

Chapter 2

ROOF SYSTEMS

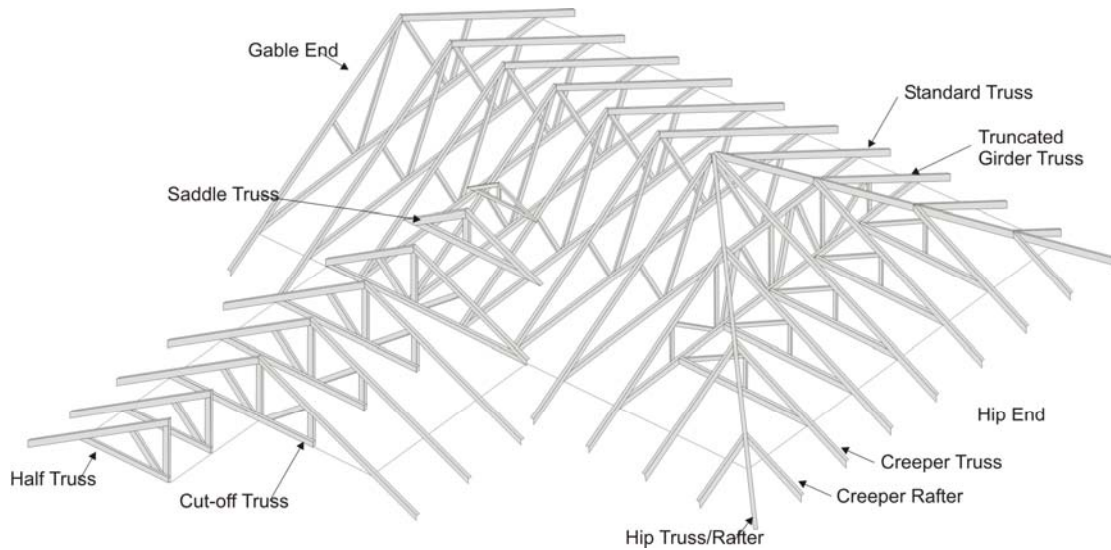
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2.1. SCOPE AND GENERAL

This chapter covers the design of the roof system. It includes the design of trusses, roof panels, rafters, roof battens, ceiling battens and ceiling joists.

Typical roof systems are shown in Figure 2.1. There are many roof styles such as flat, gable, hip etc.



Note: Battens not shown for clarity

Fig. 2.1(a) Typical truss roof system



Fig. 2.1(b) Photo of typical panel roof system

All roof design requires a framing plan which can use trusses, panels or stick by stick construction or a combination of all three. Depending on the shape of the roof, a variety of trusses can be used as shown in Figures 2.2 and 2.3. Roof plans are often generated by computer software, particularly if the roof shape is complex.

Roof battens are used to support the cladding which can be either sheet or tile. Appendix E3 and E4 of the NASH Standard Part 1 provides some guidance for the determination of selfweights of roofs and ceilings. Most residential roofs have a flat ceiling which is fixed to the underside of ceiling joists or bottom chords of trusses with or without ceiling battens.

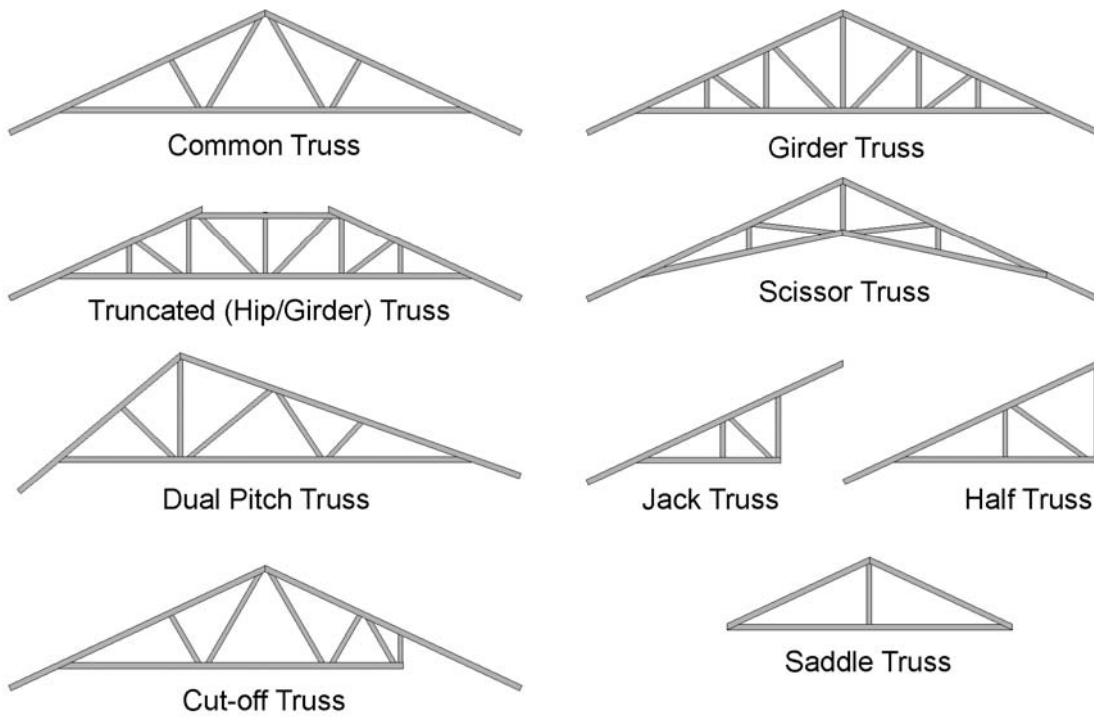


Fig. 2.2 Variety of roof trusses

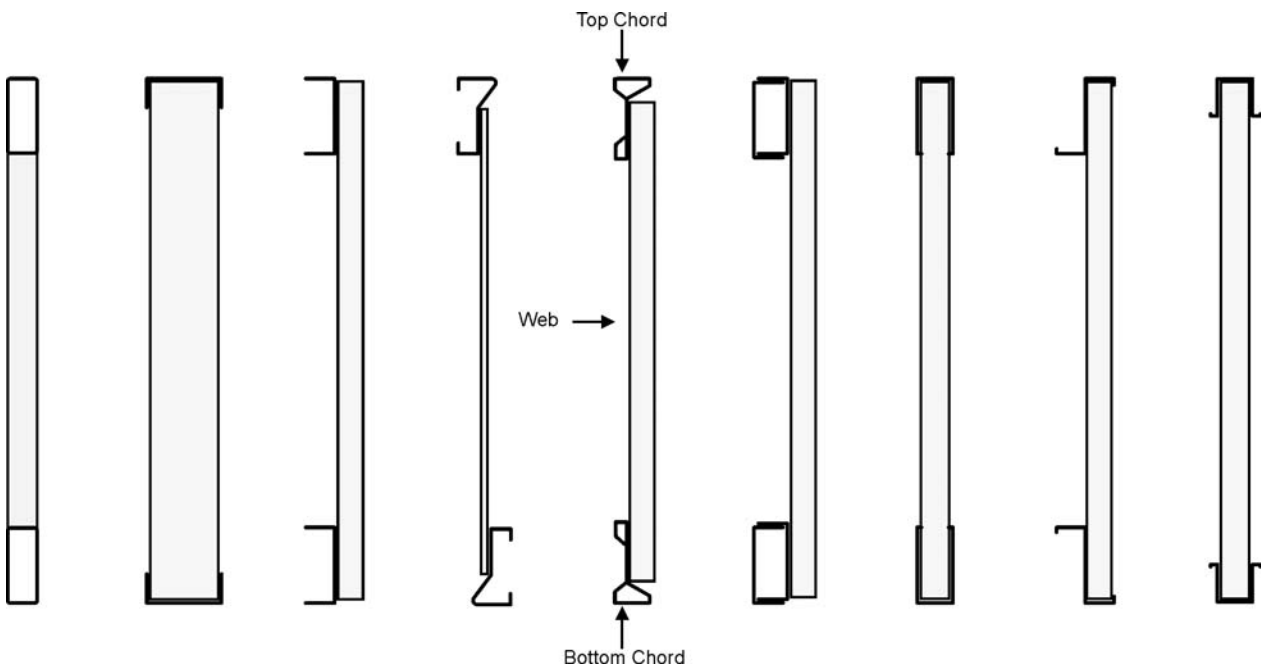


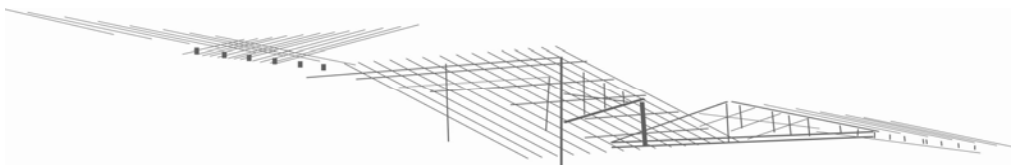
Fig. 2.3 Various truss cross sections



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NASH Handbook

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Preface

Steel framing is commonly chosen for houses and other forms of low-rise construction as it is:

- Cost effective
- Dimensionally stable
- Non combustible
- Termite and borer proof
- Durable
- Strong but lightweight
- 100 percent recyclable
- Consistent in its properties and performance

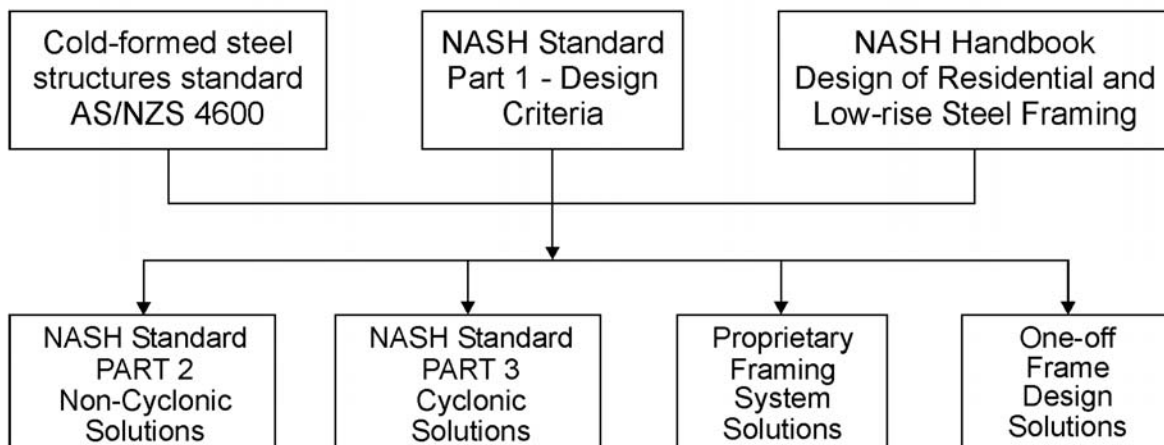
The NASH Standard – Residential and Low-rise Steel Framing Part 1: Design Criteria sets out the design criteria, in terms of structural adequacy and serviceability, for use in the design of low-rise steel framing. This includes houses as well as other low-rise residential and commercial buildings.

This Handbook aims to assist the steel framing designer in the application of the NASH Standard Part 1. However, it does not purport to provide a detailed guide on the use of the Cold-formed steel structures standard AS/NZS 4600 or replace engineering judgement.

The Handbook contains performance data for a number of proprietary components such as screws, rivets, bolts and anchors. This information has been reproduced in Appendices in good faith from information provided by the relevant manufacturers. It has been included to assist the use of the Handbook as a reference for users, but is not exhaustive. Handbook users should contact relevant manufacturers directly for additional performance information.

Two separate Standards (Part 2 & 3) are being developed to provide steel framing span tables and related information and these will be published in due course. The relationship between the Standards and this Handbook is illustrated below.

The NASH web site www.nash.asn.au is regularly updated and provides supplementary information to this Handbook.



National Association of Steel-Framed Housing Inc

NASH is an active industry association centred on light structural framing systems for residential and similar construction. NASH represents the interests of suppliers, fabricators and customers – all those involved in steel framing systems.

NASH's key objectives are to:

- Support the long term growth and sustainability of the steel frame industry.
- Maximise awareness of the steel frame industry in the market place.
- Promote the advantages of steel frames to the building industry and homeowners.

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