

List of Key Updates included in OBC 3.1 (19/07/2019)

- 1) Fixed bug resulting in occasional difficulties signing Form BA0(1) and BA0(2)
- 2) Fixed bug resulting in occasional miscalculation of Highway Loading Factor on the first calculation run.

List of Key Updates included in OBC 3.0 (12/04/2019)

- 1) Updated Tool to run in Microsoft Excel 2016.
- 2) Updated Tool to run in Windows 10 while also remaining compatible with Windows 7.
- 3) Assessed Category of section calculated in accordance with NR/L2/CIV/035 and reported in results tables.
- 4) Comments may now be included on the results sheets. Comments are compiled onto a new results comments sheet.
- 5) Comment, warning and error registers no longer limit entries to 5 lines of text.
- 6) The CRE must now select whether the Tracking Tables have been populated and checked, before Form BA0(1) can be signed.
- 7) 'Indeterminate' is now an option when selecting qualitative assessment result.
- 8) Amendments to Guidance Notes and Justification Reports to capture updates.
- 9) Ultimate moment of resistance calculations for RC flanged beams updated in accordance with BD44/15 and 5.3.2.1B of NR/GN/CIV/025.
- 10) New Pretensioned 'U' section type developed and incorporated into the Tool.
- 11) Maximum shear stress on RC calculation sheets updated in accordance with BD 44/15.
- 12) Ultimate shear resistance for pretensioned inverted 'T' beam and pretensioned 'U' beam updated in accordance with BD 44/15.
- 13) Numerous bugs amended in Tool including:
 - Problem opening the Tool due to 'enables Add-in'
 - Calculation of Pretensioned inverted 'T' beam bending capacity in the absence of transverse reinforcement

List of Key Updates included in OBC 2.3 (22/09/2017)

- 1) Added input in the 'Scenarios' sheet to specify the 'Assessment Scenario' for the optional User-Defined Loading Scenario.
- 2) Assessment Scenario and Permissible Road Speed information is now exported to CSAMS XML file for populating the CSAMS database.
- 3) Added error checking to the CSAMS XML exporting procedure, to ensure all required fields have been correctly populated by the user.

List of Key Updates included in OBC 2.2 (23/05/2017)

- 1) Input added to qualitative assessment pages to allow the identification of the leading minor element with the most significant defects causing the qualitative assessment result. These entries are required for populating the CSAMS database.

List of Key Updates included in OBC 2.1 (30/04/16)

- 1) If the form code on the FormAA does not fully describe the deck, it is mandatory to provide the correct form code for the deck and the facility to do this has been added.
- 2) Additional fields provided to allow for correct BCMI references to be entered if an element is not correctly defined in sheets "Deck" and "Subdeck".
- 3) The terms used to describe the condition of a section have been changed, choices include "As-built Condition", "Current Condition" and "Section with Defect". If "Section with Defect" is selected, a Defect ID should be provided. Imports will handle the condition of section change as shown below.

Old Input	New input (when imported)
Full section	As-built Condition
Damaged section	Section with Defect
- 4) Information sources have been split into a "Date" and "By" field. On import the information from older assessments will be placed in the "By" field, the assessor should manually split the information into the newly created "Date" and "By" fields.
- 5) Added pop-up window to display import/calculation progress.
- 6) New functionality has been added to produce an XML which can be uploaded to the CSAMS database.


GUIDANCE NOTES



Level 0 Assessment Tool
Version OBC 3.1

List of Key Updates included in OBC 2.0 (14/08/15)

- 1) Transfer from Excel 2003 to Excel 2010.
- 2) A new Assessment Menu has been added to fit with Excel 2010.
- 3) Guidance Notes have been removed from the Tool and are now provided as a stand alone PDF file.
- 4) Advanced features such as User Defined Loading are now available using the "Enable NR Version" button from the Assessment Menu. These features should only be used with advanced agreement from the relevant Network Rail Structures Manager.
- 5) The Form AA0 and Form BA0 no longer contain an approved list of CREs. It is the responsibility of the Assessor to ensure each form is signed by a competent and approved person taking note that once signed the Form AA0 cannot be amended. Forms are signed using "Sign Forms" from the assessment menu. The signatures will now be checked and approved by Network Rail Structures Managers.
- 6) Name and Title are now mandatory inputs on the Form AA0 and Form BA0 to facilitate approval by Network Rail Structure Managers.
- 7) During Data Transfer results from the original file are compared to the updated file with any changes being flagged within the Tool on an additional tab which will become visible if changes have occurred. If no changes occur the Form BA0 signatures will be carried forward.
- 8) A log file will be produced during Bulk Data Transfer which will show for each file if they contained Errors, Changes to the Results or Transferred without Change. This file will be saved in the output folder.
- 9) During signing of the Form BA0 forms the inputs will be automatically checked to ensure no changes have been made since the calculation was run. If changes have been made, the calculation must be re-run before signing the forms.
- 10) Improvements to the efficiency of the Tool have been made throughout.

GUIDANCE NOTES		
		Level 0 Assessment Tool Version OBC 3.1
	<p style="text-align: center;"><u>List of Key Updates included in OBC 1.6 (27/07/15)</u></p> <p>1) Correction made to OBC 1.5 to correctly record comments.</p> <p style="text-align: center;"><u>List of Key Updates included in OBC 1.5 (08/05/15)</u></p> <p>1) Corrections to Rectangular Reinforced Concrete Slab Calculations.</p> <p>2) Corrections made to HLF calculations.</p> <p>3) Issue with inputting Structure Name which some users experienced has been resolved.</p> <p style="text-align: center;"><u>List of Key Updates included in OBC 1.4 (09/06/14)</u></p> <p>1) Corrections made to the automatic generation of error message “Section outside effective span”</p> <p style="text-align: center;"><u>List of Key Updates included in OBC 1.3 (03/12/13)</u></p> <p>1) Amendments to the Reinforced Concrete calculations to prevent errors occurring.</p> <p style="text-align: center;"><u>List of Key Updates included in OBC 1.2 (12/07/13)</u></p> <p>1) Provision of XML database file is included. The XML file will be created automatically when the Form BA0(2) is signed. This feature is for Network Rail Structure Managers only.</p> <p>2) Refinements have been made to the Guidance Notes for greater clarity.</p> <p>3) The Network Rail version of the Tool has been developed and now includes User Defined loading. This is available only for Network Rail users.</p> <p style="text-align: center;"><u>List of Key Updates included in OBC 1.1</u></p> <p>1) No key updates.</p>	

GUIDANCE NOTES



Level 0 Assessment Tool
Version OBC 3.1

List of Abbreviations used

CRE	Contractor's Responsible Engineer
Assmt	Assessment
Calcs	Calculations
AC	Assessed Category
BC	Bridge Category
U	Utilisation factor
FE	Fire Engine
Hp	Heavy Traffic Poor Surface
Mp	Medium Traffic Poor Surface
Lp	Low Traffic Poor Surface
Hg	Heavy Traffic Good Surface
Mg	Medium Traffic Good Surface
Lg	Low Traffic Good Surface
DL	Dead load
LL	Live load
SDL	Superimposed Dead Load
HLF	Highway loading factor - Percentage of live loading carried by an element
C-way	Carriageway
BM	Bending moment
SF	Shear force
SecProp	Section Properties
Prop	Properties
BCMI	Bridge Condition Marking Index
DK	Deck
SD	Subdeck
DCK	Decking (transverse spanning reinforced concrete slab)
LSE	Secondary longitudinal beam (exposed) e.g. parapet or walkway beam
MGE	Main longitudinal beam or slab element (exposed)
MGI	Main longitudinal beam or slab element (inner) or where a single slab deck
MG	Reinforced concrete beam or slab
SL	Reinforced concrete slab
PT	Pre-tensioned concrete beam
DC	Transverse spanning reinforced concrete slab
Ed	End
Md	Midspan
VE	Position from support where shear enhancement is zero
CR	Curtailment point for reinforcement
DS	Damaged section
AD	Assessor Defined
c/c	Centre to centre
b/w	Between
longit'nal	Longitudinal
Eff.	Effective
CSAMS	Civils Strategic Asset Management Solution

GUIDANCE NOTES



**Level 0 Assessment Tool
Version OBC 3.1**

No.	Topic	General note
1	Level 0 process	The Level 0 assessment process has been developed in order to give Network Rail more contemporary bridge strength information which can be readily updated as new information becomes available or if changes are proposed. The Level 0 Assessment Tool has been developed to deliver these assessment calculations and a brief report; this will provide assessments in a common and familiar format which will greatly improve Network Rail's ability to manage their bridge stock.
2	Level 0 process	The Level 0 Assessment Tool has been developed on the basis of NR/GN/CIV/025 Issue 3, BA 44/96, BD 21/01 and BA 16/97.
3	Level 0 process	The Level 0 assessments are prepared using an Assessment Tool that introduces various agreed simplifications to the assessment method in order to reduce the time required to collect and process assessment data into calculations which determine an assessed capacity based upon principal checks on key load carrying elements.
4	Level 0 process	The assessor must determine the most reliable source of information. Generally the hierarchy of reliability for dimensional information will be: 1) Data confirmed on site 2) Data from record drawings 3) Data from drawings provided in assessment report 4) Data from assessment calculations. The hierarchy of reliability for conditional information will be: 1) Data confirmed on site, 2) Data from Detailed examination.
5	Use of the Tool	The Level 0 assessment process and this Assessment Tool are designed for use by experienced highway assessment engineers and must be undertaken by persons with suitable competency. Each assessing organisation must have at least one person of suitable experience to be the CRE to oversee the delivery of Level 0 Assessments.
6	Use of the Tool	The OBC Assessment Tool is created for Level 0 assessment of deck type concrete occupation and accommodation overbridges, using Excel 2016.
7	Use of the Tool	The Level 0 Tool should always be saved to and run from the C: drive of the user's PC. Running the Tool from a network location may impair functionality of Excel and the Level 0 Tool.
8	Use of the Tool	The Tool will attempt to identify whether Excel 2016's Autosave function is active, and if so, disable it to avoid any interference with its operation. Autosave will automatically be disabled if the Tool is saved locally to the user's C: drive, as per above.
9	Scope of the Tool - General	Level 0 Assessment Tool is designed to assess one bridge deck at a time. Structures with more than one deck will require multiple files - one for each deck. Files' names are standardized in the following format: OBC2_0_ELR-No-DKNo.xls. The file will be automatically renamed in the required format after click on "Add Elements" or manually if the user click on "Save" from "Assessment" menu.
10	Scope of the Tool - Elements articulation	Only simply supported elements may be assessed using this Level 0 Assessment Tool.
11	Scope of the Tool - Geometrical limitations	Only bridge spans 2m to 30m and skews up to 20 degrees can be assessed using the Level 0 Assessment Tool. Only bridge loaded by one carriageway with width of the carriageway up to 10m can be assessed.
12	Scope of the Tool - General arrangement limitations	The Level 0 Assessment Tool can fully assess decks comprising up to 5 main beam/slab elements. Decks comprising more than 5 main beam/slab elements can be assessed if the elements are equally spaced and have the same cross section and properties. In the case of more than 5 main beams/slabs only one element will be assessed. Decks should support only one carriageway.

GUIDANCE NOTES



**Level 0 Assessment Tool
Version OBC 3.1**

No.	Topic	General note
13	Scope of the Tool - Elements	The scope of assessment using this Level 0 Assessment Tool is limited to the following types of elements: reinforced concrete slabs, reinforced concrete beams and pre-tensioned concrete beams.
14	Scope of the Tool - Sections	This Level 0 Assessment Tool may be used to assess the following: Reinforced concrete beams arranged as discrete elements, Reinforced concrete beams arranged to form a single slab, A single reinforced concrete slab, Reinforced concrete beams with a transverse spanning slab (flanged beams), Pre-tensioned beams arranged as discrete elements, Pre-tensioned beams arranged to form a single slab.
15	Scope of the Tool - Capacity checks	Assessed elements are checked for: Bending - at midspan, at reinforcement curtailment points and at locations with damaged sections; Shear - at a distance "d" from the supports, at the point closest to the support where there is no shear enhancement, at reinforcement curtailment points and at locations with damaged sections.
16	Scope of the Tool - Qualitative assessment	Elements in deck supports and deck elements which are not covered in the assessment calculations, are assessed qualitatively.
17	Scope of the Tool - Loading Scenarios	The Level 0 Assessment Tool has the capability to assess the structure under one of two different live loading scenarios. The default scenario is pre-defined, using standard highway loads and the permissible road speed selected on the General tab. If the NR Version is activated (see pages labelled "GN_Using_tool"), a user-defined loading scenario is enabled. This scenario uses an axle arrangement specified by the user, and also requires the input of Structure Condition and Assessment Scenario. Only one scenario, either the predefined or user-defined loading, may be calculated.
18	Scope of the Tool - CSAMS Assessment Scenarios	The CSAMS database uses a pre-defined list of 'Assessment Scenarios' to classify the loading scenario assessed in the Level 0 Assessment Tool. For the pre-defined loading scenario, the corresponding 'Assessment Scenario' is pre-set to "Standard Highway Loads" and cannot be changed. For the user-defined loading scenario, the user can either select "Standard Highway Loads", "Liability Requirement", "Abnormal Loads" or "Other" as the 'Assessment Scenario'. For all qualitative assessment, the corresponding 'Assessment Scenario' is pre-set to "Qualitative" and cannot be changed.

GUIDANCE NOTES



**Level 0 Assessment Tool
Version OBC 3.1**

No.	Topic	General note
1	Run macros	To use the Assessment Tool it is necessary for macros to be enabled. Go to "File/Options/Trust Centre/TrustCentre Settings/Macro Settings" and set "Disable all macros with notification". Re-open the Tool and choose "Enable Macros" from the "Security Warning" message box, which appears when you open file with macros.
2	"Assessment" menu	Once macros are enabled and the Tool re-opened an additional "Assessment" menu is automatically added to your Excel ribbon. Use the "Assessment" menu to progress with assessment (following the assessment steps as described in the next item) and to navigate in the Tool.
3	Assessment steps	<p>Assessor: Step 1 - Review structure and fill all relevant information in sheets "General" and "FormAA0". <u>Contractor's Responsible Engineer (CRE):</u> Step 2 - Contractor's Responsible Engineer (CRE) to review and sign "FormAA0". <i>Note that no changes to Form AA0 will be allowed after the form is signed.</i> <u>Assessor:</u> Step 3 - Fill all relevant information on general input sheets "Deck", "Subdeck", "Offsets", "SSI", "DK_Qual", "PPT_Qual", "ES_IS_Qual" and "AssmtStatus". Step 4 (optional) - if alternative loading to the predefined scenario is required, create user-defined scenario by filling in details in "LL-User" and "Scenarios" sheets (available only once NR Version has been enabled using the ribbon button) Step 5 - Add elements (Assessment menu -> Add Elements) and fill all relevant information. Step 6 - Add sections (Assessment menu -> Add Sections) and fill all relevant information. Step 7 - Run calculations for either predefined scenario (Assessment menu -> Calculate -> Predefined scenario) OR for user-defined scenario if required (Assessment menu -> Calculate -> User-Defined scenario) Step 8 - Correct all errors in the input data (if any). Step 9 - Review and correct warning messages (if any). Step 10 - Review results.</p> <p><u>Checker:</u> Step 11 - Steps 1 to 10 to be checked and signed by checker. <u>Contractor's Responsible Engineer (CRE):</u> Step 12 - Contractor's Responsible Engineer (CRE) to review assessment, write recommendations (sheet "CRE") and sign Form BA0 (Sheets "Form BA0(1)"). Note the Form BA0 cannot be signed until: - All scenarios are calculated using the 'Calculate All' button in the ribbon (Calculate Scenarios -> Calculate All) - The CRE either selects "Yes" in the dropdown box (cell G44) to certify that the Tracking Tables have been populated and checked, or selects "No" and provides justification in the text box as to why this is not the case.</p>
4	Input cells	There are two types of input cells in the Tool - "yellow" and "tan" coloured. "Yellow" coloured cells are data value input cells and "tan" coloured cells are either data units or data source input cells.
5	Units	"Units" must be assigned to each data input (if applicable). Select units from drop down menu: 4 options (in, ft, m, mm). When "units" are assigned to a table of values, all the input data in the table must be in the selected units.
6	Source	"Source" must be assigned to each data input. Select information source from drop down menu - 12 options (refer to tab "General" for information sources). When "source" is assigned to a table of values and different sources are used for the input data in this table - specify the principal information source and use the comments facilities to record if any data in the table is taken from a different source. Offline supporting sources may be included in the Tool.

GUIDANCE NOTES



**Level 0 Assessment Tool
Version OBC 3.1**

No.	Topic	General note
7	Comments	<p>Add comments only to the data value input cells i.e. "yellow" coloured cells. These comments will be listed together with the data description in a separate sheet "Comments". All comments have to be entered using the standard Excel commenting facility.</p> <p><u>How to add "Comment" in Excel?</u></p> <ol style="list-style-type: none"> 1. Go to "Tool/Options/General" and change "User name:" to your initials. 2. Select the "yellow" cell to which you want to add a comment. 3. Right click and choose "Insert Comment". <p><u>How to change or delete "Comment" in Excel?</u></p> <ol style="list-style-type: none"> 1. Select the "yellow" cell with the comment. 2. Right click and choose "Edit Comment" or "Delete Comment". <p>Users are encouraged to make regular use of this facility explaining their decisions. Comments should be short, brief, clear and meaningful.</p>
8	Yes / No option	If cells with this option are left blank, this will be considered as "No".
9	Results	Comments may be added on individual element results sheets by right-clicking in the blue cells adjacent to the 'Detailed Results' table and using the Excel commenting facility (see also Item No. 7 above). These comments can then be compiled into a formatted table (as per general input comments) by selecting the "Results_Comments" sheet and selecting "Yes" when prompted by the Tool to populate the table. The user will also be prompted to update this table during printing.
10	Printing	Note that the format of page numbering when printed is "Page 1 of N", where N is number of pages printed. Therefore one and the same page can have different page number when different printing options are used.
11	NR Version	When NR version is enabled the tabs "Scenarios" and "LL-User" will appear, allowing the user to define their own loading scenario. Once NR version is enabled it cannot be reversed.
12	Change of Input	The Tool will require re-calculation when there is any change of input. Changes to any CRE input will also result in a requirement for re-calculation, and re-signing of the forms BA0(1) and BA0(2).

Frequently Asked Questions (FAQ)

1. How to start?

Read 'Using_tool'. Item 3 explains this.

2. How to add elements and sections?

'Using_tool' Item 3' explains this.

3. How to sign the Form AA0 and Form BA0 using "electronic signature"?

'FormAA0', 'Form BA0(1)' & 'Form BA0(2)'. Item 'Key/Signing' explains this.

4. How to use the Tool to assess a bridge with more than one deck?

A separate assessment has to be undertaken for each deck of the bridge.

5. How to check that the Form code and the BCMI element reference are correct?

The values under 'Element Type' in column I of sheets 'Deck' and 'Subdeck' indicate what the element is, e.g.

SL - reinforced concrete slab,

MG - reinforced concrete beam,

PT - pre-tensioned concrete beam,

DCK - transverse spanning reinforced concrete slab.

This should be compared with Form code selected to ensure the intended elements are correct.

6. Why in the sheet 'Offsets' the total in deck/subdecks distances and offsets distances don't match up?

Refer to the sketch in sheet 'Offsets'. The Total of deck/subdeck is the total width of the deck. Whereas the total of offsets is the total distance from the same datum up to the end of carriageway.

7. What is the input for the 'Width' for each type of loading for each element?

'Elements' > 'EI_Loads'. Item 'Width' in this sheet explains the loading width for each type of loading for each element.

8. Is the self weight of the elements automatically calculated?

Yes, self weight of assessed elements is automatically calculated based on midspan section properties.

9. Is the superimposed dead load replicated causing over conservatism in the dead load effects?

No, there is NO automatic load transfer between elements and "Loading must be specified per element."

10. An error occurs when text is added to the text box on CRE Recommendations and other sheets with text boxes.

The problem may appear because the text starts with "-". Signs like "-", "+", "=" will cause this problem if they are at the beginning of the text. Please avoid this. If you add a space in front of these signs it should work without error.

GUIDANCE NOTES



Level 0 Assessment Tool
Version OBC 3.1

Sheet name	Input data	Description	Suggested Sources
General	Route	e.g. Midland, Southern...	TS - Level Zero Task List
General	ELR	Engineer's Line Reference	TS - Level Zero Task List
General	Number	Bridge number. Use "_" symbol instead of "/" symbol for structures with more than one identification number (e.g. use 46_47 instead of 46/47) as bridge number is used as part of the file name and therefore some symbols are not permitted. Leading zeros may now be included as necessary within the bridge number (e.g. 00127).	TS - Level Zero Task List
General	Mileage	Format is "82.0022" which is 82m and 22yards.	TS - Level Zero Task List
General	OS Map Reference	Format is AA #####, e.g. TQ 1234 5678.	TS - Level Zero Task List
General	Bridge name	Local name.	TS - Level Zero Task List
General	Type of Bridge	Selection from drop down menu whether overline or side of line bridge.	TS - Level Zero Task List
General	Usage	Selection from drop down menu whether occupation or accommodation bridge.	TS - Level Zero Task List
General	Number of spans	Number input. Refer to BCMI code NR/L3/CIV/006/2C and sketch	RD - Record Drawings
General	Status	Status is set by default as Network Rail owned and maintained.	
General	Total number of decks	Number input. Deck is marked as DK in BCMI code. Refer to BCMI code NR/L3/CIV/006/2C and sketch	RD - Record Drawings
General	Construction date	Input date of construction. If not known, estimate the date and add a comment.	RD - Record Drawings
General	Superstructure date	Date of superstructure construction. If not known, estimate the date and add a comment.	RD - Record Drawings
General	CARRS Parent GUID	Number input required	TS - Level Zero Task List
General	CARRS Child GUID	Number input required	TS - Level Zero Task List
General	BCMI deck reference	Select option from drop down menu - options from "DK1" to "DK20"	
General	Obstacle crossed: Type, Name	Type is set by default as a Rail. Name of the lines as described in SA. e.g. Up fast.	RD - Record Drawings; AR - Last Assessment Report
General	Road carried	Describe the name of the road, e.g. A321 public road.	
General	Permissible Road Speed	Number is required.	
General	Weight restriction	The bridge should be signed if any restriction exist.	
General	Tonnes	Input appropriate number from weight restriction sign.	DE - Last Detailed Examination report; Internet
General	Min vertical clearance to soffit:	Number is required.	

GUIDANCE NOTES



Level 0 Assessment Tool
Version OBC 3.1

Sheet name	Input data	Description	Suggested Sources
General	Source type - Last Detailed Examination report (Date)	Use the format “dd/mm/yyyy”	
General	Source type - Last Detailed Examination report (By)	Name of organisation that wrote the Last Detailed Examination Report	
General	Source type - Last Assessment Report (Date)	Use the format “dd/mm/yyyy”	
General	Source type - Last Assessment Report (By)	Name of organisation that wrote the Last Assessment Report.	
General	Source type - Last Inspection for Assessment report (Date)	Use the format “dd/mm/yyyy”	
General	Source type - Last Inspection for Assessment report (By)	Name of organisation that wrote the Last Inspection for Assessment Report	
General	Source type -Last Visual Examination report -1 (Date)	Use the format “dd/mm/yyyy”	
General	Source type -Last Visual Examination report -1 (By)	Name of organisation that wrote the Last Visual Examination Report 1.	
General	Source type -Last Visual Examination report -2 (Date)	Use the format “dd/mm/yyyy”	
General	Source type -Last Visual Examination report -2 (By)	Name of organisation that wrote the Last Visual Examination Report 2.	
General	Source type - Additional Examination reports (Date)	Use the format “dd/mm/yyyy”	
General	Source type - Additional Examination reports (By)	Name of organisation that wrote the Additional Examination Reports.	
General	Source type - SCMI report (Date)	Use the format “dd/mm/yyyy”	
General	Source type - SCMI report (By)	Name of organisation that wrote the SCMI Report.	

GUIDANCE NOTES



Level 0 Assessment Tool
Version OBC 3.1

Sheet name	Input data	Description	Suggested Sources
General	Source type - Supplementary Site Inspection (Date)	Use the format “dd/mm/yyyy”	
General	Source type - Supplementary Site Inspection (By)	Name of organisation that undertook the Supplementary Site Inspection.	
General	Date of last inspection for assessment (Date)	Use the format “dd/mm/yyyy”	
General	Date of last inspection for assessment (By)	Name of organisation that undertook the inspection for assessment	
General	Source type - Record Drawings	Use the format “5E/1720/1, 3, 5-7 & 21”	
General	Source type -Five Mile Plans	Use the format “Dated ...”	
General	Source type - Sectional Appendices	Use the format “Dated ...”	
General	Source type -Level 0 Task List	Use the format “Dated ...”	
General	Source type - Internet	Use the format “Dated ..., web address ...”	
General	Source type - Hidden Critical Element Examination Report	Use the format “Dated ..., by ...”	
General	Offline supporting calculations & sketches (OL1-OL10) (Source Type)	Title and/or brief description of the offline supporting document to be appended to the Level 0 Assessment	
General	Offline supporting calculations & sketches (OL1-OL10) (Date)	Use the format “dd/mm/yyyy”	
General	Offline supporting calculations & sketches (OL1-OL10) (By)	Name of organisation that created the document.	

GUIDANCE NOTES



**Level 0 Assessment Tool
Version OBC 3.1**

Sheet name	Input data	Description	
FormAA0	Assessment checklist	Drop down menu - options "Yes" or "No" to all the 12 questions.	
FormAA0	Assessment checklist	Question 1: This Level 0 Assessment Tool assumes the deck is simply supported.	
FormAA0	Assessment checklist	Question 2: Only bridge spans greater than 2m and up to 30m can be assessed using this Level 0 Assessment Tool.	
FormAA0	Assessment checklist	Question 3: Only skews no greater than 20 degrees can be assessed using this Level 0 Assessment Tool unless the Assessor and CRE agree that the elements being assessed are not subjected to significant torsional effects. E.g. where simply supported discrete, narrow beams or simply supported discrete, narrow slabs are being assessed (arrangement akin to 'piano keys'), the Level 0 assessment Tool may be used for skews greater than 20 degrees. The justification to assess elements of decks with skews in excess of 20 degrees must be input.	
FormAA0	Assessment checklist	Question 4: Only decks with one carriageway can be assessed.	
FormAA0	Assessment checklist	Question 5: This Level 0 Assessment Tool assess carriageways more than 2.5m wide and less than 10m wide.	
FormAA0	Assessment checklist	Question 6: This Level 0 Assessment Tool does not assess any post-tensioned elements.	
FormAA0	Assessment checklist	Question 7: This Level 0 Assessment Tool does not assess any composite concrete and steel elements.	
FormAA0	Assessment checklist	Question 8: This Level 0 Assessment Tool assumes the deck and its elements are all simply supported and statically determinate.	
FormAA0	Assessment checklist	Question 9: This Level 0 Assessment Tool assumes the deck elements are all simply supported. Slabs acting in hogging are not assessed (e.g. overhanging the edge girder) and should be included as an additional sdl load on the main beam/slab.	

GUIDANCE NOTES



**Level 0 Assessment Tool
Version OBC 3.1**

Sheet name	Input data	Description	
FormAA0	Assessment checklist	Question 10: This question is linked to the dynamic sketches that appear in Offsets. Different input is needed depending on that question. When the bridge consists of decks with more than 5 main beam/slab elements per deck only one element can be assessed and the elements need to be equally spaced and have same cross section and properties.	
FormAA0	Assessment checklist	Question 11: This Level 0 Assessment Tool can only assess decks with more than 5 main beam/slab elements per deck if the elements are equally spaced and consist of the same cross section and properties. There are 3 options - "No", "Yes" and "N/A". Option "N/A" is applicable only for form code DI1-.	
FormAA0	Structural form code	Form code consists of 5 letters/numbers (Ref1-Ref5) representing: Bridge Type (Ref1), Primary Longitudinal Elements (Ref2), No. of Primary Elements (Ref3), Floor Types (Ref4) and Road Form (Ref5). Drop down menus with valid combinations for the form codes included in the Tool are provided. The assessor must choose the form code combination that defines the bridge deck correctly and completely. Refer to GN_FormCode.	
FormAA0	Assessment checklist	Question 12: This Level 0 Assessment Tool considers only those structures that can be defined from the form code options given.	
FormAA0	Enter correct form code	This field will become available if the answer to Question 12 is "No". Provide the correct form code for the structure if the bridge deck is not correctly and completely defined using the available form code options. The correct form code is selected using the form code builder which allows access to all available form codes.	

GUIDANCE NOTES






**Level 0 Assessment Tool
Version OBC 3.1**

Sheet name	Input data	Description	
FormAA0	Justification for adopting Level 0 assessment (if required)	If the answers to the questions in the Assessment Checklist result in the following statement appearing: "Bridge deck is NOT suitable for Level 0 assessment.", this Level 0 Assessment Tool is not wholly appropriate to assess the deck. However, a deck should not be excluded from Level 0 assessment based on this alone. The assessing organisation should use their experience and engineering judgement to populate as many primary elements as possible in this Assessment Tool and record the justification in this box.	
FormAA0	Name/Signing Form AA0	Name of the CRE from the Assessing organisation. To be filled by the CRE.	
FormAA0	Title/Signing Form AA0	Title of the CRE from the Assessing organisation. To be filled by the CRE.	
FormAA0	Signing Form AA0	The Form AA0 should only signed by the CRE. After filling in the Name and Title, go to Assessment menu and select "Sign Forms". It is the responsibility of the Assessor to ensure each form is signed by a competent and approved person. The signatures will be checked and approved by Network Rail Structures Managers. Completing the signing procedure will lock all the information in Form AA0 sheet.	

GUIDANCE NOTES




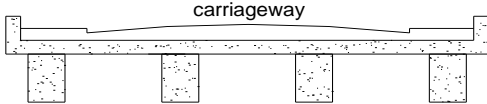
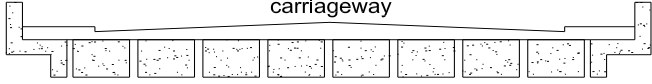
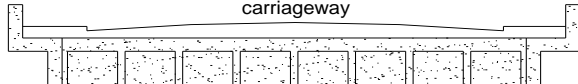
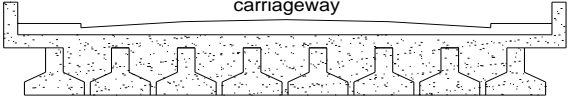
Level 0 Assessment Tool
Version OBC 3.1

Sheet name	Input data	Description	
		The form code in the Tool is to be populated using the drop down list. This may be different than what is in the spreadsheet provided by Network Rail separately. Network Rail will capture the form code from the Tool which will form the definitive list.	
FormAA0	Structural form code - Ref1	<u>Bridge Type (Ref1)</u> D - Deck	
FormAA0	Structural form code - Ref2	<u>Primary Longitudinal Elements (Ref2)</u> I - Single reinforced concrete slab H - Reinforced concrete beams or slabs Q - Pre-tensioned beams and slabs	
FormAA0	Structural form code - Ref3	<u>No. of Primary Elements (Ref3)</u> 1 - Single element. Applicable only when DI selected. M - Multiple Elements. Applicable only when DH selected and 'M' refers to a multiple elements (discrete or forming a single slab). - RC beam and slab. Applicable when DH selected. Refers to a monolithic beam and transverse spanning RC slab arrangement '-'. Applicable only when DQ selected.	
FormAA0	Structural form code - Ref4	<u>Floor Types (Ref4)</u> - Not applicable for concrete overbridges.	
FormAA0	Structural form code - Ref5	<u>Track/Road Form (Ref5)</u> C - Carriageway - no footway D - Carriageway with footway U - Carriageway undefined	
FormAA0	Structural form code	The allowable combinations of the above five codes can be found within the Tool.	
FormAA0	Structural Form Code - Example	 <p>DHM-D (rc beams arranged as discrete elements)</p>	
FormAA0	Structural Form Code - Example	 <p>DHM-D (rc slabs arranged as discrete elements)</p>	
FormAA0	Structural Form Code - Example	 <p>DHM-D (rc slabs/beams arranged to form a single slab)</p>	

GUIDANCE NOTES



Level 0 Assessment Tool
Version OBC 3.1

Sheet name	Input data	Description
FormAA0	Structural Form Code - Example	 <p>DI1-D (single rc slab)</p>
FormAA0	Structural Form Code - Example	 <p>DH--D (rc beams, including flanged beams)</p>
FormAA0	Structural Form Code - Example	 <p>DQ--D (pre-tensioned beams arranged as discrete elements)</p>
FormAA0	Structural Form Code - Example	 <p>DQ--D (pre-tensioned beams arranged to form a single slab)</p>
FormAA0	Structural Form Code - Example	 <p>DQ--D (pre-tensioned beams arranged to form a single slab)</p>

GUIDANCE NOTES



Level 0 Assessment Tool
Version OBC 3.1

Sheet name	Input data	Description	Suggested Sources
Deck	Span number	Number is required.	
Deck	Supports 1st	Label it as per BCMI code NR/L3/CIV/006/2C, i.e. ES1, IS1, etc. Refer to the sketch provided in the tab.	
Deck	Supports 2nd	Label it as per BCMI code NR/L3/CIV/006/2C, i.e. IS1, IS2, ES2 etc. Refer to the sketch provided in the tab.	
Deck	Skew:	The Tool assumes a torsionless system and as such the skew angle is limited to a max +/- 20 degrees, unless justified otherwise. Skew effects are not considered in this Level 0 Assessment Tool and all decks are considered square.	RD - Record Drawings; AR - Last Assessment Report
Deck	Minor elements (individually marked)	Refer to BCMI code NR/L3/CIV/006/2C and Abbreviation list part of this Guidance Note.	
Deck	Applicable	Select "Yes" from the drop down list if the minor elements exist. Otherwise select "No". The assessor must fill this column in full as this will define the deck and subdecks. When there are more than 5 main beam/slab elements, then you need to fill "Yes" only for LSE1 and LSE2 (if applicable), MGE1, MGI1 and MGE2. Calculations will only be produced for MGI1. For form code DI1 (single slab) you need to fill "Yes" only for MGI1.	
Deck	Name in RD (AR)	Label/name of the element used in VERA/RD/AR for reference code.	RD - Record Drawings; AR - Last Assessment Report
Deck	Correct BCMI Code	If the element is not correctly defined using the code field, enter the correct reference.	
Deck	Correct BCMI No	If the element is not correctly defined using the code field, enter the correct reference.	

GUIDANCE NOTES



Level 0 Assessment Tool
Version OBC 3.1

Sheet name	Input data	Description	Suggested Sources
Deck	Assmt Calcs	<p>Select whether assessment calculations are required for the elements listed using the drop down menu - options "Yes" or "No". Note that only elements that have been identified as applicable for the structure can be selected.</p> <p>Only elements with different cross section, condition, loading or length should be chosen for "Assmt Calcs". When two (or more) elements are the same only one can be chosen for calculations and commenting facilities used to record why other elements have not been calculated. (e.g. Element same as ...).</p> <p>When select a "Yes" the column "Element type" will be automatically filled. The relevant element type should appear if correct form code is chosen. Please refer to the GN_Abbreviations for the meaning of the element types.</p> <p>When there are more than 5 main beam/slab elements, equally spaced you need to select "Yes" only for MGI1.</p> <p>Calculations will only be produced for the most critically loaded MGI.</p> <p>For the case when there are less than 5 MGs all the five elements can be assessed.</p>	
Deck	Multiple Beams/Slabs' Spacing	This will be visible for all the form codes (except for DI1 single slab) if there are more than 5 main beam/slab elements, all equally spaced. It is the distance c/c between the beams/slabs that comprise the deck.	
Deck	Width/Breadth of MGE1	This will be visible if there are less than 5 main beam/slab elements. According to the form code the particular name and description appears.	
Deck	Width/Breadth of MGE2	This will be visible if there are less than 5 main beam/slab elements. According to the form code the particular name and description appears.	
Deck	Is transverse reinforcement placed through holes in the bottom of the webs of units?	This question applies to Invert T restressed beam decks only. Select from drop down menu - options "Yes", "No".	AR - Last Assessment Report; IR - Last Inspection for Assessment report

GUIDANCE NOTES



**Level 0 Assessment Tool
Version OBC 3.1**

Sheet name	Input data	Description	Suggested Sources
Subdeck		This sheet is applicable only for the Level 0 assessment (Predefined Scenario) of form code DH-, i.e. a deck formed of longitudinal spanning reinforced concrete flanged beams with a transverse reinforced concrete slab spanning between them. This sheet is not applicable for User defined Scenario.	
Subdeck		Up to 4 sub decks may be included with DCK (i.e. a transverse spanning reinforced concrete slab) the default assessment option within a sub-deck.	
Subdeck	(Index)	<p>Select reference (index) number from drop down menu - options from "(0)" to "(9)".</p> <p>To allow for the elements to be individually marked, an extra index (i) will be added e.g. DCK1(1), DCK5(2) etc.</p> <p>An index (0) can be used to mark these elements as a group e.g. DCK1(0) and will have the same meaning as in the current BCMI code.</p> <p>If the assessed element can represent all transverse spanning slabs in sub-deck number 1, the assessment results will be presented for DCK1(0).</p> <p>If there is a issue with inner transverse spanning slab number 2 (i.e. where deck has discrete transverse spanning slabs) in sub-deck number 1, then results will be presented for DCK1(2).</p> <p>The additional index (i) numbering will follow the same convention as for all minor elements in a deck i.e. high to low mileage and left to right when facing high mileage.</p>	
Subdeck	Name in RD (AR)	Label/name of the element used in VERA/RD/AR for reference.	RD - Record Drawings; AR - Last Assessment Report
Subdeck	Correct BCMI Code	If the element is not correctly defined using the code field, enter the correct reference.	
Subdeck	Correct BCMI No	If the element is not correctly defined using the code field, enter the correct reference.	

GUIDANCE NOTES



**Level 0 Assessment Tool
Version OBC 3.1**

Sheet name	Input data	Description	Suggested Sources
Subdeck	Assmt Calcs	Specify which minor elements will be assessed by selecting "Yes" or "No" from the drop down menu. Note that only elements that have been identified by filling the subdeck and index references can be selected. Only elements with different cross section, condition, loading or length should be chosen for "Assmt Calcs". When two (or more) elements are the same only one can be chosen for calculations and commenting facilities used to record why other elements have not been calculated. (e.g. Element same as ...)	
Subdeck	Units	Select units from drop down menu - 4 options (in, ft, m, mm)	
Subdeck	Source	Select information source from drop down menu - 12 options (refer to tab "General" for information sources)	

GUIDANCE NOTES



**Level 0 Assessment Tool
Version OBC 3.1**

Sheet name	Input data	Description	Suggested Sources
Offsets	Bridge Category (traffic flow and road surface)	Drop down menu - 6 options (Hp,Mp,Lp,Hg,Mg,Lg). Traffic flow 'H' for Heavy, 'M' for Medium, 'L' for Low. Road surface 'g' for good and 'p' for poor.	DE - Last Detailed Examination report; IR - Last Inspection for Assessment report
Offsets	Units	Select units from drop down menu - 4 options (in, ft, m, mm)	
Offsets	Source	Select information source from drop down menu - 13 options (refer to tab "General" for information sources)	
Offsets	Deck and sub-decks width, Distances	<p>These are the distances between the main longitudinal elements starting from the set datum. Datum is at the external face of the element at the high mileage end, i.e. at MGE1 or LSE1 (if present). The datum used for deck and subdeck width and for offsets must be the same.</p> <p>When there are more than 5 main beam/slab elements, all equally spaced then input is only required for LSE1 and LSE2 (if applicable), MGE1, MGE2, MGI1 and end distance.</p> <p>For DI1, a single reinforced concrete slab deck, the total deck width should be entered as MGI1. No other input is required.</p> <p>When there are less than 5 main beam/slab elements enter distances as shown on the sketch i.e. distances between adjacent elements.</p>	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Offsets	Offsets, Distances, x1-x2	<p>These are the distances starting from the set datum. Datum is at the external face of the element at the high mileage, i.e. MGE1 or LSE1 (if present).</p> <p>The distance x1 is width of the footway or any unloaded part of the deck.</p> <p>The distance x2 is the carriageway width.</p> <p>The datum used for deck and subdeck width and for offsets must be the same.</p> <p>The user can input different offsets if the distances vary across the deck. Notation used to identify ends of the deck in the Tool is left and right when facing high mileage.</p> <p>The Tool calculates and uses the average values and therefore a minimum of one set of offsets is required.</p> <p>Refer to the sketches.</p>	RD - Record Drawings; AR - Last Assessment Report;


GUIDANCE NOTES



**Level 0 Assessment Tool
Version OBC 3.1**

Applicable only when NR Version activated

Sheet name	Input data	Description	Suggested Sources
Scenarios	User defined scenario	There are two calculation scenarios included in the Tool - one predefined scenario and one user defined scenario.	
Scenarios	User defined scenario	Transverse slabs are not assessed in User Defined Scenario.	
Scenarios	Structure Condition	For User Defined Scenario it is possible to choose the structure condition from the drop down list. 2 options; Current and Proposed Change	
Scenarios	Assessment Scenario	Select from drop down menu. For the user-defined loading scenario, Assessment Scenario options are "Standard Highway Loads", "Liability Requirement", "Abnormal Loads" or "Other". If "Other" is selected, a form appears allowing the user to specify their own Assessment Scenario name. There is no option to add/change the Assessment Scenario for the predefined loading scenario, as this is fixed as "Standard Highway Loads".	

GUIDANCE NOTES			
			Level 0 Assessment Tool Version OBC 3.1
Sheet name	Input data	Description	Suggested Sources
SSI		Free text space provided for recording the findings of supplementary site inspection (SSI).	

GUIDANCE NOTES



Level 0 Assessment Tool
Version OBC 3.1

Sheet name	Input data	Description	Suggested Sources
DK_Qual		For elements where a qualitative check is appropriate, the Tool has been designed so that the assessing engineer can record the judgement on whether the structure is adequate or not (as opposed to automating it based on the defect details input). Defects are noted using a drop down list to show the basis of the judgement.	
DK_Qual		Elements are grouped together by similar type. For example all bearings are included in one table with one list of standard defects. So a noted crack could apply to any bearing. Greater details can be included, where necessary, by using the commenting facility.	
DK_Qual	Material	Select element material from drop down menu - 7 options (Masonry, Concrete, Steel, Wrought Iron, Cast Iron, Timber, N/A, Unknown).	DE - Last Detailed Examination report; IR - Last Inspection for Assessment report
DK_Qual	Defects	Record whether any defects have been identified. Select from drop down menu - 4 options (Yes, No, Unknown, N/A). These affect the recommendation for further action. Commenting excel facilities must be used to record the defects appropriately.	DE - Last Detailed Examination report; IR - Last Inspection for Assessment report
DK_Qual	Source	Select information source from drop down menu - 12 options (refer to tab "General" for information sources)	
DK_Qual	Qualitative assessment result	Record the qualitative assessment result from drop down menu - 3 options (Adequate, Inadequate, Indeterminate). Indeterminate should be selected when it has not been possible to determine the adequacy from the information available.	
DK_Qual	Question: Does the structure beneath the carriageway and the verge/footway differ?	Drop down menu - 3 options (Yes, No, N/A). This is needed for qualitative assessment of the verge/footway supporting structural elements.	
DK_Qual	Qualitative Result based on Minor Element	Choose the leading minor element (with the most significant defect) that the qualitative result is based on. If no defects, select the first relevant element code listed above this entry and choose an element number of 1 (e.g. BGL1).	

GUIDANCE NOTES



Level 0 Assessment Tool
Version OBC 3.1

Sheet name	Input data	Description	Suggested Sources
PPT_Qual	Parapet material	Select option from the drop down menu: <ul style="list-style-type: none"> • “Metal” • “Masonry” • “Concrete” • “Timber” • “Unknown” 	DE - Detailed Examination Report
PPT_Qual	Parapet containment (as-built condition)	The Assessor shall define the level of containment provided in the as built condition (e.g. irrelevant of condition). Select option from drop-down menu (note: the options available are a function of the material specified previously): <u>Metallic:</u> <ul style="list-style-type: none"> • “H4a parapet or welded steel half through type structure” • “N1 / N2 parapet or riveted steel / wrought iron half through type structure” • “Less than N1 parapet / cast iron” <u>Masonry:</u> <ul style="list-style-type: none"> • “Minimum thickness of 450mm and a height greater than 800mm” • “Minimum thickness of 450mm and a height greater than 1000mm” • “Minimum thickness of 350mm and a height greater than 1000mm” • “Minimum thickness less than 350mm and / or height greater than 1000mm” <u>Concrete:</u> <ul style="list-style-type: none"> • “H4a parapet” • “N1 / N2 parapet” • “Less than N1 parapet” 	DE - Detailed Examination Report
PPT_Qual	Containment provided (due to defects)	Based on the defects identified, the Assessor shall qualitatively assess whether the defects are considered to affect the performance of the parapet. Select option from drop-down menu: <ul style="list-style-type: none"> • “Observed defects do not adversely affect the containment provided” • “Observed defects may adversely affect the containment provided” • “Little or no containment level provided due to observed defects” 	DE - Detailed Examination Report

GUIDANCE NOTES



Level 0 Assessment Tool
Version OBC 3.1

Sheet name	Input data	Description	Suggested Sources
PPT_Qual	Parapet Condition	<p>Select option from drop-down menu – “Yes” or “No” for each type of defect listed (note: the defects listed are a function of the material specified previously):</p> <ul style="list-style-type: none"> • Strike damage (e.g. from previous vehicle incursions) • Metallic corrosion • Tears, fractures, cracked welds (for metallic parapets) • Buckling, permanent distortion (for metallic parapets) • Spalling or hollowness (for masonry or concrete parapets) • Cracking (e.g. hairline etc.) • Bulging, distortion or tilting (of masonry or concrete parapets) 	DE - Detailed Examination Report
PPT_Qual	Highway environment	<p>For the purposes of this Tool, the highway environment is defined by 7 parameters. These parameters are used to assess the probability of a Road Traffic Accident (RTA) occurring.</p> <p>The parameters and scoring are based on the Guidance Note Road Vehicle Incursions: Risk Assessment of Bridge and Neighbouring Sites (NR/GN/CIV/00012)</p> <p><u>Road alignment – horizontal</u></p> <p>Select option from drop-down menu:</p> <ul style="list-style-type: none"> • “Straight road with at least 7.3m carriageway” • “Straight road with less than 7.3m carriageway, or curved road with at least 7.3m carriageway” • “Curved road less than 7.3m carriageway” • “Reverse curves with less than 7.3m carriageway” <p><u>Road alignment – vertical</u></p> <p>Select option from drop-down menu:</p> <ul style="list-style-type: none"> • “Level or constant grade road” • “Slight hump back road” • “Hump back road where vehicles are inter-visible” • “Hump back road where vehicles are not inter-visible” 	DE - Detailed Examination Report Digital Mapping

GUIDANCE NOTES



Level 0 Assessment Tool
Version OBC 3.1

Sheet name	Input data	Description	Suggested Sources
PPT_Qual	Highway environment (cont.)	<p><u>Actual speed of road traffic</u> Select option from drop-down menu:</p> <ul style="list-style-type: none"> • “Less than 30mph” • “30mph or greater, but less than 50mph” • “50mph or greater, but less than 70mph” • “Greater than 70mph” <p><u>Site specific hazards</u> Site specific hazards increasing the likelihood of an RTA include the following features in proximity to the bridge: farm access, road junction, private driveway, lay-by, bus stop, school, hospital, etc. Select option from drop-down menu:</p> <ul style="list-style-type: none"> • “No obvious hazards” • “Single site specific hazard” • “Multiple site specific hazards and / or railway infrastructure likely to increase severity of incident” <p><u>Road verges and footpaths</u> Select option from drop-down menu:</p> <ul style="list-style-type: none"> • “Verge or footpath of at least 2m width to both sides of the road” • “Verge or footpath of at least 1m width to both sides of the road” • “Verge or footpath less than 1m to one or 	DE - Detailed Examination Report Digital Mapping
		<p><u>Road signage / carriageway markings</u> Select option from drop-down menu:</p> <ul style="list-style-type: none"> • “Signage / marking fit for purpose and clearly visible, or not needed” • “Signage / markings are not fit for purpose, non-existent or obscured” <p><u>Volume of road traffic</u> Select option from drop-down menu:</p> <ul style="list-style-type: none"> • “Less than 200 vehicles per day (e.g. lane or farm track)” • “Less than 2,000 vehicles per day (e.g. unclassified road)” • “Less than 7,150 vehicles per day (e.g. B classified road)” • “Less than 12,500 vehicles per day (e.g. A classified road)” • “More than 12,500 vehicles per day (e.g. primary / strategic routes)” 	

GUIDANCE NOTES



Level 0 Assessment Tool
Version OBC 3.1

Sheet name	Input data	Description	Suggested Sources
PPT_Results	Highway Environment	For each highway parameter considered on sheet "PPT_Qual", a level of risk is provided by the Tool, as summarised below: <ul style="list-style-type: none"> • "Green" – lowest risk with respect to an RTA occurring • "Amber" – medium risk with respect to an RTA occurring • "Red" – highest risk with respect to an RTA occurring 	
PPT_Results	Railway Environment	The route criticality is assessed within the Tool as a function of the ELR and mileage. Based upon the ELR and mileage input by the Assessor, the Tool will automatically look up the Strategic Route Section (SRS) applicable for this location. The SRS is then used by the Tool to assign a level of risk with respect to the consequence of an incident on the railway environment (e.g. cost of disruptions, unplanned possessions etc.)	
PPT_Results	Qualitative Assessment	An automated output is generated by the Tool as summarised below:	
PPT_Results	Output 1a	Provides the containment level (or comparative containment level) of the parapet in an <u>as-built condition</u> . The following outputs are available: <ul style="list-style-type: none"> • "H4a high containment" • "N2 normal containment (or comparative containment)" • "N1 normal containment (or comparative containment)" • "Less than N1 normal containment" 	

GUIDANCE NOTES



Level 0 Assessment Tool
Version OBC 3.1


Sheet name	Input data	Description	Suggested Sources
PPT_Results	Output 1b	<p>Provides the containment level (or comparative containment level) of the parapet in its <u>current condition</u>. This is based on the qualitative assessment of the parapet defects and the following logic:</p> <ul style="list-style-type: none"> • “Observed defects do not adversely affect the containment provided” <i>The containment level in the current condition will be that provided for the as built condition.</i> • “Observed defects may adversely affect the containment provided” <i>The containment level in the current condition will be a downgrading (of one category) of that provided for the as built condition, e.g. H4a containment (as built) will be reported as N2 containment (for the current condition).</i> • “Little or no containment level provided due to observed defects” <i>The containment level will be reported as less than N1 normal containment</i> 	
PPT_Results	Output 2	<p>Provides the level of risk associated with the highway and railway environment.</p> <ul style="list-style-type: none"> • Risk of an RTA is considered to be – “High” or “Low” • Consequence of an RTA on NR infrastructure is considered to be – “High” or “Low” <p>If the mileage entered for the structure is outside the extents of the ELR, no result will be provided and a message stating this will appear in the results. The mileage should be checked and amended if necessary.</p> <p>This output will also provide a recommended action based on the current parapet condition (and therefore the level of containment provided) and the risk of an RTA occurring / consequence of an RTA / incursion occurring.</p> <p>“Parapet containment level is...</p> <ul style="list-style-type: none"> • adequate • recommended for upgrade to H4a • considered to be a lower priority upgrade • recommended for upgrade to N2 or above <p>...based on the current condition”</p>	

GUIDANCE NOTES



**Level 0 Assessment Tool
Version OBC 3.1**

Sheet name	Input data	Description	Suggested Sources
ES_IS_Qual		For elements where a qualitative check is appropriate, the Tool has been designed so that the assessing engineer can record the judgement on whether the structure is adequate or not (as opposed to automating it based on the defect details input). Defects are noted using a drop down list to show the basis of the judgement.	
ES_IS_Qual		Elements are grouped together by similar type. For example all abutments and wing walls are included on one table with one list of standard defects. So a noted crack could apply to either abutment or any wing walls. Further details can be included, where necessary, by using the commenting facility.	
ES_IS_Qual	Material	Select element material from drop down menu - 7 options (Masonry, Concrete, Steel, Wrought Iron, Cast Iron, Timber, N/A, Unknown).	IR - Last Inspection for Assessment report; DE - Last Detailed Examination report
ES_IS_Qual	Defects	Record whether any defects have been identified. Select from drop down menu - 4 options (Yes, No, Unknown, N/A). These affect the recommendation for further action. Commenting excel facilities must be used to record the defects appropriately.	IR - Last Inspection for Assessment report; DE - Last Detailed Examination report
ES_IS_Qual	Source	Select information source from drop down menu - 12 options (refer to tab "General" for information sources)	
ES_IS_Qual	Qualitative assessment result	Record the qualitative assessment result from drop down menu - 3 options (Adequate, Inadequate, Indeterminate). Indeterminate should be selected when it has not been possible to determine the adequacy from the information available.	
ES_IS_Qual	Qualitative Result based on Minor Element	Choose the leading minor element (with the most significant defect) that the qualitative result is based on. If no defects, select the first relevant element code listed on the tab above this entry and add an element number of 1 (e.g. ABT1).	

GUIDANCE NOTES			
			Level 0 Assessment Tool Version OBC 3.1
Sheet name	Input data	Description	Suggested Sources
LL-Predef		Predefined live load is 40t HA Assessment live loading. For longitudinal and transverse elements different standards used as described. There are no cells for input.	

GUIDANCE NOTES



**Level 0 Assessment Tool
Version OBC 3.1**

Applicable only when NR Version activated


Sheet name	Input data	Description	Suggested Sources
LL-User		User defined live load can consist of one vehicle (2 or 4 wheels) with a maximum of 32 axles. Only longitudinal elements are analysed for User Defined Loads. No calculations are carried out for transverse elements.	
LL-User	No. of wheels per axle	This is for the User Defined Live Load. There are two options to select from the drop down menu, 2 or 4.	
LL-User	Name	This is free text to allow identification of the load applied.	
LL-User	Axle Weight	Up to 32 axles are permitted for the User Defined Live Load. Input the weight per axle (kN) including any dynamic, impact and overload factors where applicable.	
LL-User	Distance between axles	Input a distance in metres for all axles that are applicable.	
LL-User	glf for LL (ULS)	For HB loading use gamma fl=1.3 (see Cl. 1.1 BD 37/01 Table 3.1), for SOV/SV loads use gamma fl = 1.1 (see Cl. 2.6 BD 86/11 Table 2.1)	
LL-User	Wheel spacing, x4, x5, x6	These are the distances starting from the set datum. Datum is at the external face of the element at the high mileage, i.e. MGE1 or LSE1 (if present). The datum used for deck and subdeck width and for offsets must be the same as the datum used for User Defined Live Load. Notation used to identify ends of the deck in the Tool is left and right when facing high mileage. The Tool calculates and uses the average values and therefore a minimum of one set of wheel spacings for x4, x5 and x6 is required where four wheels per axle has been selected and only x4 is required where 2 wheels per axle has been selected. Refer to the sketch.	
LL-User	Wheel spacing, x3	Values for x3 should be entered for all MGs being assessed. The MGs being assessed should be selected for Assessment on the Deck tab.	

GUIDANCE NOTES



**Level 0 Assessment Tool
Version OBC 3.1**

Sheet name	Input data	Description	Suggested Sources
AssmtStatus	Assessment status	Select status of this assessment from the drop down menu - 3 options (Provisional, Updated, Revalidated). The assessment status will automatically be changed to Final once the Form BA0(1) is signed by the CRE.	
AssmtStatus	Outstanding actions -Review of record drawings	Select from drop down menu - options "Yes", "No" or "N/A".	
AssmtStatus	Outstanding actions -Site measurement of key/missing dimensions	Select from drop down menu - options "yes", "no" or "N/A". CRE is responsible for the review of the comments inserted for outstanding actions and making recommendations regarding site attendance to confirm/collect data.	
AssmtStatus	Outstanding actions - Confirmation of current condition	Select from drop down menu - options "Yes", "No" or "N/A".	
AssmtStatus	Outstanding actions - Other	Select from drop down menu - options "Yes", "No" or "N/A". If "yes" insert a comment.	
AssmtStatus	Reason/basis for update	Select from drop down menu - options "Bridge bash damage" or "Other".	
AssmtStatus	Reason/basis for revalidation	Select from drop down menu - 4 options (Reconfirmed at next DE, Review of current condition, Review of current use, Other)	

GUIDANCE NOTES			
			Level 0 Assessment Tool Version OBC 3.1
Sheet name	Input data	Description	Suggested Sources
CRE		Contractor's responsible Engineer's (CRE) recommendations to be written here.	

GUIDANCE NOTES



**Level 0 Assessment Tool
Version OBC 3.1**

Sheet name	Input data	Description	Suggested Sources
Form BA0(1)		First part of the Certificate	
Form BA0(1)	Address	Input the address of the Company responsible for the assessment in Royal Mail standard format.	
Form BA0(1)	Name/Signing Form BA0	Name of the CRE from the Assessing organisation.	
Form BA0(1)	Title/Signing Form BA0	Title of the CRE from the Assessing organisation. To be filled by the CRE.	
Form BA0(1)	Signing Form BA0	<p>The Form BA0(1) should only be signed by the CRE. After filling in the Name and Title, the CRE must either verify that the Tracking Tables have been populated and checked by selecting "Yes" from the provided dropdown box, or otherwise select "No" but provide justification as to why this has not been carried out. The CRE may then go to the Assessment tab and select "Sign Forms" to complete Form BA0 sign-off. It is the responsibility of the Assessor to ensure each form is signed by a competent and approved person. The signatures will be checked and approved by Network Rail Structures Managers. Completing the signing procedure will lock all the information in Form BA0(1) sheet.</p> <p>Before signing the Form BA0(1) form the inputs will be checked to ensure no changes have been made since the calculation was run. If changes have been made, the calculation must be re-run before signing the forms. The Form BA0(1) cannot be signed unless Tracking Table status has been verified (with either a 'Yes' response, or a 'No' response with accompanying justification) and all scenarios have been calculated using the 'Calculate Scenarios' > 'Calculate All' button. This is even the case if only Scenario 1 (predefined) is being used.</p>	

GUIDANCE NOTES



**Level 0 Assessment Tool
Version OBC 3.1**

Sheet name	Input data	Description	Suggested Sources
Form BA0(2)		Second part of the Certificate	
Form BA0(2)	Name/Signing Form BA0	Name of the Structure Manager, Network Rail.	
Form BA0(2)	Title/Signing Form BA0	Title of the Structure Manager, Network Rail. To be filled by the Structure Manager.	
Form BA0(2)	Signing Form BA0	<p>The Form BA0(2) should only be signed by the Structure Manager. After filling in the Name and Title, go to Assessment menu and select "Sign Forms". Completing the signing procedure will lock the relevant information in Form BA0(2) sheet (i.e. "Structures Manager's comments on assessment") and change the Assessment Status to "Final".</p> <p>Before signing the Form BA0(2) form the inputs will be checked to ensure no changes have been made since the calculation was run. If changes have been made, the calculation must be re-run before signing the forms.</p> <p>On signing, two XML files will be created which are used for adding assessment information to the Level 0 database and CSAMS database respectively.</p>	

GUIDANCE NOTES



Level 0 Assessment Tool
Version OBC 3.1

Sheet name	Input data	Description	Suggested Sources
EI_Loads		<p>Loading must be specified per element. Dead loads are calculated automatically based on midspan section properties for each element.</p> <p>Slabs acting in hogging are not assessed (e.g. overhanging the edge girder) and should be included as an additional sdl load relevant to the element being assessed.</p> <p>There are 3 options to specify SDLs: The user may input</p> <ul style="list-style-type: none"> a)Area and material b)Area and unit weight c)Direct loading input. <p>If the applicable partial factor is not 1.2 the input value has to be corrected with the ratio $gfL/1.2$.</p>	
EI_Loads	Units	Select units from drop down menu - 4 options (in, ft, m, mm)	
EI_Loads	Source	Select information source from drop down menu - 12 options (refer to tab "General" for information sources)	
EI_Loads	Surfacing material: Depth	<p>Surfacing material's depth is set by default equal to 100mm. In accordance with BD 21/01, Table 3.1, the top 100mm of road construction shall be considered as surfacing material and shall be factored by $gfL = 1.75$.</p> <p>Any additional depth of the road construction should be described as an area SDL. If a significant difference in depth occurs along the element, input the maximum depth and insert a comment. The depth more than 100mm shall be factored by 1.2.</p> <p>If the depth of road construction is less than 100mm or the road construction top 100mm are mixture of different materials the loading can be adjusted by adding additional area SDL with a minus sign.</p>	IR - Last Inspection for Assessment report
EI_Loads	Surfacing material: Material	Select the element material from the drop down menu. The menu includes all the options for materials in NR/GN/CIV/025-3, table 4.2 and will use the unit weight therein in calculating the SDL to apply. If the road construction top 100mm are mixture of different materials the heaviest material can be inputted and the loading can be adjusted by adding additional area SDL with a minus sign.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report

GUIDANCE NOTES



**Level 0 Assessment Tool
Version OBC 3.1**

Sheet name	Input data	Description	Suggested Sources
EI_Loads	Surfacing material: Unit Weight	Where the user selects the Material from the Material drop down menu, the Unit Weight (always in kg/m ³) in NR/GN/CIV/025-3 table 4.2 is considered. If no material has been selected from material drop down menu, input a value.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
EI_Loads	Loading width (for surfacing material)	This is the loading width per element for the surfacing material loading. It is usually equal to the elements' spacing, i.e. the spacing between main beams or slabs (if consider internal main beams/slabs). For transverse slab the loading width is set by default 2m. It is required since the capacity of transverse slab is calculated for 2m width.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
EI_Loads	SDLs: Name	Add name of another SDL if different than the SDLs pre-defined. All input units to be kN and m.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
EI_Loads	General comment	Additional SDLs may be input or calculated in the Tool. They are classified as either "Area loads" (e.g. waterproofing) or "Line loads" (e.g. parapets) when the deck plan is considered.	
EI_Loads	SDLs: Area loads: Depth	The user may input the depth (or thickness) of the element and the Tool will calculate the Area load to apply. Input must be in metres. (Refer to general comment for this Tab).	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
EI_Loads	SDLs: Area loads: Width	This is the loading width per element for the specified area loading. It is usually equal to the elements' spacing, i.e. the spacing between main beams or slabs (if consider internal main beams/slabs). For DCK element (transverse slab), the section capacity is calculated for a 2m width of the element, which require the loading to be entered also for a 2m width.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
EI_Loads	SDLs: Area loads: Loading	It may be input by the user if required. For DCK elements, the section capacity is calculated for a 2m width of element and this should be considered when entering loading. In the calculations a factor $g_f L = 1.2$ is applied to all additional loads that are not described by default name.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report

GUIDANCE NOTES



**Level 0 Assessment Tool
Version OBC 3.1**

Sheet name	Input data	Description	Suggested Sources
EI_Loads	SDLs: Line loads: Area	The user may input the area of the element and the Tool will calculate the line load to apply. Input must be in square metres. For DCK elements, the section capacity is calculated for a 2m width of element and this should be considered when entering loading dimensions. (Refer to general comment for this Tab). A factor $gfL = 1.2$ is applied to these loadings in the calculation.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
EI_Loads	SDLs: Material	Select the element material from the drop down menu. The menu includes all the options for materials in NR/GN/CIV/025-3, table 4.2 and will use the unit weight therein in calculating the SDL to apply. If no material has been selected from material drop down menu, input a value.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
EI_Loads	SDLs: Unit Weight	Where the user selects the Material from the Material drop down menu, the Unit Weight (always in kg/m^3) in NR/GN/CIV/025-3 table 4.2 is considered. If no material has been selected from material drop down menu, input a value.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
EI_Loads	SDLs: Line loads: Loading	A Line load (always in kN/m) may be input by the user if required.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
EI_Loads	Live Load: DCK: Distance, Start	This is the distance to the start of the DCK considered from the set datum. The datum is at the external face of the deck element at the high mileage end, i.e. MGE1 (or LSE1 if present). The DCK is assumed to span between the centres of the main beams MGs. (Refer to the sketch)	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
EI_Loads	Live Load (Offsets): Distances at DCK location, x1 -x2	These are the distances starting from the set datum. Datum is at the external face of the longitudinal deck element at the high mileage end, i.e. MGE1 or LSE1 (if present). The distance x1 is width of the footway or any unloaded part of the deck. The distance x2 is the carriageway width. The datum used for deck and subdeck width and for offsets must be the same. Refer to the sketch.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report

GUIDANCE NOTES



Level 0 Assessment Tool
Version OBC 3.1

Sheet name	Input data	Description	Suggested Sources
EI_Sections	Units (except Strength)	Select units from drop down menu - 4 options (in, ft, m, mm)	
EI_Sections	Source	Select information source from drop down menu - 12 options (refer to tab "General" for information sources)	
EI_Sections	Effective span	Refer to NR/GN/CIV/025 and sketch in the tab. Generally this is the distance between supports of the deck (slab or beams). Insert a comment how the effective span is calculated.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
EI_Sections	Overall length	Overall length of the deck (slab or beams).	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
EI_Sections	Loaded length	The length over which the live load is applied	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
EI_Sections	Cross section type	<p>Select cross section type from drop down menu. The options available depend on the form code selected: "RC Slab", "RC Beam", "RC Beam (flanged)", "Pre-tensioned Beam (Rectangular)" and "Pre-tensioned Beam (Invert T)".</p> <p>Where multiple spanning elements support the carriageway but are not connected together transversely select the (Discrete) option.</p> <p>Reinforced concrete slab sections and reinforced concrete beam sections are interchangeable in the Tool. The only difference is when inputting section properties, the flexural reinforcement for a slab is input as the bar diameter and spacing, whereas the reinforcement for a beam is input as the bar diameter and the total number of bars in the section defined.</p>	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
EI_Sections	Material strength type: Concrete	Select material strength type for from drop down menu - 2 options ("Concrete (Characteristic)" and "Concrete (Worst Credible)"). Refer to Clauses 7.2.2.1 and 7.2.2.2 in NR/GN/CIV/025 for more information.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report

GUIDANCE NOTES



Level 0 Assessment Tool
Version OBC 3.1

Sheet name	Input data	Description	Suggested Sources
EI_Sections	Material strength type: Reinforcement	Select material strength type for from drop down menu - 3 options ("Reinforcing Bars (Characteristic)", "Reinforcing Bars (Worst Credible)" and "N/A"). Refer to Clauses 7.2.2.1 and 7.2.2.2 in NR/GN/CIV/025 for more information. Select "N/A" if no reinforced concrete elements are being assessed.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
EI_Sections	Material strength type: Tendons	Select material strength type for from drop down menu - 3 options ("Tendons (Characteristic)", "Tendons (Worst Credible)" and "N/A"). Refer to Clauses 7.2.2.1 and 7.2.2.2 in NR/GN/CIV/025 for more information. Select "N/A" if no pre-tensioned concrete elements are being assessed.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
EI_Sections	28 day Concrete Strength	Input the cube strength of the concrete. Refer to Appendix B1 of NR/GN/CIV/025 for historical concrete grade details.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
EI_Sections	Tendon Strength	Input the strength of the pre-stressing tendons if applicable.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
EI_Sections	Tendon initial stress, i.e. at T=0	Input the initial stress applied to the pre-stressing tendons, i.e. the stress applied when the element was constructed, $T = 0$. Note that losses are considered elsewhere in the Tool. Leave blank if there are no pre-tensioned concrete elements being assessed.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
EI_Sections	Reinforcing Bars Strength (Flexural)	Input the strength of the main reinforcing bars (i.e. the reinforcement primarily resisting flexure).	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
EI_Sections	Reinforcing Bars Strength (Shear)	Input the strength of the shear reinforcing bars (i.e. the reinforcement primarily resisting shear, e.g. links).	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
EI_Sections	Strength: Units	Select material strength unit from drop down menu - 4 options("N/mm ² ", "MPa", "lb/in ² ", tons/in ²).	
EI_Sections	Elastic Modulus	This is automatically calculated based on NR/GN/CIV/025 clause 4.3.2B. Units are kN/mm ² .	NR/GN/CIV/025 clause 4.3.2B

GUIDANCE NOTES



**Level 0 Assessment Tool
Version OBC 3.1**

Sheet name	Input data	Description	Suggested Sources
El_Sections	Code	<p>Select the relevant position along the element from the drop down menu - 6 options:</p> <p>"Ed" :- end of element, shear assessed (full shear enhancement),</p> <p>"Md" :- middle of element, shear and bending assessed,</p> <p>"CR" :- reinforcement curtailment point or tendon debonding point, shear and bending assessed,</p> <p>"VE" :- location along element from the support where shear enhancement is no longer applicable, shear and bending assessed,</p> <p>"DS" :- damaged or deteriorated section, shear and bending assessed,</p> <p>These references are used to identify the positions where the elements are assessed in determining the "section reference".</p> <p>"AD" :- assessor defined section. Any point along the beam at which the assessor deems necessary to assess.</p> <p>These references are used to identify the positions where the elements are assessed in determining the "section reference".</p> <p>All sections should be entered with no empty rows between sections.</p>	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
El_Sections	No.	Select a reference number from the drop down menu - options from "1" to "9". Used for "section reference".	
El_Sections	Section Reference	<p>No manual input required: The section reference has been determined from the previous input. Consider the following example: For the external beam number 2 the full reference of the 2 default assessment check section references will be:</p> <p>MGE2-Ed1 at "d" m,</p> <p>MGE2-Md1 at midspan.</p>	

GUIDANCE NOTES



Level 0 Assessment Tool
Version OBC 3.1

Sheet name	Input data	Description	Suggested Sources
EI_Sections	Distance	<p>Input the distance from the start point of the element. Sections along the element are identified according to this distance. Note that start point of the element is defined as the beginning of the effective span. For all longitudinal elements the start point is at the left end when facing high mileage and for all transverse members at the high mileage end. The assessor must decide at what distance to assess the section where reinforcement is curtailed or tendons debonded. All sections should be entered sequentially with no empty rows between sections.</p> <p>A check for the shear where there is no shear enhancement (i.e. at 3d from the support) is recommended.</p>	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
EI_Sections	Condition	<p>Select appropriate condition description from the dropdown, choose from "As-built Condition", "Current Condition" and "Section with Defect".</p> <p>As-built Condition: The section has been taken as-built taking no account of deterioration.</p> <p>Current Condition: The section has been taken at a location of general deterioration.</p> <p>Section with Defect: The section has been taken at the location of a specific defect.</p>	DE - Last Detailed Examination report; IR - Last Inspection for Assessment report; BCMI - BCMI report
EI_Sections	Defect ID	If the condition of a section is chosen to be "Section with Defect", a Defect ID should be provided.	Detailed examination report
EI_Sections	In-situ slab fcu	Concrete strength of the in-situ slab. This should be the same material strength type as the main concrete strength .(used if section is composite)	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
EI_Sections	Concrete surface	The type of concrete surface between PTU and In-situ slab. Select from drop down menu, 'Type 1', 'Type 2'. Consult BS5400 7.4.2.3 for a detailed explanation on surface type. If unknown assume 'Type 2'.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
EI_Sections	Elastic Modulus of prestressing tendons.	The elastic modulus E.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
EI_Sections	Relaxation type	Select relaxation type from dropdown menu. 'Normal relaxation', 'Low relaxation', '"As drawn' wire', '"As spun' strand'	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report

GUIDANCE NOTES



Level 0 Assessment Tool
Version OBC 3.1

Sheet name	Input data	Description	Suggested Sources
Sec_RCS_Slab		This sheet may be used to input the section properties for a rectangular, reinforced concrete beam or slab. The bending reinforcement input in this sheet is the bar diameter and bar spacing.	
Sec_RCS_Slab	Source	Select information source from drop down menu - 12 options (refer to tab "General" for information sources)	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_RCS_Slab	Units	Select units from drop down menu - 4 options ("in", "ft", "m", "mm")	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_RCS_Slab	Depth	Vertical dimension. See the sketch provided.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_RCS_Slab	Breadth	Horizontal dimension. See the sketch provided. All slab sections considered in the Tool are rectangular and symmetrical about y-y axis. Generally the 'Breadth' input should equal the full width of the slab being assessed. For formcode DH-- where the slab represents the transverse spanning slab element (DCK), the breadth should be entered as 2m.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_RCS_Slab	Cover to outermost bar: Top	Distance from concrete top face to the top reinforcing bars. If there are no top reinforcing bars, input "0" (zero) or leave it blank.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_RCS_Slab	Cover to outermost bar: Bottom	Distance from concrete bottom face to the bottom reinforcing bars. If there are no bottom reinforcing bars, input "0" (zero) or leave it blank.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_RCS_Slab	Layer spacing	Clear distance between the bottom layer of reinforcement and the layer above. If there is only one layer of reinforcement, input "0" (zero).	RD - Record Drawings; AR - Last Assessment Report
Sec_RCS_Slab	Spacing	Distance between the reinforcing bar centres. Input "0" (zero) if there is no reinforcement in that layer or section.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report

GUIDANCE NOTES



Level 0 Assessment Tool
Version OBC 3.1

Sheet name	Input data	Description	Suggested Sources
Sec_RCS_Slab	Diameter	<p>Diameter of the effectively anchored reinforcing bars. Input "0" (zero) or leave it blank if there is no reinforcement in that layer or section.</p> <p>Note that the effective bar diameters may be input where bars in the section considered are not fully anchored, e.g. if the section being assessed is at a distance less than the anchorage required for a particular bar, the bar may be considered effective but its diameter reduced. Include calculation and justification as a comment.</p>	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_RCS_Slab	Corrosion Loss	The loss of bar sectional area due to corrosion, input as a percentage of the original bar sectional area. Maximum corrosion loss applicable for use in this Tool is 30%. Refer to NR/GN/CIV/025 clause 7.2.3. Input "0" (zero) or leave it blank if no section loss is to be considered or is there is no reinforcement in that particular layer.	AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_RCS_Slab	Are bars effectively anchored?	Only effectively anchored flexural steel may be considered in calculating shear enhancement. The assessor can select "Yes" or "No" from the drop down list. If "No" is selected, the shear reinforcement will be considered ineffective and no shear enhancement will be permitted.	RD - Record Drawings; AR - Last Assessment Report
Sec_RCS_Slab	No. of shear legs	The number of effectively anchored shear legs the transverse section (i.e. within the breadth, "b"). The shear legs may be vertical or bent up. (Note that inclined links must be input as bent up bars). See the sketch provided. A numerical value must be entered. Input "0" (zero) if there are no shear legs. Note that the assessor must only consider and input properties of the bent up bars or inclined links where they comply with the recommendations in BA 44 cl. 5.3.3.2.	AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_RCS_Slab	Angle ($30^\circ < \alpha \leq 45^\circ$)	The angle between the bent up bars (where they exist) and the horizontal. See the sketch provided. Where the angle exceeds 45° the assessor should refer to BA 44/96 cl. 5.3.3.2.	RD - Record Drawings; AR - Last Assessment Report

GUIDANCE NOTES



**Level 0 Assessment Tool
Version OBC 3.1**

Sheet name	Input data	Description	Suggested Sources
Sec_RCB_Beam		This sheet may be used to input the section properties for a rectangular, reinforced concrete slab or beam. The bending reinforcement input in this sheet is the bar diameter and number of bars.	
Sec_RCB_Beam	Source	Select information source from drop down menu - 12 options (refer to tab "General" for information sources)	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_RCB_Beam	Units	Select units from drop down menu - 4 options ("in", "ft", "m", "mm")	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_RCB_Beam	Depth	Vertical dimension. See the sketch provided.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_RCB_Beam	Breadth	Horizontal dimension. See the sketch provided. All beam or slab sections considered in the Tool are rectangular and symmetrical about y-y axis. Generally the 'Breadth' input should equal the 'Loading width' for discrete beams and slabs.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_RCB_Beam	Cover to outermost bar: Top	Distance from concrete top face to the top reinforcing bars. If there are no top reinforcing bars, input "0" (zero) or leave it blank.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_RCB_Beam	Cover to outermost bar: Bottom	Distance from concrete bottom face to the bottom reinforcing bars. If there are no bottom reinforcing bars, input "0" (zero) or leave it blank.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_RCB_Beam	Cover to outermost bar: Side	Distance from concrete side faces to the shear reinforcing bars (links). If there are no shear reinforcing bars, input "0" (zero) or leave it blank.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_RCB_Beam	Layer spacing	Clear distance between the bottom layer of reinforcement and the layer above. If there is only one layer of reinforcement, input "0" (zero) or leave it blank.	RD - Record Drawings; AR - Last Assessment Report
Sec_RCB_Beam	Diameter	Diameter of the reinforcing bars. Input "0" (zero) or leave it blank if there is no reinforcement in that layer or section.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report

GUIDANCE NOTES



Level 0 Assessment Tool
Version OBC 3.1

Sheet name	Input data	Description	Suggested Sources
Sec_RCB_Beam	No. of bars	<p>The number of effectively anchored reinforcement bars in the section (i.e. within the breadth, "b"). A numerical value must be entered. Input "0" (zero) if there are no reinforcing bars in the section.</p> <p>Note that the number of effective bars should be calculated at the section being assessed, taking into account whether they are fully anchored or not, e.g. if the section being assessed is at a distance less than the anchorage required for a particular bar, a percentage of the bar may be considered effective and included. Include calculation and justification as a comment.</p>	RD - Record Drawings; AR - Last Assessment Report
Sec_RCB_Beam	Corrosion Loss	The loss of bar sectional area due to corrosion, input as a percentage of the original bar sectional area. Maximum corrosion loss applicable for use in this Tool is 30%. Refer to NR/GN/CIV/025 clause 7.2.3. Input "0" (zero) or leave it blank if no section loss is to be considered.	AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_RCB_Beam	Are bars effectively anchored?	Only effectively anchored flexural steel may be considered in calculating shear enhancement. The assessor can select "Yes" or "No" from the drop down list. If "No" is selected, the shear reinforcement will be considered ineffective and no shear enhancement will be permitted.	RD - Record Drawings; AR - Last Assessment Report
Sec_RCB_Beam	No. of shear legs	The number of effectively anchored shear legs the transverse section (i.e. within the breadth, "b"). The shear legs may be vertical or bent up. (Note that inclined links must be input as bent up bars). See the sketch provided. A numerical value must be entered. Input "0" (zero) if there are no shear legs. Note that the assessor must only consider and input properties of the bent up bars or inclined links where they comply with the recommendations in BA 44 cl. 5.3.3.2.	AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_RCB_Beam	Spacing	Distance between the reinforcing bar centres. Input "0" (zero) or leave it blank if there are no links (vertical) or bent up bars.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_RCB_Beam	Angle ($30^{\circ} < \alpha \leq 45^{\circ}$)	The angle between the bent up bars (where they exist) and the horizontal. See the sketch provided. Where the angle exceeds 45° the assessor should refer to BA 44/96 cl. 5.3.3.2.	RD - Record Drawings; AR - Last Assessment Report

GUIDANCE NOTES



Level 0 Assessment Tool
Version OBC 3.1

Sheet name	Input data	Description	Suggested Sources
Sec_RCF_Beam		This sheet may be used to input the section properties for a reinforced concrete flanged beam, formed from a rectangular beam plus a width of transverse slab. All flanged beams are considered symmetrical about the y-y axis.	
Sec_RCF_Beam	Source	Select information source from drop down menu - 12 options (refer to tab "General" for information sources)	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_RCF_Beam	Units	Select units from drop down menu - 4 options ("in", "ft", "m", "mm")	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_RCF_Beam	Beam depth	Vertical dimension of the effective flanged beam. See the sketch provided.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_RCF_Beam	Flange breadth	Horizontal dimension of the width of slab forming the flanged beam. See the sketch provided. Generally the 'Flange Breadth' input should equal the 'Loading width' for flanged beams. The assessor must take care inputting the width of the flange to avoid applying excessive dead load (flange breadth of adjacent sections overlap) or miss dead load (flange breadth of adjacent section does not account for the full width of the slab forming the flanged beam).	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_RCF_Beam	Flange thickness	Vertical dimension of the slab forming the flanged beam. See the sketch provided.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_RCF_Beam	Web breadth	Horizontal dimension of the beam section forming the flanged beam. See the sketch provided.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_RCF_Beam	Cover to outermost bar: Top	Distance from concrete top face to the top reinforcing bars. If there are no top reinforcing bars, input "0" (zero) or leave it blank.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_RCF_Beam	Cover to outermost bar: Bottom	Distance from concrete bottom face to the bottom reinforcing bars. If there are no bottom reinforcing bars, input "0" (zero) or leave it blank.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_RCF_Beam	Cover to outermost bar: Side	Distance from concrete side faces to the shear reinforcing bars (links). If there are no shear reinforcing bars, input "0" (zero) or leave it blank.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_RCF_Beam	Layer spacing	Clear distance between the bottom layer of reinforcement and the layer above in the beam section. If there is only one layer of reinforcement, input "0" (zero) or leave it blank.	RD - Record Drawings; AR - Last Assessment Report

GUIDANCE NOTES



Level 0 Assessment Tool
Version OBC 3.1

Sheet name	Input data	Description	Suggested Sources
Sec_RCF_Beam	Diameter	Diameter of the reinforcing bars. Input "0" (zero) or leave it blank if there is no reinforcement in that layer or section.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_RCF_Beam	No. of bars	<p>The number of effectively anchored reinforcement bars in the section (i.e. within the breadth, "b"). A numerical value must be entered. Input "0" (zero) if there are no reinforcing bars in the section.</p> <p>Note that the number of effective bars should be calculated at the section being assessed, taking into account whether they are fully anchored or not, e.g. if the section being assessed is at a distance less than the anchorage required for a particular bar, a percentage of the bar may be considered effective and included. Include calculation and justification as a comment.</p>	RD - Record Drawings; AR - Last Assessment Report
Sec_RCF_Beam	Corrosion Loss	The loss of bar sectional area due to corrosion, input as a percentage of the original bar sectional area. Maximum corrosion loss applicable for use in this Tool is 30%. Refer to NR/GN/CIV/025 clause 7.2.3. Input "0" (zero) or leave it blank if no section loss is to be considered.	AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_RCF_Beam	Are bars effectively anchored?	Only effectively anchored flexural steel may be considered in calculating shear enhancement. The assessor can select "Yes" or "No" from the drop down list. If "No" is selected, the shear reinforcement will be considered ineffective and no shear enhancement will be permitted.	RD - Record Drawings; AR - Last Assessment Report
Sec_RCF_Beam	No. of shear legs	The number of effectively anchored shear legs the transverse section (i.e. within the breadth, "b"). The shear legs may be vertical or bent up. (Note that inclined links must be input as bent up bars). See the sketch provided. A numerical value must be entered. Input "0" (zero) if there are no shear legs. Note that the assessor must only consider and input properties of the bent up bars or inclined links where they comply with the recommendations in BA 44 cl. 5.3.3.2.	AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_RCF_Beam	Spacing	Distance between the reinforcing bar centres. Input "0" (zero) or leave it blank if there are no links (vertical) or bent up bars.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_RCF_Beam	Angle ($30^\circ < \alpha \leq 45^\circ$)	The angle between the bent up bars (where they exist) and the horizontal. See the sketch provided. Where the angle exceeds 45° the assessor should refer to BA 44/96 cl. 5.3.3.2.	RD - Record Drawings; AR - Last Assessment Report

GUIDANCE NOTES



Level 0 Assessment Tool
Version OBC 3.1

Sheet name	Input data	Description	Suggested Sources
Sec_PTR_Beam		This sheet may be used to input the section properties for a rectangular, pre-tensioned concrete beam with or without insitu concrete above.	
Sec_PTR_Beam	Source	Select information source from drop down menu - 12 options (refer to tab "General" for information sources)	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_PTR_Beam	Units	Select units from drop down menu - 4 options ("in", "ft", "m", "mm") except for Area of strand/wire where assessor to select from 4 options ("in^2", "ft^2", "m^2", "mm^2").	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_PTR_Beam	Depth	Vertical dimension of the pre-tensioned beam. See the sketch provided.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_PTR_Beam	Width	Horizontal dimension of the pre-tensioned beam. See the sketch provided. All beams considered in the Tool are rectangular and symmetrical about y-y axis. Generally the 'Width' input should equal the 'Loading width'.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_PTR_Beam	Diameter	Diameter of the shear reinforcement (links), pre-stressing tendons or tension reinforcement. Input "0" (zero) or leave it blank if there is no reinforcement in that section. Pre-tensioned beam sections must have tendon details input.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_PTR_Beam	Corrosion Loss	The loss of bar or tendon sectional area due to corrosion, input as a percentage of the original bar sectional area. Maximum corrosion loss applicable for use in this Tool is 30%. Refer to NR/GN/CIV/025 clause 7.2.3. Input "0" (zero) or leave it blank if no section loss is to be considered.	AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_PTR_Beam	Shear Reinforcement: Spacing	Distance between the shear reinforcement (vertical links) bar centres. Input "0" (zero) or leave it blank if there are no links.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_PTR_Beam	No. of shear legs	The number of effectively anchored shear legs the transverse section (i.e. within the width, "b"). The shear legs must be vertical. A numerical value must be entered. Input "0" (zero) if there are no shear legs.	AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_PTR_Beam	Type of Pre-stressing Tendons	Select tendon type from drop down menu - 6 options ("Plain wire, wave height < 0.15Φ", "Indented wire, wave height < 0.15Φ", "Crimped wire, wave height < 0.15Φ", "Crimped wire, wave height t ≥ 0.15Φ", "7-wire standard and super strand", "7-wire drawn or compacted strand").	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report

GUIDANCE NOTES



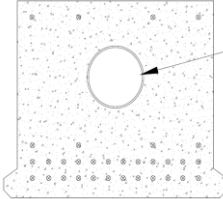
**Level 0 Assessment Tool
Version OBC 3.1**

Sheet name	Input data	Description	Suggested Sources
Sec_PTR_Beam	Area per strand/wire	The area of each strand or wire.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_PTR_Beam	Layer: No.	<p>The number of effectively anchored tendons in each layer. Where the section assessed is within the transmission zone of a number of tendons, the number of tendons should be calculated based on the number of tendons multiplied by the percentage of the transmission length the section is assessed.</p> <p>All tendons are assumed horizontal.</p> <p>A numerical value must be entered. Input "0" (zero) or leave it blank if there are no tendons in that layer.</p>	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_PTR_Beam	Distance to soffit	Distance from the pre-tensioned beam soffit to the centre of the tendons in the layer.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_PTR_Beam	FOR INFORMATION ONLY	<p>An indication of the transmission length is given to aid in the calculation of the equivalent number of effective tendons at the section, to be entered into cells B34:B38.</p> <p>Space is also given in cells G34:I38 to input the actual number of tendons at the section, as a reference (these values not used in Tool calculations).</p>	
Sec_PTR_Beam	No. of bars	<p>The number of effectively anchored reinforcement bars in the section (i.e. within the breadth, "b"). A numerical value must be entered. Input "0" (zero) if there are no reinforcing bars in the section.</p> <p>Note that the number of effective bars should be calculated at the section being assessed, taking into account whether they are fully anchored or not, e.g. if the section being assessed is at a distance less than the anchorage required for a particular bar, a percentage of the bar may be considered effective and included. Include calculation and justification as a comment.</p>	RD - Record Drawings; AR - Last Assessment Report
Sec_PTR_Beam	Concrete cover (soffit)	Distance from the pre-tensioned beam soffit to the bottom reinforcing bars.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report

GUIDANCE NOTES



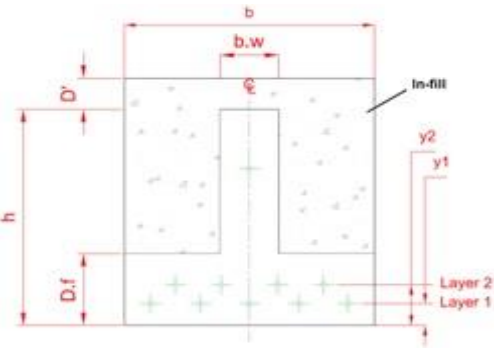
**Level 0 Assessment Tool
Version OBC 3.1**

Sheet name	Input data	Description	Suggested Sources
Sec_PTR_Beam	No. of service ducts	The number of circular ducts within the effective section. Input "0" (zero) if there are no ducts.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_PTR_Beam	Dia. of service duct	<p>The outer diameter of any circular ducts within the effective section. Input "0" (zero) or leave it blank if there are no ducts.</p> 	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_PTR_Beam	Depth (centre to soffit)	The distance from the pre-tensioned beam soffit to the centre of the duct. Input "0" (zero) or leave it blank if there are no ducts.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report

GUIDANCE NOTES



Level 0 Assessment Tool
Version OBC 3.1

Sheet name	Input data	Description	Suggested Sources
Sec_PTT_Beam		This sheet may be used to input the section properties for a Tee shaped pre-tensioned concrete beam with insitu concrete surround and above.	
Sec_PTT_Beam	Source	Select information source from drop down menu - 12 options (refer to tab "General" for information sources)	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_PTT_Beam	Units	Select units from drop down menu - 4 options ("in", "ft", "m", "mm") except for Area of strand/wire where assessor to select from 4 options ("in^2", "ft^2", "m^2", "mm^2").	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_PTT_Beam	Geometry	<p>When entering the geometry of the Tee pre-tensioned beam it must be approximated to two rectangles forming a "T". Care must be taken to not underestimate the size of the pre-tensioned beam. A sketch below is provided for guidance. The outline in red defines the approximate geometry that should be entered.</p> 	
Sec_PTT_Beam	Width	Horizontal dimension of the pre-tensioned beam. See the sketch provided. Generally the 'Width' input should equal the 'Loading width'.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_PTT_Beam	Depth	Vertical dimension of the pre-tensioned beam. See the sketch provided.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_PTT_Beam	Web breadth	Horizontal dimension of the stem of the pre-tensioned beam. See the sketch provided.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_PTT_Beam	Infill depth (top)	Vertical dimension of the pre-tensioned beam. See the sketch provided. The topping infill is not included in automatic calculation of dead load of elements. It must be entered separately as an SDL.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report

GUIDANCE NOTES



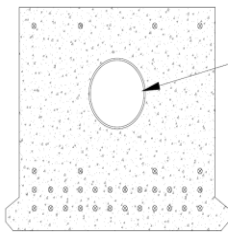
**Level 0 Assessment Tool
Version OBC 3.1**

Sheet name	Input data	Description	Suggested Sources
Sec_PTT_Beam	Flange Depth	Vertical dimension of the flange.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_PTT_Beam	Diameter	Diameter of the shear reinforcement (links in the web), prestressing tendons or tension reinforcement. Input "0" (zero) or leave it blank if there is no reinforcement in that section. Pre-tensioned beam sections must have tendon details input.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_PTT_Beam	Corrosion Loss	The loss of bar or tendon sectional area due to corrosion, input as a percentage of the original bar sectional area. Maximum corrosion loss applicable for use in this Tool is 30%. Refer to NR/GN/CIV/025 clause 7.2.3. Input "0" (zero) or leave it blank if no section loss is considered.	AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_PTT_Beam	Shear Reinforcement: Spacing	Distance between the shear reinforcement (vertical links) bar centres. Input "0" (zero) or leave it blank if there are no links.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_PTT_Beam	No. of shear legs	The number of effectively anchored shear legs the transverse section (i.e. within the width, "b _w "). The shear legs must be vertical. A numerical value must be entered. Input "0" (zero) if there are no shear legs.	AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_PTT_Beam	Type of Prestressing Tendons	Select tendon type from drop down menu - 5 options ("cold-drawn wire", "cold-drawn wire in mill coil", "7-wire standard", "7-wire super", "7-wire drawn").	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_PTT_Beam	Area per strand/wire	The area of each strand or wire.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_PTT_Beam	Layer: No.	The number of effectively anchored tendons in each layer. See the sketch provided. A numerical value must be entered. A numerical value must be entered. Input "0" (zero) or leave it blank if there are no tendons in that layer.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_PTT_Beam	Distance to soffit	Distance from the pre-tensioned beam soffit to the centre of the tendons in the layer.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report

GUIDANCE NOTES



Level 0 Assessment Tool
Version OBC 3.1

Sheet name	Input data	Description	Suggested Sources
Sec_PTT_Beam	FOR INFORMATION ONLY	An indication of the transmission length is given to aid in the calculation of the equivalent number of effective tendons at the section, to be entered into cells B34:B38. Space is also given in cells G34:I38 to input the actual number of tendons at the section, as a reference (these values not used in Tool calculations).	
Sec_PTT_Beam	No. of bars	The number of effectively anchored reinforcement bars in the section (i.e. within the breadth, "b"). A numerical value must be entered. Input "0" (zero) if there are no reinforcing bars in the section.	RD - Record Drawings; AR - Last Assessment Report
Sec_PTT_Beam	Concrete cover (soffit)	Distance from the pre-tensioned beam soffit to the bottom reinforcing bars.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_PTT_Beam	No. of service ducts	The number of circular ducts within the effective section. Input "0" (zero) if there are no ducts.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_PTT_Beam	Dia. of service duct	The outer diameter of any circular ducts within the effective section. Input "0" (zero) or leave it blank if there are no ducts. 	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_PTT_Beam	Depth (centre to soffit)	The distance from the pre-tensioned beam soffit to the centre of the duct. Input "0" (zero) or leave it blank if there are no ducts.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_PTT_Beam	Depth (centre to soffit)	The distance from the pre-tensioned beam soffit to the centre of the duct. Input "0" (zero) if there are no ducts.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report

GUIDANCE NOTES



Level 0 Assessment Tool
Version OBC 3.1

Sheet name	Input data	Description	Suggested Sources
Sec_PTU_Beam		This sheet may be used to input the section properties for a U shaped pre-tensioned concrete beam with insitu concrete slab above.	
Sec_PTT_Beam	Source	Select information source from drop down menu - 12 options (refer to tab "General" for information sources)	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_PTT_Beam	Units	Select units from drop down menu - 4 options ("in", "ft", "m", "mm") except for Area of strand/wire where assessor to select from 4 options ("in^2", "ft^2", "m^2", "mm^2").	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_PTT_Beam	Geometry	<p>When entering the geometry of the U pre-tensioned beam it must be approximated inline with the tool inputs. Care must be taken to not underestimate the size of the pre-tensioned beam, however it must be conservative.</p>	
Sec_PTT_Beam	Width	Horizontal dimension of the pre-tensioned beam. See the sketch provided. Generally the 'Width' input should equal the 'Loading width'.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_PTT_Beam	Web breadth	Horizontal dimension of a single stem of the pre-tensioned U beam, (b_w) See the sketch provided.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_PTU_Beam	U Beam depth	Vertical dimension of the prestressed U beam (d). See the sketch provided.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_PTU_Beam	Flange Depth	Vertical dimension of the flange (df).	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_PTU_Beam	Web Angle	Angle between web external and horizontal (Θ). Input in Degrees.	
Sec_PTU_Beam	Width of Slab	Width of slab (w).	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report

GUIDANCE NOTES



Level 0 Assessment Tool
Version OBC 3.1

Sheet name	Input data	Description	Suggested Sources
Sec_PTU_Beam	Slab thickness	Vertical dimension of the in-situ slab. See the sketch provided (t). The in-situ slab is not included in automatic calculation of dead load of elements. It must be entered separately as an SDL.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_PTU_Beam	Diameter	Diameter of the shear reinforcement (links in the web), prestressing tendons or tension reinforcement. Input "0" (zero) or leave it blank if there is no reinforcement in that section. Pre-tensioned beam sections must have tendon details input.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_PTU_Beam	Corrosion Loss	The loss of bar or tendon sectional area due to corrosion, input as a percentage of the original bar sectional area. Maximum corrosion loss applicable for use in this Tool is 30%. Refer to NR/GN/CIV/025 clause 7.2.3. Input "0" (zero) or leave it blank if no section loss is considered.	AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_PTU_Beam	Shear Reinforcement: Spacing	Distance between the shear reinforcement (vertical links) bar centres. Input "0" (zero) or leave it blank if there are no links.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_PTU_Beam	No. of shear legs	The number of effectively anchored shear legs the transverse section (i.e. within the width, "b _w "). The shear legs must be vertical. A numerical value must be entered. Input "0" (zero) if there are no shear legs.	AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_PTU_Beam	Type of Prestressing Tendons	Select tendon type from drop down menu - 5 options ("cold-drawn wire", "cold-drawn wire in mill coil", "7-wire standard", "7-wire super", "7-wire drawn").	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_PTU_Beam	Diameter	The diameter of the prestressing tendons.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_PTU_Beam	Area per strand/wire	The area of each strand or wire.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_PTU_Beam	Corrosion Loss	The loss of bar or tendon sectional area due to corrosion, input as a percentage of the original bar sectional area. Maximum corrosion loss applicable for use in this Tool is 30%. Refer to NR/GN/CIV/025 clause 7.2.3. Input "0" (zero) or leave it blank if no section loss is considered.	

GUIDANCE NOTES



Level 0 Assessment Tool
Version OBC 3.1

Sheet name	Input data	Description	Suggested Sources
Sec_PTU_Beam	Layer: No.	The number of effectively anchored tendons in each layer. See the sketch provided. A numerical value must be entered. A numerical value must be entered. Input "0" (zero) or leave it blank if there are no tendons in that layer.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_PTU_Beam	Distance to soffit	Distance from the pre-tensioned beam soffit to the centre of the tendons in the layer.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_PTU_Beam	FOR INFORMATION ONLY	An indication of the transmission length is given to aid in the calculation of the equivalent number of effective tendons at the section, to be entered into cells B38:B42. Space is also given in cells G38:I42 to input the actual number of tendons at the section, as a reference (these values not used in Tool calculations).	
Sec_PTU_Beam	No. of bars	The number of effectively anchored reinforcement bars in the section (i.e. within the breadth, "b"). A numerical value must be entered. Input "0" (zero) if there are no reinforcing bars in the section.	RD - Record Drawings; AR - Last Assessment Report
Sec_PTU_Beam	Concrete cover (soffit)	Distance from the pre-tensioned beam soffit to the bottom reinforcing bars.	RD - Record Drawings; AR - Last Assessment Report; IR - Last Inspection for Assessment report
Sec_PTU_Beam	Longitudinal shear reinforcement (between U Beam and slab) - Diameter	Diameter of reinforcement crossing the longitudinal shear interface between the U beam and the slab	RD - Record Drawings; AR - Last Assessment Report
Sec_PTU_Beam	Longitudinal shear reinforcement (between U Beam and slab) - Spacing	Longitudinal spacing (along the length of the beam) of reinforcement crossing the longitudinal shear interface between the U beam and the slab	RD - Record Drawings; AR - Last Assessment Report
Sec_PTU_Beam	Longitudinal shear reinforcement (between U Beam and slab) - No. bars	Number of reinforcement bars crossing the longitudinal shear interface between the U beam and the slab	RD - Record Drawings; AR - Last Assessment Report