



genesisplus+

2018



U.Values

Module 4: Thermal Calculations

LEVEL: INTERMEDIATE

Genesis Release 18

INTRODUCTION TO GENESIS U VALUES

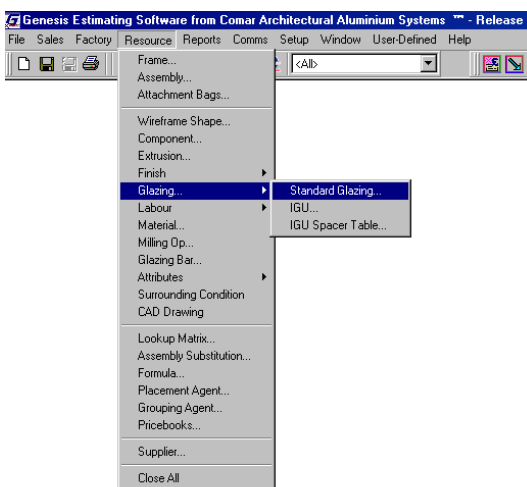
GENESIS RELEASE 9 NOW HAS THE ABILITY TO AUTOMATICALLY PRODUCE U VALUES, UNLIKE MOST OTHER SOFTWARE PACKAGES GENESIS LOOKS AT THE ACTUAL SECTION COMBINATIONS USED ON THE COMPLETE FRAME INSTEAD OF JUST THE AVERAGE. THIS ALLOWS YOU TO PRODUCE AN ACCURATE U VALUES FOR EACH FRAME TYPE.

THE U VALUE OPTION WILL NEED TO BE UNLOCKED BY COMAR WITH A DIFFERENT TIME LOCK KEY, PLEASE CONTACT SIMON HARVEY ON 0208 685 9685 TO GET THE UPDATED KEY.

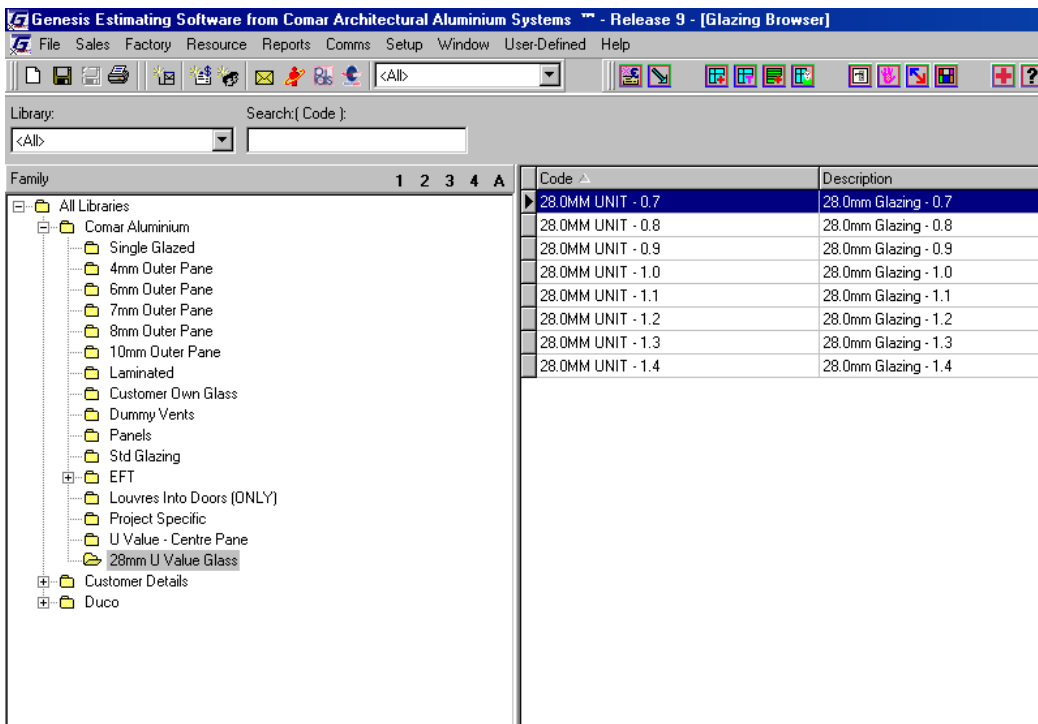
CENTRE PANE VALUES HAVE NOT BEEN SETUP ON ALL GLASS TYPE ON GENESIS AND VALUES WILL NOT BE CORRECT UNTIL THIS IS COMPLETED.

SETTING UP CENTRE PANES

FIRST OF ALL WE NEED TO SETUP THE CENTRE PANE VALUES ON THE GLASS THAT WE WILL BE USING. GO TO RESOURCE, GLAZING AND STANDARD GLAZING.



FOR EASE OF USE WE HAVE ADDED A LIST OF GLASS FROM 0.7 – 1.4 CENTRE PANE VALUE (ALL EXAMPLES ARE WITH A 0.05 PSI). THIS CAN BE LOCATED BY LOOKING FOR THE FOLDER “28mm U Value Glass”.



IF YOU ARE ORDERING GLASS THEN YOU MAY WANT TO SET YOUR OWN GLASS UP WITH A CORRECT GLASS TYPE CODE.

FOR THIS EXAMPLE GO TO THE FOLDER "4MM OUTER PANE" AND THEN FIND "4-16-4-FL K". NOW CLICK ONTO EDIT.

Code ▲	Description
4-14-6 FL TOUGH	4mm Float (Tough) x 14 x 6mm Float (Tough)
4-14-6 FL TOUGH LO	4mm Float (Tough) x 14 x 6mm Float (Tough) low e
4-14-6 OBS TOUGH	4mm Float (Tough) x 14 x 6mm Obs (Tough)
4-14-6 OBS TOUGH LO	4mm Float (Tough) x 14 x 6mm Obs (Tough) low e
4-14-6 TINT	4mm Float x 14 x 6mm Tinted
4-14-6 TINT TOUGH	4mm Float (Tough) x 14 x 6mm Tinted (Tough)
4-14-6 TINT TOUGH LO	4mm Float (Tough) x 14 x 6mm Tinted (Tough) low e
▶ 4-16-4 FL K	4mm Float x 16 x 4mm Float "K"
4-16-4 FL LO	4mm Float x 16 x 4mm Float (low-e)
4-16-4 FL TOUGH	4mm Float (Tough) x 16 x 4mm Float (Tough)
4-16-4 FL TOUGH K	4mm Float (Tough) x 16 x 4mm Float (Tough) "K"
4-16-4 FL TOUGH LO	4mm Float (Tough) x 16 x 4mm Float (Tough) (low-e)
4-16-4 FL-E	4m FLx16x4m FL (db30) lowE
4-16-4 FL-E	4m FLx16x4m FL (db30) lowE

WHEN THE FOLLOWING SCREEN COMES UP GO TO PHYSICAL.

Genesis Estimating Software from Comar Architectural Aluminium Systems™ - Release 9 - [Glazing Editor]

File Sales Factory Resource Reports Comms Setup Window User-Defined Help

General Physical Supplier Drawing Attributes

Library: COMAR ALUMINIUM

Code: 4-16-4 FL K

Internal Ref: 4-16-4 FL K

Part Code Formula: [X] ...

Description: 4mm Float x 16 x 4mm Float "K"

Classification: [4MM] 4mm [X] ...

Internal EMark Prefix Formula: [X] ...

Include in BOM: True [X] ...

Waste: ☒ Use default
Waste: 0.00%

User Defined Fields:
User defined field1: [X] ...
User defined field2: [X] ...

Substitution Formula: [X] ...

Advanced Design Buttons Pricing:
☐ Advanced Design Buttons [X] ...

☐ Hide From Pickers ☐ Not visible unless selected in Design ☐ Hide Code in Design and Report

GO DOWN TO THERMAL CALCULATIONS AND TICK THE UG BOX (THIS WILL ENABLE BOTH THE CENTRE PANE AND PSI FIELDS)

Genesis Estimating Software from Comar Architectural Aluminium Systems™ - Release 9 - [Glaz

File Sales Factory Resource Reports Comms Setup Window User-Defined Help

General Physical Supplier Drawing Attributes

Material: Glass

Receptor Adjustment: 0.00 mm

Min Distance from Bar End: 0.00 mm

Thickness

Overall: 24.00 mm

Minimum: 0.00 mm

Nominal: 0.00 mm

Stored In

☒ Cut to size

☐ Sheet or Panel

☐ Roll

Maximum size

Width: 6000.00 mm

Height: 6000.00 mm

☐ Panel adjustment applicable

☐ Width Maximum reduction: 0.00 mm

☐ Height Maximum reduction: 0.00 mm

Charge full:

☐ Width, if greater than 0.00 mm

☐ Height, if greater than 0.00 mm

Coating

Thickness: 0.00 mm

Applied to

☐ one surface ☐ both surfaces

Thermal Calculation

☒ Ug 1.1 W/m²K

☐ Psi 0 W/mK

JUST AS AN EXAMPLE USE 1.16 CENTRE PANE AND 0.05 PSI (THESE ARE JUST EXAMPLES) NOW CLICK OK TO SAVE THESE CHANGES.

Coating

Thickness: 0.00 mm

Applied to

☐ one surface ☐ both surfaces

Thermal Calculation

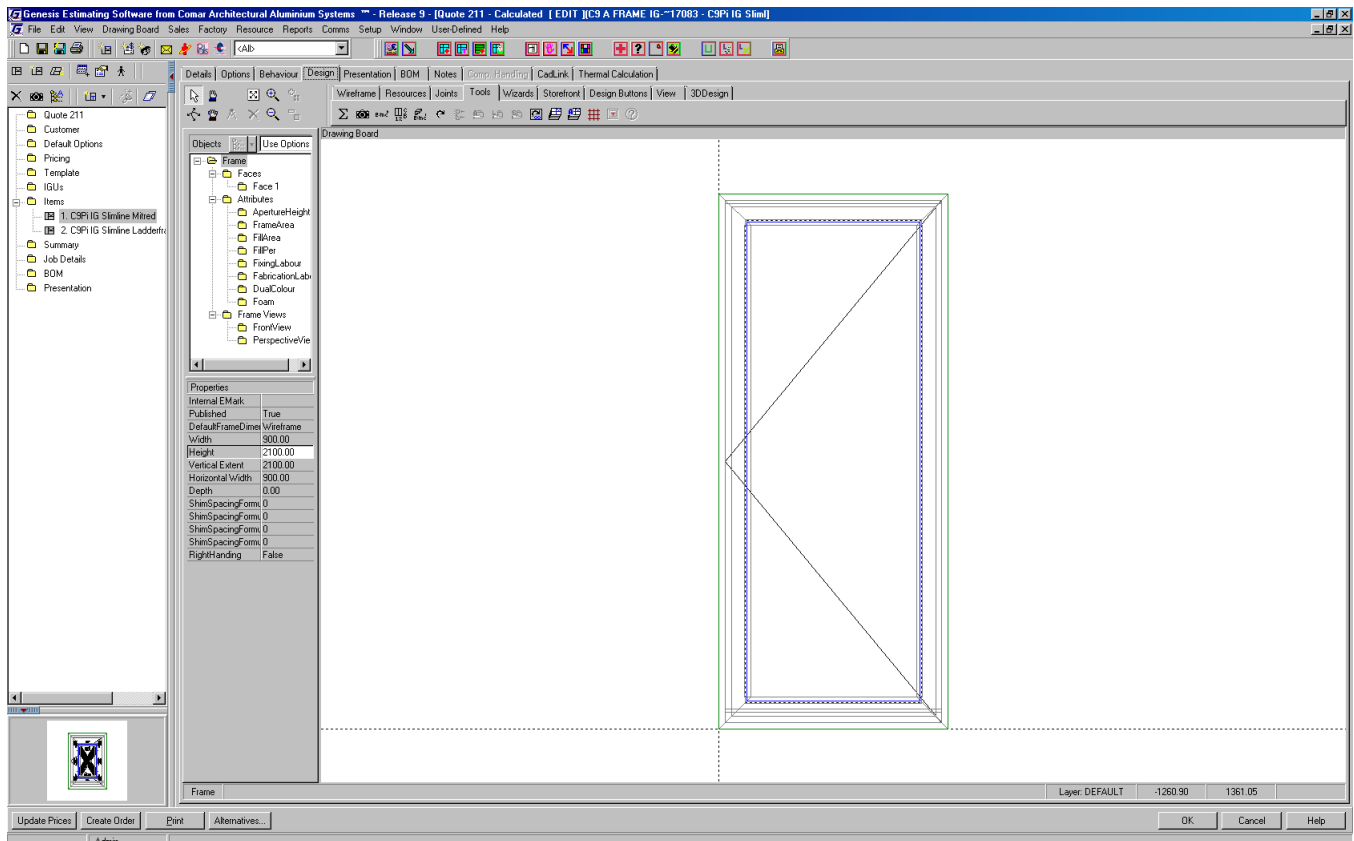
☒ Ug 1.16 W/m²K

☒ Psi 0.05 W/mK

USING U VALUE FACILITY IN A QUOTE

WE HAVE SIMULATED AF VALUES FOR OVER 1000 COMBINATION OF ASSEMBLY (PRIMARILY FOR THE POLYAMIDE RANGE OF SYSTEMS). COMAR 5PI 60MM AND ECO, COMAR 7 AND COMAR 9.

DUE TO OUR VAST RANGE OF PROFILES AND SYSTEMS THAT WE HAVE THIS COULD EASILY EXPAND TO OVER 100,000 COMBINATIONS. WITH THIS IN MIND FOR A TIME YOU WILL HAVE SOME MISSING COMBINATIONS IN SOME QUOTES AND WILL NEED TO CONTACT US SO THAT WE CAN SIMULATE OTHER COMBINATIONS FOR YOU. PLEASE CONTACT OUR INHOUSE BFRC APPROVED TECHNICAL STAFF AT KRANTHIR@PARKSIDEGROUP.CO.UK WHO WILL BE ABLE TO PROVIDE YOU WITH THESE.



OPEN ANY QUOTE (PREFERABLY POLYAMIDE), HIGHLIGHT ONE OF THE FRAMES AND YOU WILL SEE A NEW FIELD ALONG THE TOP CALLED THERMAL CALCULATION.



YOU WILL SEE THE AVERAGE FRAME VALUE SHOWN IN RED WHICH IS AUTOMATICALLY GENERATED.

Calculate

Uw (W/m².K)

1.8356

Ujn (W/m².K)

Quote 211 - Calculated [EDIT](C9 A FRAME IG-17083 - C9Pi IG Slimline Mitred)

Details Options Behaviour Design Presentation BOM Notes Comp. Handling CadLink Thermal Calculation

Quote 211

Customer

Default Options

Pricing

Template

IGUs

Items

1. C9Pi IG Slimline Mitred

2. C9Pi IG Slimline Ladderfr

Summary

Job Details

BOM

Presentation

Height (mm)

2100.00

Width (mm)

900.00

Area (m²)

1.8900

Thermal protection

Default Uf Option

Uf-System1

Calculate

Uw (W/m².K)

1.8356

Ujn (W/m².K)

Transmission of Glazing

1.4062

Code	width	Height	Quantity	Coef area	Area	Transmission (W/K)
28.0MM UNIT	680.000	1880.000	1	1.1000	1.2784	1.4062

Total area (m²)

1.2784

Total transmission of Glazing (W/K)

1.4062

Transmission junctions structure - Glazing

0.2560

Code	width	Height	Quantity	Coef linear	Perimeter	Transmission (W/K)
28.0MM UNIT	680.000	1880.000	1	0.0500	5.1200	0.2560

Total length (m)

5.1200

Total transmission of the junctions structure - Glazing (W/K)

0.2560

Transmission of structure

2.0610

Class	Combination	Length	Lf	Coef area	Area	Transmission (W/K)
Comar 9Pi Window Door and Framing	CS 931.CS 953	900.000	125.000	2.7480	0.1125	0.3092
Comar 9Pi Window Door and Framing	CS 931.CS 953	2100.000	125.000	2.7480	0.2625	0.7214
Comar 9Pi Window Door and Framing	CS 931.CS 953	900.000	125.000	2.7480	0.1125	0.3092
Comar 9Pi Window Door and Framing	CS 931.CS 953	2100.000	125.000	2.7480	0.2625	0.7214

Total area (m²)

0.7500

Total transmission of the structure (W/K)

2.0610

Total transmission (W/K)

3.7232

Update Prices Create Order Print Alternatives...

OK Cancel Help

THIS PART SHOWS THE CENTRE PANE VALUE OF THE GLASS ALONG WITH THE AREA

Transmission of Glazing

1.4062

Code	width	Height	Quantity	Coef area	Area	Transmission (W/K)
28.0MM UNIT	680.000	1880.000	1	1.1000	1.2784	1.4062

Total area (m²)

1.2784

Total transmission of Glazing (W/K)

1.4062

Transmission junctions structure - Glazing

0.2560

Code	width	Height	Quantity	Coef linear	Perimeter	Transmission (W/K)
28.0MM UNIT	680.000	1880.000	1	0.0500	5.1200	0.2560

Total length (m)

5.1200

Total transmission of the junctions structure - Glazing (W/K)

0.2560

THIS PART SHOWS THE ASSEMBLY COMBINATIONS ALONG WITH THE COEFF AREA OF THE COMBINATION.

Transmission of structure

2.0610

Class	Combination	Length	Lf	Coef area	Area	Transmission (W/K)
Comar 9Pi Window Door and Framing	CS 931.CS 953	900.000	125.000	2.7480	0.1125	0.3092
Comar 9Pi Window Door and Framing	CS 931.CS 953	2100.000	125.000	2.7480	0.2625	0.7214
Comar 9Pi Window Door and Framing	CS 931.CS 953	900.000	125.000	2.7480	0.1125	0.3092
Comar 9Pi Window Door and Framing	CS 931.CS 953	2100.000	125.000	2.7480	0.2625	0.7214

Total area (m²)

0.7500

Total transmission of the structure (W/K)

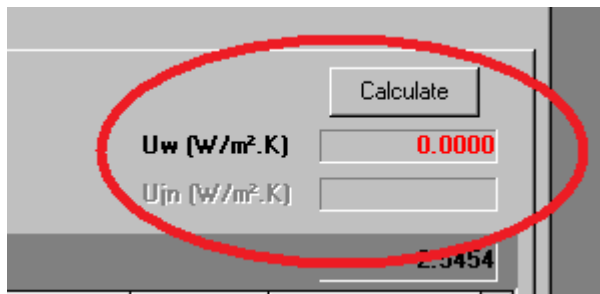
2.0610

Total transmission (W/K)

3.7232

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AS MENTIONED BEFORE SOME COMBINATIONS WILL NOT HAVE BEEN SIMULATED YET AND THE RESULT WILL SHOW AS 0



IF THIS HAPPENS THEN LOOK DOWN THE LIST OF ASSEMBLY COMBINATIONS AND YOU SHOULD SEE AN “UNKNOWN U VALUE” ERROR IN THE COEFF AREA. THIS JUST MEANS THAT THE COMBINATION IS MISSING AND ACTION IS REQUIRED. WRITE DOWN THE COMBINATION OF PROFILES. PLEASE EMAIL THIS TO KRANTHIR@PARKSIDEGROUP.CO.UK

Combination
CS 905;CS 914;CS 917;CS 958

Transmission of structure							ERROR
Class	Combination	Length	Lf	Coeff area	Area	Transmission (W/K)	
	CS 905;CS 914;CS 917;CS 958	910.000	166.000	Unknown Uf Value	0.1511	0.0000	
Comar 9Pi Window Door and Framing	CS 905;CS 958;CS 961;CS 962	2136.000	166.000	2.7990	0.3546	0.9925	
Comar 9Pi Window Door and Framing	CS 905;CS 958;CS 961;CS 962	2136.000	166.000	2.7990	0.3546	0.9925	
Comar 9Pi Window Door and Framing	CS 905;CS 958;CS 980	910.000	166.000	2.9470	0.1511	0.4452	
Comar 9Pi Window Door and Framing	CS 961;CS 962	600.000	65.000	2.7770	0.0390	0.1083	
Comar 9Pi Window Door and Framing	CS 961;CS 962	626.000	65.000	2.7770	0.0407	0.1130	
Comar 9Pi Window Door and Framing	CS 961;CS 962	600.000	65.000	2.7770	0.0390	0.1083	
Comar 9Pi Window Door and Framing	CS 961;CS 962	626.000	65.000	2.7770	0.0407	0.1130	
Comar 9Pi Window Door and Framing	CS 971	910.000	65.000	2.7320	0.0592	0.1616	
Comar 9Pi Window Door and Framing	CS 980	910.000	65.000	2.6130	0.0592	0.1546	
Missing Uf-Values: 1/10							
Missing area (m²): 0.1511							
Missing (%): 11.720%							
Total area (m²): 1.1379							
Total transmission of the structure (W/K): 3.1888							
Total transmission (W/K): ERROR							

WHEN YOU HAVE THE VALUE BACK FROM KRANTHI WHILST IN A THERMAL CALCULATIONS FIELD RIGHTCLICK ONTO THE “UNKNOWN U VALUE” ERROR AND GO TO EDIT UF.

Combination	Length	Lf	Coeff area	Area	Transmission (W/K)
CS 905;CS 914;CS 917;CS 958	910.000	166.000	Unknown Uf Value	0.1511	0.0000
CS 905;CS 958;CS 961;CS 962	2136.000	166.000	2.7990	0.3546	0.9925

YOU CAN ADD THE VALUE THE AS SHOWN.THIS WILL AUTOTMATICALLY UPDATE THE FINAL VALUE AND WILL STAY IN THE PROGRAM, THIS WILL ALSO UPDATE ANY OTHER ITEMS WITH THE SAME COMBINATION. IT MAY BE ADVISABLE TO GO THROUGH ALL ITEMS AND THEN SEND ANY MISSING COMBINATIONS TO KRANTHI IN ONE GO. TECHNICAL@PARKSIDEGROUP.CO.UK

Edit Uf-Value

Please enter the Uf-Value for the combination. This value will be considered as user-value and is subject to be overridden by Uf-values provided by the supplier

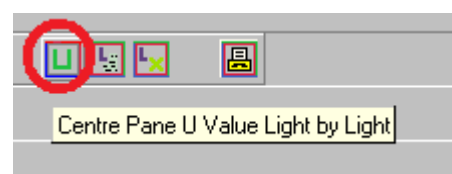
Combination

CS117;CS119

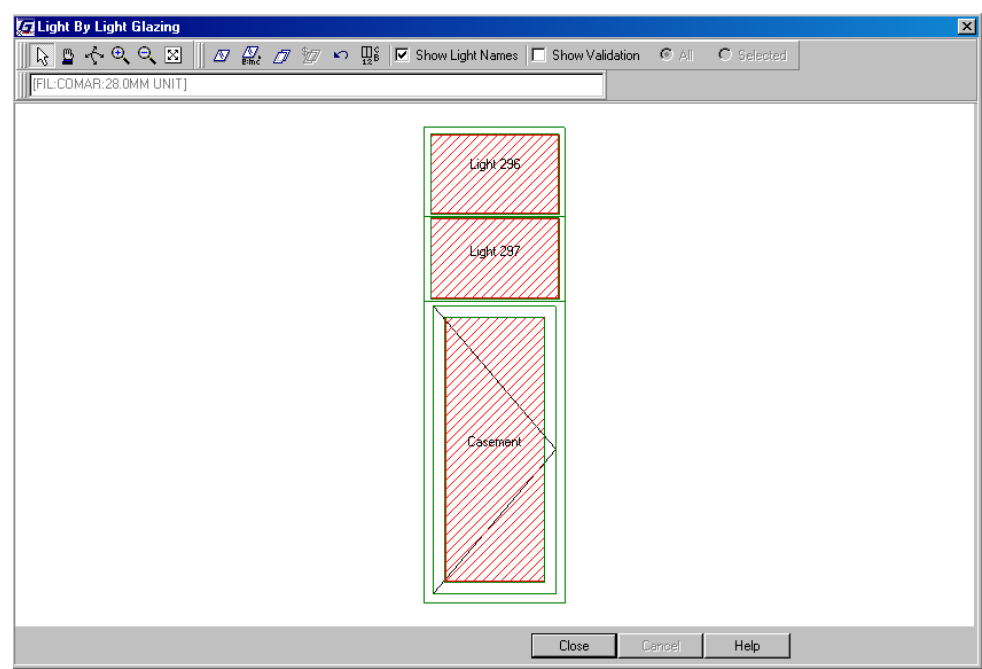
Uf Values

Standard	User Defined
Foam (Where Available)	5.43
Original Comar Values	

IF THE U VALUE IS NOT ACCEPTABLE THEN WE CAN CHANGE THE GLASS TO BE AN OPTION WITH A BETTER CENTRE PANE. CLICK ONTO THE BUTTON AS SHOWN (LOCATED AT THE TOP LINE OF MACRO BUTTONS)



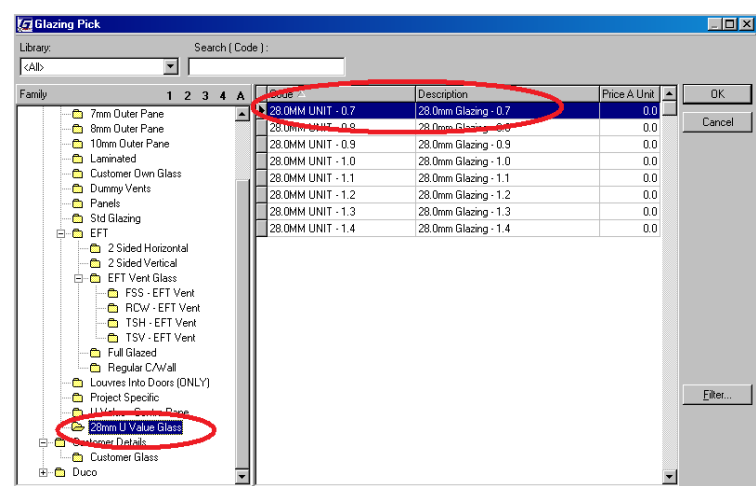
USING THE LIGHT BY LIGHT GLAZING THE SAME WAY AS YOU WOULD WHILST CHANGING GLASS WHILST DESIGNING THE FRAME, HIGHLIGHT ALL LIGHTS AS SHOWN.



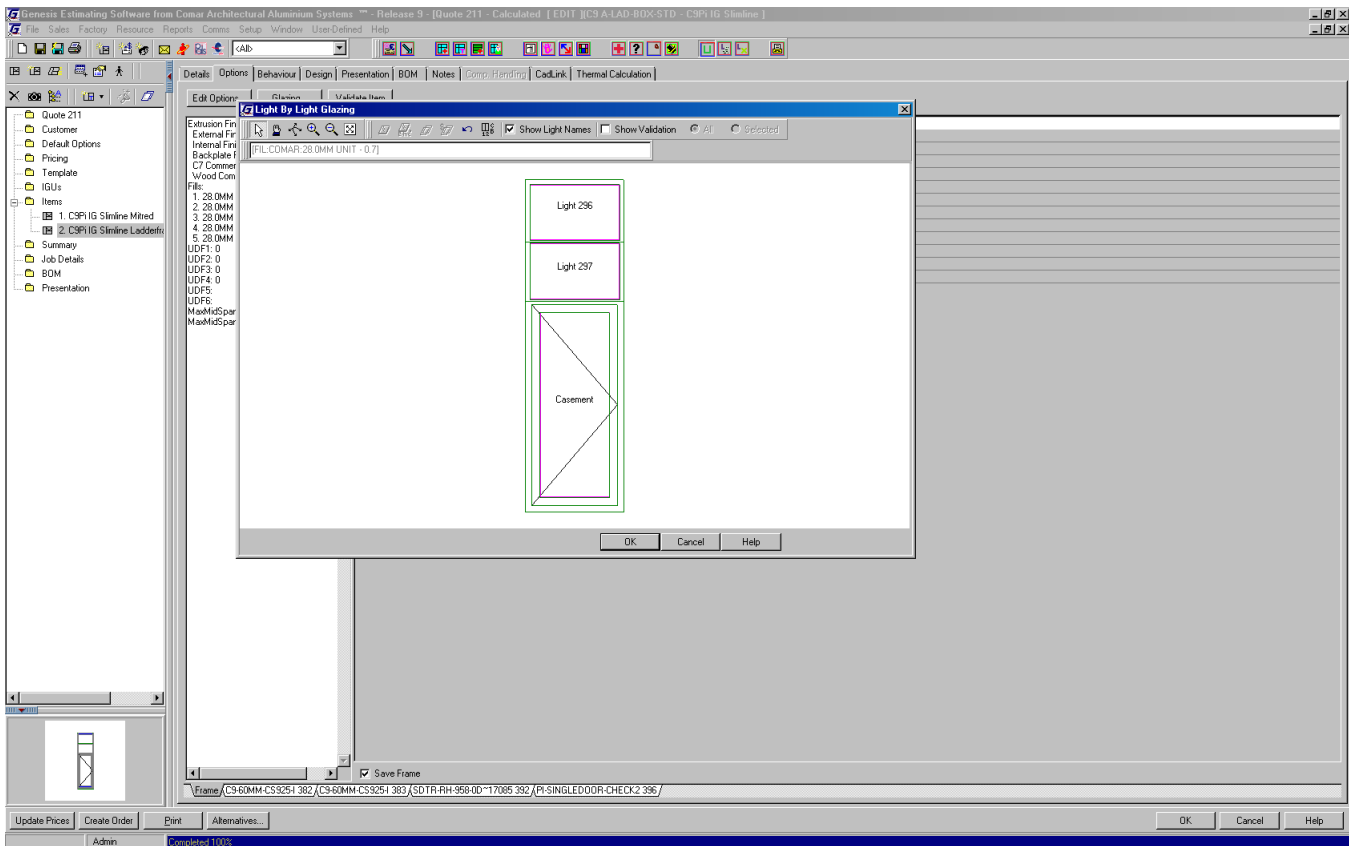
NOW CLICK ONTO FILL REPLACE.



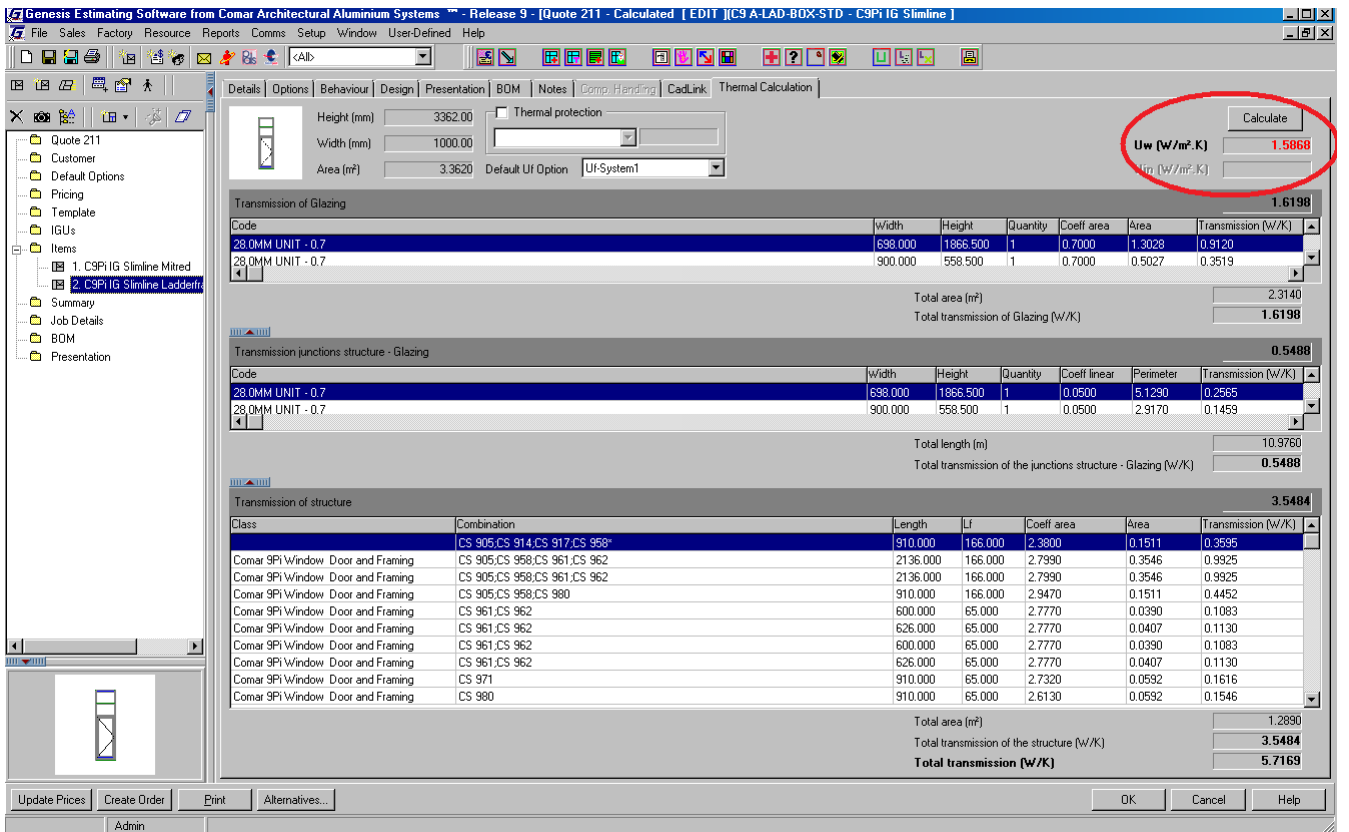
USING THE STANDARD ONES THAT WE HAVE SETUP (UNLESS YOU HAVE SETUP YOUR OWN) GO TO "28MM U VALUES GLASS" FOLDER AND THEN FIND "28MMUNIT - 0.7" AND THEN CLICK OK.



THIS WILL BRING YOU BACK TO THE ORIGINAL SCREEN, CLICK OK TO FINISH.



THIS WILL AUTOMATICALLY UPDATE THE VALUE.

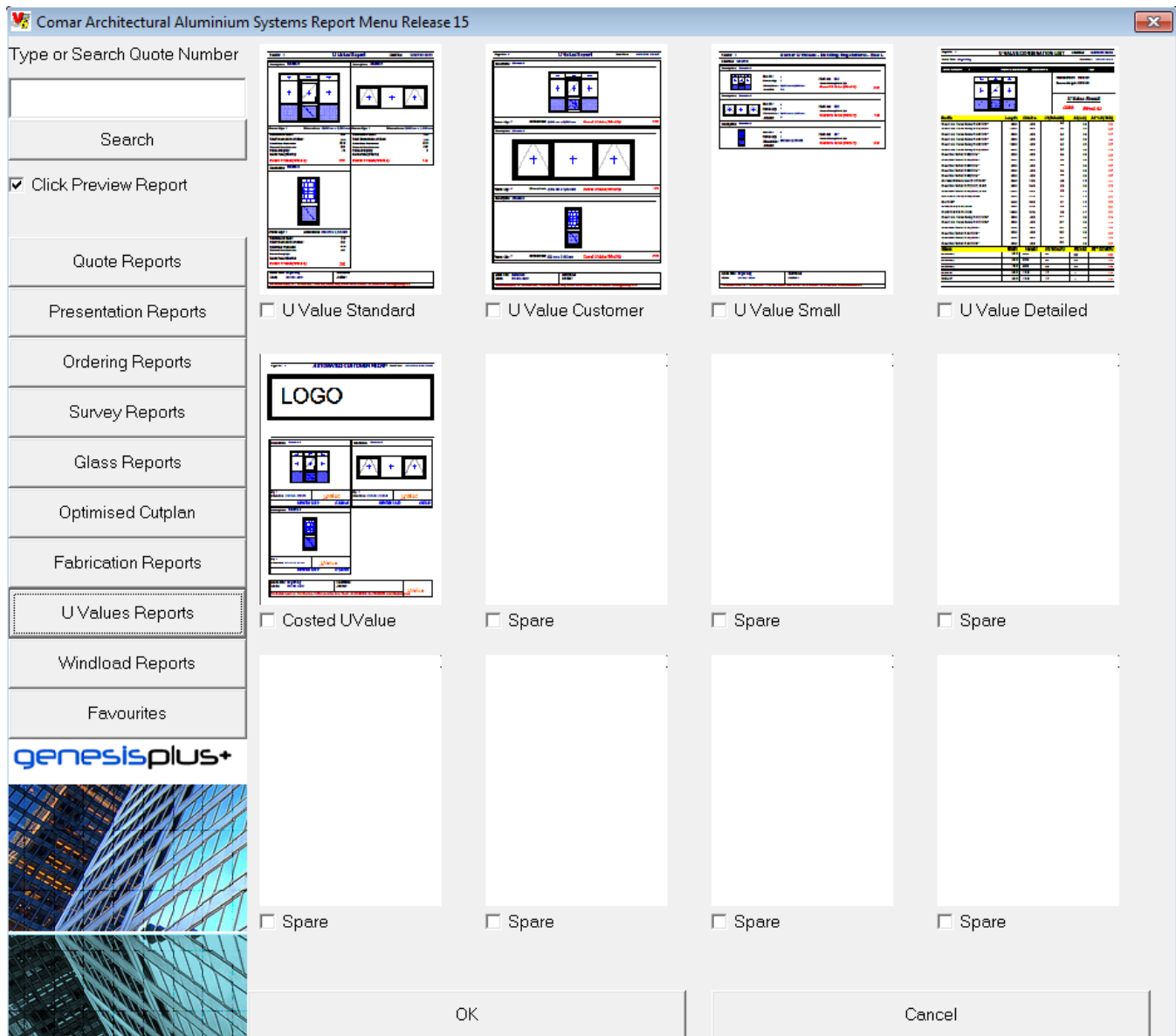


EXPORTING AND PRINTING VALUES

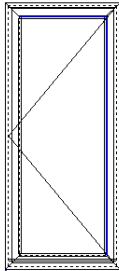
WE NOW WANT PRINT THE INFORMATION THAT WE HAVE CREATED SO SHUT THE QUOTE DOWN. NOW CLICK ONTO THE PRINT BUTTON AS SHOWN.



CHOOSE ONE OF THE REPORTS, FIND THE QUOTE NUMBER AND CLICK PREVIEW, THEN CLICK OK



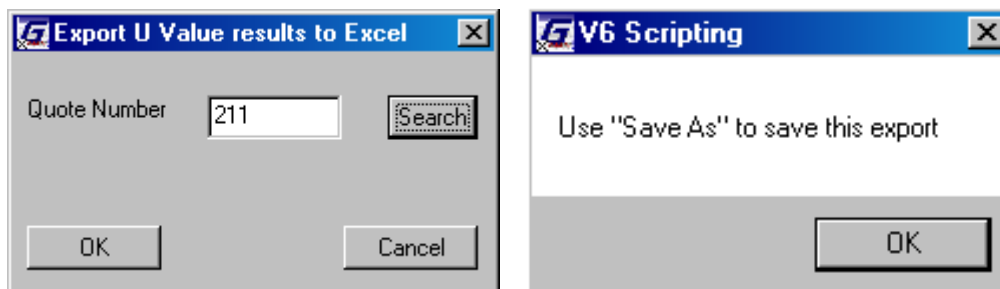
ANOTHER EXAMPLE SHOWS THE COMBINATIONS OF ASSEMBLIES TO.

Page No: 1		U VALUE COMBINATION LIST		Date/Time: 18/08/2011 12:11:50		
Quote Title: Test U Values				Quote No: SH-211- -Ver 2		
Item Number: 1		Frame Description C9Pi IG Slimline Mitred		Qty	1	
			Frame:Width 900.00			
			Frame: Height 2100.00			
			<u>U Value Result</u>			
			1.836 (W/m2. K)			
Profile		Length	Siteline	Uf (W/m2K)	Af (m2)	Af * Uf (W/K)
Comar 9Pi Window Door and Framing:CS 931;CS 953		900.00	125.00	2.75	0.11	0.31
Comar 9Pi Window Door and Framing:CS 931;CS 953		2100.00	125.00	2.75	0.26	0.72
Comar 9Pi Window Door and Framing:CS 931;CS 953		900.00	125.00	2.75	0.11	0.31
Comar 9Pi Window Door and Framing:CS 931;CS 953		2100.00	125.00	2.75	0.26	0.72
Glass		Width	Height	Uf (W/m2K)	Af (m2)	Af * Uf (W/K)
28.0MM UNIT		680.00	1880.00	1.28	1.1	1.41

WE WILL NOW EXPORT THE RESULTS TO EXCEL, CLICK ONTO THE BUTTON AS SHOWN.



FIND THE QUOTE NUMBER AND NOW CLICK OK. FOLLOWED BY OK WHEN THE SECOND BOX APPEARS



THIS WILL EXPORT THE RESULTS TO EXCEL. PLEASE MAKE SURE THAT YOU SAVE THE FILE IN A DIFFERENT LOCATION AND WITH A DIFFERENT FILE NAME AS YOU WILL OVERWRITE THE TEMPLATE.

U-VALUE RESULT

Quote Number:	211	Overall Average U-Value of the Project W/m2K	1.68
Reference Number:	0	Quantity of Frames	2
Company Name:	0.00	Centre Pane U Value of Glazing	1.10
Project Name:	Test U Values	Centre Pane U Value of Panels	0.35
Date	18/08/2011	Linear Thermal Transmittance	0.05
		Total Area m2	5.25
		Total Conductance W/mK	8.80

U Values calculated in accordance with April 2006 Building Regulations*. To be read in conjunction with all relevant standards. Glass Spec from SAP2005 Table6e, Centre Panes based on guidelines from CAB SS6/AD for guidance, consult glass supplier's datasheets. Comar Aluminium accept no responsibility for the correctness of this information. *Approved Document L1a L1b L2a L2b

Screen Reference	U-Value	Width	Height	Area/M2	Quantity	Total Area	Conductance
C9Pi IG Slimline Mitred	1.84	900	2100	1.89	1	1.89	3.47
C9Pi IG Slimline Ladderfr	1.59	1000	3362	3.36	1	3.36	5.33

PLEASE CONTACT SIMON HARVEY IF YOU HAVE ANY PROBLEMS USING THIS FEATURE 0208 685 9685