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## Estimating Steel Building Installation

As with all types of construction, setting up or installing a pre-engineered steel building, comes down to time, material, equipment and overhead. This simple outline is designed to assist Builders who may not have vast amounts of experience, in getting an idea of how to estimate the time and material, erecting (as it's commonly referred to) a **high quality** metal steel building. The brand and quality of the structure can vary drastically and will have a great impact on the length of time and labor cost. Make sure that you have educated yourself to the brand and quality of steel building prior to purchasing or contracting a builder to erect it. The customer service provided by the Builder or their steel building manufacture will be very critical to your construction schedule and final cost. It is suggested, prior to purchasing or contracting an erector that you investigate the customer service offered by the provider, as well as contacting and speaking with a knowledgeable factory representative. Erectors who must sit on the jobsite, hoping for a return call, is one of the most expensive waste of labor dollars.

Erecting steel buildings can be very dangerous. Be sure to be aware of and follow all safety procedures required by law, OSHA, and all other applicable safety standards. If you are not experienced, it is highly recommended that you use a professional and properly insured erector who has the knowledge and experience with the specific brand of building to meet your requirements.

**The following guidelines are based on some national average assumptions and are for estimating purposes only. They are not intended to provide a detailed or accurate cost for a specific building. As is commonly known in the industry, there is really no such thing as average!**

The following items give you just a few of the variables in each specific geographical area that will need to be considered when estimating the erecting of a steel building.

1. **Weather Conditions** - wind, cold, heat and snow can all have an impact on the work schedule.
2. **Labor** - Availability of labor personnel as well as the hourly wage of experienced labor.
3. **Equipment Required** - Cost of Local Equipment Rental, Lease or Purchase.
4. **Site Conditions** - Working in a large level area will be much faster that working on the side or mountain top!
5. **Insurance Cost** - Many "gypsy" erectors do not carry insurance at all and pay cash to their labor to avoid workmen's compensation, general and other liability insurances. Request copies and make sure that each Builder or erector carry's the appropriate insurance coverage.
6. **Complexity of Structure** - a simple box building will be much faster than a complex building with 2-story mezzanines, mansards, roof hips or valleys, exterior stucco or other types of aesthetic added value products.
7. **Clear Span Width of Building** - clear span buildings over 60-80' wide can take more time due to the safety requirements and equipment needed to handle longer and heavier beams.
8. **Travel Time to Jobsite** - obviously the amount of time to get to the site each day or travel cost if applicable, will influence the final cost.

In order to start to estimate the time and material, first you will need to estimate the man hours required to determine the man-hours per square foot of building.

- (Gypsy erectors often can do a box 2400' building in as little as 4 days or .04 (mhrs) per sq.ft.)
- Based on national averages of an experienced 4 man crew, the average time to erect a small 40 x 50 x 14, (2000') is 4-5 days. To estimate the man hours (mhrs) based on these averages:
- Calculate: 4 men at 8 hours per day = 32 man-hours per day. 32 (mhrs) per day x 5 days = 160 (mhrs) per week.
- Divide 2000 sq.ft. by 160 = **.08 (mhrs) per square foot.** (Average .05-.10 per square foot)

Once you have estimated the man-hours per square foot, you can estimate the labor cost by taking the total man hours times the hourly wage per person.

Next, you would take the total number of days that you would need equipment rental and calculate the equipment rental cost and transportation.

Now, add your appropriate overhead for your monthly business expense. (Average 10- 25%)

Don't forget to add travel time, insurance cost or any of the other above mentioned or job specific items.

**Example: 40 x 50 x 14**

2000 x .08 = 160 total man-hours x \$25.00 per hour average	\$4,000.00 Labor
160 total (mhrs) divided by 32 (mhrs) day = 5 days rental at \$500/day	\$2,500.00 Rental
Travel time and expense at \$100/day (100 miles)	<u>\$500.00 Travel</u>
Subtotal	\$7,000.00
Add profit at 20%	<u>\$1,400.00</u>
<b>Total Erection cost (\$4.20')</b>	<b>\$8,400.00</b>

**Example: 100 x 100 x 18**

10,000 x .06 = 600 total man hours x \$25.00 per hour average	\$15,000.00 Labor
600 total (mhrs) divided by 32(mhrs) day = 18.75 days rental at \$500/day	\$9,500.00 Rental
Travel time and expense (within 1 hour of jobsite)	<u>No Charge</u>
Sub-total	\$24,500.00
Add overhead at 20%	<u>\$4,900.00</u>
<b>Total Erection Cost (2.94')</b>	<b>\$29,400.00</b>

These examples are given only as guidelines to assist a Builder in a method of evaluating final cost as you complete the work. Learning how to estimate the hours will also give the Builder some guidelines in ball parking the time and equipment rental to calculate if the rates of a sub-contract erector are reasonable. There are many other methods for estimating erecting cost and nothing is a substitute for experience.