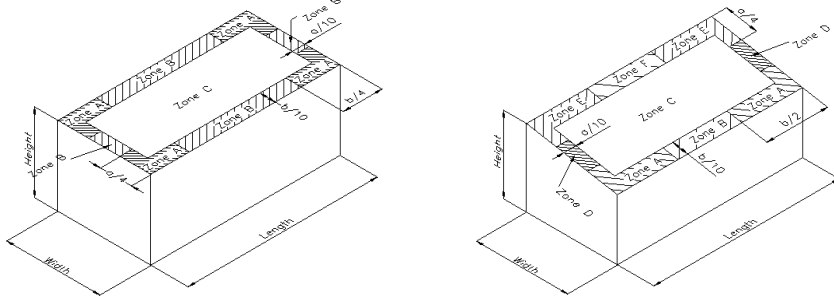


Design Calculations

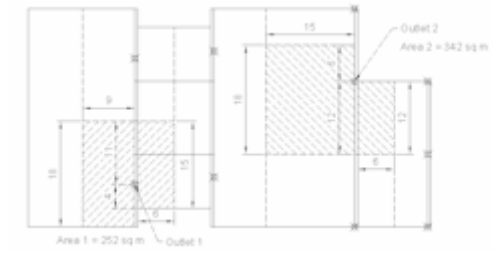
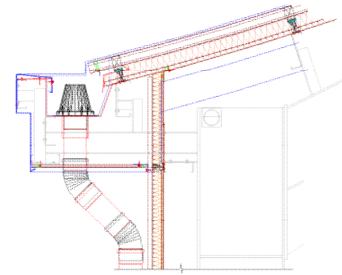
Wind loading and fixing requirements

Wind load calculations are carried out in accordance with the requirements of BS 6399 Part 2:1997, Code of practice for wind loads - Standard Method. Fixings numbers can be calculated for mechanically fixed flat roof systems profiled sheeting & cladding and composite panels.



Roof drainage and gutter design

Drainage calculations are carried out in accordance with the requirements of BS EN 12056 -3:2000 Gravity drainage systems inside buildings - Part 3: Roof drainage layout and calculation for eaves, parapet, valley gutters and flat roofs.

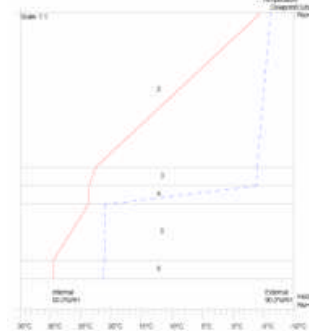
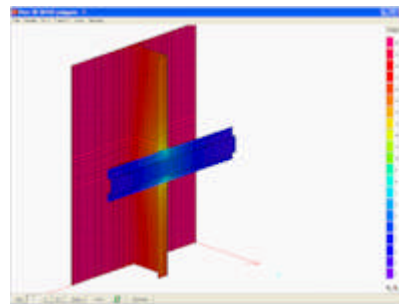
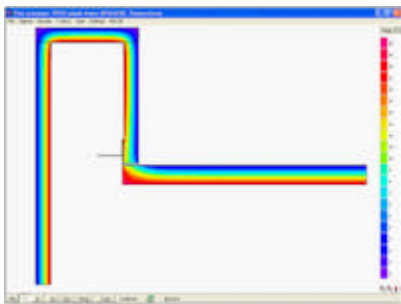


U value and thermal bridging to comply with Part L

The calculations are carried out in accordance with the recommendations of MCRMA Technical Paper No. 18 Conventions For Calculating U-Values, f-Values And Ψ -Values For Metal Cladding Systems Using Two- And Three Dimensional Thermal Calculations, using finite element analysis computer program HEAT2 & HEAT 3.

Condensation risk analysis

The calculations were carried out using industry recognised software JPA Designer from JPA Technical in accordance with BS 5250:2002 Code of practice for control of condensation in buildings. The equations used are from BS EN ISO 13788:2002 Hygrothermal performance of building components and building elements. Internal surface temperature to avoid critical surface humidity and interstitial condensation.



Condensation Risk Analysis (no account taken of thermal bridges)
 Internal - External Conditions: 10.0°C @ 65.0%RH / 0.0°C @ 65.0%RH / 31 days

	Interface Temp. °C	Component Temp. °C	Vapour Density (g/m³)	Calculated Dew Point Temp. °C	Summer Humidity Ratio (g/m³)	Annual Output (g/m²)	Condensation
1 Outside surface resistance	-1.7	-1.2	0.36	0.11	-	-	No
2 Gypsum Panel	10.6	-0.5	0.44	2.75	-	-	No
3 Air Cavity	10.6	-0.5	0.44	2.75	-	-	No
4 Vapor Control Layer	10.6	-0.5	0.44	2.75	-	-	No
5 Rock Wool (Wool) - RW0	10.6	-0.5	0.44	2.75	-	-	No
6 Insulated metal deck	10.6	-0.5	0.44	2.75	-	-	No
7 Inside surface resistance	10.6	-0.5	0.44	2.75	-	-	No

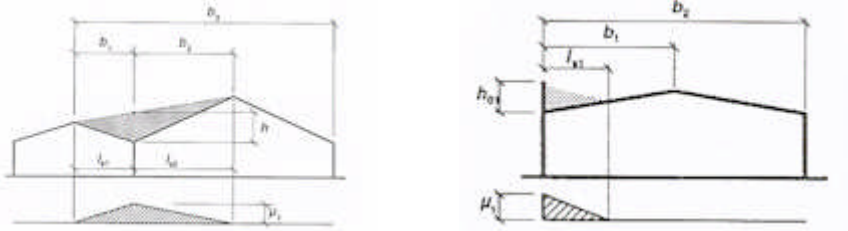
Condensation Risk Analysis (no account taken of thermal bridges)
 Internal - External Conditions: 10.0°C @ 65.0%RH / 0.0°C @ 65.0%RH / 31 days

	Interface Temp. °C	Component Temp. °C	Vapour Density (g/m³)	Calculated Dew Point Temp. °C	Summer Humidity Ratio (g/m³)	Annual Output (g/m²)	Condensation
1 Outside surface resistance	10.1	11.3	1.34	2.07	-	-	No
2 Gypsum Panel	17.0	11.8	1.38	3.85	-	-	No
3 Air Cavity	17.0	11.8	1.38	3.85	-	-	No
4 Vapor Control Layer	17.0	11.8	1.38	3.85	-	-	No
5 Rock Wool (Wool) - RW0	17.0	11.8	1.38	3.85	-	-	No
6 Insulated metal deck	17.0	11.8	1.38	3.85	-	-	No
7 Inside surface resistance	17.0	11.8	1.38	3.85	-	-	No

Design Calculations

Snow loading

Snow Load calculations are carried out in accordance with the recommendations of BS 6399: Part 3:1988 Loadings for buildings Code of practice for imposed roof loads.



All calculations are backed by Professional Indemnity Insurance.

For more information and prices contact David Roy at:

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Light gauges steel structural Supports rails

Section properties and spans calculated in accordance with BS 5950-5:1998 Code of practice for design of cold formed thin gauge sections.



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- Site investigations into failures and reports on appropriate remedial actions
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