



RNS Steel Estimator

Guide to the SCNZ NZ Database

Rev 0

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I. Steel Construction New Zealand Inc. Database Terms of Use

1. DEFINITIONS

1.1 In these Terms of Use:

“**Agreement**” means these Terms of Use as may be varied by us from time to time.

“**Confidential Information**” includes the source code in relation to the Database and any information relating to our business or financial affairs, trade secrets, specialised know-how or practices or our clients or customers. It does not include any information which is already in the public domain at the time it is disclosed to you, or becomes available to the public domain other than via breach of this Agreement, or was received by a third party who had the legal right to disclose the information, or was already in the recipient’s possession prior to being disclosed to the recipient by you.

“**Intellectual Property Rights**” means any patent, trade mark, service mark, copyright, moral right, design, know-how and any other intellectual or industrial property rights anywhere in the world whether or not registered.

“**Database**” means our SCNZ Steel Estimator Demo database made available to you through the software and includes any modifications, improvements or upgrades to that database.

“**RNS**” means RNS Software Limited.

“**Software**” means any and all software that is available through the Website or otherwise provided by RNS, including mobile applications.

“**Users**” means your employees, contractors and invitees using the Database.

“**We**”, “**us**”, “**our**” and “**SCNZ**” shall mean Steel Construction New Zealand Incorporated and any of our agents or employees.

“**Website**” means the website at www.steelestimator.co.nz.

“**You**” and “**your**” shall mean the person or entity using the Database.

2. ACCEPTANCE

2.1 By using the Database, you accept and agree to be bound by this Agreement. We may vary this Agreement at any time by giving you 15 days’ notice. If you do not agree with any change to this Agreement, your sole remedy is to terminate your use of the Database.

3. USE OF THE DATABASE

3.1 In consideration of you agreeing to the terms set out in this Agreement, we grant you a non-transferable and non-exclusive right to access and use the Database on an “as is” basis.

4. INTELLECTUAL PROPERTY RIGHTS

4.1 All Intellectual Property Rights in the Database, and any other works provided in any form whatsoever to you by us or accessible to you because of your entry into this Agreement are and remain in our ownership.

4.2 You acknowledge no Intellectual Property Rights in the Database, will pass to you and agree that you shall not contest or challenge the ownership of the Intellectual Property Rights in the Database.

5. INDEMNITY

5.1 **You indemnify us against any actions, proceedings, losses, damages, liabilities, claims, costs and expenses including fines, penalties, legal (on a solicitor to own client basis), debt collection and other professional costs on a full indemnity basis that we or any of our directors, agents or employees**

incurs or suffers as a direct or indirect result of any breach by you of this Agreement and/or your use of the Database.

6. LIMITATIONS AND EXCLUSIONS

6.1 You acknowledge and agree that:

6.1.1 we are providing the Database to you only for the purpose of allowing you to trial your use of the Software;

6.1.2 the Software and the Database is to be used to offer pricing guidance at your own risk. In order to analyse the Database, and assess the SCNZ created Cost Centres, Material Codes, Material Sizes, Material Grades, Demo Estimates, Price Catalogues, Material Adjustments, Other Costs and Finish Treatments, the Database should be used alongside our pricing support documentation. You must create your own data for all of these created attributes and NOT use the Database as your own;

6.1.3 all projects should be costed on their own merit and complex items all need to be taken into account and added to the basic 'beam, column and bracing' structure, otherwise the prices generated will not be realistic or a good basis for costing. It is imperative that the end price is not taken as absolute and guaranteed unless you have analysed them and assessed the project in its entirety and you are satisfied with the output;

6.1.4 we therefore recommend that any prices derived from the Database and the Software have checking procedures placed upon them to ensure that you are satisfied with, and fully understand, the output prior to presentation to your client;

6.1.5 to the maximum extent permitted by law, we shall not be responsible or liable, whether in contract, tort, negligence or otherwise, for any loss or damage of any kind whatsoever, including, without limitation, interruption of business, access delays or data mis-delivery or destruction incurred by you in your use of the Database;

6.1.6 so far as the law permits, all conditions and warranties on our part which might be implied in relation to this Agreement and the Database are excluded;

6.1.7 you agree that you have acquired the Database for business purposes and nothing in the Consumer Guarantees Act 1993 will apply to this Agreement; and

6.1.8 use of the Database does not constitute the provision of professional advice by us.

7. CONFIDENTIALITY

7.1 You agree that any Confidential Information received by you under this Agreement shall remain confidential between the parties and shall be used only for the purposes of this Agreement.

7.2 Any Confidential Information received by you under this Agreement shall not be disclosed to any third party for any reason other than is necessary to fulfil your obligations under this Agreement and otherwise as may be required by law.

7.3 Clauses 12.1 and 12.2 shall survive the termination of this Agreement.

8. TERMINATION

8.1 You may terminate your use of the Database and this Agreement by giving notice in writing to us at any time.

8.2 We may terminate your use of the Database and this Agreement at any time for any reason by giving you 15 days' notice in writing.

8.3 Your use of the Database and this Agreement will be immediately terminated if your agreement with RNS to use the Software is terminated or expires.

8.4 You agree that all of your obligations in this Agreement are essential terms.

9. CONSEQUENCES FOLLOWING TERMINATION

9.1 Following termination of this Agreement you will immediately cease use of the database and shall return all Confidential Information in your possession to us.

10. GENERAL

10.1 No failure by us to exercise any power given to us under this Agreement or to insist upon strict compliance by you with any obligation under this Agreement and no custom or practice of the parties at variance with the terms of this Agreement and no waiver of any particular default by you shall constitute any waiver of any of our rights or your obligations under this Agreement.

10.2 We will not be liable for any failure to fulfil our obligations under this Agreement to the extent that such failure arises from any cause reasonably beyond our control (including any failure by us to provide the Database otherwise than in connection with any act or omission by us, strikes, lockouts, riots, acts of war, epidemics, governmental interference, fire, communication line failures, equipment failures, power failures or earthquakes or other natural disasters).

10.3 If any term or provision (the "offending provision") of this Agreement shall be declared or become unenforceable, invalid or illegal, the other provisions of this Agreement shall remain in full force and effect as if they had been executed without the offending provision appearing and the offending provision shall nonetheless be enforceable and binding to the fullest extent permitted by the applicable law.

10.4 Your rights under this Agreement are personal to you and you shall not assign, convey, subcontract, sublicense or delegate any of your rights, duties or obligations under this Agreement without our express prior written consent.

10.5 This Agreement and every matter arising from or in any way connected with the subject matter of this Agreement shall be governed exclusively by the laws of New Zealand and the parties irrevocably submit to the exclusive jurisdiction of the courts of New Zealand over all such matters.

II. Introduction

SteelEst is a member takeoff tool: the user takes off steel members as per the engineer's drawings, includes the correct type of end connections on the members, and feeds in other project data. The end result is a price that reflects the data that is in the background database.

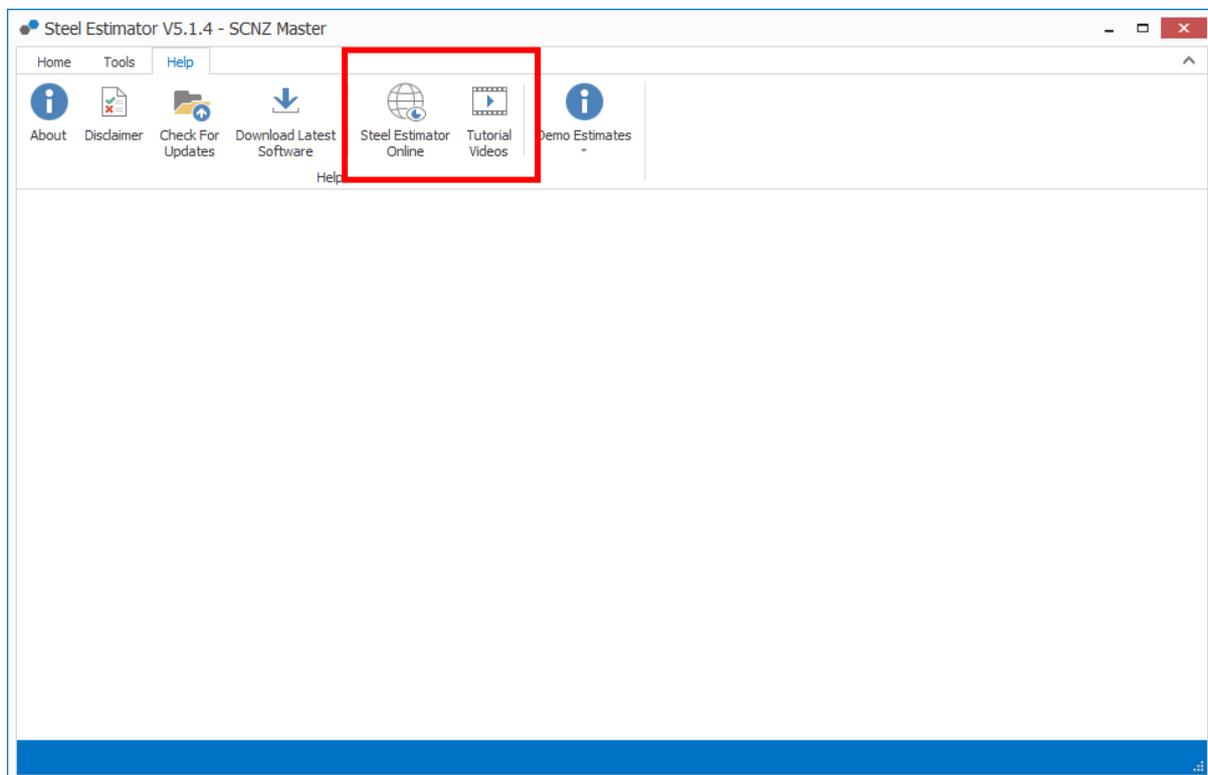
In New Zealand, Steel Estimator ships with a database in the background, created by Steel Construction New Zealand (SCNZ). This database allows the user to create estimates instantly, but the database needs used in a way so that the user knows exactly what prices they are creating.

The database was and is the property of SCNZ and the disclaimer at the beginning of this document should be read in order to fully understand this. The data is a snapshot of the industry at a certain point in time, and this database should be used with extreme care so that incorrect costs are not generated which are assumed to be correct.

In the 'Basic' version of the software, Qs and engineers will use the given SCNZ database to generate prices. SCNZ will control the database and make updates to it as and when necessary. There will be limited ability to manipulate the background data.

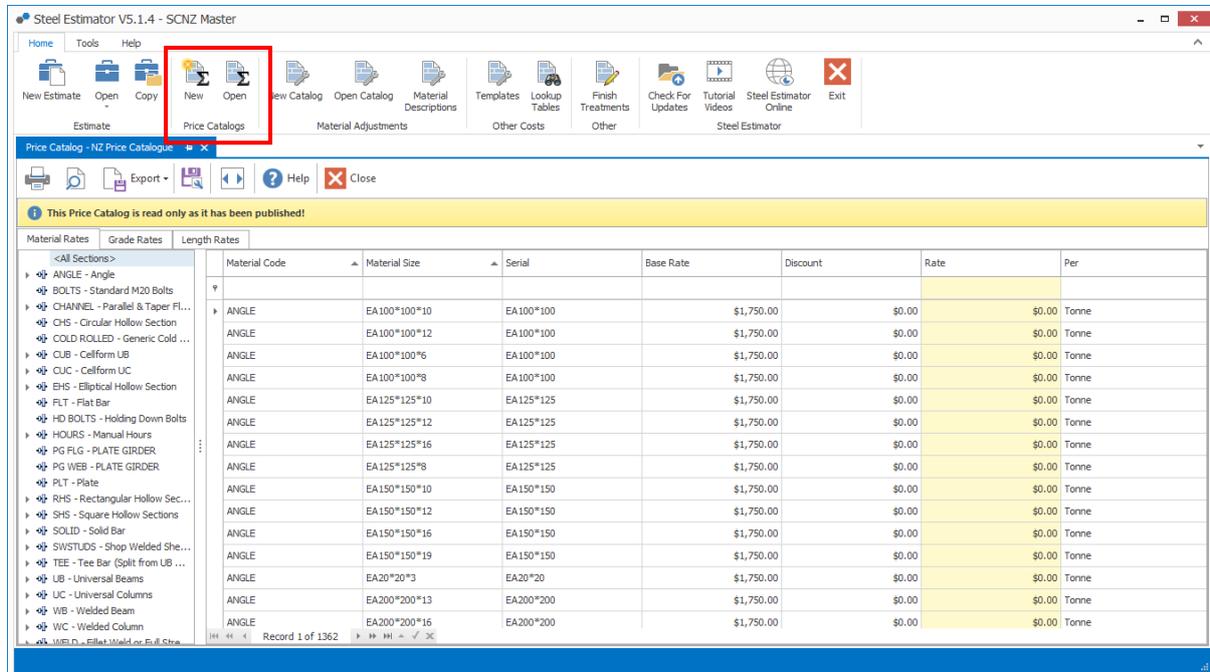
In the 'Advanced' version of the software, fabricators will use the SCNZ database as a starting point, but they should create new versions of the data to suit their own organization and to reflect their own company specific descriptions and costs. The SCNZ database may be used and amended, or new data may be created from scratch.

The basic functionality of Steel Estimator is not covered in this document. In order to get an understanding of Steel Estimator, the user should refer to the developer's website www.steelestimator.co.nz or use the 'Help' ribbon at the top of the application in order to access Steel Estimator Online or the Tutorial Videos:



III. Price Catalogue

Price catalogues hold all costing information for the material and are situated in the 'Home' ribbon:



A. Material Rates

This is the cost of material and is based on industry average prices. In the Basic version, these values are locked. In the Advanced Version, these values are there to amend to be correct for your organisation.

B. Grade Rates

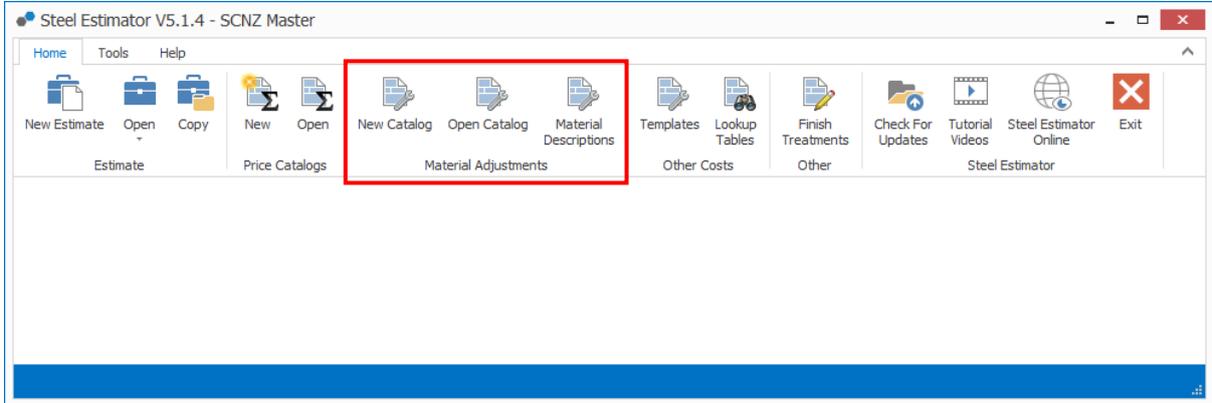
This is where premiums or reductions can be inserted for certain grades, against material sizes. In the Basic version, these values are locked. In the Advanced Version, these values are there to amend to be correct for your organisation.

C. Length Rates

This is where premiums / reductions can be inserted for certain lengths, against material sizes. In the Basic version, these values are locked. In the Advanced Version, these values are there to amend to be correct for your organisation.

IV. Material Adjustments

Situated in the Home ribbon:



A. Material Descriptions

These are the descriptions that are used to categorise members that will be taken off in the estimate. The user must know what he is taking off, so they may ascertain the level of 'extras' (bracketry, weld, shelves, etc.) that are needed to turn a simple takeoff into a complex finished estimate. The simplest and most common are usually BEAM, COLUMN, RAFTER, BRACING, GIRT and RAIL. These descriptions will allow the user the take off a simple structure, but by using a combination of the other descriptions below, the user will be able to add complicated details and work content to turn the simple takeoff into a complex and comprehensive estimate. These descriptions give flexibility to ensure that most steel structures with even the most intricate details can be priced using this database.

Material Adjustment Descriptions					
Save Print Export Help Close					
Description	Warn if no Bolts	Warn if no Fittings	Warn if no Fab Hours	Warn if no Weight	Warn if no Value
	<input type="checkbox"/>				
* Click here to add a new row					
B1 10FW	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B1 12FW	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B1 15FW	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B1 6FW	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B1 8FW	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B1 FSBW	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B1 NO WELD	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B2 10FW	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B2 12FW	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B2 15FW	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B2 6FW	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B2 8FW	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B2 FSBW	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B2 NO WELD	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
BEAM	<input checked="" type="checkbox"/>				

BOLTS	<input type="checkbox"/>				
BRACING	<input checked="" type="checkbox"/>				
COLUMN	<input checked="" type="checkbox"/>				
CURVED BEAM	<input checked="" type="checkbox"/>				
CURVED RAFTER	<input checked="" type="checkbox"/>				
FLT BRACE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
FSBW	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
FW	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
GIRT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
HAUNCH	<input checked="" type="checkbox"/>				
HD BOLTS	<input type="checkbox"/>				
HOURS	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PCOLUMN	<input checked="" type="checkbox"/>				
PG FLG	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
PG WEB	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
PURLIN	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
RAFTER	<input checked="" type="checkbox"/>				
RAIL	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SERVICE HOLE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SHELF02	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SHELF04	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SHELF06	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SHELF08	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SHELF10	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SWSTUDS	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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The above check box shows what 'warnings' will be shown in the project takeoff if the user has made a mistake and not taken off the member type properly (i.e. picked an invalid member size against a description, or picked a member size with no hours/fittings/bolts against it in the database). Some examples are shown below:

Example 1. In an estimate the user takes off a BEAM as a section size '100x10 flat bar'. In reality this is infeasible and is no data in the database against this combination. Therefore, a 100x10 flat bar BEAM will have no hours, fittings or bolts against it. Based on the above table, not having anything assigned to hours, fittings and bolts will all generate a warning, highlighting to the user that he must change his input.

Example 2. In an estimate the user takes off a RAIL as an equal angle section size 'EA150x150x10'. This is fine, as this combination exists and there is data in the database against this combination. Therefore, based on what a RAIL is (any member that is simply cut and drilled, ready for connecting to something else) an EA150x150x10 will have hours and bolts assigned against it, but no fittings. Based on the above table, this will not generate a warning.

What this means is that the user can freely take off combinations of member descriptions against sizes, and a warning will clearly be generated advising the user of an error that needs changed.

B. Material Adjustments Catalogue

1. Descriptions Summary List

When taking off steelwork, it is imperative that the steel is taken off using a material adjustment description that is most relevant to that member's use. This way we can aspire to greater accuracy in the final steel price.

Each description has a different set of data behind it. The data is generally in the form of man hours, fittings (kg) and bolts.

Different descriptions determine the correct assignment of man hours, fittings and bolts to a member, depending on what section type and size is selected. These values are calculated, not guessed, based on industry average data for welding timings¹, along with studied actual measured fabrication shop timings, adjusted to be representative of the NZ industry average². How this information is calculated is covered in more detail in the following subsection (IV.B.2) 'Material Adjustments Catalogue - Descriptions Detail' and in Appendix A – 'Breakdown of hours, fittings and bolts'.

Below is a summary sheet, in alphabetical order, of all of the material descriptions in the SCNZ catalogue. Following that is a detailed breakdown about what each member is, and when it should be used in the estimate.

Material Adjustment Description	Explanation
B1 10FW	1 piece bracket with 10mm FW
B1 12FW	1 piece bracket with 12mm FW
B1 15FW	1 piece bracket with 15mm FW
B1 6FW	1 piece bracket with 6mm FW
B1 8FW	1 piece bracket with 8mm FW
B1 FSBW	1 piece bracket with full strength butt weld
B1 NO WELD	1 piece bracket with no weld
B2 10FW	2 piece bracket with 10mm FW
B2 12FW	2 piece bracket with 12mm FW
B2 15FW	2 piece bracket with 15mm FW
B2 6FW	2 piece bracket with 6mm FW
B2 8FW	2 piece bracket with 8mm FW
B2 FSBW	2 piece bracket with full strength butt weld
B2 NO WELD	2 piece bracket with no weld
BEAM	Simple beam
BOLTS	M20/M24 structural bolts
BRACING	Diagonal (on plan or elevation) bracing member
COLUMN	Simple column
CURVED BEAM	Same as BEAM but with extra time assigned due to difficulties of curving
CURVED RAFTER	Same as RAFTER but with extra time assigned due to difficulties of curving
FLT BRACE	Diagonal (on plan or elevation) flat bracing member
FSBW	Full strength butt weld.
FW	Full strength butt weld.

¹ QV Costbuilder, formerly Rawlinsons Handbook

² Based on several test case projects

GIRT	Girt
HAUNCH	Portal frame style haunch of significant length
HD BOLTS	M20/M24 HD Bolts
HOURS	Additional hours
PCOLUMN	'Portal' column
PG FLG	Plate girder flange
PG WEB	Plate girder web
PURLIN	Purlin
RAFTER	Rafter
RAIL	'Rail' - any steel member with only bolt holes, no additional fittings
SERVICE HOLE	Any hole burned/cut in a steel member not achievable with a drill
SHELF02	Shelf Angle – 2m segment
SHELF04	Shelf Angle – 4m segment
SHELF06	Shelf Angle – 6m segment
SHELF08	Shelf Angle – 8m segment
SHELF10	Shelf Angle – 10m segment
SWSTUDS	Shop Welded Shear Studs

2. Descriptions Detail

As previously stated, each member (based on its description) generates a certain amount of man hours, fittings and bolts. The fittings and bolts are calculated based on typical end connections for that type of member for that type of description. The man hour calculation is a little more complicated. It is important to understand the contributing processes behind the man hour summary. These processes are based on the various actions that occur during the fabrication cycle of an item. Here is a list of the processes and an explanation:

- Handling – the handling, unloading and loading of a piece of steel at the beginning and end of the cycle.
- Carriage – the handling of a piece of steel between other processes.
- Saw/drill – time associated with the piece of steel being cut and drilled.
- Fittings – time allocated to actual handling and processing of fittings prior to plating.
- Plating – measuring, marking out and tacking in place of fittings.
- Notching – coping or notching ends of members.
- Welding – time assigned to welding involved with that type of member.
- Unknown – a contingency allowance given to unforeseen events, breaks, maintenance etc.

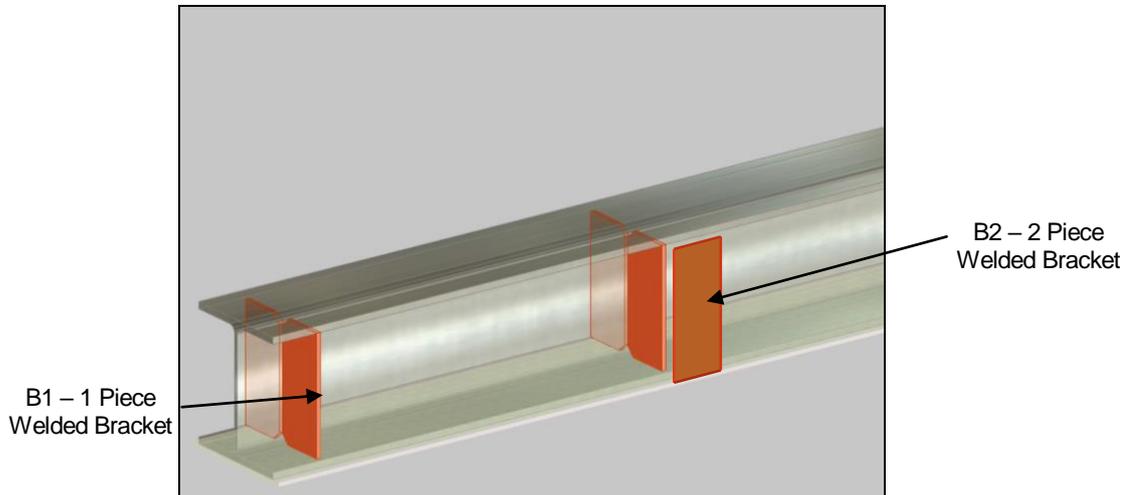
The build up behind the calculations for man hours, fittings and bolts are shown in Appendix A - 'Breakdown of hours, fittings and bolts'.

A detailed explanation of the Material Adjustment Descriptions begins on the following page.

3. Descriptions Explanation

- B1 – 1 PIECE WELDED BRACKETRY

This description allows the user to take off a single piece of flat plate steel, such as a stiffener between the toes of a beam or column, an example of which is shown as the left hand bracket below.



B1 6FW	1 piece bracket with 2x 6mm fillet welds to three sides. Holes but no bolts.
B1 8FW	1 piece bracket with 2x 8mm fillet welds to three sides. Holes but no bolts.
B1 10FW	1 piece bracket with 2x 10mm fillet welds to three sides. Holes but no bolts.
B1 12FW	1 piece bracket with 2x 12mm fillet welds to three sides. Holes but no bolts.
B1 15FW	1 piece bracket with 2x 15mm fillet welds to three sides. Holes but no bolts.
B1 FSBW	1 piece bracket with full strength butt welds to three sides (allows for prep to both edges). Holes but no bolts.

The only difference is the following loose bracket, e.g. a splice flange plate.

B1 NO WELD	1 piece bracket with no weld. No bolts. Loose plate. Holes but no bolts.
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- B2 – 2 PIECE WELDED BRACKETRY

This description allows the user to take off two pieces of flat plate steel, welded together to form a 'T', such as a T-piece stiffener, or a plate across the toes with a web stiffener behind, an example of which is shown on the right hand bracket in the image above.

B2 10FW	2 piece bracket with 2x 6mm fillet welds to three sides. Holes but no bolts.
B2 12FW	2 piece bracket with 2x 8mm fillet welds to three sides. Holes but no bolts.
B2 15FW	2 piece bracket with 2x 10mm fillet welds to three sides. Holes but no bolts.
B2 6FW	2 piece bracket with 2x 12mm fillet welds to three sides. Holes but no bolts.
B2 8FW	2 piece bracket with 2x 15mm fillet welds to three sides. Holes but no bolts.
B2 FSBW	2 piece bracket with full strength butt welds to three sides (allows for prep to both edges). Holes but no bolts.

The only difference is the following loose bracket.

B2 NO WELD	2 piece bracket with 2x runs of 6mm fillet weld to hold the two pieces together, but no provision of weld to a host beam. Holes but no bolts.
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Bracketry is taken off as a 'weight'. In the database there are not a selection of weights in incremental sizes: 1kg, 2kg, 3kg, 4kg, 5kg, 7.5kg, 10kg, 12kg, 15kg, 20kg, 30kg and 100kg. The user should select the closest, rationalize or a combination of the above to get what he requires. Users cannot take off any other type of member as brackets or they will get an error.

- **BEAM – SIMPLE BEAM**

This description allows the user to take off a simple beam member which allows for full depth simple end plates to each end with full profile fillet welds and a proportional quantity of bolts. Allowing for a full depth end plate and full profile fillet weld offers a simple beam that has enough time and fittings material to cover all of the 'simple' connections in the standard connections guide, from full depth end plates to partial depth end plates to web cleats to angle cleats. Using this description rationalises all 'simple' beams and saves the user time. If anything the time and fittings will be ever so slightly high, but as a percentage on the whole project this should be a minimal cost and provides efficiency in pricing. It also allows an amount for notching beam ends. This seems counterintuitive due to the allowance of full depth end plates, but the value has been halved to average out the possibility of this requirement. Although the fittings for a web cleat would normally be associated with the column, due to rationalizing of beams for take-off purposes those fittings are associated with the beam.

For hollow sections, an end plate and tab plate with associated small gusset plate are allowed for.

Users can take off UBs, UCs, WBs, WCs, SHSs, CHSs, RHS, PFCs/TFCs, UAs and EAs.

- **BOLTS**

This description allows the user to take off additional individual bolts which may be in addition to the standard allowance within the standard members.

Bolts are rationalized simply as M20 in the database. Allowance needs to be made for bigger bolts by way of an increased number. Users cannot take off any other type of member as bolts or they will get an error.

- **BRACING**

Please note that cross flat or cross rod bracing is taken off in the description FLT BRACE.

This description allows the user to take off a compression brace member that is on a diagonal, either horizontally or vertically. This is because it allows for the extended gusset due to the inevitable offset that comes from the member being skewed. If the member is 'orthogonal', that is it is horizontal and square such as an eaves tie or a glazing head, then it should be taken off as a BEAM.

An end plate, tab plate and associated gusset and bolts are allowed for.

Users can take off UBs, UCs, WBs, WCs, SHSs, CHSs, RHS, PFCs/TFCs, UAs and EAs.

- **COLUMN – SIMPLE COLUMN**

This description allows the user to take off a simple column member which allows for a 'typical' base plate with bolts outside of the shaft profile (i.e. not between the toes), plus a cap plate with inside profile weld only.

No other cleats are allowed for. Any incoming beam connection web plates are included within the member description BEAM and girt cleats need to be allowed for additionally.

Users can take off UBs, UCs, WBs, WCs, SHSs, CHSs, RHS, PFCs/TFCs, UAs and EAs

- **CURVED BEAM**

This description is exactly the same as BEAM but with two hours extra per member to allow for added complexities due to the curvature of the beams.

Users can take off UBs, UCs, WBs, WCs, SHSs, CHSs, RHS, PFCs/TFCs, UAs and EAs

- **CURVED RAFTER**

This description is exactly the same as RAFTER but with two hours extra per member to allow for added complexities due to the curvature of the beams.

Users can take off UBs, UCs, WBs, WCs, SHSs, RHS, PFCs/TFCs, UAs and EAs

- **FLT BRACE – FLAT BRACING**

This description allows the user to take off a tension only brace member. It allows for the associated gusset and bolts, including one extra bolt to connect the two cross flat braces.

Users can take off FLT and Rod.

- **FSBW – FULL STRENGTH BUTT WELD**

This allows the user to take off a quantity of full strength butt weld, to be used for bespoke additional FSBW extra to the times assigned to standard member types in the database. This allows for user manipulation of welding allowances to ensure full flexibility for taking off weld quantity.

FSBW is grouped into weld for plate under 12mm, plate between 12mm and 16mm, and plate over 16mm. Weld is grouped into one metre worth of weld. The user should tally up the amount of additional weld required and take it off as a number of 1m lengths. Weld timings are in line with QV Costbuilder (formerly Rawlinsons Handbook)

Users can take off 'FSBW <12mm: 1m', 'FSBW 12-16mm: 1m' and 'FSBW >16mm: 1m'.

- **FW – FILLET WELD**

This allows the user to take off a quantity of fillet weld, to be used for bespoke additional FW extra to the times assigned to standard member types in the database. This allows for user manipulation of welding allowances to ensure full flexibility for taking off weld quantity.

FW is grouped into one metre worth of weld. The user should tally up the amount of additional weld required and take it off as a number of 1m lengths. Weld timings are in line with QV Costbuilder (formerly Rawlinsons Handbook)

Users can take off '6FW: 1m', '8FW: 1m', '10FW: 1m', '12FW: 1m' and '15FW: 1m',

- **GIRT**

This description allows the user to take off a cold rolled girt member plus 4 bolts per girt end. No cleats are allowed for as these are company specific as to length, shape and thickness. Girt (& purlin) cleats should be taken off as a separate item, with the recommendation being the relevant weight B1 or B2 for each cleat.

The correct number of girts should be taken off so that the final piece count is correct. Girts should not be summated into theoretic singular lengths which are the full length of the building, or a single number encompassing the entire quantity of the project – try and get the number right, to ensure the right number of bolts and the right final piece count.

HD bolts are simply a cost, and should include for the associated anchor plate & placing bolt, washers, and nut.

Bolts are rationalized simply as M20x450mm in the database. Allowance needs to be made for bigger bolts by way of an increased number. Users cannot take off any other type of member as bolts or they will get an error.

- **HOURS**

This allows the user to take off an additional quantity of hours. This is the main way of manipulating the end hours by way of manual adjustment.

Users can take off 1HR, and then a quantity. These hours can be taken off in different work categories, so that quantities of hours could be associated with different work.

- **PCOLUMN – PORTAL (MORE COMPLEX) COLUMN**

This description allows the user to take off a column member which would be typical to the outside perimeter of a building or a portal frame stanchion. It allows for a 'typical' base plate with bolts outside of the shaft profile (i.e. not between the toes), plus a cap plate with inside profile weld only, as well as a single level of extra stiffeners between the toes (to tie in with a haunch or a beam bottom flange). There are also additional fittings to allow for internal flange restraints (fly braces from girts).

No other cleats are allowed for. Any incoming beam connection web plates are included within the member description BEAM and girt cleats need to be allowed for additionally.

Users can take off UBs, UCs, WBs, WCs, SHSs, CHSs, RHS, PFCs/TFCs, UAs and EAs

- **PG FLG – PLATE GIRDER FLANGE**

This description is specifically to take off flange members for plate girders or plate beams that are fabricated externally. For every two plate girder flanges that are taken off, a relevant number of plate girder webs should also be taken off. A cost is then assigned to this material at a later time using 'Other Costs' but it allows the finished members' weights to be taken into account within the main take-off, so they form part of the final tonnage and also the ultimate piece count.

The flange members attract no in-house fabrication time, with all time assigned to the Plate Girder Web members. The reason for this is that the number of flanges is double the number of finished beams (there are two flanges per beam) hence the final fabrication calcs would be overly complex.

Remember to take off 2No flanges for every web.

Users can take off PGPLT (Plate Girder Plate) which are listed in incremental sizes. The correct width needs to be taken off.

- **PG WEB – PLATE GIRDER WEB**

This description is specifically to take off web members for plate girders or plate beams that are fabricated externally. For every plate girder web that is taken off, a relevant number of plate girder flanges should also be taken off. A cost is then assigned to this material at a later time using 'Other Costs' but it allows the finished members' weights to be taken into account within the main take-off, so they form part of the final tonnage and also the ultimate piece count.

The web members attract all of the fabrication time, with no time assigned to the Plate Girder Flange members. The reason is that this will give a better chance of getting an accurate assessment of the final fabrication calculations due to the usual single web per beam.

Users can take off PGPLT (Plate Girder Plate) which are listed in incremental sizes. The correct width (height) needs to be taken off.

- PURLIN

This description allows the user to take off a cold rolled purlin member. No cleats are allowed for as these items tend to be company specific as to length, shape and thickness. Purlin (& girt) cleats should be taken off as a separate item, with the recommendation being the relevant weight B1 or B2 for each cleat.

The correct number of purlins should be taken off so that the final piece count is correct. Purlins should not be summated into theoretic singular lengths which are the full length of the building, or a single number encompassing the entire quantity of the project – try and get the number right, to ensure the right number of bolts and the right final piece count. Each purlin allows for 4 bolts per purlin end.

Secondary items such as sleeves, sag rods, sag cleats, struts and diagonals should not be taken off, and are covered in 'Other Costs' as 'CR Accessories' / 'Cold Rolled Accessories' as a percentage of the cost of the cold rolled main items, with 20% as a starting point.

Users can take off HST or DHS purlin sizes.

- RAFTER

This description allows the user to take off a simple rafter member which allows for full depth simple end plates to each end with full profile fillet welds and a proportional quantity of bolts. Allowing for a full depth end plate and full profile fillet weld offers a simple beam that has enough time and fittings material to cover all of the 'simple' connections in the standard connections guide, from full depth end plates to partial depth end plates to web cleats to angle cleats. Using this description rationalises all rafters and saves the user time. A lot of rafters tend to have full depth plates to allow for stiff enough connections to incorporate roof bracing too.

There is also additional saw/drill time to allow for skewed cuts and double skews. There are also additional fittings allowance for internal flange restraints (fly braces from purlins). Purlin cleats need to be allowed for additionally

Users can take off UBs, UCs, WBs, WCs, SHSs, RHS, PFCs/TFCs, UAs and EAs.

- RAIL

A rail is simply any member that has only been drilled with holes, with the purpose of being a 'bolt on' member on site. It has a relevant number of bolts assigned to the member, but no additional fittings and/or fabrication.

Users can take off UBs, UCs, PFCs/TFCs, UAs and EAs.

- SERVICE HOLE

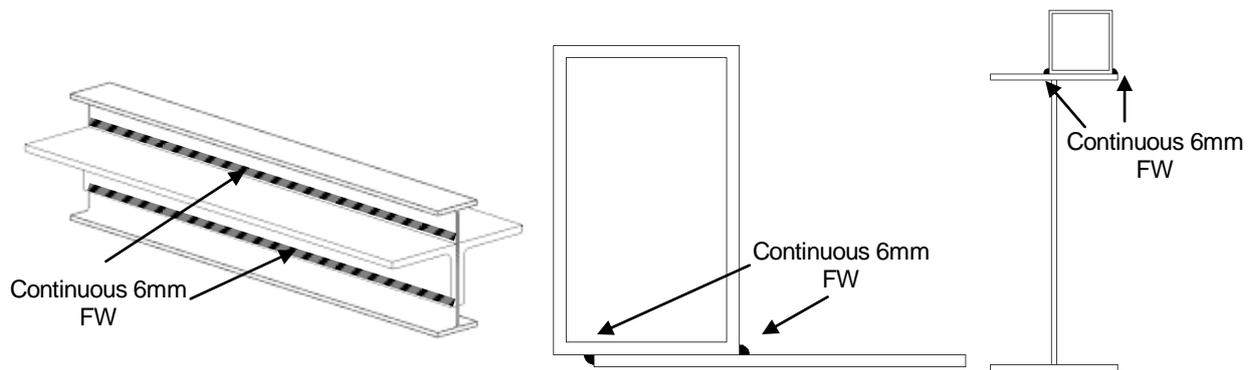
This is to allow the user to take off additional service holes that won't be covered in the saw/drill allowance. There is half an hour assigned to each hole.

Users can take off HOLE.

- SHELF – SHELF ANGLES / SECONDARY WELDED MEMBER

This description allows the user to take off a 'shelf angle' type member, or any member which is welded to another by way of two lines of continuous 6mm fillet weld, such as a shelf plate on a box lintel, a shelf angle on a beam web, or a 'packer' member on a beam top flange, an example of which is shown below.

Sometimes these members are welded on with staggered welds rather than continuously – in this event the estimate will have erred on the side of safety.



Shelf members are taken off in segments, to allow for an incremental increase in weld quantity. It will be necessary for the user to average off his take-off, for example any member between 5m and 7m should be taken off as a SHELF06 and this will allow 6m worth of weld. When inserting the member length, the actual length should be used (e.g. 6312mm)

SHELF02	Shelf member at 2m long (any member from 0m to 3m)
SHELF04	Shelf member at 4m long (any member from 3m to 5m)
SHELF06	Shelf member at 6m long (any member from 5m to 7m)
SHELF08	Shelf member at 8m long (any member from 7m to 9m)
SHELF10	Shelf member at 10m long (any member from 9m to 11m)

Any members that are outside this scope, the user will have to use some element of rationalization to allow for what he wants.

Users can take off UBs, UCs, SHSs, RHS, PFCs/TFCs, UAs, EAs. FLT and PLT. If PLT is used, a thickness and width will be required as well as length.

- **SWSTUDS**

This description allows the user to take off a quantity of shop welded shear studs. This should not be used for site applied shear studs which will normally be within the metal deck package and have no effect on the steel subcontract price.

SWSTUDS have no fittings and bolts assigned to them, only a small amount of time for welding (approx. 5 mins per stud) and a cost in the price catalogue.

Users can take off 22*125mm, 19*125mm and 19*100mm.

V. Descriptions – Usage within Steel Estimator

If no tick is shown, then the user will experience an error within Steel Estimator for taking off a member type against a member description that is not in the database.

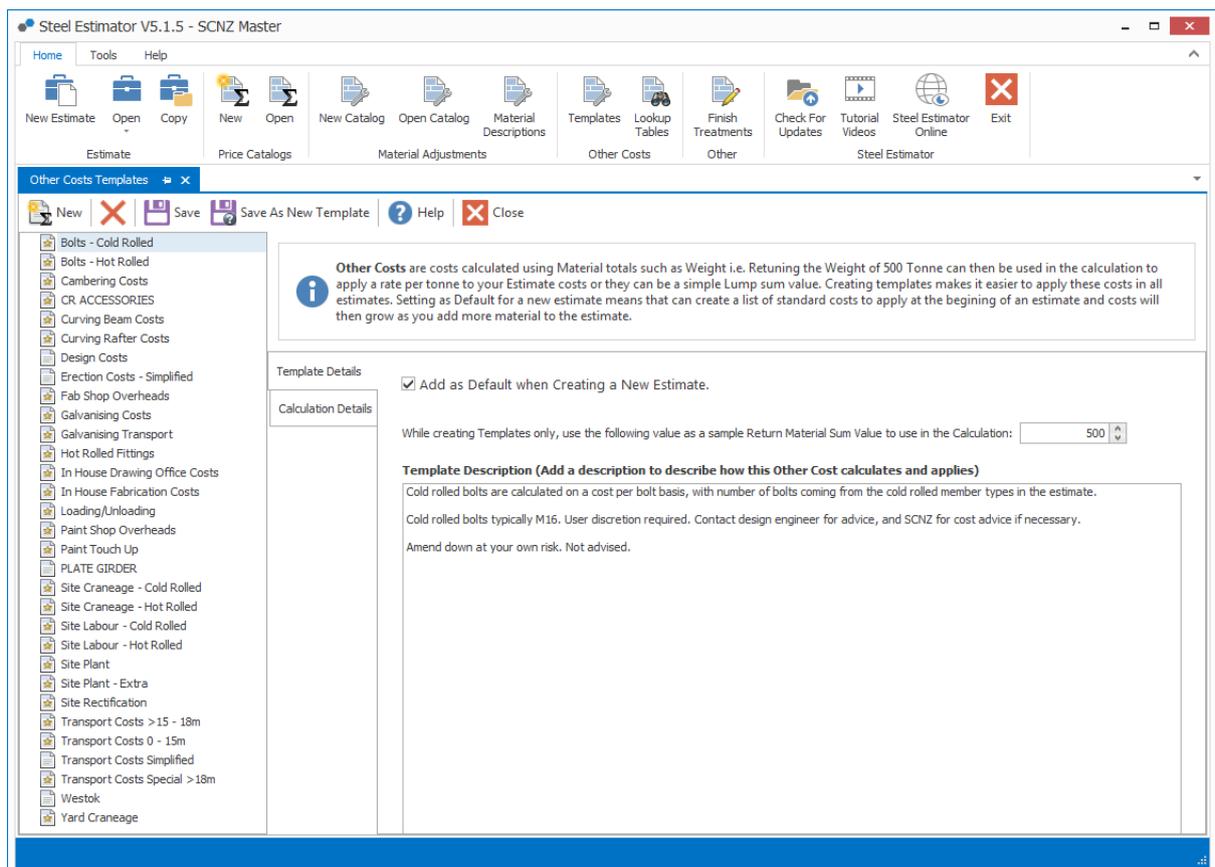
Description	kg	Bolt	UB	UC	UKB	UKC	WB	WC	SHS	RHS	CHS	PFC	EA	UA	FLT	PLT	Rod	FSBW /FW	Cold	Hr	PG Plate	Hole
B1 10FW	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
B1 12FW	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
B1 15FW	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
B1 6FW	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
B1 8FW	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
B1 FSBW	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
B1 NO WELD	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
B2 10FW	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
B2 12FW	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
B2 15FW	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
B2 6FW	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
B2 8FW	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
B2 FSBW	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
B2 NO WELD	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
BEAM	✗	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗
BOLTS	✗	✓													✗	✗	✗	✗	✗	✗	✗	✗
BRACING	✗	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗
COLUMN	✗	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗
CURVED BEAM	✗	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗
CURVED RAFTER	✗	✗	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗
FLT BRACE	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✓	✗	✓	✗	✗	✗	✗	✗
FSBW	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✓	✗	✗	✗	✗
FW	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✓	✗	✗	✗	✗
GIRT	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✓	✗	✗	✗
HAUNCH	✗	✗	✓		✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
HD BOLTS	✗	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
HOURS	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✓	✗	✗
PCOLUMN	✗	✗	✓	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
PG FLG	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✓	✗
PG WEB	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✓	✗
PURLIN	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✓	✗	✗	✗
RAFTER	✗	✗	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗
RAIL	✗	✗	✓	✓	✗	✗	✗	✗	✗	✗	✗	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗
SERVICE HOLE	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✓
SHELF02	✗	✗	✓	✓	✓	✓	✗	✗	✓	✓	✗	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗
SHELF04	✗	✗	✓	✓	✓	✓	✗	✗	✓	✓	✗	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗
SHELF06	✗	✗	✓	✓	✓	✓	✗	✗	✓	✓	✗	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗
SHELF08	✗	✗	✓	✓	✓	✓	✗	✗	✓	✓	✗	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗
SHELF10	✗	✗	✓	✓	✓	✓	✗	✗	✓	✓	✗	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗
SWSTUDS	✗	✗	✓	✓	✓	✓	✗	✗	✓	✓	✗	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗

VI. Other Costs

A. Templates

Templates are set up as starting points to be used and changed if necessary.

There are templates for the following, with standard functions and calculations within each to help the user achieve a costing of an important aspect of the project. The templates with stars alongside them are the default ones that will be in an estimate when an estimate is created.



There are two ways to amend Other Costs:

- 1) Amend the Other Costs templates. These are global and will form the basis of Other Costs for all future projects.
- 2) Amend the Other Costs within an estimate once it is created. Once the estimate is created the Other Costs are no longer linked to the global templates and can be amended to the user's content with no risk of affecting the global templates.

APPENDIX A

See attached excel spreadsheet which has nine tabs showing the build up of the majority of members in terms of hours, bolts and fittings.