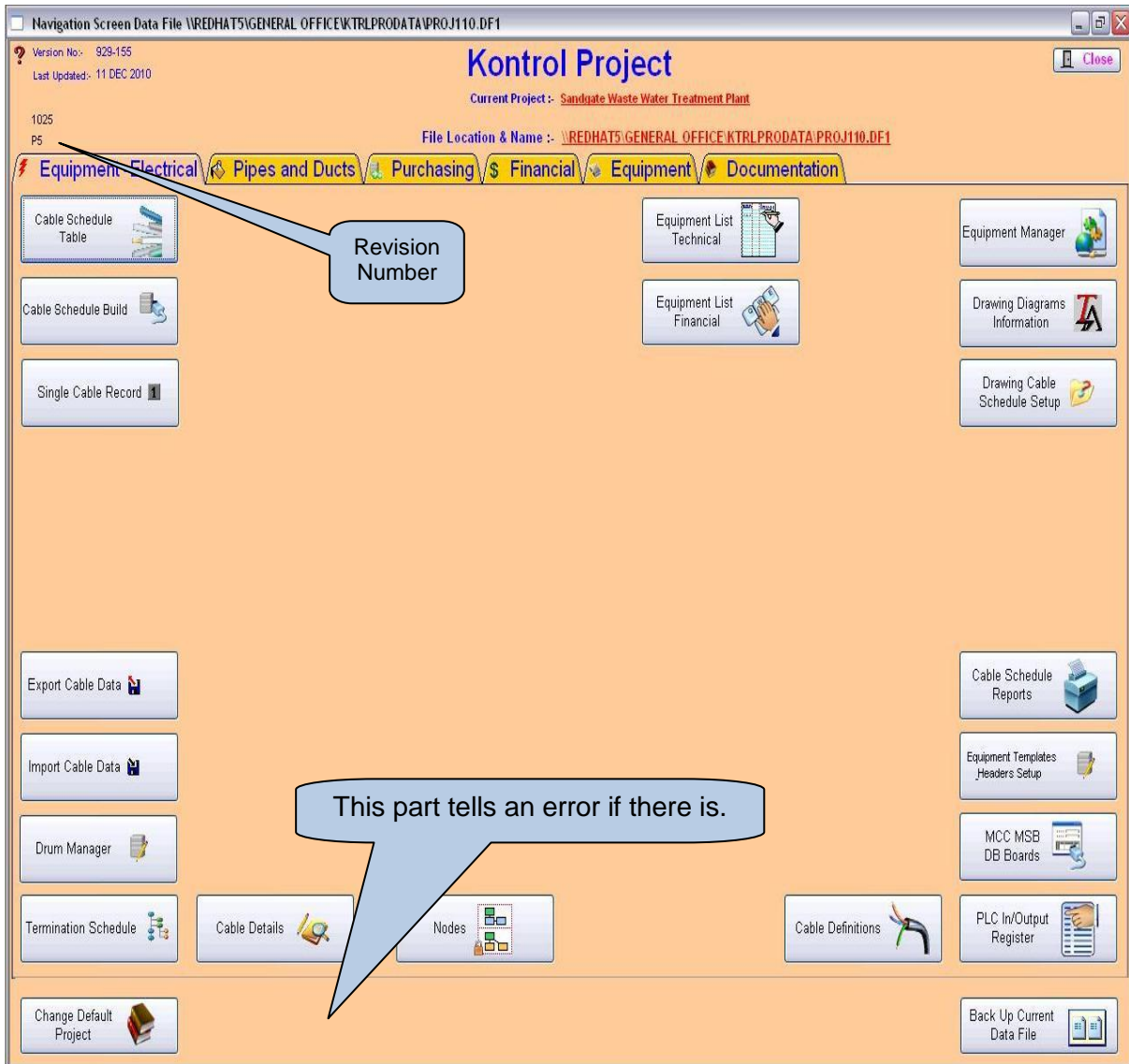


# Category 1

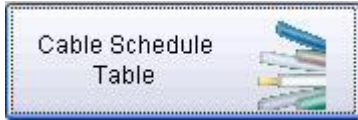
## 1.0 Equipment - Electrical

Equipment – Electrical Navigation Screen



## Category 1

### 1.1 Cable Schedule Table



The Cable Schedule Table is all objects that have been given a tag number and require electrical linking by the means of Power Control communications and Data cables.

The Cable Schedule shows all the current cables. To include all cables including redundant cables right click on the 'Rebuild' button.

It is important that you have established a complete Equipment List prior to preparing a Cable Schedule. You can compile your Equipment List in the Equipment Manager Module.

#### 1.1.1 Functions



To enter a new cable, click "New". The Cost Centre can be entered by using the down arrow to select appropriate Cost Centre. Revision Numbers can be added. The status will automatically be generated to C which means the cable schedule is current. If this is not the case, you will need to insert the current status C = Current, D = Delete, N = New and R = Redundant.

Insert 'Cable Origin' – insert first letter and right click to select.

**Alter Existing Record**

Modifications and additions can be made to the cable schedule. To change existing information, click “**Edit**”, then “**Tab**” to the field required. Click “**OK**”, and the changed details will be recorded.

**Concatenates**

Concatenates on the end of the field or right click to add to the front of the field.

**Replace**

This function replaces the existing word(s) in the cable “Origin”, “Device Origin”, “Destination” or “Device Destination”.

**Reverse**

Reverses the Origin of the cable to the Destination and the Destination to the Origin without using the edit function.

**Diag X**

Inserts new line and places the ‘Cable Destination’ into the ‘Cable Origin’ field eliminating data entry.

**Termination Schedule**

Generates termination schedule.

**Calculate**

Select and highlight lines to provide totals of Estimated Lengths and Cables.

**Insert**

To insert a new cable record where required and will not place at end of cable schedule.

**Clear**

This clears the contents of the line, not the line number or in other words it removes any information contained in the fields except the line number itself.

**Copy**

Copies contents to line below.

**Delete Selected Lines**

Deletes selected lines from list. This does not delete the information; but allows you to work with a smaller list.

**Rebuild**

Rebuilds list complete current cable list defined by C = Current. A right click builds a cable schedule with all cables including C = Current and H + Hold. The Cable Schedule shows all the current cables. To include all cables including redundant cables right click on the ‘Rebuild’ button.

**Deselect Lines**

Deselects all highlighted lines.

**Duplicates**

Duplicates the selected line and extends the cable ID number by 1.

**Swap**

Swaps two (2) selected lines around. Use by holding down 'Ctrl' Key and click with the mouse, to select the lines.

**Print**

Prints the selected lines. To print onto Excel Spreadsheet, highlight the required lines and right click on the Print button.

**Clear**

Clears the entire cable schedule list.

**Node Window**

Opens node window.

**Node Window**

Opens node window type 2.

**Search**

Searches for the cables that are in the nominated cost center.

**Search**

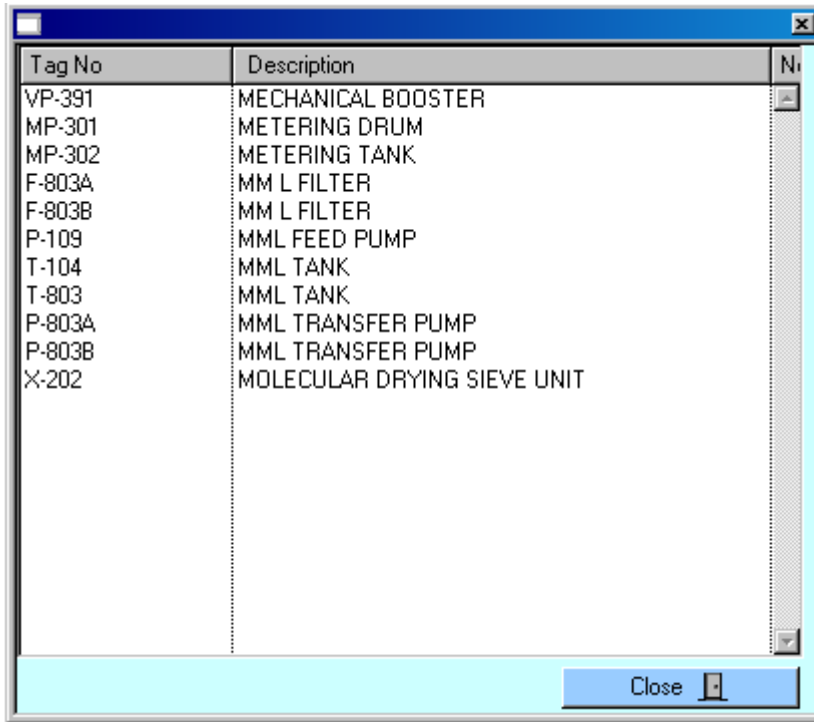
A normal click prompts for a Tag Number and does a search on the following: - Device Origin, Device Destination, Origin and Destination ....A right mouse click stops the redraw and does not clear the list.

**Ctrl [ ]**

By using the Control Key and the square brackets you can expand and contract the text in any screen ie 'Cable Schedule Table' – use Control Key + ] . The text will expand.

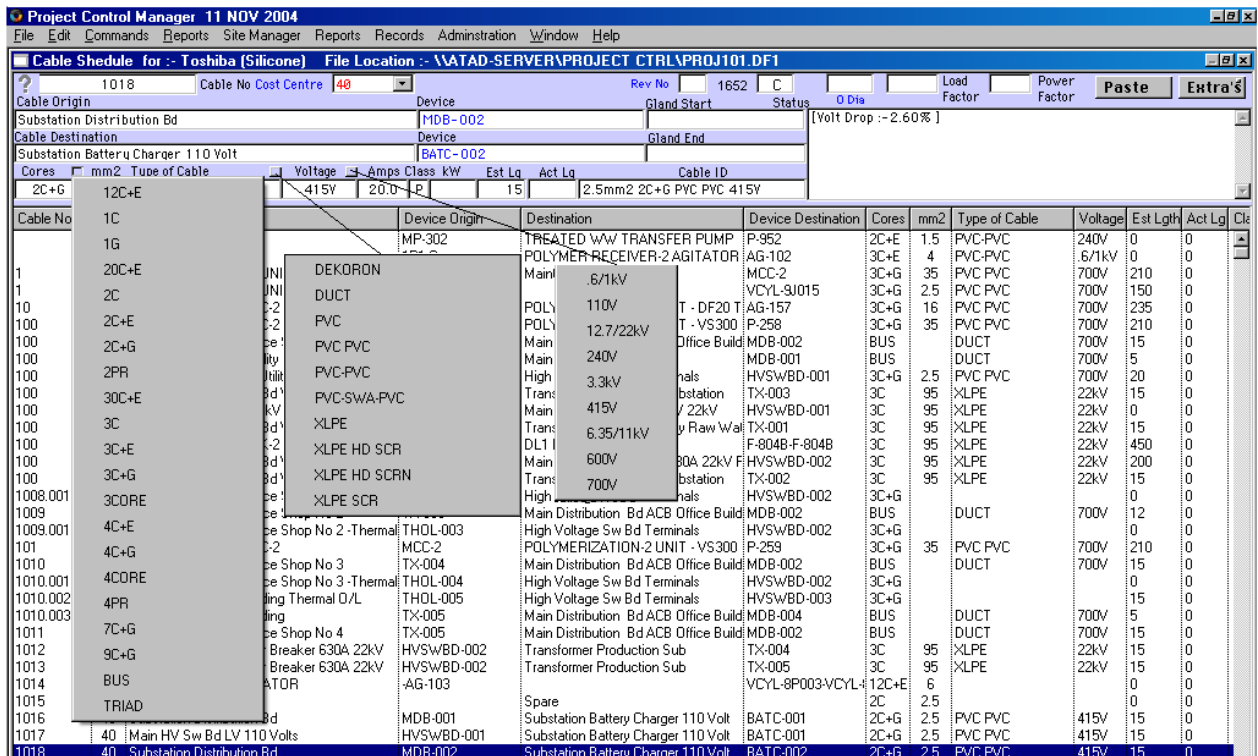
### 1.1.1 Cable Origin & Destination

Once you have entered information into the 'Equipment Manager' you are able to access the information by a right click in the 'Cable Origin and Cable Destination' fields. Refer to Module 4 – Equipment Manager.



### 1.1.2 Cable Schedule Window

To select 'Cores, Type of Cable and Voltage' you can use the facility which has been included in this screen by clicking on the small box to the right hand side of the field, as indicated in the example below.

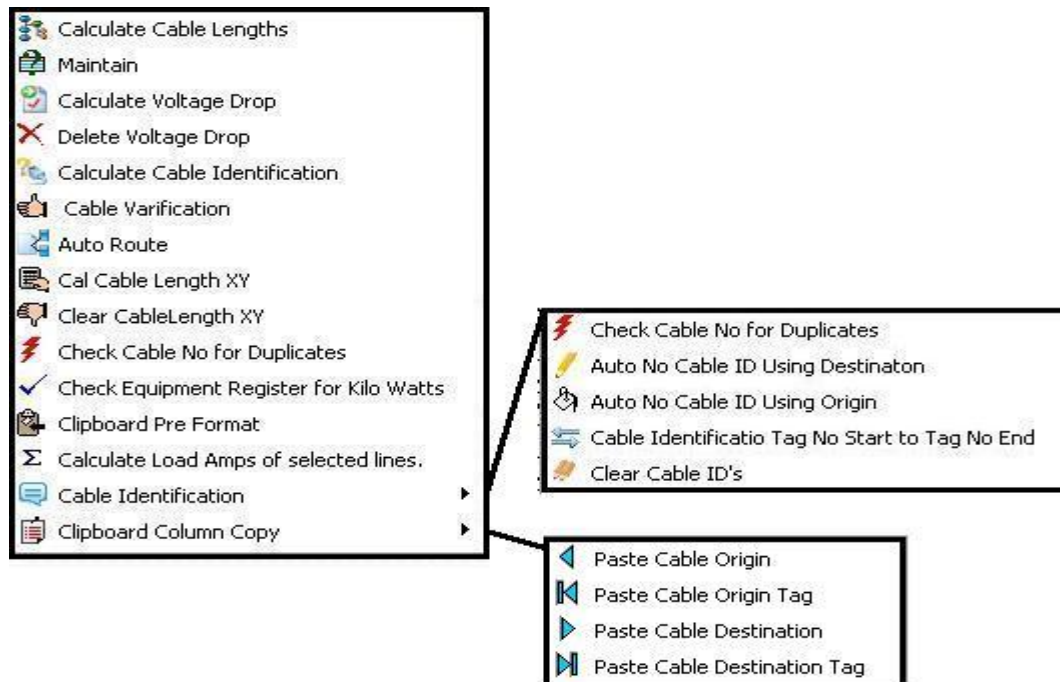


**1.1.3 Tricks**

**Tricks**

The 'Tricks' button performs many functions. Simply click on the paste button located on the top right hand side of the screen to have the following functions highlighted on the screen.

**Tricks Functions**



**Calculate Cable Lengths**

Highlight the lines you want to calculate and click on the 'Calculate Cable Lengths' a dialogue box will appear asking you to 'Insert % factor you want to add to the cable'. Insert the required percentage and click 'OK' button



**Maintain**

The 'Maintain' function eliminates – Trailing Spaces. Should data need to be imported into the 'Cable Schedule' it is important that you use the Maintain function to eliminate spaces that are not required. This will ensure that no spaces are remaining at the beginning or end of alpha or numerical information. Should spaces still be present it will impede the search and find functions.



**Calculate Voltage Drop**

To calculate a Voltage Drop ensure that you have figures in the Estimated Length, Amps and Voltage fields. Highlight the lines that you need to calculate the 'Voltage Drop' and click on 'Calculate Voltage Drop'. The system will calculate the voltage drop and insert the figure into the 'Comments Section' on the 'Cable Schedule', it is highlighted by square brackets [ ]. A Voltage Drop that is more than 5% in difference is unacceptable and should be checked.

**Delete Voltage Drop**

Should cables circumstances change ie the length size then the 'Voltage Drop' will need to be recalculated. First delete the current 'Voltage Drop' by highlighting the lines and then by clicking on the 'Delete Voltage Drop'. The system will look for the square brackets [ ] and will remove the current calculation. Once this function has been performed, recalculate the 'Voltage Drop' by the method explained above in 'Calculate Voltage Drop'.

**Calculate Cable Identification****Cable Verification****Auto Route**

As the automatic routing function becomes available it will route the cable through the nodes.

**Check Cable Number for Duplicates**

When the 'Cable Schedule' is complete you will need to perform the 'Check Cable Number for Duplicates' function to ensure that cables have not been labelled the same. The system will automatically check the 'Cable Schedule' by sorting cable numbers in the table and testing adjacent records next to each other. Should a duplicate be found the system will alert you and will highlight the lines duplicated lines allowing you to edit the Cable Number.

**Check Equipment Register for Kilo Watts**

If the 'Kilo Watts' have been changed to any cable in the 'Equipment Manager Module' the system will automatically check for changes and update the 'Cable Schedule' accordingly. Therefore, will save time by not having to go between the Modules checking for these changes manually.

**Clipboard Pre Format****Cable ID Auto Format Prefix**

The system will automatically copy the 'Device Destination' Tag Number and will paste it into the 'Cable Number' column.



### **Cable ID Series**

If you need to identify your cables by a series of alpha and numerical prefixes, this can be performed quite quickly by using the 'Cable ID Series' function. Enter the first number in the series ie: PW-001. Highlight the range of cables to be identified by the same prefix and use the key strokes 'Ctrl + C' this will then prefix all the cables with the same prefix of PW-001. Highlight the same range of cables again and now click on the 'Cable ID Series' and the numbers will automatically be numbered from PW-001, PW-002, PW-003, and so on.



### **Cable ID Prefixes**



### **Extra Tips**

## **1.1.4 EXTRA'S**

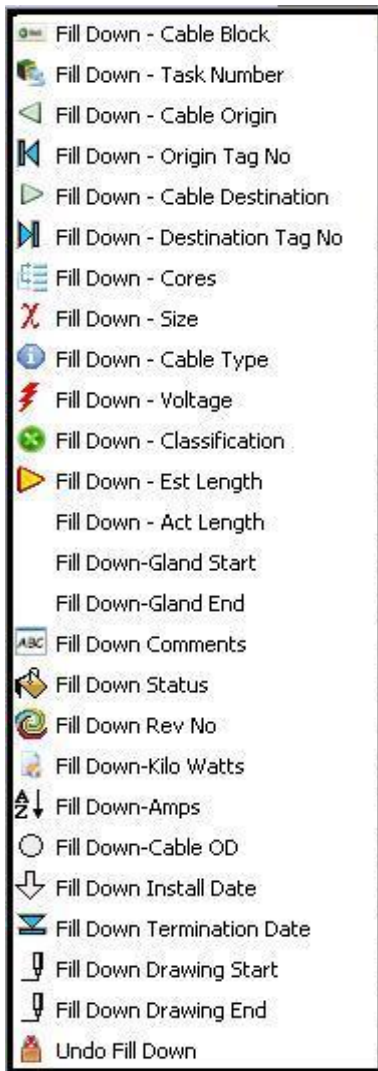


The Extra's button performs Fill Down functions. Simply click on the small button located on the top right hand side of the 'Extra's' button to have the following functions highlighted on the screen.

### **'Fill Down' Functions**

To save excessive data entry time, the following 'Fill Down' functions have been included to ensure a faster more effective production of the 'Cable Schedule'. Simply highlight the lines required and click on the appropriate 'Fill Down' function and the information will be copied into all lines highlighted.



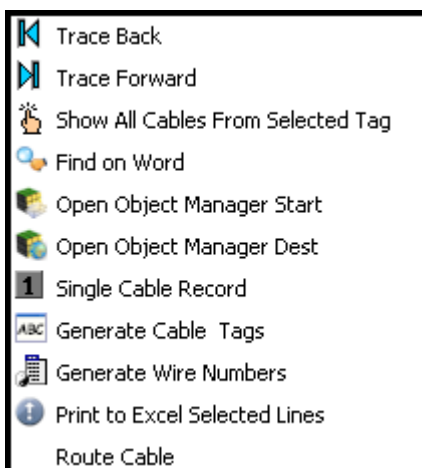


**Cable Block**

If all of the Bi-Polar coordinates are entered for the location of all equipment, this function will calculate the 'estimated length'.

**1.1.6 Additional Functions**

To use these functions simply right click in the 'Cable Schedule' window.





**Trace Back**

This takes you to the first record in the list.



**Trace Forward**

This takes you to the last record in the list.



**Find on Word**



**Open Object Manager Start**



**Open Object Manager Destination**



**Single Cable Record**



**Generate Cable Tags**

'Cable Numbers' can be generated by the system. Kontrol Pro can automatically generate an Excel document with the 'Cable Numbers'. Highlight the cables in the 'Cable Schedule' window. Click on 'Generate Cable Tags' and the spreadsheet will be generated. This feature assists so that ordering can be controlled by selecting and generating a file called ????? with the date that the document was generated.



**Generate Wire Numbers**

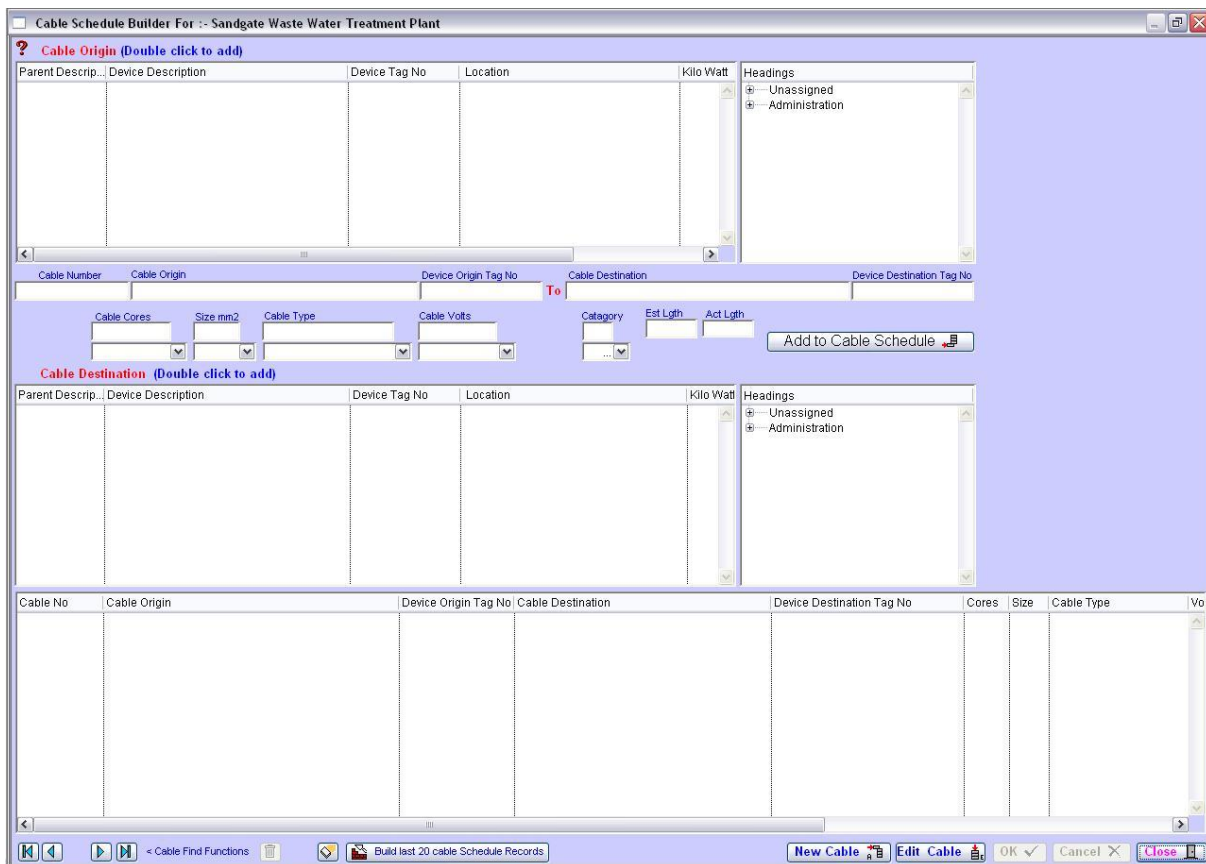
'Cable Numbers' can be generated by the system. Kontrol Pro can automatically generate an Excel document with the 'Cable Numbers'. Highlight the cables in the 'Cable Schedule' window. Click on 'Generate Cable Tags' and the spreadsheet will be generated. This feature assists so that ordering can be controlled by selecting and generating a file called ????? with the date that the document was generated.

**Category 1**

**1.2 Cable Schedule Build**



The 'Cable Schedule Build' window is where a cable schedule can be rapidly developed using the Cable Origin and Cable Destination. It must be noted that before the window can be used effectively, you need to have established the Equipment List. (Refer Module 4 – Equipment Manager).



Generally to set a new cable schedule use the 'Cable Origin' at the top of the screen. Click 'New Cable'. Locate the 'Cable Origin' and then click on the 'New' button under the 'Cable Origin' screen. Select the 'Cable Destination' and then click on the 'Edit' button located on the top of the 'Cable Destination' screen.

The drop down boxes assists in building the appropriate cable to be used. These boxes can be preset to assist when you are entering a multiple of similar type cables.

## Category 1

### 1.3 Single Cable Record



The 'Single Cable Record' window shows a single cable record

This window allows the user to display the contents of one cable only. This can be opened directly from Navigation Screen or the cable schedule Table by using the context menu in the Main Table.

The main purpose of this screen is to provide the user with Quality Assurance and access to the cable were initially installed, terminated tested, results, completion date and person signing off the cable



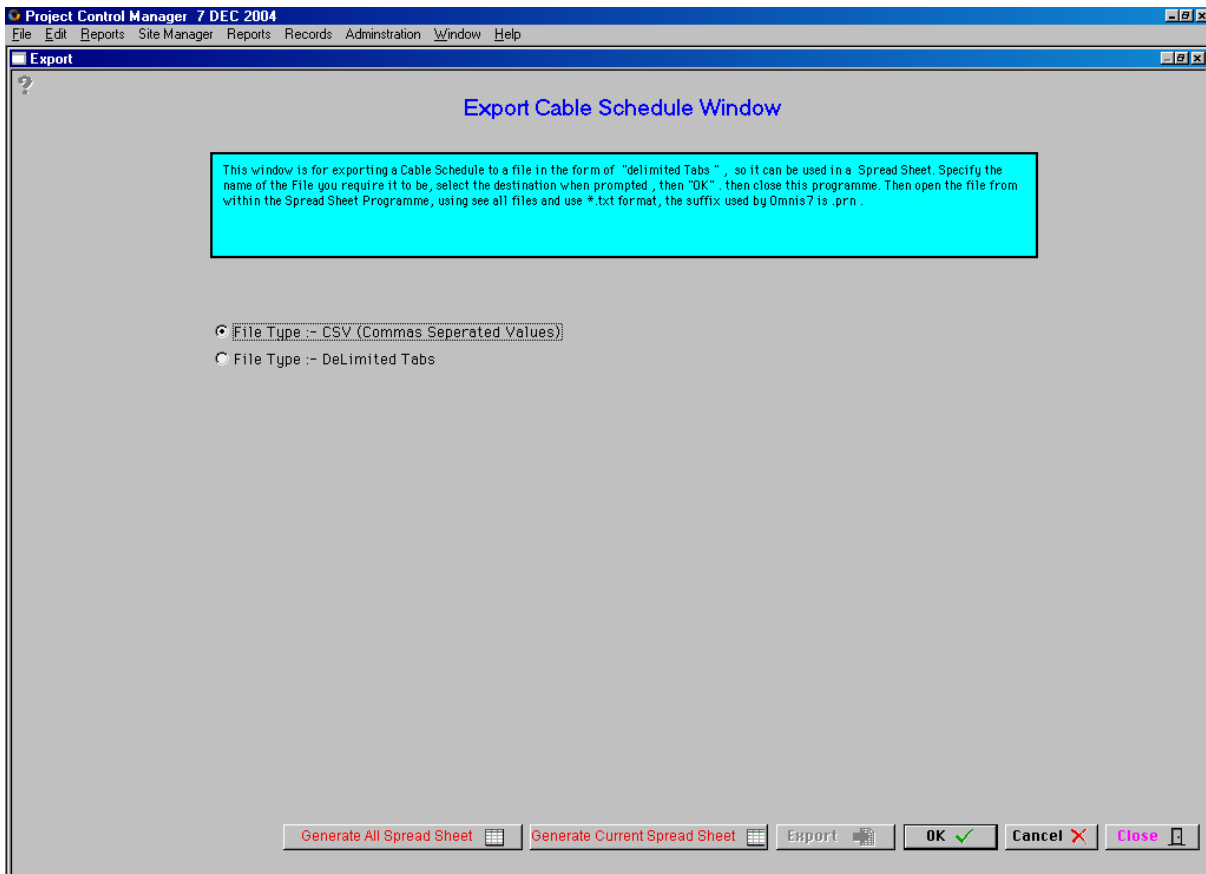
This button builds a drawing list so drawing numbers can be drag from the list to the Drawing fields.

## Category 1

### 1.4 Export and Import Cable Data



#### Export Cable Data



This window is for exporting Cable Schedule to a file in the form of “Delimited Tabs”, so that it can be used in a spreadsheet. Specify the name of the File you require it to be, select the destination when prompted, then “OK, then close this program. Then open the file from within the Spreadsheet programme, using see all files and use\*.txt format, the suffix used by Omnis7 is .prn



This button generates a spreadsheet with all records in the data bases including Current, Deleted or on Hold records.

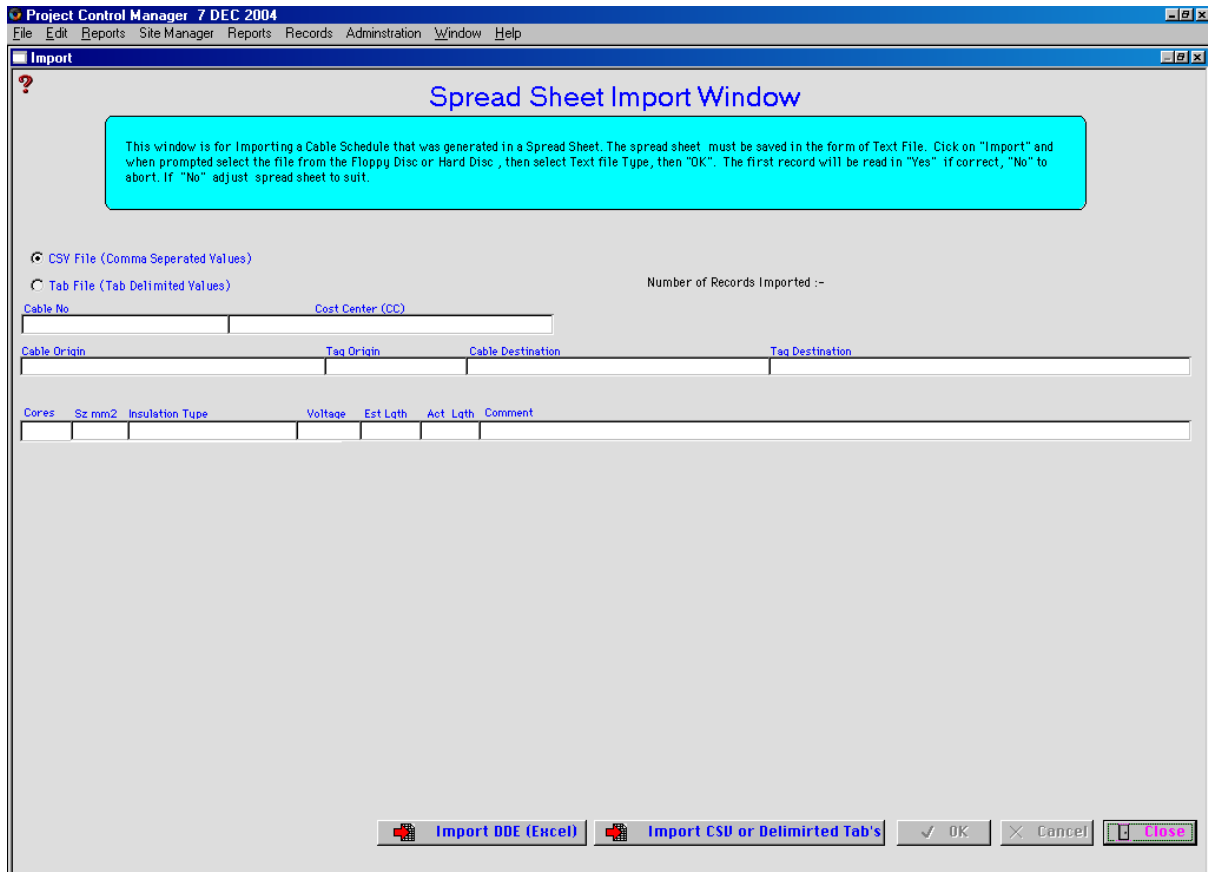


While this button generates a spreadsheet of all the current records.



This button will export the cable schedule in Delimited tab or Coma separated valued so the information can be imported into other computer systems.

### Import Cable Data



This Window is for importing a Cable Schedule that was generated in a spread sheet. The spread sheet must have been saved in the form of a text file. Click on Import and when prompted select the file from the Floppy Disc or Hard Disc, then select Text file type, then “Ok”. The first record will be read, “Yes” if correct or “No” to abort. If “No” adjust the spreadsheet to suit.



This Button imports the cable via the Dynamic Data Exchange (DDE).



While this button allows for information to be imported into the system.

# Category 1

## 1.5 Drum Manager



Drum Manager interface showing a data table and a 'Cables on Drum' section.

Drum No	Cable Drum Type	Max Len M	Est Drum M	Act Len M	Order Number	Kilograms/M	Outside Dia mm	Inside Dia mm	Width mm	No of Runs
100-001	0.5mm2 1C SPECIAL 6/1KV	0	0	0	NO	0.00	0.00	0.00	0.00	0
100-001	0.5mm2 1PR DEKORON 110V	0	0	0	NO	0.00	0.00	0.00	0.00	0
1000-001	95mm2 1C PVC 6/1KV	0	0	0	NO	0.00	0.00	0.00	0.00	0
1010-001	95mm2 1C PVC PVC 6/1KV	0	0	0	NO	0.00	0.00	0.00	0.00	0
1020-001	95mm2 3C XLPE SCR 6.3/11KV	0	0	0	NO	0.00	0.00	0.00	0.00	0
1030-001	mm2	0	0	0	NO	0.00	0.00	0.00	0.00	0
110-001	0.5mm2 1PR DEKORON 24V	0	0	0	NO	0.00	0.00	0.00	0.00	0
120-001	0.5mm2 1PR PROFIBUS-DP 110V	0	0	0	NO	0.00	0.00	0.00	0.00	0
130-001	0.5mm2 1PR PROFIBUS-DP 24V	0	0	0	NO	0.00	0.00	0.00	0.00	0
140-001	0.5mm2 1PR PROFIBUS-PA 6/1KV	0	0	0	NO	0.00	0.00	0.00	0.00	0
150-001	0.5mm2 1PR PROFIBUS-PA 110V	0	0	0	NO	0.00	0.00	0.00	0.00	0
160-001	0.5mm2 1PR PROFIBUS-PA 24V	0	0	0	NO	0.00	0.00	0.00	0.00	0
170-001	0.5mm2 1PR SPECIAL 110V	0	0	0	NO	0.00	0.00	0.00	0.00	0
180-001	0.5mm2 2PR DEKORON 110V	0	0	0	NO	0.00	0.00	0.00	0.00	0
190-001	0.5mm2 2PR DEKORON 24V	0	0	0	NO	0.00	0.00	0.00	0.00	0
200-001	0.5mm2 2PR PROFIBUS-PA 110V	0	0	0	NO	0.00	0.00	0.00	0.00	0
210-001	0.5mm2 2PR SPECIAL 110V	0	0	0	NO	0.00	0.00	0.00	0.00	0
220-001	0.5mm2 3PR DEKORON 110V	0	0	0	NO	0.00	0.00	0.00	0.00	0
230-001	0.5mm2 4PR CAT5 OUTDOOR 110V	0	0	0	NO	0.00	0.00	0.00	0.00	0
240-001	0.5mm2 4PR DEKORON 110V	0	0	0	NO	0.00	0.00	0.00	0.00	0
250-001	0.5mm2 4PR DEKORON 24V	0	0	0	NO	0.00	0.00	0.00	0.00	0
260-001	0.62mm2 6FIB MULTIE2.5J 110V	0	0	0	NO	0.00	0.00	0.00	0.00	0
270-001	1.5mm2 10C+E PVC PVC	0	0	0	NO	0.00	0.00	0.00	0.00	0
280-001	1.5mm2 10C+E PVC PVC 6/1KV	0	0	0	NO	0.00	0.00	0.00	0.00	0
290-001	1.5mm2 10C+E PVC PVC 24V	0	0	0	NO	0.00	0.00	0.00	0.00	0

Buttons: Calculate Drum Types, Drum List, Drum Contents, New, Edit, OK, Cancel, Close



## Category 1

### 1.6 Termination Schedule



Cable terminations are built through the 'Cable Schedule' Module through the 'Termination' window. Every cable needs to be terminated. Refer to Module 6 – Cable Schedule.

Once the 'Cable Schedule' has been completed you can then complete the 'Termination Schedule' on your multicore control cables.

The screenshot shows the 'Project Control Manager' interface. The top part is a table listing equipment with columns for Parent Description, Device Description, Device Tag No, Drawing Number, and Sequence No. The bottom part is a diagram showing a termination schedule for a cable, with boxes for various phases and equipment tags connected by lines.

Parent Description	Device Description	Device Tag No	Drawing Number	Sequence No
	Hand Valve -Pressure Indication	HV-380-35		631
	Hand Valve -Pressure Indication	HV-380-25		630
	Hand Valve -Pressure Indication	HV-380-15		629
	Hydraulic Fluid Tank - Level Switch	LSL-61603	Sludge Area	609
	Hydraulic Fluid Tank - Level Switch	LAL-61603	Sludge Area	567
	Hypo Dosing Pump No 1	PU-815-10		70
	Hypo Dosing Pump No 2	PU-815-20		71
	Hypo Dosing Tank High Level Switch	LSH-815-01B		239
	Hypo Dosing Tank Low Level Switch	LSL-815-01B		230
	Inlet Works Flow Splitter No 1	ZE-85102		545
	Inlet Works Flow Splitter No 1	ZIT-85102		546
	Inlet Works Flow Splitter No1 Motorised Weir	PS-85101		544
	Ionisation Unit	IDN-001-1	Adjacent to Hydraulic Unit Grid Floor Sludge	402
	LCS - Polymer Batching Control Station	LCS-010-01	Blower - Sludge Building	384
	LCS <= 10KW (Anaerobic Zone 1 Mixer No1)	LCS-001-MX-301-01		113

The top part of the screen shows all equipment listed in the 'Equipment Manager'. Refer to Module 1.10 – Equipment Manager.

When a cable has been terminated, click to select a cable and the termination schedule will be shown in the diagram at the bottom section of the screen.

The 'termination schedule' can now be imported into an Excel Spreadsheet ready for printing. There are three (3) methods available for printing out 'Termination Schedules', these are: - Forward from Device to Excel, Back and Forward from Device to Excel and Back from Device to Excel.



The Excel Spreadsheets can be copied and pasted into various documents and used for final as built 'termination drawings'.

### Forward from Device to Excel

To print forward from the Device click on 'Forward from Device to Excel' button. The system will automatically open an Excel Spreadsheet and print out the 'Termination Schedule' for the selected cable. When schedule has been completed the system will ask if you wish to save. Click 'YES' to save and 'NO' to cancel.

Should you select 'YES' the system will automatically save the schedule to the designated file location path selected in the 'Change Default Project' Module – 'Back Up Location' Tab. Refer to Module 2 – 'Change Default Project'.

### Back and Forward from Device to Excel

To print the entire device schedule click on 'Back and Forward from Device to Excel' button. The system will automatically open an Excel Spreadsheet and print out the entire 'Termination Schedule' for the selected cable. When schedule has been completed the system will ask if you wish to save. Click 'YES' to save and 'NO' to cancel.

Should you select 'YES' the system will automatically save the schedule to the designated file location path selected in the 'Change Default Project' Module – 'Back Up Location' Tab. Refer to Module 2 – 'Change Default Project'.

### Back from Device to Excel

To print back from the Device click on 'Back from Device to Excel' button. The system will automatically open an Excel Spreadsheet and print out the 'Termination Schedule' for the selected cable. When schedule has been completed the system will ask if you wish to save. Click 'YES' to save and 'NO' to cancel.

Should you select 'YES' the system will automatically save the schedule to the designated file location path selected in the 'Change Default Project' Module – 'Back Up Location' Tab. Refer to Module 2 – 'Change Default Project'.

## Category 1

### 1.7 Cable Details



This button will open the window with information on cable and accessories information.

**Cable Glands & Details**

**Cable Details :- Glands, Cat No, Weights & Diameter**

This area is for the adding default glands that are required on the cables. And also Cable outside diameter in millimetre and Kilograms per Metre.

Rec No	Catalogue No	Description of cable	ODmm	Gland Start	Gland End	Kg/M	Est Price	Act Price	Lab Rt M	abRtTer	Term \$			
249		0.5mm2 2PR DEKORON 110V	12.00	aaaaa	bbbbb	0.0000	0.00	0.00	0.000	0.000	0.00	350	0	
974		2.5mm2 3C+E SPECIAL 6/1KV	0.00			0.0000	0.00	0.00	0.000	0.000	0.00	15	0	
951		2.5mm2 3C+E PVC PVC 6/1KV	0.00			0.0000	0.00	0.00	0.000	0.000	0.00	788	0	
1000		240mm2 1C PVC PVC 6/1KV	0.00			0.0000	0.00	0.00	0.000	0.000	0.00	100	100	
772		120mm2 1C PVC PVC 6/1KV	0.00			0.0000	0.00	0.00	0.000	0.000	0.00	1058	0	
728		120mm2 1C PVC 6/1KV	0.00			0.0000	0.00	0.00	0.000	0.000	0.00	280	43	
1004		25mm2 3C+E PVC PVC 6/1KV	0.00			0.0000	0.00	0.00	0.000	0.000	0.00	0	0	
971		2.5mm2 3C+E PVC PVC (VSD) 6/1KV	0.00			0.0000	0.00	0.00	0.000	0.000	0.00	0	0	
348		1.5mm2 12C+E PVC PVC 6/1KV	0.00			0.0000	0.00	0.00	0.000	0.000	0.00	140	0	
662		1.5mm2 6C+E PVC PVC 6/1KV	0.00			0.0000	0.00	0.00	0.000	0.000	0.00	3399	0	
332		0.62mm2 6FIB MULTIB2.5J 110V	0.00			0.0000	0.00	0.00	0.000	0.000	0.00	1175	0	
362		1.5mm2 20C+E PVC PVC 6/1KV	99.00	ggggg	hhhhh	0.0000	0.00	0.00	0.000	0.000	0.00	86	0	
1042		4mm2 4C+E PVC PVC 6/1KV	0.00			0.0000	0.00	0.00	0.000	0.000	0.00	100	0	
1165		95mm2 3C XLPE SCR 6.3/11KV	0.00			0.0000	0.00	0.00	0.000	0.000	0.00	110	0	
341		1.5mm2 10C+E PVC PVC 6/1KV	0.00			0.0000	0.00	0.00	0.000	0.000	0.00	279	0	
920		2.5mm2 2C+E PVC PVC 6/1KV	0.00			0.0000	0.00	0.00	0.000	0.000	0.00	2860	0	
819		2.5mm2 11C+E SPECIAL 6/1KV	0.00			0.0000	0.00	0.00	0.000	0.000	0.00	90	0	
721		10mm2 7C+E SPECIAL 6/1KV	0.00			0.0000	0.00	0.00	0.000	0.000	0.00	10	0	
275		0.5mm2 3PR DEKORON 110V	0.00			0.0000	0.00	0.00	0.000	0.000	0.00	330	0	
994		2.5mm2 5C+E SPECIAL 6/1KV	0.00			0.0000	0.00	0.00	0.000	0.000	0.00	10	0	
1009		35mm2 3C XLPE HD SCR 6.3/11KV	0.00			0.0000	0.00	0.00	0.000	0.000	0.00	6	0	
240		0.5mm2 1PR SPECIAL 110V	0.00			0.0000	0.00	0.00	0.000	0.000	0.00	57	0	
1044		4mm2 7C+E SPECIAL 6/1KV	0.00			0.0000	0.00	0.00	0.000	0.000	0.00	10	0	
598		1.5mm2 4C+E PVC PVC 6/1KV	0.00			0.0000	0.00	0.00	0.000	0.000	0.00	105	0	
1146		6mm2 4C+E PVC PVC 6/1KV	0.00			0.0000	0.00	0.00	0.000	0.000	0.00	234	0	
1162		95mm2 1C PVC PVC 6/1KV	0.00			0.0000	0.00	0.00	0.000	0.000	0.00	186	0	
1002		25mm2 1C PVC 6/1KV	0.00			0.0000	0.00	0.00	0.000	0.000	0.00	62	0	
214		0.5mm2 1PR PROFIBUS-PA 110V	0.00			0.0000	0.00	0.00	0.000	0.000	0.00	1195	0	
154		0.5mm2 1PR PROFIBUS-DP 110V	0.00			0.0000	0.00	0.00	0.000	0.000	0.00	711	0	
695		10mm2 3C+E PVC PVC 6/1KV	0.00			0.0000	0.00	0.00	0.000	0.000	0.00	52	0	
440		1.5mm2 2C+E PVC PVC 110V	0.00			0.0000	0.00	0.00	0.000	0.000	0.00	0	0	
297		0.5mm2 4PR CAT5 OUTDOOR 110V	0.00			0.0000	0.00	0.00	0.000	0.000	0.00	614	0	
310		0.5mm2 4PR DEKORON 110V	0.00			0.0000	0.00	0.00	0.000	0.000	0.00	1554	200	
992		2.5mm2 4C+E PVC PVC 6/1KV	0.00			0.0000	0.00	0.00	0.000	0.000	0.00	123	0	
1081		50mm2 4C+E PVC PVC 6/1KV	0.00			0.0000	0.00	0.00	0.000	0.000	0.00	20	0	

Recalculate Cable Schedule

Est Price \$ 0.00 Act Price \$ 0.00

Estimated Total M 29,339

Actual Total M 421

Verify Cables Calculate Cables Lengths Edit Cancel OK Close

This window is for adding the default glands that are required on the cables and also Cables outside diameter in millimetre and Kilograms per Metre.



Use this button to see if the cable still exists in the Cable Schedule, and deletes if they no longer exist. Still included in cable is on R=Redundant or D=Delete

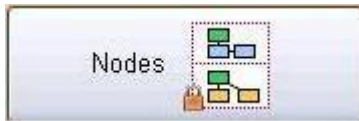


This button will calculate the cables lengths that either N=New or C=Current



# Category 1

## 1.8 Nodes



Nodes such as Cable Ladder and Pits.

Nodes Routing | Nodes Definitions | Verify Nodes Routing | Node Enquiry

Node	T	Name	Tag No
100	T	HY Switch Board 11KY	HYSB-001-1
101	C	Concrete Cable Pit No1 3.0x9x1 M	PITC-001-1
102	C	Concrete Cable Pit No2 3.0x9x1 M	PITC-001-2
103	C	Concrete Cable Pit No3 3.0x9x1 M	PITC-001-3
104	C	Concrete Cable Pit No4 3.0x9x1...	PITC-001-4
105	C	Concrete Cable Pit No5 3.0x9x1 M	PITC-001-5
106	C	Concrete Cable Pit No6 3.0x9x1 M	PITC-001-6
107	C	Concrete Cable Pit No7 3.0x9x1 M	PITC-001-7
108	C	Cable Pit Concrete 2MW x 2MW x...	PITC-002-1
109	C	Cable Pit Concrete 1.2MW x 1.2M...	PITC-002-1

**Connected Top Node**

Node:    
 Type:  Distance M:   
 North:  Support Sys.:   
 East:  Size & Number of Supports:   
 RL:

**Connected Left Node**

Node:    
 Type:  Distance M:   
 North:  Support Sys.:   
 East:  Size & Number of Supports:   
 RL:

**Current Node**

Node Id:   
 Type:   
 Northings:   
 Eastings:   
 (RL) Level:

**Connected Right Node**

Node:    
 Type:  Distance M:   
 North:  Support Sys.:   
 East:  Size & Number of Supports:   
 RL:

**Connected Bottom Node**

Node:    
 Type:  Distance M:   
 North:  Support Sys.:   
 East:  Size & Number of Supports:   
 RL:

Navigation:

Buttons:

Nodes such as Cable Ladder and Pits.

Nodes Routing   Nodes Definitions   **Verify Nodes Routing**   Node Enquiry

**Node ID**    **Tag Number**    **Northings.**   
**Node Name**    **Reference**    **Eastings.**   
**Node Type (T or C)**    **(RL) Level**   
**HTML Reference**    **Comment**

Node ID	Type	Tag Number	Name	Reference ( C-T-L-B-R)	North	East	RL
100	T	HVSB-001-1	HV Switch Board 11kV	100-000-152-134-000	0.000	0.000	0.000
101	C	PITC-001-1	Concrete Cable Pit No5 3.0x0.9x1 M	101-149-000-000-145	6792.620	7007.540	-1.000
102	C	PITC-001-2	Concrete Cable Pit No2 3.0x0.9x1 M	102-151-000-101-103	6764.570	7037.554	-1.000
103	C	PITC-001-3	Concrete Cable Pit No3 3.0x0.9x1 M	103-000-102-000-104	6759.129	7082.543	-1.000
104	C	PITC-001-4	Concrete Cable Pit No4 3.0x0.9x1 M	104-000-103-000-105	6804.447	7134.109	-1.000
105	C	PITC-001-5	Concrete Cable Pit No5 3.0x0.9x1 M	105-000-104-000-106	6847.380	7187.806	-1.000
106	C	PITC-001-6	Concrete Cable Pit No6 3.0x0.9x1 M	106-109-105-000-107	6890.953	7240.817	-1.000
107	C	PITC-001-7	Concrete Cable Pit No7 3.0x0.9x1 M	107-0-106-0-136	6899.593	7233.658	-1.000
108	C	PITC-002-1	Cable Pit Concrete 2MW x 2MW x 1.2M D	108-141-123-136-140	0.000	0.000	0.000
109	C	PITC-003-1	Cable Pit Concrete 1.3MW x 1.3MW x 1.2M D	109-110-000-106-000	0.000	0.000	0.000
110	C	PITC-003-2	Cable Pit Concrete 1.3MW x 1.3MW x 1.2M D	110-164-111-109-136	0.000	0.000	0.000
111	C	PITC-003-3	Cable Pit Concrete 1.3MW x 1.3MW x 1.2M D	111-000-112-000-110	0.000	0.000	0.000
112	C	PITC-003-4	Cable Pit Concrete 1.3MW x 1.3MW x 1.2M D	112-114-137-000-111	0.000	0.000	0.000
113	C	PITP-004-3	Cable Pit Polycrete.750w x 750w x 800d mm	113-000-119-000-137	0.000	0.000	0.000
114	C	PITP-004-5	Cable Pit Polycrete.750w x 750w x 800d mm	114-116-115-132-000	0.000	0.000	0.000
115	C	PITP-004-4	Cable Pit Polycrete.750w x 750w x 800d mm	115-000-000-159-158	0.000	0.000	0.000
116	C	PITC-003-7	Cable Pit Concrete 1.3MW x 1.3MW x 1.2M D	116-125-117-114-000	0.000	0.000	0.000
117	C	PITC-003-8	Cable Pit Concrete 1.3MW x 1.3MW x 1.2M D	117-000-118-000-116	0.000	0.000	0.000
118	C	PITP-004-2	Cable Pit Polycrete.750w x 750w x 800d mm	118-000-119-000-157	0.000	0.000	0.000
119	C	PITP-004-1	Cable Pit Polycrete.750w x 750w x 800d mm	119-000-135-000-156	0.000	0.000	0.000
120	C	PITC-003-5	Cable Pit Concrete 1.3MW x 1.3MW x 1.2M D	120-000-163-108-141	0.000	0.000	0.000
121	C	PITC-003-6	Cable Pit Concrete 1.3MW x 1.3MW x 1.2M D	121-122-000-141-000	0.000	0.000	0.000
122	C	PITP-004-6	Cable Pit Polycrete.750w x 750w x 800d mm	122-000-124-121-142	0.000	0.000	0.000
123	C	PITC-001-8	Concrete Cable Pit No8 3.0x0.9x1 M	123-000-143-000-108	0.000	0.000	-1.000
124	C	PITP-004-7	Cable Pit Polycrete.750w x 750w x 800d mm	124-000-125-165-122	0.000	0.000	0.000
125	C	PITC-003-9	Cable Pit Concrete 1.3MW x 1.3MW x 1.2M D	125-126-000-116-124	0.000	0.000	0.000
126	C	PITC-003-10	Cable Pit Concrete 1.3MW x 1.3MW x 1.2M D	126-127-000-125-000	0.000	0.000	0.000

Nodes such as Cable Ladder and Pits.

Nodes Routing   Nodes Definitions   **Verify Nodes Routing**   Node Enquiry

**List of Nodes**

Node ID	Type	Top	Left	Botto...	Right
100	T	0	152	134	0
101	C	149	0	0	145
102	C	151	0	101	103
103	C	0	102	0	104
104	C	0	103	0	105
105	C	0	104	0	106
106	C	109	105	0	107
107	C	0	106	0	136
108	C	141	123	136	140
109	C	110	0	106	0
110	C	164	111	109	136
111	C	0	112	0	110
112	C	114	137	0	111
113	C	0	119	0	137
114	C	116	115	132	0
115	C	0	0	159	158
116	C	125	117	114	0
117	C	0	118	0	116
118	C	0	119	0	157
119	C	0	135	0	156
120	C	0	163	108	141
121	C	122	0	141	0
122	C	0	124	121	142
123	C	0	143	0	108
124	C	0	125	165	122
125	C	126	0	116	124
126	C	127	0	125	0
127	C	146	139	126	0
129	C	0	130	168	0
130	C	0	146	166	129

**List Of Errors - Number of Errors: 0**

Node ID	Type	No Of Connections	Error Description

Nodes such as Cable Ladder and Pits.

Nodes Routing | Nodes Definitions | **Verify Nodes Routing** | Node Enquiry

Node	T	Name	Tag No
100	T	HV Swtch Board 11kV	HVSB-001-1
101	C	Concrete Cable Pit No5 3.0x0.9x1	PITC-001-1
102	C	Concrete Cable Pit No2 3.0x0.9x1	PITC-001-2
103	C	Concrete Cable Pit No3 3.0x0.9x1	PITC-001-3
104	C	Concrete Cable Pit No4 3.0x0.9x1	PITC-001-4
105	C	Concrete Cable Pit No5 3.0x0.9x1	PITC-001-5
106	C	Concrete Cable Pit No6 3.0x0.9x1	PITC-001-6
107	C	Concrete Cable Pit No7 3.0x0.9x1	PITC-001-7
108	C	Cable Pit Concrete 2MW x 2MW x 1	PITC-002-1
109	C	Cable Pit Concrete 1.7MW x 1.7MW	PITC-002-1

Nodes & Cables

**Node Master Data**

Node ID  Northings.

Node Type  Eastings.

(RL) Level

Tag Number

Node Name

Reference

HTML Reference

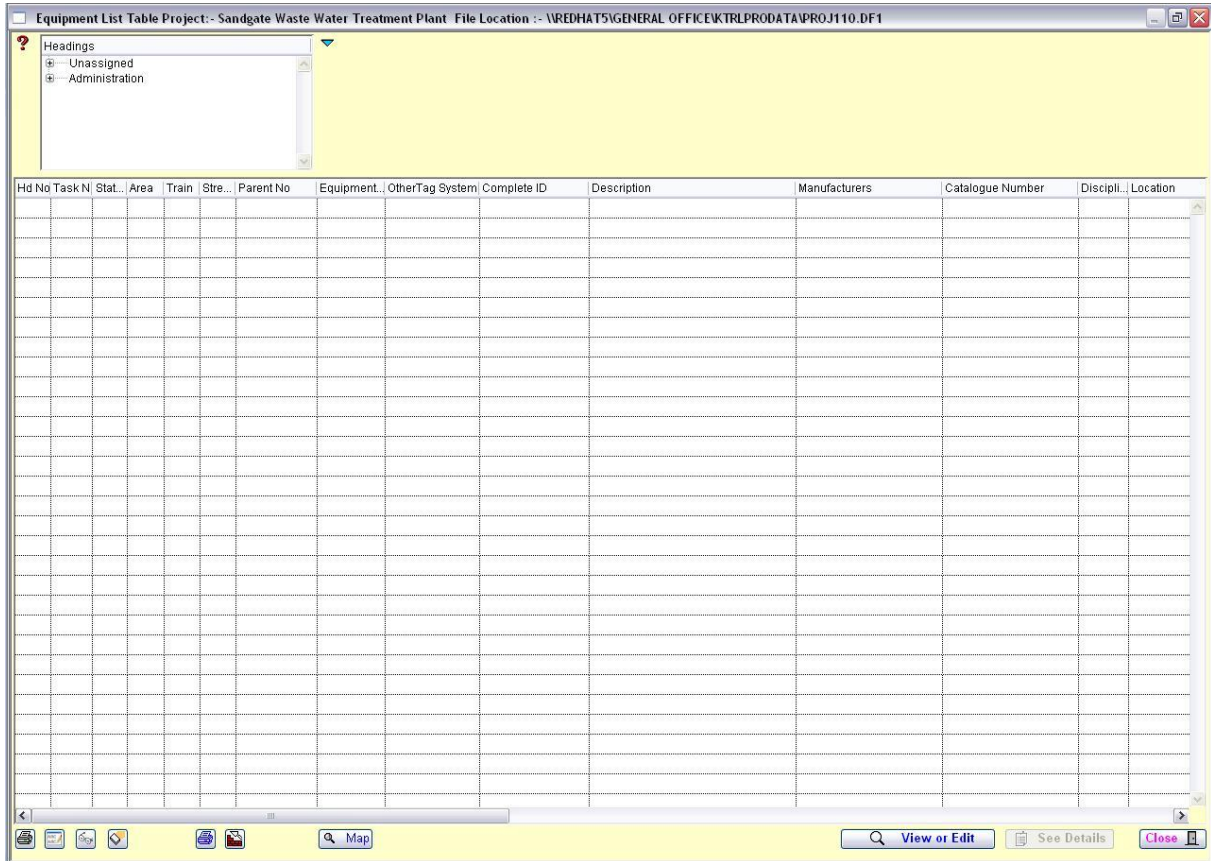
Comment

All Nodes Details

OK Cancel Close

**Category 1**

**1.9 Equipment List Technical**

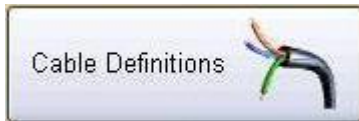


The screenshot shows a software window titled "Equipment List Table Project:- Sandgate Waste Water Treatment Plant" with a file location of "\REDHAT5\GENERAL OFFICE\KTRLPRDATA\PROJ110.DF1". On the left, a tree view under "Headings" shows "Unassigned" and "Administration". The main area is a large table with the following columns: "Hd No", "Task N", "Stat..", "Area", "Train", "Stre...", "Parent No", "Equipment...", "OtherTag", "System", "Complete ID", "Description", "Manufacturers", "Catalogue Number", "Discipli..", and "Location". The table is currently empty. At the bottom, there is a toolbar with icons for navigation and actions, including buttons for "Map", "View or Edit", "See Details", and "Close".



## Category 1

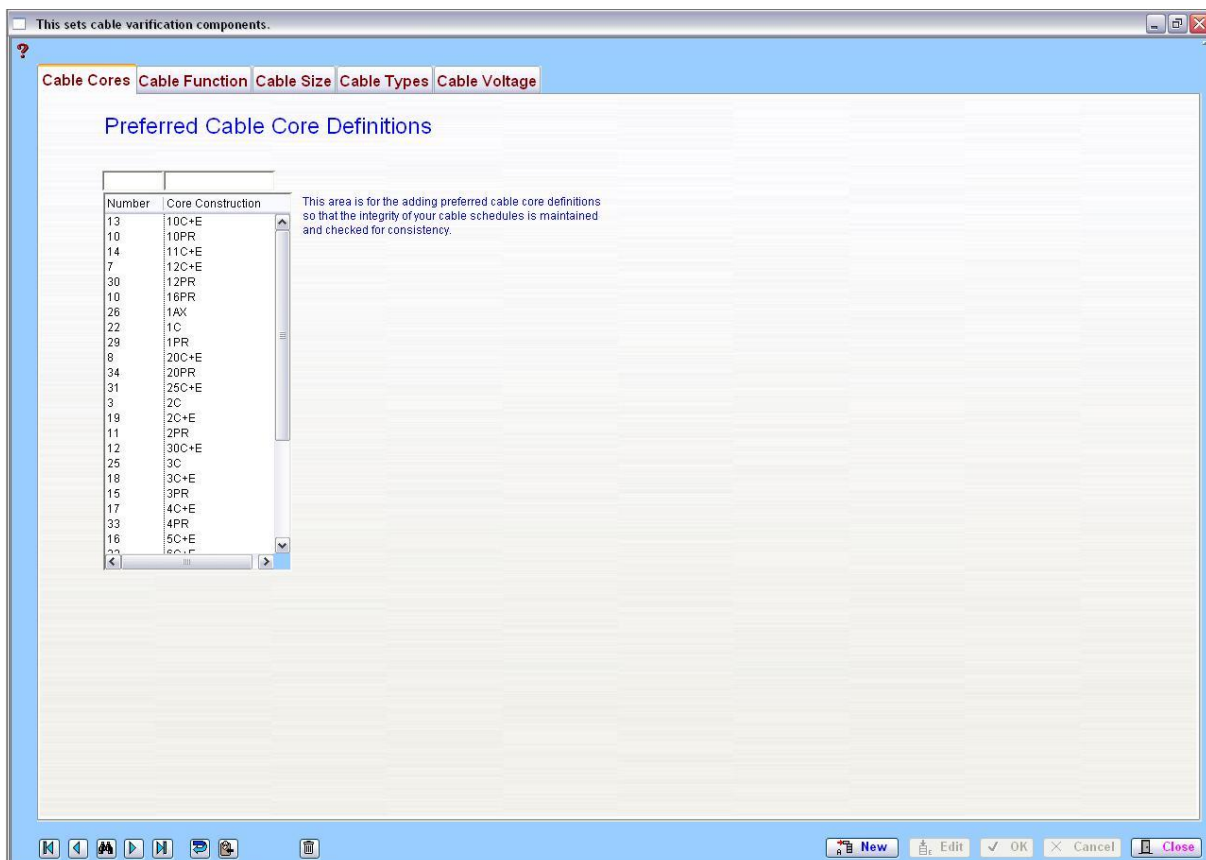
### 1.11 Cable Definitions



This opens a Tab panel window that allows the user to enter all the aspects of a cable construction such as size insulation etc.

#### 1.11.1 Cable Cores

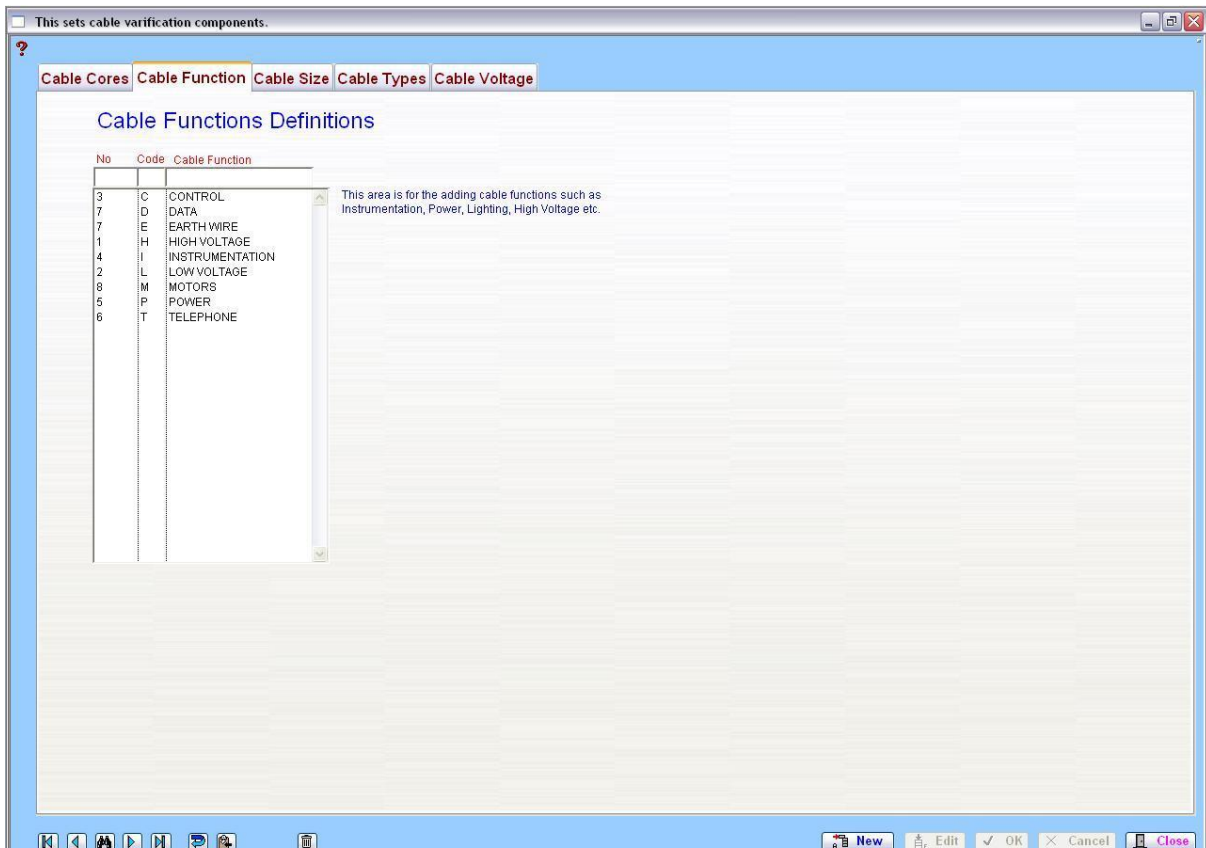
This area is for the adding preferred cable core definitions so that the integrity of your cable schedules is maintained.



#### 1.11.2 Cable Functions

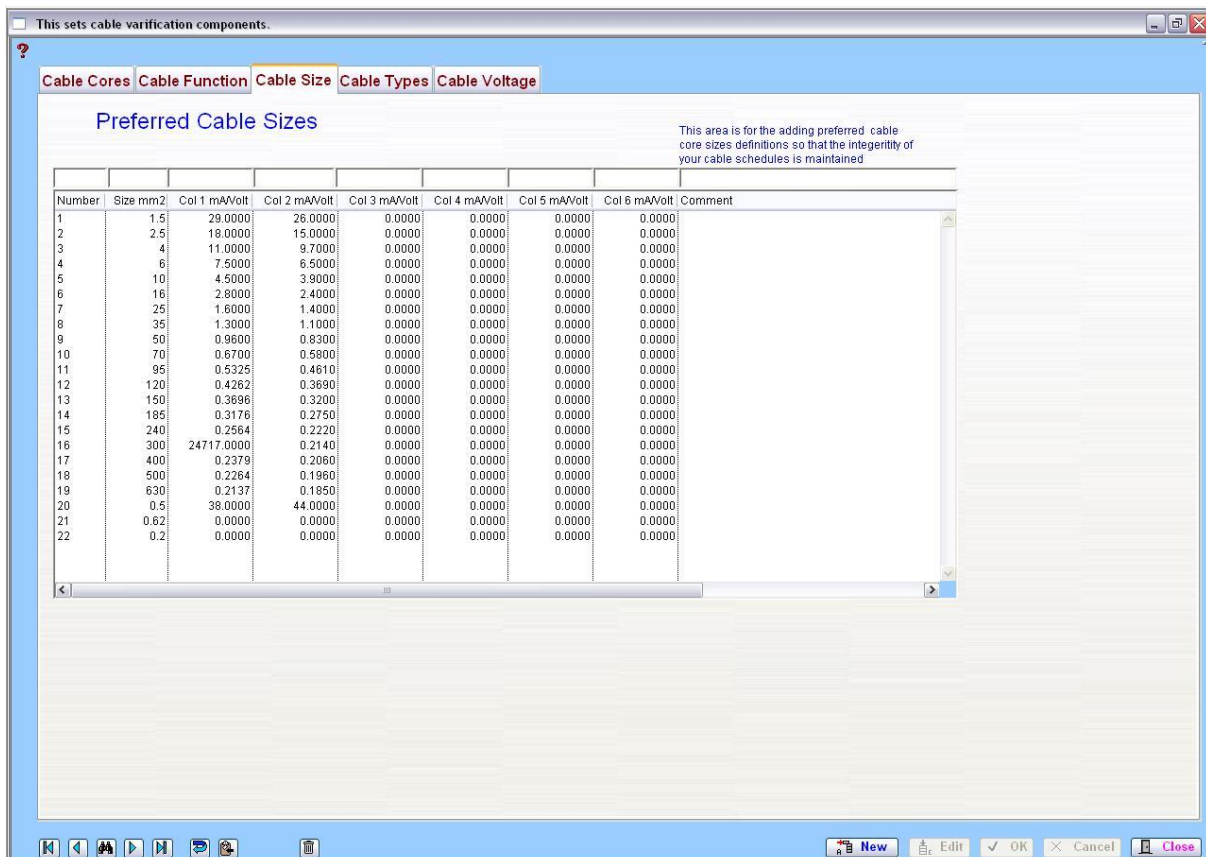
This is for the adding cable functions such as Instrumentation, Power, Lighting, High voltage etc.





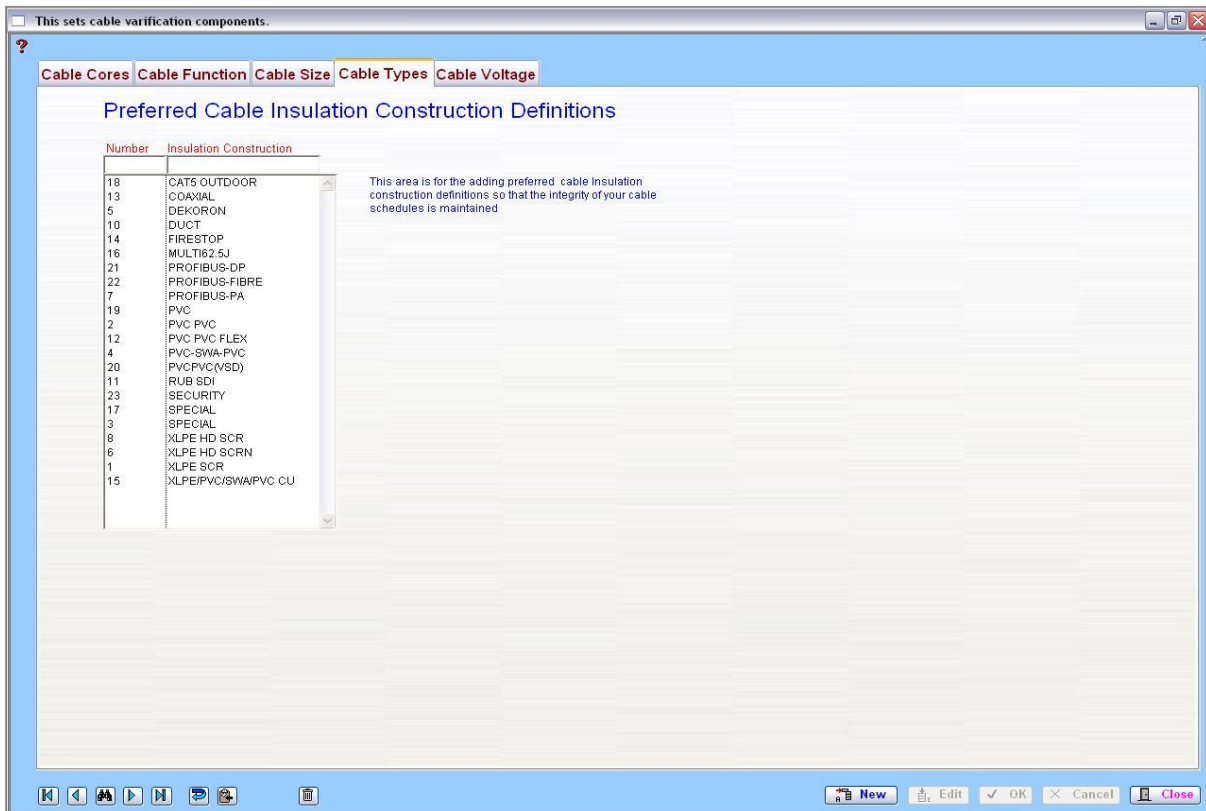
### 1.11.3 Cable Sizes

This area is for the adding preferred cable core sizes definitions so that the integrity of your cable schedules is maintained.



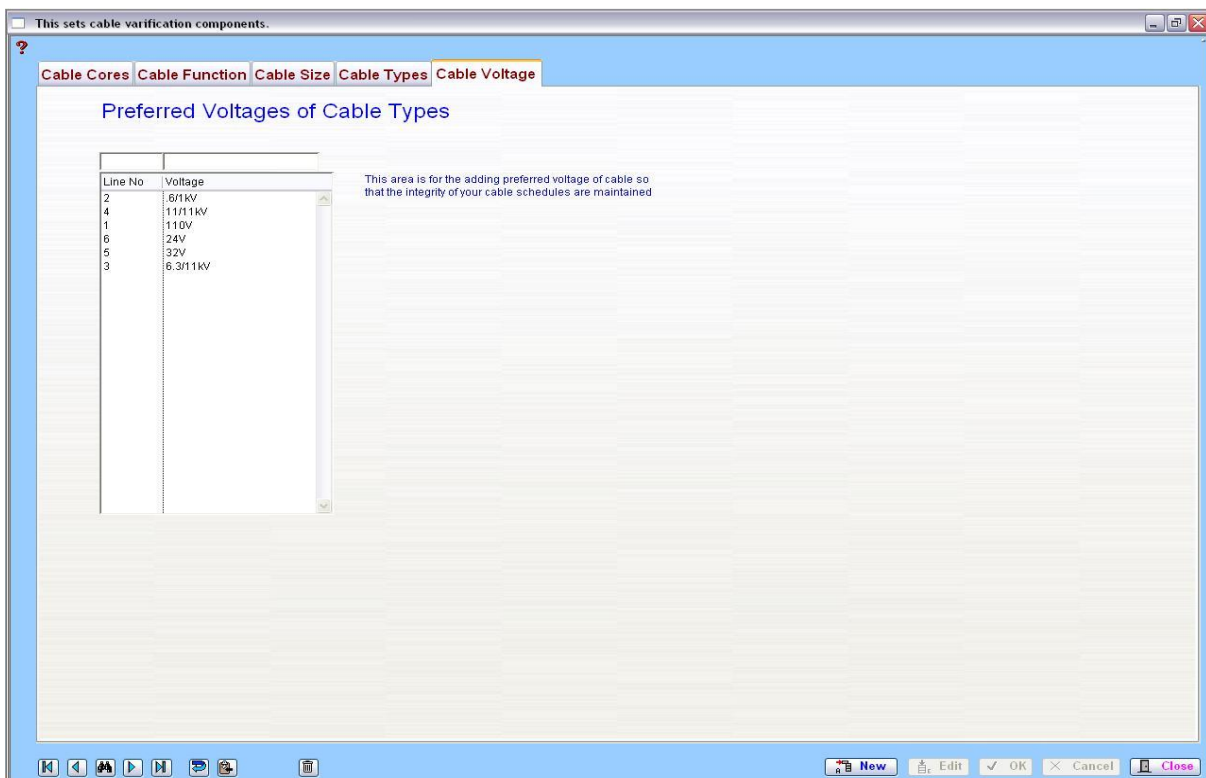
**1.11.4 Cable Types**

This area is for the adding preferred cable insulation construction definitions so that the integrity of your cable schedules is maintained.



**1.11.5 Cable Voltage**

This area is for the adding preferred voltage of the cable so that the integrity of your cable schedules is maintained.

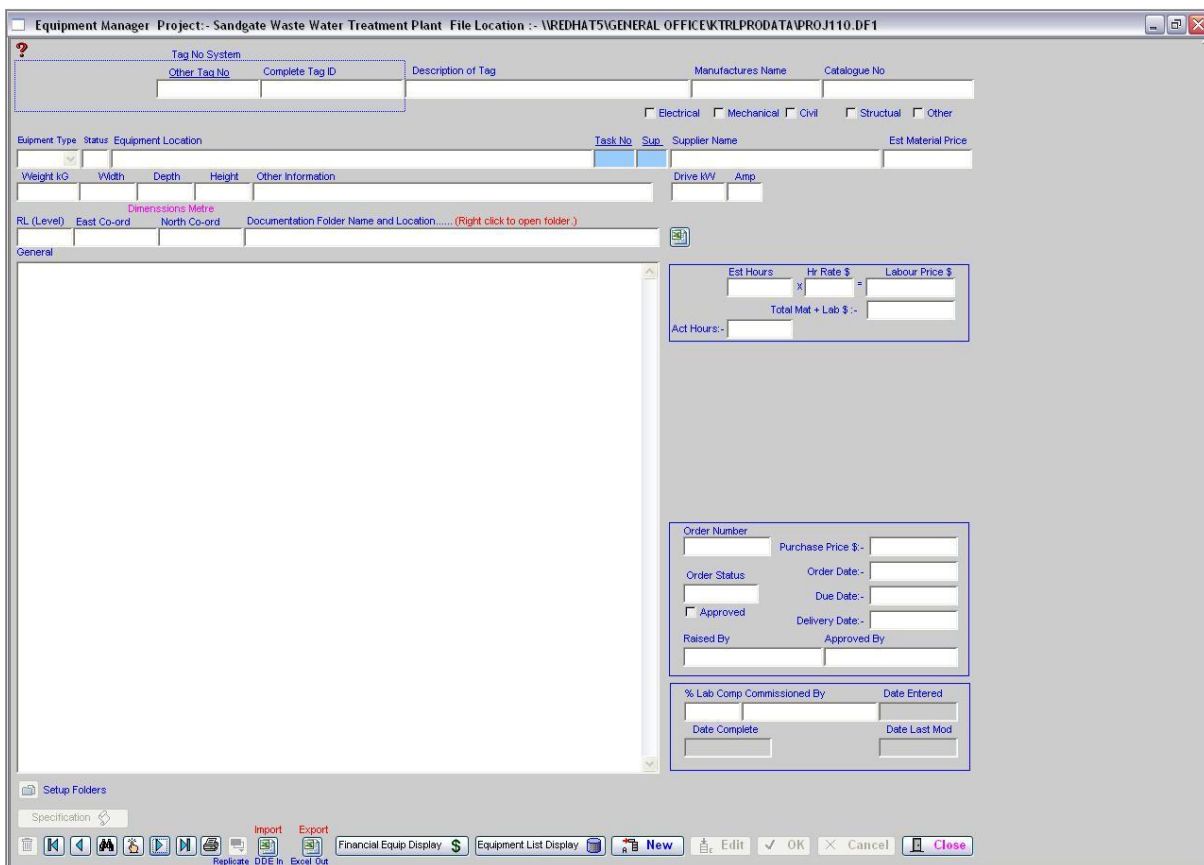


## Category 1

### 1.12 Equipment Manager



The 'Equipment Manager' collects information on equipment such as Motors, Pump Sets and Instrumentation Devices to have like objects identified. These like objects are then given a unique number. This information is built on assigning details such as Parent, Weight, Location, Dimensions, Kilowatts, Catalogues and other information.



This information can be added or amended when required and notes and general comments can also be included to provide up to date information.



#### Replicate

The 'Replicate' function is to save data entry. Click on 'Replicate' to copy the item, then make amendments as required.



#### Excel Out

The entire Equipment List can be automatically generated into an Excel Spreadsheet. Click on the 'Excel Out' button and the list will be generated.

**DDE In**

Information stored on another document can also be imported into the Equipment List. Click on the 'DDE In' button and the system will request a document location. Find the location of the document and the system will import the information.

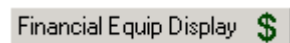
<b>Equipment Schedule :-</b>								Chris Hughes
Parent	Equipment ID	Complete Number	Description	Manufacturer Name	Catalogue Number	Displ	Status	Loc
		----	POLYMER RECEIVER-1 AGITATOR	Power Up		E YES	C	Pow
		----	POLYMER RECEIVER-2 AGITATOR				C	
		AG-103	REWORK TANK AGITATOR					
		AG-151	DF5 TANK-1 AGITATOR					
		AG-152	DF5 TANK-2 AGITATOR				C	
		AG-153	DF5 TANK-3 AGITATOR					
		AG-154	DF10 TANK-1 AGITATOR					
		AG-155	DF10 TANK-1 AGITATOR					
		AG-156	DF20 TANK-1 AGITATOR					

The system has a DDE (Dynamic Data Exchange) function. This means information can be imported into the current section of the Equipment List. You must have an Microsoft Excel spreadsheet open and the Excel file you want to import, and the columns lined up in the following order:-

Parent, Equipment ID, Complete Number, Description, Manufacturer Name, etc.

Spreadsheets can be used for evaluation or to access information received in spreadsheet format. The information can be organised into an area to act as a gateway for exchange. When this feature is used, the information is entered into the currently displayed section. The procedure is designed to obtain information from the 3<sup>rd</sup> line downward in a spreadsheet until a blank description (line) is found, then it will terminate.

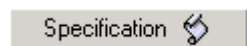
**Note:** Numeric fields in Excel must be displayed without "\$" signs, as the system see these as Alpha fields and the information is not imported.



This button opens another window and allows the user to build a selected list of equipment, by using a drop down list. (See below for further information 1.10.1)



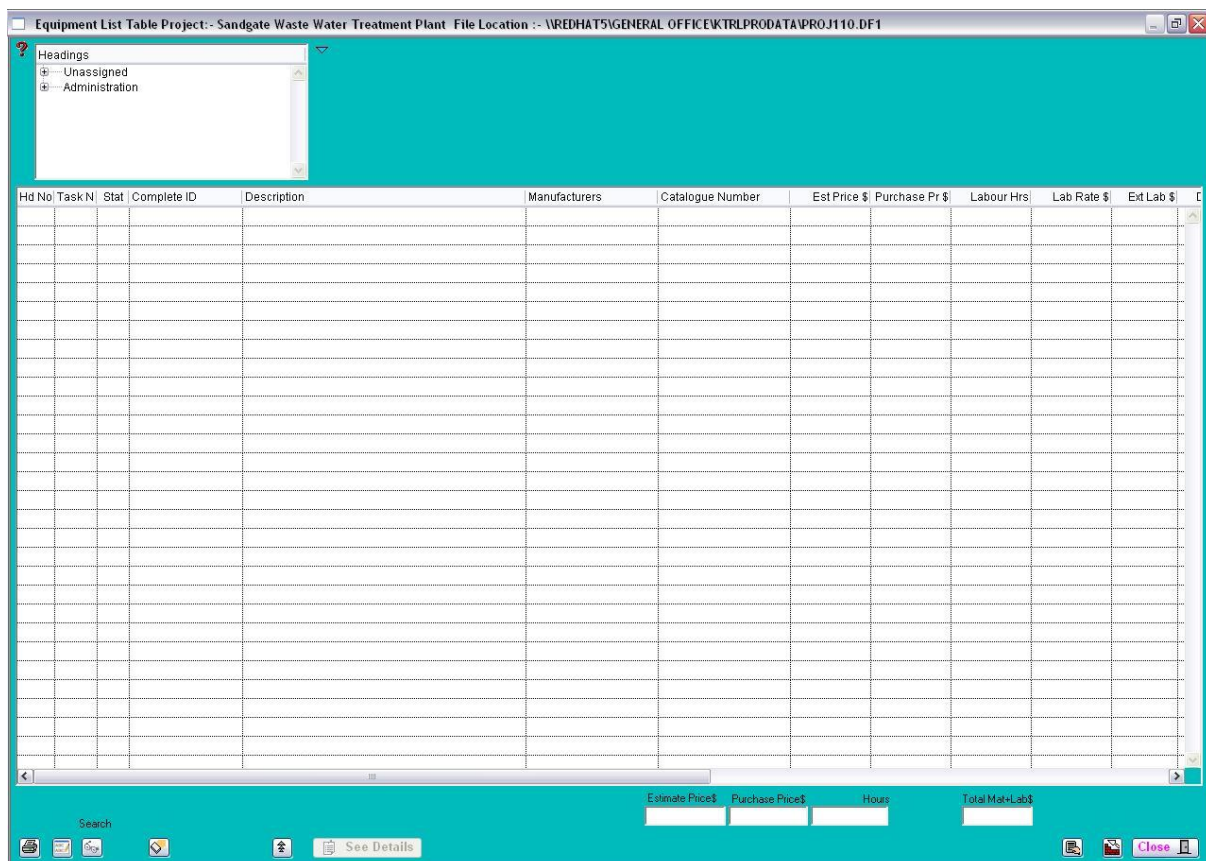
This button opens another window and allows the user to build a selected list of equipment, by using a drop down list. (See below for further information 1.10.2)



This button opens a window showing more related details on the current record / piece of equipment. (See below for further information 1.10.4)

**1.12.1 Financial Equip Display**

The following screen appears with all the information of each item.



To make an amendment or to update an item in the Equipment List, click on the item to highlight the selected line and then click on the 'Close' button. You will return to the Equipment Manager screen and the item will be listed in the fields.



This replaces the existing part of a word, or word in the Equipment Manager description to a new word



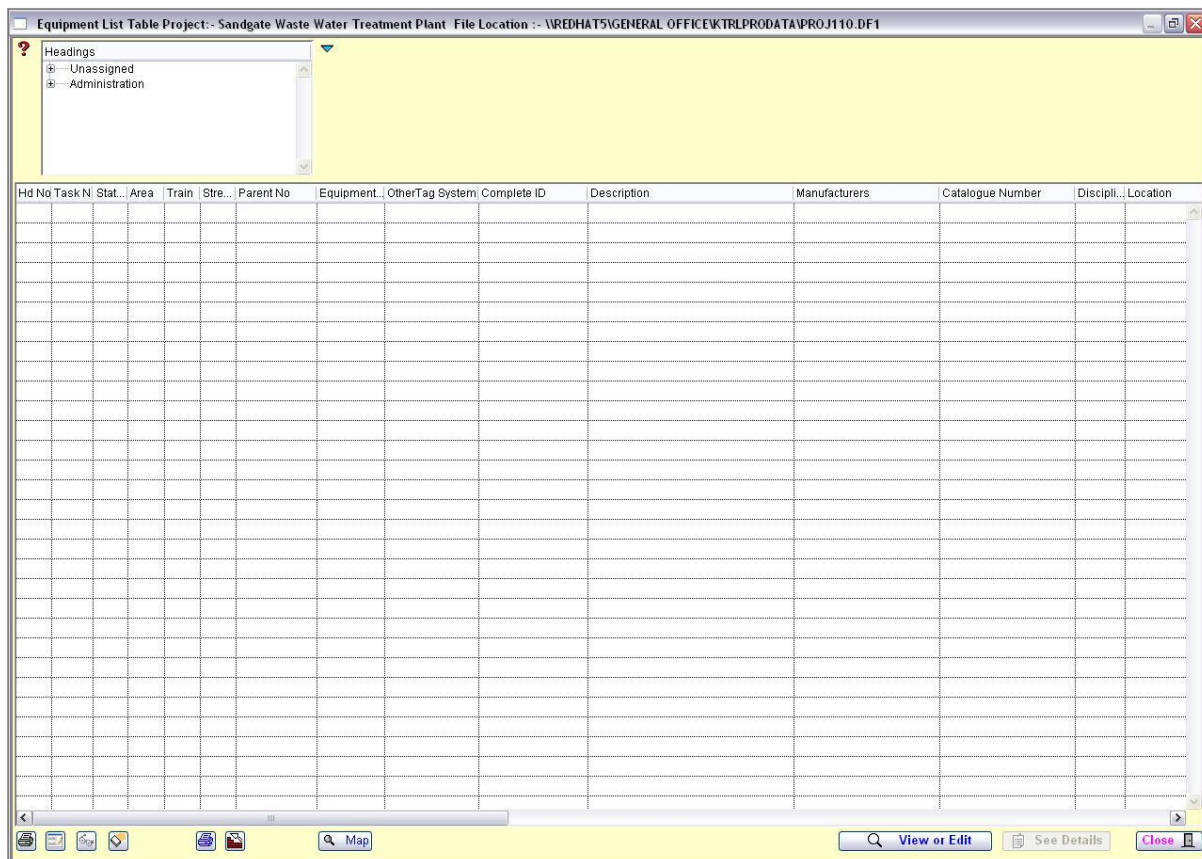
Search Description based on words contained. A right click will search on the combined tag number looking for number identifiers.



Deletes selected lines from the list. This does not delete the information, it allows you to work with a smaller list.

## 1.12.2 Equipment List Display

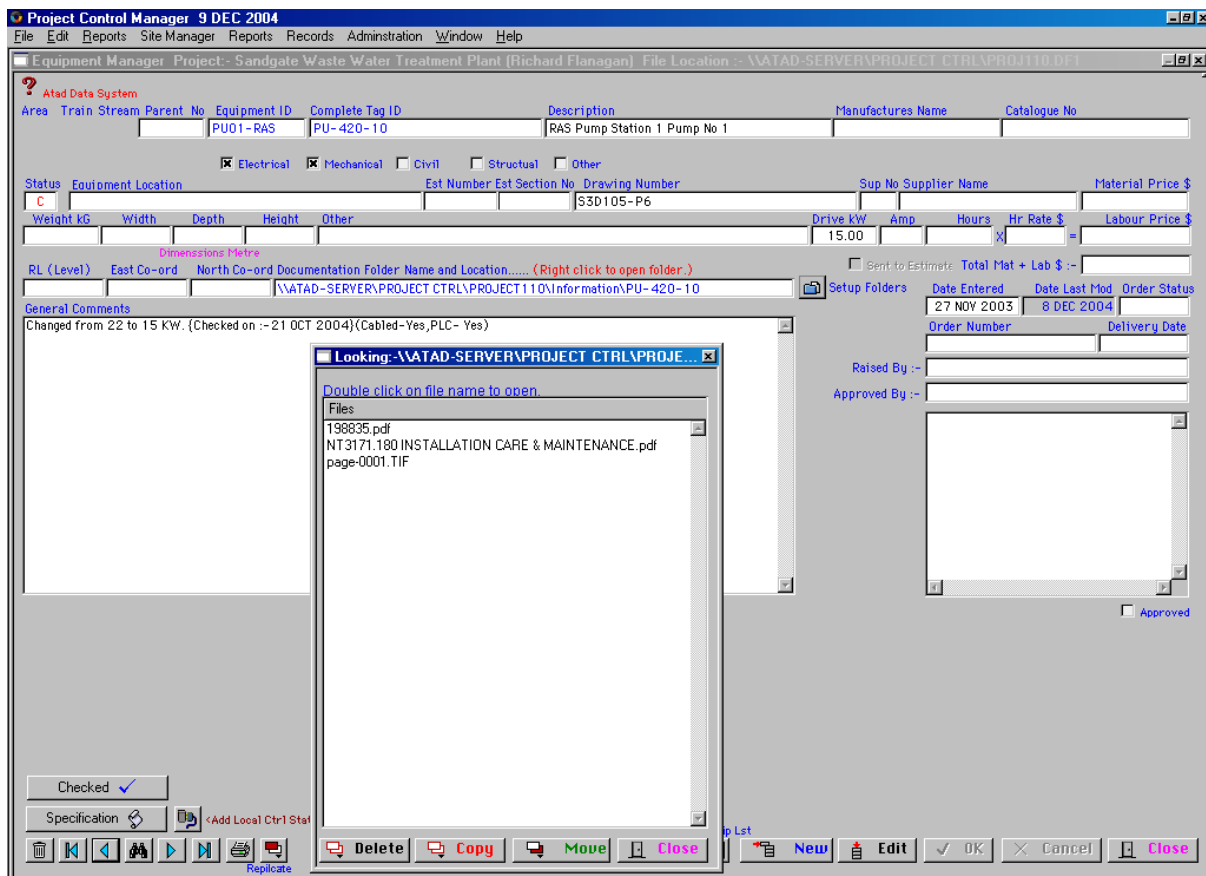
This displays as default the current records and a selection of records in the equipment list data file, when a record is clicked on the line is found and displays in single record layout. The list headers will sort the records when clicked on.



### 1.12.3 Document Folder Location

In Equipment Manager you can set up a 'Documentation Folder, Name and Location' for each item. Information pertaining to the item in the Equipment List might be for the care and installation or setup. Other information could include; PDF Instructions, Excel Spreadsheets, Diagrams, Drawings and Graphs.

To establish an information folder, click on the 'Setup folders' button located to the right of the 'Documentation Folder, Name and Location' field. The folder path will be named the same as the Project Name (refer to Module 2 – Change Default Project). However, it will have included an Information Folder and the Equipment Item Tag Number.



To access the information in the folder, right click on the 'Documentation Folder, Name and Location' field. The 'Document' screen will open and to access information, double click on the folder name.

If the information / instructions is required on several items the same ensure you use the same path location ie 6 RAS pumps instructions should only be included in the information folder once and the path location should be directed to the one location.

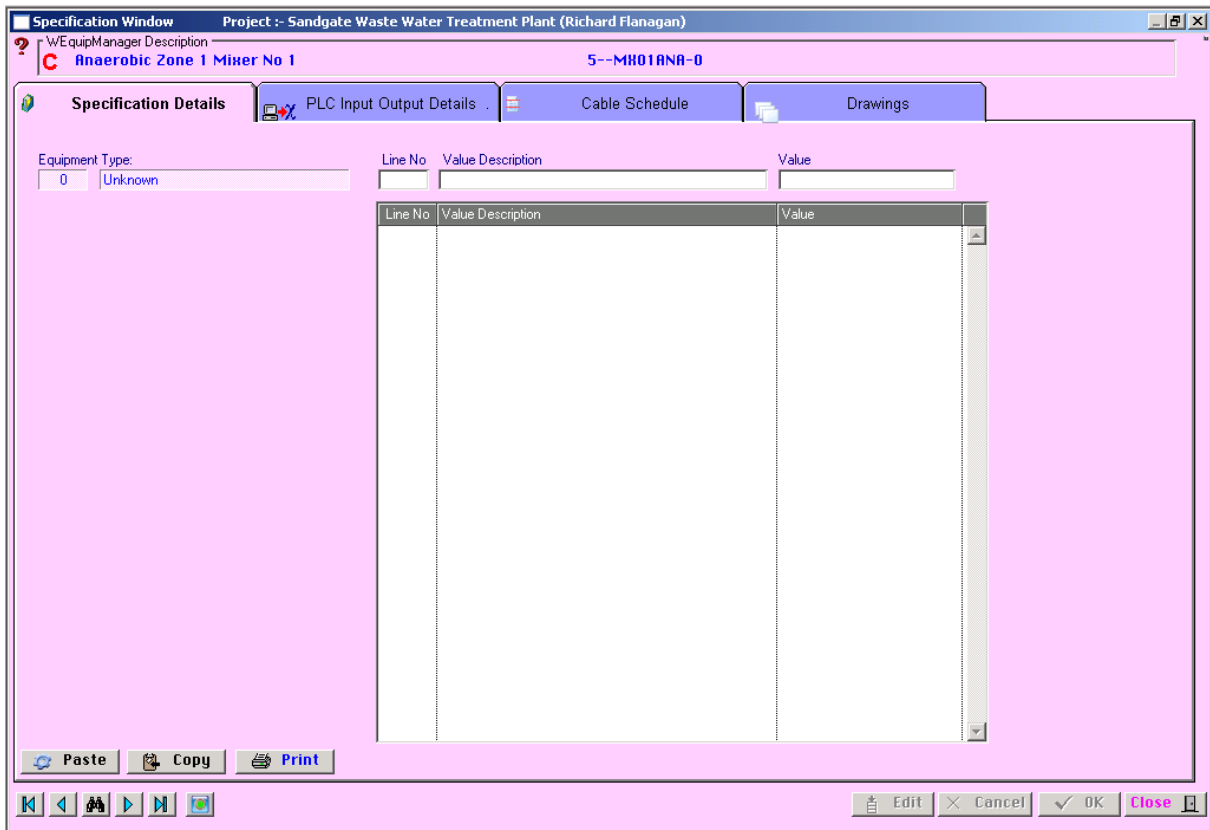
## Specifications

To build on the details on an item in the 'Equipment Manager', click on the 'Specification' button. Additional information can be entered into each of the following areas providing a more detailed explanation of the item listed.

- Specification Details
- PLC In/Output Details
- Cable Schedule
- Drawings

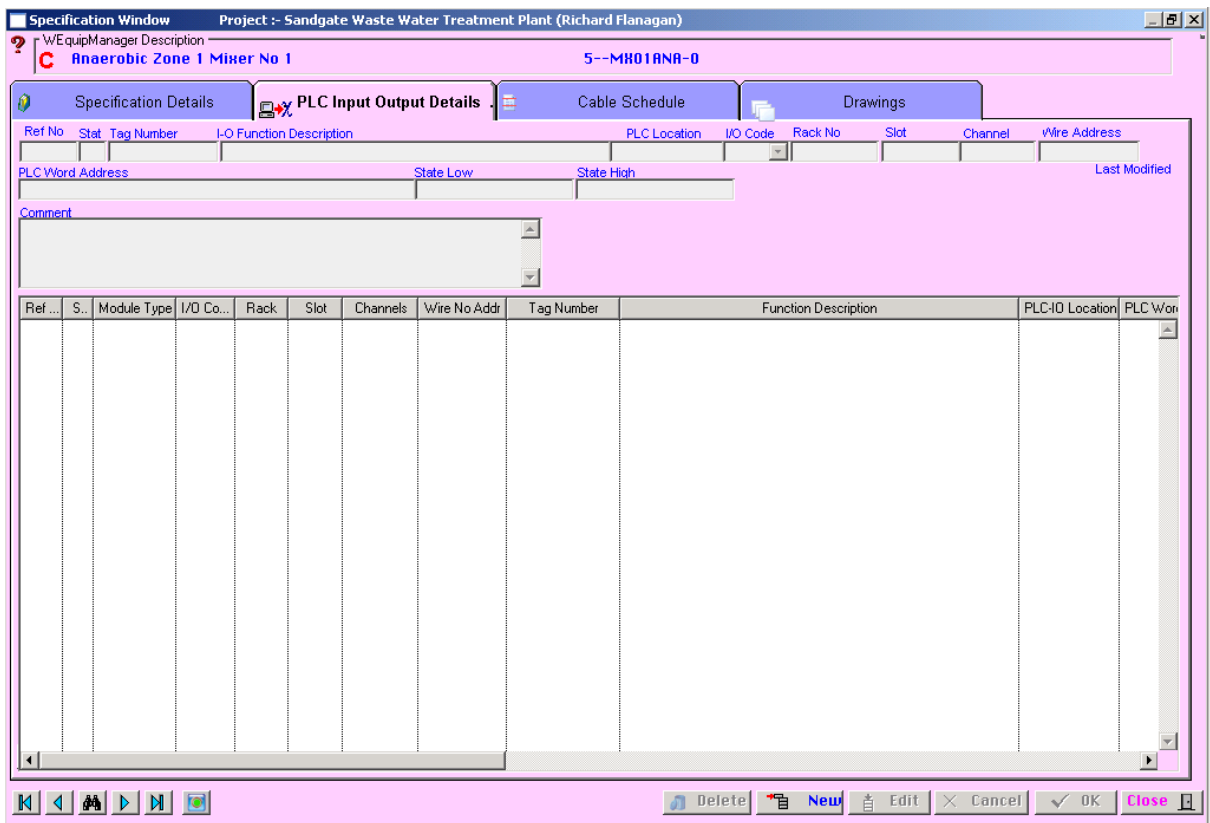
### 1.12.4 Specification Details window

The 'Specification' window provides more detailed information to be entered on each item listed in the 'Equipment Manager'.



This button Transfers to PLC Input Output File

### 1.12.5 PLC In/Output Details Window





### 1.12.6 Cable Schedule Window

Cable No.	C.C.	Cable Origin	Device Origin	Destination	Device Destination	Cores	mm2	Type of Cable	Voltage	Est Lgth	Act L
TX-001-02	204	Transformer 1500kVA-Blower Building	TX-001-02	Motor Ctrl Center - Blowers	MCC-001-01	1C	500	PVC PVC	6/1kV	13	0
TX-001-02	204	Transformer 1500kVA-Blower Building	TX-001-02	Motor Ctrl Center - Blowers	MCC-001-01	1C	500	PVC PVC	6/1kV	13	0
TX-001-02	204	Transformer 1500kVA-Blower Building	TX-001-02	Motor Ctrl Center - Blowers	MCC-001-01	1C	500	PVC PVC	6/1kV	13	0
TX-001-02	204	Transformer 1500kVA-Blower Building	TX-001-02	Motor Ctrl Center - Blowers	MCC-001-01	1C	500	PVC PVC	6/1kV	13	0
TX-001-02	204	Transformer 1500kVA-Blower Building	TX-001-02	Motor Ctrl Center - Blowers	MCC-001-01	1C	500	PVC PVC	6/1kV	13	0
TX-001-02	204	Transformer 1500kVA-Blower Building	TX-001-02	Motor Ctrl Center - Blowers	MCC-001-01	1C	500	PVC PVC	6/1kV	13	0
TX-001-02	204	Transformer 1500kVA-Blower Building	TX-001-02	Motor Ctrl Center - Blowers	MCC-001-01	1C	500	PVC PVC	6/1kV	13	0
TX-001-02	204	Transformer 1500kVA-Blower Building	TX-001-02	Motor Ctrl Center - Blowers	MCC-001-01	1C	500	PVC PVC	6/1kV	13	0
TX-001-02	204	Transformer 1500kVA-Blower Building	TX-001-02	Motor Ctrl Center - Blowers	MCC-001-01	1C	500	PVC PVC	6/1kV	13	0
TX-001-02	204	Transformer 1500kVA-Blower Building	TX-001-02	Motor Ctrl Center - Blowers	MCC-001-01	1C	500	PVC PVC	6/1kV	13	0
TX-001-02	204	Transformer 1500kVA-Blower Building	TX-001-02	Motor Ctrl Center - Blowers	MCC-001-01	1C	500	PVC PVC	6/1kV	13	0
TX-001-02	204	Transformer 1500kVA-Blower Building	TX-001-02	Motor Ctrl Center - Blowers	MCC-001-01	1C	500	PVC PVC	6/1kV	13	0
TX-001-02	204	Transformer 1500kVA-Blower Building	TX-001-02	Motor Ctrl Center - Blowers	MCC-001-01	1C	500	PVC PVC	6/1kV	13	0
TX-001-02	204	Transformer 1500kVA-Blower Building	TX-001-02	Motor Ctrl Center - Blowers	MCC-001-01	1C	500	PVC PVC	6/1kV	13	0
TX-001-02	204	Transformer 1500kVA-Blower Building	TX-001-02	Motor Ctrl Center - Blowers	MCC-001-01	1C	500	PVC PVC	6/1kV	13	0
TX-001-02	204	Transformer 1500kVA-Blower Building	TX-001-02	Motor Ctrl Center - Blowers	MCC-001-01	1C	500	PVC PVC	6/1kV	13	0
TX-001-02	204	Transformer 1500kVA-Blower Building	TX-001-02	Motor Ctrl Center - Blowers	MCC-001-01	1C	500	PVC PVC	6/1kV	13	0
TX-001-02	204	Transformer 1500kVA-Blower Building	TX-001-02	Motor Ctrl Center - Blowers	MCC-001-01	1C	500	PVC PVC	6/1kV	13	0
TX-001-02	204	Transformer 1500kVA-Blower Building	TX-001-02	Motor Ctrl Center - Blowers	MCC-001-01	1C	500	PVC PVC	6/1kV	13	0
EP-E-002	102	Transformer 1500kVA-Blower Building	TX-001-02	Earth Ring Around Transformer	MCC-001-01	1C	120	PVC	6/1kV	30	0
HV-P11	104	Ring Main Unit No1 - Blowers MCC Feeder 1	RMU-002-1	Transformer 1500kVA-Blower Buildi...	TX-001-02	3C	35	XLPE HD SCR	6.3/1...	2	0

### 1.12.7 Drawings Window

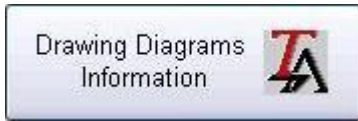
Number of Drawings Associated with the Current Tag = 0

Drawing Number	Drawing Title	Rev.

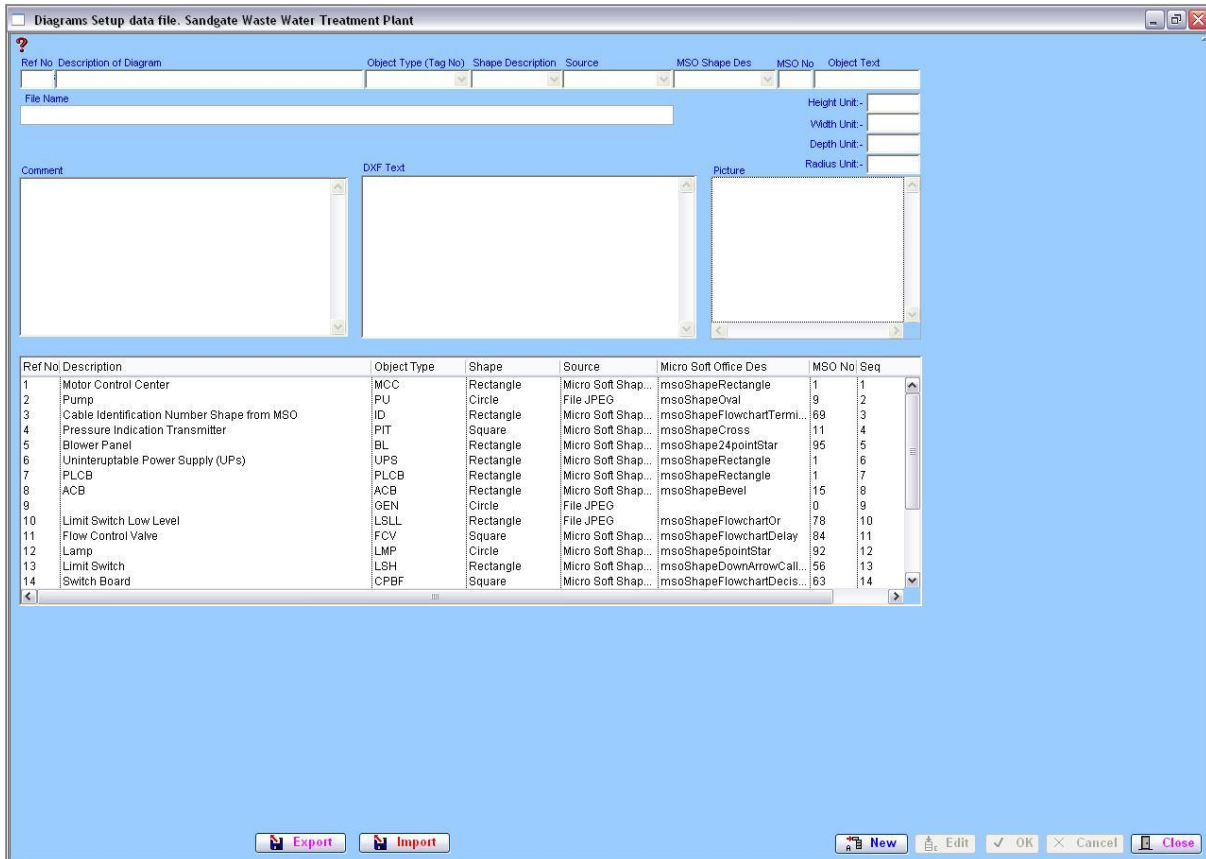
Add Drawings

## Category 1

### 1.13 Drawing Diagrams Information



Diagrams Setup data file.



Creates temporary file so the current project information can be exported to another project

## Category 1

### 1.14 Drawing Cable Schedule Setup



This window is for setting up drawing information and displays sections of the data records contained in cable schedule file.

This window is for setting up drawing information. Sandgate Waste Water Treatment Plant (Richard Flanagan)

Print Object Descriptions

Cable No	Module No	Module No	Module No	Module No	Module No	Module No	Module No	Module No
Cable No	Md No	Mod Name	Cable Origin	Device Origin	Destination	Device Destination	Md No	Mod Name
ACB-8310...	0	ACB-083101	Motor Ctrl Center - Blowers	MCC-001-01	Magenetic Bearing Ctrl Panel	ACB-083101	0	
ACB-8310...	0						0	
ACB-8320...	0	ACB-083201	Motor Ctrl Center - Blowers	MCC-001-01	Magenetic Bearing Ctrl Panel	ACB-083201	0	
ACB-8330...	0	ACB-083301	Motor Ctrl Center - Blowers	MCC-001-01	Magenetic Bearing Ctrl Panel	ACB-083301	0	
ACB-8340...	0	ACB-083401	Motor Ctrl Center - Blowers	MCC-001-01	Magenetic "Bearing Ctrl Panel No4"	ACB-083401	0	
ACB-8350...	0	ACB-083501	Motor Ctrl Center - Blowers	MCC-001-01	Magenetic "Bearing Ctrl Panel No5"	ACB-083501	0	
ACH-012-0...	0		Motor Ctrl Center FST 2 Bridge	MCC-012-01	FST No 2 Slip Ring Anti Condensation ...	ACH-012-01	0	
ACH-4030...	0		Motor Ctrl Center FST 3 Bridge	MCC-013-01	FST No 3 Slip Ring Anti Condensation ...	ACH-40301	0	
AD-870-01...	0		Distribution Board Sludge (MCC-002-01)	DB-002-01	Sludge Compressor Air Dyer Isolator	AD-870	0	
AD-870-01...	0		Sludge Compressor Air Dyer Isolator	AD-870	Sludge Compressor Air Dyer	AD-870-01	0	
AIT-31102...	0		Bioreactor No.1 PA Drop 2 T Box 4	TBX-003-24	Bioreactor 1 High Intensity Zone DO In...	AIT-31102	0	
AIT-31102...	0		USC7000 (AIT-31102)High Intensity Zo...	USC7-001-2	Bioreactor 1 High Intensity Zone DO In...	AIT-31102	0	
AIT-31102...	0		Motor Ctrl Center - Bioreactor No1 (DB...	MCC-003-01	Bioreactor 1 High Intensity Zone DO In...	AIT-31102-USC	0	
AIT-31103...	0		Bioreactor No.1 PA Drop 1 T Box 6	TBX-003-06	Bioreactor 1 Anoxic Zone DO Indicat...	AIT-31103A-USC	0	
AIT-31103...	0		Bioreactor 1 Anoxic Zone DO Indicat...	AIT-31103A-USC	Bioreactor 1 Anoxic Zone DO Indicat...	AIT-31103A	0	
AIT-31103...	0		Motor Ctrl Center - Bioreactor No1 (DB...	MCC-003-01	Bioreactor 1 Anoxic Zone DO Indicat...	AIT-31103A-USC	0	
AIT-31103...	0		Bioreactor No.1 PA Drop 1 T Box 4	TBX-003-04	Bioreactor 1 Low Intensity Zone DO In...	AIT-31103B-USC	0	
AIT-31103...	0		Bioreactor 1 Low Intensity Zone DO In...	AIT-31103B-USC	Bioreactor 1 Low Intensity Zone DO In...	AIT-31103B	0	
AIT-31103...	0		Motor Ctrl Center - Bioreactor No1 (DB...	MCC-003-01	Bioreactor 1 Low Intensity Zone DO In...	AIT-31103B-USC	0	
AIT-31105...	0		Bioreactor No.1 PA Drop 1 T Box 6	TBX-003-06	Bioreactor 1 Zone ORP Initial Indicat...	AIT-31105	0	
AIT-31105...	0		Motor Ctrl Center - Bioreactor No1 (DB...	MCC-003-01	Bioreactor 1 Zone ORP Initial Indicat...	AIT-31105	0	
AIT-31106...	0		Bioreactor No.1 PA Drop 2 T Box 1	TBX-003-21	Bioreactor 1 Zone ORP Final Indicat...	AIT-31106	0	
AIT-31106...	0		Motor Ctrl Center - Bioreactor No1 (DB...	MCC-003-01	Bioreactor 1 Zone ORP Final Indicat...	AIT-31106	0	
AIT-31114...	0		Bioreactor No.1 PA Drop 1 T Box 5	TBX-003-05	Bioreactor 1 Mixed Liquor Temperature ...	AIT-31114	0	
AIT-31114...	0		Motor Ctrl Center - Bioreactor No1 (DB...	MCC-003-01	Bioreactor 1 Mixed Liquor Temperature ...	AIT-31114	0	
AIT-31115...	0		Bioreactor No.1 PA Drop 1 T Box 5	TBX-003-05	USC7000 (AIT-31115) NH4 Indicating ...	USC7-001-1	0	
AIT-31115...	0		USC7000 (AIT-31115) NH4 Indicating ...	USC7-001-1	Bioreactor 1 NH4 Indicating Transmitter	AIT-31115	0	
AIT-31115...	0		Motor Ctrl Center - Bioreactor No1 (DB...	MCC-003-01	Bioreactor 1 NH4 Indicating Transmitter...	AIT-31115-USC	0	
AIT-31115...	0		Bioreactor 1 NH4 Indicating Transmitter...	AIT-31115-USC	Bioreactor 1 NH4 Indicating Transmitter	AIT-31115	0	
AIT-32102...	0		Bioreactor No.2 PA Drop 2 T Box 3	TBX-005-23	Bioreactor 2 High Intensity Zone DO In...	AIT-32102	0	
AIT-32102...	0		Bioreactor 2 High Intensity Zone DO In...	AIT-32102-USC	Bioreactor 2 High Intensity Zone DO In...	AIT-32102	0	
AIT-32102...	0		Distribution Board No 2 240V UPS Bior...	DB-005-02	Bioreactor 2 High Intensity Zone DO In...	AIT-32102-USC	0	
AIT-32103...	0		Bioreactor No.2 PA Drop 1 T Box 2	TBX-005-02	Bioreactor 2 Anoxic Zone DO Indicat...	AIT-32103A-USC	0	
AIT-32103...	0		Bioreactor 2 Anoxic Zone DO Indicat...	AIT-32103A-USC	Bioreactor 2 Anoxic Zone DO Indicat...	AIT-32103A	0	
AIT-32103...	0		Distribution Board No 2 240V UPS Bior...	DB-005-02	Bioreactor 2 Anoxic Zone DO Indicat...	AIT-32103A-USC	0	

Build Excel Block Cable Drawing

Edit OK Cancel Close



This button is a toggle type and controls if text is to be placed next to Object positioned on the right bottom side of object. X=No and Tick=Yes



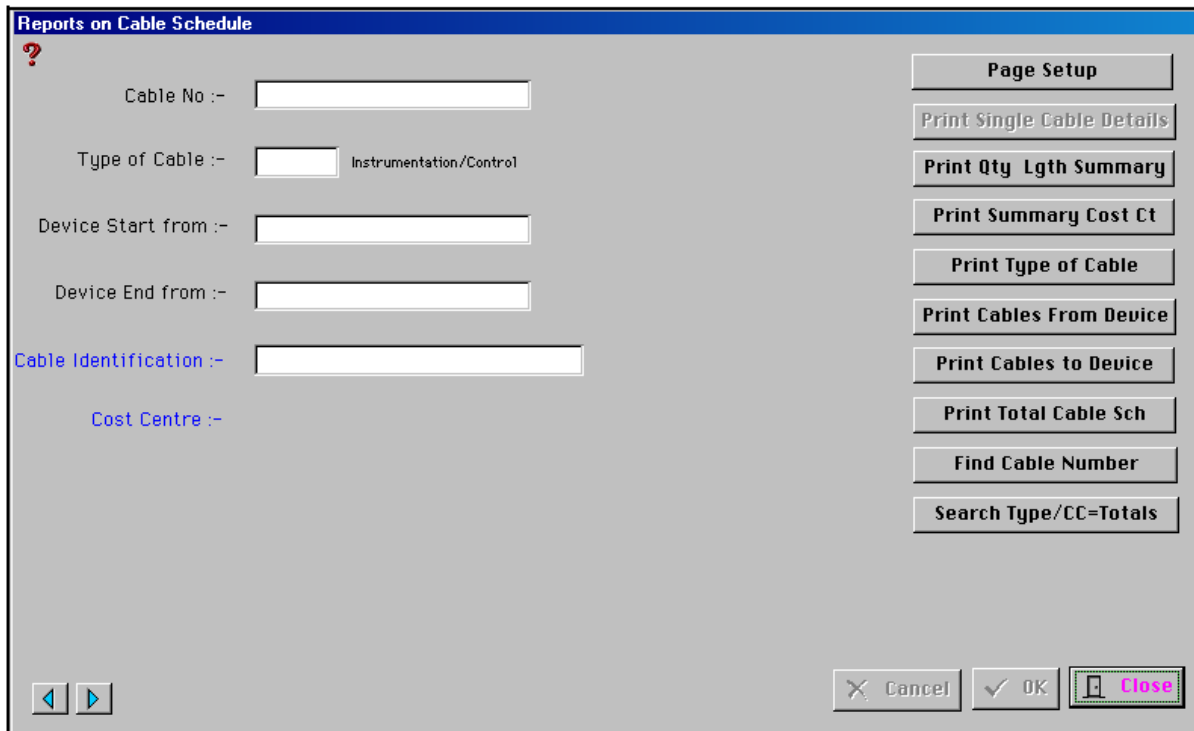
Do Block Cable Drawing

## Category 1

### 1.15 Cable Schedule Reports



This Button opens a window that allows specialised cable schedule reports.



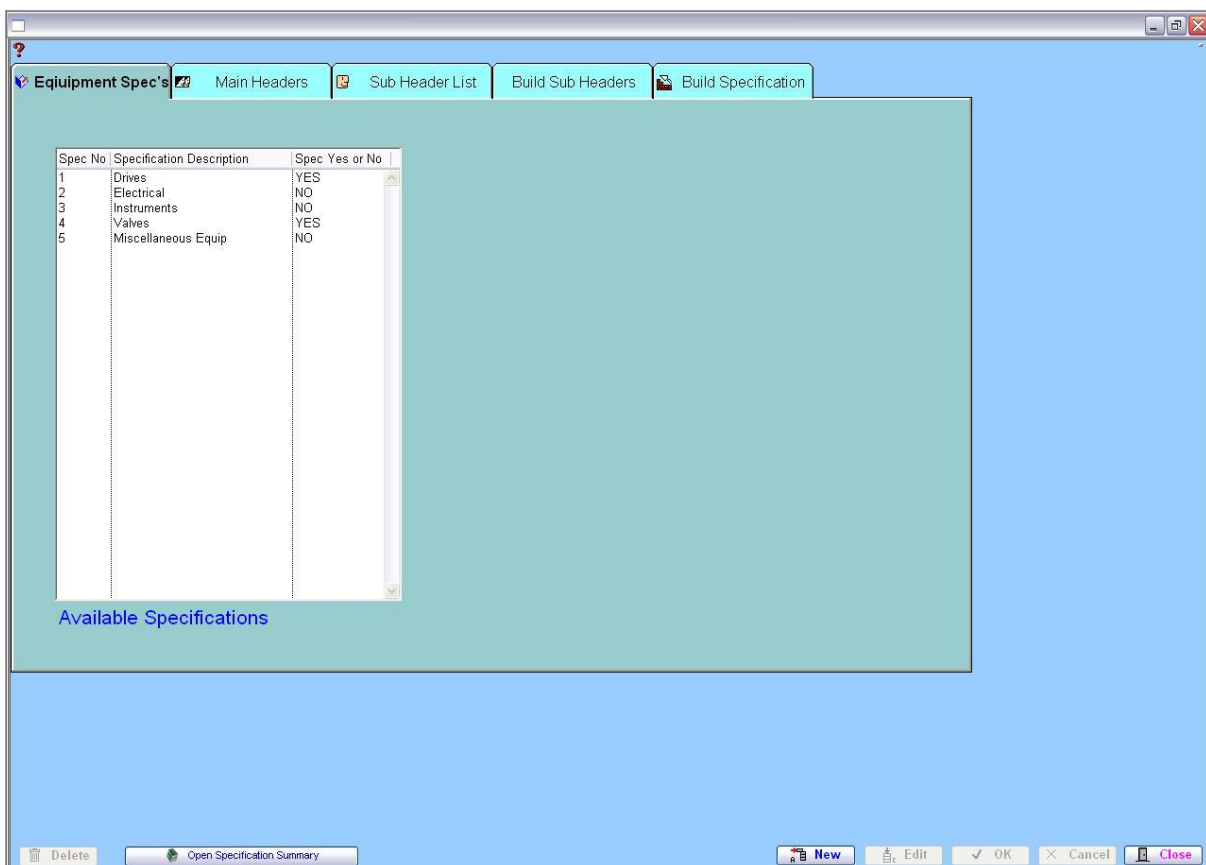
## Category 1

### 1.15 Equipment Template Setup

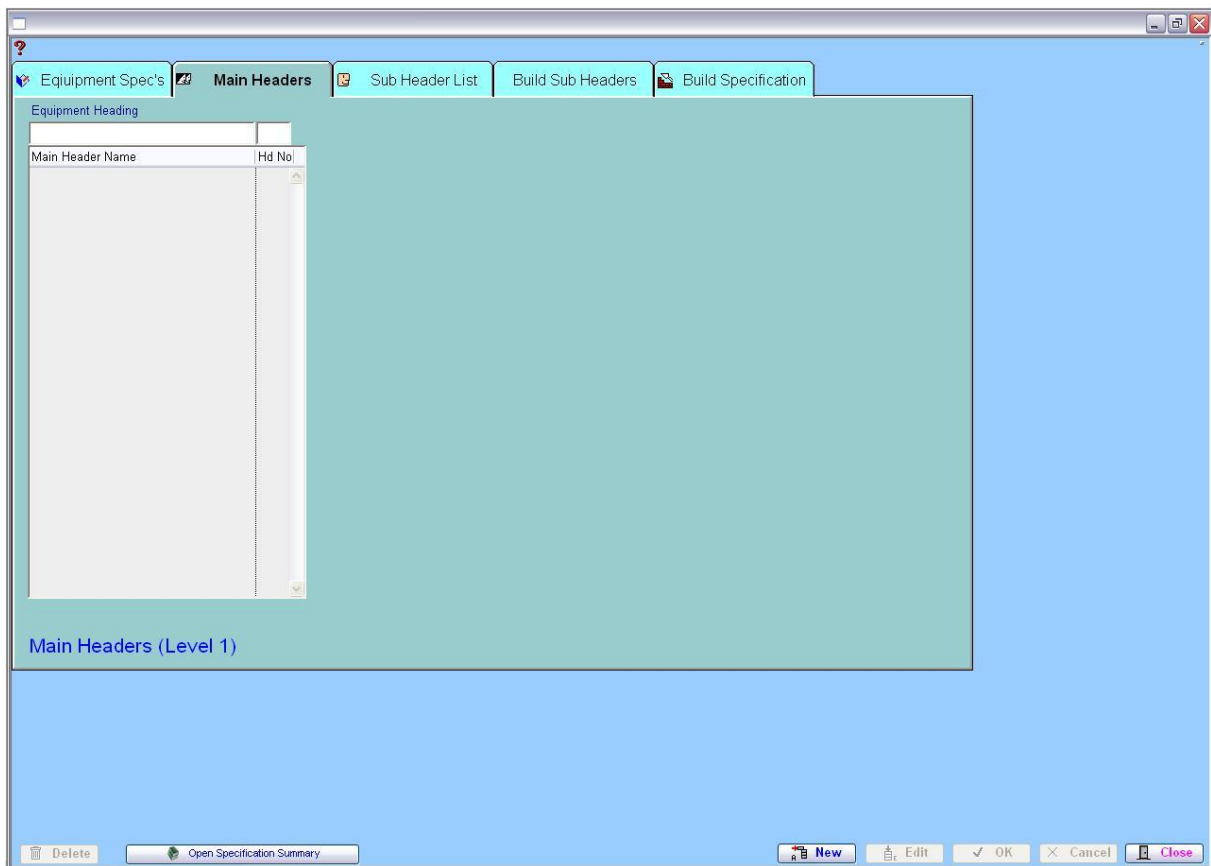


This button opens up the menus used in the template for the equipment list.

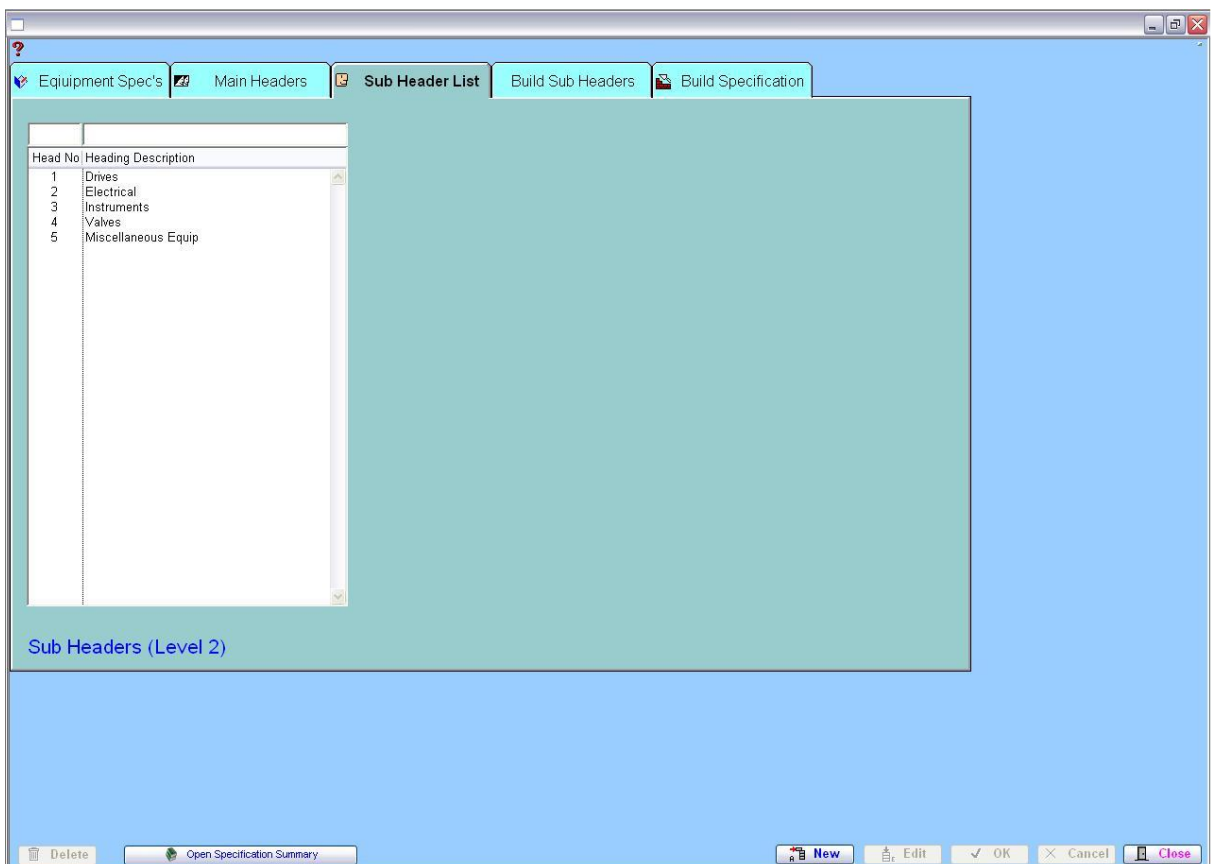
#### 1.15.1 Equipment Specifications



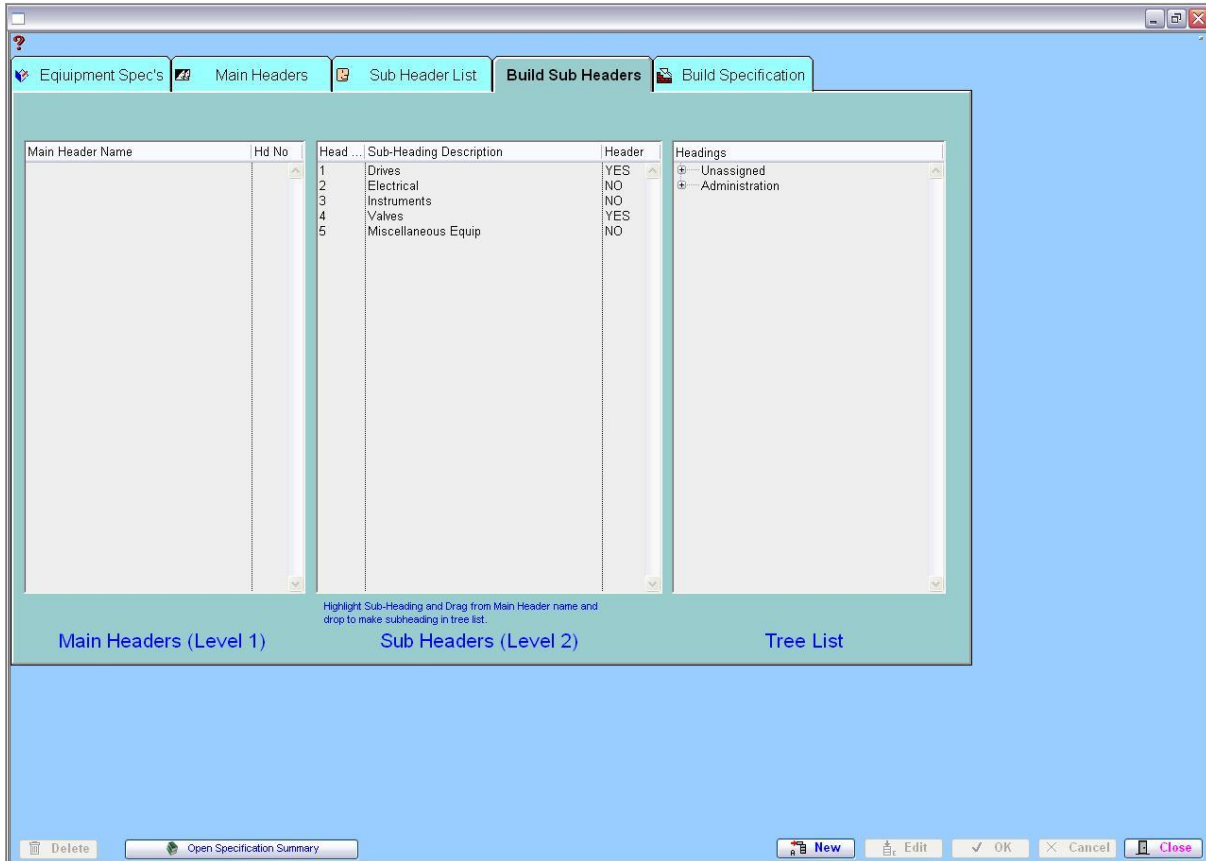
#### 1.15.2 Equipment Main Headers



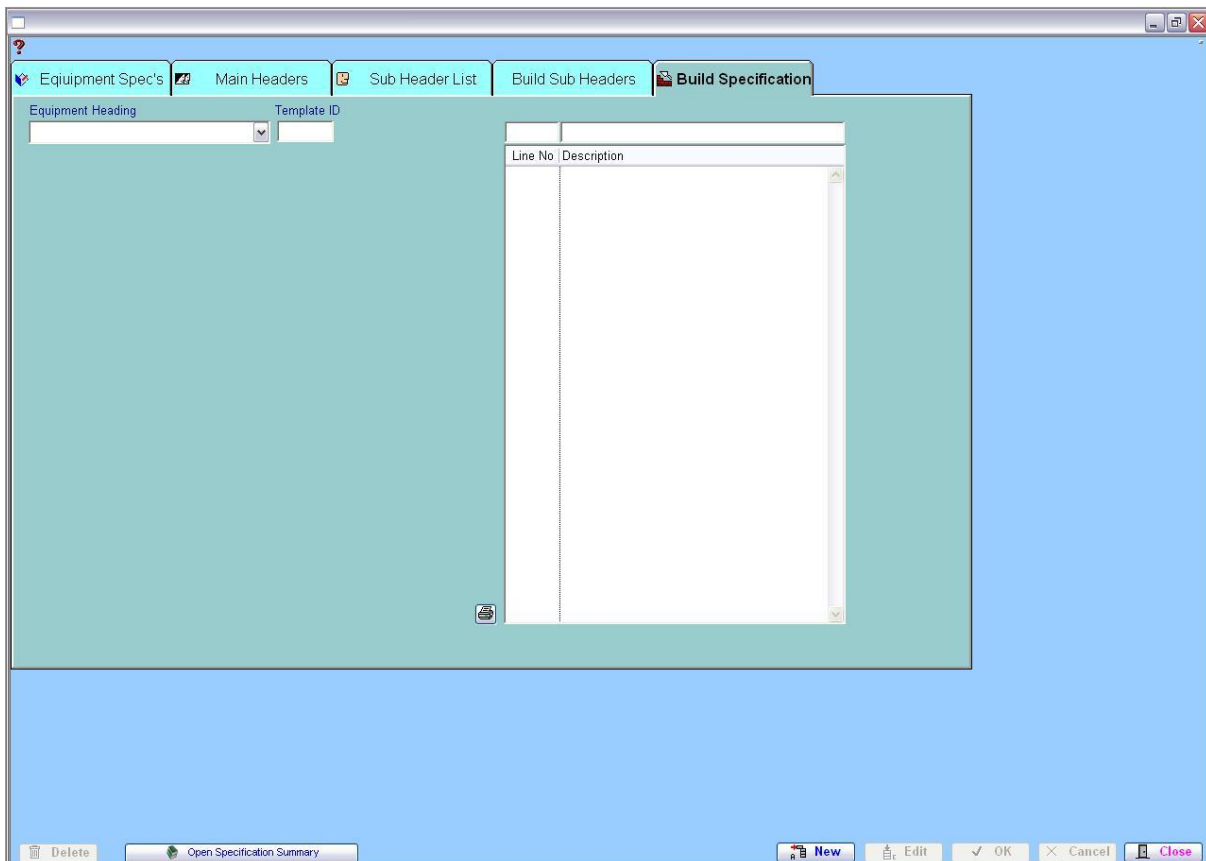
### 1.15.3 Equipment Sub Header List



### 1.15.4 Equipment Build Sub Headers

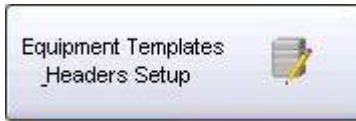


### 1.15.5 Equipment Build Specification



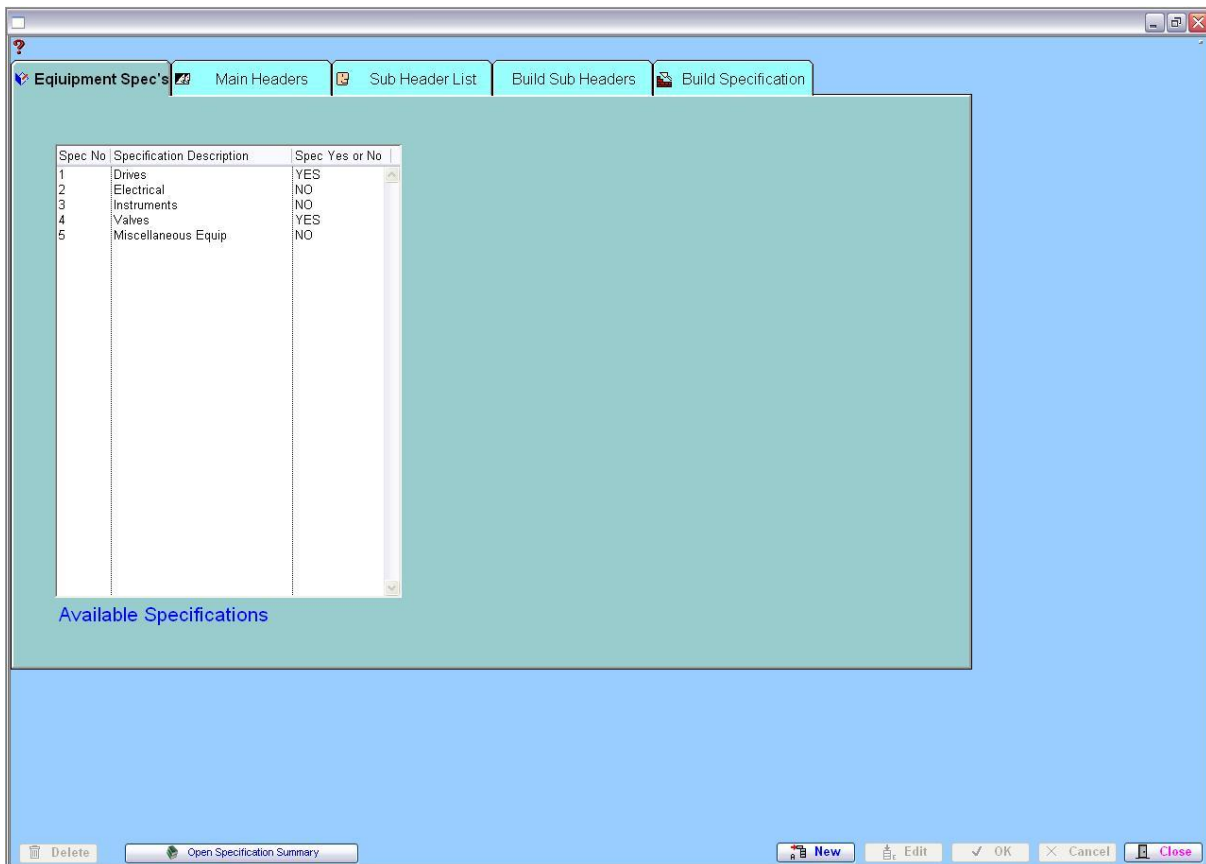
## Category 1

### 1.16 Equipment Template Setup



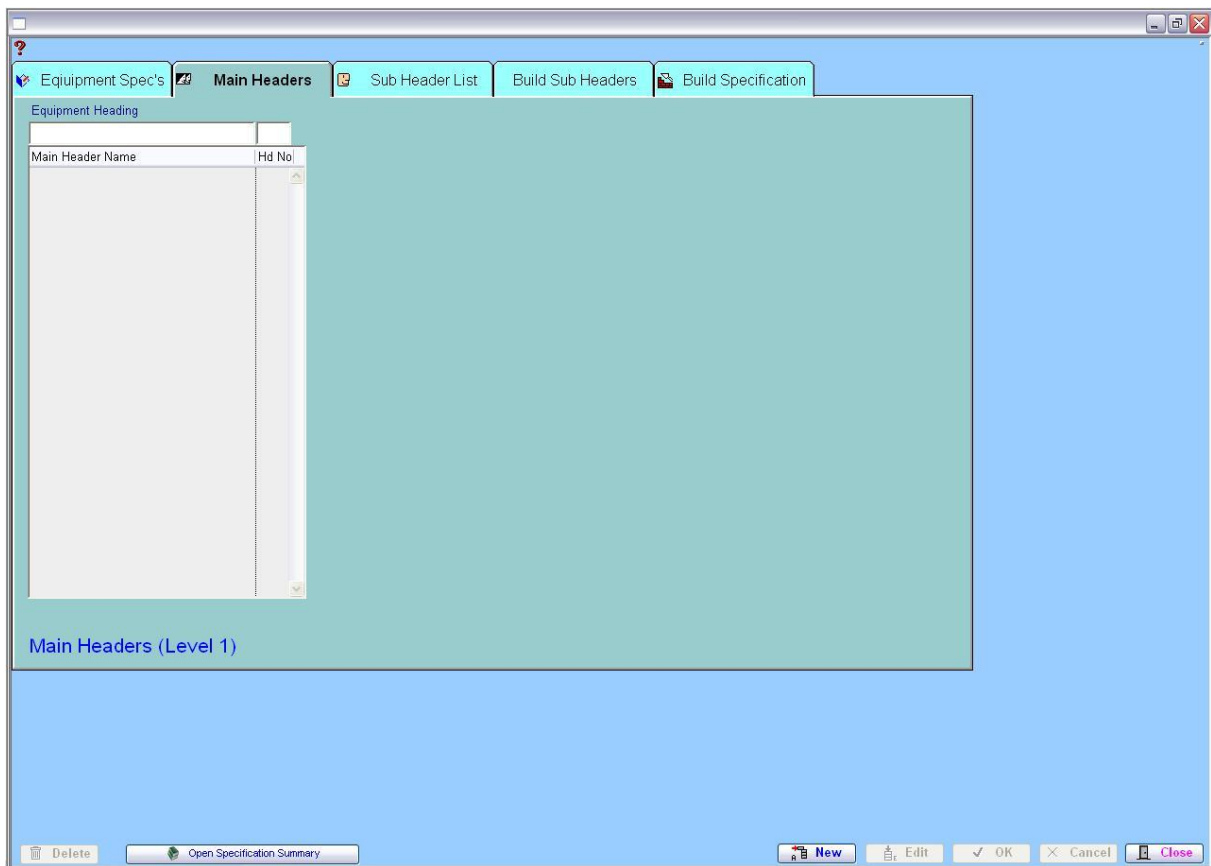
This button opens up the menus used in the template for the equipment list.

#### 1.16.1 Equipment Specifications

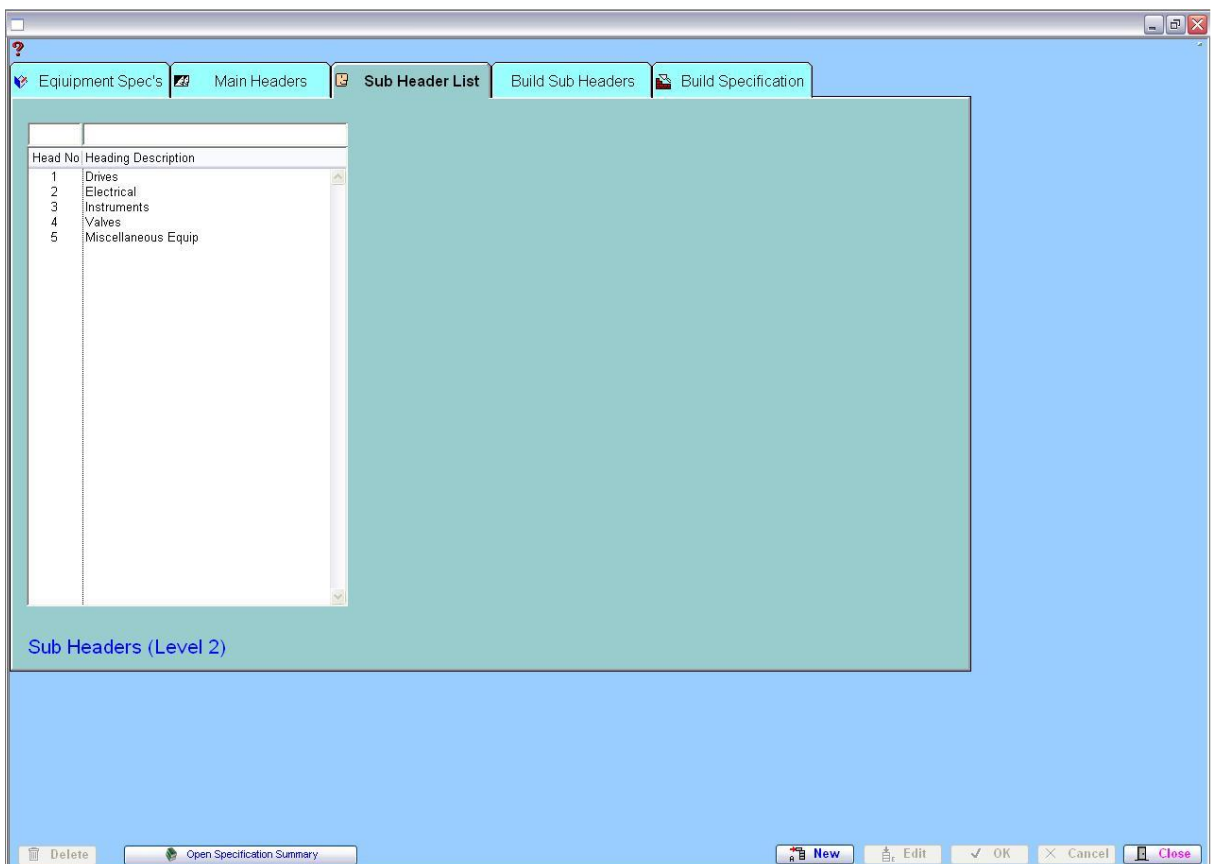


#### 1.16.2 Equipment Main Headers

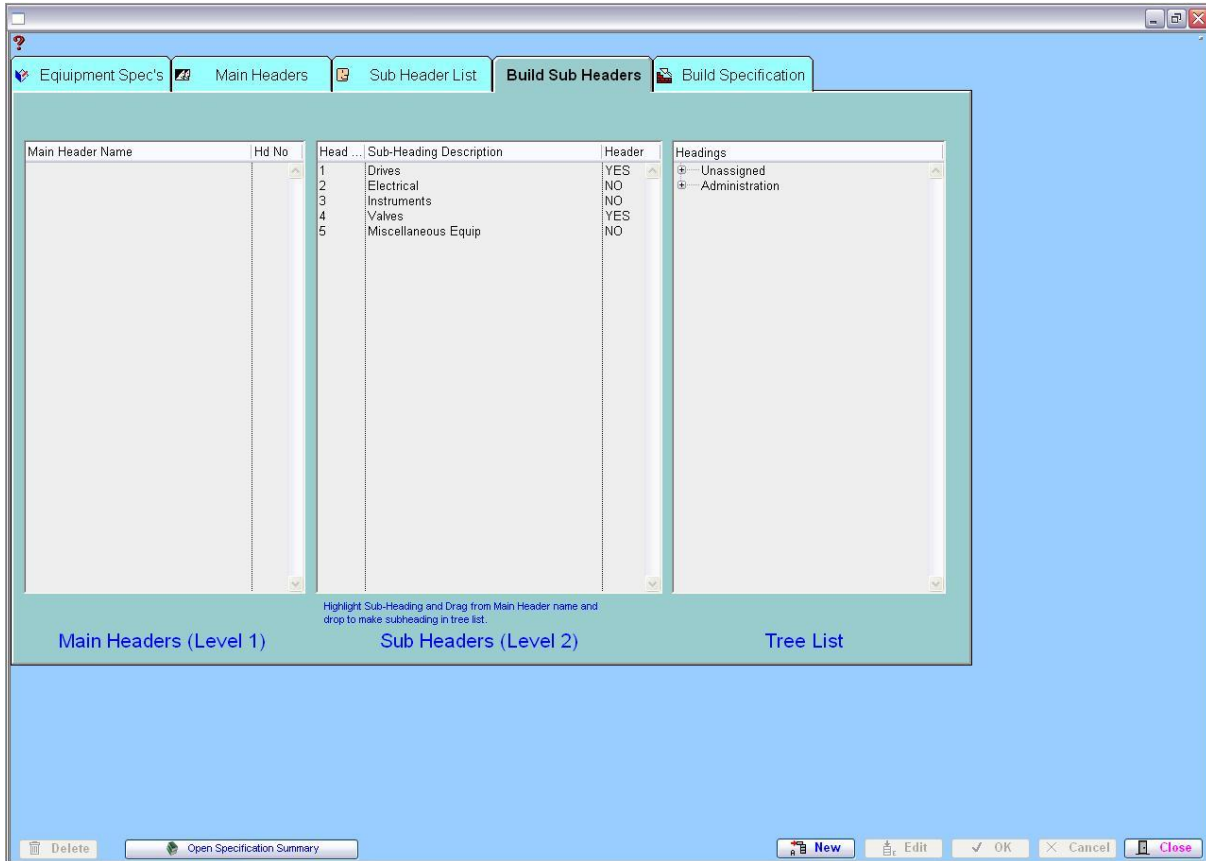




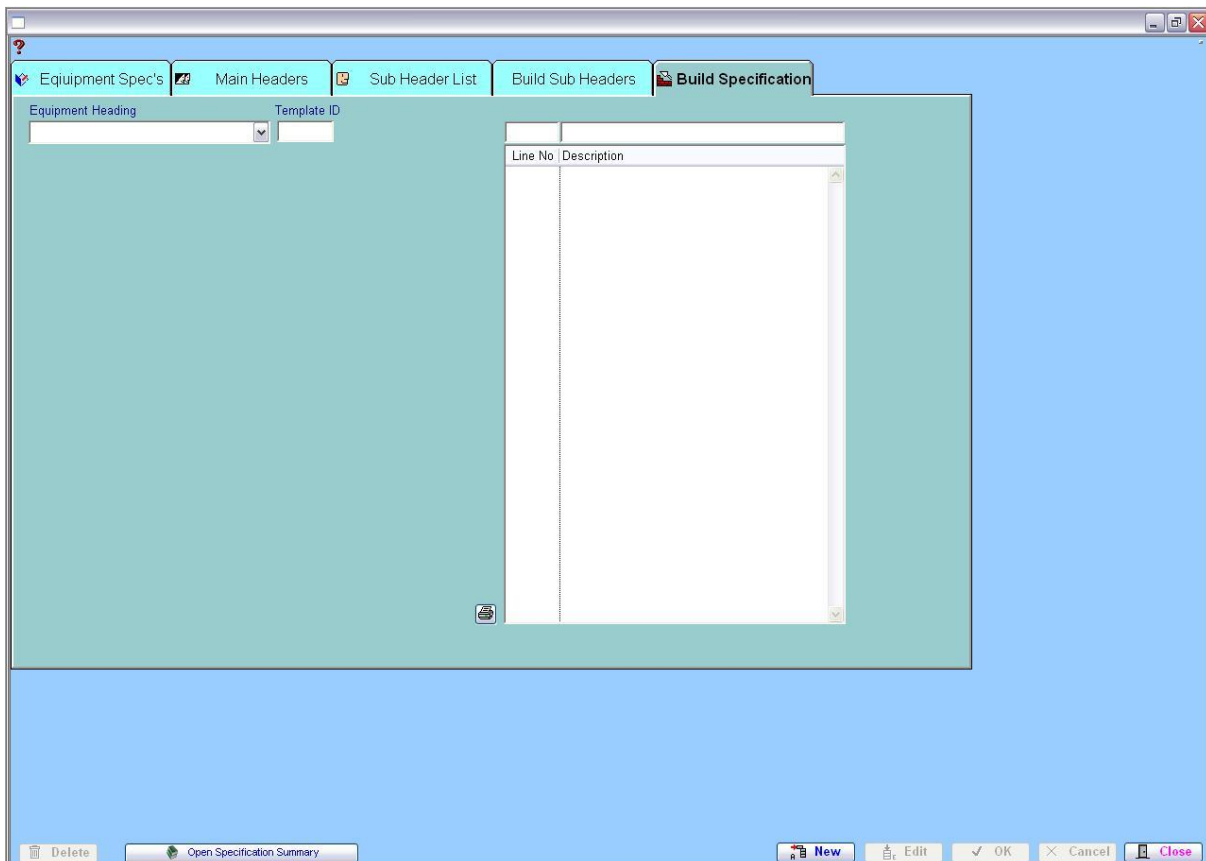
### 1.16.3 Equipment Sub Header List



### 1.16.4 Equipment Build Sub Headers



### 1.16.5 Equipment Build Specification



**Category 1**

**1.17 MCC MSB DB Boards**



**Circuit Distibution**

**Equipment List**

Headings

- Unassigned
- Administration

Line No	Equipment Type	AC-DC	Poles	Volts	Amps	KW	KA	Hertz	Circuit No.
Cable No (Right Click to list)									
Drive Description (Right click with letter)									
Associated Tag No									
Dwg Order	Dwg Orientation	Level	Status	Commissions					
Comment									

Tag Name	Description	Data YN

Line ...	Equipment Type	AC...	Poles	Volts	Amps	KW	K...	Hz	Cir No	Cable Number	DestinationDescription	Tag Number

## Category 1

### 1.18 PLC In/Output Register



There is also an area for tracking and coordinating PLC Input and Outputs and including analogue inputs. This allows for the control and instrumentation requirements to be fully integrated with the cable schedules.

PLC Table For :- Sandgate Waste Water Treatment Plant (Richard Flanagan) File Location :- \\CHRIS4\DATA\KONTROLPRO\PROJ110.DF1

Bioreactor 2 High Intensity Zone DO Indicating Transmitter 1575 Revision No:- 10 Last Modified

Ref No	Stat	Module Type	I/O Code	Rack No	Slot No	Channel	Wire No Addr	Tag Number	I-O Function Description	PLC or IO Location
0	C		WI					AIT-31102	Bioreactor No1 High Intensity Zone DO Indicator/Transmitter	MCC-003-01
0	C		WI					AIT-31102	Bioreactor No1 High Intensity Zone DO Indicator/Transmitter	MCC-003-01
0	C		WI					AIT-31103A	Bioreactor No1 Anoxic Zone DO Indicator/Transmitter Fault Word	MCC-003-01
0	C		WI					AIT-31103A	Bioreactor No1 Anoxic Zone DO Indicator/Transmitter	MCC-003-01
0	C		WI					AIT-31103B	Bioreactor 1 Low Intensity Zone DO Indicating Transmitter	MCC-003-01
0	C		WI					AIT-31103B	Bioreactor 1 Low Intensity Zone DO Indicating Transmitter	MCC-003-01
0	C		WI					AIT-31105	Bioreactor No1 ORP Initial Zone Indicator/Transmitter Fault	MCC-003-01
0	C		WI					AIT-31105	Bioreactor No1 ORP Initial Zone Indicator/Transmitter	MCC-003-01
0	C		WI					AIT-31106	Bioreactor No1 ORP Final Zone Indicator/Transmitter Fault Word	MCC-003-01
0	C		WI					AIT-31106	Bioreactor No1 ORP Final Zone Indicator/Transmitter	MCC-003-01
0	C		WI					AIT-31114	Bioreactor No1 Mixed Liquor pH and Temperature Indicator/Tra	MCC-003-01
0	C		WI					AIT-31114	Bioreactor No1 Mixed Liquor pH and Temperature Indicator/Tra	MCC-003-01
0	C		AI					AIT-31115	Bioreactor No1 NH4 Indicator/Transmitter	MCC-003-01
0	C		WI					AIT-32102	Bioreactor 2 High Intensity Zone DO Indicator/Transmitter	MCC-007-01
0	C		WI					AIT-32102	Bioreactor 2 High Intensity Zone DO Indicator/Transmitter Fa	MCC-007-01
0	C		WI					AIT-32103A	Bioreactor 2 Anoxic Zone DO Indicator/Transmitter	MCC-007-01
0	C		WI					AIT-32103A	Bioreactor 2 Anoxic Zone DO Indicator/Transmitter Fault Word	MCC-007-01
0	C		WI					AIT-32103A	Bioreactor 2 Final Zone ORP Indicator/Transmitter	MCC-007-01
0	C		WI					AIT-32103B	Bioreactor 2 Low Intensity Zone DO Indicator/Transmitter	MCC-007-01
0	C		WI					AIT-32103B	Bioreactor 2 Low Intensity Zone DO Indicator/Transmitter Fault	MCC-007-01
0	C		WI					AIT-50108	UV Channel Turbidity Indicator/Transmitter	MCC-004-01
0	C		WI					AIT-50108	UV Channel Turbidity Indicator/Transmitter Fault Word	MCC-004-01
0	C		WI					AIT-81105A	Odorgard Scrubber Recirculation pH Analyser No 1	MCC-005-01
0	C		WI					AIT-81105A	Odorgard Scrubber Recirculation pH Analyser No 1 Fault Word	MCC-005-01
0	C		WI					AIT-81105B	Odorgard Scrubber Recirculation pH Analyser No 2	MCC-005-01
0	C		WI					AIT-81105B	Odorgard Scrubber Recirculation pH Analyser No 2 Fault Word	MCC-005-01
0	C		WI					AIT-81106A	Odorgard Scrubber Recirculation ORP Analyser No 1	MCC-005-01
0	C		WI					AIT-81106A	Odorgard Scrubber Recirculation ORP Analyser No 1 Fault Word	MCC-005-01
0	C		WI					AIT-81106B	Odorgard Scrubber Recirculation ORP Analyser No 2	MCC-005-01

#### Ref No:

The reference number is a unique number and is used in the Export and Import procedures. The way this works is a unique number is created by finding the last number on the file that has been used, and by adding one the number a new unique number is created.

This number is used in the export procedure to possible a subcontract PLC programmer.

The programmer may need to change the information, so if the reference number is maintained the information can be used to update the PLC file in the data base.

If the PLC programmer adds new lines of I/O to the Excel sheet then any blank spaces in reference number column that are encountered this system assumes that there are needed and new reference number is created and added.

#### Status:

There are three (3) status levels; C = Current, H = Hold and D = Delete

The records that have the Delete status can be maintained in the system, because in design projects they can sometimes make their way back into the system as a current record.

## I/O Code:-

There are eight (8) different I/O Code levels:-

- Digital Output
- Digital Input
- Analogue Input
- Analogue Output
- Flag Output
- Flag Input
- Word Output
- Word Input

## Rack No:-

This contains the rack (Horizontal Row) number of the PLC or remote Input or Output (I/O).

## Channel:-

This is for entering the number Inputs for example Module 16 = Digital Inputs or Module 8 = digital Inputs & 8 Digital Outputs or 8 Analogue Inputs ect.

## Wire No. add:-

Wire number address, for example Rack or Module number then channel (Terminal number) number. Rack=1 Slot=2 Channel=16. Then number = 1-2-16

## Tag number:

This field holds the tag number for related I/O register. A right mouse click will open tag number list based on the first character of the description of the equipment.

## PLC or IO Location:

This is the storage location of the PLC or remote I/O. If assigned to an object do right mouse click whilst in Enter mode to install selection list. This allows the system to track the amount PLC modules that are required at each location,

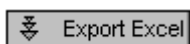


The system has a DDE (Dynamic Data Exchange) function. This means information contained in an Excel Spread sheet can be automatically imported into the PLC data file in Kontrol-Pro.

To do this the Excel Spread must be set up with columns in the correct order. To get an example, put a few lines into the data base and do an export, if the column arrangement is the same then vast amounts of information can easily be imported quickly and efficiently.


The rules are Microsoft Excel must open with the current work sheet open as well. The system will prompt you for the work sheet name, so the Omnis Studio knows where to extract the information from. The next rule is that information must be continuous in the Status column as the system will start reading information from the third row down and the import procedure will stop when a blank space is encountered. So there must be no blank lines in the data.


The import procedure will also interpret and establish what information has been updated for example if the Tag Number has changed the description field will show column F1 changed. The procedure when reading it in is flagged because the present field does not match the new field being read in. The date field is called "Date Modified" is also updated when this procedure is used.




This exports the whole file to Microsoft Excel, using Microsoft automation feature that allows Omnis studio to talk to an instance of Excel. The procedure prompts you to save into the folder called "Transportx" in "OSRT42" in Program Files for later retrieval.

A Right mouse click will produce an excel report on the selected lines. Lines can be selected by using the Ctrl key so records do not have to be in consecutive order.

 A normal mouse click of this button will build a list of current Inputs and Outputs. Right click to build all inputs and outputs.

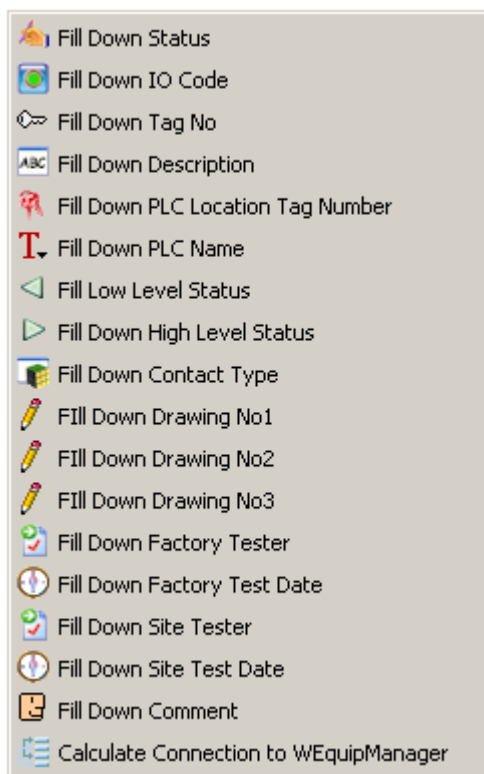
 This button gives totals. To use select the lines required then press this button.

 This button clears the selected lines in a list, however it does not delete the data all it does is allows the user to focus on for example 10 lines of data.

Note:- If you want the text in the main headed list to be lager by using the “Ctrl + ] “ this lifts the font size up by one size. By using the “Ctrl + [ “ this steps down one size.

### Additional Functions

Additional functions displayed on the menu below are reached by using a right on the mouse over the main headed list.



The fill down functions work by changing the record by the normal edit function, that record should be at the highest point of a group of records that requires simultaneous change. Then by highlighting top newly changed record, and all the records below that new adjustment.

Note the records do not necessarily have to be adjacent to each other, they can have gaps in the highlighting.

**Category 1**

**Notes:**