Hangar Design and Construction Made Easy

With 30 years of experience and a team of aviation enthusiasts, it is fair to suggest that Thompson Engineering know a thing or two about good hangar design and construction. KiwiFlyer recently spoke with Michelle Thompson who explained the company's capabilities as well as the main factors to consider when building a home for your aircraft.

Hangar Style

Hangars come in several styles, however for strength and versatility Thompson Engineering recommend choosing heavy steel portal frames. These offer extra durability in high wind zones and under heavy snow loading, while not compromising the wide clear span required for aircraft. Both gable and lean-to options can easily be accommodated. The gable style when constructed with a heavy steel portal truss frame gives wide span and excellent overhead clearance as there are no rafters to clutter the roof space. The lean-to is often ideal in smaller situations such as for microlights.

Versatility of design and future proofing are readily provided for in these styles. The heavy steel portal has structural strength to allow the addition of a gantry crane in the workshop area or a mezzanine floor in the apex (great for storage or living quarters) without the requirement to add in a subframe to take the weight. Extensions in the future are also made easy, whether by adding on additional bays or attaching a lean-to.

Recent hangar projects in different styles by Thompson Engineering that are based on steel portal frames with a variety of door options.

Regulatory Compliance

Compliance costs on a poorly designed project can be a moving target, so it is important to consider fire ratings, the building code, drainage, resource consents and local authority requirements in order to ensure that the consent process is a smooth one. Thompson Engineering has a team on hand who handle regulatory issues on a daily basis and can offer as much assistance toward this as may be required.

Flooring Options

Concrete floor finishes should be chosen depending on the end use. Generally a steel polished finish is suitable for most aircraft storage. An option of combining this with a paint system over the top will create an ideal surface for engineering workshops. For high precision areas there are self leveling compounds available, but to date all of Thompson Engineering's customers have been satisfied with the steel polished and/or paint finish combination.

Cladding Options

Colour steel is the usual preference for buildings at an airport or in the flight approach path, as it does not reflect the sunlight like Zincalume. Thompson Engineering offer both a corrugated and 5 rib dek profile option depending on customer preference. Translucent sections can be added to the roof to allow in natural light, however although these are UV protected, they still allow UV into the building and may not be suitable for fabric covered aircraft.

Fire Ratings may need to be considered, especially at an airport if space is tight or walls are located near a boundary. Tilt panels can be one solution to achieve this and these fit well with steel portal frames, slotting in behind the legs and butting into the concrete floor. There are also other cheaper options available and Thompson's understand and are experienced in all of the different systems available for firewalls. This is experience that can easily save time and money.

Door Options

Typically there are three styles of doors that suit the wide opening required for hangars. These are the outrigger where the door opens beyond the footprint of the building to give maximum opening, the stacker style sliding door where the doors slide past each other and stack to one side, and the bifold door which folds neatly up towards the roof. Each door has advantages and disadvantages depending on wall space, building budget and section space. Personnel doors are strongly recommended to allow quick access to the building and are ideal for fire exits or when you just want to nip in and out. A final and most important consideration is bird proofing. Thompson's recommend this be given a high priority as there is nothing worse than the mess of a birds nest inside your cowling, or bird droppings all over your paintwork.

DIY or Complete Service

Thompson Engineering are able to assist customers on site as much or as little as may be required, offering competitive labour rates and very experienced construction teams. Hangars are available as kitsets for the do-it-yourself builder.

Thompson Engineering hangars have been constructed throughout the South Island for many well known commercial operators and the company has plenty of experience at creating freight friendly designs to avoid the use of pilot vehicles or other additional costs. All of Thompson's buildings are designed in-house providing a one-stop option for hassle free construction. Michelle Thompson notes that the idea of purpose-built is to ensure the design is right for you. Contact Thompson Engineering on 0800 688716, email: admin@thompsonengineering.co.nz or visit www.thompsonengineering.co.nz