for each calendar month are
  - the cumulative rainfall (mm)
  - the number of days with rainfall more than 5 mm
  - the number of days with minimum air temperature less than 0 degrees Celsius
  - the number of days with snow lying at ..... hours GMT
  - and these measurements:  
 .....  
 .....  
 .....
- The *weather measurements* are supplied by .....
- The *weather data* are the records of past *weather measurements* for each calendar month which were recorded at ..... and which are available from .....  
 .....

#### Where no recorded data are available

- Assumed values for the ten year return *weather data* for each *weather measurement* for each calendar month are  
 .....  
 .....  
 .....  
 .....

### 8 Risks and insurance

- The minimum limit of indemnity for insurance in respect of loss of or damage to property (except the *works*, Plant and Materials and Equipment) and liability for bodily injury to or death of a person (not an employee of the *Contractor*) caused by activity in connection with this contract for any one event is .....  
 .....
- The minimum limit of indemnity for insurance in respect of death of or bodily injury

to employees of the *Contractor* arising out of and in the course of their employment in connection with this contract for any one event is

**Optional statements**

.....  
If the *tribunal* is arbitration

- The *arbitration procedure* is .....
- The place where arbitration is to be held is .....
- The person or organisation who will choose an arbitrator
  - if the Parties cannot agree a choice or
  - if the *arbitration procedure* does not state who selects an arbitrator is .....

.....  
If the *Employer* has decided the *completion date* for the whole of the *works*

- The *completion date* for the whole of the *works* is .....

If the *Employer* is not willing to take over the *works* before the Completion Date

- The *Employer* is not willing to take over the *works* before the Completion Date.

If no programme is identified in part two of the Contract Data

- The *Contractor* is to submit a first programme for acceptance within. .... weeks of the Contract Date.

If the *Employer* has identified work which is to meet a stated *condition* by a *key date*

- The *key dates* and *conditions* to be met are

<i>condition</i> to be met	<i>key date</i>
1.....	.....
2.....	.....
3.....	.....

If the period in which payments are made is not three weeks and Y(UK)2 is not used

- The period within which payments are made is .....

If Y(UK)2 is used and the final date for payment is not 14 days after the date when payment is due

- The period for payment is .....

If there are additional *Employer's* risks

- These are additional *Employer's* risks

- 1.....
- 2.....
- 3.....

If the *Employer* is to provide Plant and Materials

- The insurance against loss of or damage to the *works*, Plant and Materials is to include cover for Plant and Materials provided by the *Employer* for an amount of .....

If the *Employer* is to provide any of the insurances stated in the Insurance Table

- The *Employer* provides these insurances from the Insurance Table

1. Insurance against .....
- Cover/indemnity is .....
- The deductibles are .....
2. Insurance against .....
- Cover/indemnity is .....
- The deductibles are .....
3. Insurance against .....

Cover/indemnity is .....  
The deductibles are .....

**If additional insurances are to be provided**

• The *Employer* provides these additional insurances

1. Insurance against .....  
Cover/indemnity is .....  
The deductibles are .....  
2. Insurance against .....  
Cover/indemnity is .....  
The deductibles are .....  
3. Insurance against .....  
Cover/indemnity is .....  
The deductibles are .....

• The *Contractor* provides these additional insurances

1. Insurance against .....  
Cover/indemnity is .....  
2. Insurance against .....  
Cover/indemnity is .....  
3. Insurance against .....  
Cover/indemnity is .....

**If Option X1 is used**

• The proportions used to calculate the Price Adjustment Factor are

0. .... linked to the index for .....  
0. ....  
0. ....  
0. ....  
0. ....  
0. ....  
0. .... non-adjustable

1.00

- The *base date* for indices is .....
- The indices are those prepared by .....

**If Option X3 is used**

• The *Employer* will pay for the items or activities listed below in the currencies stated

items and activities	other currency	total maximum payment in the currency
.....	.....	.....
.....	.....	.....
.....	.....	.....

- The *exchange rates* are those published in .....  
on ..... (date).

**If Option X5 is used**

• The *completion date* for each section of the works is

section	description	completion date
1	.....	.....

2 .....  
 3 .....  
 4 .....

**If Options X5 and X6 are used together**

- The bonus for each *section* of the *works* is

<i>section</i>	<i>description</i>	<i>amount per day</i>
1	.....	.....
2	.....	.....
3	.....	.....
4	.....	.....
Remainder of the <i>works</i> . ....		

**If Options X5 and X7 are used together.**

- Delay damages for each *section* of the *works* are

<i>section</i>	<i>description</i>	<i>amount per day</i>
1	.....	.....
2	.....	.....
3	.....	.....
4	.....	.....
Remainder of the <i>works</i> . ....		

**If Option X6 is used (but not if Option X5 is also used)**

- The bonus for the whole of the *works* is ..... per day.

**If Option X7 is used (but not if Option X5 is also used)**

- Delay damages for Completion of the whole of the *works* are ..... per day.

**If Option X12 is used**

- The *Client* is

Name .....  
 Address .....

- The *Client's* objective is

.....  
 .....  
 .....  
 .....  
 .....

- The Partnering Information is in

.....  
 .....  
 .....  
 .....

**If Option X13 is used**

- The amount of the performance bond is .....

**If Option X14 is used**

- The amount of the advanced payment is .....
- The *Contractor* repays the instalments in assessments starting not less than ..... weeks after the Contract Date.
- The instalments are .....

.....  
(either an amount or a percentage of the payment otherwise due)

- An advanced payment bond is/is not required.

**If Option X16 is used**

- The *retention free amount* is .....
- The *retention percentage* is ..... %.

**If Option X17 is used**

- The amounts for low performance damages are  
amount                      performance level  
.....                      for .....  
.....                      for .....  
.....                      for .....  
.....                      for .....

**If Option X18 is used**

- The *Contractor's liability* to the *Employer* for indirect or consequential loss is limited to .....
- For any one event, the *Contractor's liability* to the *Employer* for loss of or damage to the *Employer's* property is limited to .....
- The *Contractor's liability* for Defects due to his design which are not listed on the Defects Certificate is limited to .....
- The *Contractor's total liability* to the *Employer* for all matters arising under or in connection with this contract, other than excluded matters, is limited to .....
- The *end of liability date* is ..... years after the Completion of the whole of the works.

**If Option X20 is used (but not if Option X12 is also used)**

- The *Incentive schedule* for Key Performance Indicators is in .....
- A report of performance against each Key Performance Indicator is provided at intervals of ..... months.

**If Option Y(UK)1 is used and the *Employer* is to pay any charges made and is paid any interest paid by the *project bank***

- The *Employer* is to pay any charges made and is paid any interest paid by the *project bank*.

**If Option Y(UK)3 is used**

- term    person or organisation  
.....  
.....  
.....  
.....

**If Options Y(UK)1 and Y(UK)3 are both used**

- term    person or organisation  
The provisions of Option Y(UK)1              Named Suppliers

**If Option Z is used**

- The *additional conditions of contract* are .....  
.....

## Part two – Data provided by the Contractor

### Statements given in all contracts

Completion of the data in full, according to the Options chosen, is essential to create a complete contract.

- The Contractor is
  - Name .....
  - Address .....
  - .....
- The *direct fee percentage* is..... %.
- The *subcontracted fee percentage* is..... %.
- The *working areas* are the Site and .....
- The key people are
  - (1) Name .....
  - Job .....
  - Responsibilities .....
  - .....
  - Qualifications .....
  - Experience .....
  - .....
  - (2) Name .....
  - Job .....
  - Responsibilities .....
  - .....
  - Qualifications .....
  - Experience .....
  - .....
- The following matters will be included in the Risk Register
  - .....
  - .....
  - .....
  - .....

### Optional statements

If the Contractor is to provide Works Information for his design

- The Works Information for the Contractor's design is in
  - .....
  - .....
  - .....
  - .....
  - .....

If a programme is to be identified in the Contract Data

- The programme identified in the Contract Data is.....

If the Contractor is to decide the *completion date* for the whole of the works

- The *completion date* for the whole of the works is.....

If Option Y(UK)1 is used

- The *project bank* is .....
- *named suppliers* are .....

Data for the Shorter  
Schedule of Cost  
Components

- 
- The *activity schedule* is .....
  - The tendered total of the Prices is. ....
  - The percentage for people overheads is ..... %.
  - The published list of Equipment is the last edition of the list published by  
.....
  - The percentage for adjustment for Equipment in the published list is  
..... % (state plus or minus).
  - The rates for other Equipment are
 

Equipment	size or capacity	rate
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
  - The hourly rates for Defined Cost of design outside the Working Areas are
 

category of employee	hourly rate
.....	.....
.....	.....
.....	.....
.....	.....
  - The percentage for design overheads is ..... %.
  - The categories of design employees whose travelling expenses to and from the Working Areas are included in Defined Cost are  
.....  
.....  
.....  
.....



# **nec<sup>3</sup> Engineering and Construction Contract Option A**

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Terms in *italics> are identified in Contract Data, and defined terms have capital initial letters.*

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## **SECTION 7**



## **SECTION 7 WORKS INFORMATION**



# **WORKS INFORMATION**

**Version: (FINAL) Revision 1**

**Date: 25/01/2018**

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# WI 100 – Description of the works

## 1.1 General Description of the Works

### (a) Project Overview

This project comprises the strengthening and upgrade of 2 Nr. bridges in Blackhorse Lane, Croydon together with re-surfacing the road between the junctions which "bracket" the bridges and a new retaining wall to the south side of Blackhorse Lane abutting Woodside School

- Blackhorse Lane South Bridge (owned by Transport for London)
- Blackhorse Lane North Bridge (owned by London Borough of Corydon).

Both bridges are to be strengthened and upgraded in this contract. The terms and conditions of contract are for a single contract for the works to both bridges. The *Employer* under the contract is Transport for London. This is a design and build contract.

This Works Information includes the necessary information for both bridges (North and South) and most clauses are common to the works for both bridges. However, where necessary, works relative to the North Bridge only are denoted in italics.

Regular black text (Arial 11pt) denotes all common clauses, specifications, conditions, etc. and all works to Blackhorse Lane South Bridge (TfL).

The bridges are to be referred to herein as the South Bridge and the North Bridge.

The Blackhorse Lane Project (North and South Bridge) is to be delivered in two stages as defined below. Further details of the tasks listed below are contained in the relevant sections of the Works Information.

### Stage 1 – Design Development

The objective of this stage is for the *Contractor* to complete the engineering design. The *Contractor* shall ensure all of the engineering decisions have been made and approved so the construction cost, risk and schedule for delivery can be agreed between the *Project Manager* and the *Contractor*. The *Contractor's* final output will be a fully co-ordinated and approved detailed design for both North and South Bridges to enable the commencement of construction works on the Site. This package will include a complete works specification developed by the *Contractor* for the approval by the *Employer*.

As part of the Stage 1 works the *Contractor* shall:

- Undertake further site investigation and surveys as deemed necessary by the *Contractor* to prepare the Stage Two Fixed Price for the construction of the Project.
- Develop the Stage Two Fixed Price with the accompanying design information to the *Project Manager*. These are to be in accordance with the Pricing Information and should cover the construction and handover activities and any outstanding design elements from Stage 1.

## **Stage 2: Construction**

The objective of this stage is to undertake the construction and handover activities based on the approved design by the *Contractor* in Stage 1.

### **Background**

#### **South Bridge**

Blackhorse Lane Bridge (South) was constructed in the late 19th Century, it is a simply supported Overline Bridge which spans over 2 tram lines between Blackhorse Lane tram stop and Addiscombe tram stop, it comprises of 16 No. cast iron trough beams with low-grade concrete infill and masonry abutments and wingwalls.

Blackhorse Lane Bridge (South) carries a local 'C' class road with a speed limit of 30mph over two tram lines operated by London Trams and is located between Blackhorse Lane tram stop and Addiscombe tram stop.

Due to lack of waterproofing system to protect the structural members, the Principal Inspections have identified the cast iron trough beams are heavily corroded from water seepage through the expansion joints.

The structure was assessed in 1997, the results showed the structure was capable of carrying 3 tonnes assessment live load (ALL). And 3 tonnes weight restriction plates have been installed on the bridge. Subsequently this has been superseded as a later report from London Trams' Structures Inspection Consultant was that the bridge is failing at 3 ton and from that the bridge has now been closed for vehicular access.

In June 2016 London Trams commenced a feasibility study for the bridge to determine the most efficient option of removing the risk carried by the bridge's condition and bring the bridge back to the desired weight limit. Different strengthening and replacement options were considered and the recommended option chosen was a pre-cast concrete deck replacement.

December 2016 a further report was submitted by London Trams' Structures Inspection Consultant accelerating their concerns due to the unknown corrosion of the cast iron beams. They stated that immediate action should be taken to reduce the risk of the bridge catastrophically failing by means of total or part demolition of the bridge deck.

A Make Safe project was successfully completed in June 2017 removing the dead load (including the highway surfacing, fill material, and the masonry parapet) across the entire span of the bridge. This resulted in a reduction in the stresses due to dead and superimposed dead load in the beams in excess of 50% and therefore substantially reducing the risk of collapse.

#### **North Bridge**

Blackhorse Lane (North) bridge carries Blackhorse Lane, an unclassified local road over the track-bed of the former Addiscombe to Elmers End Railway which was closed in May 1997. The tracks have been removed and the track bed has been landscaped and is currently used as a footpath. The railway branch which the bridge crossed (Woodside to Addiscombe, Mid-Kent railway) was opened in 1864. The type of bridge construction is consistent with this date. The bridge pre-dates the adjacent Blackhorse Lane South Bridge by about 20 years.

The single span bridge has a clean span of 7.61m. The deck is square to the abutments.



The carriageway width is 5.66m, with footways typically 1.7m wide on the west side and 1.85m wide on the east side. The overall width between parapets is 9.2m the structure comprises of eight longitudinally spanning cast iron girders at approximately 1.41m centres with a brick jack arch construction spanning between the girders. The six internal girders are hog-backed and the bottom flange thickness varies for each girder across the span. At mid-span, the girders are 610mm deep with a 150mm x 35mm top flange and 457mm x 35mm bottom flange. On the edge girders, the top flange is level but the bottom flange is hogged. At mid span, the depth of the edge girders is 560mm and the bottom flange is 225 x 48mm throughout. The jack arches are 220mm thick. There are four tie bars to each jack arch. Additional tie straps have been provided to the central girders. The substructure comprises brick abutments and pilasters and brick splayed wingwalls at each corner. Construction details of the substructure are not available. It is most probable that these are solid gravity type structures.

The parapets are constructed of masonry brickwork and are not designed to current standards for vehicle incursion.

There is no waterproofing system present across the deck to protect the structural members. Previous inspections have noted significant corroding of the cast iron I-beams supporting the jack arches.

The structure was last assessed in 2014 and the results showed the internal girders are capable of carrying 7.5 tonnes assessment live loading (ALL). The edge girders are rated at 3 tonnes accidental vehicle loading. Weight restriction plates of 7.5 tonnes have been placed over the bridge – however the bridge is currently closed to all vehicular traffic.

## **(b) Site Location & working areas**

Blackhorse Lane is a London Borough of Croydon road that acts as a connection between Lower Addiscombe Road and Woodside Green. Blackhorse Lane Bridge (South) carries a local 'C' class road with a speed limit of 30mph over two tram lines operated by London Trams and is located between Blackhorse Lane tram stop and Addiscombe tram stop.

*The North Bridge carries the same 'C' class road and is located between the South Bridge and the junction with Woodside Green.*

Both bridges are "bracketed" by junctions with Sissinghurst Road (cross-roads) at the southern end and Woodside Green (T-junction) and the northern end. These junctions mark the extent of the site and the works.

A red-line drawing shows the extent of the site (refer Site Boundary Plan in the Site Information). The working areas are confined within the red-line boundary.

## **(c) Enabling works**

### **South Bridge**

Limited enabling work can be carried out by the *Contractor* prior to implementation of the Works apart from site surveys and investigations.

### **North Bridge**

*The Contractor may undertake limited enabling works prior to implementation of the Works. Such works could include removal of footway and carriageway and surfacing but*

*temporary reinstatement will be required for public pedestrian access. The site survey and investigation works are not enabling works.*

#### **(d) Constraints**

Details of constraints on delivery of the works are set out in W/200, these include:

- Noise pollution
- Maintaining safe access to members of public
- Maintaining safe access to residential properties
- Operational tramway below the bridge
- The existing London Tram OHLE wiring
- The utilities within the bridge decks
- The current weight restriction on the London Trams bridge and the Local Authority's bridge adjacent
- The temporary traffic diversion
- The proximity of houses and households
- Construction techniques due to condition of the bridge and existing adjacent and nearby properties
- The existing bridges are closed to vehicular traffic
- A temporary footbridge has been provided for pedestrians
- The cycle/footpath under the North Bridge (the cycle / footpath must be suspended for the duration of the works – contractor responsible for all notifications, traffic orders etc.
- Proximity of businesses which are to remain open and operational.
- Hours of Working; the hours of working will be [unless otherwise instructed and /or authorised];
  - Monday – Friday 08.00 -18.00
  - Saturday 08.00-13.00
  - Sunday and Bank Holidays – no working

There will be no restriction on working hours during track possession **BUT** consideration shall be given to noisy working which must be kept to a minimum

#### **(e) Works Sequencing**

The North and South Bridges, carriageway/footpath reconstruction and retaining wall are a single civil engineering / construction project. The works are to be programmed and undertaken to each bridge **concurrently** with each other. The works will not be undertaken in a linear or sequential manner (i.e. one bridge completed before work commenced on the other). The carriageway/footpath reconstruction is to be completed in such a manner and at such a time as not to be damaged by works to the bridges. The works are to be constructed in the shortest possible time making use of efficiencies with regard to use of plant, machinery and equipment; labour; material deliveries etc., traffic management; temporary works and the like

## **1.2 Scope of Works**

### **(a) South Bridge**

*The scope of work for the design and construction of the South Bridge deck replacement includes:*

#### *Stage 1: Design Development:*

- i. *Develop and assure a detailed design for construction based on the Approval in Principle report produced by Pell Frischmann ref. RA13226VBBO 01-A (see Volume 3)*

#### *Stage 2: Construction:*

- i. *Installation of any traffic management inclusive of pedestrian management.*
- ii. *Removal and disposal of any existing highway material, infill, water proofing and any other material on the bridge deck*
- iii. *Removal and disposal of the existing cast iron beams*
- iv. *Installation of any propping and monitoring as required for the Works*
- v. *Installation of all materials and components associated with the new bridge deck construction*
- vi. *Management of all diversion and interface with utilities*
- vii. *Installation of all highway materials and components*
- viii. *Installation, removal and maintenance of any temporary Works*
- ix. *Communication management with the local author, local residents and businesses*
- x. *All associated testing and commissioning of the Works*
- xi. *Directly liaising with the temporary footbridge manufacturer (All task) for any proposed alterations, and the removal of the bridge. There will be ongoing costs with the temporary footbridge and the Employer will pay these costs.*

### **(b) North Bridge**

*The scope of work for the design and construction of the North Bridge strengthening and widening including the retaining wall to Woodside School are as follows:*

#### *Stage 1: Design Development:*

- i. *Develop and assure a detailed design for construction based on the Approval in Principle report produced by Pell Frischmann dated June 2017 ref. RA13263VBB001 - A. The retaining wall is shown on drawing A13263 – C103*

#### *Stage 2: Construction:*

- I. *Installation of any traffic management inclusive of pedestrian management.*
- II. *Removal and disposal of any existing highway material, infill, water proofing and any other material on the bridge deck*
- III. *Removal and disposal of the existing cast iron beams*
- IV. *Installation of any propping and monitoring as required for the Works*
- V. *Installation of all materials and components associated with the new bridge deck and parapet construction.*
- VI. *Enlargement of abutments and alterations to wing walls including all necessary foundations and structural works Lighting, signage, etc.*

- VII. *Management of all diversion and interface with utilities*
- VIII. *Installation of all highway materials and components*
- IX. *Installation, removal and maintenance of any temporary Works*
- X. *Communication management with the local authority, local residents and businesses*
- XI. *All associated testing and commissioning of the Works*

**(c) Carriageway and Footpath**

*The scope of work for the design and re-construction of the carriageway and footpath includes:*

Stage 1: Design Development:

- i. *Develop and assure a detailed design for the re-construction based on the Drawings ref;*

*A13263-C-102-A  
A13263-C-103-C  
A13263-C-104-A  
A13263-C-105-A  
A13263-C-106-A  
A13263-C-107  
A13263-C-108*

Stage 2: Construction:

- i. *Installation of any traffic management inclusive of pedestrian management.*
- ii. *Removal and disposal of any existing highway material, infill, etc.*
- iii. *Installation of all materials and components associated with the new carriageway and footways including all road markings, lining, fencing bollards, signage Lighting, signage, etc.*
- iv. *Management of all diversion and interface with utilities*
- v. *Installation, removal and maintenance of any temporary Works*
- vi. *Communication management with the local authority, local residents and businesses*
- vii. *All associated testing and commissioning of the Works*

**(d) Project objectives and philosophy**

**Transport for London's goal is**

*"To keep London working and growing and make life in London better. We will deliver a transport system that secures London's position as a world-leading city and the engine of the UK economy. Our services will ensure that those who live and work in and visit London can access all the Capital has to offer in terms of jobs, leisure, health and education."*

London Trams, as a mode within Transport for London, will strive to help make this goal possible. The works highlighted in this document will help to achieve this goal by:

- o Reducing the risk of delays and disruptions by removing old and tired assets before they fail
- o Developing long standing solutions to reduce whole life costs and future disruption to tram users, residents and businesses.

*London Borough of Croydon's goal is to continuously improve and upgrade the borough's infrastructure in a timely and cost effective manner. In respect of the North Bridge the proposed deck replacement strengthening and road widening fully meets Croydon Council's aspiration in providing a low maintenance and safe asset with a 120 year design life and unrestricted access for future modes of highway traffic.*

**(e) Contractor's design responsibilities (Ref. WI300)**

The *Contractor* is to develop a detailed design achieving Acceptance of Design (AoD) in accordance with LT-IMS-ENG-106 and in accordance with the *Employer's* Design Requirements demonstrating compliance with all the *Employer* design requirements and all other relevant industry standards.

**1.3 Compliance with Policies (TfL)**

- (a)** The *Contractor* notifies its personnel SubContractors and Indirect SubContractors and the *Employer* of any health and safety hazards that exist or that may arise in connection with the provision of the works of which the *Contractor* is aware or ought reasonably to be aware.

The *Contractor* undertakes that all its personnel and those of its SubContractors and Indirect SubContractors comply with all of the *Employer's* policies and standards that are relevant to the provision of the works, including those relating to safety, security, business ethics, responsible procurement, work place harassment, drugs and alcohol and illegal substances and any other on site regulations specified by the *Employer* for personnel working at TfL Premises or accessing the *Employer's* computer systems. The *Employer* provides the *Contractor* with copies of such policies on request.

**(b) The Contractor:**

- undertakes to procure that all the *Contractor's* Personnel comply with each *Employer's* policies and standards that are relevant to the performance of the Works, including those relating to safety, security, business ethics, drugs and alcohol and any other on site regulations specified by each *Employer* for personnel working at *Employer* Premises or accessing an *Employer's* computer systems. The Framework *Employer* or the relevant *Employer* provides the *Contractor* with copies of such policies and standards on request;
- provides the Works in compliance and ensures that the *Contractor's* Personnel comply with all requirements of all Acts of Parliament, statutory instruments, court orders, regulations, directives, European Community decisions (insofar as legally binding), bye-laws, treaties and other regulatory requirements relevant to either or both of the *Contractor's* business or each *Employer's* business, from time to time in force which are or may become applicable to the Works. The *Contractor* promptly notifies the Framework *Employer* and/or any relevant *Employer* if the *Contractor* is required to make any change to the Works for the purposes of complying with its obligations under this Clause 12.1.2;
- without limiting the generality of Clause 12.1.2, complies with all relevant enactments in force from time to time relating to discrimination in employment and the promotion of equal opportunities;
- without prejudice to any other provision of this Clause 12.1 or the Schedules, complies with any provisions set out in the Schedules that relate to traffic management and complies with the reasonable instructions of each *Employer's* Traffic Manager as may be made available to the *Contractor* from time to time. For the purposes of this Clause 12.1.6, "Traffic Manager" means an *Employer's* traffic

manager appointed in accordance with section 17 of the Traffic Management Act 2004; and

- o promptly notifies the *Contractor's* Personnel and any relevant *Employer* of any health and safety hazards that exist or may arise in connection with the performance of the Works.

(c) In all cases, the costs of compliance with this Clause 12.1 shall be borne by the *Contractor*.

In providing the Works, the *Contractor* (taking into account best available techniques not entailing excessive cost and the best practicable means of preventing, or counteracting the effects of any noise or vibration) has appropriate regard (insofar as the *Contractor's* activities may impact on the environment) to the need to:

- o preserve and protect the environment and to the need to avoid, remedy and mitigate any adverse effects on the environment;
- o enhance the environment and have regard to the desirability of achieving sustainable development;
- o conserve and safeguard flora, fauna and geological or physiological features of special interest; and
- o sustain the potential of natural and physical resources and the need to safeguard the life-supporting capacity of air, water, soil and ecosystems.

#### 1.4 Records, Audit and Inspection

(a) In this "Records" means:

- o all necessary information for the evaluation of claims or compensation events, whether or not relating to SubContractors and/or Indirect SubContractors;
- o management accounts, information from management information systems and any other management records;
- o accounting records (in hard copy as well as computer readable data);
- o sub-contract files (including proposals of successful and unsuccessful bidders, bids, rebids, etc.);
- o original estimates;
- o estimating worksheets;
- o correspondence;
- o compensation event files (including documentation covering negotiated settlements);
- o schedules including capital works costs , risk schedules and cost-loaded schedules at activity level;
- o timetable and progress towards Completion;
- o general ledger entries detailing cash and trade discounts and rebates;
- o commitments (agreements and leases) greater than £5,000 (five thousand pounds);
- o detailed inspection records;
- o such materials prepared in relation to the invitation to tender and subsequent tendering process relating to cost breakdowns, in each case which have not already been provided to the *Employer*, and

- accounts and records of the Price for Works Done to Date and all other amounts to be paid to the *Contractor* under this contract.
- (b) The *Contractor* maintains and procures in each subcontract that each of his SubContractors, maintains and retains the Records for a minimum of twelve (12) years from Completion with respect to all matters for which the *Contractor* and his SubContractors and Indirect SubContractors are responsible under this contract. The *Contractor* procures that each subcontract contains open-book audit rights in favour of the *Employer* and any novated *Employer* and their authorised representatives.
- (c) The *Contractor* undertakes and procures that his SubContractors and Indirect SubContractors undertake their obligations and exercise any rights which relate to the performance of this contract on an open-book basis. The *Employer* and/or any novated *Employer* and their authorised representatives may from time to time audit on an open-book basis and check any and all information regarding any matter relating to the performance of or compliance with this contract, including without limitation, inspection of the *Contractor's* technical and organisational security measures for the protection of personal data, any aspect of the *Contractor's* operations, costs and expenses, sub-contracts, claims related to compensation events, and financial arrangements or any document referred to therein or relating thereto. The *Employer's* and any novated *Employer's* rights pursuant to this sub-clause include the right to audit and check and to take extracts from any document or record of the *Contractor* and/or his SubContractors and Indirect SubContractors including, without limitation, the Records.
- (d) The *Contractor* promptly provides (and procures that his SubContractors and Indirect SubContractors promptly provide) all reasonable co-operation in relation to any audit or check including, to the extent reasonably possible in each particular circumstance by:
- granting or procuring the grant of access to any premises used in the *Contractor's* performance of this contract, whether the *Contractor's* own premises or otherwise;
  - granting or procuring the grant of access to any equipment or system (including all computer hardware and software and databases) used (whether exclusively or non-exclusively) in the performance of this contract, wherever situated and whether the *Contractor's* own equipment or otherwise;
  - making any contracts and other documents and records required to be maintained under this contract (whether exclusively or non-exclusively) available for audit and inspection;
  - providing a reasonable number of copies of any subcontracts and other documents or records reasonably required by the *Employer's* and/or any novated *Employer's* auditor and/or granting copying facilities to the *Employer's* and/or any novated *Employer's* auditor for the purposes of making such copies; and
  - complying with the *Employer's* and/or any novated *Employer's* reasonable requests for access to senior personnel engaged by the *Contractor* in the performance of this contract and/or the works.

# WI 200 – Constraints on Providing the Works

## 2.1 Constraints

- (a) The *Employer* requires that the *Contractor* take the following constraints into account when managing the works:
- Noise pollution
  - Maintaining safe access to members of public
  - Maintaining safe access to residential properties
  - Operational tramway below the bridge
  - The existing London Tram OHLE wiring
  - The utilities within the bridge decks
  - The current weight restriction on the London Trams bridge and the Local Authority's bridge adjacent
  - The temporary traffic diversion
  - The proximity of houses and households
  - Construction techniques due to condition of the bridge and existing adjacent and nearby properties
  - The existing bridges are closed to vehicular traffic
  - A temporary footbridge has been provided for pedestrians
  - The cycle/footpath under the North Bridge (the cycle / footpath must be suspended for the duration of the works – contractor responsible for all notifications, traffic orders etc
  - Proximity of businesses which are to remain open and operational.
  - Hours of Working; the hours of working will be [unless otherwise instructed and /or authorised];
    - Monday – Friday 08.00 -18.00
    - Saturday 08.00-13.00
    - Sunday and Bank Holidays – no working

There will be no restriction on working hours during track possession BUT consideration shall be given to noisy working which must be kept to a minimum

## 2.2 Setting Out the Works and Site information

- (a) All survey, setting out and monitoring shall be undertaken using horizontal and vertical control directly related to the *Employer's* project survey control.
- (b) Before commencing work in the Site and/or the Working Areas the *Contractor* shall consult with the *Project Manager* to ensure an understanding of the survey control system and the survey requirements.
- (c) Site Information is contained in Volume 3



## **2.3 Security and Protection of the Site**

- (a) The *Contractor* shall be responsible for providing security on the Site and in the *Working Areas*.
- (b) The *Contractor* must not hinder or prevent authorised access to the Site or adjacent areas by authorised users.
- (c) Gates provided for the passage of People, Plant and Materials and Equipment must be kept locked when not in use and all boundary fences must be kept secure to prevent unauthorised access.
- (d) The *Contractor* proposes alternative security measures to the *Project Manager*, where it considers that the alternative security measures enhance security on the contract or Project.

### **2.3.1 Principal Contractor**

- (a) For Working Areas for which the *Contractor* is designated *Principal Contractor* and in accordance with CDM 2015 the *Contractor* shall provide:
  - o Control of site perimeters;
  - o Security and control of access to the Working Areas;
  - o Site inductions for and issue permanent passes to all staff, to the *Employer*, *Project Manager*, *Supervisor* and Others at no charge to these parties;
  - o Control of visitor access, parking and delivery and collection vehicles;
  - o Periodic patrols and facilities for security personnel;
  - o Signage and security surveillance; have available at all times the *Contractor's*
  - o Security manager or nominated deputy to act as co-ordinator between the *Contractor*, Others, the *Project Manager* and the emergency services;
  - o Maintain an up to date record of the site plans;
  - o Develop the procedures required to meet the obligations of this clause and included in the Security Manual and Incident Management Plan.
  - o Details on Liaising / cooperating with Client, PD and Designer
  - o A Construction Phase Plan that is reviewed and maintained regularly
  - o Suitable arrangements to Manage the construction phase
  - o Welfare facilities, provide induction, secure site, manage, engage and monitor

### **2.3.2 Security Arrangements with Others**

- (a) The *Employer* requires that members of the public are protected from site activities with adequate hoarding at all times and with a fully applicable and compliant hording licence from London Borough of Croydon.
- (b) When assessing hoarding requirements, the following considerations will need to be taken into account:

- The presence of schools, hospitals, persons with disabilities;
- Other issues specific to each location.

## 2.4 Control of Site Personnel

- (a) General access to the Site shall be restricted to authorised persons in possession of a valid pass and with the appropriate personal protective equipment.
- (b) Passes must be shown at all times when within the Site and/or the Working Areas and upon request by a uniformed security guard or any member of the *Project Manager's* team. The *Project Manager's* team will provide proof of their identity for this purpose.
- (c) No person shall receive a permanent security pass until they have attended the mandatory site induction and their pass application has been fully processed.
- (d) The *Contractor* shall be responsible for the issue and withdrawal of permanent photographic security passes.
- (e) Passes shall be provided by the *Contractor* for the *Employer's* and *Project Manager's* personnel on the written request from the *Project Manager*. Visitors will be issued with a temporary pass.
- (f) The *Contractor* shall propose the locations of the access/egress points for acceptance by the *Project Manager*. The duration for which these access/egress point will be in use shall be included in such proposals.
- (g) The *Contractor* will screen all personnel in accordance with the *Employer's* screening policy to confirm the applicant's identity and right to work in the UK and where appropriate (i.e. sensitive posts) detect individuals who make false declarations about their records and detect individuals whose criminal records might preclude them from being engaged.

### 2.4.1 Visitors

- (a) Any persons attempting to gain access to the Site and/or the Working Areas by vehicle or on foot who do not at the time have in their possession a valid permanent security pass shall be treated as a visitor. All visitors shall be escorted or supervised at all times by a permanent pass-holder whilst in the Site and/or the Working Areas. No more than four visitors are to be escorted or supervised by a single permanent pass holder at any time. No visitors are permitted to go trackside without a valid TSA and in accordance with section 2.42 and any relevant London Trams Standard
- (b) The *Contractor* shall maintain a log of all visitors including:
  - Name;
  - *Employer*;
  - Nature of business;
  - Time in;
  - Time out; and
  - *Supervisor/escort* name including signature.

- (c) The *Contractor* shall issue all visitors with temporary passes and details of relevant written health and safety site rules. The *Contractor* will ensure that sufficient copies of the health and safety rules are available for issue to visitors before they enter the Site and/or the Working Areas for the first time.
- (d) Visitors shall receive a temporary pass with maximum 24 hour duration and the expiry date or time shall be clearly indicated.
- (e) The *Contractor* is to ensure that all temporary passes are returned when the visitor leaves the Site and/or the Working Areas and that a list of lost passes is maintained.

#### **2.4.2 London Trams Specific Competencies**

- (a) The *Contractor* shall ensure the following standards are followed when undertaking any works on the London Trams Infrastructure:
  - o LT-IMS-ENG-102 – Occupation
  - o LT-IMS-ENG-103 – Possession without isolation
  - o LT-IMS-ENG-104 – Possession with isolation
- (b) All *Contractor* personnel working on the London Trams infrastructure require a valid TSA card and designated TPS/TWS present as a minimum in order to Access the Site and carry out works. The *Contractor's* personnel obtain their TSA cards by completing the half day training course and passing the written exam. The *Contractor* is responsible for arranging and paying for TSA training for their operatives and SubContractors and the cost of the training.
- (c) A Tramlink Possession *Supervisor* (TPS) card is required for staff who will supervise and book possessions. The *Contractor* is responsible for arranging training for their operatives and SubContractors as per LT-IMS-ENG-801.
- (d) A Tramlink Works *Supervisor* (TWS) card is required for staff who will supervise works under "Occupation" or as a "Worksite in a Possession". The *Contractor* is responsible for arranging training for their operatives and SubContractors as per LT-IMS-ENG-801.
- (e) On Contract Award, the *Contractor* shall provide a list of *Contractor's* staff and detail any valid certificates and training undertaken and held by each manager and operative and provide the list to the *Employer's* HSE team. The *Contractor* is responsible for updating the HSE team at a frequency to be agreed with the *Project Manager*.
- (f) The Tramlink Possession *Supervisor* (TPS) / Tramlink Work *Supervisor* (TWS) card and TSA card are specific to an individual, not transferable and are valid for a 2 year period.
- (g) The *Contractor's* personnel carry their TPS/TWS/TSA card at all times when in performance of this contract and present them to any authorised representative of the *Employer* for inspection when requested to do so. Failure to produce a valid card or requisite certification for inspection may result in the individual being instructed to leave Site.
- (h) The TPS/TSA cards do not entitle the *Contractor's* staff or personnel to any benefits other than permitting access to the Site for the purpose of carrying out Works during the agreed hours of work. The cards remain the property of the *Employer* and are required to be returned immediately upon request.

(i) Exceptions to the TSA/TPS card process:

- If the *Project Manager* decides to permit exceptional access to the Site or working areas the *Contractor* must obtain the *Project Manager's* written acceptance regarding the personnel and work activities prior to commencement on Site.

## **2.5 Protection of Existing Structures and Services**

### **2.5.1 Utility Supplies**

- (a) The *Contractor* is responsible for the protection of existing utilities on or adjacent to the site in connection with providing the Works. Should the *Contractor* become aware of any damage to utilities during the works, the *Contractor* must notify the *Project Manager* as soon as practicable.
- (b) Should the *Contractor* require existing utilities to be enabled, disabled or relocated then it is the *Contractor's* responsibility to make the arrangements directly with the utility company.

### **2.5.2 Damage to Works and Protection to Adjoining Structures**

- (a) The *Contractor* does not carry out any works liable to damage the stability of the works and adjoining buildings. No cutting through floors, roofs or walls will be permitted except as shown on the design drawings and accepted by the *Project Manager*.
- (b) The *Contractor* protects from damage the adjoining buildings and premises and is responsible for and making good as soon as practicable all damage done through the carrying out of the works.
- (c) The *Contractor* is responsible for bearing the cost of any making good required following damage to the structures, services, or finishes of the *Employer's* or *Other's* premises.
- (d) The *Contractor* shall bear the cost for making good any trackside infrastructure if damage occurs through the *Contractor's* works, this list is not final:
  - Track side bonding;
  - Track side fibre cabling;
  - Electrical Overhead Line Equipment
  - Track side Drainage
  - Rail and all associated equipment
  - All tramstop furniture

### **2.5.3 Protection of Existing Trees**

- (a) The *Contractor* shall manage the protection of exiting trees in accordance with any Tree Protection Orders (TPO's) in place by the local authority.

### **2.5.4 Protection of Plant Life**

- (a) The *Contractor* shall manage the protection of exiting plant life in accordance with The Wildlife & Countryside Act 1981

#### **2.5.5 Protection of Wildlife on Site**

- (a) The *Contractor* shall manage the protection of wildlife in accordance with The Wildlife & Countryside Act 1981

#### **2.6 Protection of the Works**

- (a) Unless expressly stated otherwise in the Works Information, the *Contractor* is responsible for protecting his elements of the works.
- (b) The *Contractor* protects the works from inclement weather, public or staff access, accidental damage by third parties or its own operatives, in whichever form is required to ensure the Works are made available in "as new" condition, until the constructed asset is put into use. Any outstanding defects are to be recorded prior to putting into use and rectified in accordance with the conditions of contract.

#### **2.7 Cleanliness of Roads**

- (a) The *Contractor* shall implement measures to avoid, limit and mitigate the deposition of mud and other debris on the Highway or Tramway including:
- Hardstanding at the access and egress points which will be cleaned regularly;
  - Vehicle wash down points to clean vehicle wheels at each exit point on to the Highway;
  - The correct loading of vehicles and sheeting of loads to avoid spillage during their journeys;
  - The use of mechanical road sweepers combined with water sprays for the suppression of dust to clean site hardstanding, roads and footpaths in the vicinity of the site; and
  - The flushing of gullies in the vicinity of the Site.
- (b) After completion of any works affecting the Highway, the *Contractor* shall clear all surplus materials arising from the any works affecting the Highway from the highway. The *Contractor* shall leave it in a clean and tidy condition.

#### **2.8 Traffic Management**

- (a) The *Contractor* is responsible for the planning and implementation of all traffic management for the *works* including:
- All necessary consents and approvals.
  - All traffic management activities within the Site and Working Areas and control of access to and egress from the Site and Working Areas;
  - All traffic management activities around the Site and Working Areas to allow construction of the works;

- The coordination of all its traffic management activities with others ;
- So far as reasonable practicable, maintaining existing public routes and rights of way and providing signposted alternative routes if not feasible; and
- So far as reasonable practicable minimising disruption to traffic.

## 2.9 Highway Safety Inspections

- (a) The *Contractor* shall deploy sufficient and adequate resources to ensure the Site and the highways within it are kept in a safe condition and shall maintain all areas accessible to the public free of hazards
- (b) The *Contractor* shall accommodate *TfL*'s routine safety inspections and night scouting, ensuring they are not hindered by the Works.
- (c) Any defects or hazards within the Site reported to *TfL*, including those identified during safety inspections and night scouting will be recorded in *TfL*'s asset management system and forwarded to the *Contractor* advising of the relevant timeframe to rectify them. The *Contractor* will provide a 24/7 service to respond to any emergency within the Site or the highways within it. On completion of remedial action the *Contractor* will provide *TfL* with date/time stamped before/after photographs, a summary of the action taken and the date and time of completion.
- (d) Should the 24/7 emergency contract arrangements required of the *Contractor* fail for any reason then *TfL*'s resources will be deployed in default and the *Contractor* will be responsible for meeting all costs incurred.

## 2.10 Condition Surveys

- (a) The *Contractor* undertakes a condition survey of the areas affected by the works and agrees it with the *Project Manager*. The *Contractor* is to reinstate all areas disturbed by the works or any of his activities back to the condition recorded in the survey and agreed with the *Project Manager* and in accordance with all relevant statutes and Local Authority / Employer requirements.
- (b) The *Contractor* shall produce and submit to the *Project Manager* for his approval a survey plan within 28 days of the starting date. The purpose of this plan is to identify and describe the *Contractor's* strategy and approach to the advance surveying of the area of the works prior to any physical change to the built environment as a result of the works. The plan shall address the requirements of this section, include a survey schedule and all necessary method statements, risk assessments, designs, drawings and other documents required to complete Condition Surveys and Defects Surveys.
- (c) In addition to the foregoing requirements, the *Contractor* shall undertake structural surveys of the following properties to ensure that all and every necessary temporary works are effected as necessary to protect the properties during the works (and thereafter):
  - 37 Blackhorse Lane
  - 39 Blackhorse Lane
  - 41 Blackhorse Lane
  - 43 Blackhorse Lane

- 45 Blackhorse Lane
- 47 Blackhorse Lane

## 2.11 Consideration of Others

- (a) The *Contractor* obtains Considerate Constructors accreditation for the Site and adheres to similar applicable requirements set out by the *Employer*.

## 2.12 Industrial Relations

- (a) The *Employer* will promote a consistent approach to labour and industrial relations across the Project. To support this, the *Contractor* shall put in place policies and processes to ensure the effective management of labour and industrial relations on this contract. These policies and processes shall include (but are not necessarily limited to) those required to cover the following *Employer's* minimum requirements:
- Reduce or eliminate the risks of industrial unrest;
  - Provide sound employment practices;
  - Minimise accidents and work-related ill health;
  - Ensure a ready supply of skilled labour and reward good performance;
  - Reduce the churn of employees; and
  - Avoid incentivising the migration of employees between the *Contractor* and other TFL *Contractors*, the *Employer* and the *Project Manager*.
- (b) This Works Information covers the *Contractor's* activities that have a potential impact on the industrial relations environment within the contract and the ability of the workforce to safely deliver the Works required by the works in the most effective and efficient manner.
- (c) The *Contractor* shall ensure that the *Employers* and employees use all available working hours as efficiently and productively as possible.
- (d) The *Contractor* shall ensure that all requirements and arrangements are applied consistently and transparently to all *Employers* and employees.
- (e) The *Contractor* shall be responsible for ensuring that all employees working on the contract:
- perform their work safely, with due skill and diligence and within their level of competence;
  - participate in work that is effectively planned and organised;
  - are supported by properly trained and effective *Supervisors* and team leaders;
  - are provided with appropriate plant, tools and equipment; and
  - assess, manage and report performance as required.
- (f) Employees' competence is to be determined by taking into account all relevant information, including any representations made by a duly appointed safety representative under the Health and Safety at Work Act 1974 and associated regulations.

- (g) The *Contractor* shall implement policies to ensure that all *Employers* do not prevent or discourage employees from joining trade unions.

#### **2.13 Site cleanliness**

- (a) On completion of each shift all equipment, building appliances, apparatus or tools, surplus materials, together with all rubbish and debris is to be removed as quickly as possible and conveyed away from the Site. All barriers, scaffolding are to be dismantled, taken down and removed when no longer needed and in any event upon Completion.
- (b) On completion of the works the *Contractor* clears the working areas made available to him of all surplus materials, stores, equipment, spoil, and rubbish and reinstates the areas to their condition existing prior to the *Contractor's* occupation of those areas.

#### **2.14 Waste materials**

- (a) The *Contractor* is responsible for the removal of waste materials from the Site.
- (b) The *Contractor* will ensure waste is managed appropriately on site and segregated where required. The contractor shall use <http://www.smartwaste.co.uk/>

#### **2.15 Deleterious and Hazardous Materials**

- (a) The *Contractor* shall manage the storing, disposal and the use of hazardous materials and substances in accordance with The Control of Substance Hazardous to Health (COSHH) Regulations 2002



## WI 300 – Contractor's design

### 3.1 Contractor's Design

- (a) The Contract is a design and build contract. The *Contractor* is responsible for all necessary design work to achieve the *Employer's* Requirements for strengthened upgraded and enlarged bridges as stated in this Works Information and for obtaining all necessary approvals and agreements as may be required in order that the bridges can be used safely for the designed lifespan and includes all necessary construction and commissioning to complete the works.
- (b) The *Contractor* is appointed, and complies with its duties, as the Principal Designer, Principal Contractor and Designer in accordance with the CDM Regulations 2015.
- (c) The *Contractor* ensures that his designers are suitably qualified and competent to carry out the work.
- (d) The *Contractor* appoints a design manager (the "*Contractor's* Design Manager") who is responsible for the management, coordination, quality control and Assurance of the design work. The *Contractor's* Design Manager is the primary interface with the *Project Manager* on design matters.
- (e) The *Contractor* is the principal and sole designer for the whole of the Works in accordance with clause Z28 (Single Point Design Responsibility) and the information contained within Contract Data Part 1.
- (f) The *Contractor* is responsible for the management, co-ordination, integration and Assurance for the entire design for the Project.
- (g) The *Contractor* is responsible for the design of all Equipment together with installation.
- (h) The *Contractor* shall develop the design to achieve a buildable, operational and maintainable asset that is compliant with Design Requirements and relevant Standards and meets the Project Requirements.
- (i) The *Contractor* shall provide Assurance to the *Employer* that the Works have been designed in accordance with the *Employer's* Design Requirements as listed in W1100.
- (j) The *Contractor* seeks to minimise the effects of settlement and noise and vibration on the surrounding structures, neighbouring properties and residents through design and construction planning.
- (k) The *Contractor* is responsible for managing the design interfaces with assets and structures affected by the Works either directly or indirectly e.g. OLE
- (l) The *Contractor's* design shall support the Works and the operation of the Tramlink Network through all phases of the Project.
- (m) The *Contractor* shall be responsible for the design, design approval, procurement, installation, testing and commissioning and bringing into use of all equipment.
- (n) The *Contractor* shall be responsible for all booking, planning and obtaining approvals for possession, Adjacent Line Open (ALO) and/or electrical power isolations from the

*Employer* and other required approvals e.g. Tram Operations Ltd. (TOL) in order to construct test and commission the works.

### **3.2 Design for the Works**

- (a) The *Contractor* accepts entire responsibility for the *Contractor's* design and for any mistake, inaccuracy, discrepancy or omission contained in the same.
- (b) The *Contractor* warrants and undertakes to the *Employer* as a condition of this contract that his work and those parts of the works for which the *Contractor* is responsible will be designed and specified using the best modern engineering principles and practices at the time of preparing the design and in accordance with good industry practice.
- (c) Within two weeks of the starting date the *Contractor's* Design Manager prepares, in consultation with the *Project Manager*, the following:

A design assurance plan;

- o A detailed design programme consistent with the programme to be submitted for acceptance, showing the planned order and timing of the *Contractor's* design activities including the various stages involved with the preparation of the design documentation for construction through to completion of "as-built" records. This programme includes provision for all reviews required under the contract, for design, design development, design checks, certification, and for obtaining and obtaining design consents and third party technical approvals as appropriate. The *Contractor* allows sufficient time in his Programme for any re- submissions that may be necessary to obtain acceptance or consent or approval as the case may be;
- o A list of all design deliverables including all drawings, specifications and other design data which the *Contractor* intends to produce together with the dates by which the *Contractor* plans to complete each deliverable identified in the list;
- o A list of the names of the *Contractor's* key design staff and specialist designers and SubContractors, and evidence of their competence to undertake the design work, and identifying those with delegated authority to certify the *Contractor's* design;
- o A list of the names of independent checker's key staff and evidence of their competence to undertake the checking, and identifying those with delegated authority to sign-off check certificates; A list of all consents and approvals for the *Contractor's* design required from the *Project Manager* and Others including technical approval bodies;
- o The quality plans and procedures applicable to the *Contractor's* design and checking activities, including describing the interfaces between the *Contractor's* designers, the *Contractor's* Design Manager and the *Project Manager*; and
- o Procedures for design progress monitoring and reporting, design change control and design risk management.

### **3.3 Design Submission Procedures**

- (a) The *Contractor* provides design certificates and check certificates.
- (b) The *Contractor* is responsible for co-ordination, systems integration and quality control of the *Contractor's* design and its integration with other parts of the works whether designed by the *Contractor* or not.
- (c) The *Contractor* obtains the acceptance of the *Project Manager* to any changes which

arise on Site and vary the *Contractor's* design, which has been already been accepted by the *Project Manager*, or vary designs prepared by Others and contained in the *Employer's Design Information*.

- (d) Within the *Contractor's* programme for acceptance the *Contractor* identifies the submission dates for the design in accordance with the *Employer's* Programme Assurance Plan, LT-IMS-ENG-106 and Technical Assurance requirements in order to achieve AoD. The *Contractor* defines the scope for the design of any advanced work, enabling work and other packages of work that are not in line with the main design and shows them on the programme. Also refer to the requirements described in WI 500.
- (e) The *Contractor* submits two copies of the design data to the *Project Manager* for acceptance. The *Contractor* makes a presentation for each package of data submitted for review and gives no less than four weeks' notice of the intended submission date.
- (f) Unless otherwise agreed between the *Project Manager* and *Contractor*, the period for reply for a *Contractor's* design submission is four weeks.
- (g) The *Contractor* prepares all Assurance deliverables in support of the Acceptance of Design Acceptance for Test and Acceptance of Asset as described in LT-IMS-ENG-106.
- (h) The *Contractor* submits the coordinated design at the end of each design stage to the *Project Manager* for Acceptance. The *Project Manager* reviews the design for compliance with the *Employer's* Design Requirements described in WI 100 as well as any relevant Standards and guidance and returns comments for incorporation into the design prior to acceptance (AoD).
- (i) Reasons for not accepting the *Contractor's* design are that it does not:
  - o Comply with the Works Information, applicable law or Statutory Requirements;
  - o Comply with this contract; and it is not integrated and coordinated with the designs of Others where the *Contractor* is required by the Works Information or the instructions of the *Employer* to integrate and/or coordinate his design with the designs of Others or such integration is necessary for the *Contractor* to Provide the Works.
- (j) Unless the *Project Manager* has notified the *Contractor* otherwise, the *Contractor's* design is advanced to complete and suitable for construction status before submission of the design data to the *Project Manager* for acceptance.
- (k) Submissions are staged in accordance with the Accepted Programme. The *Contractor* includes all relevant information in the design particulars, including:
  - o Model files (2D/3D)
  - o Composite models
  - o Drawing definitions and renditions
  - o Bending schedules
  - o Specifications
  - o Safe system of works
  - o Assessment reports
  - o Design certificates

- Check certificates
- Designer's risk assessments
- Design calculations

### 3.4 Design Approvals from Others

- (a) The *Contractor* obtains all approvals of the designs and assessments from consenting bodies (e.g. local planning authorities, Environment Agency) and other third parties (e.g. highway authorities, Statutory Undertakers) that may be required.
- (b) The *Project Manager* assists the *Contractor* to obtain approvals and consents for designs carried out by the *Contractor* for the works.
- (c) Formal submissions to consenting bodies are made in accordance with their particular requirements which are to be determined by the *Contractor*.
- (d) The *Contractor* integrates and coordinates his design with the designs of Others and in accordance with the Works Information and the instructions of the *Project Manager*.
- (e) The *Contractor* appoints a suitably competent *Contractor's* Design Manager, with the appropriate knowledge, skills and experience to carry out the role, in order to:
  - provide a single guiding and controlling mind for all aspects of the *Contractor's* design;
  - be responsible for all aspects of the *Contractor's* design including management, coordination, integration, quality control and Assurance;
  - put in place a design management system and a Design Management
  - Plan and ensure that these are implemented and maintained;
  - be the primary interface with the *Project Manager* and their representatives (e.g. the *Employer's* Project Engineer and the *Supervisor*) on design matters;
  - act as the single point of contact for design queries for *Contractor*, designers, *Employer's* Project Engineer, *Supervisor*, *Project Manager* and *Employer*;
  - be responsible for managing the exchange of information between the various discipline designers in order to achieve a co-ordinated design;
  - chair design team meetings;
  - conduct regular informal interdisciplinary reviews and at least one formal documented interdisciplinary review prior to the design being submitted to the *Employer*;
  - collate all design information and maintain the official copy of the design; and
  - be the first point of contact for any design changes, whether requested by the *Project Manager*, the *Contractor* or necessitated on site.
- (f) The *Contractor's* design responsibility extends into the construction phase.
- (g) Where excavation and / or tunnelling activities are part of the *Contractor's* design, the *Contractor* provides competent representatives of the *Contractor's* designer throughout the construction phase in order to monitor all of the *Contractor's* excavation and / or tunnelling activities 24 hours a day, 7 days a week. These representatives have the following duties:

- review construction progress and monitoring information;
- verify that the actual ground conditions encountered accord with expectations;
- verify that the works are being constructed in accordance with the design intent;
- verify that the actual ground movements and structural performance experienced accord with expectations;
- attend the daily required excavation and support sheet (RESS) meeting;
- ensure that the tunnelling is carried out in accordance with the RESS;
- respond and react to ground conditions; and
- advise the monitoring review and response team.

(h) Where appropriate, the *Contractor* appoints a Temporary Works Coordinator, who undertakes the duties and role described in LU Category 1a Standard S1062 (Temporary Works) and BS 5975:2008 and its associated code of practice, and ensures that sufficient competent temporary works engineers are deployed on site to verify that all temporary works comply with the design prior to loading.

### 3.5 Change to *Contractors* design

- (a) The Principal Designer's role is to ensure any design changes are assessed by the project team and relevant duty holders and that any associated risk can be eliminated/reduced/controlled
- (b) Following any appropriate review if the *Contractor* wishes to propose a change to the accepted design he submits the relevant design data to the *Project Manager* for Acceptance, with an explanation of the reasons for the proposed change together with an assessment of the cost, risk and programme effects.
- (c) Except as may be agreed between the *Project Manager* and *Contractor* the period for reply for the assessment of the *Contractor's* submission to change the accepted design shall be in accordance with the conditions of contract.
- (d) The *Contractor* submits the following information with any alternative design proposal:
  - Outline construction safe system of work with safety risk assessment;
  - Summary of changes to the current design;
  - Proposed design check category of any new/altered structure;
  - List of third party approvals required for the alternative design proposal;
  - Outline programme for design, liaison, checking, consents, *Project Manager's* review and construction; and
  - Proposed design and checking bodies.
- (e) The *Contractor* is responsible for co-ordination of the design and its integration with other parts of the Works not designed by the *Contractor*. This may involve regular liaison and formal reviews on all aspects of the design with the *Employer's* other designers.
- (f) Design particulars (including drawings and specifications) are subject to formal review by the *Project Manager*.
- (g) The *Contractor* takes account of the *Project Manager's* and the *Employer's* costs

incurred in review and acceptance of the proposed change. The *Contractor* is also responsible for management of the programme to ensure that the process of revisions to the design does not impact on the Completion Date or on any other Key Date.

- (h) The *Project Manager* may agree a phased submission programme to facilitate development of the assured design and to mitigate delays to the programme.

### **3.6 Employer's Requirements**

- (a) The *Contractor* develops the design in order to Provide the Works to comply with the Project Requirements as defined in WI 100.
- (b) The *Contractor* is to demonstrate that he has taken into account the guidance notes listed in the list of Standards provided in Appendix 02-01 of WI 300.
- (c) The *Contractor* shall develop production and handover in accordance with the Standard, Methods and Procedures outlined within relevant British standards (notably BS1192:2007)

### **3.7 Cost saving proposals**

- (a) The *Contractor* identifies opportunities for cost saving proposals notifies the *Project Manager* and undertakes to chair and manage a value engineering meeting. The meeting is attended by key personnel to review the proposals and the beneficial output to the contract. The *Project Manager* reserves the right to refuse any output of the cost saving process, where this leads to a change in scope. The *Project Manager* reserves the right to instruct the output of a cost saving exercise as a change to the Works Information if it constitutes a change in scope.

### **3.8 Design Co-ordination**

- (a) The *Contractor* must provide evidence when requested by the *Employer* of the process that ensures that the design is properly coordinated across all disciplines as well as with the existing infrastructure and that it is being followed including design of any element of the Works from within his supply chain.
- (b) The formally submitted designs must be co-ordinated and submitted to the *Employer* for acceptance in order to achieve AoD, Aft and AoA.
- (c) The *Contractor* is responsible for coordinating their design interfaces with any other *Employer* projects adjacent to the Works and with any third parties' infrastructure or systems affected by the Works.
- (d) The *Contractor* shall make allowance within the programme and undertake interdisciplinary reviews/checks prior to submission to the *Project Manager* for acceptance. These reviews will be attended by the *Employer* and Others.
- (e) The Principal *Contractor* has a legal duty to coordinate with the Principal Designer under CDM.
- (f) The *Contractor's* Designer must provide information to other duty holders using or implementing the design.
- (g) The Principal Designer must liaise with the Principal *Contractor*, sharing information relevant to the planning, management and monitoring of the construction phase and

the coordination of health and safety matters during the construction phase.

### **3.9 Requirements of Others**

- (a) The *Contractor* shall liaise where applicable with the local authority on aesthetics of the bridge design and highway construction. The *Project Manager* can facilitate this meeting if required.

### **3.10 Employers Business Assignment**

- (a) The *Contractor* acknowledges that it:
- has sufficient information about the *Employer* and the works;
  - is aware of the *Employer's* processes and business, and
  - is aware of the purposes for which the works are required.

### **3.11 Appendix 02-01: List of Applicable *Employer* Design Requirements**

- (a) Design of new infrastructure shall be undertaken in accordance with the *Employer's* Design Requirements as named below:
- LT-IMS-ENG-106 – Assurance of New and Altered LT Assets
  - LT-IMS-ENG-107 – LT Master Document List
  - LT-IMS-ENG-108 – Management of Derogations to LT Standards
  - LT-IMS-ENG-2000 – Technical Source Document
  - LT-IMS-ENG-2004 – Overhead Line (OLE) Requirements
  - LT-IMS-ENG-2045 – Structure Clearances and DKE Requirements and the requirements stated in AIP; contained in Volume 3

## WI 400 – Completion

### 4.1 Completion Definition.

(a) Without limitation to the provisions in the conditions of contract, the *Project Manager* will not certify that a section of the Works or the whole of the Works have achieved Completion unless the items below have taken place and therefore the *Contractor* should allow for the following in his programme:

- all Works necessary to meet the Project Requirements and to facilitate a safe Handover of the Works by the *Employer*;
- all safety critical systems are fully handed over to the *Employer*;
- In the event that the *Employer's* Assurance processes as described in LT-IMS-ENG-106 and Programme Assurance Plan has not been fully achieved, the *Project Manager* (having consulted with the *Employer*, *Supervisor* and Others, as appropriate) in his absolute discretion accepts that the level of achievement is sufficient to allow the *Employer* to take over the relevant Works;
- A Health and Safety file is prepared by the Principal Designer in cooperation with the Principal Contractor
- All records, documents, drawings and records of assets delivered or altered as part of these Works for the *Employers* Asset Management Data Base, Ellipse, have been issued to the *Project Manager* and transferred to the relevant *TfL* Group Company and Others as appropriate; and
- All relevant staff have been trained as required by this contract and the asset is Available.

(b) Completion is not achieved until the *Contractor* ensures that:

- the Site is clear of all unused Materials, Plant and Equipment and other items to ensure free and unobstructed access by the *Employer* and Others
- all temporary hoardings and barriers have been removed;
- the demobilisation of all Site accommodation and welfare is completed;
- all strategic maintenance spares and tools are provided to the *Employer* as described in WI440.5;
- all necessary training to the *Employer* for those assets and systems installed as part of the Works has been provided;
- Operations and maintenance data is provided by the *Contractor* and accepted by the *Project Manager*; and
- Training of staff who will operate and maintain the Works has been completed.

### 4.2 Sectional Completion Definition

(a) Sectional Completion is not envisaged for these works. Completion shall be at the completion of the whole of the works and/or when the *Project Manager* provides to the *Contractor*, written confirmation that the whole, or any part, of the works have been completed.



#### **4.3 Training**

- (a) The *Employer* does not envisage there to be any new training requirements the *Contractor* shall provide once completion is achieved.

#### **4.4 Final Finishing;**

- (a) Prior to Completion, the *Contractor* shall be required to prepare the works for operational use. The final preparation will include but not be limited to:
- removal of all temporary structures;
  - cleansing of all new infrastructure and cleansing of existing infrastructure in close proximity which may have received dust and debris arising from the Works;
  - removal of all *Contractor's* plant and Equipment;
  - removal of all screening and protective films;
  - clean down using appropriate methods and products;
  - cleansing of all glazing affected by the Works [including but not limited to all fenestration to local residential and business premises];
  - cleansing of all lighting, road and track and associated signage, bollards, etc. and surfaces;
  - all tram station furniture to be cleaned.
  - All carriageways, footways, ramps, stairs, balustrades and the like to be thoroughly swept and cleaned.
  - all track infrastructure to be free of dust and debris and in good operational order.

#### **4.5 Security**

- (a) For further details of security requirements refer to WI 200.

#### **4.6 Correcting Defects**

- (a) In complying with the requirements of the defects correction period as stated in the conditions of contract and Contract Data, the *Contractor* continues to make use of the Access Plan requirements in order to arrange the appropriate access to the Site in order to correct any Defects.
- (b) The *Contractor* shall liaise with the *Project Manager* to agree an appropriate time to return to undertake any defects Works. Where Works are deemed obstructive to the operations of the facility the *Employer* may require the *Contractor* to undertake the Works during Engineering Hours.

#### **4.7 Pre-Completion Arrangements**

- (a) The *Project Manager* instructs the *Contractor* to attend a Pre-Completion meeting with the *Employer* to review the *Contractor's* progress and planning 4 weeks prior to planned Completion as shown on the Accepted Programme, or if there is no updated Accepted Programme when the *Project Manager* deems it to be the appropriate time. This enables the *Employer* to consider what action may be required or assistance given in order to achieve Completion.

- (b) The purpose of the pre-completion meeting is:
  - o to establish whether or not the Works are complete; and
  - o to agree upon a fixed date and time for the Completion of the Project.
- (c) The pre-completion meeting will take place at the location of the Project and at the agreed date and time. The meeting will be attended by the *Contractor*, *Project Manager*, *Supervisor*, *Employer* and such other personnel of the *Employer* as may be appropriate.

#### **4.8 Take Over**

- (a) Not required

#### **4.9 Operational and maintenance manuals**

- (a) Not less than four weeks prior to Completion, the *Contractor* submits to the *Project Manager* for Acceptance, a draft of the operation and maintenance (O&M) manual documents in the form of an interactive PDF file with supporting native files, including an outline plan for preventive maintenance, and a recommended list of spare parts holding (together the "O&M data").
- (b) The *Project Manager* either accepts the O&M Data or notifies his non acceptance, giving reasons, within four (4) weeks. A reason for not accepting the draft O&M data is that it is not sufficient to enable the *Employer* to accept responsibility for the maintenance of the section of the Works.
- (c) The section of the Works which, following take over by the *Employer*, is not Accepted as complete until the O&M data are accepted by the *Project Manager*.

#### **4.10 Acceptance of asset (AoA)**

- (a) The *Contractor* fulfils all requirements with the Acceptance of Asset (AoA) and submits all required documentation, to the *Project Manager* for acceptance. The *Contractor* shall also ensure all assets are submitted on to the *Employer's* Asset Management System, Ellipse.

#### **4.11 Maintenance of Completed Works**

- (b) The *Contractor* is responsible for routine preventive maintenance and breakdown maintenance of all items of Plant and Materials which have been installed in the Works and have not been taken over by the *Employer*.
- (c) Responsibility for maintenance of new and altered assets passes from the *Contractor* to the *Employer's* maintainer at Handback or Handover of the asset.
- (d) Handback means the process by which the *Contractor* returns into use an altered or unaltered asset where the function of the asset is not changed by the *Contractor's* occupation or alteration. And the responsibility for maintenance after the Handback returns to the *Employer*.
- (e) Handback means the same as Completion or take over by the *Employer* (in accordance with clause 35 of the conditions of contract).

The *Contractor* shall undertake Hand Over and Hand Back of *Employer's* assets in accordance with LT-IMS-ENG-105.