



Introduction and Project Background

Milestone Business Park is located in Germantown, Maryland, approximately 30 miles NNW of the nation’s capital. The Business Park is a 44 acre site that will be constructed in three phases. Concentrating on Building #4, this is the second phase and third of five buildings in the development. Along with the construction of Building #4, additional surface parking will be added due to the expansion and potential growth of the Business Park.

Milestone Building #4 is a LEED Core and Shell project with a total proposed score of 33 points or Silver Certification. The design team utilizes all five LEED categories; Sustainable Sites (8 points), Water Efficiency (5 points), Energy and Atmosphere (3 points), Material and Resources (3 points) and Indoor Environmental Quality (10 points). The project will also receive four (4) points for Innovation in Design which includes a LEED AP, Exemplary performance, Education/Outreach and Green Housekeeping.

PURSE	PLANET	PEOPLE
<p>First Cost Savings</p> <ul style="list-style-type: none"> - Reduced infrastructure costs - Reduced material use - Savings in construction waste disposal - Savings from downsizing mechanical equipment <p>Reduced Operating Costs</p> <ul style="list-style-type: none"> - Lower energy costs - Lower water costs - Greater durability and fewer repairs - Reduced cleaning and maintenance - Reduced cost of churn - Lower insurance costs - Reduced waste generation within the building <p>Other Economic Benefits</p> <ul style="list-style-type: none"> - Increased property value - More rapid lease-out - Easier employee recruiting - Reduced employee turnover - Reduced liability risk - Staying ahead of regulations - Positive public image - New business opportunities 	<p>Environmental Benefits</p> <ul style="list-style-type: none"> - Reduced global warming impacts - Minimized ozone depletion - Reduced resource extraction impacts - Reduced toxic emissions - Reduced energy and other impacts of transporting materials - Reduced contributions to local and regional air pollution - Reduced local and regional water pollution - Reduced urban heat islands - Protection of biodiversity - Increased environmental awareness 	<p>Health and Productivity Benefits</p> <ul style="list-style-type: none"> - Improved health - Enhanced comfort - Reduced absenteeism - Improved worker productivity - Improved learning - Faster recovery from illness - Increased retail sales <p>Social Benefits</p> <ul style="list-style-type: none"> - Support of sustainable economies - Support of companies with socially responsible policies <p>Community Benefits</p> <ul style="list-style-type: none"> - Reduced demand on municipal services - Reduced erosion and stormwater runoff - Reduced automobile use, traffic congestion and sprawl - Creating “community” - Support of local agriculture



Project Design Overview

Architecture

Milestone Building #4 is a six story Class A office building; totaling 166,292 square feet. This will be the third of five buildings located at Milestone Business Park. Upon completion, the project team hopes to achieve a LEED Core and Shell rating of Silver. Being the third building on site, Building #4 was design architecturally to match the existing buildings. This similarity includes glass entrance doors, an aluminum frame window system and a decorative brick façade.

Demolition

There is no demolition required for Milestone Building #4.

Structural Steel Frame

The structural steel will be erected in four sections by a mobile crane (Sequencing plan is located in Appendix A.). The steel was designed for dead, live, snow, wind and seismic load according to IBC and ASCE. All 'W' shapes are composed of ASTM A992 steel and all other shapes are conformed to ASTM A36. The structural steel is mainly made up of W21 or W16 shapes carrying a 3 ¼" lightweight concrete slab on top a 3" metal deck.

Cast In Place Concrete

Cast in place concrete is used for the foundation, SOG and elevated slabs. It will be placed directly (foundation and SOG) and by pump (elevated slabs). The footings and grade beams will use 3000 psi concrete and will be formed with plywood. The slab on grade is of 4000 psi while the elevated slabs are of 3500 psi. Concrete was designed to IBC, ASTM and ACI.

Precast Concrete

There is no precast concrete designed for Milestone Building #4.

Mechanical System

The rooftop mechanical equipment is housed in the penthouse and another mechanical room is located on the first floor. The mechanical system is an air water system designed for 76°F/40%RH for summer months and 72°F for winter months. There are two 1700 GPM cooling towers located on the roof.

Electrical System

The main switchboard providing power is designed at 4000A, 277Y480V, 3φ, 4 wire. For emergency power, there is a 350KW diesel generator located outside of the south wall. There



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are six transformers at 150KVA, while all others range from 15-45KVA. The lighting in the building is typically 277V fluorescent fixtures.

Masonry

Milestone Building #4 will be ornamented with masonry brick veneer to match Buildings #1 and #2 of Phase I. The primary brick pattern is $\frac{1}{2}$ running bond, broken up with a soldier brick window head. The use of a tower scaffolding system will be incorporated on Building #4 and the brick veneer will be laid by elevation; south, west, north, east.

Curtain Wall

There is no curtain wall designed into Milestone Building #4.

Transportation

The building consists of four elevators, two on each side of the lobby. One of these elevators serves as a freight elevator, while the other three are strictly used as passenger elevators. All of the elevators have a capacity of 3500 pounds and travel at a speed of 350 feet per minute. The pits are approximately 9' deep with a sump pump in each pit. The penthouse located on top of the building houses the elevator mechanical room. Each elevator is decorated with brick, glass and ornamental railings.

Support of Excavation

There is no excavation support needed for Milestone Building #4.

Project Team Overview

The following are the core member of Milestone Building #4:

Owner	Kennedy Associates
Developer	Trammell Crow Company
Leasing Agent	CB Richard Ellis
Architect	Morgan Gick McBeath and Associates
Structural Engineer	Haynes Whaley and Associates
Civil Engineer	VIKA Incorporated
MEP Engineer	B&A Consulting Engineers
Contractor	Buch Construction



Client Information

Kennedy Associates has started Milestone Business Park as a speculative office development with a financial return of 10-12%. The LEED design was an initiative of Kennedy Associates and building #4 is the first in the Business Park. Located outside of the nation's capital, it is felt many companies are expanding their service radius. This business park hopes to accommodate the expanding companies that would like another office in a region outside of Washington, DC.

Trammell Crow Company has placed high expectations on Buch Construction through cost, quality, schedule and safety. The cost of the job is what they expected to pay and will hold Buch Construction to it. Safety and quality is of utmost importance on any job. Milestone Building #4 can be classified as Value Engineering, Class A. Trammell Crow and Buch Construction have agreed to a schedule of 12-14 months. As of now, building #4 will be complete late by October 2008. Milestone Building #4 is a core and shell building and currently has no tenants. Once a tenant has been found, the substantial completion date may be altered to satisfy the needs of the tenant. Kennedy Associates and Trammell Crow hope to have building #4 fully leased within 12 months of completion. As of now, there is a brochure used to market Milestone Building #4. A more in-depth marketing strategy is in the works. Upon completion, Trammell Crow will be satisfied with the job completed on time and within budget.

Project Delivery Method

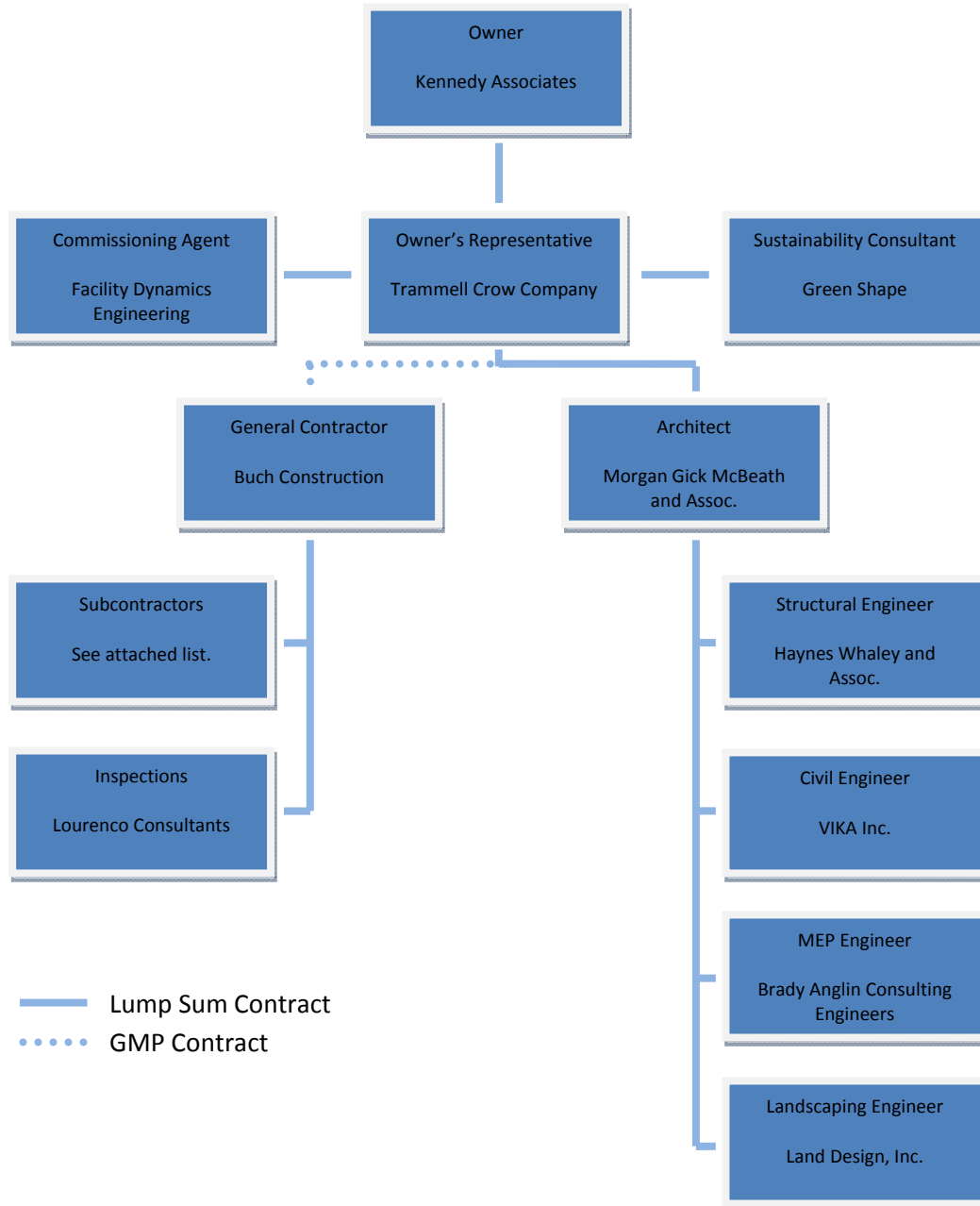
Trammell Crow Company has made Milestone Building #4 a competitive bid, inviting five General Contractors to bid. Buch Construction was one of two finalists. Buch Construction was ultimately chosen for their competitive price, professional business relationships and past experience with the company. Trammell Crow Company and Buch Construction have a guaranteed maximum cost contract with a 4% fee.

While Milestone Building #4 was in bidding phase, it was a non-LEED rated building. However, it was always the intention of Trammell Crow Company and Kennedy Associates to make the building LEED Certified. This played little role in selecting the general contractor. Once the job was awarded, Buch Construction would then wait for the LEED design to finalize and send the changes to their subcontractors. The LEED design was noted as revisions in the drawings and was priced as a change order. The contract amount does not include the LEED revisions.



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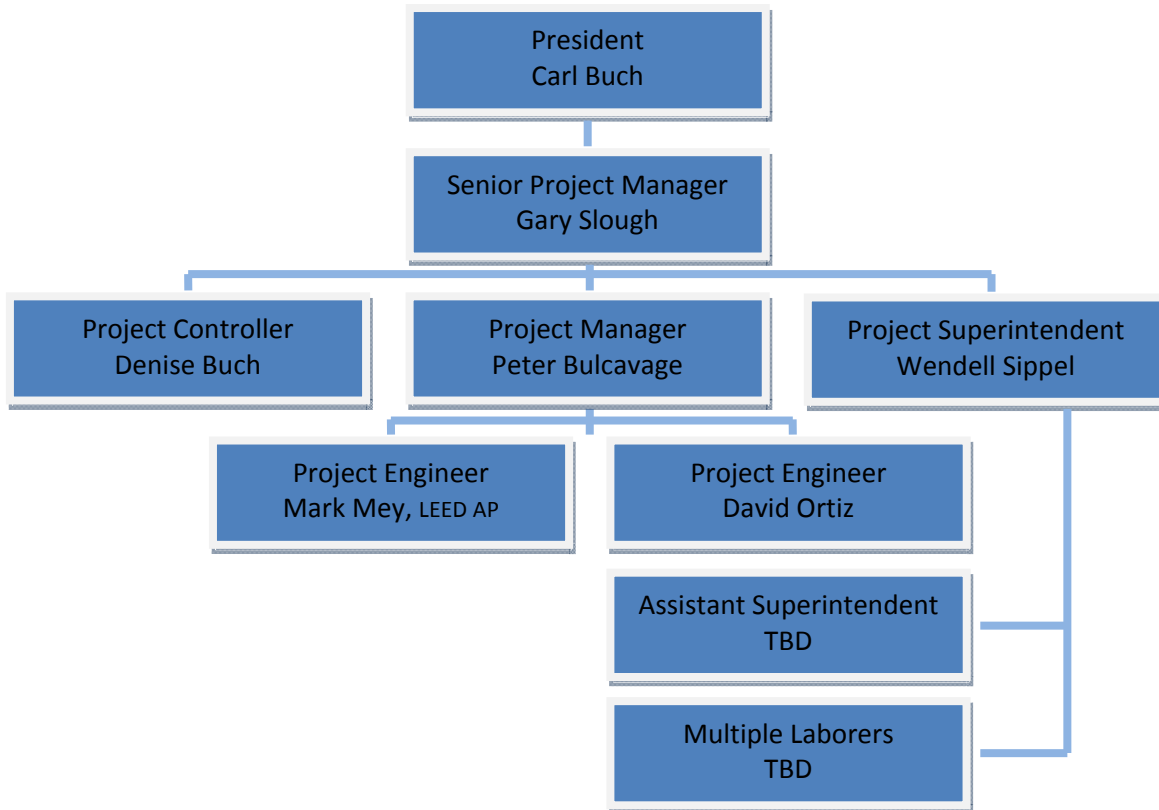
Buch Construction invited three subcontractors of each trade to bid on Milestone Building #4. Since Buch Construction highly values healthy business relationships, selecting which subcontractors to bid the job was based on previous experience with the company. Hence, selecting the ultimate subcontractor was primarily based on price. The contract provides a list of insurance and bonds that Buch Construction should have on all subcontractors.





Staffing Plan

Buch Construction follows a typical staffing plan for each job the company is awarded. However, this is one of the larger projects and the first to obtain LEED certification. Due to the unfamiliarity of LEED construction, Buch Construction compensated for this by allocating additional staff. There are two project engineers that will share the duties of RFIs, submittals, and communication with other parties. Mark Mey (Project Engineer) received LEED accreditation, and will serve as the LEED representative for Buch Construction and will communicate directly with the LEED Consultant; Green Shape. Gary Slough (Senior Project Manager) oversees three parties; Peter Bulcavage (Project Manager), Wendell Sippel (Project Superintendent) and Denise Buch (Project Controller). Even though Slough makes most of the final decisions, there is open communication throughout the staff at Buch Construction and are all equally included in all decision making. Once Milestone Building #4 is heavily underway, Sippel (Project Superintendent) will be granted an Assistant Superintendent to divide the responsibilities. Also, under the supervision of Sippel, additional available laborers will arrive onsite as needed.



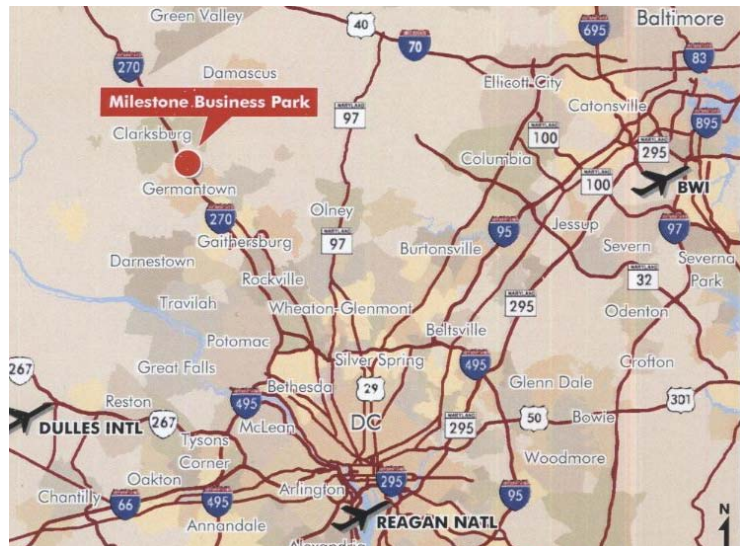


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Existing Conditions

Vicinity Maps

Milestone Building #4 is located approximately 30 miles NNW of our Nation's capital in Germantown, Maryland. With major thoroughfares to Washington, DC and Baltimore, the Business Park is strategically located off of I-270 to allow for easy commute to both cities.



The picture to the left shows Milestone Business Park. Building #4 will be constructed in the current phase along with asphalt parking to west of Building #4 and expanding south of the existing parking.

Local Conditions

Milestone Building #4 is located on a 44 acre site in a developed suburb northwest of Washington, DC. Since the Business Park is not fully developed yet, a congested site is not an issue. With future development in the

design phase, future buildings and parking lots provide adequate space for storage, lay down areas, parking, trailers, etc.

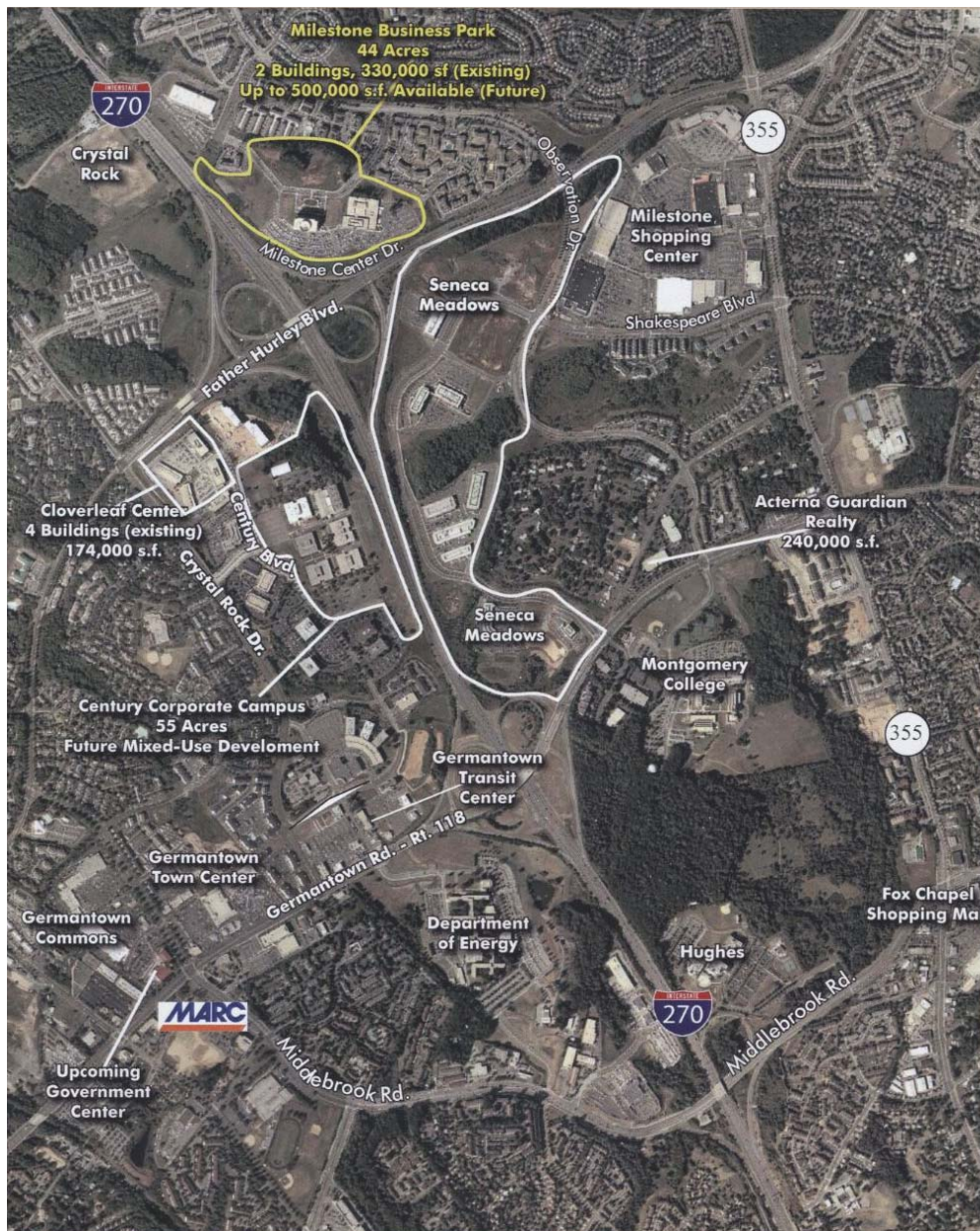
One concern the project team has with the site are the existing tenants and buildings. Building #4 will be built directly next to Building #2. Safety to the existing building and its tenants are of utmost concern. Noise is also a concern to the tenants of Building #2. Construction will begin long before the typical work day and limits the use of construction equipment, which causes



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louder noises, during peak tenant work hours. Deliveries will be limited to non-peak traffic hours (morning, lunch and evening) and will be rerouted through the back entrance.

There are three primary types of soils located on site; topsoil, silty sands/sandy silts and rock. The topsoil averages 5"-6" deep; which allows most of the soils to fall into the medium dense (silty sands/sandy silts) category. Rock begins mainly between 18'-20', however, hitting rock is still a concern at spots due to its depth from surface.





Existing Site Plan

A detailed site plan of existing conditions can be found in Appendix B.

Cost Summary

Milestone Building #4 was bid in early May 2007 with a lump sum of ~\$19 million (\$144/sf). Once the general contractor was selected, LEED revisions were completed causing a change order of ~\$478,000. The construction cost breakdown and total building costs are located in the tables below.

Total Building Cost

Category	Cost	Cost/SF
Construction Cost	\$17,586,084	\$106/sf
General Conditions	\$700,000	\$4/sf
Bond, Insurance, Misc.	\$720,716	\$4/sf
LEED Change Order	\$477,841	\$3/sf
Total	\$19,484,641	\$117/sf

Construction Cost

Actual Construction Cost

CSI Division	Cost	Cost/SF
Site Construction	\$2,228,986	\$14/sf
Concrete	\$1,380,000	\$8/sf
Masonry	\$1,359,116	\$8/sf
Metals	\$3,223,000	\$19/sf
Woods and Plastics	\$316,000	\$2/sf
Thermal and Moisture Protection	\$1,181,779	\$7/sf
Door, Frames and Hardware	\$1,517,200	\$9/sf
Finishes	\$1,548,577	\$9/sf
Specialties	\$104,687	\$1/sf
Furnishings	\$61,190	\$1/sf
Conveying Systems	\$975,000	\$6/sf
HVAC/Plumbing	\$2,200,790	\$13/sf
Fire Protection	\$288,759	\$2/sf
Electrical	\$1,201,000	\$7/sf
Total	\$17,586,084	\$106/sf

*LEED Change Order***LEED Change Order**

Item	Cost	Cost/SF
LEED Coordinator	\$43,866	\$0.26
Waste Management	\$182,249	\$1.10
Materials Protection	\$8,500	\$0.05
Materials Hoist	\$43,525	\$0.26
Concrete	\$4,400	\$0.03
Millwork	\$13,998	\$0.08
Blocking/Rough Carpentry	\$43,000	\$0.26
Moisture Protection	\$3,530	\$0.02
Doors and Hardware	\$225	\$0.00
Glazing	\$1,000	\$0.01
Gypsum Board	\$68,000	\$0.41
Tile and Stone	\$17,372	\$0.10
Carpet	\$212	\$0.00
Paint	\$1,200	\$0.01
Toilet Accessories	\$1,095	\$0.01
Mechanical	\$39,860	\$0.24
Electrical	\$23,169	\$0.14
Subtotal		
	\$434,401	\$2.61
Fee (10% OH&P)	\$43,440	\$0.26
Total		
	\$477,841	\$2.87



General Conditions

General Conditions	
Supervision - Administrative	\$349,181
Office Management and Clerks	\$5,180
Engineering	\$137,942
Clean Up	\$59,379
Safety Construction	\$19,000
Temporary Facilities and Utilities	\$5,600
Temporary Construction Utilities	\$28,600
Field Office Operation	\$27,700
Security and Fire Protection	\$13,950
Medical	\$500
Hauling, Transportation	\$27,125
Equipment Repairs	\$14,100
Small Tools and Expendables	\$2,500
Taxes, Permits and Licenses	\$9,243
Total	\$752,052

Project Schedule

Milestone Building #4 went to bid in early May 2007 and received Noticed to Proceed at the end of June 2007. However, there were many issues regarding permits and was unable to break ground until Mid-September. The construction project had an original schedule of 12-14 months; with substantial completion in September 2008. Due to permit problems, Buch Construction hopes to complete Milestone Building #4 late October 2008. A detailed project schedule can be found in Appendix C.

Foundation

The site of Building #4 was previously landscaped during phase one due to its close proximity of Building #2. Therefore only removal of trees and very little excavation is needed. The foundation consists of spread footings and concrete piers topped with a 5" slab on grade.

Structural

Steel will be erected by a mobile crane in four sections; south (floors 1-3), north (floors 1-3), south (floors 4-6, roof), north (floors 4-6, roof). Please see attached drawing in Appendix A for sequencing. Once steel has erected, decking and concrete will follow. Concrete will be placed



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with a pump and each floor will have two pours. Upon completion of all elevated slabs and roof, roof will be sealed and closed in.

Finishes

Due to Milestone Building #4 being a Core and Shell building, the finishes are limited to elevator lobbies and bathrooms. Finishes will be done in a typical ceiling to floor fashion; starting after passing ceiling close-in inspection. Finishes will start on the first floor and move up to the sixth floor.

Site Utilization Plan

For a detailed Site Utilization Plan – Steel Erection Phase, see Appendix D.

The contractor trailers are located at the front entrance to the site. This location was chosen for two reasons, existing transformer for easy hook-up and ability to coordinate deliveries. Once the trailers have been placed, all deliveries were moved through the back entrance to lessen any disruption to other traffic and building occupants.

There is plenty of room on site for laydown, storage and parking. The one way traffic pattern (as shown on Site Utilization Plan in Appendix D) allows for easy flow of traffic. Milestone Business Drive will remain open, but will have temporary gated closures for large deliveries. If this becomes a problem for traffic control and noise to the building occupants, the delivery trucks have room to turn around west of the site. The crane will pick steel off the truck and place in staging areas. When concrete is being placed, two gates in the fence will open to allow the concrete trucks to drive up to the building and exit without turning around. A temporary large gravel parking lot is located at the northwest corner of the site. Construction personnel can enter the lot through the main road; Milestone Business Drive. Also located in the parking lot are dumpsters, recycling bins and portable toilets, making it an easy location for trash removal.