HCW

Estimation System

OVERVIEW & INSTRUCTION MANUAL

June 2024

HCW Estimation System

STEEL BUILDING ESTIMATION SYSTEM

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OVERVIEW

Our Goal:
To provide the small to mid-sized weld-up steel building companies a quick, cost effective service for estimating, quoting, ordering, fabricating, and erecting steel buildings.

The HCW Steel Building Estimation System originated from our own need for a solution to streamline our operations and become more efficient. Finding no existing program that suited our needs, we developed this System. Recognizing the immense value of this tool, we have refined it to service your needs.

Our Estimation System has been designed to efficiently facilitate the necessary processes of: quoting, ordering, fabricating, and erecting Weld-up Standard Buildings with options for framed openings for windows and Overhead doors, lean-tos, partition walls, and interior wall liners. This System has been designed to accurately create material take-offs, estimate material costs, compute material cut dimensions, and to create accurate material orders.

With as few as 30 data entries on a Google Form, the HCW Steel Building Estimation System can quantify your entire Weld-up Standard Building project. The building information that you, the user, provides will be automatically submitted to our office. Our highly qualified staff will process your submission through the System and return results within (2) business days.

HCW has been in the weld-up steel building arena since 2001, and we understand how much time is required to create accurate building estimates, quotes, orders and shop plans. We also know that TIME IS MONEY! This System is designed to eliminate hand calculation errors, and save your company time by calculating building information for you. The entire process to enter and submit all building data can take place in a matter of minutes. The goal is to help you get accurate and professional looking information back to your customer quickly. Also with more precise ordering, your company will save time and energy correcting ordering mistakes. This System may become one of the most valuable tools you can possess.

SYSTEM FEATURES

- ➔ Easy to understand program with clear reports that compute all needed materials for a Standard weld-up building, including: framing, PBR sheet metal and trim, accessories; as well as, provide shop build specifications for clearspan buildings.
- ➔ Customer support by a highly qualified staff.
- ➔ Data can be entered via a mobile device or a computer.
- ➔ The System is designed to calculate the exact length of each necessary component for the building and determine what stock material length each member should be cut from in order to have the least amount of waste.
- ➔ All submitted projects and their reports will be organized, stored and available for modifications, in the event you need to revise or revisit a past job.

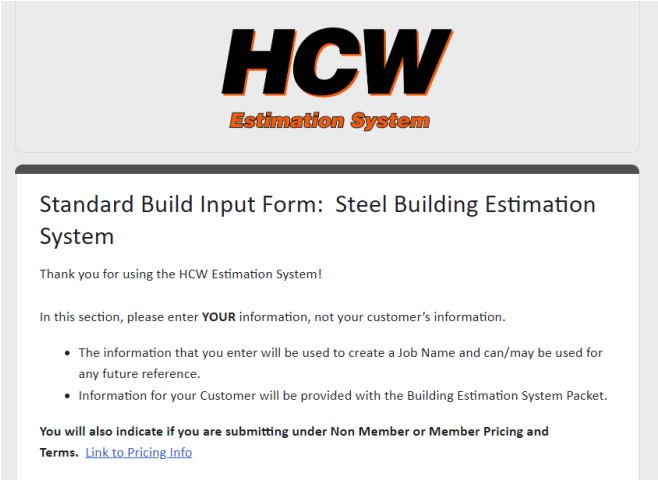
This System is designed to ease the necessary burden of defining the information needed to: quote, order, fabricate, and the erect Weld-up Standard Clearspan Buildings. Every effort has been made to ensure that the information created by this System is accurate, however ALL information should be reviewed thoroughly by the user. The standards used for the calculations in this System are based on many years of weld up steel building construction experience, both engineered and non-engineered. The information created by this System should not be used in lieu of proper engineering and use of this information does not guarantee, in any way, structural soundness.

ENTERING BUILDING INFORMATION

The user will answer questions and enter dimensions on a user-friendly Google Form: **Standard Build Input Form: Steel Building Estimation System**. Once submitted, The System will quantify the user's entire Weld-up Standard Building project! [Standard Build Input Form Link]

The Input Form: Steel Building Estimation System can be used on a mobile device or computer!

Example below:



HCW Estimation System

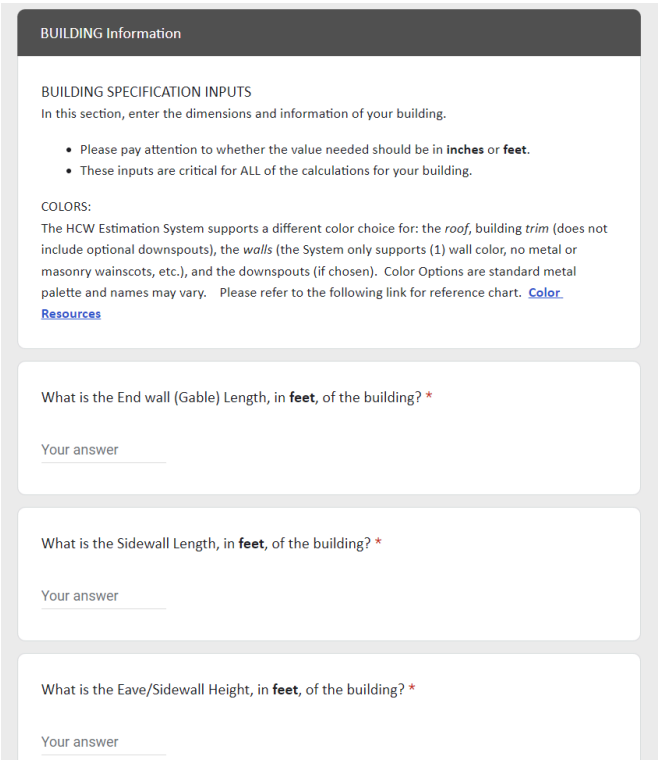
Standard Build Input Form: Steel Building Estimation System

Thank you for using the HCW Estimation System!

In this section, please enter **YOUR** information, not your customer's information.

- The information that you enter will be used to create a Job Name and can/may be used for any future reference.
- Information for your Customer will be provided with the Building Estimation System Packet.

You will also indicate if you are submitting under Non Member or Member Pricing and Terms. Link to Pricing Info



BUILDING Information

BUILDING SPECIFICATION INPUTS
In this section, enter the dimensions and information of your building.

- Please pay attention to whether the value needed should be in **inches** or **feet**.
- These inputs are critical for ALL of the calculations for your building.

COLORS:
The HCW Estimation System supports a different color choice for: the *roof*, building *trim* (does not include optional downspouts), the *walls* (the System only supports (1) wall color, no metal or masonry wainscots, etc.), and the downspouts (if chosen). Color Options are standard metal palette and names may vary. Please refer to the following link for reference chart. Color Resources

What is the End wall (Gable) Length, in **feet**, of the building? *

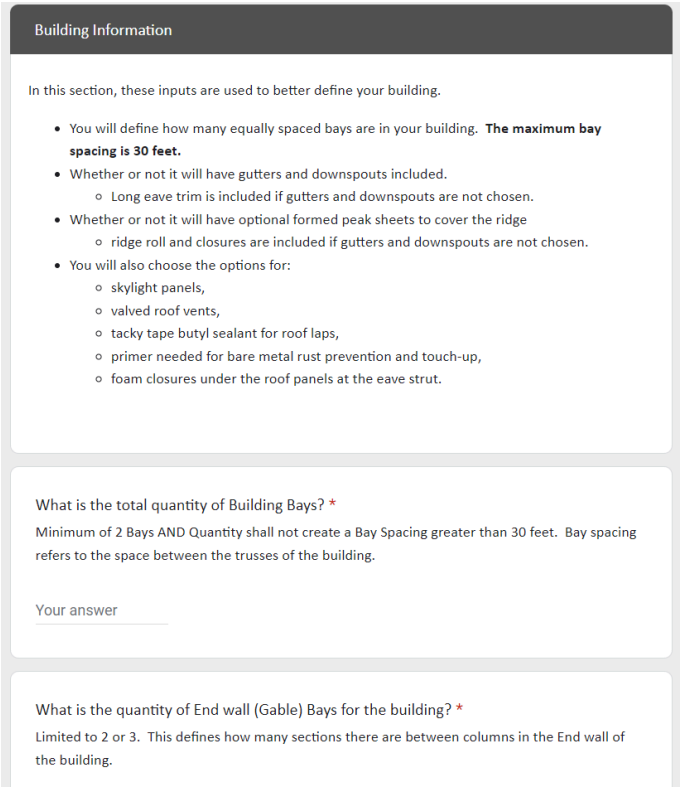
Your answer

What is the Sidewall Length, in **feet**, of the building? *

Your answer

What is the Eave/Sidewall Height, in **feet**, of the building? *

Your answer



Building Information

In this section, these inputs are used to better define your building.

- You will define how many equally spaced bays are in your building. **The maximum bay spacing is 30 feet.**
- Whether or not it will have gutters and downspouts included.
  - Long eave trim is included if gutters and downspouts are not chosen.
- Whether or not it will have optional formed peak sheets to cover the ridge
  - ridge roll and closures are included if gutters and downspouts are not chosen.
- You will also choose the options for:
  - skylight panels,
  - valved roof vents,
  - tacky tape butyl sealant for roof laps,
  - primer needed for bare metal rust prevention and touch-up,
  - foam closures under the roof panels at the eave strut.

What is the total quantity of Building Bays? *

Minimum of 2 Bays AND Quantity shall not create a Bay Spacing greater than 30 feet. Bay spacing refers to the space between the trusses of the building.

Your answer

What is the quantity of End wall (Gable) Bays for the building? *

Limited to 2 or 3. This defines how many sections there are between columns in the End wall of the building.

ENTERING BUILDING INFORMATION, cont.

In addition to answering questions and entering dimensions so The System can compute all materials needed to complete the user's project, the user will also answer a few questions that will allow The System to recommend a price to charge the user's customers.

- ➔ The user can enter the percentage amount of markup the user wants to be calculated with the material estimate. *We recommend 30% markup if you buy all of your material at wholesale prices.*
- ➔ The user can enter the price per square foot for fabrication and erection. *We recommend $10.00 to $15.00 per square foot depending on the complexity of the project*
- ➔ The user can enter the amount of sales taxes that the user pays on materials so that the System can accurately estimate the costs.

If the user prefers to gather information on paper before starting a submission on the **Standard Build Input Form**, download a copy of *New Project Form, HCW Estimation System*. It can be found on our website under Resources. New Project Details It is organized to aid in filling out the **Input Form**.

SYSTEM OUTPUTS

The user will receive a **HCW Estimation System Packet**, in pdf form, for each Building Submission. A sample of a complete HCW Estimation System Packet can be found on our website.

HCW Estimation System Packet includes:

1) Materials Summary
2) Material Report
3) Shop Build Sheet
4)Building Reference Diagram
5) Framing Material Order Sheet
6) Stock Purlin Order Sheet
7) Custom Purlin Order Sheet
8) Panels, Trim, Accessories Material Order Sheet
9) Building Proposal

➔ **Materials Summary**: A summary of the building. It provides shipping weight(s), estimated material costs, markup percentages, estimated total sale price, material cost per square foot, total sale price per square foot. *(*HCW also offers custom, ready to erect weld up kits. See more information at the end of this document.).*

➔ **Material Report:** A breakdown of all needed materials, with actual material cut lengths, colors and assembly locations for reference.

➔ **Shop Build Sheet:** Representative drawings of an endwall frame, a clear span frame, and lean to(s) with dimensions for fabrication purposes. *(Drawings are representative only, not to scale. ALWAYS refer to listed dimensions!)*

➔ **Building Reference Diagram:** Diagram of the type of building this resource uses to determine materials needed, based on assembly of this type of construction.

➔ **Material Order sheet(s):** Summarizes the Material Report page by consolidating each material size and putting it into an easy to read format, that will facilitate ordering material for the building. These pages are ready to send to the user's vendors / suppliers. There are two options for purlin order sheets: Stock Length Materials or Custom Rolled Purlins.

➔ **Building Proposal:** Provides the specifications for the building project. This page is a resource provided by the System for the user to offer to the user's customer. The Building Proposal includes a place for the user to input the desired sales price for the building, as well as, the user's customer's information. This page can be used to present specifications and the user's pricing for the project to the customer for their approval. Dimensions for the concrete foundation, with tin ledge included, are also listed. (door block-outs, etc. are site located and are not listed.)

SYSTEM SUPPORTS

- (4) sided structure with all four sides solid sheeted.
- The Building must have a standard load, width, and eave height.
- All buildings and Lean-to(s) are designed to be erected on concrete foundations.
- Wet Set Embed plates to be installed in the concrete foundation are calculated by the System, and are to be site located based on the provided dimensions of the building. (Embed plates can be substituted by the installer with bolt plates if necessary)
- Equal bay spacings on the building and Lean-tos.
- Roof framing is designed to utilize by-pass Cee Purlins and is designed to be Clearspan trusses.
- Wall framing is designed to utilize flush-framed Cee Purlin wall girts.
- Nail anchors are calculated (24” o/c) to install base angle.
- OH door frames, both eave wall and end wall located, are supported (Some wall panels are left off the calculation when OH door frames are eave wall located, no wall panels are left off the calculation when OH door frame are End wall located) ALL OVERHEAD DOOR FRAME SIZES MUST BE VERIFIED BY THE USER AND SHOULD NOT EXTEND TO WITHIN TWO (2) FEET OF THE TOP OF THAT WALL THAT IT WILL BE INSTALLED IN TO ALLOW FOR PROPER CLEARANCE FOR DOOR HARDWARE.
- Overhead doors can be Eave wall located (as long as the location does not interfere with a structural column), offset end wall located, or end wall located at center of wall (centered at peak). Eave wall OH door jamb members are calculated to reach from the foundation to 1” below the eave strut member. End wall door frames can and may replace end wall columns. (The columns are still included in the material order even if the door frame will replace the column.) End wall OH door jamb members are calculated to reach from the foundation to 2” below the end wall truss beam member.
- **Optional estimated calculation for Primer (Red Oxide) to coat all non primed metal.
- All doors, windows, and accessories are to be field located

SYSTEM SUPPORTS, cont.

- Standard Buildings are designed to utilize the Diaphragm Action of properly installed wall and roof panels on flush-framed walls acting as one unit to resist longitudinal wind force. X bracing not calculated but can be added on site.
- PBR panel metal profile supported.
    - Eave wall panels are calculated to be cut at the exact eave height (Panels will be installed 1.5” down from eave strut when utilizing a tin ledge in the concrete foundation). The System will remove some panels when there are eave located overhead doors, so as not to have much, if any, material overage.
    - End wall panels are calculated to be stagger cut by the manufacturer according to the building’s roof pitch (Panels will be 1.5” down from rake angle when utilizing a tin ledge in the concrete foundation). 1:12 and ½:12 roof pitch are calculated to be stagger cut by the manufacturer and designed to be installed as is with no on site cuts. The System will not remove any panels when there are endwall located overhead doors. The System, by default, adds (2) of the longest length panel to every order output to give the installer some spare panels.
    - Roof panels are calculated for a 0” to 6” overhang from the eave strut, no extras.
    - Single color walls only are supported. (no metal wainscot)
    - **Optional Formed Peak sheets. (Ridge roll is is included with outside R panel Closures if formed peak sheets are not chosen)
    - **Optional Skylight panels (PBR), the System calculates 2 panels per building bay.
    - **Optional valved roof vents. (quantity determined by the user)
    - **Optional Tacky tape roof sealant. (for roof panel lap joints only)
    - **Optional Foam Closures. (under roof sheets at eave strut)
- Standard Trims are supported
    - ** Optional Gutters and downspouts (Long eave trim is included if gutters and downspouts are not selected). Gutters are calculated to have a 2” overlap at the joints.

SYSTEM SUPPORTS, cont.

- Standard Trims are supported, cont.
    - **Optional different color for downspouts.
    - Quantity of downspouts is automatically determined by a formula based on rainfall amounts in and around Texas.
    - **Optional OH door jamb liner trim.
- TEK Screw quantity to allow for double screws at base of walls and double screws on roof at eave strut, and includes a minimum 5% buffer.
- LAP screw quantity to allow for stitch screws every 24” o/c for every panel.
- Lath screws calculated for trim fasteners. When ordering, substitute pop rivets for lath screws if the installer prefers pop rivets.
- **Optional Interior wall liner calculated for full interior perimeter (7’6” tall PBR). Panels and TEK screws only, no lap screws.
- **Optional Lean-to’s with optional flat skirting on three sides, attached to an eave of an existing structure, are also supported. (2) different sizes of lean-tos supported. *NOTE: Lean-to roof pitch is designed to be the same as the building roof pitch. It is recommended that the building roof pitch be **1/2:12 or 1:12** when Lean-tos will be attached.*
- **Optional Partition walls calculated with intermediate columns, wall girts, base angle for top and the base of the wall, panels, screws, and nail anchors. No trim is calculated for partition walls.
- Window frames are site located (so long as the location does not interfere with a structural column). The System calculates for (2) jamb members that match the material used for wall girts that extend from the base member to the underside of the first wall girt, and (1) sill member per window. The System also calculates for head and jamb trim for each window. The header member is the wall girt which is located at 86” from the foundation.

SYSTEM DIMENSIONAL LIMITS

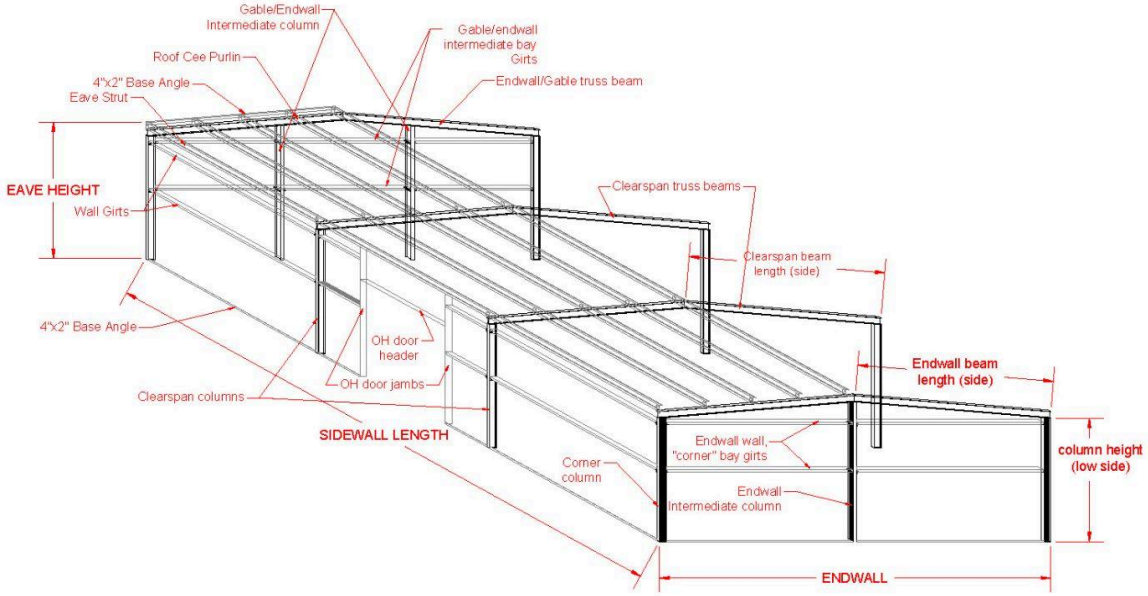
- Building:
  - Able to calculate ½:12, 1:12,2:12,3:12,4:12,5:12 or 6:12 roof pitches.
  - 60’0” End wall length, with Clearspan Trusses
  - 513’0” sidewall length
  - 20’0” eave wall height
  - 6:12 maximum roof pitch
  - Maximum bay spacing: 30’

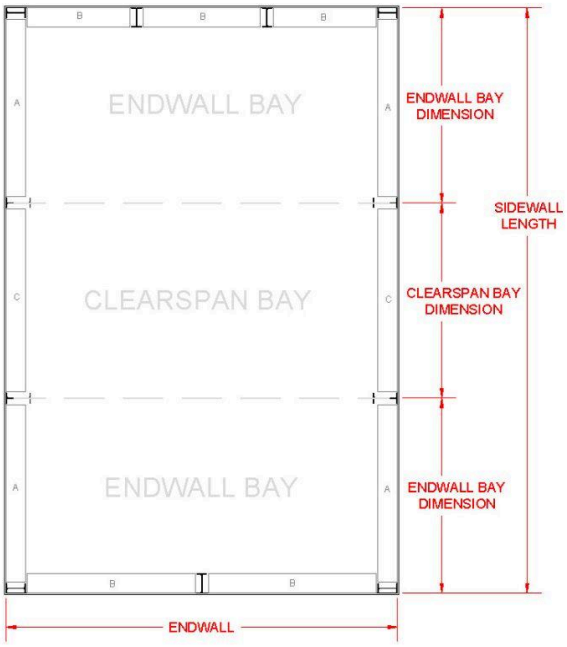
- Lean-To(s):
  - 32’ extension from building.
  - Bay spacing and roof pitch will match the building.
  - Lean-to bay spacing must equal the building bay spacing. (the length of the Lean-to must be a multiple of the bay spacing)
  - Lean-to roof pitch is designed to be the same as the building roof pitch. It is recommended that the building roof pitch be **1/2:12 or 1:12** when Lean-tos will be attached.
  - Optional skirting must not extend more than 5’0” down from top of eave strut.

Pre Fabricated WELD UP KITS

HCW fabricates and delivers complete weld-up kits. Kits include custom cut purlins, beams, columns with clips pre welded in the correct locations, fully primed frame with panels, trim and all accessories needed, delivered to your jobsite…ready to assemble! Kit pricing includes free delivery up to 50 miles from Athens, Texas, anything farther will incur an added delivery fee. Weld-up Kit buildings typically have a 4 week lead time. Weld-up kit buildings require a 25% deposit and the balance will be due upon delivery. Typical lead time on kit fabrication is four (4) weeks. Contact our office for details and pricing!

EstimationSystem@hortoncustomwelding.com or 903.880.9070.


Gable/Endwall Intermediate column
Gable/endwall intermediate bay Girts
Roof Cee Purlin
4"x2" Base Angle
Eave Strut
Endwall/Gable truss beam
EAVE HEIGHT
Wall Girts
Clearspan truss beams
Clearspan beam length (side)
4"X2" Base Angle
OH door header
OH door jambs
Endwall beam length (side)
Clearspan columns
SIDEWALL LENGTH
Endwall wall, "corner" bay girts
column height (low side)
Corner column
Endwall intermediate column
ENDWALL


ENDWALL BAY
ENDWALL BAY DIMENSION
SIDEWALL LENGTH
CLEARSPAN BAY
CLEARSPAN BAY DIMENSION
ENDWALL BAY
ENDWALL BAY DIMENSION
ENDWALL

FAQ

Q: I need a framed walk-through opening for a residential door, plastic strips, or just a passageway. Does this system support that?

A: Yes, use the window input function, enter the opening width you want as the window width, and enter the height as 88". This will calculate the needed materials for the framing and trim that you will need for a walk-through framed opening.

Q: I need a walk through door in my partition wall. How do I add that?

A: Simply add the desired quantity of walk-through doors to the input for walk-through doors for the building. The framing dimensions for the partition wall will accept the walk-through doors.

Q: I want to build a pavilion style building (a building with no wall framing and skirts only). Does this system support that?

A: Currently, we do not support that style building, but we have plans for it to be included in an update soon.

Q: Does this system support cantilevered roof on the eave walls?

A: Currently, we do not support cantilevered roofs, but we have plans for it to be included in an update soon.

Q: Does this system support the calculations for roll fiberglass insulation?

A: Currently, we do not.

Q: Does this system support Lean-tos with a different roof pitch than the main building?

A: Currently, we do not. Lean-to roof pitches will be calculated to be the same roof pitch as the main building.