

COST ANALYSIS

We first survey the plot, then draw the model;
And when we see the figure of the house,
Then we must rate the cost of the erection;
Which, if we find outweighs ability,
What do we then but draw anew the model.

- William Shakespeare



COST ANALYSIS



Cost Analysis is a comprehensive breakdown of all expenditures related to the Design/Build process. The following list is a line item representation for a typical residential project **combining hard and soft costs**. Strive for accuracy as each item is assigned a cost. Assigning accurate costs will be an extension of estimating activities except these numbers will be **based on Trade Contractors' and Suppliers' bid proposals**.

WITHOUT any formal contracts or binding agreements, an Owner can solicit proposals from a Trade Contractor or Supplier for each type of work to be performed. You will need copies of **Drawings and Specifications** to circulate among bidders so be prepared to own a set of six to eight copies. **Remember:** Two copies will eventually be submitted to the building department for their review so keep these in **clean condition**. If you purchase stock Drawings (set of 8 copies) from a plan service and attach a copy of your Specifications to each set, then Trade Contractors **will make proposals based on same product types, sizes, and quality**.

After the first round of proposals, you will be able to embellish your set of files **matching the major categories** of the Design/Build Matrix (See "Design Development" on Page 9-10). All items of the **COST ANALYSIS** will be grouped under both dimensions. Most soft costs will be grouped under the Design dimension, and here's where your **SAVINGS** really occur. The proposals for labor and materials are **fairly fixed** as hard costs but ingenuity and motivation to do some of the work associated with the soft costs will save money. For example, costs for coordination of bid proposals from Trade Contractors and Suppliers are mixed between Design and Build dimensions, and may be considered part of both the "Builder's Overhead" and "Designer's Bid / Negotiations." Doing this work yourself creates "sweat equity" in your project.

A second round of bid proposals from different Trade Contractors and Suppliers will add a competitive edge to this endeavor as each business attempts **TO WIN** your contract. A more detailed description for dealing with Trade Contractors and Suppliers appears in the following sections.

HARD AND SOFT COSTS

NOTE: (See "Cost Ledger" on Page 130)

1. Architect/Designer's Fee
(See Fee Breakdown from "*Budget Estimate*")
2. Site Survey
3. Permits:
 - Building
 - Water
 - Septic/Sewer
 - Electric
 - Plumbing
 - HVAC
4. Install Electrical Service
5. Install Water Service
6. Excavation
7. Hauling
8. Environmental Protection
9. Framing Lumber
10. Framing Hardware
11. Sealants & Adhesives
12. Concrete:
 - Pads
 - Footings
 - Walls
 - Floors
 - Sidewalks
 - Steps
 - Patios
 - Driveways

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13. Draintile and/or Dispersal Trench for Stormwater Control
14. Downspout Drains
15. Damp and/or Waterproofing
16. Reinforcing Steel
18. Anchor Bolts
19. Sheet Metal Flashing
20. Backfill
21. Exterior Doors:
 - Prefinished
 - Prehung
 - Handles
 - Deadbolts
 - Thesholds
22. Asphalt Paving
23. Roofing:
 - Felt Paper
 - Flashing
 - Vents
 - Shingles
24. Garage Doors
 - Openers
25. Windows and Skylights
26. Doors:
 - Sliding
 - Specialty
 - Shower
 - Include Hardware
 - Include Finishes

27. Mirrors
28. Medicine Cabinets
29. Glass & Glazing
30. Brick Veneer or Masonry
31. Stone Veneer
32. Fireplace/Wood Stove
33. Chimney/Vent Stack
34. Insulation:
 - Foundation
 - Floor
 - Walls
 - Ceiling
 - Fire Stuffing
 - Weatherproofing
 - Soundproofing
35. Plumbing:
 - Rough-in/Service Connection
 - Finish
 - Hot Water Tank
36. HVAC:
 - Rough-in/Service Connection
 - Finish
 - Gas or Oil Piping
 - Oil Tank
 - Radon Gas
37. Electric:
 - Rough-in/Service Connection
 - Finish
38. Fixture Allowance:
 - Vent Fans

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- Heat Lamps
- Hanging
- Sconces
- Hair Dryer

39. Appliance Allowance:

- Cooktop & Hood
- Oven
- Microwave
- Refrigerator
- Dish Washer
- Garbage Disposal
- Clothes Washer
- Clothes Dryer

40. Finish Lumber (Millwork Package):

- Case & Base
- Window Liner
- Specialty Trim
- Half or Full Jambs
- Sauna Kit
- Shelf & Ledger

41. Interior Doors:

- Prefinished
- Prehung
- Include hardware
- Panel
- Flush
- Bi-Fold
- Bi-Pass

42. Drywall (Gypsum Wallboard):

- Hang
- Tape
- Finish/Heat For Curing
- Seal & Texture

43. Cabinets:

- Kitchen

- Laundry
- Bath
- TV/VCR/CD/Stereo
- Books

44. Exterior Finish:

- Siding
- Trim
- Soffit

45. Gutters & Downspouts

46. Paint & Stain:

- Interior
- Exterior
- Trim Pkg
- Door Pkg
- Window Pkg
- Cabinet Pkg

47. Wall Coverings:

- Paper
- Fabric
- Mirror
- Wood Panel

48. Floor Coverings:

- Vinyl
- Tile
- Stone
- Marble
- Hardwood
- Carpet

49. Cabinet Countertops:

- Laminated Plastic
- Solid Surface
- Hardwood
- Tile or Marble
- Stainless Steel

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- 50. Septic System:
 - Percolation
 - Design
 - Installation

- 51. Storm Water:
 - Leach Field
 - "French" Drain
 - Culvert
 - Perforated Tile

- 52. Finish Hardware

- 53. Ornamental Iron/Specialty Metals

- 54. Deck
 - Structural
 - Surface
 - Guardrail
 - Stair
 - Handrail

- 55. Landscape

- 56. General Labor

- 57. Carpenter Labor

- 58. Clean-up
 - Recycle/Refuse
 - Broom & Bags

- 59. Builder's Overhead and Profit
(See Fee Breakdown from "Budget Estimate")

- 60. Professional Service's Fee
(Construction Manager/Lawyer/Accountant/Engineer)

You are not expected to figure material and labor costs for each line item of the Cost Analysis. The Owner's job is to assemble Drawings and

Specifications then request bids from and negotiate contracts with Trade Contractors and Suppliers for the work to be completed on your project. If this seems overwhelming, another option is to work directly with a General Contractor because his/her reputation is based on an existing organization of Trade Contractors and Suppliers.

Even though you won't be calculating specific material and labor costs, it may be helpful to understand how bidders arrive at a price for the work to be completed. Generally, most pricing systems fall into one of three categories: Piece-by-piece, Square Foot, or Unit Pricing. Piece-by-piece is the most accurate, but the most time consuming to prepare. It takes into account every item which needs to be purchased and installed for the work. Square Foot is the least accurate, but less time consuming to prepare. This method determines total square footage of an area and assigns a average dollar amount per square foot of that area. Unit Pricing combines a Piece-by-piece account with a Square Foot take-off. This is accomplished by grouping all the elements of a specific type of work into trade categories then determine the cost for that work based on labor and material per square foot of area (or lineal foot, cubic yard, number of items depending on the category).

R.S. Means Company (See "*Recommended Reading*" section) has developed a construction cost data base covering all phases of residential construction. The data base is organized into trade sections covering square foot cost, assemblies cost, and unit price cost. Costs are broken under headings for material, labor, equipment, overhead, and profit. Since these are "*average*" costs, the Means Residential Cost Data Guide has factored a number of variables affecting costs such as quality, productivity, size of project, and location. There's also a list of other unpredictable factors covered in the book's introduction which may be useful for identifying less than ideal conditions on your project.

Referring to a residential construction data base is a good way to weigh and consider the bid proposals which are being submitted. Just be sure your cost analysis thoroughly covers all items in the Drawings and Specifications because the bid proposals begin to form the basis of your Contract Documents (Pages 16-20).

Remember: This is a time for **ANALYSIS** and **NEGOTIATION**. You may want to contact a Certified Public Accountant familiar with the construction industry for professional advice regarding Cost Analysis.