



## US HANGAR DEVELOPMENT GROUP



## Hangar Costs

Pre-engineered steel hangars are ubiquitous structures, and benefit from the simple form and function they perform in the airport environment. Our experience reveals that corporate flight departments do not focus on the same cost drivers that FBO's do. The reasons for this vary, but have much to do with the "cost center" characteristic of the corporate aviation department as opposed to the need for an FBO to minimize overhead and expenses in order to make a profit.

Almost anyone who has built a hangar on a public airport with an underlying ground lease will tell you that the actual construction of the hangar is the easy part of the process. Many corporations and fixed base operations have tales of an approval processes and lease negotiations that extend for months or even years. Once the underlying lease is secured, building the hangar becomes a matter of adopting a particular approach to the construction, and following through. Most heads of corporate flight departments state that the thing they would do over again if they had the chance would be not to hire an architect. Because pre-engineered steel buildings are made by a variety of manufacturers, dealers in various locations are now equipped with all of the engineering capacity to produce a design/build structure which will fulfill virtually all of the requirements required by any corporate flight department. We know how to manage this process and save our client's money.

Because corporations are structured environments, there is an inherent tendency to commission an architect to reinvent the wheel. The design process is then extended, and adds unnecessary cost to the completed project. This is where experience proves invaluable in delivering a product functional for corporate flight departments for less cost.

Our team is led by a disabled military veteran, lifelong pilot and aviation construction expert. U.S. Hangar Development Group (USHDG) has a great degree of familiarity with on-airport structures, and we only turn a project over to another architect when necessary. As a result, our clients benefit from the significant savings which can be produced by allowing the USHDG to design the structure around the particular capabilities of the building system utilized and engage architects only when required. Typical architectural and engineering fees average around 7% of the total project cost, but utilizing our approach leverages our experience and knowledge providing significant cost savings for a large portion of those fees if our client so elects.

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For both corporate and FBO hangars, site preparation is the most pervasively variable component of any large hangar project. If a parcel of unimproved land is level, served with all utilities, and is adjacent to vehicular access roads, then the costs incurred with its development are nominal. The installation of utilities, along with the topographic configuration of an airside site can add 10% to 30% to a project's cost depending on location and the extent of work required. The demolition of improved structures becomes problematic regarding unknown conditions that must be investigated and tested prior to site design.

In addition to the particular characteristics which apply to the site as a whole, the specific capabilities of the apron and aircraft maneuvering area can also have an effect on cost. Many airports are quite specific regarding the technical specifications of the apron area which they allow to be built on a property. Depending on the airport's policy, an FBO or a corporation may be required to install a heavy duty concrete apron area with a prescribed thickness and load bearing capacity. This may represent an over-improvement with relation to the particular weight and size aircraft actually to be operated on the apron, but still is a conditional requirement when building on the airport. These variables/constraints are important issues to address throughout the pre-planning stage.



Most of the building codes which govern aircraft hangar construction in the United States and internationally are often bastardized versions of the same rules which apply to similar use structures such as public garages for cars. These generic building codes can leave a number of gray areas.

One of the most critical costs relating to hangar development is fire suppression. Large hangars in excess of 10,000 square feet are often required to have both water and chemical type fire suppression systems. The basic cost of a high deluge water and foam system adds approximately \$10 per square foot to a hangar's construction budget. However, the risk carrier insuring the proposed housed aircraft can provide construction guidelines/details that, if adopted, can provide significant premium savings to offset these additional cost considerations. These additional initial costs typically have a payback period of between 2-4 years relative from the time required to recover those costs through realized premium savings.

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Oftentimes, the hangar's location on the airport and the type of activities which take place within it can convince local officials to grant variances in the code based on their perception of the potential for a hazardous fire occurring within the structure. These negotiations and discussions take a considerable amount of time to achieve best case results.

When FBO versus corporate hangar costs were analyzed one of the most important reasons why FBOs construct the same hangar project for less cost is that there seems to be the greater familiarity with the hangar development and construction process. It is this attribute that USHDG brings to its clients. It is the experience of the team at USHDG that provides this same intangible benefit in driving value to its customers. Only experience in this very specialized industry sector can provide this benefit, not building contractors, but aviation constructors.

In addition to the greater body of general knowledge, FBOs have a strong motivation to build hangars as cheaply as possible. Every dollar spent unnecessarily adds a burden to that particular location and makes it harder to make a profit. USHDG utilizes this same philosophy and provides upfront profit considerations for our clients to understand and then take off in providing them the best cost savings we can, based upon our experience, so they are the benefactors of our knowledge and experience.

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