

INTERIOR IMPLICATIONS: IMPACT ON DESIGN AND PROJECT PLANNING

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Tullett Prebon London Boat Show

Superyacht UK Technical Seminar

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Code compliance - SOLAS, PYC or LY2

- ▣ Less than 12 passengers:
 - LY2 – up to 3000GT
 - SOLAS Cargo Ship – over 3000GT
- ▣ More than 12 less than 36 passengers:
 - SOLAS Passenger Ship 13-36
 - Passenger Yacht Code

Code compliance - SOLAS, PYC or LY2

M/Y Alysia



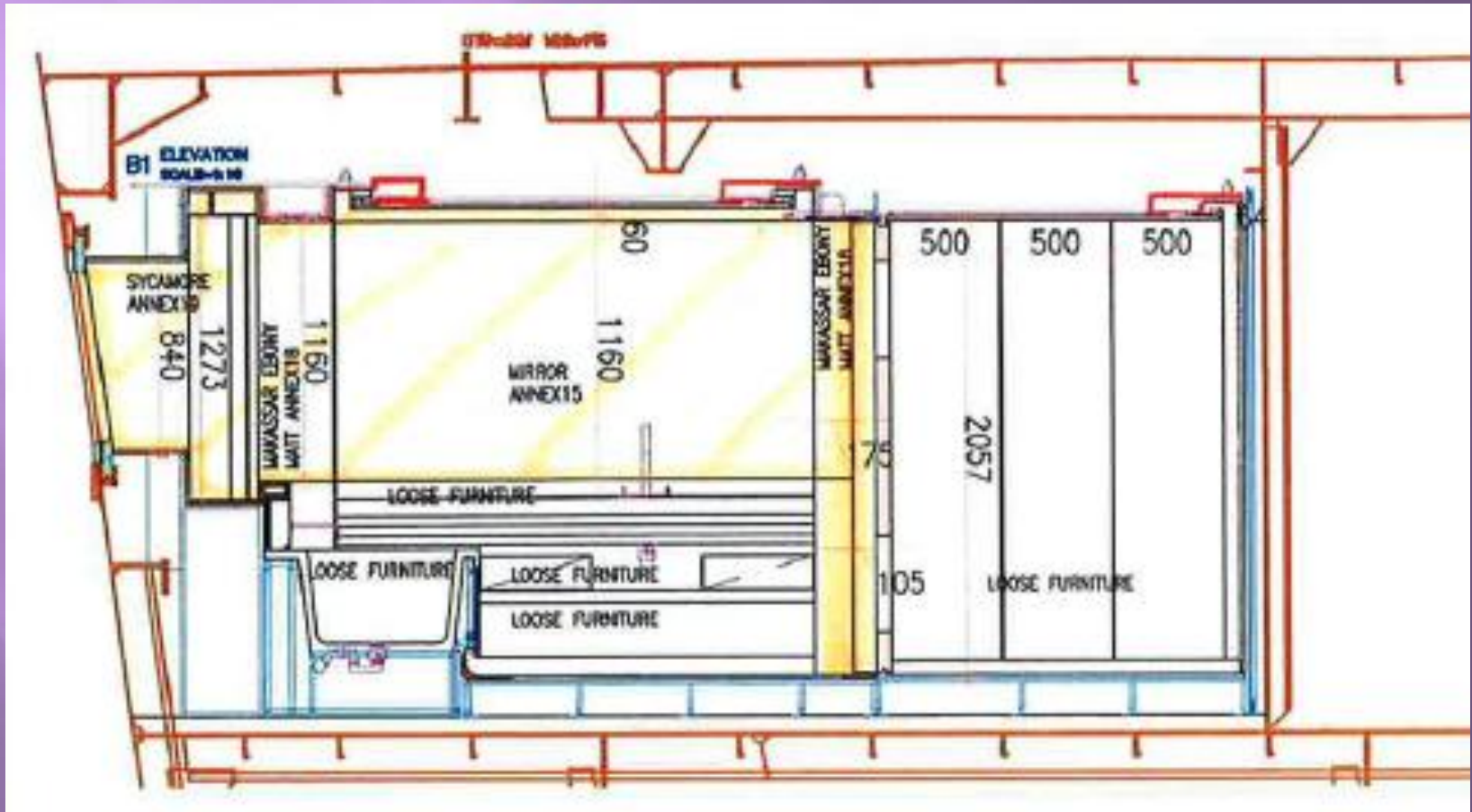
Code Compliance - Interiors

- ▣ Large Commercial Yacht and/or > 12 passengers
 - SOLAS Cargo Ship
 - SOLAS Passenger Ship 13-36
 - Passenger Yacht Code
- ▣ This means compliance with SOLAS II-2, Part B, Regulation 5
- ▣ What are the differences from LY2?

LY2 Typical Interior Construction

- ▣ Yacht would typically be fitted with:
 - Addressable fire detection system
 - Sprinkler system
 - A and B and “C” class type approved fire doors and modular bulkheads, draught stops
- ▣ Use solid timber for profiles
- ▣ Use veneers for flat panels
- ▣ In general no prescribed restrictions on the type and amount of combustible material (timber, veneer) that can be used:
 - Plywood can be used as a substrate instead of non combustible boards (Promarine, FIPRO)

LY2 Interior Cross Section



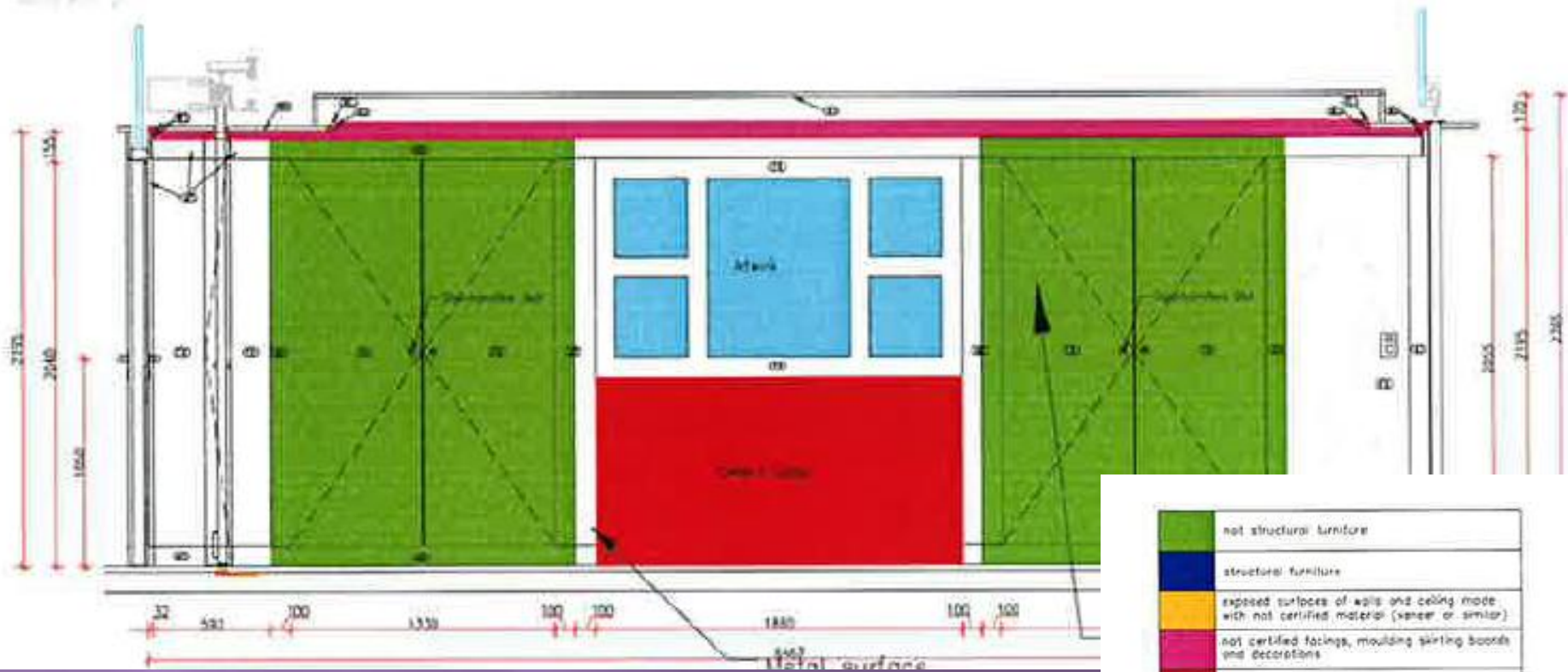
SOLAS Compliant Interiors

- ▣ Extracts from SOLAS II-2, Part B Regulation 5:
- ▣ 3.2.2 Maximum calorific value of combustible materials
Combustible materials used on the surfaces and linings specified in paragraph 3.2.1 shall have a **calorific value* not exceeding 45 MJ/m²** of the area for the thickness used. The requirements of this paragraph are not applicable to the surfaces of furniture fixed to linings or bulkheads.
- ▣ 3.2.3.1 The total volume of combustible facings, mouldings, decorations and veneers in accommodation and service spaces shall not exceed a volume **equivalent to 2.5 mm veneer** on the combined area of the walls and ceiling linings. Furniture fixed to linings, bulkheads or decks need not be included in the calculation of the total volume of combustible materials;

SOLAS Compliant Interiors

- ▣ Fire load calculations to be carried out, submitted and approved
- ▣ Means of calculation:
 - Traditional combustible volume calculation
 - ▣ Acceptable Fire Volume in m³
 - ▣ Acceptable Calorific Value in MJ
 - Simplified calculation for total amount of combustible material per unit area in accommodation and service spaces (MSC Circular 1003)
 - Furniture is excluded because it is fixed to linings, bulkheads or decks
- ▣ Fire tests may have to be carried out for some material and material lacquer combinations

Exclusion of Furniture



Traditional Fire Load Calculation

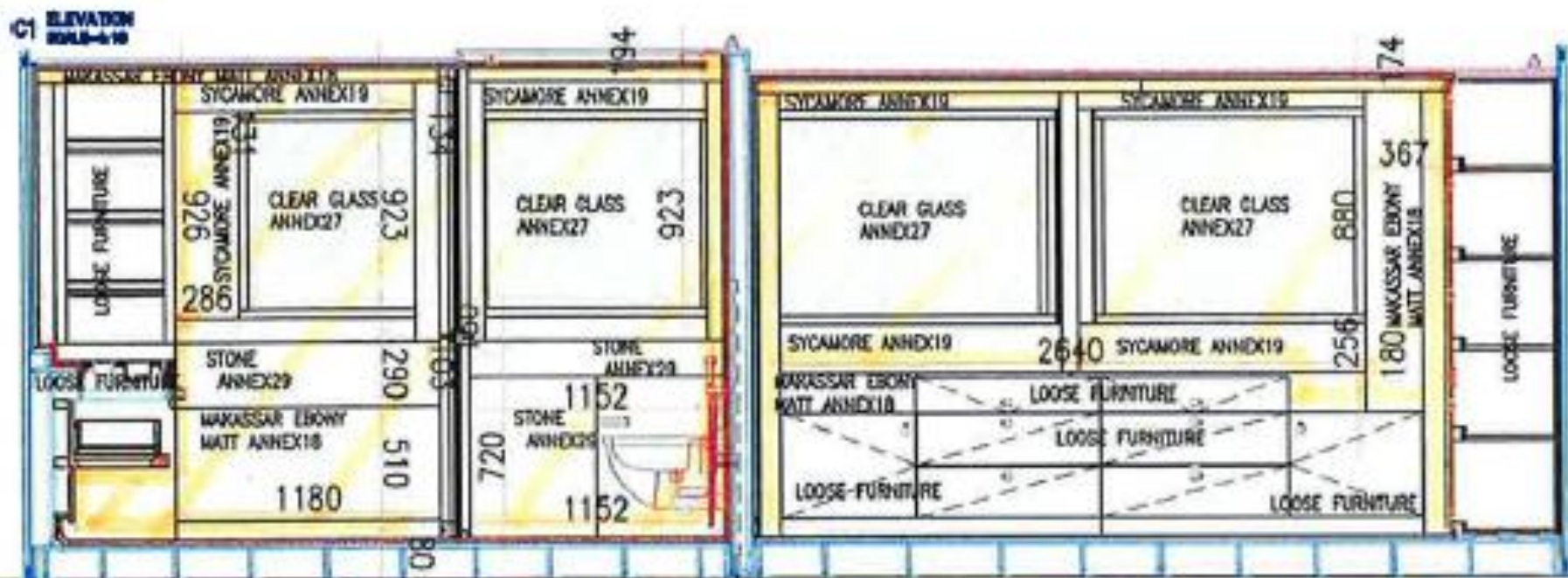
Line	Item	Desc.	Area m ²	Thickness mm	Volume m ³	Density kg/m ³	Total Weight kg
1	Non comb. board	Promarine	41				
2a	Ceiling frame	Tulip wood	0.49	0.017	0.008	600	5.0
2b	Ceiling Frame	Lacquer	0.49	0.0003	0.000	1000	0.1
3	Wall panel	Laminate	14.2	0.0008	0.004	1300	51.7

Calorific Volume MJ/kg	Calorific Value MJ	Calorific Volume MJ/m ²	Acceptable Calorific Value MJ/m ²	Below Acceptable Value	Total MJ/m ²	Below Acceptable Value	Comment
18	90	44	45				
30	4	2	45		46	x	
19	981	20	45	✓			

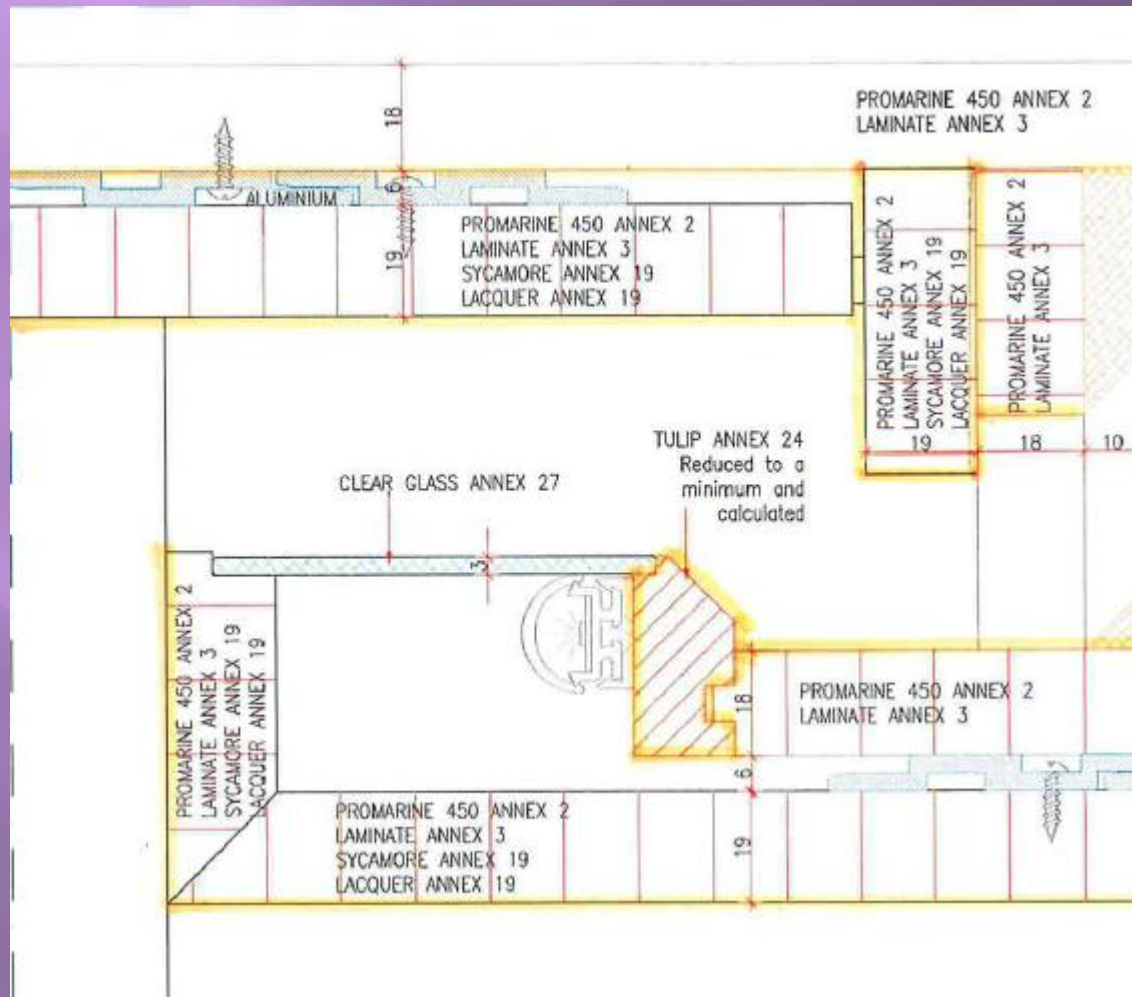
Traditional Fire Load Calculation Summary

Description	Value	Comment
Total Volume	m³	
Total Calorific Value	MJ	
Wall Surface	m ²	
Ceiling Surface	m ²	
Floor Surface	m ²	
Total Surface	m²	
Acceptable Fire Volume	m³	
Acceptable Calorific Value	MJ	

Calculated Area - Elevation



Calculated Area - Detail



Conclusions

- ▣ Establish project team with shipyard, designers, class, flag, interior contractor(s) as early as possible
- ▣ Select interior designers and contractors with previous experience of SOLAS interiors
- ▣ Don't expect to do everything that can be achieved with and non SOLAS interior (LY2) – manage an owner's expectations
- ▣ Interior will be more expensive
- ▣ What can we do to help this process?
 - Standardise the approach to Fire Load Calculations for yachts – publication of a guidance note?
 - New material developments – particularly non combustible boards

THANK YOU