

Granby Tower
515 Granby Street
Norfolk Virginia



Justin Pennycoff
Construction Management
Technical Assignment #1
Faculty Advisor: Dr. Riley
October 5, 2007

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Executive Summary

This technical report gives an overview of the construction management process for the Granby Tower project in Norfolk, Virginia. The total time for construction is approximately 863 days in duration. In this report the following can be found: a summary schedule, a summary of the main building systems throughout the building, a cost evaluation, a site plan show the existing conditions, local conditions such as typical construction methods used in the area, information about the owner, the project delivery method, and a staffing plan employed by the General Contractor/Construction Manager.

When complete this building will be the tallest in Norfolk at 450 ft. tall (31 stories). Not only will it be the tallest building in Norfolk but it will be the second tallest building in the state of Virginia. With the project being in downtown Norfolk site congestion can be a big issue. Not only is it congest near the site, it is congested on the site where the building will take up the majority of site leaving a very limited amount of space for lay down areas and shakeout areas.

Project Schedule Summary

(Please refer to schedule on the following page.)

Foundation

The foundation for Granby Tower consists of deep mat foundations with pre-stressed concrete piles. There are 1233 piles in all throughout the foundation of the building. Approximately one month after the start of driving the piles the mat foundation begins. The slab-on-grade for the parking garage and retail structure is started first.

Structural

The structural system is mainly cast in place concrete with post-tensioned slabs. This make up the structure for the majority of the building. However there is some wood framed construction in the retail areas and the town homes. The structural sequence starts with the parking garage and the retail areas is started first. As this is completed the remaining floors are constructed.

Finishes

Once the MEP trades are finished on a certain level finishing can begin. Once again the finishes start in the lower level and move upwards as construction is being completed. This process can take a very long time since a lot of coordination is required and there are many inspections that take place to make sure everything is done correctly before the units are complete. The private living units are the first to be completed then the public spaces are completed.

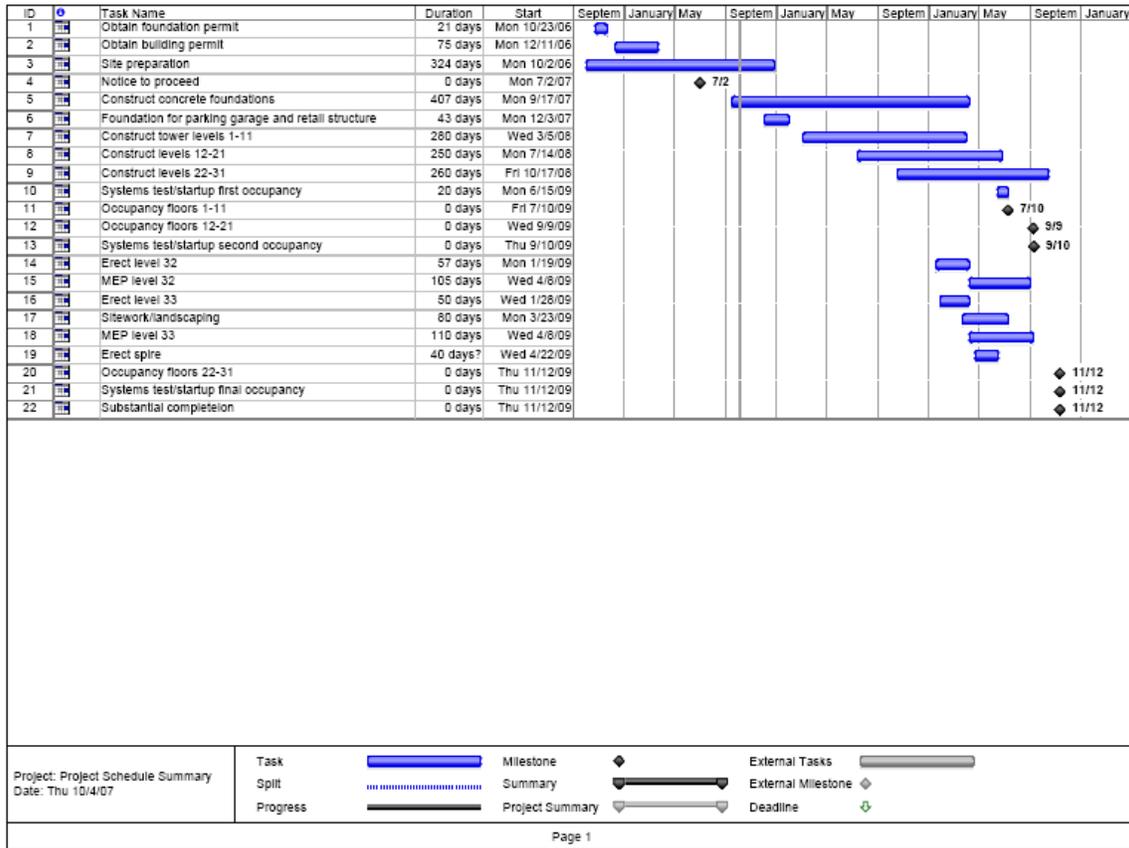


Figure 1- Project Schedule

Building Systems Summary

| Yes | No | Work Scope | If yes, address these questions / issues |
|-----|----|------------------------|---|
| X | | Demolition Required? | Types of materials, lead paint, or asbestos? |
| X | | Structural Steel Frame | Type of bracing, composite slab?, crane size / type / location(s) |
| X | | Cast in Place Concrete | Horiz. And Vert. Formwork types, concrete placement methods |
| | X | Precast Concrete | Casting location, connection methods, crane size / type / location (s) |
| X | | Mechanical System | Mech. room locations, system type, types of distribution systems, types of fire suppression |
| X | | Electrical System | Size/ capacity, redundancy |
| X | | Masonry | Load bearing or veneer, connection details, scaffolding |
| X | | Curtain wall | Materials included, construction methods, design responsibility |
| X | | Support of Excavation | Type of excavation support system, dewatering system, permanent vs. temporary |

Demolition: Some demolition was required before construction could begin. There were two one to two story buildings located within the construction limits. The property also consisted of a paved parking area.

Structural Steel Frame: Consists of structural tubing, w-shapes, other rolled plates/shapes, connection bolts, and anchor rods. Connections consist of shear connections and fillet welds.

Cast in Place Concrete: Vertical formwork was used for this part of the project. Concrete was placed via direct pour for the bottom floors and via chute for the upper floors.

Mechanical System: The mechanical rooms are located on the top two floors of the building. The main mechanical system is a four pipe system. Some fans and air-conditioning units are located on the roof.

Electrical System: Riser system has sub panels every three floors. Units run on 120A/208V circuits while the equipment runs on 277A/480V circuits. Has a 500KW diesel emergency generator.

Masonry: Hollow load-bearing masonry units shall conform to ASTM C 90 and be made with lightweight aggregate.

Curtain Wall: The façade is comprised of a curtain wall system with metal panels. The curtain wall will be hand set for most of the skin and the part that is to be constructed as the store front will be constructed in place. The façade will also contain operable aluminum framed windows.

Support of Excavation: Dewatering could arise as an issue as construction progresses. The groundwater on site can fluctuate, causing the issue of not knowing whether or not dewatering is completely necessary.

Project Cost Evaluation

Actual Building Construction Cost

- \$110,030,520
- At 717,233 sq.ft - \$153.41/sq.ft

Total Project Cost

- \$180,000,000
- At 717,233 sq.ft - \$250.96/sq.ft

Major Building Systems Costs

- Mechanical/Plumbing Systems
 - \$17,631,324
 - \$24.58/sq.ft
- Electrical System
 - \$7,969,594
 - \$11.11/sq.ft
- Structural System
 - \$30,542,142
 - \$42.58/sq.ft

D4 Parametric Cost Analysis (refer to Appendix A)

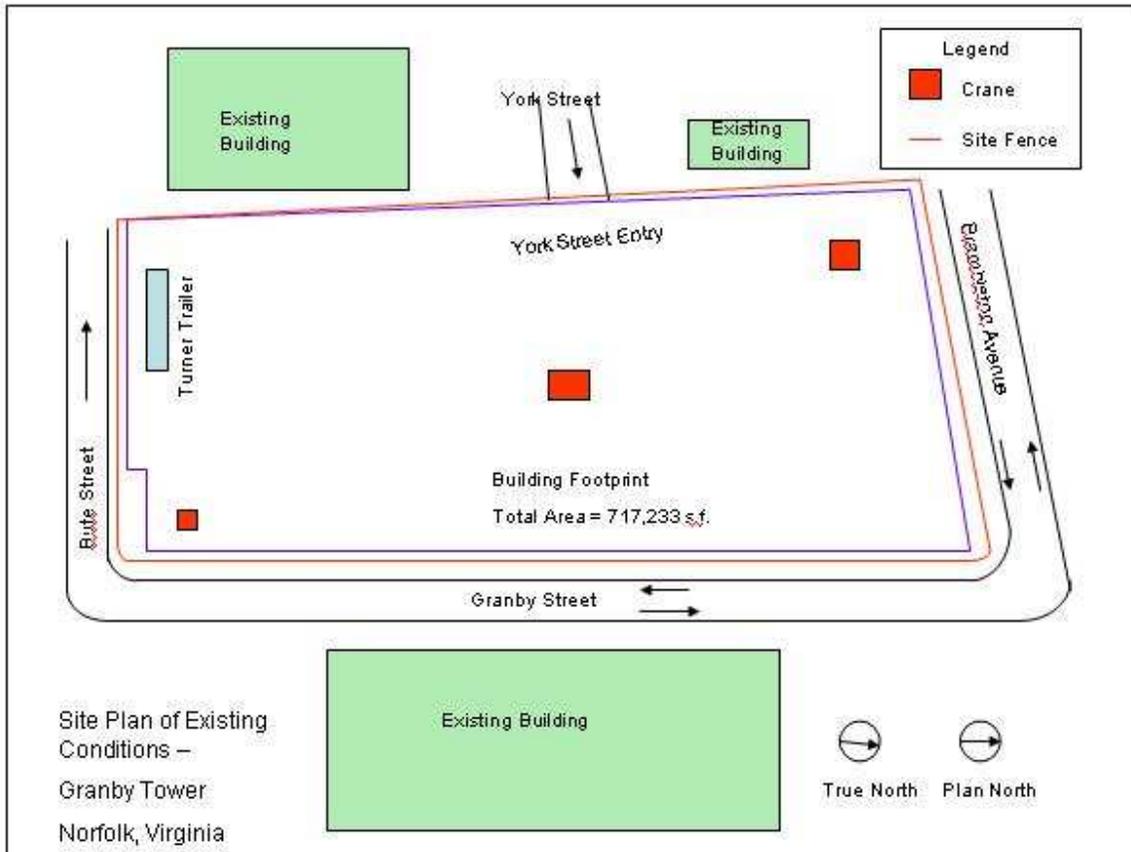
- \$118.43/sq.ft
- \$84,941,052 – total cost

2007 RS Means Square Foot Estimate (refer to Appendix B)

- Used a M.030 apartment, 8-24 story
- \$141.65/sq.ft
- Location factor for Norfolk, Virginia: 0.88
- \$124.65/sq.ft with change for location
- \$89,404,528 – total cost

The main reason why there is such a big difference between the actual costs and the ones determined by RS Means and D4 is because neither one has an estimate for a mixed use building such as Granby Tower. I compared it with an apartment building using RS Means and a condominium using D4, because the majority of the building is comprised of townhouses and condominiums. Also they don't consider as much of the details that would be taken into consideration when comprising an estimate.

Site Plan



Local Conditions

Regional Construction:

In the Norfolk, Virginia area deep foundations are a preferred method of construction. This is true because of the soil conditions in the area. Norfolk is very close to the Chesapeake Bay and the soil allows for settling.

Soil/Subsurface Water Conditions:

There are four different layers of soil on site. The first layer consists of clay with varying amounts of silt and sand. The second layer consists of sand with varying amounts of silt and clay. The third layer consists of clay with varying amounts of silt, sand, and marine shell fragments. The fourth and final layer consists of sand with varying amounts of silt, clay and marine shell fragments. There are also paving and fill material near the soil surface above the previous four layers of soil. However these materials vary throughout the site and are inconsistent. They include asphalt paving, concrete paving; the types of fill include a very loose to medium dense sand and soft clay with varying amounts of silt, clay, construction debris, and organics. As mentioned above these materials change throughout the site, however the four layers of soil are consistent throughout the site. The groundwater table is six to seven feet below grade.

Recycling/Tipping Fees:

Recycling fees in the Norfolk area are about \$11.20 for a 95 gallon container. The tipping fees for waste materials differ depending on what the material is. Yard waste taken to the Norfolk Transfer Station is \$39/ton. Solid waste is only accepted at the regional landfill. Construction and demolition waste is \$7.25/cy.

Parking:

Parking can be an issue since the construction is taking place in downtown Norfolk; however there are several parking garages in the area. Also there is meter parking along the street.

Client Information

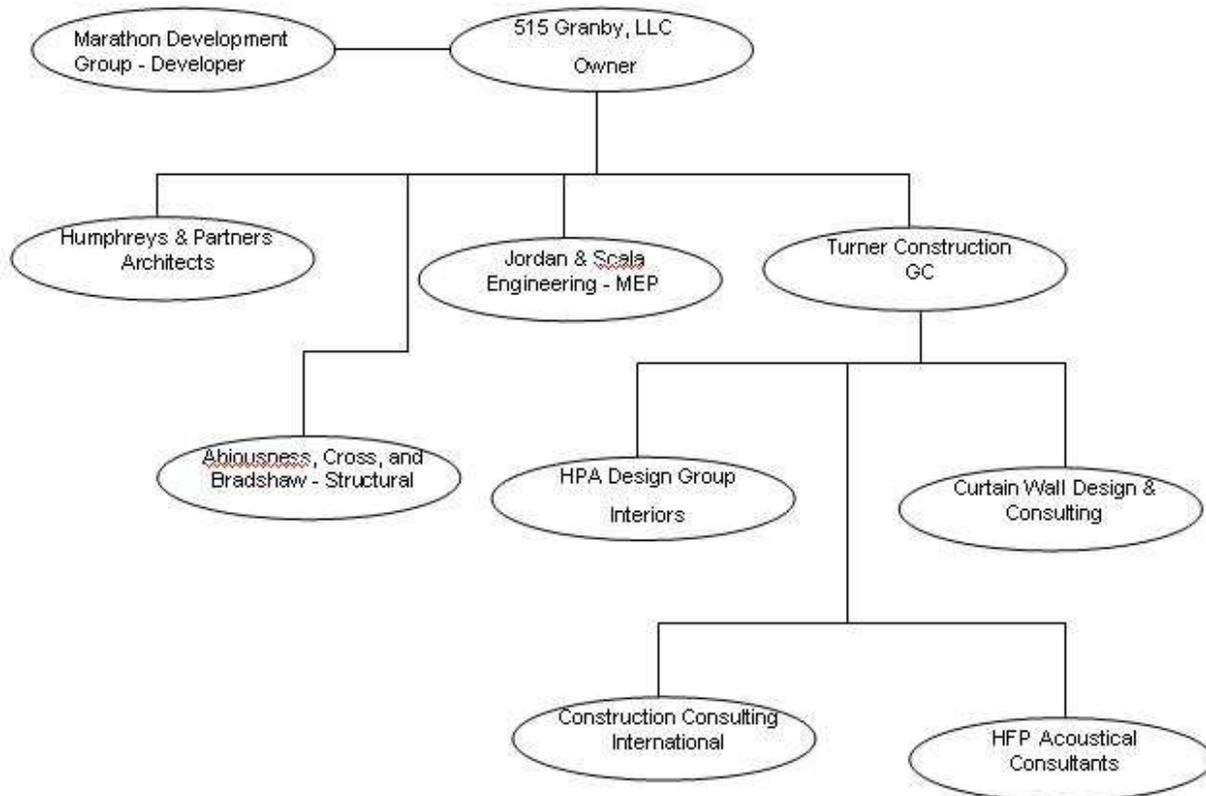
The owner of this project is 515 Granby, LLC. While they are the owner Marathon Development Group Inc. is the developer. Marathon has been involved in restoring historic landmarks in the area. Not only do they restore historic landmarks their goal is to provide a unique living experience for homeowners. They are building this building to give people a chance to live in a historic neighborhood in the largest building in Norfolk and the second largest in the state of Virginia.

Cost and schedule are a concern for the owner as they are on most any project. The owner wants the project to be done on time and on budget. Maintaining schedule is very critical for this project since approximately half of the 311 condominiums units have already been sold, so it is very critical that this project is completed on time. If the building is not finished on time the people who have already bought condominiums will most likely back and the owner will lose a good amount of money. The same can be said about staying within budget. If the project comes in over budget and the owner has to pay for it, most likely they will have to raise the price of the condominiums to make their money back. This could irritate buyers and will either keep people from buying or will force others to back out.

The keys to completing this project to the owner's satisfaction would be for it to be done on time and under budget. The owner will also expect quality work, these condominiums and town homes aren't exactly cheap. People are paying for a quality product and expect to get one in return.

Project Delivery Method

Turner Construction was hired for this project under a Guaranteed Maximum Price (GMP).

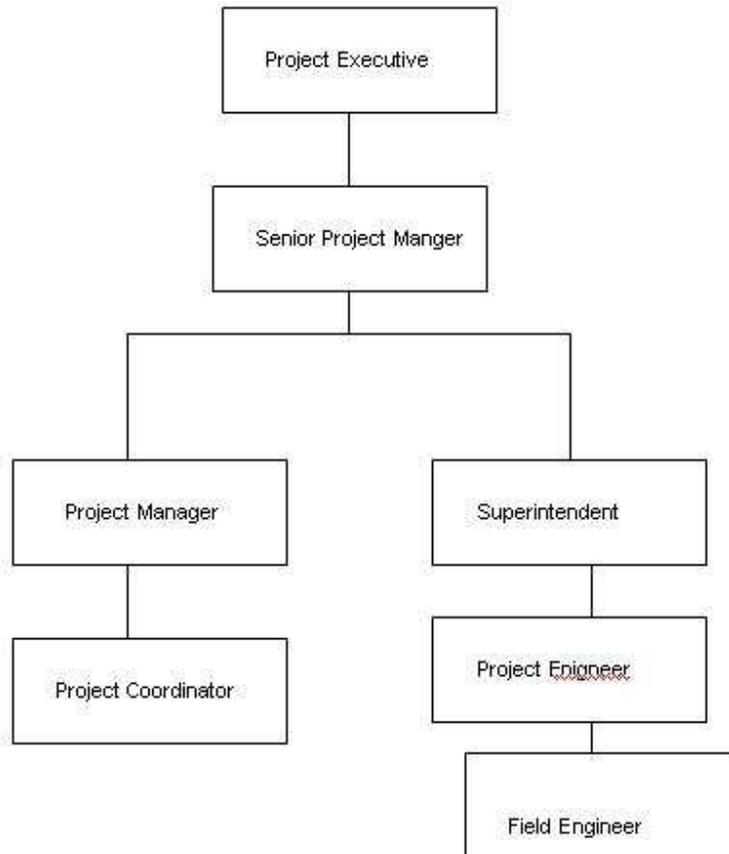


Contract types

- Contracts with owner
 - Humphreys and Partners Architect (Architect)
 - Lump sum
 - Abiousness, Cross, and Bradshaw (Structural Engineer)
 - Lump sum
 - Jordan and Scala Engineering (MEP Engineer)
 - Lump sum
 - Turner Construction (General Contractor/CM)
 - Guaranteed maximum price (GMP)
- Contracts with GC
 - HPA Design Group (Interior Subcontractor)
 - Lump sum
 - Curtain Wall Design and Consulting (Curtain wall Subcontractor)
 - Lump sum
 - Construction Consulting International (Waterproofing Subcontractor)
 - Lump sum
 - HFP Acoustical Consultants (Acoustics Subcontractor)
 - Lump sum

Staffing Plan

The following is the (assumed) staffing plan for the Granby Tower project for Turner Construction. Staff was determined based on class experience and work experience. Will update and make correction when information is received.



Granby Tower
Norfolk Virginia

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Appendix A (D4 Cost Estimate)

Friday, October 5, 2007

Estimate of Probable Cost

Pag

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| | | | |
|--------------------|------------------|-----------------|--------------------|
| Prepared By: | | Prepared For: | |
| | Fax: | | Fax: |
| Building Sq. Size: | 717233 | Site Sq. Size: | 435600 |
| Bid Date: | 11/1/2003 | Building use: | Residential |
| No. of floors: | 4 | Foundation: | PIL |
| No. of buildings: | 1 | Exterior Walls: | PRE |
| Project Height: | 50.8 | Interior Walls: | MAS |
| 1st Floor Height: | 11.8 | Roof Type: | BUP |
| 1st Floor Size: | 15000 | Floor Type: | CON |
| | | Project Type: | NEW |

| Division | | Percent | Sq. Cost | Amount |
|-----------|---|--------------|--------------|-------------------|
| 00 | Bidding Requirements | 0.31 | 0.37 | 263,893 |
| | Permits | 0.31 | 0.37 | 263,893 |
| 01 | General Requirements | 14.29 | 16.83 | 12,070,788 |
| | Builder's Risk Insurance | 0.12 | 0.14 | 102,625 |
| | Building Permit Fees | 0.43 | 0.51 | 366,518 |
| | Change Orders | 3.18 | 3.75 | 2,686,167 |
| | Contractor's Fee | 3.41 | 4.01 | 2,877,167 |
| | Equipment Tools | 0.14 | 0.16 | 118,019 |
| | Field Labor, Safety, Clean-up | 1.29 | 1.52 | 1,092,224 |
| | Field Supervision | 1.15 | 1.35 | 967,608 |
| | General Conditions | 1.14 | 1.34 | 963,209 |
| | General Requirements | 1.56 | 1.84 | 1,319,465 |
| | Insurance (General Condition Items) | 0.42 | 0.49 | 354,789 |
| | MEP Consulting Fees | 0.63 | 0.74 | 532,624 |
| | MOT, Traffic Control | 0.20 | 0.24 | 168,598 |
| | Temporary Utilities | 0.39 | 0.45 | 326,201 |
| | Trash Removal/Hoisting | 0.23 | 0.27 | 195,574 |
| 03 | Concrete | 36.01 | 42.41 | 30,417,097 |
| | 2nd FI Post Tension-1st FI Columns | 4.25 | 5.01 | 3,591,877 |
| | 3rd FI Post Tension-2nd FI Columns | 4.25 | 5.01 | 3,591,877 |
| | 4th FI Post Tension-3rd FI Columns | 4.25 | 5.01 | 3,591,877 |
| | Architectural Precast North Elevati on | 2.60 | 3.07 | 2,199,108 |
| | Architectural Precast South Elevati on | 2.60 | 3.07 | 2,199,108 |
| | Architectural Precast West Elevatio n | 6.77 | 7.97 | 5,719,147 |
| | Elevator Shaft | 0.69 | 0.82 | 586,429 |
| | Pile Caps/Foundations | 3.47 | 4.09 | 2,932,144 |
| | Retaining Wall | 0.31 | 0.37 | 263,893 |
| | Roof Post Tension-4th FI Columns | 4.25 | 5.01 | 3,591,877 |
| | Slab-On-Grade | 1.24 | 1.46 | 1,050,206 |
| | Stair Enclosures/Shear Wall | 1.30 | 1.53 | 1,099,554 |
| 04 | Masonry | 1.04 | 1.23 | 879,643 |
| | Masonry | 1.04 | 1.23 | 879,643 |
| 05 | Metals | 3.38 | 3.98 | 2,855,176 |
| | Exterior Handrails | 1.52 | 1.79 | 1,286,478 |
| | Metal Stairs (2) | 1.13 | 1.33 | 952,947 |
| | Misc. Metals | 0.03 | 0.04 | 29,321 |
| | Roof HVAC Screen Wall | 0.69 | 0.82 | 586,429 |
| 06 | Wood & Plastics | 3.54 | 4.17 | 2,992,253 |
| | Closets | 0.22 | 0.26 | 185,458 |
| | Millwork/Countertops | 2.60 | 3.07 | 2,199,108 |
| | Rough Carpentry-Blocking | 0.46 | 0.54 | 389,975 |
| | Wood Trim/Base | 0.26 | 0.30 | 217,712 |
| 07 | Thermal & Moisture Protection | 2.32 | 2.73 | 1,957,719 |
| | Balcony Coatings | 0.29 | 0.34 | 244,101 |

Friday, October 5, 2007

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| | | | | |
|---------------------------------|---------------------------------|---------------|---------------|-------------------|
| | Dampproofing/Caulking | 0.49 | 0.58 | 416,218 |
| | Modified Bituminous Roof System | 1.54 | 1.81 | 1,297,401 |
| 08 | Doors & Windows | 4.72 | 5.56 | 3,991,088 |
| | Aluminum Windows & Doors | 2.67 | 3.15 | 2,256,725 |
| | Doors, Frames & Hardware | 1.63 | 1.92 | 1,375,176 |
| | Mirrors | 0.12 | 0.14 | 102,625 |
| | Shower Doors | 0.30 | 0.36 | 256,563 |
| 09 | Finishes | 15.89 | 18.71 | 13,420,117 |
| | Carpet/VCT | 1.08 | 1.27 | 908,965 |
| | Drywall | 4.06 | 4.78 | 3,430,609 |
| | Floor Topping | 0.38 | 0.45 | 322,536 |
| | Metal Studs/Drywall/Plaster | 4.76 | 5.61 | 4,024,368 |
| | Painting | 2.60 | 3.07 | 2,199,108 |
| | Special Coating - Stain | 0.12 | 0.15 | 105,191 |
| | Stone Flooring | 0.14 | 0.17 | 120,277 |
| | Tile | 0.78 | 0.92 | 659,732 |
| | Wood Floor | 1.95 | 2.30 | 1,649,331 |
| 10 | Specialties | 0.57 | 0.67 | 477,940 |
| | Entrance Canopy | 0.09 | 0.10 | 73,304 |
| | Fire Extinguishers | 0.02 | 0.02 | 15,394 |
| | Lockers | 0.03 | 0.04 | 26,389 |
| | Mailboxes | 0.07 | 0.08 | 58,643 |
| | Signage | 0.09 | 0.10 | 73,304 |
| | Toilet Accessories | 0.27 | 0.32 | 230,906 |
| 11 | Equipment | 1.28 | 1.50 | 1,079,029 |
| | Appliances | 1.28 | 1.50 | 1,079,029 |
| 12 | Furnishings | 0.33 | 0.39 | 278,480 |
| | Garage Entrance Door | 0.23 | 0.28 | 197,920 |
| | Trash Chute | 0.10 | 0.11 | 80,561 |
| 14 | Conveying Systems | 0.95 | 1.12 | 806,706 |
| | Elevator System | 0.95 | 1.12 | 806,706 |
| 15 | Mechanical | 8.93 | 10.52 | 7,544,407 |
| | Fire Protection | 1.29 | 1.51 | 1,086,359 |
| | Fixtures | 0.43 | 0.51 | 366,518 |
| | HVAC/Ductwork/Piping | 3.73 | 4.39 | 3,152,055 |
| | Plumbing | 3.48 | 4.10 | 2,939,475 |
| 16 | Electrical | 6.44 | 7.58 | 5,439,025 |
| | CATV/Audio/Music | 0.17 | 0.20 | 146,607 |
| | Distribution Panels | 0.26 | 0.31 | 219,911 |
| | Electrical | 3.75 | 4.42 | 3,167,449 |
| | Fire Alarm | 0.17 | 0.20 | 146,607 |
| | Panel Boards | 0.26 | 0.31 | 219,911 |
| | Rough-In/Wire/Conduit | 1.82 | 2.15 | 1,538,540 |
| Total Building Costs | | 100.00 | 117.78 | 84,473,362 |
| 02 | Site Work | 100.00 | 1.07 | 467,689 |
| | Asphalt Pavement/Striping | 7.87 | 0.08 | 36,793 |
| | Auger Cast Piling | 38.20 | 0.41 | 178,649 |
| | Building Demolition | 4.89 | 0.05 | 22,873 |
| | Chain Link Fence | 0.79 | 0.01 | 3,709 |
| | Concrete Sidewalks/Curbs | 3.67 | 0.04 | 17,170 |
| | Dewatering System | 5.77 | 0.06 | 26,982 |
| | Earthwork | 6.82 | 0.07 | 31,887 |
| | Gravity Wall | 1.84 | 0.02 | 8,585 |
| | Landscape Irrigation | 6.56 | 0.07 | 30,661 |
| | Utilities | 23.60 | 0.25 | 110,380 |
| Total Non-Building Costs | | 100.00 | 1.07 | 467,689 |
| Total Project Costs | | -- | -- | 84,941,052 |

Granby Tower
Norfolk Virginia

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Appendix B (RS Means Cost Data)

COMMERCIAL/INDUSTRIAL/ INSTITUTIONAL **M.030** **Apartment, 8-24 Story**



Costs per square foot of floor area

| Exterior Wall | S.F. Area | 95000 | 112000 | 129000 | 145000 | 170000 | 200000 | 275000 | 400000 | 600000 |
|--|----------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | L.F. Perimeter | 345 | 386 | 406 | 442 | 480 | 510 | 530 | 570 | 630 |
| Ribbed Precast Concrete Panel | Steel Frame | 175.45 | 171.85 | 167.65 | 165.75 | 162.55 | 158.95 | 151.90 | 145.95 | 131.00 |
| | R/Conc. Frame | 163.05 | 159.50 | 155.60 | 153.75 | 150.65 | 147.30 | 140.60 | 135.05 | 127.75 |
| Face Brick with Concrete Block Back-up | Steel Frame | 156.40 | 153.15 | 149.60 | 147.85 | 145.10 | 142.05 | 136.25 | 131.30 | 129.55 |
| | R/Conc. Frame | 158.00 | 154.70 | 151.15 | 149.50 | 146.70 | 143.70 | 137.95 | 133.10 | 125.10 |
| Stucco on Concrete Block | Steel Frame | 147.35 | 144.50 | 141.70 | 140.25 | 138.00 | 135.65 | 131.35 | 127.75 | 126.90 |
| | R/Conc. Frame | 148.90 | 146.05 | 143.30 | 141.85 | 139.65 | 137.35 | 133.10 | 129.50 | 126.90 |
| Perimeter Adj., Add or Deduct | Per 100 L.F. | 9.20 | 7.70 | 6.75 | 5.95 | 5.05 | 4.35 | 3.05 | 2.15 | 1.40 |
| Story Hgt. Adj., Add or Deduct | Per 1 Ft. | 3.05 | 2.75 | 2.65 | 2.45 | 2.25 | 2.05 | 1.50 | 1.15 | .80 |

For Basement, add \$29.70 per square foot of basement area

The above costs were calculated using the basic specifications shown on the facing page. These costs should be adjusted where necessary for design alternatives and owner's requirements. Reported completed project costs, for this type of structure, range from \$74.05 to \$173.85 per S.F.

Common additives

| Description | Unit | \$ Cost | Description | Unit | \$ Cost |
|--|------|-------------|---|------|---------|
| Appliances | | | Closed Circuit Surveillance, One station | Each | 1675 |
| Cooking range, 30" free standing | | | Camera and monitor | Each | 910 |
| 1 oven | Each | 370 - 1875 | For additional camera stations, add | | |
| 2 oven | Each | 1825 - 1975 | Elevators, Electric passenger, 10 stops | Each | 270,500 |
| 30" built-in | | | 3000# capacity | Each | 273,000 |
| 1 oven | Each | 600 - 2050 | 4000# capacity | Each | 278,000 |
| 2 oven | Each | 1650 - 2250 | 5000# capacity | Each | 7675 |
| Counter top cook tops, 4 burner | Each | 325 - 820 | Additional stop, add | | |
| Microwave oven | Each | 225 - 720 | Emergency lighting, 25 watt, battery operated | Each | 265 |
| Combination range, refrig. & sink, 30" wide | Each | 1450 - 4000 | Lead battery | Each | 770 |
| 72" wide | Each | 4300 | Nickel cadmium | | |
| Combination range, refrigerator, sink, microwave oven & icemaker | Each | 5125 | Laundry Equipment | | |
| Compactor, residential, 4-1 compaction | Each | 575 - 725 | Dryer, gas, 16 lb. capacity | Each | 320 |
| Dishwasher, built-in, 2 cycles | Each | 560 - 870 | 30 lb. capacity | Each | 3525 |
| 4 cycles | Each | 580 - 1125 | Washer, 4 cycle | Each | 995 |
| Garbage disposer, sink type | Each | 161 - 281 | Commercial | Each | 1400 |
| Hood for range, 2 speed, vented, 30" wide | Each | 242 - 980 | Smoke Detectors | | |
| 42" wide | Each | 465 - 1225 | Ceiling type | Each | 171 |
| Refrigerator, no frost 10-12 C.F. | Each | 520 - 670 | Duct type | Each | 440 |
| 18-20 C.F. | Each | 670 - 1050 | | | |

Important: See the Reference Section for Location Factors

Location Factors

| STATE/ZIP | CITY | Residential | Commercial |
|----------------------|----------------------|-------------|------------|
| VIRGINIA | | | |
| 220-221 | Fairfax | 1.02 | .93 |
| 222 | Arlington | 1.04 | .93 |
| 223 | Alexandria | 1.06 | .94 |
| 224-225 | Fredericksburg | .95 | .89 |
| 226 | Winchester | .93 | .87 |
| 227 | Culpeper | 1.00 | .89 |
| 228 | Harrisonburg | .90 | .86 |
| 229 | Charlottesville | .92 | .87 |
| 230-232 | Richmond | 1.01 | .88 |
| 233-235 | Norfolk | 1.01 | .88 |
| 236 | Newport News | .92 | .86 |
| 237 | Portsmouth | .95 | .89 |
| 238 | Petersburg | .91 | .82 |
| 239 | Farmville | .99 | .87 |
| 240-241 | Roanoke | .86 | .82 |
| 242 | Bristol | .84 | .81 |
| 243 | Puaski | .93 | .85 |
| 244 | Staunton | .97 | .87 |
| 245 | Lynchburg | .85 | .81 |
| 246 | Grundy | | |
| WASHINGTON | | | |
| 980-981,987 | Seattle | 1.02 | 1.04 |
| 982 | Everett | 1.05 | 1.02 |
| 983-984 | Tacoma | 1.01 | 1.03 |
| 983 | Olympia | 1.01 | 1.01 |
| 986 | Vancouver | .98 | 1.02 |
| 988 | Wenatchee | .93 | .96 |
| 989 | Yakima | .97 | .98 |
| 990-992 | Spokane | .99 | .95 |
| 993 | Richland | .97 | .97 |
| 994 | Clarkston | .97 | .95 |
| WEST VIRGINIA | | | |
| 247-248 | Bluefield | .88 | .89 |
| 249 | Lewisburg | .89 | .92 |
| 250-253 | Charleston | .97 | .95 |
| 254 | Martinsburg | .86 | .90 |
| 255-257 | Huntington | 1.01 | .99 |
| 258-259 | Beckley | .90 | .93 |
| 260 | Wheeling | .93 | .97 |
| 261 | Parkersburg | .92 | .96 |
| 262 | Buckhannon | .92 | .96 |
| 263-264 | Clarksburg | .93 | .96 |
| 265 | Morgantown | .92 | .95 |
| 266 | Gassaway | .88 | .93 |
| 267 | Romney | .90 | .94 |
| 268 | Petersburg | | |
| WISCONSIN | | | |
| 530,532 | Milwaukee | 1.07 | 1.02 |
| 531 | Kenosha | 1.04 | 1.00 |
| 534 | Racine | 1.02 | 1.00 |
| 535 | Beloit | 1.00 | .98 |
| 537 | Madison | .99 | .97 |
| 538 | Lancaster | .97 | .94 |
| 539 | Portage | .96 | .95 |
| 540 | New Richmond | 1.00 | .96 |
| 541-543 | Green Bay | 1.01 | .97 |
| 544 | Wausau | .95 | .94 |
| 545 | Rhinelander | .95 | .96 |
| 546 | La Crosse | .98 | .97 |
| 547 | Eau Claire | .99 | .98 |
| 548 | Superior | .99 | .98 |
| 549 | Oshkosh | .95 | .94 |
| WYOMING | | | |
| 820 | Cheyenne | .84 | .86 |
| 821 | Yellowstone Nat. Pk. | .75 | .82 |
| 822 | Wheatland | .75 | .82 |
| 823 | Rawlins | .76 | .83 |
| 824 | Worland | .75 | .81 |
| 825 | Riverton | .74 | .81 |
| 826 | Casper | .78 | .83 |
| 827 | Newcastle | .74 | .81 |
| 828 | Sheridan | .80 | .84 |
| 829-831 | Rock Springs | .79 | .83 |

| STATE/ZIP | CITY | Residential | Commercial |
|---|---------------------|-------------|------------|
| CANADIAN FACTORS (reflect Canadian currency) | | | |
| ALBERTA | | | |
| | Calgary | 1.14 | 1.11 |
| | Edmonton | 1.13 | 1.12 |
| | Fort McMurray | 1.09 | 1.06 |
| | Lethbridge | 1.10 | 1.07 |
| | Lloydminster | 1.09 | 1.07 |
| | Medicine Hat | 1.10 | 1.06 |
| | Red Deer | 1.10 | 1.06 |
| BRITISH COLUMBIA | | | |
| | Kamloops | 1.08 | 1.09 |
| | Prince George | 1.08 | 1.09 |
| | Vancouver | 1.09 | 1.10 |
| | Victoria | 1.03 | 1.04 |
| MANITOBA | | | |
| | Brandon | 1.06 | 1.01 |
| | Portage la Prairie | 1.06 | 1.01 |
| | Winnipeg | 1.05 | 1.03 |
| NEW BRUNSWICK | | | |
| | Bathurst | .97 | .96 |
| | Dalhousie | .97 | .96 |
| | Fredericton | 1.05 | .99 |
| | Moncton | .98 | .97 |
| | Newcastle | .97 | .96 |
| | Saint John | 1.05 | 1.00 |
| NEWFOUNDLAND | | | |
| | Corner Brook | .99 | .99 |
| | St. John's | 1.01 | 1.00 |
| NORTHWEST TERRITORIES | | | |
| | Yellowknife | 1.10 | 1.08 |
| NOVA SCOTIA | | | |
| | Dartmouth | 1.00 | 1.01 |
| | Halifax | 1.02 | 1.03 |
| | New Glasgow | 1.00 | 1.00 |
| | Sydney | .99 | .99 |
| | Yarmouth | 1.00 | 1.00 |
| ONTARIO | | | |
| | Barrie | 1.17 | 1.11 |
| | Brantford | 1.19 | 1.12 |
| | Cornwall | 1.19 | 1.11 |
| | Hamilton | 1.19 | 1.14 |
| | Kingston | 1.19 | 1.11 |
| | Kitchener | 1.11 | 1.06 |
| | London | 1.17 | 1.11 |
| | North Bay | 1.15 | 1.10 |
| | Oshawa | 1.17 | 1.11 |
| | Ottawa | 1.19 | 1.11 |
| | Owen Sound | 1.15 | 1.10 |
| | Peterborough | 1.16 | 1.10 |
| | Sarnia | 1.19 | 1.13 |
| | Sudbury | 1.09 | 1.05 |
| | Thunder Bay | 1.15 | 1.06 |
| | Toronto | 1.20 | 1.14 |
| | Windsor | 1.14 | 1.06 |
| PRINCE EDWARD ISLAND | | | |
| | Charlottetown | .95 | .96 |
| | Summerside | .94 | .96 |
| QUEBEC | | | |
| | Cap-de-la-Madeleine | 1.18 | 1.06 |
| | Charlesbourg | 1.18 | 1.06 |
| | Chicoutimi | 1.20 | 1.08 |
| | Gatineau | 1.16 | 1.06 |
| | Laval | 1.17 | 1.06 |
| | Montréal | 1.21 | 1.11 |
| | Quebec | 1.22 | 1.11 |
| | Sherbrooke | 1.17 | 1.06 |
| | Trois Rivières | 1.18 | 1.06 |
| SASKATCHEWAN | | | |
| | Moose Jaw | .97 | .97 |
| | Prince Albert | .96 | .95 |
| | Regina | .99 | .98 |
| | Saskatoon | .97 | .97 |
| YUKON | | | |
| | Whitehorse | .96 | .96 |