



1. Project Information

Project Schedule

(See Appendix 1.1 for Detailed Project Schedule)

Key Project Dates

Schematic Design Begins.....	14 April 2004
Design Issued for Bid.....	21 March 2005
Begin Foundations and Excavation.....	26 December 2005
Start Above Grade Structure.....	15 August 2006
Design Complete.....	17 April 2007
Start Hanging Drywall.....	18 April 2007
Substantial Completion.....	8 September 2007

Key Sequencing Aspects

Foundation footings and slab on grade are to be completed before the start of the concrete frame structure. The structural frame is erected in sequence starting with the columns at the slab on grade, followed by the first elevated slab, then repeating that sequence placing entire levels of columns followed by the full slabs above them. Once the concrete structure is completed to the roof-level slab, the erection of the pre-cast concrete panel façade begins. The exterior walls are erected from the ground to roof at each face before moving the crane and beginning the next face. Following the completion of the final face of exterior wall, the windows and glass are installed per floor, beginning at the ground level and working up to the ninth level. Interior finishes begin prior to each floor's windows and glass being installed. Turn over to the owner is performed per floor as that floor is completed.



Project Cost

Actual Building Costs

- Total Construction Costs:
- \$34,000,000.00
- \$109.00 \$/SF

Parametric Estimate

Expected costs for Two Liberty Center have been estimated based on data from similar buildings using the *D4 Cost 2002* estimating software. Buildings from the database were selected for comparison based on building type, building size, location and basic design features. Three buildings were selected and then averaged using the Smart Averaging feature. All three buildings were new construction office buildings with concrete foundations and concrete floors. Two of the three buildings were constructed in the same general region as Two Liberty Center, with of those two also being a second building of a complex built to complement the first, and the other of the two having an attached parking facility similar to Two Liberty Center. The following chart outlines the source data and reports the final data for Two Liberty Center, including the adjustment for location and total square footage:

Summary Chart for Parametric Estimate

(Reports from D4 Cost 2002 can be found in Appendix 1.2)

Parametric Estimate for Two Liberty Center					
building	location	year built	size (SF)	Cost/SF	Cost
Woodlands Two	MD	1998	120,000	\$41.76	\$5,623,260.00
Netplex Plaza	VA	1999	171,800	\$47.84	\$8,153,214.00
Ha-Lo Headquarters	IL	1998	267,300	\$151.21	\$40,134,138.00
Two Liberty Center	VA	2005	180,000	\$186.98	\$33,656,395.00

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Square Foot Estimate

This estimate was performed using the square foot modeling feature of *R.S. Means – Cost Works 2005* software. Since Two Liberty Center has two major components, the below grade parking structure and the above grade office building, two estimates were performed and the addition of the two is meant to produce a single cost estimate for Two Liberty Center. Values were modified by a 15% factor to account for the additional money invested by the owner to produce a high-end and efficient building. The following chart summarizes the square footage estimate produced:

Summary Chart for Square Foot Estimate

(Detailed reports from Cost Works 2005 can be found in Appendix 1.3)

Garage Estimate			
Model Type: Garage, Underground Parking, Reinforced Concrete / R/Conc. Frame			
Stories (Ea.): 4		Location:	Arlington, VA
Story Height (L.F.): 10		Data Release:	2005
Floor Area (S.F.): 130000		Wage Rate:	Union
Basement: Not Applicable			
		Cost/SF	Cost
	Sub-Total	\$37.84	\$4,919,325.00
	GENERAL CONDITIONS (Overhead & Profit) 25%	\$9.46	\$1,230,000.00
	ARCHITECTURAL FEES 8%	\$3.78	\$492,000.00
	CLASS A MODIFIER 15%	\$7.66	\$996,198.75
	TOTAL GARAGE COST	\$58.75	\$7,637,523.75
Office Building Estimate			
Model Type: Office, 5-10 Story, Precast Concrete Panel / R/Conc. Frame			
Stories (Ea.): 9		Location:	Arlington, VA
Story Height (L.F.): 12		Data Release:	2005
Floor Area (S.F.): 180000		Wage Rate:	Union
Basement: Not Included			
		Cost/SF	Cost
	Sub-Total	\$75.39	\$13,570,875.00
	GENERAL CONDITIONS (Overhead & Profit) 25%	\$18.85	\$3,392,500.00
	ARCHITECTURAL FEES 6%	\$5.66	\$1,018,000.00
	CLASS A MODIFIER 15%	\$14.99	\$2,697,206.25
	TOTAL OFFICE BUILDING COST	\$114.89	\$20,678,581.25
Total Building Cost			
Model Type: Office with Subgrade Garage, 9 Story Office with 4 Story Garage			
Stories (Ea.): 13		Location:	Arlington, VA
Story Height (L.F.): 12		Data Release:	2005
Floor Area (S.F.): 310,000		Wage Rate:	Union
		Cost/SF	Cost
	GARAGE COST	\$58.75	\$7,637,523.75
	OFFICE BUILDING COST	\$114.89	\$20,678,581.25
	TOTAL COSTS	\$91.34	\$28,316,105.00

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Site Conditions

(See Appendix 1.4 for Site Utilization Plan)

Two Liberty Center is being constructed in downtown Ballston, a very rapidly developing and active section of Arlington County. The local conditions leave very little space for site activity and create potential complications with vehicular and pedestrian traffic. Vehicular traffic is most critical on the south side of the site, where the busiest adjacent street is, so the majority of site activity will need to take place on the east and west sides of the site or during the off-peak hours on the south side. Pedestrians are redirected to avoid the east and west sides of the site and provided with a covered walkway along the south side. Concrete jersey barriers line all sides of the site to protect the site and the pedestrians along the south side from vehicular accidents. There is no room for on-site parking, so contractors and site visitors need to make use of existing parking facilities in the area or take advantage of the close proximity to public transportation access.

Local Conditions

Regional Construction

The Arlington area falls into the trends of the Washington DC market because of the close proximity and shared contractors. These contractors typically build structures with steel reinforced cast-in-place concrete, and have recently seen a trend with pre-cast concrete panel exterior wall construction.

Excavation

This site was excavated as part of a larger excavation for all three of the buildings being built on the same complex. There was very little ground-water encountered during the excavation, but some water was removed from the site using standalone pumps. The soils being excavated contained some areas of rock that created the potential for some

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concealed conditions costs, but this rock was found to be soft enough for standard excavation methods. There were also contaminated samples of soil discovered during the excavation. These contaminated sections of soil were removed from the site with minimal additional costs. Soil removal was a large portion of the estimated cost of excavation since there was not room on site or nearby for a stock pile. Soils to be reused were shipped to a remote location and stored until backfilling was ready to take place.

Local Constraints

The governing local authorities added additional complications to the planning of this project. Permit review by the local county has an abnormally long lead time. This extended duration places emphasis on early completion of design to ensure construction will not be delayed by permitting. The local authority also places restrictions on the “noisy” working hours since this site is zoned for apartments as well as commercial and office. Noisy work can’t begin on site until after 7am on the weekdays and 10am on the weekends. These restrictions limit the types of activities that can occur on the site prior to those times.

Project Delivery

This project is being delivered under a modification of the traditional design-bid-build method. The contractor for this building was selected without bid by the owner and negotiated during the design phase. Negotiations included budgeting at several phases of design to assist the owner in making critical design criteria decisions. The contractor is being held under a cost-plus-fee contract with a guaranteed maximum price. After design was completed, the sub-contracts were released for a competitive bid and awarded based on lowest cost with most reliable scope.