

National Highways

Benchmark Apps

Parametric Models User Guide

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Table of Contents

Benchmark Apps - Parametric Models Overview	5
Prerequisites	6
Accessing Parametric Models	7
Accessing the App from Benchmark	7
Accessing the App from LoadSpring	8
Navigating the App.....	8
Landing Page	8
Summary Page	9
Managing User Access	10
Setting Up New Access.....	10
Modifying User Access	12
Deleting User Access.....	12
Viewing Access History	13
Creating New Model Instances.....	14
Indirect Works (Prelims)	14
Viewing the BQ.....	17
Regional Investment Programme (RIP).....	19
Viewing the BQ.....	22
Smart Motorway Program (SMP).....	23
Viewing the BQ.....	27
Structure	28
Viewing the BQ.....	30
Other Functions	32
Searching Model Instances	32
Saving Model Instances	33
Adding Comments.....	34
Archiving Model Instances.....	35
Copying Model Instances.....	36
Logging Out.....	37
Appendix	38
Indirect Works.....	38
Primary Input	38
TTM Input.....	38

Scaffold Input	38
Temp Retaining Input.....	39
Regional Investment Programme (RIP).....	39
Roadworks.....	39
Earthworks	40
Drainage	41
Carriageway.....	41
Signs & Lighting	43
Smart Motorway Program (SMP).....	44
Roadworks.....	44
Earthworks	45
Carriageway.....	46
Drainage	47
Signs & Lighting	48
Structure	49
Box Culverts	49
Footbridges	49
Gantries.....	49
Overbridges.....	50
Piped Culverts	51
Retaining Walls.....	51
Underbridges.....	51
Viaducts.....	52

Benchmark Apps - Parametric Models Overview

Benchmark apps, built using Microsoft Power Apps, offer an intuitive, cloud-hosted solution for Parametric Models. This application allows Estimators to perform a two-step process, where:

- Estimators can input details about the works to be undertaken in a sophisticated app interface to produce the list of quantities and review these quantities.
- These quantities are then priced in Benchmark i.e., the Bill of Quantity (BQ or BOQ) is then created back in Benchmark.

Estimators can also view a summarised or full version of the BQ in the app. At this stage, the BQ in the app is read-only.

Prerequisites

To use the Parametric Models feature in Benchmark, you must have:

- Access to Microsoft Power Apps in your organisation.
- Permission to use the Parametric Models app in Power Apps.
- PowerApps URL configured in Administration > Integration Settings > PowerApps.
Contact your system administrator for more information.
- Parametric Models Library role-based or individual access. An administrator can provide the relevant level of this access to the estimator from the [Estimator Library](#) or [Role Based Access](#) windows.

Access	Role Based Access
Disallow change to Project status after Wo	No
Custom Export Library	Read, Edit, Add, Delete
Run Inactive Routines in a Project	No
Reports/Exports	View
Allow editing in Project Mark-up Calculato	Yes
Workflow	Read, Edit, Add, Delete
Mark-Up/On-Cost/TEF Calculation Library	Read, Edit, Add, Delete
Do not allow Project Client to be edited	No
Mark-Up/On-Cost/TEF Percentage Settings	Read, Edit, Add, Delete
Display Workbank on My Benchmark	Yes
Parametric Models Library	Read, Edit, Add, Delete

Accessing Parametric Models

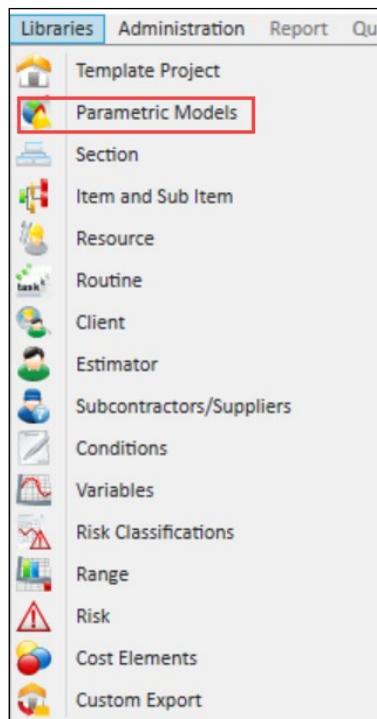
You can access the Parametric Models feature from:

- [Benchmark](#)
- [LoadSpring Homepage](#)

Accessing the App from Benchmark

From the main Benchmark menu:

1. In the **My Benchmark** window, select **Libraries**.
2. Select **Parametric Models**.



3. Open the relevant **Project Section** or **Composite Total**.
4. Select the **Parametric Model**  icon in the toolbar. Alternatively, use the right-click menu option.
5. The app will open in your web browser.



You can continue working in Benchmark when the Parametric Models app is open.

Accessing the App from LoadSpring

You can access the Parametric Models app from the LoadSpring Homepage.

1. Go to the LoadSpring homepage.
2. From My Applications section, select Benchmark Apps - Parametric Models.
The app opens in your web browser.

Navigating the App

There are several model types available and in development for this feature. In this document, we will look at some of the implemented model types, such as Indirect Works and Regional Investment Programme (RIP).

The Indirect Works model is also called the Preliminary model or Prelims model.



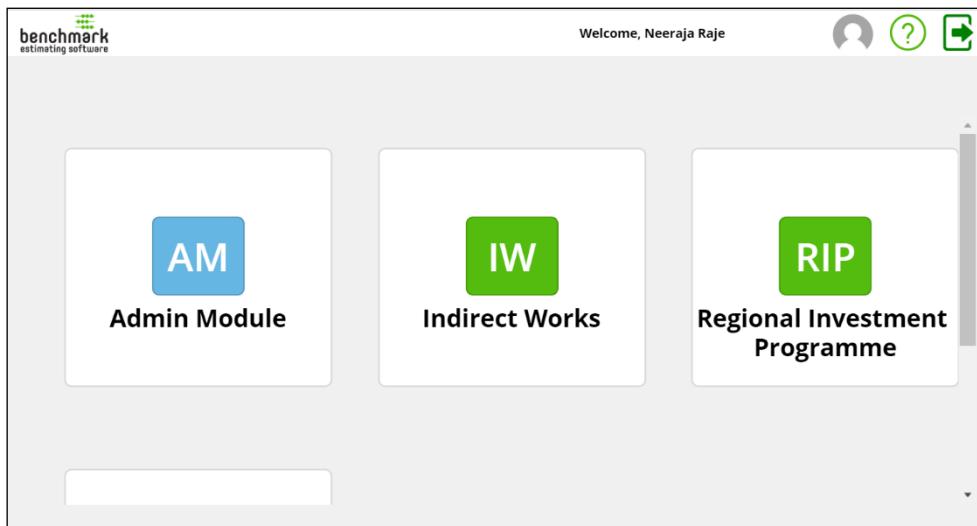
Landing Page

The app landing page allows you to select a model type to view the saved, submitted and archived model instances or create a new one.



Only users with an Administrator role for this application in Power Apps will have access to the Admin Module.

Use the scroll bar on this page to view all the model types available to you.

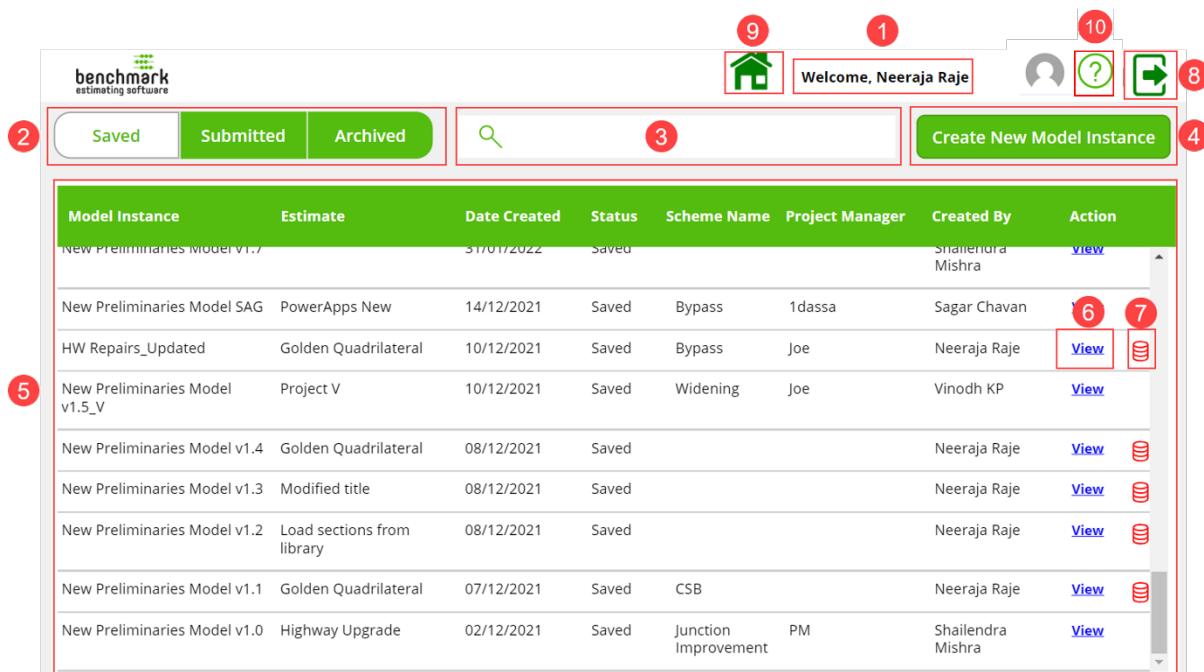


The screenshot shows the Parametric Models app landing page. At the top, there is a header with the benchmark logo, a welcome message "Welcome, Neeraja Raje", and user profile icons. Below the header, there are three large cards representing different model types:

- Admin Module (AM)**: Represented by a blue button with the letters "AM".
- Indirect Works (IW)**: Represented by a green button with the letters "IW".
- Regional Investment Programme (RIP)**: Represented by a green button with the letters "RIP".

A vertical scroll bar is visible on the right side of the page.

Summary Page



The screenshot shows the Summary Page interface. At the top, there is a navigation bar with icons for Home (9), Welcome (1), Help (10), Logout (8), and a search bar (3). Below the navigation bar is a toolbar with buttons for Saved (2), Submitted, Archived, a search icon, and Create New Model Instance (4). The main area displays a grid of model instances (5) with columns for Model Instance, Estimate, Date Created, Status, Scheme Name, Project Manager, Created By, and Action (View and Archive). The first instance in the grid is highlighted.

Model Instance	Estimate	Date Created	Status	Scheme Name	Project Manager	Created By	Action
New Preliminaries Model v1.7		31/07/2022	Saved			Shailendra Mishra	View
New Preliminaries Model SAG	PowerApps New	14/12/2021	Saved	Bypass	1dassa	Sagar Chavan	View 
HW Repairs_Updated	Golden Quadrilateral	10/12/2021	Saved	Bypass	Joe	Neeraja Raje	View 
New Preliminaries Model v1.5_V	Project V	10/12/2021	Saved	Widening	Joe	Vinodh KP	View
New Preliminaries Model v1.4	Golden Quadrilateral	08/12/2021	Saved			Neeraja Raje	View 
New Preliminaries Model v1.3	Modified title	08/12/2021	Saved			Neeraja Raje	View 
New Preliminaries Model v1.2	Load sections from library	08/12/2021	Saved			Neeraja Raje	View 
New Preliminaries Model v1.1	Golden Quadrilateral	07/12/2021	Saved	CSB		Neeraja Raje	View 
New Preliminaries Model v1.0	Highway Upgrade	02/12/2021	Saved	Junction Improvement	PM	Shailendra Mishra	View

- 1 - Displays the name of the logged in user.
- 2 - Use this toggle to view the list of Saved, Submitted or Archived model instances.
- 3 - Search for model instances.
- 4 - Create new model instances.
- 5 - Displays key information for each of the model instances:
 - Model Name
 - Estimate Name
 - Date the instance was created
 - Status of the model instance – *Saved, Submitted or Archived*
 - Scheme Name
 - Name of the Project Manager
 - Name of the user who created the model instance
- 6 - View all the details for the selected model instance.
- 7 - Archive the model instance.
- 8 - Log out of the application.

9 - Go back to the Home (previous) screen.

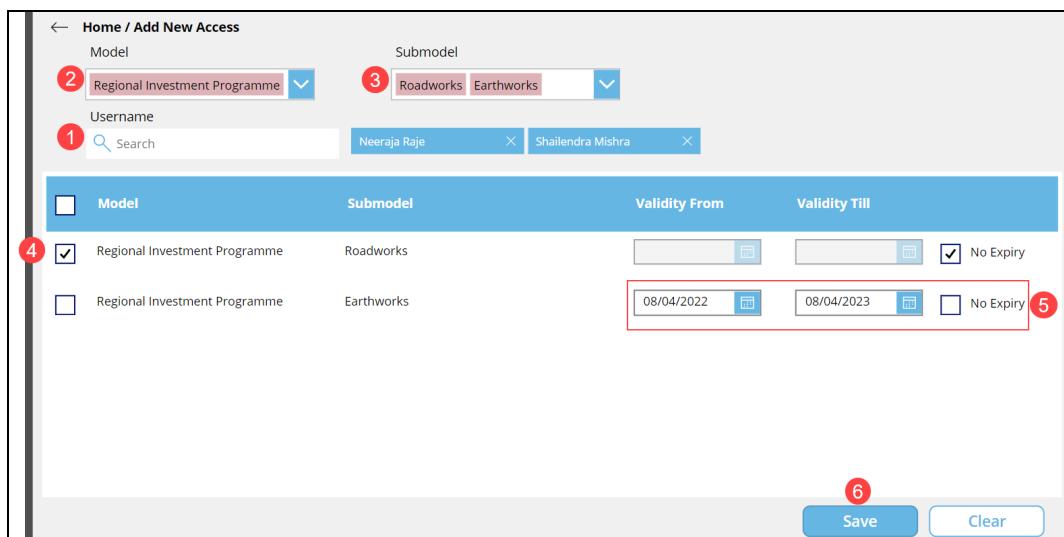
10 - Open this Help document.

Managing User Access

Administrators must grant users access to the relevant model types and sub models. This access can be granted for a set duration, if required.

Setting Up New Access

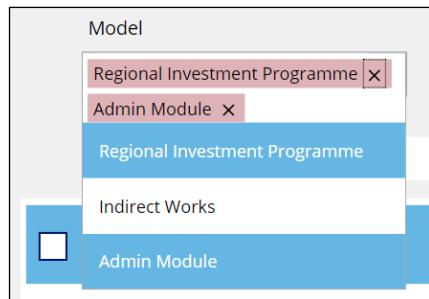
1. [Open](#) the Parametric Models app.
2. Select Admin Module.
3. Select the New Access + button.



The screenshot shows the 'Home / Add New Access' page. At the top, there are dropdown menus for 'Model' (2) and 'Submodel' (3), both currently set to 'Regional Investment Programme'. Below these are two search input fields for 'Username' (1), containing 'Neeraja Raje' and 'Shailendra Mishra'. The main area is a table where users can assign models and submodels to users. The table has columns: Model, Submodel, Validity From, and Validity Till. There are two rows: one for 'Roadworks' under 'Regional Investment Programme' with 'Validity Till' set to 'No Expiry', and another for 'Earthworks' under 'Regional Investment Programme' with 'Validity Till' set to '08/04/2023'. A red box highlights the 'Validity Till' field for the Earthworks row, and a red number '5' is placed next to it. At the bottom right are 'Save' and 'Clear' buttons, with a red number '6' placed above the 'Save' button.

Model	Submodel	Validity From	Validity Till
<input checked="" type="checkbox"/> Regional Investment Programme	Roadworks		<input checked="" type="checkbox"/> No Expiry
<input type="checkbox"/> Regional Investment Programme	Earthworks	08/04/2022	08/04/2023 <input type="checkbox"/> No Expiry

4. From the *Username* (1) dropdown, search and select the relevant user(s).
To remove a selected user, select x in their username tab.
5. From the *Model* (2) dropdown, select all the model types you want this user to be able to access.
For example, *Regional Investment Programme*.
To remove a selected model type, select x.



6. From the *Submodel* 3 dropdown, select all the sub models that you want this user to be able to access.
For example, if you select the model type *Regional Investment Programme*, then *Roadworks, Earthworks, Drainage, Carriageway, Signs & Lighting* will be the sub models available for selection.
To remove a selected sub model, select x.
7. All the selected models / sub models will be added to the grid, with a default validity of one year.
8. Select the relevant row (model / sub model) 4
Alternatively, use the checkbox in the header to select all the rows.
9. To modify the default access duration, use the *Validity From* and *Validity To* calendar tools or check *No Expiry* 5
10. Select Save 6

Modifying User Access

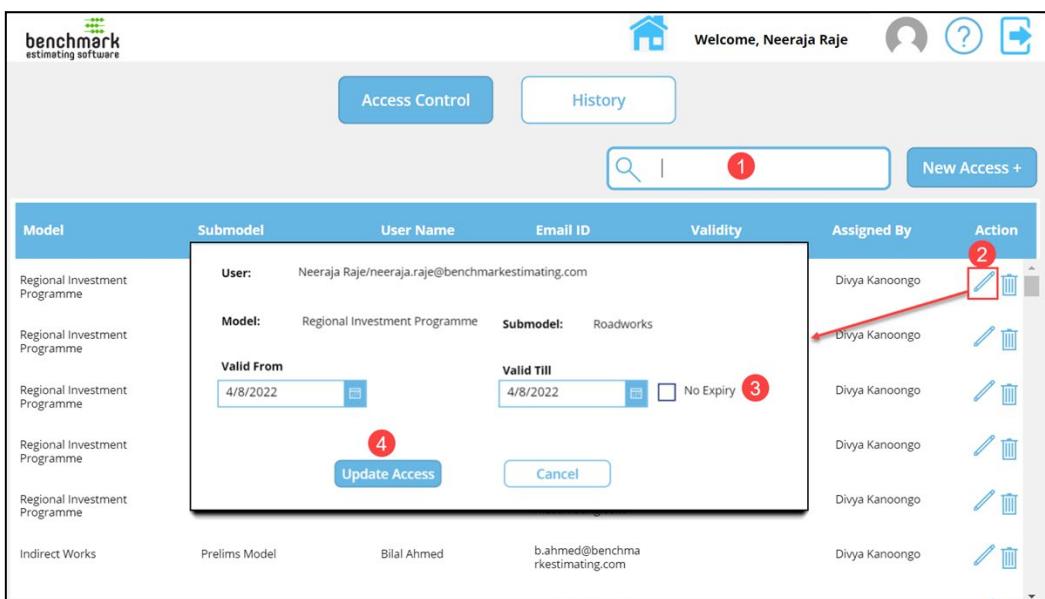
The **Access Control** tab lists all the users and their access within the application. Administrators can modify the duration for which users can access the assigned models/sub models.

1. In the Access Control tab, search **1** the relevant user.

You can also search by:

- Model
- Sub model
- Email
- User who assigned the access

2. Select the **Edit** **2** icon.
3. In the pop-up screen, modify the validity of the user's access to this model/sub model or select *No Expiry* **3**
4. Select **Update Access** **4**



Deleting User Access

Administrators can revoke a user's access to the assigned models / sub models.

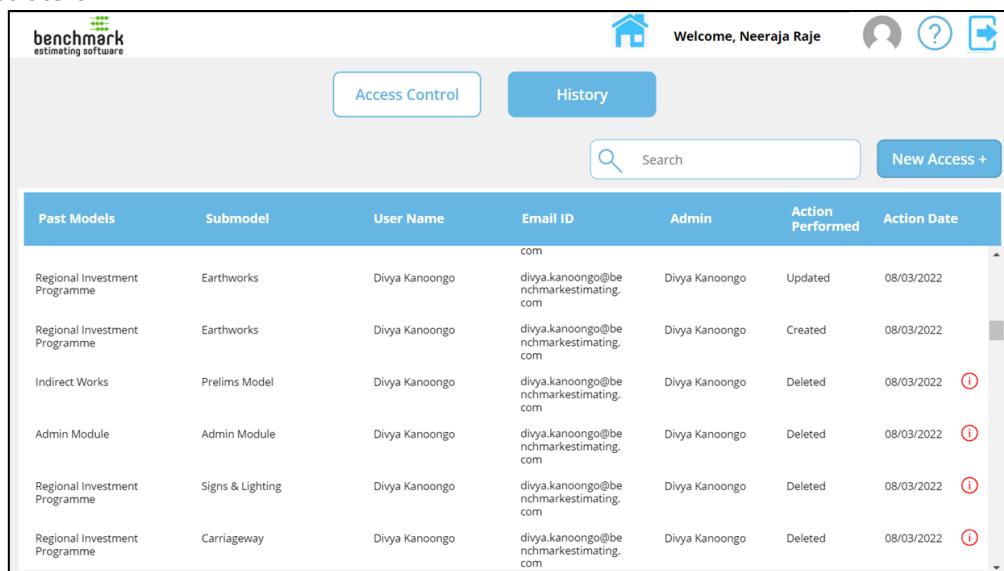
1. In the Access Control tab, search the relevant user.
 2. Select the Delete icon  for the model / sub model you no longer want this user to access.
- The following confirmation prompt displays:

"Are you sure you want to delete <Model Type – Sub Model Name> model access for <Username>?"

3. Enter comments in the text area within the prompt, if required.
4. Select Yes.

Viewing Access History

The History tab of the Admin Module shows all the access created, updated and deleted by Administrators.



Past Models	Submodel	User Name	Email ID	Admin	Action Performed	Action Date
Regional Investment Programme	Earthworks	Divya Kanoongo	divya.kanoongo@benchmarkmarketing.com	Divya Kanoongo	Updated	08/03/2022
Regional Investment Programme	Earthworks	Divya Kanoongo	divya.kanoongo@benchmarkmarketing.com	Divya Kanoongo	Created	08/03/2022
Indirect Works	Prelims Model	Divya Kanoongo	divya.kanoongo@benchmarkmarketing.com	Divya Kanoongo	Deleted	08/03/2022
Admin Module	Admin Module	Divya Kanoongo	divya.kanoongo@benchmarkmarketing.com	Divya Kanoongo	Deleted	08/03/2022
Regional Investment Programme	Signs & Lighting	Divya Kanoongo	divya.kanoongo@benchmarkmarketing.com	Divya Kanoongo	Deleted	08/03/2022
Regional Investment Programme	Carriageway	Divya Kanoongo	divya.kanoongo@benchmarkmarketing.com	Divya Kanoongo	Deleted	08/03/2022



An information icon  displays if a comment was added when deleting an access. Select the icon to view the comment.

Creating New Model Instances

You can create model instances for Project Sections and/or Composite Totals within those Sections. Note that, only one model instance (of any model type) can be created for a Project, Section and Composite Total.

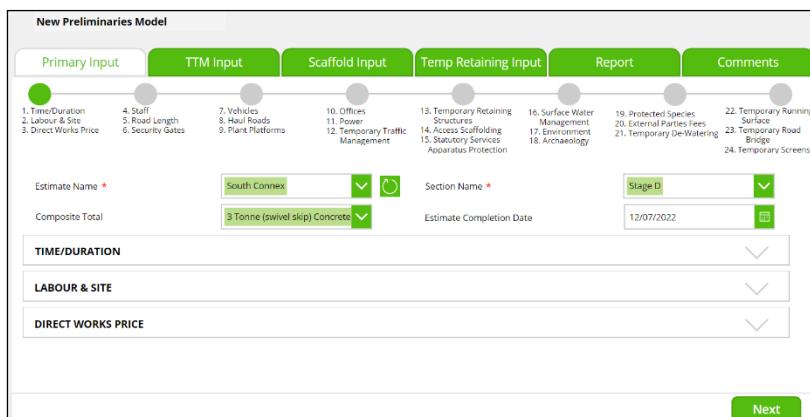
Indirect Works (Prelims)

1. [Open](#) the Parametric Models app.
2. Select Indirect Works > Prelims Model.
3. Select Create New Model Instance.
4. In the Primary Input tab, select the *Estimate Name*, *Section Name* and *Composite Total*.

Estimate Name and *Section Name* are mandatory fields.

Select the Reload Estimate Name List button  to refresh the list of Estimates, if required.

If you have accessed the app from a Project Section / Composite Total in Benchmark, then these fields will automatically populate the Project *Title*, Section *Description* and Composite Total *Description* from Benchmark.



5. Use the up and down arrows on the accordions to expand or collapse panels in the screen.



6. Enter / select details for all the relevant fields in each of the panels in the screen.
7. Select Next to continue proceeding to the next screens.

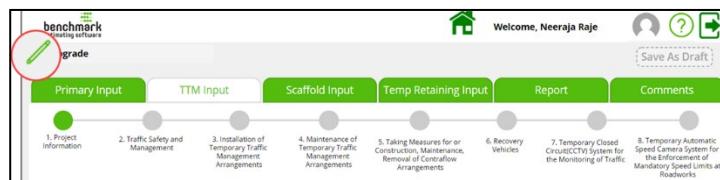
When you proceed from the first screen, you will be prompted to enter the model instance name.

8. Enter a unique name and select Continue.

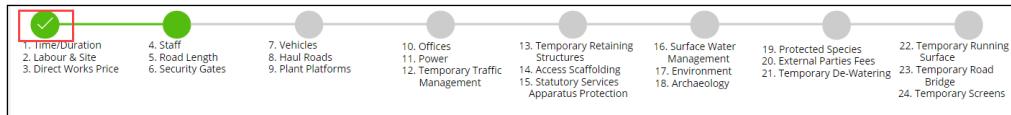


If required, you can edit this name in any of the screens using the Edit icon.

Then, Save  the new name.



Each completed screen is denoted by a tick within a green circle in the progress line. Active screens are denoted by a green circle. Screens pending completion are denoted by grey circles.



9. Enter / select details for all the relevant fields in each of the panels in the TTM Input tab.

Project Type	Junction Improvement
Primary Road-Length of the Works (km)	0
Secondary Road-Length of the Works (km)	0
Number of Junctions (no)	<input type="text"/>

10. Select Next to continue proceeding to the next screens.

You can select Back to return to the previous screen and make changes.

11. Enter / select details for all the relevant fields in each of the panels in the Scaffold Input tab.

Primary Input	TTM Input	Scaffold Input	Temp Retaining Input	Report	Comments
1. Overbridge Abutments	2. Underbridge Abutments	3. Wing Walls	4. Pile-Cap And Foundation Access	5. Wall Scaffolding	6. Central Reserve Pier Scaffolding
7. Loading Bay Addition	8. Suspended And Bent Scaffolding (Birmingham Box)	9. Cost Engineer Self Price Section			
OVERBRIDGE ABUTMENTS					
Number of Scaffolds of this Size	Scaffolding Number of Faces Front and Rear	Scaffold Length in Metres	Scaffold width in Boards	Scaffold Height in Metres	Number of Staircases
1 Adjusted Allowance	2	39	5	7	26
2 Adjusted Allowance	2	32	5	7	1
3 Adjusted Allowance					
Back Next					

12. Select **Next** to continue proceeding to the next screens.
13. Enter / select details for all the relevant fields in each of the panels in the **Temp Retaining Input** tab.

Primary Input	TTM Input	Scaffold Input	Temp Retaining Input	Report	Comments
Sheet Piled Wall	King Piled Wall	Gabion Walls	Cofferdam		
Sheet Piled Wall					
Select from here					
Retaining Wall Constructed in Select from here Sheet Piles Working in Cantilever					
Number of Walls	Retained Height	Length of Wall	Calculated Pile length	Ground Conditions	Pre-auger
Adjusted Allowance	3	100	8	Unknown	50%
Select from here					
Back Next					

14. Select **Next** to continue proceeding to the next screens.
 15. In the **Report** screen, review the summary of the BQ.
- Alternatively, select **Full BQ** to review all the details of the Bill of Quantities.

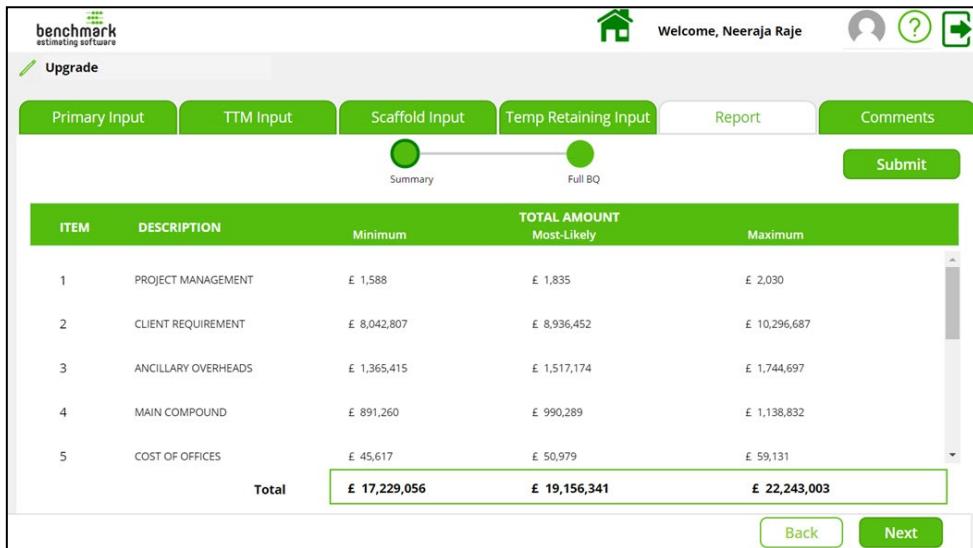
Primary Input	TTM Input	Scaffold Input	Temp Retaining Input	Report	Comments																																			
Summary	Full BQ																																							
<table border="1"> <thead> <tr> <th>ITEM</th> <th>DESCRIPTION</th> <th>Minimum</th> <th>TOTAL AMOUNT Most-Likely</th> <th>Maximum</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>PROJECT MANAGEMENT</td> <td>£ 1,588</td> <td>£ 1,835</td> <td>£ 2,030</td> </tr> <tr> <td>2</td> <td>CLIENT REQUIREMENT</td> <td>£ 8,042,807</td> <td>£ 8,936,452</td> <td>£ 10,296,687</td> </tr> <tr> <td>3</td> <td>ANCILLARY OVERHEADS</td> <td>£ 1,365,415</td> <td>£ 1,517,174</td> <td>£ 1,744,697</td> </tr> <tr> <td>4</td> <td>MAIN COMPOUND</td> <td>£ 891,260</td> <td>£ 990,289</td> <td>£ 1,138,832</td> </tr> <tr> <td>5</td> <td>COST OF OFFICES</td> <td>£ 45,617</td> <td>£ 50,979</td> <td>£ 59,131</td> </tr> <tr> <td>Total</td> <td></td> <td>£ 17,229,056</td> <td>£ 19,156,341</td> <td>£ 22,243,003</td> </tr> </tbody> </table>						ITEM	DESCRIPTION	Minimum	TOTAL AMOUNT Most-Likely	Maximum	1	PROJECT MANAGEMENT	£ 1,588	£ 1,835	£ 2,030	2	CLIENT REQUIREMENT	£ 8,042,807	£ 8,936,452	£ 10,296,687	3	ANCILLARY OVERHEADS	£ 1,365,415	£ 1,517,174	£ 1,744,697	4	MAIN COMPOUND	£ 891,260	£ 990,289	£ 1,138,832	5	COST OF OFFICES	£ 45,617	£ 50,979	£ 59,131	Total		£ 17,229,056	£ 19,156,341	£ 22,243,003
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Total		£ 17,229,056	£ 19,156,341	£ 22,243,003																																				
Back Next																																								

16. Select Submit.

The BQ will be created in Benchmark.

Viewing the BQ

When you submit a model instance from the Parametric Models app:



The screenshot shows the Parametric Models app interface. At the top, there are tabs for Primary Input, TTM Input, Scaffold Input, Temp Retaining Input, Report, and Comments. Below these are two buttons: 'Summary' and 'Full BQ'. A large green 'Submit' button is positioned to the right of the summary button. The main area displays a table of BQ items. The columns are ITEM, DESCRIPTION, Minimum, TOTAL AMOUNT (Most-Likely), and Maximum. The table contains five rows of data, with a 'Total' row at the bottom. The total values are £ 17,229,056, £ 19,156,341, and £ 22,243,003 respectively. At the bottom right of the table are 'Back' and 'Next' buttons.

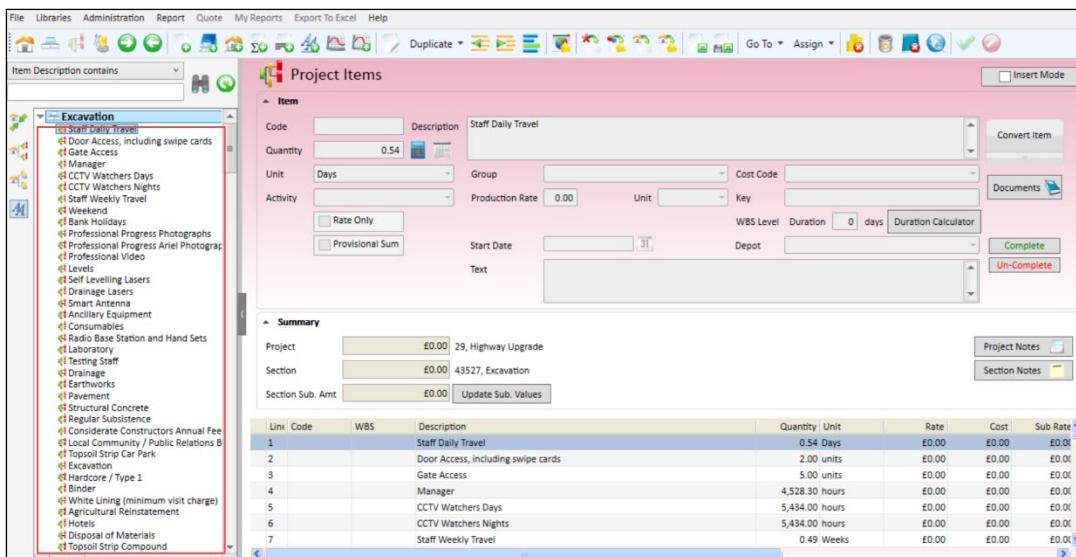
ITEM	DESCRIPTION	Minimum	TOTAL AMOUNT	
			Most-Likely	Maximum
1	PROJECT MANAGEMENT	£ 1,588	£ 1,835	£ 2,030
2	CLIENT REQUIREMENT	£ 8,042,807	£ 8,936,452	£ 10,296,687
3	ANCILLARY OVERHEADS	£ 1,365,415	£ 1,517,174	£ 1,744,697
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5	COST OF OFFICES	£ 45,617	£ 50,979	£ 59,131
Total		£ 17,229,056	£ 19,156,341	£ 22,243,003

- A BQ is created back in Benchmark.
- BQ line items are created as part of a Section or Composite Total.
- BQ line items with quantity and units are created as normal items.
- BQ line items without quantity and units are created as text items.
- BQ line items with 0 quantity are not created.

To view the BQ created in Benchmark:

1. Open the Project for which you created the BQ.
2. Select the relevant Section.

All the BQ line items are created as Project Items.

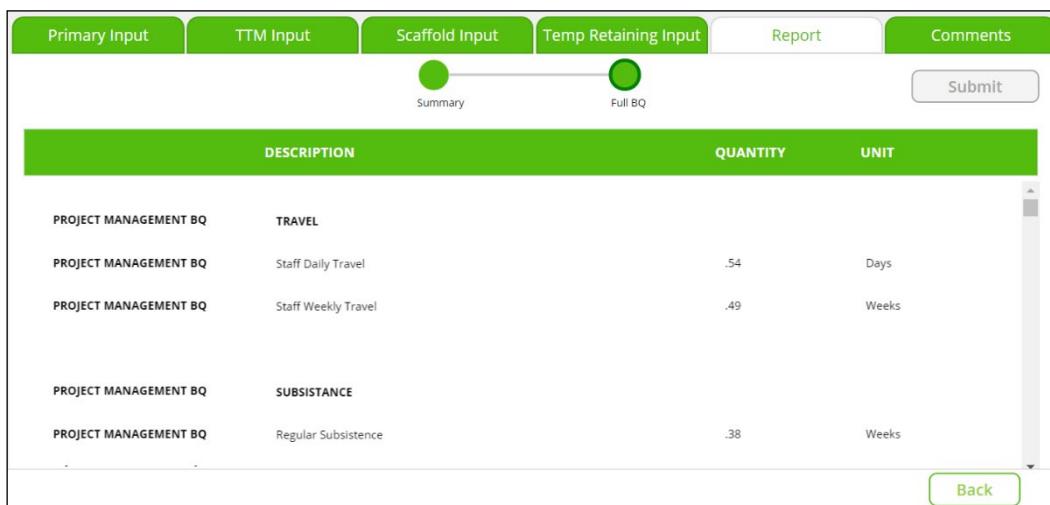


Line	Code	WBS	Description	Quantity / Unit	Rate	Cost	Sub Rate
1			Staff Daily Travel	0.54 Days	£0.00	£0.00	£0.00
2			Door Access, including swipe cards	2.00 units	£0.00	£0.00	£0.00
3			Gate Access	5.00 units	£0.00	£0.00	£0.00
4			Manager	4,528.30 hours	£0.00	£0.00	£0.00
5			CCTV Watchers Days	5,343.00 hours	£0.00	£0.00	£0.00
6			CCTV Watchers Nights	5,343.00 hours	£0.00	£0.00	£0.00
7			Staff Weekly Travel	0.49 Weeks	£0.00	£0.00	£0.00

You can also view these items in the app using the **Full BQ** option (read-only BQ) in the Report tab.



All the Items from the legacy Excel files will be displayed here. Only the non-zero quantity Items will be created in Benchmark.



DESCRIPTION				QUANTITY	UNIT
PROJECT MANAGEMENT BQ TRAVEL					
PROJECT MANAGEMENT BQ	Staff Daily Travel	.54	Days		
PROJECT MANAGEMENT BQ	Staff Weekly Travel	.49	Weeks		
PROJECT MANAGEMENT BQ SUBSISTENCE					
PROJECT MANAGEMENT BQ	Regular Subsistence	.38	Weeks		

Regional Investment Programme (RIP)

The RIP model includes the following sub models:

- Roadworks
- Earthworks
- Drainage
- Carriageway
- Signs & Lighting



This topic describes the process of creating a Roadworks submodel instance in the application to generate a Bill of Quantities (BQ). You can create other submodel instances following a similar process.

1. [Open](#) the Parametric Models app.
2. Select Regional Investment Programme.
3. Select Roadworks.
4. Select Create New Model Instance.
5. In the Options Parameters tab, select the *Estimate Name*, *Section Name* and *Composite Total*.

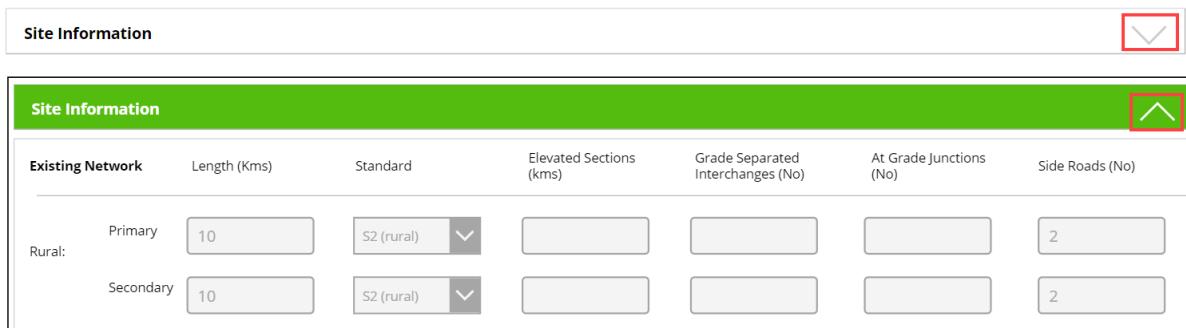
Estimate Name and *Section Name* are mandatory fields.

If you have accessed the app from a Project Section / Composite Total in Benchmark, then these fields will automatically populate the Project *Title*, Section *Description* and Composite Total *Description* from Benchmark.



The Scheme Credentials panel will populate details for the Scheme that this Estimate (Project) is associated with in Benchmark.

6. Use the up and down arrows on the accordions to expand or collapse panels in the screen.



The screenshot shows the 'Site Information' panel. At the top right, there is a collapse arrow icon with a red border. Below it is a table with columns for Existing Network, Length (Kms), Standard, Elevated Sections (kms), Grade Separated Interchanges (No), At Grade Junctions (No), and Side Roads (No). Under 'Existing Network', there are two rows: 'Primary' and 'Secondary'. Each row has input fields for 'Length (Kms)' and 'Standard', and dropdown menus for 'Elevated Sections (kms)' and 'Grade Separated Interchanges (No)'. The 'At Grade Junctions (No)' and 'Side Roads (No)' columns also contain input fields.

7. Select Next to continue proceeding to the next screens.

When you proceed from the first screen, you will be prompted to enter the model instance name.

8. Enter a unique name and select Continue.



If required, you can edit this name in any of the screens using the Edit icon.

Then, Save  the new name.



Each completed screen is denoted by a tick within a green circle in the progress line. Active screens are denoted by a green circle. Screens pending completion are denoted by grey circles.



9. Enter / select details for all the relevant fields in each of the panels in the Detailed Parameters screen.

Existing Infrastructure			
		RURAL	URBAN
		TOTAL	
Grade Separated Interchanges:	Donut	no	2
	Dumbell	no	1
	Half Dumbell	no	0
	Diamond	no	0

10. Select Next to continue proceeding to the next screens.

You can select Back to return to the previous screen and make changes.

11. Enter / select details for all the relevant fields in each of the panels in the Series Parameters tab.

Pipelines

Save As Draft

Options Parameters Detailed Parameters Series Parameters Full BQ Comments

1. Proportion of heavily wooded areas requiring clearance 2. Take down existing fences 3. Take down existing safety barriers 4. Take up existing kerbs and channels 5. Take up existing lighting columns 6. Take down existing traffic signs 7. Take down existing technology 8. Temporary Fencing (as specified and shown on the drawings) 9. Post and rail boundary fencing 10. Other fencing (excluding Environmental Barriers) 11. Environmental Barriers 12. LANDSCAPING & ECOLOGY Planting 13. Additional habitat creation 14. Temporary Reptile Fencing

Proportion of heavily wooded areas requiring clearance

Take down existing fences

Assumptions: All widening in RURAL locations require fences to be taken down on BOTH sides of existing highway boundary.

ADJUST FOR retained fencing associated with:

Areas of assumed take down both sides of road:	Proportion to be retained	Areas of assumed no fences taken down:	Proportion to be removed
Parallel widening	10%	Symmetric widening with no land take (rural)	20%
Asymmetric widening	10%	Urban sections	25%
Symmetric widening with land take	5%	Detrunked sections	5%

Back **Next**

12. Select Next to continue proceeding to the next screens.
13. In the Full BQ tab, review all the details of the Bill of Quantities (BQ).

Pipelines

Welcome, Neeraja Raje

Options Parameters Detailed Parameters Series Parameters **Full BQ** Comments

Submit

Sr No	Description	Unit	Qty
1	General site clearance	ha	65.28
2	General site clearance - wooded areas	ha	6.95
3	General site clearance - removal of hedges	m	0.57
4	Demolition of buildings	no	0
5	Demolition of bridges	no	0
6	Demolition of retaining walls	no	0

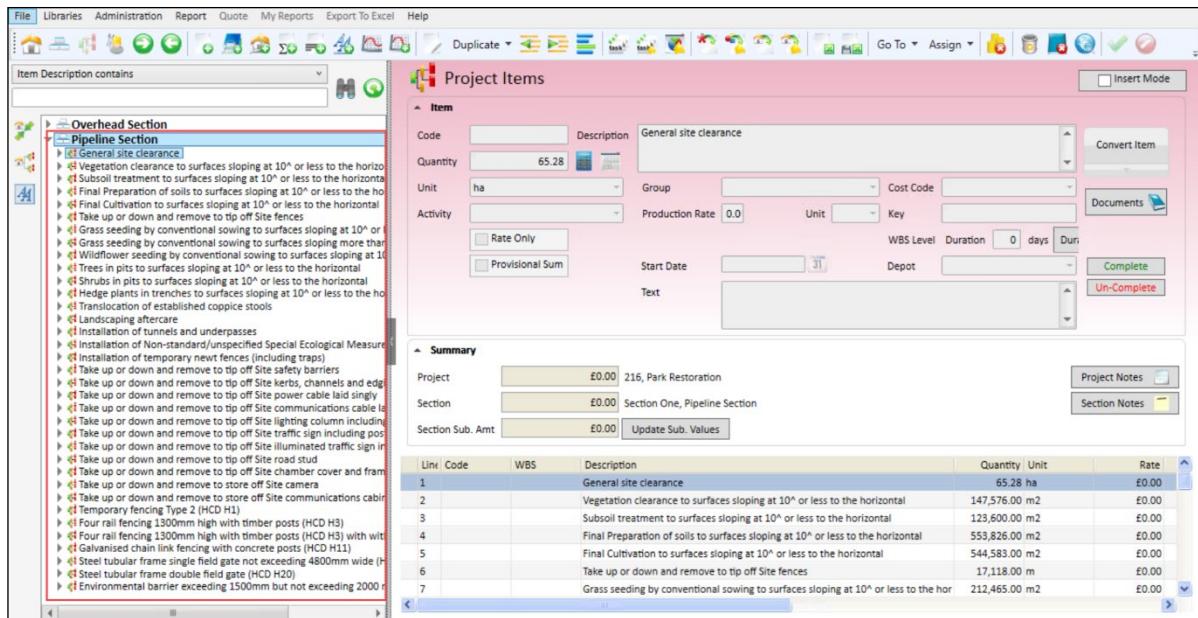
14. Select Submit.
- The following confirmation prompt displays:
- "No changes to the model are permissible once you submit the item list to Benchmark.
Please press Confirm to continue."
15. Select Confirm.

Viewing the BQ

To view the BQ created in Benchmark:

1. Open the Project for which you created the BQ.
2. Select the relevant Section or Composite Total.

All the BQ line items are created as Project Items.

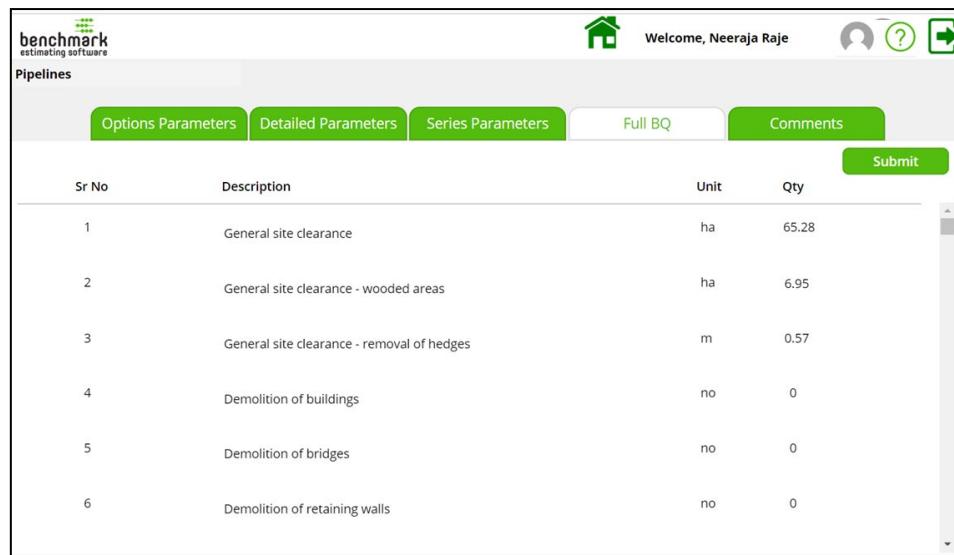


Line	Code	WBS	Description	Quantity	Unit	Rate
1			General site clearance	65.28	ha	£0.00
2			Vegetation clearance to surfaces sloping at 10° or less to the horizontal	147,576.00	m ²	£0.00
3			Subsoil treatment to surfaces sloping at 10° or less to the horizontal	123,600.00	m ²	£0.00
4			Final Preparation of soils to surfaces sloping at 10° or less to the horizontal	553,826.00	m ²	£0.00
5			Final Cultivation to surfaces sloping at 10° or less to the horizontal	544,583.00	m ²	£0.00
6			Take up or down and remove to tip off Site fences	17,118.00	m	£0.00
7			Grass seeding by conventional sowing to surfaces sloping at 10° or less to the horizontal	212,465.00	m ²	£0.00

You can also view these items in the app using the **Full BQ** tab:



All the Items from the legacy Excel files will be displayed here. Only the non-zero quantity Items will be created in Benchmark.



Sr No	Description	Unit	Qty
1	General site clearance	ha	65.28
2	General site clearance - wooded areas	ha	6.95
3	General site clearance - removal of hedges	m	0.57
4	Demolition of buildings	no	0
5	Demolition of bridges	no	0
6	Demolition of retaining walls	no	0

Smart Motorway Program (SMP)

The SMP model includes the following sub models:

- Roadworks
- Earthworks
- Drainage
- Carriageway
- Signs & Lighting



This topic describes the process of creating a Drainage submodel instance in the application to generate a Bill of Quantities (BQ). You can create other submodel instances following a similar process.

1. [Open](#) the Parametric Models app.
2. Select Smart Motorway Program.
3. Select Drainage.
4. Select Create New Model Instance.
5. In the Options Parameters tab, select the *Estimate Name*, *Section Name* and *Composite Total*.

Estimate Name and *Section Name* are mandatory fields.

If you have accessed the app from a Project Section / Composite Total in Benchmark, then these fields will automatically populate the Project *Title*, Section *Description* and Composite *Total Description* from Benchmark.



The Scheme Credentials panel will populate details for the Scheme that this Estimate (Project) is associated with in Benchmark.

6. Use the up and down arrows on the accordions to expand or collapse panels in the screen.

Site Information

Existing motorway	Length (kms)	Elevated Sections (m)	Standard (A-side)	Standard (A-side)	Length of Central Reserve existing VCB (kms)	Lit?
Link 1	20	10	D2M (rural) <input checked="" type="button"/>	D3M (rural) <input checked="" type="button"/>	2	No <input checked="" type="button"/>
Link 2	15	5	D3M (rural) <input checked="" type="button"/>	D4M (rural) <input checked="" type="button"/>	1.5	Yes <input checked="" type="button"/>
Link 3			<input checked="" type="button"/>	<input checked="" type="button"/>		<input checked="" type="button"/>
Link 4			<input checked="" type="button"/>	<input checked="" type="button"/>		<input checked="" type="button"/>

7. Select Next to continue proceeding to the next screens.

When you proceed from the first screen, you will be prompted to enter a model instance name.

8. Enter a unique name and select Continue.

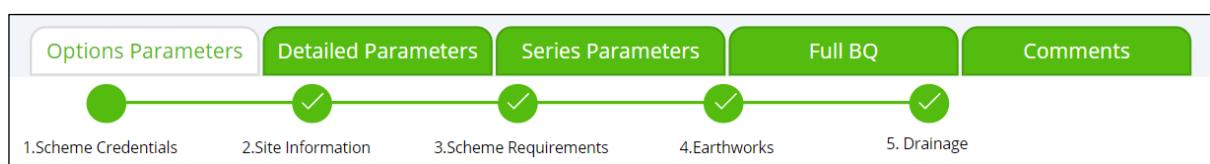


If required, you can edit this name in any of the screens using the Edit icon.

Then, Save  the new name.



Each completed screen is denoted by a tick within a green circle in the progress line. Active screens are denoted by a green circle. Screens pending completion are denoted by grey circles.



9. Enter / select details for all the relevant fields in each of the panels in the Detailed Parameters screen.

Project Overheads

Save As Draft

Options Parameters Detailed Parameters Series Parameters Full BQ Comments

1.Existing Infrastructure 2.Proposed Mainline 3.Emergency Refuge Areas 4.Interchanges 5.Service Areas, Work Depots And Turnaround Facilities 6.Side Roads

Existing Infrastructure

A-side				B-side			
Start Chainage	End Chainage	Length (m)	Existing carriageway width	Existing verge width (ave)	Existing Central Reserve width (ave)	Existing carriageway width	Existing verge width (ave)
Link 1		10000	Standard	Standard	Standard	Standard	Standard
Link 2		20000	Standard	Specify	Standard	Standard	Standard
...				20			

Back **Next**

10. Select Next to continue proceeding to the next screens.

You can select Back to return to the previous screen and make changes.

11. Enter / select details for all the relevant fields in each of the panels in the Series Parameters tab.

Options Parameters Detailed Parameters Series Parameters Full BQ Comments

1.Drainage 2.Emergency Refuge Areas 3.Interchanges 4.Service Areas, Work depots and turnaround facilities 1 5. Side Roads

Drainage

Proposed Drainage Types and Renewal									
A-CARRIAGEWAY	Start Chainage	End Chainage	Length (m)	Upgrade	% of Kerb & Gully Drainage Type	% of Kerb & Gully Renewed	% of Filter Drain Drainage Type	% of Filter Drain Renewed	% of C Drain
Link 1		20000	D2M (rural)	15%	70%	10%	80%	35%	
Link 2		0		0%	100%	0%	100%	0%	
Link 3		0		0%	100%	0%	100%	0%	
Link 4		0		0%	100%	0%	100%	0%	

Back **Next**

12. Select Next to continue proceeding to the next screens.

13. In the Full BQ tab, review all the details of the Bill of Quantities (BQ).

SMP - Drainage

SeqNo	Description	Unit	Quantity
301	575 mm internal diameter drain specified design group 2 to 6 in trench depth to invert not exceeding 2 metres, ave...	m	292
302	600 mm internal diameter drain specified design group 2 to 6 in trench depth to invert not exceeding 2 metres, ave...	m	0
303	600 mm internal diameter drain specified design group 2 to 6 in trench depth to invert exceeding 2m but not exceed...	m	0
304	750 mm internal diameter drain specified design group 2 to 6 in trench depth to invert not exceeding 2 metres, ave...	m	0
305	750 mm internal diameter drain specified design group 2 to 6 in trench depth to invert exceeding 2m but not exceed...	m	265
306	900 mm internal diameter drain specified design group 2 to 6 in trench depth to invert not exceeding 2 metres, ave...	m	0
307	900 mm internal diameter drain specified design group 2 to 6 in trench depth to invert exceeding 2m but not exceed...	m	205
308	225 mm internal diameter drain by jacking or thrust boring depth to invert not exceeding 2 metres, average depth t...	m	0
309	225 mm internal diameter drain by jacking or thrust boring depth to invert exceeding 2 metres but not exceeding 4 ...	m	0
310	300 mm internal diameter drain by jacking or thrust boring depth to invert not exceeding 2 metres, average depth t...	m	0
311	375 mm internal diameter drain by jacking or thrust boring depth to invert not exceeding 2 metres, average depth t...	m	0
312	100mm Duct cast in verge/concrete infill	item	0
313	150 mm internal diameter filter drain in trench specified design group 2 to 6 depth to invert not exceeding 2 metres	m	3000

14. Select Submit.

The following confirmation prompt displays:

“No changes to the model are permissible once you submit the item list to Benchmark.

Please press Confirm to continue.”

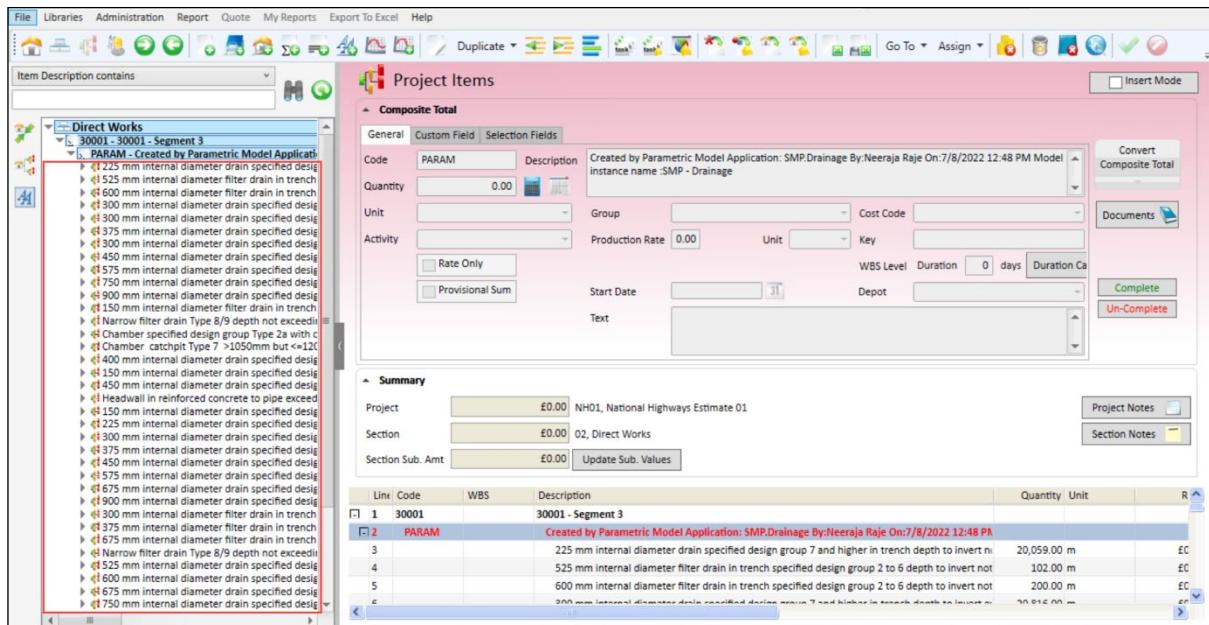
15. Select Confirm.

Viewing the BQ

To view the BQ created in Benchmark:

1. Open the Project for which you created the BQ.
2. Select the relevant Section > Composite Total.

All the BQ line items are created as Project Items.

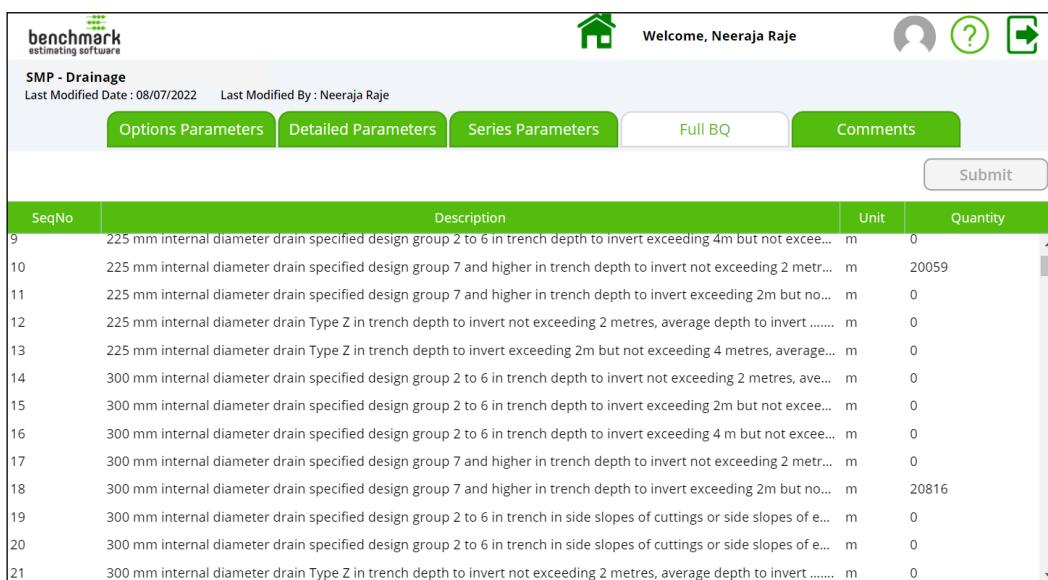


The screenshot shows the 'Project Items' screen in Benchmark. The 'Composite Total' tab is selected. On the left, there's a tree view under 'Direct Works' showing '30001 - Segment 3' and 'PARAM - Created by Parametric Model Application'. The main area displays a table of BQ items with columns for SeqNo, Code, WBS, Description, Unit, Quantity, and Rate. The 'Description' column contains detailed specifications like '225 mm internal diameter drain specified design group 2 to 6 in trench depth to invert exceeding 4m but not exceeding 8m'. The 'Quantity' column shows values like 20,059.00 m, 102.00 m, and 200.00 m.

You can also view these items in the app using the Full BQ tab:



All the Items from the legacy Excel files will be displayed here. Only the non-zero quantity Items will be created in Benchmark.



The screenshot shows the 'Full BQ' tab in the Benchmark mobile application. It displays a table of BQ items with columns for SeqNo, Description, Unit, and Quantity. The items listed are identical to those in the desktop version, such as '225 mm internal diameter drain specified design group 2 to 6 in trench depth to invert exceeding 4m but not exceeding 8m' with a quantity of 20,059.00 m.

Structure

The Structure model includes the following sub models:

- Box Culverts
- Footbridges
- Gantry
- Overbridges
- Piped Culverts
- Retaining Walls
- Underbridges
- Viaducts



This topic describes the process of creating a Footbridges submodel instance in the application to generate a Bill of Quantities (BQ). You can create other submodel instances following a similar process.

1. [Open](#) the Parametric Models app.
2. Select Structure.
3. Select Footbridges.
4. Select Create New Model Instance.
5. In the Scheme Credentials tab, select the *Estimate Name*, *Section Name* and *Composite Total*.

Estimate Name and *Section Name* are mandatory fields.

If you have accessed the app from a Project Section / Composite Total in Benchmark, then these fields will automatically populate the Project *Title*, Section *Description* and Composite *Total Description* from Benchmark.



The Scheme Credentials panel will populate details for the Scheme that this Estimate (Project) is associated with in Benchmark.

6. Use the up and down arrows on the accordions to expand or collapse panels in the screen.

Structure Details



Structure Details					
Structure Name	Paved Areas	Location	Chainage	Type	Footbridge
Principal Route under planned bridge:	WS2				
Total Carriageway width (m)	Standard				
Total Verge width (m)	Standard				
Total Central Reserve width (m)	Standard				

7. Select **Next** to proceed to the next screen.

You can select **Back** to return to the previous screen and make changes.

When you proceed from the first screen, you will be prompted to enter the model instance name.

8. Enter a unique name and select **Continue**.



If required, you can edit this name in any of the screens using the **Edit** icon.

Then, Save  the new name.



Each completed screen is denoted by a tick within a green circle  in the progress line.

Active screens are denoted by a green circle . Screens pending completion are denoted

by grey circles .

9. Enter / select details for all the relevant fields in the **Structure Details** screen.
10. Select **Next** to generate and review the Bill of Quantities (BOQ) in the **Full BQ** tab.

SeqNo	Description	Quantity	Unit
40	Disposal of unacceptable material Class U1A	1044	m3
41	Imported acceptable material Class 1A in fill to structures	0	m3
42	Imported acceptable material Class 6I/J in reinforced earth structures	0	m3
43	Imported acceptable material Class 6N/P in reinforced earth structures	1937	m3
44	Imported acceptable material Class 6N/P in fill to structures	798	m3
45	Imported acceptable material Class 6N/P in fill above structural concrete foundations	72	m3
46	Compaction of acceptable material in reinforced earth structures	1937	m3
47	Compaction of acceptable material in fill to structures	798	m3
48	Compaction of acceptable material in fill above structural concrete foundations	72	m3
49	In situ concrete reference C7.5 in blinding 75 mm or less in thickness	0	m3
50	In situ concrete reference C8/10 in blinding 75 mm or less in thickness	0	m3
51	In situ concrete reference C32/40	0	m3

11. Select Submit.

The following confirmation prompt displays:

"No changes to the model are permissible once you submit the item list to Benchmark.

Please press Confirm to continue."

12. Select Confirm.

Viewing the BQ

To view the BQ created in Benchmark:

1. Open the Project for which you created the BQ.

2. Select the relevant Section > Composite Total.

All the BQ line items are created as Project Items.

Line	Code	WBS	Description	Quantity	Unit	Rate
25			Disposal of unacceptable material class U1A	1,044.00	m3	£0.00
26			Imported acceptable material Class 6N/P in reinforced earth structures	1,937.00	m3	£0.00
27			Imported acceptable material Class 6N/P in fill above structural concrete foundations	798.00	m3	£0.00
28			Imported acceptable material Class 6N/P in fill above structural concrete foundations	72.00	m3	£0.00
29			Compaction of acceptable material in reinforced earth structures	1,937.00	m3	£0.00
30			Compaction of acceptable material in fill above structural concrete foundations	72.00	m3	£0.00

You can also view these items in the app using the Full BQ tab:



All the Items from the legacy Excel files will be displayed here. Only the non-zero quantity Items will be created in Benchmark.

SeqNo	Description	Quantity	Unit
40	Disposal of unacceptable material class U1A	1044	m3
41	Imported acceptable material Class 1A in fill to structures	0	m3
42	Imported acceptable material Class 6I/J in reinforced earth structures	0	m3
43	Imported acceptable material Class 6N/P in reinforced earth structures	1937	m3
44	Imported acceptable material Class 6N/P in fill to structures	798	m3
45	Imported acceptable material Class 6N/P in fill above structural concrete foundations	72	m3
46	Compaction of acceptable material in reinforced earth structures	1937	m3
47	Compaction of acceptable material in fill to structures	798	m3
48	Compaction of acceptable material in fill above structural concrete foundations	72	m3
49	In situ concrete reference C7.5 in blinding 75 mm or less in thickness	0	m3
50	In situ concrete reference C8/10 in blinding 75 mm or less in thickness	0	m3
51	In situ concrete reference C32/40	0	m3

Other Functions

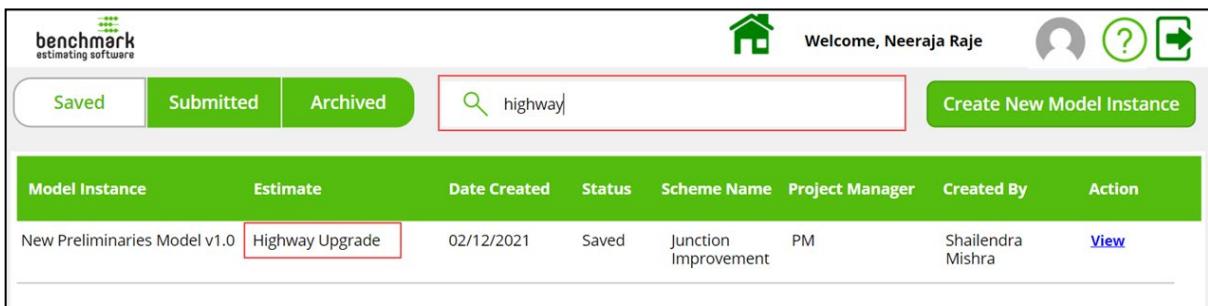
Searching Model Instances

You can search the model instances by the following search criteria:

- Model name
- Estimate name
- Creation date
- Scheme name
- Project manager
- User who created the model instance

In the example below, we will search the model instances by Estimate name:

1. [Open](#) the Parametric Models app.
2. Select the relevant model type.
For example, **Indirect Works**.
3. In the Search bar, enter the search term.
For example, **Highway**.
4. This displays the list of model instances containing the search term.



The screenshot shows the Parametric Models application interface. At the top, there is a navigation bar with the benchmark logo, a home icon, a user profile 'Welcome, Neeraja Raje', and a help icon. Below the navigation bar, there are three buttons: 'Saved' (highlighted), 'Submitted', and 'Archived'. To the right of these buttons is a search bar containing the text 'highway'. A green button labeled 'Create New Model Instance' is located to the right of the search bar. Below the search bar is a table header with columns: Model Instance, Estimate, Date Created, Status, Scheme Name, Project Manager, Created By, and Action. Under the 'Model Instance' column, it lists 'New Preliminaries Model v1.0'. Under the 'Estimate' column, it shows 'Highway Upgrade' (which is highlighted with a red border). Under the 'Date Created' column, it shows '02/12/2021'. Under the 'Status' column, it shows 'Saved'. Under the 'Scheme Name' column, it shows 'Junction Improvement'. Under the 'Project Manager' column, it shows 'PM'. Under the 'Created By' column, it shows 'Shailendra Mishra'. Under the 'Action' column, there is a link labeled 'View'.

Clear the search term to view the unfiltered list of model instances again.

Saving Model Instances

When working on a model instance, you can choose to save the details and submit it later.

- Select **Save As Draft** to save the entered details.



The screenshot shows the 'New Preliminaries Model v1.4' interface. At the top right, there are buttons for 'Save AS Draft' (highlighted with a red box), 'Copy', and 'Modify'. Below these are tabs for 'Primary Input', 'TTM Input', 'Scaffold Input', 'Temp Retaining Input', 'Report', and 'Comments'. A horizontal timeline below the tabs lists items 1 through 24. The 'STAFF' section is expanded, showing fields for 'Adjusted Supplier Staff Percentage (if known)' (Default Value is 20%) and 'Is The Supplier Providing Permanent Work Design?' (YES selected). The 'DISCIPLINE APORTIONMENT' section shows percentages for 'NON OVERHEAD DIRECTORS' (4%) and 'PROJECT MANAGEMENT' (32%). The 'MODEL DEFAULT %' column shows 4% for Non-Overhead Directors and 32% for Project Management. The 'ADJUSTED %' and 'ADOPTED %' columns show corresponding values. At the bottom are 'Back' and 'Next' buttons.

- These drafts display with a status of **Saved** in the list of model instances.
- Select **View** to open the draft.
- Select **Modify** to continue working on the model instance.

You can view but not modify the model instances created by other users.



Errors

A red circle denotes errors in the section. Go to the relevant section and rectify the error.

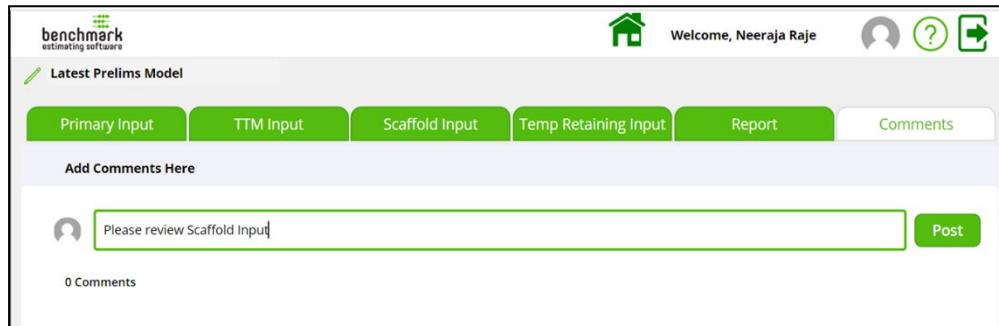


Adding Comments

You can add comments to a model instance, when creating it or editing a saved draft. You can also add comments for the model instances created by other users.

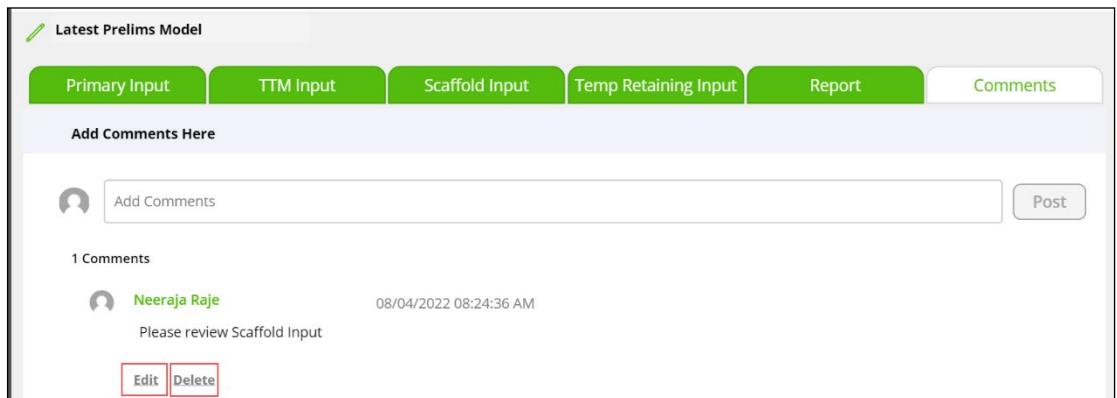
To add comments:

1. Select the Comment tab for the relevant model instance.



The screenshot shows the 'Comments' tab selected in the top navigation bar. Below the tabs, there is a section labeled 'Add Comments Here'. A user has entered the comment 'Please review Scaffold Input' into a text input field. To the right of the input field is a green 'Post' button. Below the input field, the text '0 Comments' is displayed.

2. Enter the comment and select Post.
3. Once posted, the comment will be listed in the tab.
4. Select:
 - a. Edit to modify and save your comment.
 - b. Delete to delete your comment.



The screenshot shows the 'Comments' tab selected. Below the tabs, there is a section labeled 'Add Comments Here'. A user has entered the comment 'Add Comments' into a text input field. To the right of the input field is a grey 'Post' button. Below the input field, the text '1 Comments' is displayed. A single comment is listed, showing the user 'Neeraja Raje' posted on '08/04/2022 08:24:36 AM' with the message 'Please review Scaffold Input'. Below the comment are two buttons: 'Edit' and 'Delete', both highlighted with red boxes.

Archiving Model Instances

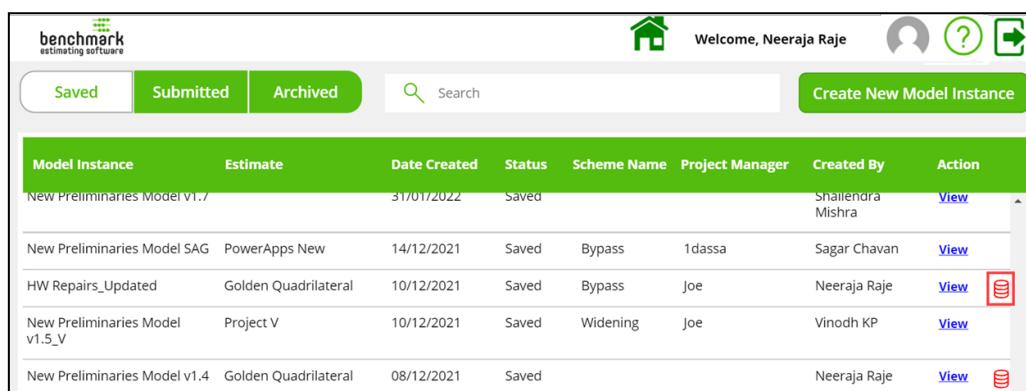
If you no longer need a model instance, you can archive it. This can be particularly useful when you need to manage a large list of model instances in the application.

You can only archive your saved model instances. You cannot archive:

- Your submitted model instances.
- The model instances created by other users.

To archive:

1. Go to the **Saved** tab.
2. Select the **Archive Model** icon for the relevant model instance.



Model Instance	Estimate	Date Created	Status	Scheme Name	Project Manager	Created By	Action
New Preliminaries Model v1.7		31/01/2022	Saved			Shailendra Mishra	View
New Preliminaries Model SAG	PowerApps New	14/12/2021	Saved	Bypass	1dassa	Sagar Chavan	View
HW Repairs_Updated	Golden Quadrilateral	10/12/2021	Saved	Bypass	joe	Neeraja Raje	View 
New Preliminaries Model v1.5_V	Project V	10/12/2021	Saved	Widening	joe	Vinodh KP	View
New Preliminaries Model v1.4	Golden Quadrilateral	08/12/2021	Saved			Neeraja Raje	View 

The following confirmation prompt displays:

“Are you sure you want to archive <model instance name>?”

3. Add a comment within the text area in the prompt, if required.
4. Select Yes.

The model instance will be removed from the **Saved** tab, and added to the **Archived** tab.

You can view or [copy](#) these archived model instances, but not submit them.

Copying Model Instances

This functionality facilitates:

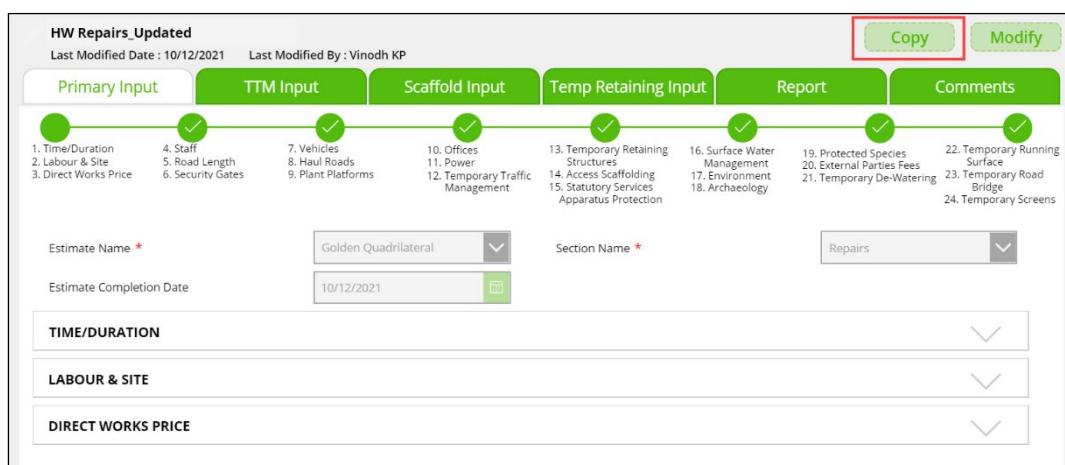
- Easy reuse of the same model instance between different estimates.
- Creation of multiple versions of the same model instance within the same estimate. Each version may be different from the other. Users can then compare these versions and submit the relevant model instance.



You can only submit one version per model instance. The others can be archived.

To copy a model instance:

1. From the list of saved/submitted/archived model instances, select **View** to open the model instance you want to copy.
2. Select **Copy**.



The screenshot shows the 'HW Repairs_Updated' model instance details. At the top right are 'Copy' and 'Modify' buttons. Below them are tabs for Primary Input, TTM Input, Scaffold Input, Temp Retaining Input, Report, and Comments. A horizontal bar with green checkmarks indicates which sections have been completed. A list of 24 items is shown below the tabs. At the bottom are fields for Estimate Name (Golden Quadrilateral), Section Name (Repairs), and Estimate Completion Date (10/12/2021). Below these are expandable sections for TIME/DURATION, LABOUR & SITE, and DIRECT WORKS PRICE.

Section	Completed
Primary Input	✓
TTM Input	✓
Scaffold Input	✓
Temp Retaining Input	✓
Report	✓
Comments	✓

Completed items (1-24):

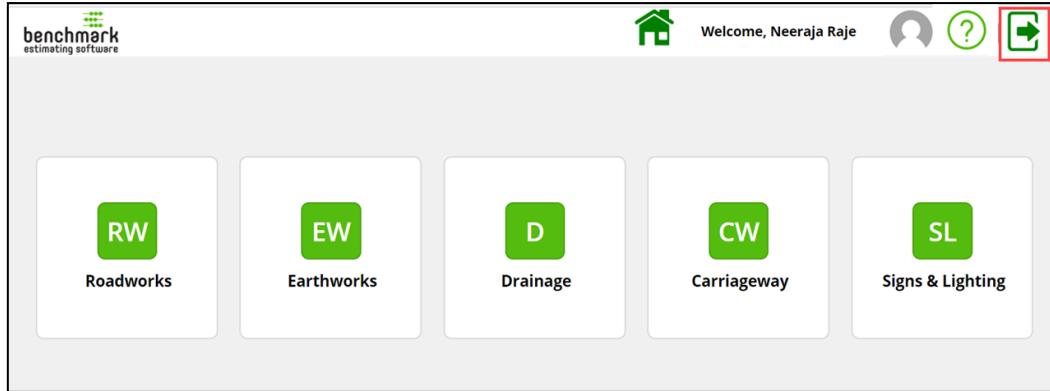
- 1. Time/Duration
- 2. Labour & Site
- 3. Direct Works Price
- 4. Staff
- 5. Road Length
- 6. Security Gates
- 7. Vehicles
- 8. Haul Roads
- 9. Plant Platforms
- 10. Offices
- 11. Power
- 12. Temporary Traffic Management
- 13. Temporary Retaining Structures
- 14. Access Scaffolding
- 15. Statutory Services Apparatus Protection
- 16. Surface Water Management
- 17. Environment
- 18. Archaeology
- 19. Protected Species
- 20. External Parties Fees
- 21. Temporary De-Watering
- 22. Temporary Running Surface
- 23. Temporary Road Bridge
- 24. Temporary Screens

3. This creates a copy of the selected model instance.
4. Select the new Estimate Name and Section Name.
5. Enter/select details for the new model instance using standard functionality.

Logging Out

To log out of this application:

1. From any page within the application, select the Logout icon.



The following confirmation prompt displays:

“Are you sure you want to Logout?”

2. Select Yes.

Appendix

The sections below map the input screens in the app to the relevant worksheets.

Indirect Works

Forms in the app user interface map to their corresponding Parametric Model worksheets (MP Model v51.5).

Primary Input

New Preliminaries Model v1.0

Last Modified Date : 06/12/2021 Last Modified By : Vinodh KP

Primary Input

TTM Input

Scaffold Input

Temp Retaining Input

Report

Comments

Estimate Name * Highway Upgrade

Estimate Completion Date 02/12/2021

TIME/DURATION

LABOUR & SITE

DIRECT WORKS PRICE

Next

INDIRECT PRICE CALCULATOR / NEW PRELIMS MODEL

For use on schemes over £10,000,000

TIME / DURATION

Select Scheme Definition from the Drop-down List : Smart Motorway

NO STAGES AND DURATIONS	WEEKS	MONTHS	YEARS
1 Stage	100	27	1
2 Stages	100	27	1
3 Stages	100	27	1
4 Stages	100	27	1
5 Stages	100	27	1
6 Stages	100	27	1
7 Stages	100	27	1
8 Stages	100	27	1
9 Stages	100	27	1
10 Stages	100	27	1
11 Stages	100	27	1
12 Stages	100	27	1
13 Stages	100	27	1
14 Stages	100	27	1
15 Stages	100	27	1
16 Stages	100	27	1
17 Stages	100	27	1
18 Stages	100	27	1
19 Stages	100	27	1
20 External Party Fees	100	27	1
21 Temporary De-Watering	100	27	1
22 Temporary Running Surface	100	27	1
23 Temporary Road Bridge	100	27	1
24 Temporary Screens	100	27	1

LABOUR & SITE

Enter HR Project Manager Name :

Definition Data : £10,000,000.00

PM Lead Address : PTS LANCASHIRE

Indirect Labour Data : £10,000,000.00

Indirect Labour Rate : 20%

primary inputs **secondary inputs** **selected parameters** **bill of lading** **exchange rates** **project management calls** **project management bg** **client requirement bg**

TTM Input

Scaffold Input

New Preliminaries Model v1.0
Last Modified Date : 09/12/2021 Last Modified By : Virend KP

Primary Input
TTM Input
Scaffold Input
Temp Retaining Input
Report
Comments

1. Overbridge Abutments
2. Underbridge Abutments
3. High Walls
4. Pipe-Cap And Foundation Access
5. Wall Scaffolding
6. Circular Retaining Pile Scaffolding
7. Lining Bay Addition & Scaffolding And Bent Scaffolding Birmingham Box
8. Cost Engineer Self Price Section

OVERBRIDGE ABUTMENTS

Number of Scaffold of this Size
Scaffolding Number of Faces Front and Rear
Scaffold Length in Meters
Scaffold width in Boards
Scaffold Height in Meters
Number of Staircases
Scaffold Hire Period in weeks

1 Access Scaffold to an Overbridge Abutment carrying 4 lanes x 2 carriageways plus hardstrips and verg

Adjusted Allowance
 2
 39
 5
 7
 2
 26

2 Access Scaffold to an Overbridge Abutment carrying 3 lanes x 2 carriageways plus hardstrips and verg

Adjusted Allowance
 2
 32
 5
 7
 1
 26

3 Access Scaffold to an Overbridge Abutment carrying 2 lanes x 2 carriageways plus hardstrips and verg

Adjusted Allowance
 2
 30
 5
 7
 1
 26

[Back](#)
[Next](#)

The screenshot shows the Scaffold Input section of the software. It includes a title 'SCAFFOLDING INPUT' and a sub-section 'Access Scaffold to an Overbridge Abutment carrying 4 lanes x 2 carriageways plus hardstrips and verg'. Below this, there are four rows of scaffolding options, each with a description, a 'Default Allowance' input field, and a 'Reduced Allowance' input field. The first three rows have dropdown menus for 'Number of Faces' and 'Scaffold Height in Meters'. The fourth row has dropdown menus for 'Number of Faces' and 'Scaffold Height in Meters'. At the bottom of the scaffold input section, there is a red arrow pointing to the 'scaffold input' tab in the navigation bar.

[scaffold input](#)
[priod price](#)
[data sheet](#)
[piling summary](#)
[disposition](#)
[input power](#)
[grid calculator 1](#)
[generator calculator 1](#)
[water & sewage](#)

Temp Retaining Input

The screenshot displays two overlapping software windows. The top window is titled 'New Preliminaries Model V1.0' and shows a navigation bar with tabs: Primary Input, TTM Input, Scaffold Input, Temp Retaining Input (which is highlighted with a red box), Report, and Comments. Below the navigation bar are four circular icons representing different wall types: Sheet Piled Wall (green), King Piled Wall (grey), Gabion Walls (grey), and Cofferdam (grey). A dropdown menu for 'Sheet Piled Wall' is open, showing a list item 'Select from here'. The main content area of this window is titled 'Retaining Wall Constructed In: Select from here Sheet Piles Working in Cantilever' and contains fields for Number of Walls (Adjusted Allowance: 1), Retained Height (3), Length of Wall (100), Calculated Pile length (8), Ground Conditions (Unknown), Pre-auger (50%), and Buy Back / Removal Percentage (50%). Another dropdown menu for 'Select from here' is visible at the bottom left. The bottom window is titled 'Retaining Solutions Input' and also has a 'Temp Retaining Inputs' tab highlighted with a red box. It lists several 'Select from here' dropdown menus for different retaining wall types: Sheet Piled Wall, King Piled Wall, Gabion Walls, Cofferdam, Retaining Wall Constructed in: Select from here Sheet Piles Working in Cantilever, Retaining Wall Constructed in: Select from here Sheet Piles Working in Gravity, Retaining Wall Constructed in: Select from here Sheet Piles Working in Gravity, Retaining Wall Constructed in: Select from here Sheet Piles Working in Gravity, and Retaining Wall Constructed in: Select from here Sheet Piles Working in Gravity. Each of these sections includes a table with columns for Length of Wall, Calculated Pile length, Ground Conditions, Pre-auger, and Buy Back / Removal Percentage.

Regional Investment Programme (RIP)

Roadworks

Forms in the app user interface map to their corresponding Parametric Model worksheets (DWCM – Roadworks General – RIP – V2.0).

Options Parameters

Detailed Parameters

The screenshot shows the 'New Roadworks Model' application. On the left, the 'Existing Infrastructure' section displays a table of roads to be abandoned/upgraded across Rural, Urban, and Total categories for various interchange types: Donut, Dumbell, Half-dumbell, and Diamond. A red box highlights the 'Detailed Parameters' tab at the top. On the right, the 'Proposed Road Network' section shows tables for 'Proposed Interchanges' and 'Proposed Road Network'. The 'Proposed Interchanges' table includes columns for 'Existing Section', 'Start Location', 'End Location', 'Length (mi)', 'Alignment', 'New road type', 'Number of lanes per carriageway', 'Open width', and 'Value in last column'. The 'Proposed Road Network' table includes columns for 'Existing Section', 'Start Location', 'End Location', 'Length (mi)', 'Alignment', 'New road type', 'Number of lanes per carriageway', 'Open width', and 'Value in last column'. A red arrow points from the 'Detailed Parameters' tab on the left to the 'Proposed Road Network' table on the right.

Series Parameters

New Roadworks Model

Options Parameters Detailed Parameters Series Parameters Full BQ Comments

Proportion of heavily wooded areas requiring clearance

Principal route	Link 1	Link 2	Link 3	Link 4	Link 5	Link 6	Link 7	Link 8	Link 9
Location									
Start Change									
End Change									
Extent of heavily wooded areas	✓	✓	✓	✓	✓	✓	✓	✓	✓

Back Next

SWH - CLEARMASK

Proportion of heavily wooded areas requiring clearance

	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6	Unit 7	Unit 8
Cleared route	0	0	0	0	0	0	0	0
Start Change	0	0	0	0	0	0	0	0
End Change	0	0	0	0	0	0	0	0
Extent of heavily wooded areas	0	0	0	0	0	0	0	0
Interchanges	0	0	0	0	0	0	0	0
Manhole Change	0	0	0	0	0	0	0	0
SWH Change	0	0	0	0	0	0	0	0
Site Roads (cont'd)	0	0	0	0	0	0	0	0
Start Change	0	0	0	0	0	0	0	0
End Change	0	0	0	0	0	0	0	0
Off Line Tracks	0	0	0	0	0	0	0	0
Off Line Change	0	0	0	0	0	0	0	0
Extents of cleared areas	0	0	0	0	0	0	0	0

Take down existing fences Version Control Grand Summary Options Parameters Detailed Parameters Series Parameters Back Plan

Earthworks

Forms in the app user interface map to their corresponding Parametric Model worksheets (DWCM – Earthworks General – RIP – V2.0).

Options Parameters

Earthworks Model

Options Parameters Detailed Parameters EWKS Parameters Full BQ Comments

Site Information

Existing Network	Length (km)	Standard	Excavated Sections (m)	Grade Separated Interchanges (No.)	At Grade Junctions (No.)	Side Hoods (No.)
Rural	Primary					
	Secondary					
Urban	Primary					
	Secondary					

Back Next

DWCM - EARTHWORKS GENERAL

Existing Network

Length (km)	Standard	Excavated Sections (m)	Grade Separated Interchanges (No.)	At Grade Junctions (No.)	Side Hoods (No.)
Rural	Primary				
	Secondary				
Urban	Primary				
	Secondary				

Geography

Primary	Secondary
RURAL	URBAN

Schema Requirements

No. of links	Length (km)	Standard
Sheet 1 Subcontract Library		

Options Parameters Detailed Parameters EWKS Parameters Summary Tasks Schedule

Detailed Parameters

New Earthworks Model

Options Parameters Detailed Parameters EWKS Parameters Full BQ Comments

Existing Infrastructure

Existing roads to be abandoned/upgraded

	RURAL	URBAN	TOTAL
Graded	no		0
Dumbell	no		0
Half Dumbell	no		0
Chamfer	no		0

Back Next

DWCM - INFRASTRUCTURE

Existing Infrastructure

RURAL	URBAN	TOTAL
Roundabout	no	0
Half Roundabout	no	0
Diamond	no	0
LGD	no	0
Roundabout	no	0
Interchanges	no	0
Site roads (crossings)	Single	0
Off line tracks	Single	0
Off line change	Single	0

Proposed Infrastructure

Proposed Section	Existing Section	Start Change	End Change	Length (m)	Alignment	Surfaced	Horizontal/Vertical curvature	Curv. radius	Verge width (per carriage)
I Link 1				0					
I Link 2				0					
I Link 3				0					
I Link 4				0					
I Link 5				0					
I Link 6				0					
I Link 7				0					
I Link 8				0					
I Link 9				0					

Subcontract Library Options Parameters EWKS Parameters Summary Tasks Schedule

EWKS Parameters

New Earthworks Model

Options Parameters Detailed Parameters EWKS Parameters Full BQ Comments

Typical Strip

Project Route	Link 1	Link 2	Link 3	Link 4
Location				
Start Change				
End Change				
Predominant Land Use	✓	✓	✓	✓
Average Depth of Topsoil and roots	✓	✓	✓	✓

Back Next

DWCM - EARTHWORKS

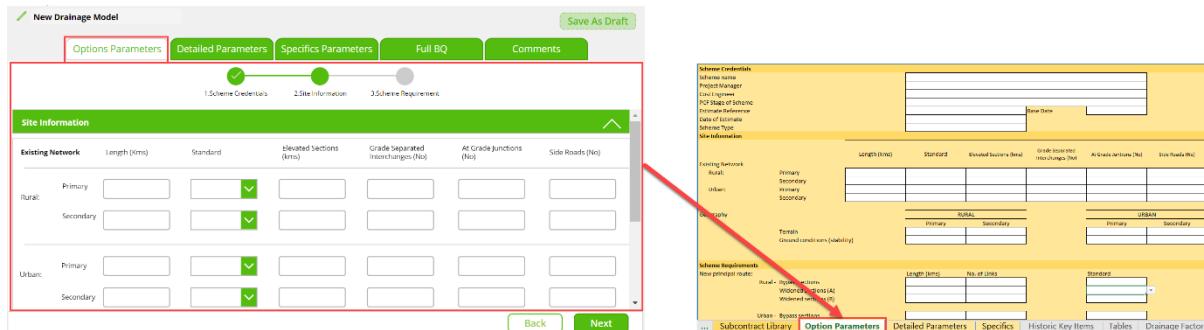
Typical Strip

Project Route	Link 1	Link 2	Link 3	Link 4	Link 5	Link 6	Link 7	Link 8
Location	0	0	0	0	0	0	0	0
Start Change	0	0	0	0	0	0	0	0
End Change	0	0	0	0	0	0	0	0
Predominant land use	0	0	0	0	0	0	0	0
Average depth of topsoil strip (mm)	0	0	0	0	0	0	0	0
Interchanges	0	0	0	0	0	0	0	0
Site Roads (cont'd)	0	0	0	0	0	0	0	0
Start Change	0	0	0	0	0	0	0	0
End Change	0	0	0	0	0	0	0	0
Predominant land use	0	0	0	0	0	0	0	0
Average depth of topsoil strip (mm)	0	0	0	0	0	0	0	0
Site Roads (cont'd)	0	0	0	0	0	0	0	0
Start Change	0	0	0	0	0	0	0	0
End Change	0	0	0	0	0	0	0	0
Predominant land use	0	0	0	0	0	0	0	0
Subcontract Library Options Parameters Detailed Parameters EWKS Parameters Summary Tasks Schedule	0	0	0	0	0	0	0	0

Drainage

Forms in the app user interface map to their corresponding Parametric Model worksheets (DWCM – Drainage – RIP – V2.0).

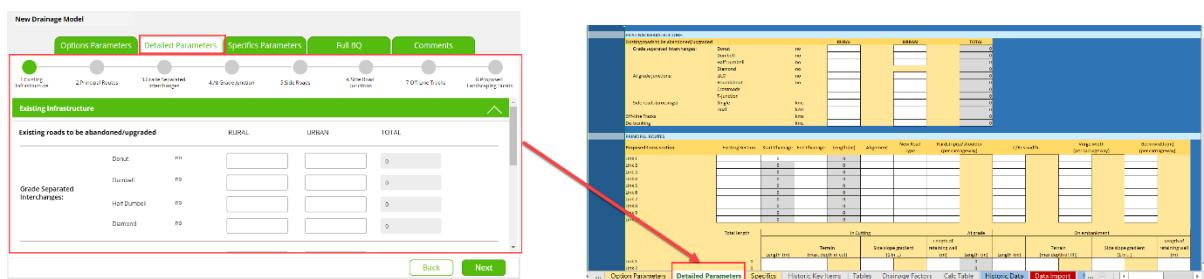
Options Parameters



The screenshot shows the 'New Drainage Model' application interface. The top navigation bar includes tabs for 'Save As Draft', 'Options Parameters' (highlighted in green), 'Detailed Parameters', 'Specifics Parameters', 'Full BQ', and 'Comments'. Below the tabs is a progress bar with three steps: 1. Scheme Details, 2. Site Information, and 3. Scheme Requirements. The main area is titled 'Site Information' and contains a table for 'Existing Network' under 'Rural' and 'Urban' categories. At the bottom are 'Back' and 'Next' buttons.

The right side shows the corresponding DWCM Parametric Model worksheet for 'Option Parameters'. It includes sections for 'Scheme Details' (Scheme name, Project Manager, Lead Engineer, PCU Stage of Scheme, Environmental Statement, Date of Estimate, Scheme Type, Site Information), 'Existing Network' (Rural and Urban tables for Primary and Secondary roads), 'Scheme Requirements' (New principle route, Rural and Urban bypass routes), and 'Drainage Factors' (Subcontract Library, Option Parameters, Detailed Parameters, Specifics, Historic Key Items, Tables, Drainage Factors). A red arrow highlights the 'Option Parameters' tab in both the app and the worksheet.

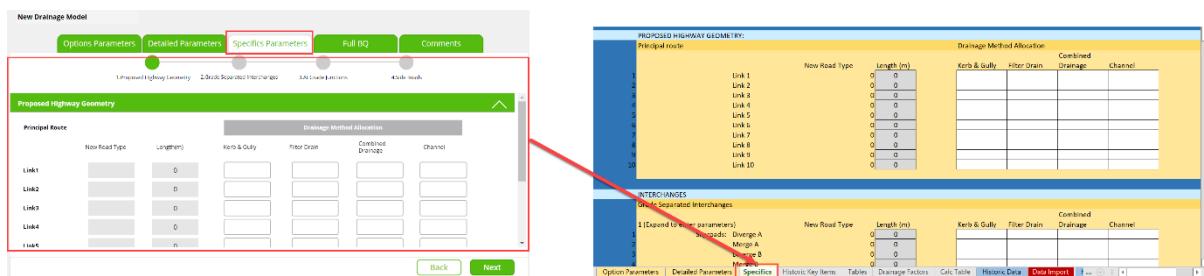
Detailed Parameters



The screenshot shows the 'New Drainage Model' application interface with the 'Detailed Parameters' tab highlighted in green. Below the tabs is a progress bar with steps 1 through 7. The main area is titled 'Existing Infrastructure' and contains a table for 'Existing roads to be abandoned/upgraded' under 'RURAL', 'URBAN', and 'TOTAL' columns. At the bottom are 'Back' and 'Next' buttons.

The right side shows the corresponding DWCM Parametric Model worksheet for 'Detailed Parameters'. It includes sections for 'Proposed Interchanges' (Proposed Interchange table), 'Proposed Roads' (Proposed Roads table), 'Proposed Highways' (Proposed Highways table), and 'Drainage Method Allocation' (Drainage Method Allocation table). A red arrow highlights the 'Detailed Parameters' tab in both the app and the worksheet.

Specifics Parameters



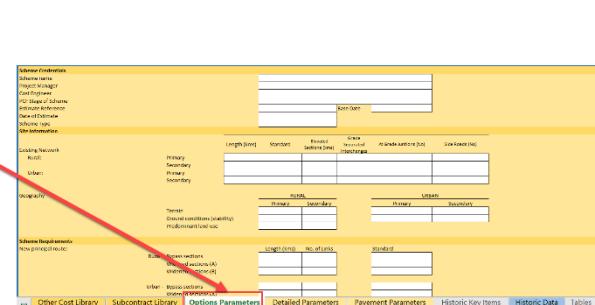
The screenshot shows the 'New Drainage Model' application interface with the 'Specifics Parameters' tab highlighted in green. Below the tabs is a progress bar with steps 1 through 4. The main area is titled 'Proposed Highway Geometry' and contains a table for 'Principal Route' with columns for 'New Road Type' and 'Length (m)'. At the bottom are 'Back' and 'Next' buttons.

The right side shows the corresponding DWCM Parametric Model worksheet for 'Specifics'. It includes sections for 'PROPOSED HIGHWAY GEOMETRY' (Principal route table), 'Drainage Method Allocation' (Kerb & Gully, Filter Drain, Combined Drainage, Channel tables), and 'INTERCHANGES' (Grade-separated Interchanges table). A red arrow highlights the 'Specifics' tab in both the app and the worksheet.

Carriageway

Forms in the app user interface map to their corresponding Parametric Model worksheets (DWCM – Carriageway – RIP – V2.1).

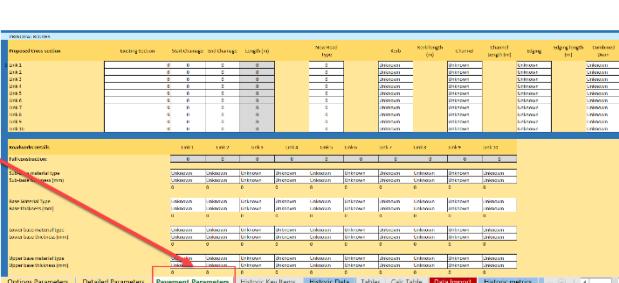
Options Parameters

Detailed Parameters




Pavement Parameters

Signs & Lighting

Forms in the app user interface map to their corresponding Parametric Model worksheets (DWCM – Signs Lighting – RIP – V2.1).

Options Parameters

Site Information					
Existing Network	Length (Kms)	Standard	Reverted Sections (km)	Grade Separated Interchanges (No.)	At Grade Junctions (No.)
Rural:	Primary				
	Secondary				
Urban:	Primary				
	Secondary				

Subcontract Library

Detailed Parameters

Existing Infrastructure			
Existing roads to be abandoned/upgraded	RURAL	URBAN	TOTAL
Grade Separated Interchanges:	None		0
Dumbell	None		0
Half Dumbell	None		0
Diamond	None		0

Proposed Cross-section

Signs Parameters

Principal Routes							
Proposed Cross-section	Existing Section	Start Change	End Change	Length (m)	New Road Type	Unit No. 1/2	Unit No. 3/4
Link 1				0	Unknown	Unknown	Unknown
Link 2				0	Unknown	Unknown	Unknown
Link 3				0	Unknown	Unknown	Unknown
Link 4				0	Unknown	Unknown	Unknown
Link 5				0	Unknown	Unknown	Unknown

Proposed Cross-section

Road Marking Parameters

Principal Routes							
Proposed Cross-section	Existing Section	Start Change	End Change	Length (m)	New Road Type	Unit No. 1/2	Unit No. 3/4
Link1				0	Unknown	Unknown	Unknown
Link2				0	Unknown	Unknown	Unknown
Link3				0	Unknown	Unknown	Unknown

Proposed Cross-section

Smart Motorway Program (SMP)

Roadworks

Forms in the app user interface map to their corresponding Parametric Model worksheets (DWCM – Roadworks General – SMP – V2.0).

Options Parameters

Link	Length (m)	Bridged Sections (m)	Standard (A-side)	Standard (B-side)	Length or Central Reserve (C.R.) (m)	Width
Link 1			✓	✓		✓
Link 2			✓	✓		✓
Link 3			✓	✓		✓
Link 4			✓	✓		✓

Detailed Parameters

Link	Start Change	End Change	Length (m)	Bridged carriageways	Existing verge width (m)	Existing Central Reserve width (m)	Existing verge width (m)
Link 1			0	✓	✓	✓	✓
Link 2			0	✓	✓	✓	✓

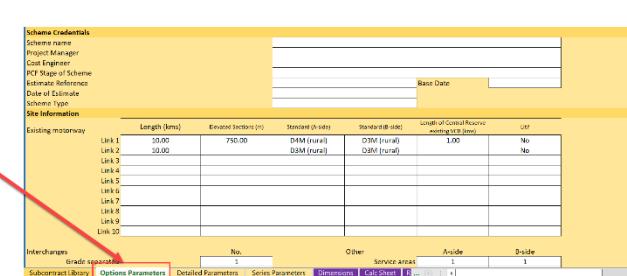
Series Parameters

Link	Link 1	Link 2	Link 3	Link 4	Link 5	Link 6	Link 7
Start Change							
End Change							
A Carriageway	✓	✓	✓	✓	✓	✓	✓
B Carriageway	✓	✓	✓	✓	✓	✓	✓

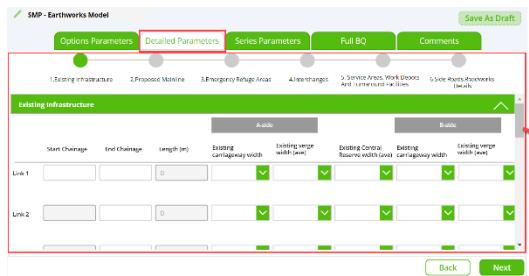
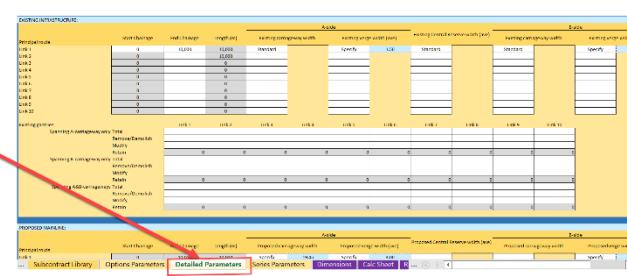
Earthworks

Forms in the app user interface map to their corresponding Parametric Model worksheets (DWCM – Earthworks General – SMP – V2.0).

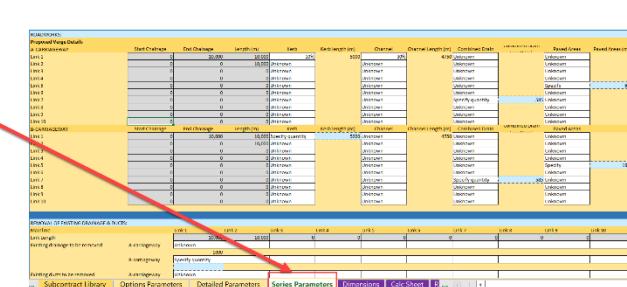
Options Parameters

Detailed Parameters

Series Parameters

Carriageway

Forms in the app user interface map to their corresponding Parametric Model worksheets (DWCM – Carriageway – SMP – V2.1).

Options Parameters

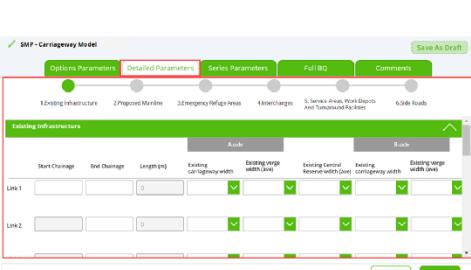


Link	Length (m)	Bridged Sections (m)	Standard (A-side)	Standard (B-side)	Length of Central Reserve (C2) (m)	A-side
Link 1			✓	✓		✓
Link 2			✓	✓		✓
Link 3			✓	✓		✓
Link 4			✓	✓		✓

Link	Length (m)	Bridged Sections (m)	Standard (A-side)	Standard (B-side)	Length of Central Reserve (C2) (m)	A-side
Link 1	100	100	100	100	0	100
Link 2	100	100	100	100	0	100
Link 3	100	100	100	100	0	100
Link 4	100	100	100	100	0	100

Scheme Credentials		Basic Data	
Scheme name	Project Manager	Cost Engineer	PKT Stage of Scheme
Manager's Reference	Date of Estimate	Scheme Type	
Site Information			
Existing motorway	Length (m)	Bridged Sections (m)	Standard (A-side)
Link 1	100	100	100
Link 2	100	100	100
Link 3	100	100	100
Link 4	100	100	100
Link 5	100	100	100
Link 6	100	100	100
Link 7	100	100	100
Link 8	100	100	100
Link 9	100	100	100
Link 10	100	100	100
Interchanges			
Grade separated	No.	Other	Service areas
Subcontract library	Dimensions	Calc Sheet	Risk
Options Parameters	Data Collection	Data Import	

Detailed Parameters



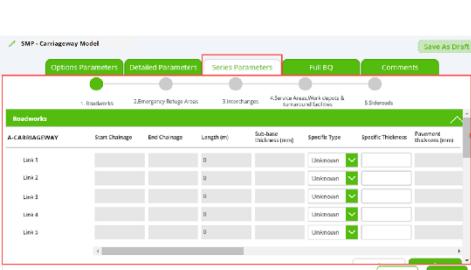
Link	Start Change	End Change	Length (m)	Existing carriageway width	Existing reserve width (m)	Existing emergency width	Existing central resource width (m)	Existing emergency width
Link 1			100	100	0	0	100	100
Link 2			100	100	0	0	100	100

Link	Start Change	End Change	Length (m)	Proposed carriageway width	Proposed reserve width (m)	Proposed central resource width (m)	Proposed emergency width	
Link 1			100	100	0	0	100	100
Link 2			100	100	0	0	100	100

EXISTING INFRASTRUCTURE		A-side		B-side			
Proposed route	Existing route	Start Change	End Change	Length (m)	Existing emergency width	Existing central resource width (m)	Existing emergency width
Link 1	Link 2	0	0	100	0	100	100
Link 3	Link 4	0	0	100	0	100	100
Link 5	Link 6	0	0	100	0	100	100
Link 7	Link 8	0	0	100	0	100	100
Link 9	Link 10	0	0	100	0	100	100

EXISTING FEATURES		A-side		B-side	
Proposed route	Existing route	Start Change	End Change	Length (m)	Existing emergency width
Link 1	Link 2	0	0	100	0
Link 3	Link 4	0	0	100	0
Link 5	Link 6	0	0	100	0
Link 7	Link 8	0	0	100	0
Link 9	Link 10	0	0	100	0

Series Parameters



Link	Start Change	End Change	Length (m)	Sub-base thickness (m)	Specific type	Specific thickness	Pavement thickness (m)
Link 1			100	0	Unknown	✓	0
Link 2			100	0	Unknown	✓	0
Link 3			100	0	Unknown	✓	0
Link 4			100	0	Unknown	✓	0

Link	Start Change	End Change	Length (m)	Sub-base thickness (m)	Specific type	Specific thickness	Pavement thickness (m)
Link 1	0	0	100	0	Unknown	✓	0
Link 2	0	0	100	0	Unknown	✓	0
Link 3	0	0	100	0	Unknown	✓	0
Link 4	0	0	100	0	Unknown	✓	0

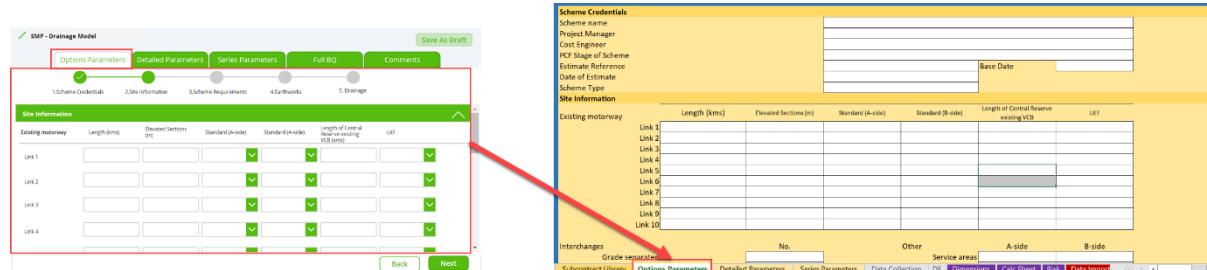
PROPOSED INFRASTRUCTURE		A-side		B-side			
Proposed route	Existing route	Start Change	End Change	Length (m)	Proposed emergency width	Proposed central resource width (m)	Proposed emergency width
Link 1	Link 2	0	0	100	0	100	100
Link 3	Link 4	0	0	100	0	100	100
Link 5	Link 6	0	0	100	0	100	100
Link 7	Link 8	0	0	100	0	100	100
Link 9	Link 10	0	0	100	0	100	100

PROPOSED FEATURES		A-side		B-side	
Proposed route	Existing route	Start Change	End Change	Length (m)	Existing emergency width
Link 1	Link 2	0	0	100	0
Link 3	Link 4	0	0	100	0
Link 5	Link 6	0	0	100	0
Link 7	Link 8	0	0	100	0
Link 9	Link 10	0	0	100	0

Drainage

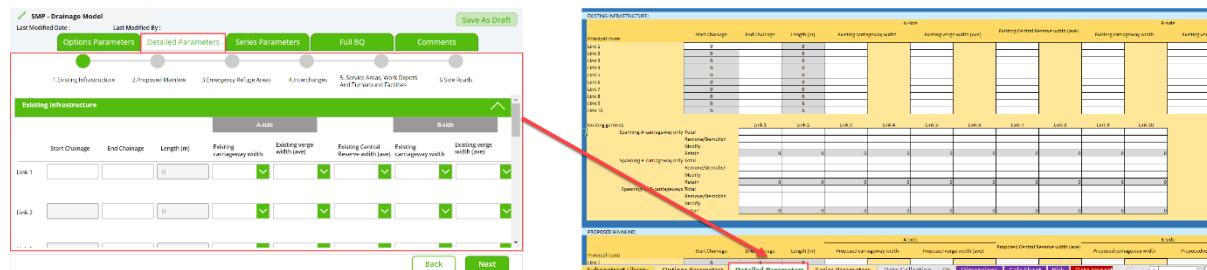
Forms in the app user interface map to their corresponding Parametric Model worksheets (DWCM – Drainage – SMP – V2.0).

Options Parameters



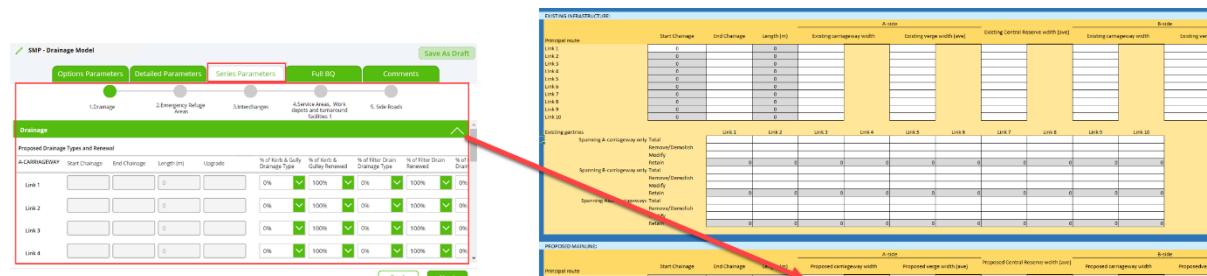
Scheme Credentials					
Scheme name					
Project Manager					
Cost Engineer					
PCU ID					
Estimate Reference					
Date of Estimate					
Scheme Type					
Existing motorway	Length (km)	Detailed Sections (m)	Standard (A-side)	Standard (B-side)	Length of Central Reserve existing VCB
Link 1					
Link 2					
Link 3					
Link 4					
Link 5					
Link 6					
Link 7					
Link 8					
Link 9					
Link 10					

Detailed Parameters



Existing Infrastructure					
	A-side	B-side			
Start Change	End Change	Length (m)	Existing carriageway width	Existing verges width (m)	Existing central reserve width (m)
Link 1					
Link 2					
Link 3					
Link 4					
Link 5					
Link 6					
Link 7					
Link 8					
Link 9					
Link 10					

Series Parameters



Drainage					
	A-side	B-side			
Proposed Drainage Types and Renewal	Start Change	End Change	Length (m)	Upgrade	% of Kerb & Gully Drainage Type
A-CARRIAGEWAY	Link 1				0%
	Link 2				100%
	Link 3				0%
	Link 4				100%
	Link 5				0%
	Link 6				100%
	Link 7				0%
	Link 8				100%
	Link 9				0%
	Link 10				100%

Signs & Lighting

Forms in the app user interface map to their corresponding Parametric Model worksheets (DWCM – Signs & Lighting – SMP – V2.0).

Options Parameters

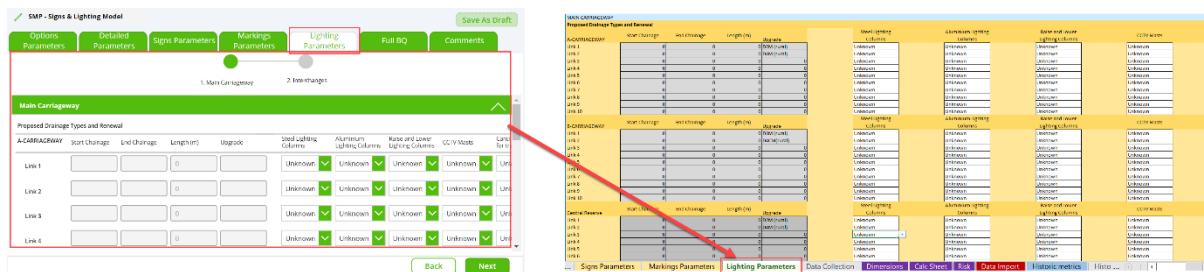
Detailed Parameters

The screenshot shows the 'Existing Infrastructure' section of the SMP model. It includes a table for 'Existing Infrastructure' with columns for Start Change, End Change, Length (m), Existing verge carriageway width, Existing verge width [m], Existing Central Reserve width [m], and Existing verge width [m]. Below this is a 'Detailed Parameters' table for 'Existing Infrastructure' with columns for Start Change, End Change, Length, Existing verge width [m], Existing Central Reserve width [m], Existing verge width [m], Existing verge width [m], Existing Central Reserve width [m], and Existing verge width [m]. The 'Detailed Parameters' table has a red arrow pointing to it from the main interface.

Signs Parameters

Markings Parameters

Lighting Parameters

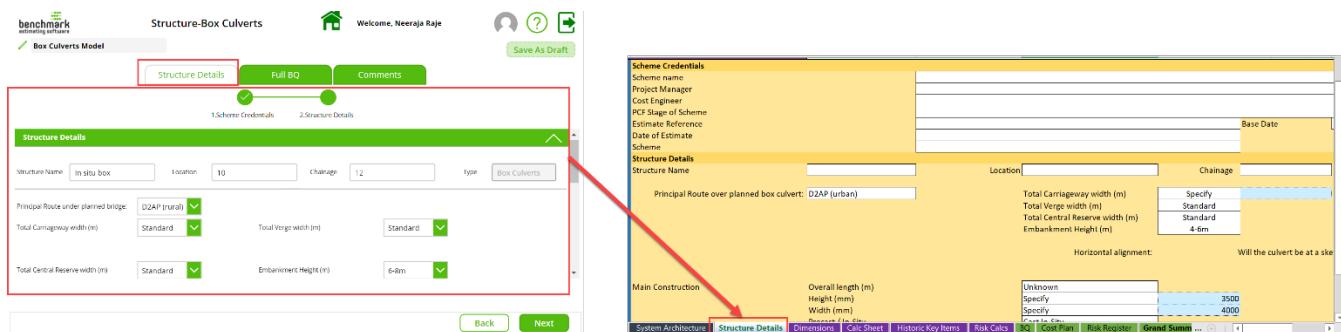


Structure

Box Culverts

Forms in the app user interface map to their corresponding Parametric Model worksheets (DWCM – Box Culverts Model – V2.0).

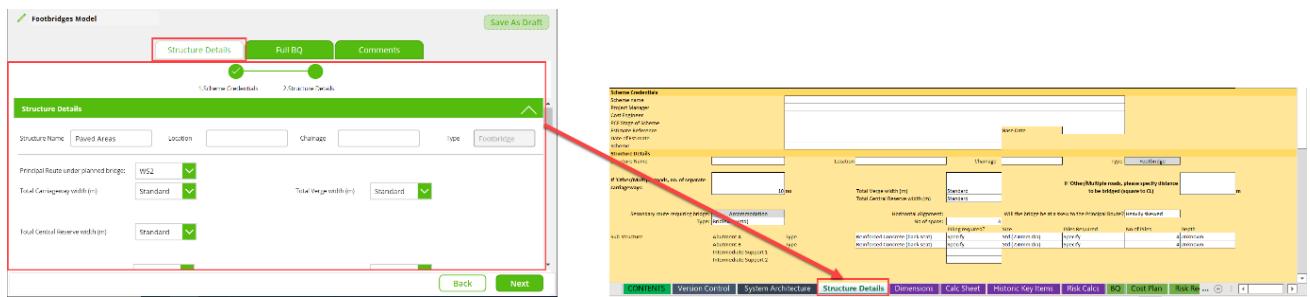
Structure Details



Footbridges

Forms in the app user interface map to their corresponding Parametric Model worksheets (DWCM – Footbridges Model – V2.0).

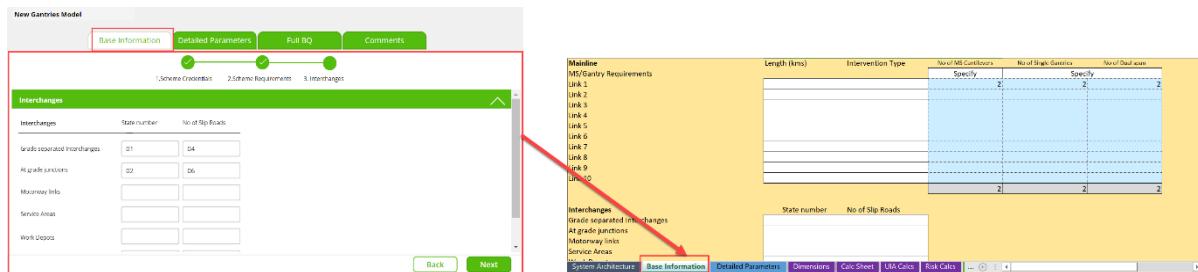
Structure Details



Gantries

Forms in the app user interface map to their corresponding Parametric Model worksheets (DWCM – Gantry Model – V2.0).

Base Information



Interchanges		
Interchanges	State number	No. of Slip Roads
Grade separated interchanges	01	04
At grade junctions	02	06
Motorway links		
Service areas		
Wayside drops		

Mainline	M2 Gantry Requirements	Length (km)	Intervention Type	Next MS Corridors		No. of Single Ganties		No. of Dual spans	
				Specify	Specify	Specify	Specify	Specify	Specify
Link 1									
Link 2									
Link 3									
Link 4									
Link 5									
Link 6									
Link 7									
Link 8									
Link 9									
Link 10									

Detailed Parameters



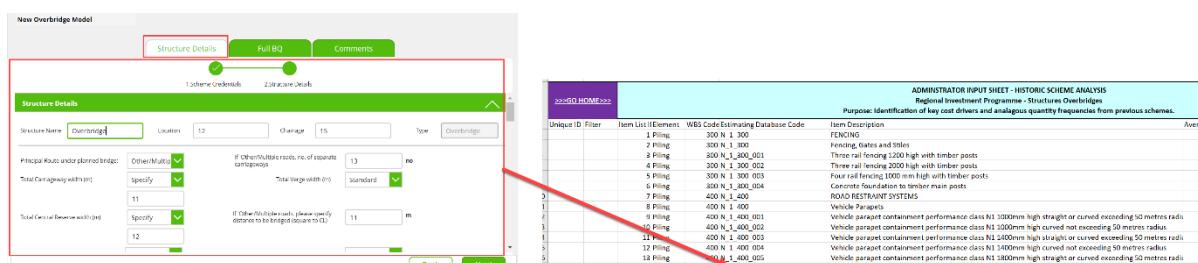
Reference	Chainage	Carriageway	Type	Piling	Diameter	No. of piles	Depth
MS-1	38	A-way	MS3	Specify	ne 600mm	Unknown	ne 10m
MS-2	42	B-way	MS3	Specify	Unknown		
MS-3	60	A-way	MS4	Specify	Unknown		

MS CANTILEVER SCHEDULE				
Reference	Chainage	Carriageway	Type	Piling

Overbridges

Forms in the app user interface map to their corresponding Parametric Model worksheets (DWCM – Overbridges Model – V2.0).

Structure Details



Structure Name	Location	Chainage	Type
Overbridge	12	15	Overbridge

ADMINISTRATOR INPUT SHEET - HISTORIC SCHEME ANALYSIS				
Regional Investment Programme - Structures Overbridges				
Purpose: Identification of key cost drivers and analogous quantity frequencies from previous schemes.				
Unique ID	Filter	Item List (Element)	WBS Code Estimating Database Code	Item Description
1		1 Piling	300_N_1_300	FENCING
2		2 Piling	300_N_1_300	Fencing, Gates and Gates
3		3 Piling	300_N_1_400_001	Three rail fencing 1000 mm high with timber posts
4		4 Piling	300_N_1_400_002	Three rail fencing 2000 mm high with timber posts
5		5 Piling	300_N_1_300_003	Four rail fencing 1000 mm high with timber posts
6		6 Piling	300_N_1_800_004	Concrete foundation to timber main posts
7		7 Piling	400_N_1_400	Vehicle parapet containment performance class N1 1000mm high straight or curved exceeding 50 metres radius
8		8 Piling	400_N_1_400_001	Vehicle parapet containment performance class N1 1000mm high straight or curved exceeding 50 metres radius
9		9 Piling	400_N_1_400_001	Vehicle parapet containment performance class N1 2000mm high straight or curved exceeding 50 metres radius
10		10 Piling	400_N_1_400_002	Vehicle parapet containment performance class N1 2000mm high straight or curved exceeding 50 metres radius
11		11 Piling	400_N_1_400_003	Vehicle parapet containment performance class N1 2000mm high straight or curved exceeding 50 metres radius
12		12 Piling	400_N_1_400_004	Vehicle parapet containment performance class N1 2000mm high straight or curved exceeding 50 metres radius
13		13 Piling	400_N_1_400_005	Vehicle parapet containment performance class N1 3000mm high straight or curved exceeding 50 metres radius
14		14 Piling	400_N_1_400_006	Vehicle parapet containment performance class N1 3000mm high straight or curved exceeding 50 metres radius
15		15 Piling	400_N_1_400_007	Vehicle parapet containment performance class N1 4000mm high straight or curved exceeding 50 metres radius
16		16 Piling	400_N_1_400_008	Vehicle parapet containment performance class N1 4000mm high straight or curved exceeding 50 metres radius

Piped Culverts

Forms in the app user interface map to their corresponding Parametric Model worksheets (DWCM – Piped Culverts Model – V2.1).

Base Information

Piped Culvert Model

Save As Draft

Base Information **Detailed Information** **Full BQ** **Comments**

Scheme Requirements

1.Scheme Credentials 2.Scheme Requirements

Manline Lengths (Kms) No Of Culverts
MS/Gerry Requirements Unknown

Link 1 20
Link 2 15
Link 3 5
Link 4
Link 5

Scheme Credentials

Scheme name
Project Manager
Cost Estimator
PCE Stage of Scheme
Estimate Reference
Date of Estimate
Scheme Type

Scheme Requirements

Manline
Piped Culverts Requirements
Link 1
Link 2
Link 3
Link 4
Link 5
Link 6
Link 7
Link 8
Link 9

Length (kms) No of Culverts
Specify 5

Base Information **Detailed Parameters** **Dimensions** **Calc Sheet** **Historic Key Items** **...**

Detailed Parameters

Piped Culvert Model
Last Modified Date: 11/10/2022 Last Modified By: Neeraj Raje
Save As Draft

Base Information
Detailed Information
Full BQ
Comments

1.7 Piped Culverts Schedule

Piped Culverts Schedule

Address
Change
Category
Length
Diameter
Design Category (1 to 20)
Depth category
Depth Category (1 to 20)
Depth Category (2 to 40)
Depth length

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Retaining Walls

Forms in the app user interface map to their corresponding Parametric Model worksheets (DWCM – Retaining Walls Model – V2.1).

Base Information

The screenshot shows the 'New Retaining Walls Model' interface with the 'Base Information' tab selected. The interface is divided into several sections:

- Header:** 'New Retaining Walls Model' with tabs for 'Base Information', 'Full BQ', and 'Comments'.
- Left Sidebar:** 'Schema Requirements' section with a green header bar containing '1 Schema Constraints' and '250 Item Requirements'. It includes a 'Schema Type' dropdown set to 'Major Joints' with a green checkmark, and a 'Schema Length' input field set to '10'.
- Middle Section:** 'Retaining Wall Schedule' table with three rows. Each row has columns for Ref, Start Change, End Change, Length, Max Ht (mm), Average Ht (mm), and Design type. The first row has values: Ref 1, Start Change 20, End Change 10, Length 2000, Max Ht (mm) Unknown, Average Ht (mm) Unknown, Design type Gabion. The second and third rows have similar patterns with checkmarks in the last two columns.
- Right Section:** 'Schema Credentials' table with fields for Schema Name, Project Manager, Lead Engineer, Lead Architect, Estimate Reference, Date of Estimate, and Basic Date. A 'Basic Date' input field is highlighted with a red box. Below it is a 'Schema Requirements' table with a green header bar containing 'Insert Minnoway' and 'Schema Length' set to '10'. This table includes columns for Ref, Start Change, End Change, Length, Max Ht (mm), and Average Ht (mm). To the right is a 'Retaining Wall requirements' table with a green header bar containing 'Specify' and a 'Design Type' column.
- Bottom Navigation:** Buttons for 'Back' and 'Next'.

Underbridges

Forms in the app user interface map to their corresponding Parametric Model worksheets (DWCM – Underbridges Model – V2.0).

Structure Details

New Underbridge Model

Structure Details **Full BQ** **Comments**

Structure Details

Scheme Name: Underbridge Location: 11 Chainage: 21 Type: Underbridge

Principal Route under planned bridge: Other/Multi? If Other/Multiple roads, no. of separate carriageways: 11 If no, specify: no

Total Carriageway width (m): Standard Total Verge width (m): Specify 250 m

Total Central Reserve width (m): Standard If no/Other/Multiple roads, please specify distance to be bridged (before or C2):

Scheme Credentials

Scheme name: Project Manager: Cost Engineer: PCF Stage: Scheme Status: Reference Date of Estimate: Scheme:

Structure Details

Structure Name: Location: Chainage: Principal Route over planned bridge: D2AP (urban) Total Carriageway width (m): Standard Total Verge width (m): Standard Total Central Reserve width (m): Standard

Secondary route requiring bridge: Load Type: S2 (real) Horizontal alignment: Will the bridge be at a skew to the road? No of spans: 2 Piling required? Unknown Size: No of piers:

Sub-structure

Abutment/A	Type	Reinforced Concrete (with wingwalls)
COMBINED	Version Control	System Architecture
STRUCTURE DETAILS	Dimensions	Calc Sheets
COMMENTS	Calcs	Horizon Key Items
Version Control	Risk Calcs	Budget
System Architecture	Cost Plan	...

Viaducts

Forms in the app user interface map to their corresponding Parametric Model worksheets (DWCM – Viaducts Model – V2.0).

Structure Details

Scheme Requirements

Structure Name	Abutment	Location	10	Change	12	Type	Vluctus
Principal Route over planned bridge:	D2AP (rural)	Total Carriageway width (m):	Standard	Total Central Reserve width (m):	Specify		
Total Central Reserve width (m):	Specify						

Structure Details

Scheme Name	Abutment	Location	10	Change	12	Type	Vluctus
Principal Route over planned bridge:	D2AP (rural)	Total Carriageway width (m):	Standard	Total Central Reserve width (m):	Specify		
Total Central Reserve width (m):	Specify						

Scheme Credentials

Scheme Name	Abutment	Location	10	Change	12	Type	Vluctus
Project Manager	John Doe	Role	Manager	Start Date	2023-01-01	End Date	2023-12-31
PCI Stage of Scheme	Concept	Design Phase	Initial	Completion Date	2024-06-30		
Estimate Reference	Initial Estimate	Cost Type	Cost	Completion Status	In Progress		
Date Entered	2023-01-01	Entered By	John Doe	Last Updated	2023-01-01		
Scheme	Abutment	Location	10	Change	12	Type	Vluctus

Structure Details

Scheme Name	Abutment	Location	10	Change	12	Type	Vluctus
Principal Route over planned bridge:	D2AP (rural)	Total Carriageway width (m):	Standard	Total Central Reserve width (m):	Specify		
Total Central Reserve width (m):	Specify						

Structural Requirements

Structural Requirement	Description	Type	Value
Abutment A	Abutment A	Type	Standard
Abutment B	Abutment B	Type	Standard
Intermediate Support 1	Intermediate Support 1	Type	Standard
Intermediate Support 2	Intermediate Support 2	Type	Standard
Intermediate Support 3	Intermediate Support 3	Type	Standard
Intermediate Support 4	Intermediate Support 4	Type	Standard
Intermediate Support 5	Intermediate Support 5	Type	Standard

Geometric Requirements

Geometric Requirement	Description	Type	Value
Horizontal alignment	Will the bridge be at a slope to the Principal Route?	Yes/No	No
Radius of curve	Radius required for the bridge	Meters	500
Width required	Width required for the bridge	Meters	10
Width of lanes	Width of lanes required	Meters	3.5

Material Requirements

Material Requirement	Description	Type	Value
Reinforced Concrete concrete walls/Spans	Reinforced Concrete concrete walls/Spans	Type	Standard
Reinforced Concrete eccentric spandrel/Unidirectional	Reinforced Concrete eccentric spandrel/Unidirectional	Type	Standard
Reinforced Concrete eccentric spandrel/Bidirectional	Reinforced Concrete eccentric spandrel/Bidirectional	Type	Standard
In-situ concrete	In-situ concrete	Type	Standard
Precast concrete	Precast concrete	Type	Standard
Steel reinforcement	Steel reinforcement	Type	Standard
In-situ concrete	In-situ concrete	Type	Standard

Our mission is to help organisations improve their estimating, and the integration of estimating with related business processes; for private enterprise this helps improve your profit and market share; public authorities can deliver more accurate budgets and streamline project delivery.

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