



Executive Summary

Bloomingdales is an 180,000 sq. ft. structure with three main floor levels, a penthouse, and four story below grade parking garage. This project is located in Chevy Chase, Maryland. The original bid was \$17,310,000. With ever increasing change orders and other unforeseen conditions the projected overall cost has come to a projected \$18,860,000 million.

This project has its unique and complex problems. Issues with buyouts and mergers have greatly affected this project and its schedule. Added to construction layout are plans including a new office tower and the existing retail stores and community center in the adjacent properties. The control of traffic during deliveries is one of the greatest hindrances to project flow. Due to this projects location in a moderate traffic environment of Chevy Chase with already existing construction conditions in the immediate area during the day there was an issue of managing how and when deliveries were made. Having already been delayed numerous times in the design phase of the project due to a redesign of interior plans, the project needs to be delivered as soon as possible. Fortunately for Federated and Buch, they have a previously existing relationship from past Macy's, Hecht's and Bloomingdales projects that will lend itself to collaboration and avoid any unnecessary conflict on an already difficult project. Due to the relationships of the past on similar projects Federated choose to use Lump Sum contracting for all entities involved.



Building Systems Summary

Structural System

The structural system of the building consists of mainly ¾” lightweight concrete slab on metal deck supported by structural steel. The formwork for the concrete structure will be traditional hand sawn and built plywood. For placement, concrete deliveries are made to the streets west and south of the building (Friendship Boulevard, Western Avenue. respectively) and placed using a pumping method. The foundation consists of a cast-in-place reinforced parking garage.

Mechanical System

The buildings mechanical system is handled through the penthouse mechanical room on roof. It houses (2) 230 ton chillers with power induction boxes. The HVAC system design criteria used that of Washington, DC. The requirements for outdoor air were 88 degrees Fahrenheit dry bulb (DB), and 74 degrees wet bulb (WB). Indoor was 75 degrees DB, with a special needs area required in the cosmetics area of 72 degrees DB.

Electrical Systems

Underground duct banks are the source for the primary feeders which are routed to the building. Distribution voltage is provided at 11,256V/480/277V/208/120V. The switch boards are tin plated 4000A rated, 480/277V, circuits.

Fire Protection

A wet pipe system is utilized in this structure. Wet pipe sprinkler systems have the least number of components and therefore, the lowest number of items to malfunction. The system is constantly filled with water allowing for the quick response time allowing for maximum protection of merchandise and the structure itself.

Curtain Glass Wall

The curtain wall consists of metal panels, vision glass, and aluminum mullions and headers. The mullions are mostly prefabricated to ensure quality control as well as aid installation. For installation, embeds are placed into the slab where needed. These embeds will be used to fasten the curtain wall headers and footers. The windows will then be installed from the interior of the building.



Project Cost Evaluation

The below costs were obtained through Buch and then the appropriate construction costs were used to calculate the cost per square foot. The following table is a breakdown of the contracts awarded to each subcontractor and their respective work. A building size of 180,000 ft² has been assumed for this Bloomingdales.

Construction Cost	CC:	\$14,240,000
Construction Cost per square foot	CC/SF:	\$79.11/ SF
Total Project Cost	TC:	\$18,860,000
	TC/SF:	\$104.78/SF
Structural System:	TC:	\$3,100,000
	TC/SF:	\$17.22/ SF
Concrete: \$1,410,000		
Structural Steel: \$1,690,000		
Mechanical System:	TC:	\$3,080,000
	TC/SF:	\$17.11/ SF
Fire system: \$780,000		
Electrical System:	TC:	\$2,100,000
	TC/SF:	\$11.66/ SF

Parametric Estimate using D4 Cost 2002

Assumptions:

- Due to the limited amount of sources available for the parametric estimate, these three projects were used to calculate the similar Lecture Hall project:
 - o Net Plex Center, 171,809 ft², 4 Floors, Cost \$13,630,891
 - o Scottsdale Memorial hospital, 188,641 ft², 3 Floors, Cost \$10,743,299
 - o Shops of Rockville, 138,406 ft², 1 Floors, Cost \$18,263,563
- Although the Shops of Rockville were a close overall project cost the square footage was approx. 1.3 times smaller than that of Bloomingdales. In an attempt to obtain a higher parametric estimate, the other two more costly projects were included in the overall “Smart Averages” offered by D4 Cost.



- Appropriate subdivisions with their respective percentages, in relation to the IGMP Bids and ‘Total Direct Cost’ shown above, have been added to the parametric estimate for a more in depth cost comparison.

While none of these projects are the exact type of building as the Bloomingdales project they do offer some range of acceptance when looking at a project of its relative size. It is expected that the accompanied project estimates will range in estimates due to the higher level of technical aspects to projects such as the hospital. The estimate of probable cost for the Net Plex Center offers the most comparison, considering the fact that it is a smaller project by approximately 10,000 sq. ft. can be marginalized by multiple tenants and the added floor.

Square Foot Estimate using RS Means 2005

Assumptions:

- Since the main function of the building is a department store, the estimate of a Precast Exterior and Steel Frame 200,000 ft² Retail Store is used.
- To factor in the large Skylight space in the center of the building, an addition of \$200, 000 is included in Building Type costs.
- A Rockville location factor of 0.91 is used for the Bloomingdales. Inflation cost have not been calculated in this estimate.

Building Type	\$/SF	SF	Factor	Cost
Retail	97.26	180,000	0.91	15,931,188

RS Means Estimate (w/ Location Factor and added cost of skylight): **\$16,131,188**

The estimate derived from RS Means was slightly short of the estimated overall cost of Bloomindales but is still within a respectable 4%. In order to receive more accurate estimates one would have to do detailed material take-offs and similar approximations.



Site Plan

The Site plan for Bloomingdales is in a suburban area with limited room for equipment and setup. Addressed in this site plan is the immediate area surrounding the Bloomingdales site. Placement of fencing and traffic flow onto and off of the site is noted. Please see the attached Existing Site Plan.

Local Conditions

Local building code regulates height restrictions on most high rise buildings. For this reason most buildings in the area are designed as cast-in-place concrete with a structural steel frame. On this particular project contractors bought monthly parking passes as there was none for long term use. Another option is the Metro which has a stop located only several hundred yards from the site. The soil conditions on site are moderately undesirable, with the soil being composed of very poor organic clayey soils. There was no recycling of materials on this project. This decision was aided by the tipping fee of sixty dollars per ton for roll off dumpster.

Client Information

Federated Department Stores, founded in 1929, is an every growing enterprise. Federated stands today as the nation's largest department store retailer. Federated prides itself on understanding and meeting the needs of American consumers in ways unmatched by any other retailer by offering an exceptional level of service by highly trained sales associates and a large quantity of quality merchandise offered.

One of Federated most successful branches is Bloomingdale's, America's only nationwide, full-line, upscale department store. The Bloomingdales division has experienced outstanding performance and strategic progress. Bloomingdales has expanded multiple times in the last several years including a new flagship store on the west coast located in San Francisco.

Sequencing is not as big of an issue to this owner because they will be occupying the entire building. Federated biggest expectation is bringing a quality project in on time to help the company further deliver a high quality product to the consumers they are catering to.



Project Delivery System

Design-Bid-Build was used on this Bloomingdales project which is typical of Federated and most retail stores of this size. This approach allows for an architect to be hired for design and will proceed to put the drawings out to bid once they have reach the point where the drawings are substantially complete. This allows for a quick and efficient design to competition process. On this project the Architect also served as the designers for the MEP system. Please note the project team illustration in Table 1.

Federated choose to use Lump Sum contracting for each entity.

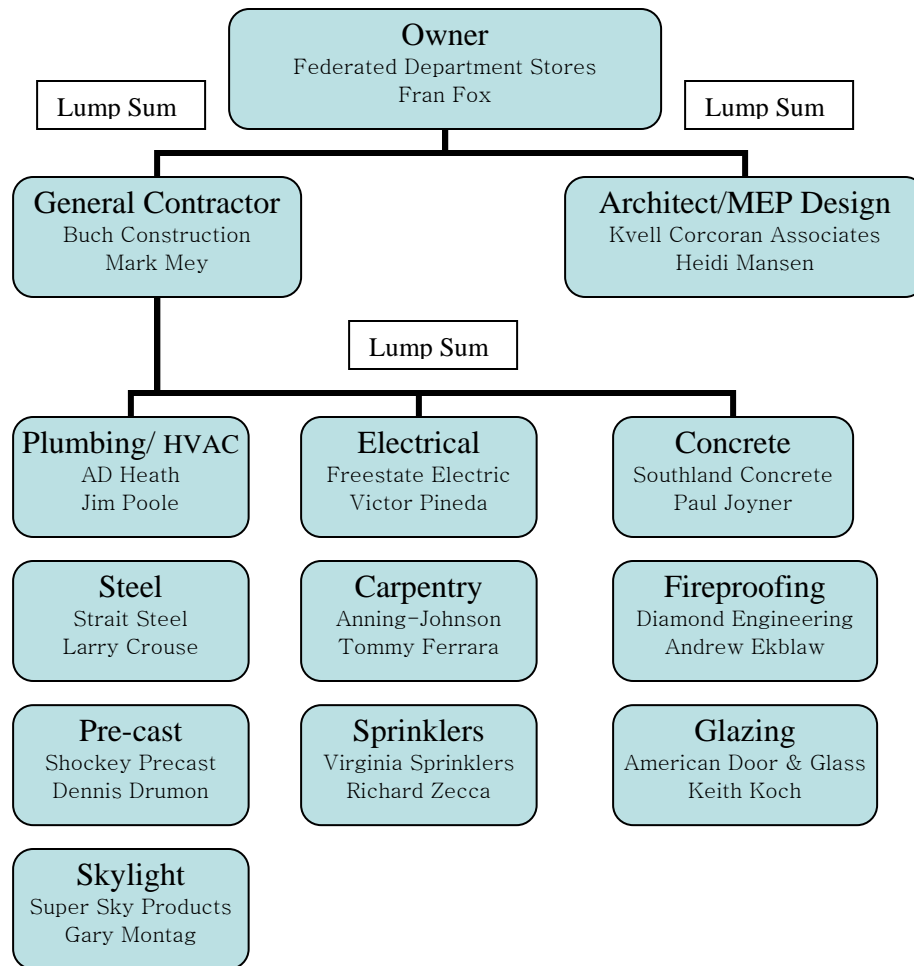
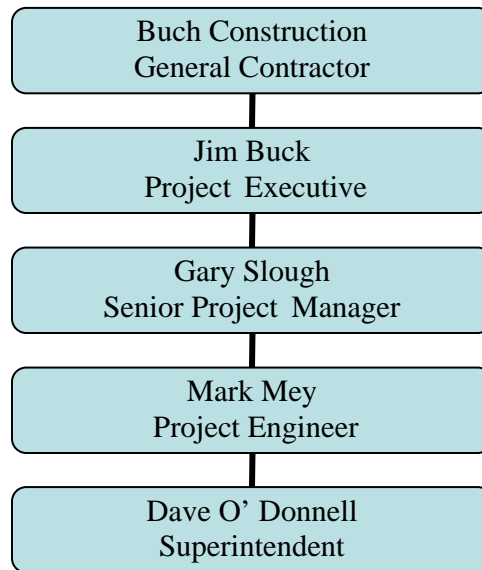


Table 1.



Staffing Plan

Table 2



In the above Table 2 an illustration is provided to help visualize the project team and the position they command. In order to keep everyone on the project team at Buch up-to-date with construction progress, a free flow of information is required between the project Executive, Project Manager, Project Engineer, and Superintendent. The Project Executive advises and approves all outgoing and incoming correspondence between Buch Construction, Federated, and the subcontractors. The Project Manager oversees most subcontractor correspondence, scheduling, billing and other financial information on Buch's behalf. It is the duty of the Project Engineer to take care of handling submittals, RFIs, processing change orders, meeting minutes, and whatever else is required to help ease the work load on the rest of the team. Both the PM and PE coordinate directly with the Superintendent to make sure all field personnel and the subcontractor's people are on task to make the schedule. While the Superintendent oversees the work being performed on site and executes safety checks to make sure everything is in order to reduce the chance of accidents.