

Realistic, Updateable Cost Estimates at the Schematic Design Phase?

Introduction

BSD CostLink/AE includes RS Means Commercial Cost Models for 75 different building types. These models make possible the generation of detailed cost estimates very early in a project. Furthermore, the estimates can be refined as the project design develops by adjusting quantities and substituting materials and systems for those used in the model. If the cost estimate is adjusted periodically to remain coordinated with changes in the project design, the final cost estimate should be a reliable predictor of actual project cost.

The RS Means models included in CostLink/AE are constructed of up to 75 separate assemblies, and each assembly comprises 1 to 25 tasks and/or material components. The models operate through use of a series of formulas that calculate the quantity of each assembly and the quantity of the member tasks in each assembly, based on a small number of key parameters such as gross building area, length of perimeter, and number of floors. These parameters, which are adjustable by the user, are used by the formulas to project assembly quantities such as exterior closure area, slab on grade area, roof area, etc.

What Does CostLink/AE Do?

First and foremost, CostLink/AE manages the models. AE offers an intuitive, easy-to-use interface to help choose a model type, select a structural frame and exterior closure alternative, input the gross building size, review or adjust the critical parameters used to generate construction assembly quantities, and adjust project location and markups.

On the Cost Models tab of the Summary Info dialog box, the user chooses a model category (Commercial, Industrial or Institutional) and then uses the pull-down to select a model type from that category. After choosing the model, the next step is to choose one of the exterior closure and framing alternatives. Then the estimated building size and length of perimeter must be entered. The major building parameters can then be reviewed and adjusted, if necessary.

Model Building Parameters	
Default (Baseline) Building Area (GSF)	80000 SF
Default (Baseline) Building Perimeter	420 LF
Number of Floors	8 FLRS
Average Floor to Floor Height	12 LF
Partition Density (GSF per SF of Partition)	30 SF/SF
Average Partition Height	10 LF
Door Density (GSF per Door)	400 SF/EA
Suggested Architectural Fees (% of Construction)	6 PCT

Description	Quantity	Units	Cost	Total Cost
Clock System				
20 room	0.00	EA	\$13,466.50	\$0
50 room	0.00	EA	\$32,800.00	\$0
Closed Circuit Surveillance, One station				
Camera and monitor	1.00	EA	\$1,407.04	\$1,408
For additional camera stations, add	9.00	EA	\$760.37	\$6,844
Directory Boards, Plastic, glass covered				
30" x 20"	0.00	EA	\$517.03	\$0
36" x 48"	1.00	EA	\$1,081.90	\$1,082
Aluminum, 24" x 18"	0.00	EA	\$476.60	\$0
36" x 24"	0.00	EA	\$539.97	\$0
48" x 32"	0.00	EA	\$702.93	\$0
48" x 60"	0.00	EA	\$1,597.30	\$0
Elevators, Electric passenger, 5 stops				
2000# capacity	0.00	EA	\$102,023.33	\$0
3500# capacity	8.00	EA	\$108,210.83	\$324,633
5000# capacity	0.00	EA	\$112,638.33	\$0
Additional stop, add	4.00	FLR	\$5,839.25	\$23,357
Emergency Lighting, 25 watt, battery operated				
Lead battery	0.00	EA	\$233.30	\$0
Nickel cadmium	0.00	EA	\$667.80	\$0
Intercom System, 25 station capacity				

Each model has an associated set of possible "Additive" items. An accompanying tab on the Summary Info dialog displays these additives for the currently selected building model. Additives are individual items that may or may not be appropriate to this particular building. The user can scroll through the list and enter the number or area of each item to be included in the project. There is also a Cost Summary tab on the Summary Info dialog box that allows the user to select any of 725 different U.S. and Canadian locations, enter an appropriate sales tax, and adjust contractor markups and other cost assumptions, such as the architect's fees. When this data has been appropriately adjusted, the preliminary cost information for the project is complete, and the user can print or preview a summary or a detailed cost estimate.

The user can navigate the standard tree structure of the project hierarchy to view the individual assemblies and cost items in the project. It is possible to replace the formula-calculated quantity on any item with a quantity estimated or calculated by the user. The user can also add (and delete) assemblies and cost items using any of the RS Means Assemblies and Cost Items provided with the software. Such adjustments and substitutions should be made periodically, to keep the estimate coordinated with the project design development. The user can also experiment with alternative assemblies and building elements to investigate the effects on project cost.

Office Building			
		COST	PER UNIT
Construction Priced from R. S. Means		92,500 SF	\$7,404,155
Location Adjustment	State: GA City: ATLANTA -10.40 %	-\$770,032	-\$8.32/SF
Sales Tax	6.50 % Est Matl Cost \$3,657,361	\$237,728	\$2.57/SF
Construction Priced Locally		92,500 SF	\$28,456
Cost to Contractor		\$6,900,307	\$74.60/SF
Contractor Fees	Contractor's Gen Requirements 10.000 %	\$690,031	\$7.46/SF
	Contractor's Overhead 5.000 %	\$379,517	\$4.10/SF
	Contractor's Profit 10.000 %	\$796,985	\$8.62/SF
Construction Contract		\$8,766,840	\$94.78/SF
Other Costs	Architect's Fees 6.500 %	\$569,845	\$6.16/SF
	Contingency 3.000 %	\$280,101	\$3.03/SF
	Other 0.000 %	\$0	\$0.00/SF
Estimated Project Cost		\$9,616,785	\$103.97/SF

BSD CostLink/AE - [Office Building]

File Edit View Tree Insert LinkMan Tools Window Help

BUILDING | SITEWORK

- BUILDING
 - SUBSTRUCTURE
 - SHELL
 - SUPERSTRUCTURE
 - EXTERIOR CLOSURE
 - ROOFING
 - Roof Coverings
 - Roof Openings
 - INTERIORS
 - SERVICES
 - EQUIPMENT AND FURNISHINGS
 - SPECIAL CONSTRUCTION AND DEMOLITION
 - Unassigned

Tasks for Office Building

General

B30104201400 - Roof edges,aluminum,duranodic .050" thick,6" face

Task Description: Roof edges,aluminum,duranodic .050" thick,6" face

Quantity: 510.0 UOM: LF Task Type: Assembly MDL: B30104201400

Use Quantity Entered
 Use MS Excel Value Times \
 Use Parent Quantity Times - /
 Use Formula Value Times /
 Building Perimeter

Task Cost Data		
	Unit Cost	Extended
Base Cost	\$16.82	\$8,578.30
Cost To Prime	\$15.61	\$7,961.59
Cost To Owner	\$19.83	\$10,115.19
Project Cost	\$21.76	\$11,095.86

Assembly Members			
Description	Quantity	Units	Total Cost
Anchor Bolt, Incl. Nut And Washer, 5/8" Diameter, 12" Long	178.50	EA	\$1,072.43
Framing, Miscellaneous, Steel Construction, 2" X 8"	0.66	MBF	\$1,122.29
Cants, 4" X 4" Treated Timber, Cut Diagonally	510.00	LF	\$1,299.38
Single-Ply Memb.(Cspe),45Mils Loose-Laid & Blsted W/Stone, (10 Psf)	5.10	SQ	\$916.62
Gravel Stop, Aluminum .050" Thick, 6" Height, Duranodic Finish	510.00	LF	\$4,167.57

	Source	Description	Quantity	UOM	Unit Cost	Base Cost	Cost To Prime	Project Cost
	USR	Sgl ply memb, EPDM, 45 mils, mechly fastened w/ batten strips	12,500.00	SF	\$1.15	\$14,375	\$14,375	\$20,034
	USR	Roof deck insulation, composites with 2" EPS, 1" perlite	10,277.78	SF	\$1.37	\$14,081	\$14,081	\$19,624
	MDL	Roof edges,aluminum,duranodic .050" thick,6" face	510.00	LF	\$16.82	\$8,578	\$7,962	\$11,096
	MDL	Flashing,aluminum,no backing sides,.019"	510.00	SF	\$3.45	\$1,760	\$1,634	\$2,277

Press F1 for Help

CAPS NUM INS 9:33 AM

Conclusion

BSD is the only company that provides the RS Means modeling capability integrated with a full-featured estimating system. CostLink/AE combines the extensive models database with the estimating power of nearly 11,000 assemblies and 22,000 cost items in an easy-to-use, drag and drop interface. Several levels of presentation quality reports add the finishing touch to a very clean and professional cost estimating system that will be useful to any design professional interested in controlling building costs.