

# “How Much Does it Cost?”

## Calculating Construction Costs

We are often asked: “How much does it cost to build a house?”. This is a simple question that does not have a simple answer. There are many things that must be taken into consideration and some vary from project to project. You might hear something like “I can build a house for X dollars a square foot.” Then you plug that number into your calculator, multiply it by the square footage of the house you have in mind and there’s your answer.

How easy! Except, not really...

While no two houses are alike, many are similar enough to take this approach, but only if you lock in some variables before crunching the numbers. First, you need to determine which square footage (sf) number you are using. Houses have two different square footage calculations, heated and unheated. Heated square footage is the portion of the house that is climatized and unheated square footage is not heated and cooled, like the attic and the garage.

Typically, builders will use the heated sf count to calculate cost of construction, without considering the unheated portion. But what if you plan to build an attached garage? The garage can be expensive to build and should be considered. Unlike other rooms of your house, the garage must have a concrete floor<sup>1</sup> requiring a perimeter footing, a spread footing in the centre, rebar, mesh, plastic, manual labor to install and finish, and approximately 9 to 15 yards of concrete. Add in a garage door and motor, electric car charging ports and finished stairs leading from the garage into the house, and this becomes a significant cost that you don’t want to leave out of construction calculations.

Conversely, a typical set of construction drawings calculate attic space as unheated sf. In most cases you don’t need to pay much attention to this, unless you are building an ‘expandable’ attic. Expandable attics are attractive to buyers and add value to the sales price, typically making a future buildout of that area a fairly straightforward process. While an expandable attic may not look like much to the untrained eye, they do come with real added expense. At a minimum, it includes a floor system and plumbing costs. The builder might also rough in electric, HVAC, add additional windows and potentially build a finished set of stairs leading up to the space. A finished stair can help potential buyers see that this is an area of the house that they will want to build out in the future, adding tangible value to the house. While mostly optional, these costs should be evaluated.

Similarly, if you are building a basement this is another often overlooked but very important space to consider. Basements are comparably more expensive than any other area of a house as they require additional site excavation and are typically constructed of 8” thick concrete walls with a 5” thick concrete slab and footings. They are also similar to an expandable attic in that they will likely have future amenities roughed in and finished stairs leading to them. If the basement will be fully built out, the additional costs of concrete, etc. should be added to the sf estimate. But even an unfinished basement can add forty to sixty thousand dollars to the cost of a typical build, yet potential investors sometimes overlook them while doing their square footage calculations.

Getting back to our original query, perhaps the first question should now be “how do you calculate square footage” followed by “what is the typical square footage cost?” of a project similar to the one you are contemplating. I find the following formulas to be helpful:

Cost to build a typical house with an attached garage:

Heated sf + garage sf X builder’s cost per sf = approx. cost of build.

Cost to build a typical house without an attached garage:  
Heated sf X builder's cost per sq ft = approx. cost of build.

Variations:

Heated sf (and attached garage if applicable) + cost of expandable attic<sup>2</sup> (if applicable) + cost of detached garage (if applicable) + cost of basement (if applicable) = approx. cost of build

These methods of calculating construction cost are quick estimating tools at best, typically only used to try to match the cost of a potential lot and build with an estimated future sales price in order to assess whether or not a lot is a good candidate. Your actual cost of construction will depend on many factors such as finish level<sup>3</sup>, lot development costs<sup>4</sup> that are unique to the property, and any other element that would deviate from a typical project.

Lastly, the most overlooked elements of construction costing are the intangibles. These are things like the amount of time it will take to get a project from lot acquisition to a completed and sold project. In areas like historical districts or overlay districts<sup>5</sup> with complicated zoning rules it can take much longer than normal to get a project through the compliance stage of the timeline. While a difficult element to put a dollar cost on, this must be taken into consideration as the holding costs and project turn over time could determine the viability of a project.

Final cost analysis formulas:

Cost of lot + estimated land development cost + square footage price = estimated project cost  
Estimated future sales price - estimated project cost - real estate commission<sup>6</sup> = gross estimated profit

While square footage pricing is a good tool for gauging a project's potential, there is absolutely no substitute for a solid construction budget built from recent historical construction cost data, and even this is only as accurate as it is current. Lumber prices fluctuate month to month, sometimes wildly. The cost of other raw materials and labor can also fluctuate within short periods of time. So, no matter how straightforward a project's cost seems, it is important to analyze it carefully, then re-analyze it often throughout the project's life span.

<sup>1</sup> In recent years concrete has become a very expensive building material

<sup>2</sup> Attic floors are usually only built for light storage, consisting of some OSB (use the full name) attached to ceiling joists. An actual floor system is built of joists and is engineered to handle the additional weight of flooring materials, cabinets and countertops, furniture etc. For quick estimating purposes we use 60% of the builder's finished sf cost when calculating expandable attic pricing.

<sup>3</sup> Finish level refers to the cost of amenities such as hardwood flooring, upgraded tile and built-in shelving, appliances and any other add ons.

<sup>4</sup> Lot development costs can include demolition of existing structures, rock and debris removal, soil remediation in the case of large voids or structurally compromised soils (old buried trash pits), tree removal and lot clearing, topographical considerations, etc.

<sup>5</sup> An overlay district is an area that has additional zoning regulations such as the Beltline Overlay District in Atlanta. Tighten this up and state accurately

<sup>6</sup> Real estate commissions are typically 6% of gross sales price.