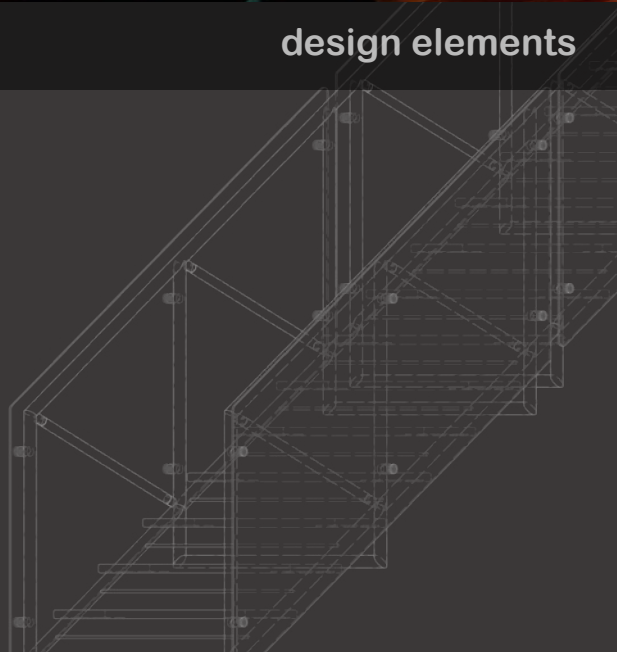




design elements

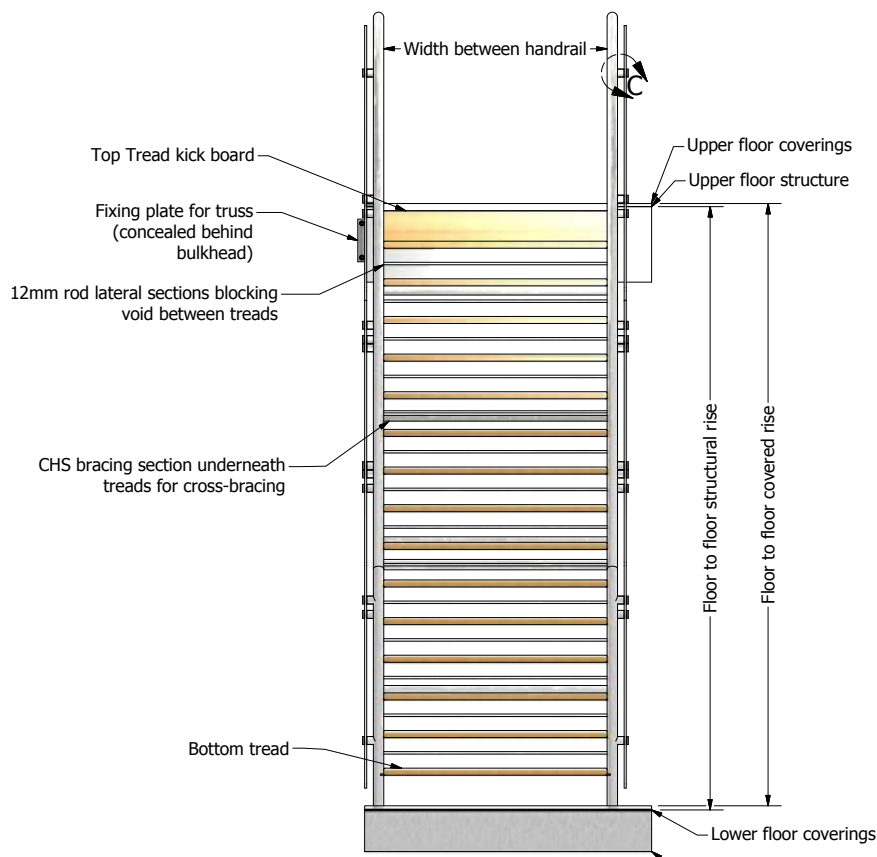
T1



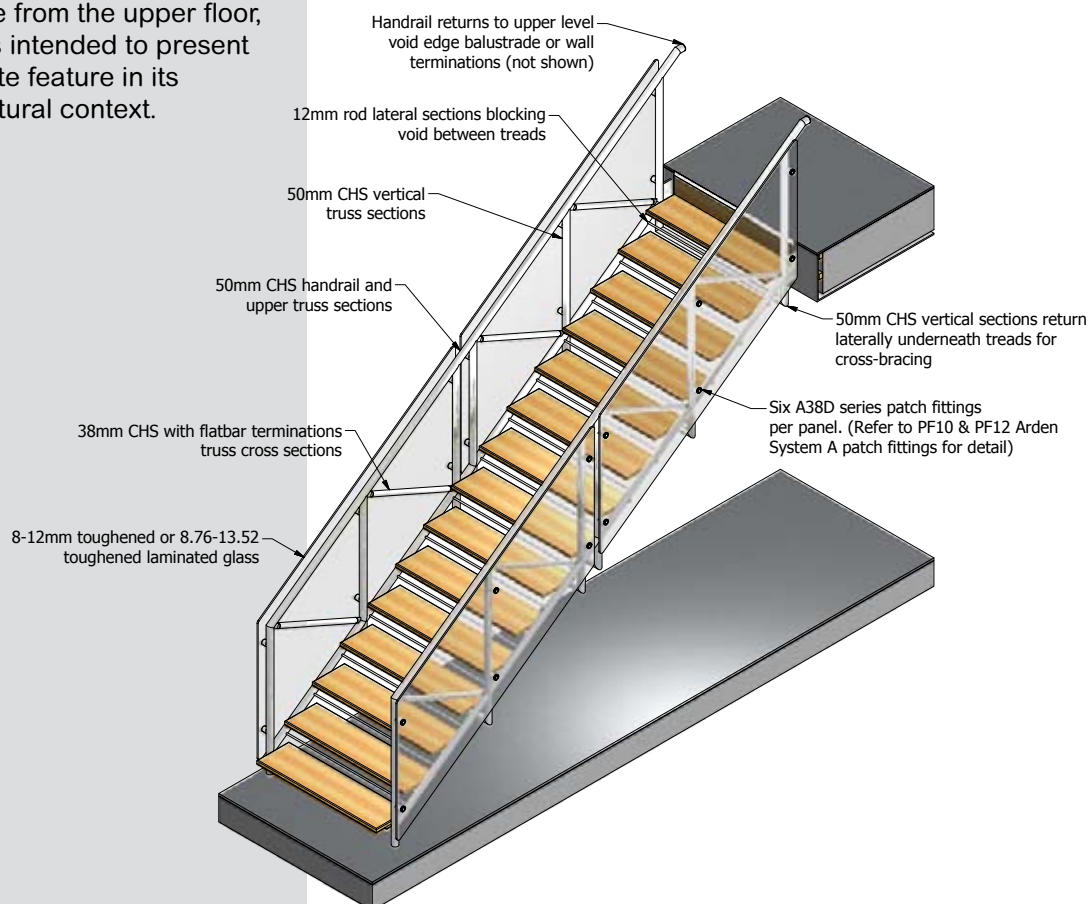
design

Eliminating the traditional distinctions between stringer, handrail and stanchion, the T1 utilises a truss design for all three roles. Rather than concealing the structural members (see the T2 technical data sheet for examples of this kind of design), the T1 brings them to the fore in the form of 38 and 50mm stainless steel circular hollow sections. The geometric shapes created by the support structure are the main point of visual interest. The open nature of the exposed truss design is maximised by the use of frameless glass infill supported by A38 Arden system 'A' patch fittings (see Appendix A.1 for details).

Similar to other Arden styles, the T1 relies on a combination of materials and textures to achieve visual impact, featuring stainless steel, glass and timber. Elevated above the lower floor, and visually separate from the upper floor, the T1 is intended to present a discrete feature in its architectural context.



1

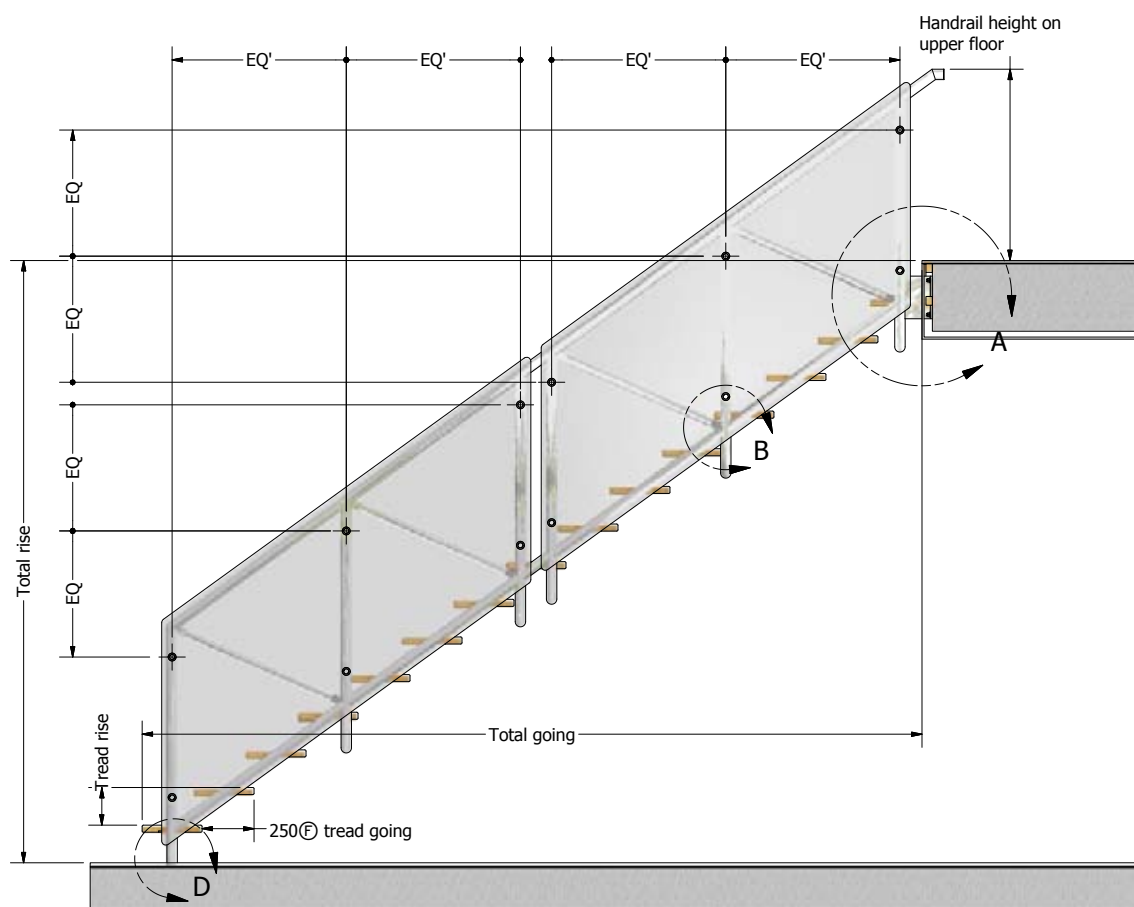


2

Figure 1. Front elevation

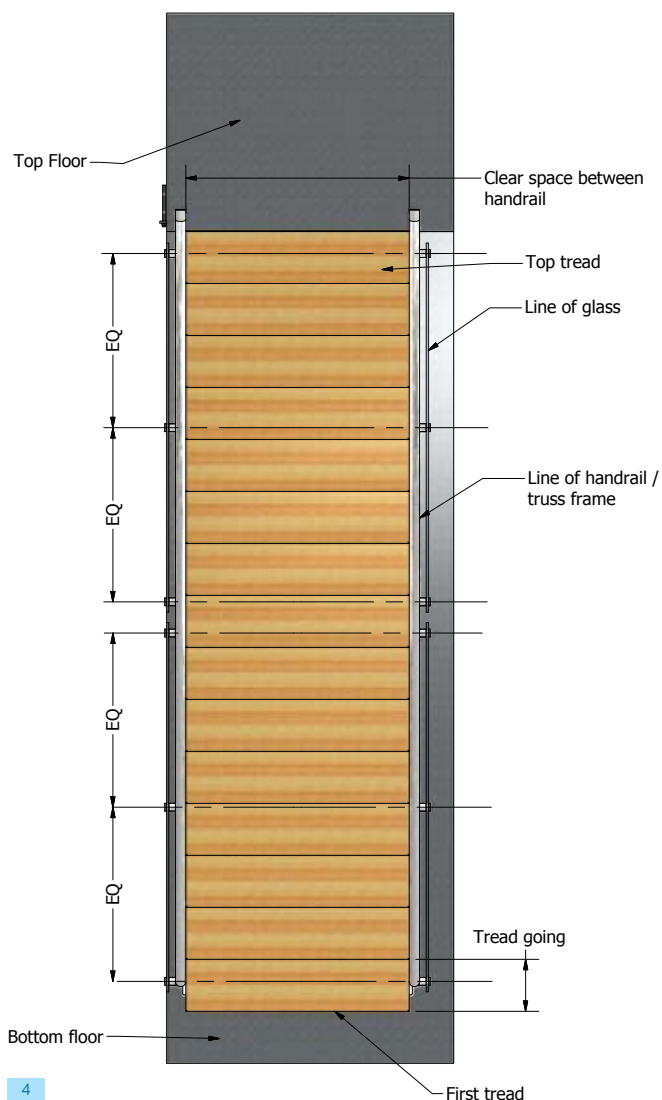
Figure 2. Isometric overview.





3





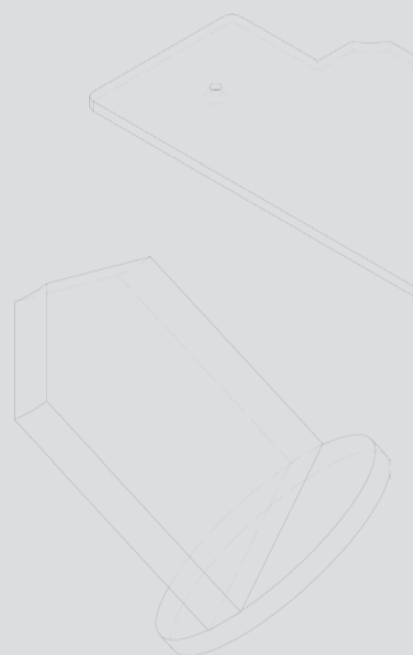
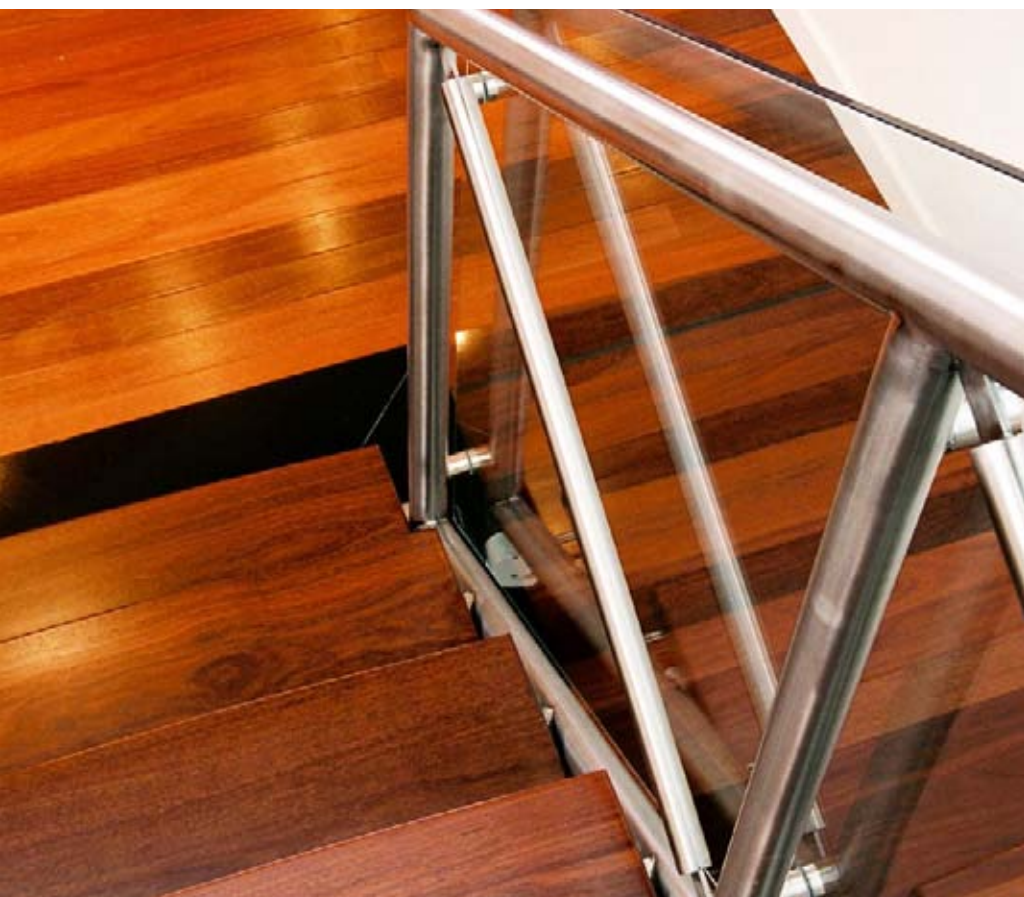
technical

The T1 relies on a unique truss approach to resolving the structural support of the staircase, with 50mm CHS members carrying the main load, 38mm CHS members providing cross-bracing, and rod and tread bodies to provide further stiffening. A wide range of floor and void-edge fixings are possible, depending on the construction methods employed on the floors and walls. A typical fixing approach to concrete slab floors is shown in the illustrations.

Polish timber treads are the most common option, and Arden is able to provide a range of species from environmentally sound harvesting and recycled sources.

Figure 3. Side elevation. Equal spacing is maintained for components within the two main panels.

Figure 4. Plan.

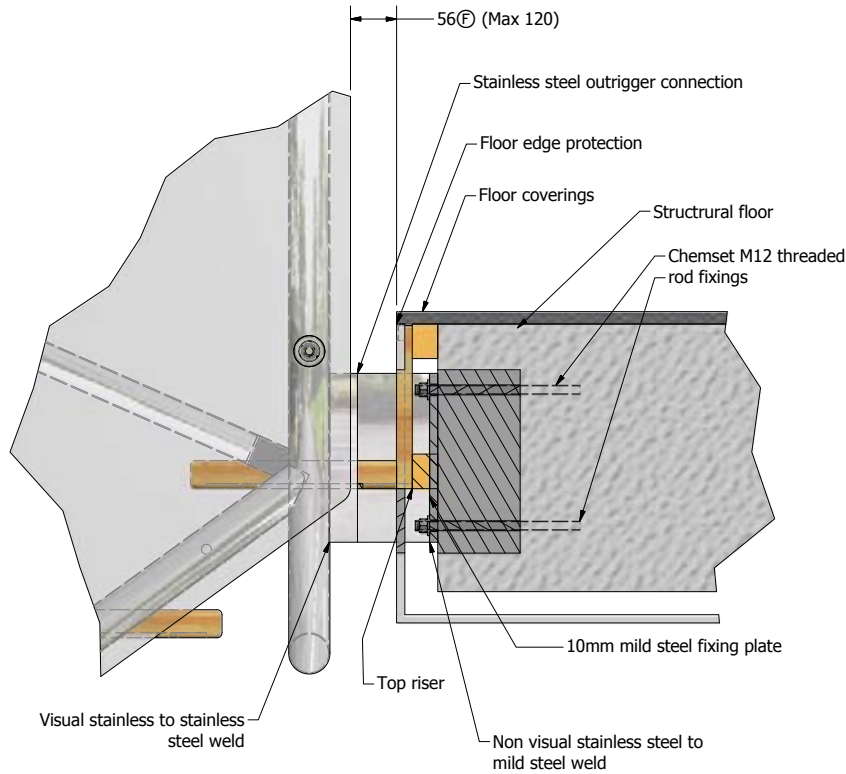


Ⓔ indicated on dimensions denotes a nominal dimension that typically varies according to specific application, engineering requirements or client preferences.

Figure 5. Truss to top floor structure fixing detail. In this typical fixing, a stainless steel vertical mounting plate is shown disappearing into the plaster line.

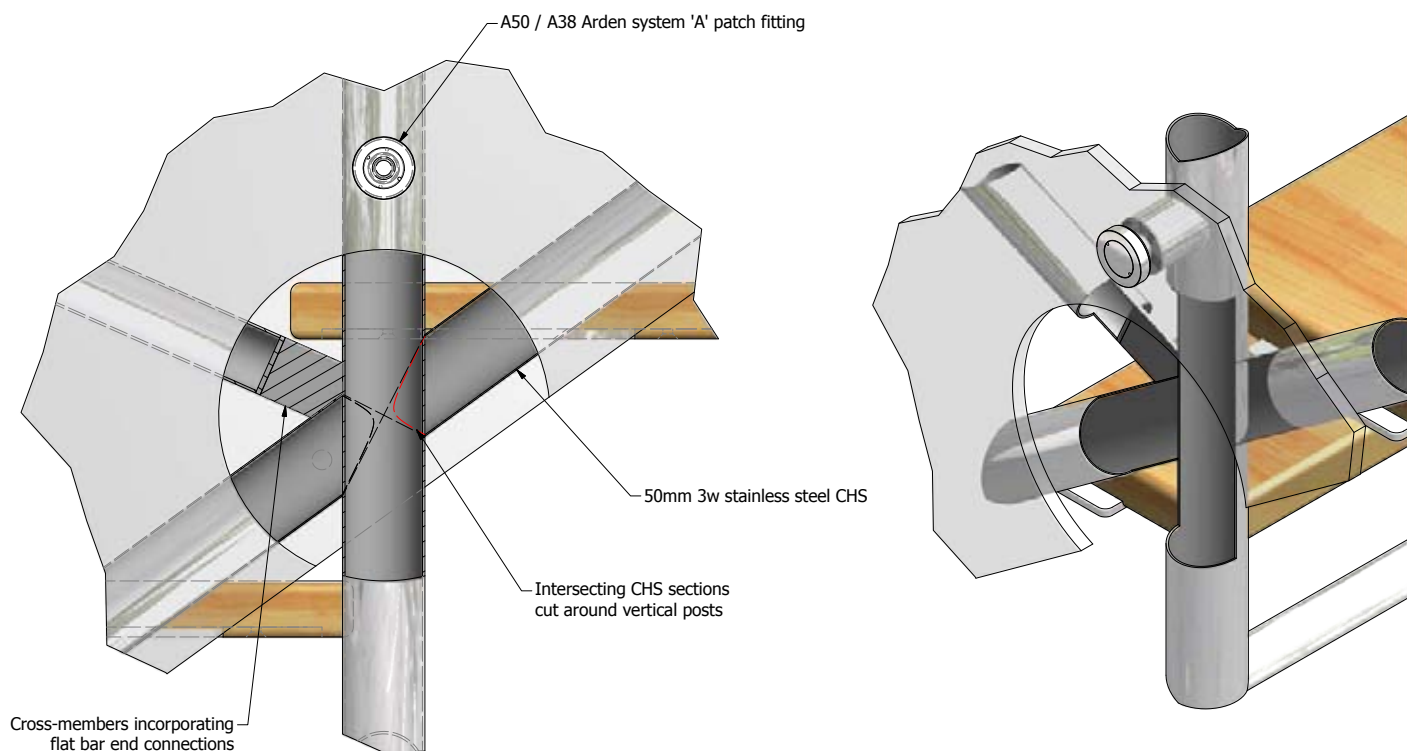
Figure 6. Truss member intersection / interface detail. At the intersection, either the vertical members can continue (as illustrated in this diagram) or the raking members can carry through (as photographed).

Ⓢ indicated on dimensions denotes a nominal dimension that typically varies according to specific application, engineering requirements or client preferences.



5





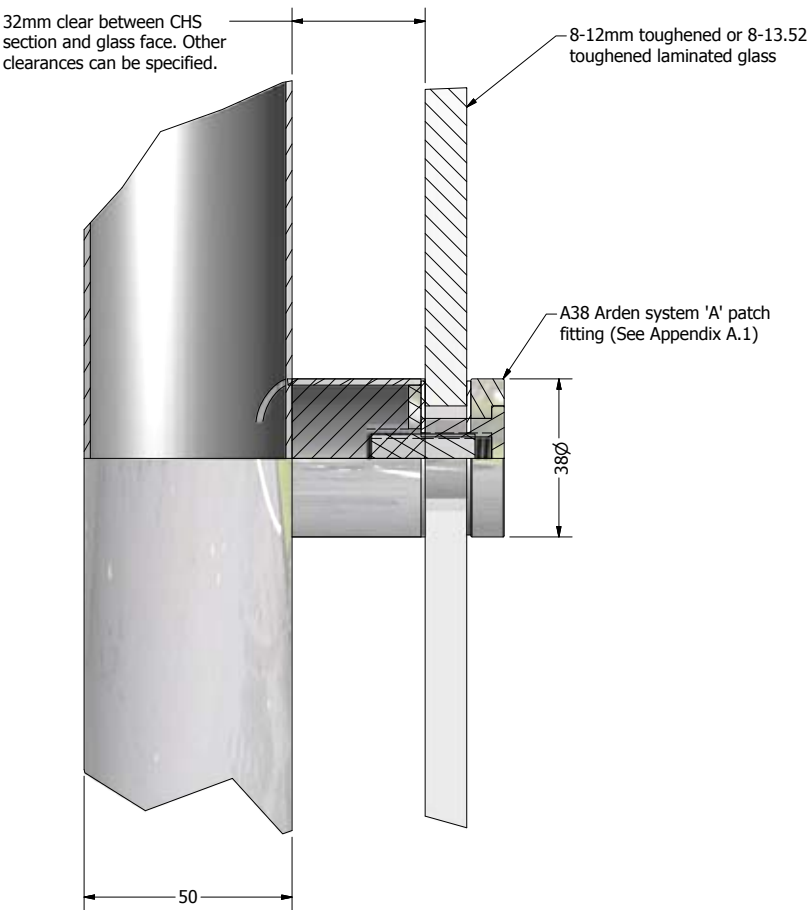
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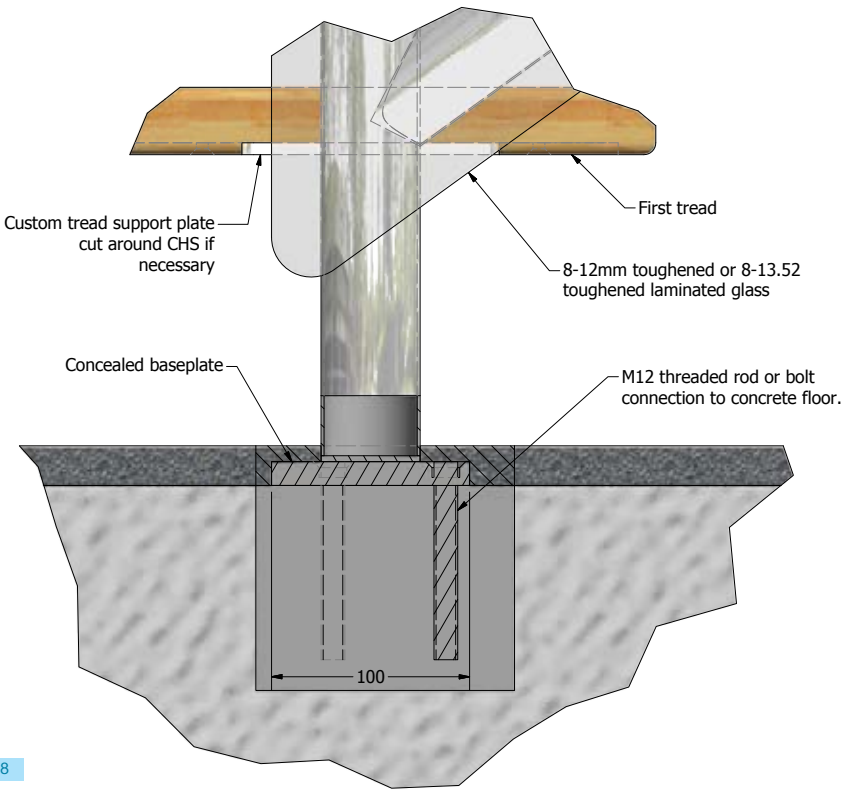
Figure 7. Truss to glass connection detail.

Figure 8. Truss to bottom floor structure fixing detail.

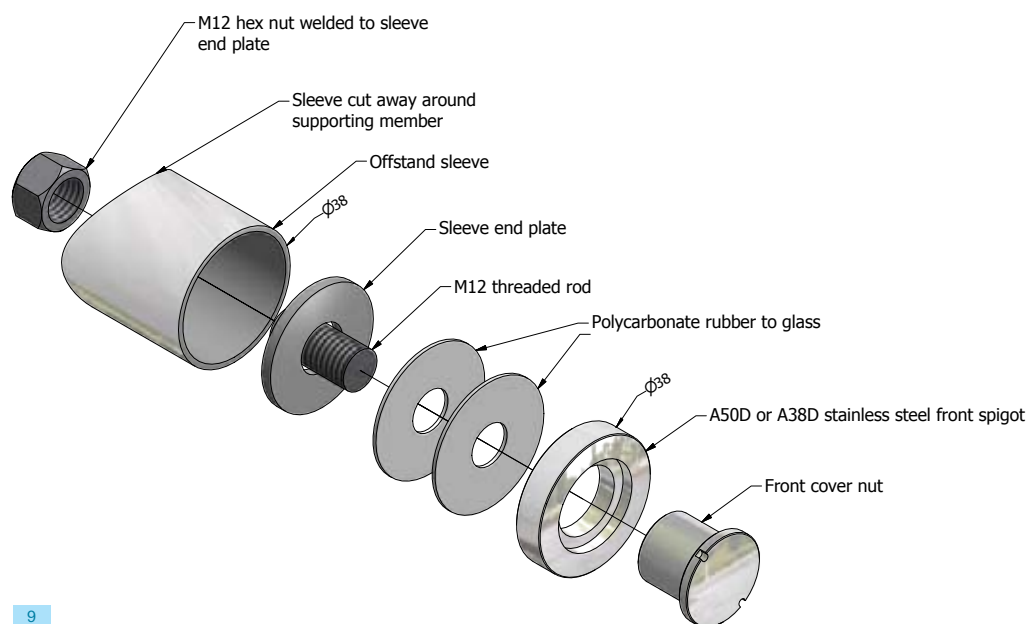
Figure 9. Through-glass patch fitting and truss connection assembly.



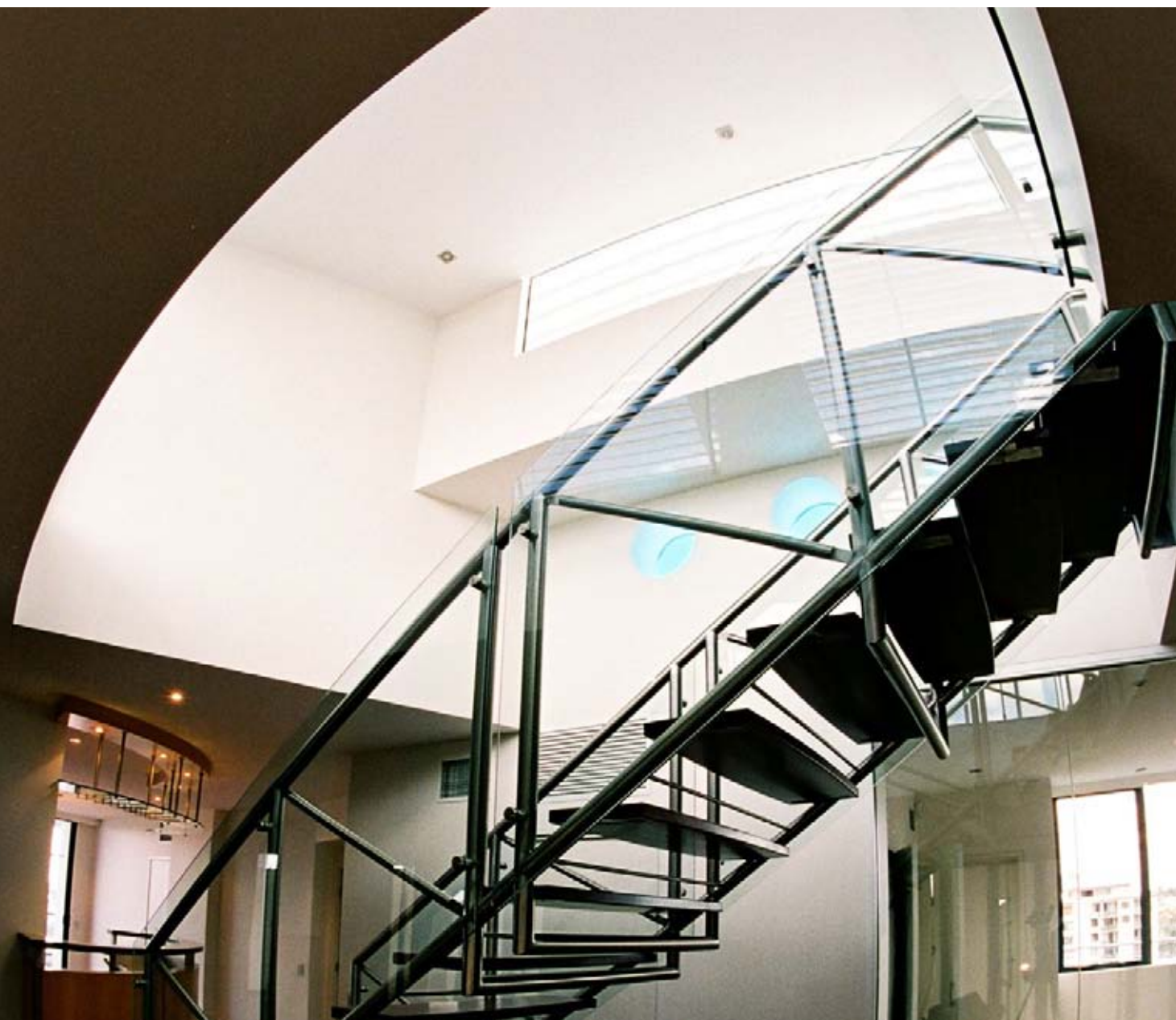
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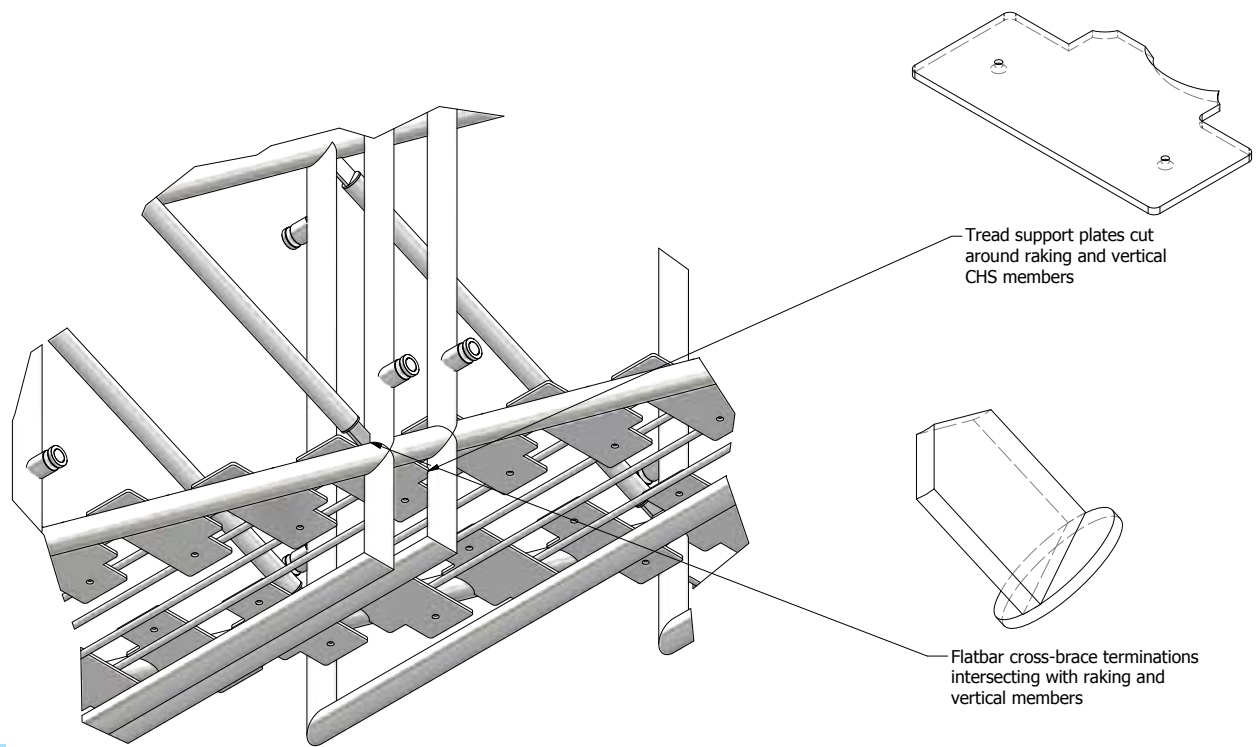


8



9





10

Figure 10. Examples of customised components utilised in design. Precision 3D CAD design combined with CNC (computer numeric controlled) laser cutting technology allows exact fabrication of necessary components.





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compliance

Arden is a BSA licensed contractor for carpentry, joinery, glass, glazing and aluminium as well as structural metal fabrication and erection. Arden supplies a Form 16 (Licensed Contractor) on all projects. In design and construct contracts, a Form 15 (Design Engineer) certification is supplied upon request. For products and services incorporating the T1 system, this table shows compliance with relevant codes and standards.

Key

- full compliance with the code
- ◐ can comply
- not applicable to this element

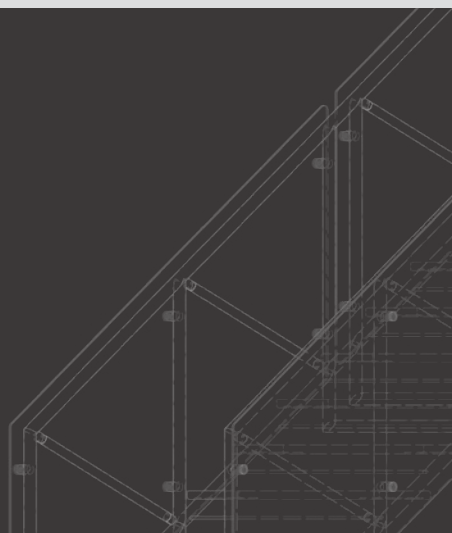
Code	Title	Applicability
BCA	The Building Code of Australia	●
AS NZS 1170.1-2002	Structural Design Actions – Permanent, imposed and other actions	●
AS 1288-2006	Glass in Buildings. Selection and installation.	●
AS NZS 1554.1-2004	Structural steel welding - Welding of steel structures	●
AS 1554.6-1994	Welding stainless steels for structural purposes	●
AS NZS 4586-2004	Slip resistance classification of new pedestrian surface materials	◐
AS 1428.1-2009	Design for access and mobility	◐
AS 1657-1992	Fixed platforms, walkways, stairways & ladders. Design, construction and installation	●

design note

For all commercial applications, it is important that sufficient space for the stairwell cavity be allowed to satisfy Australian Standards and BCA requirements.

The footprint is primarily driven by the floor to floor rise, as well as the staircase configuration chosen. However, stringer and balustrade style design may increase the amount of space required. Allowing too small a cavity can restrict the design options of the staircase. Also, points at where the staircase interacts with other structures are best addressed early in the design cycle.

Consultation with Arden early on will help ensure that these design issues can be addressed in a cost-effective manner.



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