

Construction Management for a New Multi-Story Building

Submitted by **AVIM Construction** represented by

Audye Voltaire and Imani Milima

Presentation Outline

- * Project Background
- * **AVIM Construction** Background and Approach
- * Section I: Bid Process
- * Section II: Managing Time and Cost
- * Section III: Managing Construction and Quality
- * Section IV: Construction Team
- * Summary

Project Background

OWNER

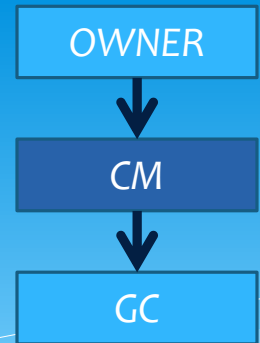
CM

GC

AVIM Construction understands that the erection of this new 8-story, multi-use building is an important project for Mr Carmo. The property has been purchased and you are ready to begin. For each of its uses and the building's requirements, we will outline some key issues. Our approach is to first understand the broad intent and then to work through the details with the client, so the client is fully engaged.

- * Land use readiness
- * Concrete foundation, steel framed, 8-story
- * Classrooms, office building
- * Ground floor public space / large meeting room
- * Metal panel and glass curtain wall veneer
- * Interior furnishings
- * LEED certification – impacting the design, purchase and installation of:
 - * Energy efficient lighting
 - * HVAC systems
 - * Fire protection systems

AVIM Construction Background



AVIM Construction will be your advocate on the project. We will be the central point of communication both to the Mr Carmo, the owner; and to the GC. We ensure that communication is timely, orderly and accurate. We will oversee all issues of quality control, cost and schedule. We will ensure the design intent and operational intent are achieved. Our experience includes:

- * 10 years of relevant experience
 - * multi-story, new buildings
 - * steel framed, metal panel & glass façade, multi-use, courtyard
 - * size of building: 350,000 SF; construction cost \$121M
 - * mega-city, commercial areas
 - * DOB, DOT and MTA requirements, codes, time-lines
 - * LEED certification

AVIM Construction Background

OWNER

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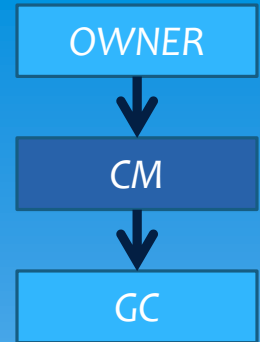


AVIM in Phoenix

AVIM in Seattle



Key issues to be managed and the LEED requirements.



Surveys:

Topographical
Utilities

Site Safety Plan

Logistics Plan

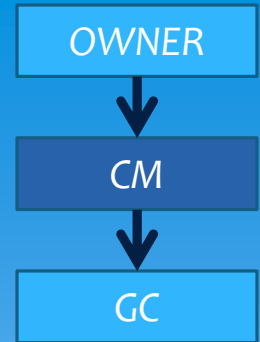
Mobilization Plan

LEED: Site sustainability,
water efficient
landscaping plans



Land Purchase & Prep

Key issues to be managed and the LEED requirements.



Survey results:
rock removal
chemical contamination
Foundation pours & shoring
LEED: Waste management,
construction management
plan

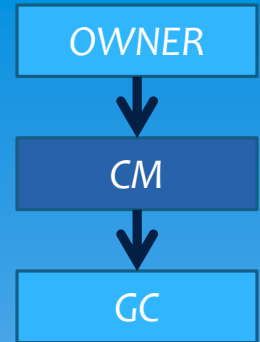


Land Purchase & Prep



Excavation. Concrete Foundation

Key issues to be managed and the LEED requirements.



- Crane lifts
- Scaffolding
- GC / Subcontractor coordination
- Design conformance (space & materials)
- Inspection timing & results
- LEED: Building energy systems, water use reduction, recycled materials & content, acoustic comfort



Land Purchase & Prep



Excavation. Concrete Foundation



Office

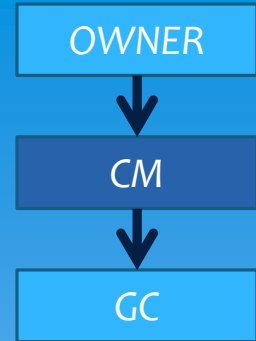


Classrooms

Build and Fit-out

Key issues to be managed and the LEED requirements.

Specialist contractors
Fabrication & storage time line
Grade prep & maintenance
LEED: thermal comfort, low-emitting materials, daylight views, optimize energy performance



Courtyard & Landscaping



Glass Window Wall



Classrooms



Office

Build and Fit-out

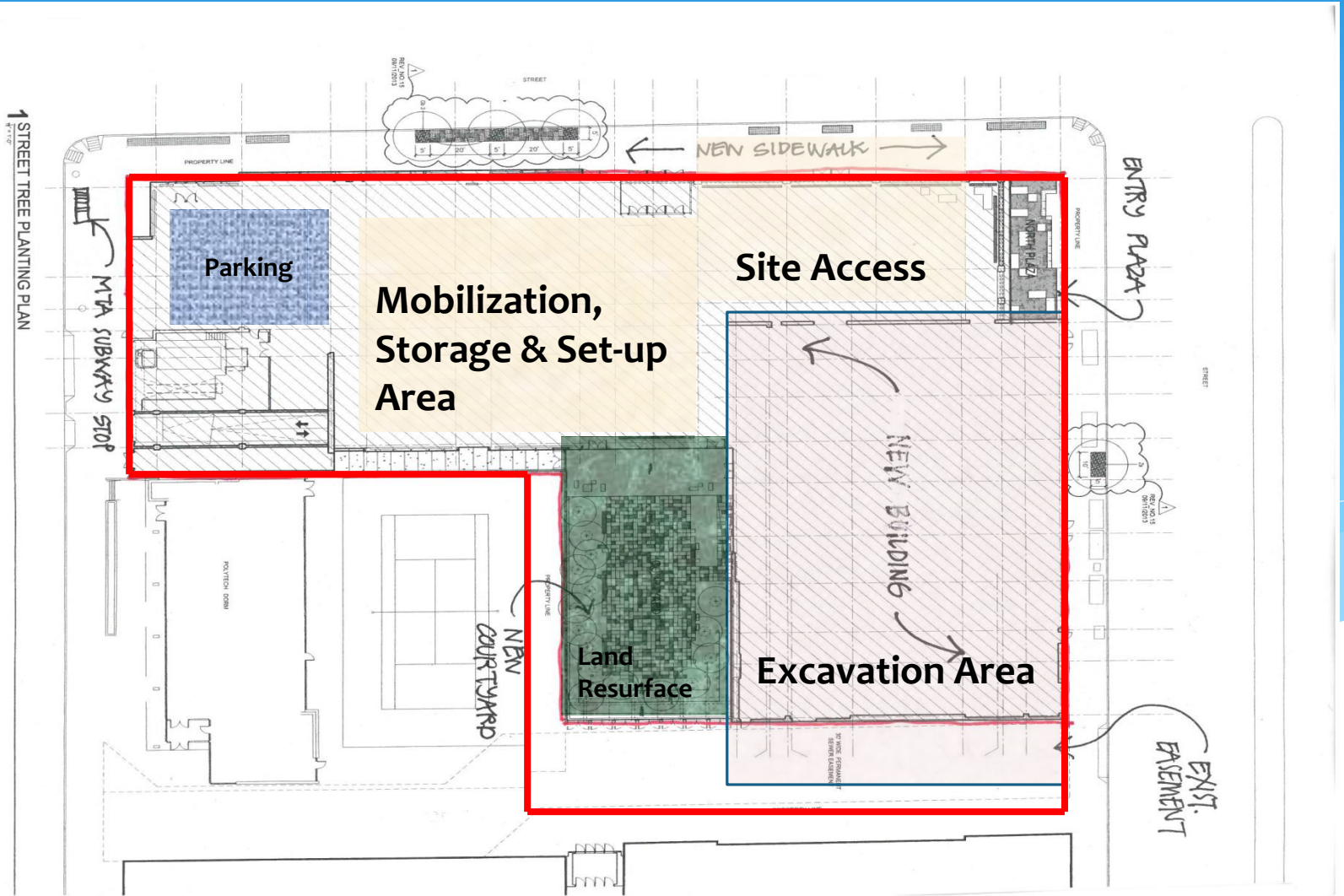


Excavation. Concrete Foundation



Land Purchase & Prep

Establish operational zones and perimeter fencing (red line).



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Section II

Bid Process

Bidding Process

To ensure a quality bidding process:

- Detailed review of the construction documents with the design consultants and our estimators before publishing the request for bids.
 - Construction, general conditions, project management, insurance, mobilization, logistics and schedule costs
- Timely and accurate bidding from general contractors with relevant experience:
 - by dollar value of previous contracts
 - new construction of office buildings with multiple use
 - excavation and specialist experience in rock removal, MTA and utility access
- Accurate tabulation and leveling of bid submissions
- Reporting the bid cost impact to the total project cost
- Review of contract terms (price, payment, disagreements and schedule) by legal and risk management professionals

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Section III

Managing Time and Cost

Managing Time and Cost

Projects are successful by the management of time and cost:

- Establish a flow of communication.
 - for good and bad news
- Create a habit of continuous planning.
 - even slight adjustments can affect the project time frame and cost
- Always ask questions and observe.
 - sometimes you have to see an issue in person in order to resolve it
- Monitor budget changes and track all costs.
 - ensure all costs are recorded properly, anticipated costs are forecasted monthly and cash flow reporting is timely

Managing Time and Cost

Time Management

Schedule Initiated	Schedule to be Used	Frequency	Responsible
At launch	Milestone Schedule	Bi-Annual	Construction Manager
Within a month of bid awards	Gantt Chart Schedule / CPM	Quarterly	General Contractor
At start of construction	Look Ahead	2-Week	CM Field Manager with GC General Superintendent

Managing Time and Cost

Cost Management

Report Initiated	Report to be Used	Frequency	Responsible
At launch	Schedule of Value (per subcontractor)	Once	General Contractor (Summary Report)
At launch	Cash Flow & Anticipated Cost Report	Monthly	CM Financial Officer
At month-end	Payment Requisition / Continuation Sheet including Change Orders (per subcontractor)	Monthly	General Contractor (Summary Report)
Close-Out in 2-Steps 1) Retainage release	<ul style="list-style-type: none"> • At review of punch list, As-Built drawings, etc. • At acceptance of close-out documentation 	Monthly - last 6 months of the project	CM Financial Officer General Contractor
2) When all costs have been paid	Final Financial Statement	Once	CM Financial Officer General Contractor

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Section IV

Managing Construction and Quality

Managing Construction and Quality

Projects are successful by the management of the construction execution and quality:

<p>Logistics & Mobilization</p>	<p>1) Onsite Set-up temporary fencing, security & security cameras, gates for access & egress, parking, temporary trailers, temporary toilets, signage, verify utility disconnects and isolations by others, install temporary power for site trailers and interior lights</p>	<p>2) Surrounding site DOB permits, exterior signage; DOT permits and street closing / crossing, temporary walkways; MTA right of way and temporary walkways, utility requirements; tree protection</p>	<p>3) Site plan Publish and review with GC. Ensure it is shared in the subcontractor kick-off meetings,</p>
<p>Technical</p>	<p>1) Shop drawings and product data according to design drawings and specifications</p> <ul style="list-style-type: none"> - submitted by Subcontractors - reviewed by GC - approved by design team 	<p>3) Execution to plan by daily informal observations and weekly meetings</p> <ul style="list-style-type: none"> - by CM field manager, CM project manager and GC general superintendent <p>4) Field reports, monthly</p> <ul style="list-style-type: none"> - by architect & engineers 	<p>5) Tests of concrete, bolts, sealants, equipment, plumbing lines, electrical lines</p> <ul style="list-style-type: none"> - by 3rd party <p>6) Inspections</p> <ul style="list-style-type: none"> - by 3rd party <p>7) Commissioning</p> <ul style="list-style-type: none"> - by GC with 3rd party sign-off

Managing Construction and Quality

Projects are successful by the management of the construction execution and quality:

<p>Schedule</p>	<p>1) Informal & daily observations - by CM field manager, CM project manager and GC general superintendent</p>	<p>2) Planned vs actual execution time line, weekly & monthly 3) Schedule correction - by CM field manager, CM project manager and GC general superintendent</p>	<p>4) Testing & commissioning schedule review and update - by CM field manager, CM project manager and GC general superintendent</p>
<p>Safety</p>	<p>1) Establish site logistics and site safety plan - in cooperation with the GC. 2) Weekly observations - by Site Safety coordinator</p>	<p>3) Training certification review & tool box review (OSHA & specialist licenses) - by Site Safety coordinator at Kick-Off Meetings</p>	<p>4) Regular inspections - by Site Safety coordinator</p>
<p>Monetary</p>	<p>1) Payment for work done - monthly by CM project manager & financial officer</p>	<p>2) Cost of corrective work (NCR, NCW) - assign by GC, review by CM project manager financial officer</p>	<p>3) Change order management - by GC, review by CM project manager financial officer</p>

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Section IV

AVIM Construction Team

Your project will be led by Audye and Imani

- ***with a team of 4 full-time direct reports.***
- ***Utilize as consultants: design team, expeditor, site safety coordinator, inspection company and LEED consultant.***
- ***AVIM Construction estimator part-time, as required.***

The key responsibilities are outlined below.

AVIM Construction Team & Role

	Consultants: Design: Arch, MEPS, Structure, Landscaping Expeditor, Inspection, Site Safety, LEED, Estimator	Project Manager	Field Manager / General Superintendent	Finance Officer	Project Administrator
I. BID PROCESS	<ul style="list-style-type: none"> Bid evaluation 	<ul style="list-style-type: none"> Vets bid pricing Gathers and documents bid references 		<ul style="list-style-type: none"> Bid pricing impact vis-à-vis the project budget 	<ul style="list-style-type: none"> Publishes bid Collects, logs tabulates bids
II. MANAGE TIME & COSTS Budgets & Schedules	<ul style="list-style-type: none"> Oversee design changes Review contractor shop drawings Review monthly payment requests for work completion 	<ul style="list-style-type: none"> Review monthly payment requests for work completion and its pricing Meets regularly with GC regarding construction schedule 	<ul style="list-style-type: none"> Attends weekly contractor meetings Gives input to look ahead and construction schedules 	<ul style="list-style-type: none"> Financial reporting to Owner Collects and reviews monthly requisitions, verifying financial impact to the project budget Ensures accuracy of project accounting 	<ul style="list-style-type: none"> Schedules meetings Schedule inspections Collect meeting minutes Document management

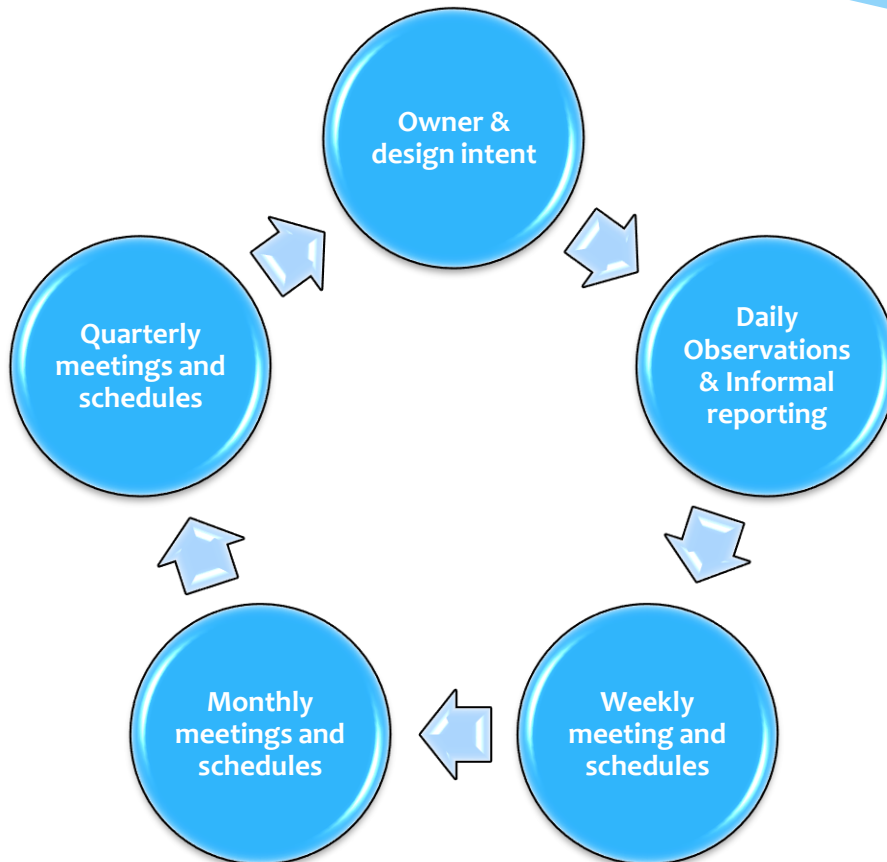
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III. MANAGING CONSTRUC- TION & QUALITY	<ul style="list-style-type: none"> Subcontractor adherence to Construction Drawings, and Design changes 	<ul style="list-style-type: none"> Leads project coordination with GC 	<ul style="list-style-type: none"> Daily field oversight 		
Mobiliza- tion & Logistics		<ul style="list-style-type: none"> Security oversight 	<ul style="list-style-type: none"> Safety requirements 	<ul style="list-style-type: none"> Cost impact 	<ul style="list-style-type: none"> Collect and review monthly invoices for safety & security
Construc- tion Schedule		<ul style="list-style-type: none"> Monthly update of construction schedule 			
Quality Control	<ul style="list-style-type: none"> Review contractor shop drawings Oversee design changes Review survey reports and impact 	<ul style="list-style-type: none"> Third party inspection oversight Adherence to schedule DOB compliance DOB inspections 		<ul style="list-style-type: none"> Reviews monthly billing and change order pricing 	<ul style="list-style-type: none"> Permit renewal coordination with the GC
Changes & Disputes	<ul style="list-style-type: none"> Final authority for design changes 	<ul style="list-style-type: none"> Mediate changes & disputes 	<ul style="list-style-type: none"> Gather information 	<ul style="list-style-type: none"> Confirms cost of changes are efficient 	

Summary

Execution, Review and Reporting

- **Daily** : CM Field Manager, GC General Superintendent
- **Weekly**: CM Field Manager, GC General Superintendent, Site Safety Coordinator
- **Monthly**: CM Project Leads & Manager, CM Field Manager, GC General Superintendent, GC Project Manager, Site Safety Coordinator , CM Financial Officer
- **Monthly & Quarterly**: Owner, CM Project Leads, GC Lead, CM Financial Officer



Summary

Communication Hot List

- Field emergencies: CM Field Manager, CM Project Manager
- Government Agency reports (DOB, DOT, FDNY): CM Project Leads, CM Project Manager
- Monthly and Inspection reports: CM Project Leads
- Financial reporting: CM Project Leads, CM Financial Officer

Summary

Preliminary Milestone Schedule (Illustrative)

	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13	M14	M15	M16	M17	M18
Bid Prep – Review design dwgs with A/E	█																	
Bid Ad, receipt, review, level, tabulate	█																	
Award of GC Contract – NTP issued	█	█																
Initial Planning Mtgs		█																
Mobilization, Logistics & Permits		█																
GC – Subcontractor Bid Process & Awards		█	█	█														
Excavation & Foundation			█	█														
Scaffold, Framing				█	█	█												
MEPS					█	█	█	█	█	█								
Façade					█	█	█	█	█	█	█	█	█					
Fit Out												█	█	█	█	█	█	
Close Out																█	█	█

Summary

What is required & AVIM experience

Mr Carmo requires:

- * Land use readiness
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