PMBOK on Steroids: The Integrated Project Delivery Development of a Continuing Care Retirement Community
The Product: Ashby Ponds
3NHD 1,500 Unit Campus
The Product: Ashby Ponds
3NHD 1,500 Unit Campus

• 123+/- acres
• 3 neighborhoods (NHD)
• 5-6 Residential buildings (RB) per NBHD; 4-story over one-store garage
• Buildings connected by enclosed bridges; campus linked w/in one level
• 1,584 ILU + 96 ALF + 132 SNF
• 2 million S.F. of development
• Phased in 5 years
• $300 M cost to development
• **Features:** Ponds, swimming-pool, putting greens, courtyards, resident gardens & walking paths
• **Amenities:** Restaurants, commercial kitchens, performing arts theaters, fitness centers, salon / spa, indoor heated swimming pool, marketplace & cafe, on-site pharmacy, bank, full-service medical centers, dental suites, out-patient rehabilitation centers, cafes, art & craft studios, catering facilities, classrooms, club rooms, libraries, computer labs, concierge service, shuttle transportation & 24/7 security
• Architectural character matched regional identity
The Organization: DOM + Customer

Development
- Acquisitions
- Design
- Construction
- Standards

DOM

Operations
- Planning
- Operations
- Finance
- IT
- Facility Management

Marketing
- Sales
- Marketing

Community
(The Customer)
- Exec. Dir.
- Operations
- Marketing
- Residents
Ashby Ponds

NHD 1

NHD 2

NHD 3
Ashby Ponds
The Product
The Product
Ashby Ponds

Residential Building
**Rita’s Process Chart**

### Initiating
- Select project manager
- Determine company culture and existing systems
- Collect processes, procedures and historical information
- Divide large projects into phases
- Identify stakeholders
- Document business need
- Determine project objectives
- Document assumptions and constraints
- Develop project charter
- Develop preliminary project scope statement

### Planning
- Determine how you will do planning—part of management plans
- Create project scope statement
- Determine team
- Create WBS and WBS dictionary
- Create activity list
- Create network diagram
- Estimate resource requirements
- Estimate time and cost
- Determine critical path
- Develop schedule
- Develop budget
- Determine quality standards, processes and metrics
- Determine roles and responsibilities
- Determine communications requirements
- Risk identification, qualitative and quantitative risk analysis and response planning

### Executing
- Acquire final team
- Execute the PM plan
- Complete product scope
- Recommend changes and corrective actions
- Send and receive information
- Implement approved changes, defect repair, preventive and corrective actions
- Continuous improvement
- Follow processes
- Team building
- Give recognition and rewards
- Hold progress meetings
- Use work authorization system
- Request seller responses
- Select sellers

### Monitoring & Controlling
- Measure against the performance measurement baselines
- Measure according to the management plans
- Determine variances and if they warrant corrective action or a change
- Scope verification
- Configuration management
- Recommend changes, defect repair, preventive and corrective actions
- Integrated change control
- Approve changes, defect repair, preventive and corrective actions
- Risk audits
- Manage reserve
- Use issue logs
- Facilitate conflict resolution
- Measure team member performance
- Report on performance
- Create forecasts
- Administer contracts

### Closing
- Develop closure procedures
- Complete contract closure
- Confirm work is done to requirements
- Gain formal acceptance of the product
- Final performance reporting
- Index and archive records
- Update lessons learned knowledge base
- Hand off completed product
- Release resources

#### The Communications Management Process

<table>
<thead>
<tr>
<th>The Communications Management Process</th>
<th>Done During</th>
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<tbody>
<tr>
<td>Communications planning</td>
<td>Planning process group</td>
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<td>Information distribution</td>
<td>Executing process group</td>
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<td>Performance reporting</td>
<td>Monitoring and controlling process group</td>
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<tr>
<td>Manage stakeholders</td>
<td>Monitoring and controlling process group</td>
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I. INITIATING:
Identifying a Need to Build
Collect processes, procedures and historical information

- **(Office of) Development Standards** (PMO)
- **Design Standards**: Drawings, specifications, schedules, etc. outlining A/MEP systems, FF&E and best practices
- **Development Manual**: Processes/procedures, communications
- **Lessons Learned Reports**: Similar projects

Determine company culture and existing systems

- **Determine Organizational Assets**: 
  - **The Organization**
  - **Corporation**: DOM
  - **Customer**: Exec. Dir., Operations/Marketing team + residents
  - **The Product**: 3 NHD 1,500 ILU - prototype

Select project mgr.

- **Determine PM**: 
  - Development Director
  - Member of Corporate Development

Divide larger project into phases

- Divide 3NHD 1,500 ILU into NHD 1 Phase (500 ILU)
**Identify Project Stakeholders:**
- **Development**
  - Dev. Exec. Team, PM, Asst. PM, + Dev. Mgmt. team
- **Operations**
  - Operations Exec. Team
- **Marketing**
  - Marketing Exec. Team
- **Customer (the Community)**
  - Headed by Exec. Dir.
  - Residents

**Document the Business Need:**
- **Financial Planning & Analysis (FP&A)**
  - Scenarios: scope, quality, cost, schedule, loans, interest, payback period, etc.
- **Marketing Demographic Study**
  - Housing market, construction costs, median income level, number of seniors, transportation, employment market, etc.
• Develop Project Charter & Preliminary Scope Statement:

- Development ProForma (3 NHD 1,500 ILU)
  - Based on FP&A, demographics, par. data & lessons learned
  - Included:
    - Balance reconciliation
    - Completion to budget analysis - ETC, EAC
    - Variance analysis – scenarios (hard costs, development costs, working capital loan, etc.)
    - Anticipated budget expectation
    - Absorption analysis – scenarios
    - Deposits & inventory analysis – scenarios
    - Settlement analysis - scenarios
    - Payback period – scenarios
    - Etc.
### The ProForma

#### Balance Testing

**"Not-For-Profit Scenario"**

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<th>Phase</th>
<th>Completion Date</th>
<th>Status</th>
<th>No. of Units</th>
<th>Average Deposit per Unit</th>
<th>Total Deposit by Phase</th>
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**Projected Fair Market Value at Completion**

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#### Absorption Analysis

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#### Demographic Study

[Map Image]

#### Variance Analysis

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**Phase Costs:**

10. Hard Costs - Site
11. Hard Costs - Site
12. Architecture
13. Engineering
14. Builder's Risk
15. Fees, Permits, & Bonds
16. Development Fees
17. Outside Legal Expense
18. Inside Legal Expense
19. Outside Construction
20. Inside Construction
21. Testing Costs
22. Soft Costs
23. Pre-development Costs
24. Indirect Expenses
25. Interest
26. Taxes
27. Insurance
28. Contingency
29. Profit
30. Total Costs
31. Total Budget
32. Total ETC
33. Total EAC
34. Total Original Budget
35. Total Favorable Difference
II. PLANNING:
What to Build...How to Build...When

Continually Defining, Designing & Refining
Determine how to plan – part of management plans

- **Determine How to Plan:**
  - Development Standards
    Office of Development Standards (PMO)

- **Create Project Scope Statement**
  - **Architectural Program** (Masterplan)
    - List of spaces, square footages & FF&E requirements
  
  - **Unit Mix** (Masterplan)
    - Numbers & ratios of each unit type (1BR, 2BR...)
  
  - **Design Manual** (Masterplanning)
    - Includes: Development Standards + prototypes, character studies, preliminary drawings, Lessons Learned Report (similar projects), preliminary budget & schedule (based on ProForma)
Determine Team:

- **Corporate Team**: (regional)
  - **Development**: PM, Asst. PM, Development Mgmt. team
  - **Operations**: Ops. Dir., team
  - **Marketing**: Markt. Dir., team

- **Consultant Team**: (regional)
  - **Design**: Architect, design consultants
  - **Construction**: G.C., sub-contractors
  - **Others**: Vendors, etc.

Create WBS and WBS dictionary
Create activity List
Create network diagram
Estimate resource requirements
Estimate time and cost
Determine critical path
Develop schedule
Develop budget

Create WBS, Critical Path, Project Schedule & Budget:

- **Development Schedule & Budget**
  - Design & construction – design build, fast-track
  - Managed by PM & project consultants
  - Based on ProForma w/ parametric data (from consultants)
  - Outlines: Who, what, when, actual vs. planned, CPM, EVM, etc.
Determine quality standards, processes and metrics

- Development Manual
- Design Standards
- Lessons Learned
- Design Manual (Masterplanning)

Determine roles and responsibilities

- Determine communication requirements
  - Risk identification, qualitative and quantitative risk analysis and response planning
  - Iterations – go back
- Determine what to purchase

Determine Roles, Responsibilities, Communications, Risks & What to Purchase:

- Due-Diligence Process (6-12 months before kick-off)
  - Series of meetings, investigative work & reviews
  - Refine requirements: scope, quality, communications, resources, schedule, budget, risks, etc.
  - Results in land acquisition & zoning
Prepare procurement documents

- Prepare Procurement Documents:
  - RFP, Proposal Review, Pre-Bid Conf. & Awards *
  - Project consultants (Architect + G.C.)

Create process improvement plan

- Finalize “How to Execute” Management Plans & Establish Performance Measurement Baselines:
  - Design Manual (NHD 1) (before kick-off)
    - Reviewed with project consultants
    - Includes:
      - Architectural Program (NHD 1)
      - Unit Mix (NHD 1)
      - Development Standards
      - Prototypes
      - Character studies, preliminary drawings
      - Development budget & schedule (NHD 1)

Gain formal approval

- Finalize the “how to execute and control” aspects of all management plans

Hold kick-off meeting

- Hold Project Kick-Off Meeting *
What to Build

NHD 1 Design Manual

Chapter 1: PROJECT INFORMATION
- Standard Guidelines for Electronic Submissions

Chapter 2: MASTER PLANNING
- Standard Site Design Guidelines
- Standard Exterior Site Signage Design Guidelines
- Standard Site Lighting Schedule

Chapter 3: DESIGN STANDARDS
- Architectural Masterplan Program and Cover Sheet
- One-of-a-Kind Space Diagram
- Standards Directives to be implemented Memo
- Standard Interior Finishes
- Interior Design Standards Management (ISDM) Consultant Guide
- Standard Window Treatment Package
- Standard Equipment Schedule
- Standard Mechanical Design Criteria
- Standard Electrical Design Criteria
- Standard Building Lighting Schedule
- Standard Plumbing Fixture Schedule
- Standard Specifications

Chapter 4: CLUBHOUSE & NEIGHBORHOOD DESIGN
- CB 2.0 Prototype: (YKG, CB 2.0) Concept Plans
- CB 2.0 Prototype: (YKG, CB 2.6) Adix and SFix
- CB 2.0 Prototype: (YKG, CB 2.6) Walk-through Recap APL CB 2.0 Interpretation by MTA

Chapter 5: INDEPENDENT LIVING BUILDING AND RES.
- Standard Unit Amenities and Unit Mix Chart
- APL Unit Mix Chart
- APL Key Plans
- Standard Marketing Drawing Scope of Work

Chapter 6: ADJUNCT BUILDINGS
- Standard Chapel
- Standard Maintenance Yard/Wash Bay

NHD 1 Phase

NHD 1 Architectural Program
III. EXECUTING:
An Integrated, Design-Build Approach
...on a *Fast-Track*
• Acquire Final Team:
  - Sign contracts for project consultants *

• Execute PM Plan:
  - Building Design (6 months) *
    - Pre-SD
    - Schematic Design (SD)
    - Design Development (DD)
    - Construction Documents (CD)
    - Bid Documents
    - Permit Documents
    - Project Specifications
  - Building Construction (6 months) *
    - Bidding
    - Value-engineering
    - Construction & installation of design
    - Building inspection
    - Building occupancy
    - Substantial Completion

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  - Recommend changes and corrective actions
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  - Implement approved changes, defect repair, preventative and corrective actions
  - Continuous improvement
  - Follow processes
Team building
Give recognition and reward

• Give Recognition & Reward:
  - Team building exercises (as needed) *
    - Frequent
    - Informal & formal
  - Entertaining (as required) *
    - Lunch meetings/outings, happy-hours, dinners, events, parties

Hold progress meetings
Use work authorization system

• Hold Progress Meetings:
  - Design Progress Meetings (bi-monthly) *
    - Review progress + resources, schedule, budget, communications, risks, etc.
  - Construction Progress Meetings (bi-monthly) *
    - Review progress + resources, schedule, budget, communications, risks, etc.
Construction
Construction
IV. MONITORING & CONTROLLING: Weighing Risk vs. Reward
A Continual Balancing Act
Measure against the performance measurement baselines

Measure according to management plans

Determine variances and if they warrant corrective action or a change

Scope verification
Configuration management

Recommend changes, defect repair, preventive and corrective actions

• Measure against Performance Baselines, Determine Variances & Recommend Changes:

- Exec. Development Meetings (monthly)
  - Milestones + track (schedule, budget, actual vs. planned, EVM)

- Formal Design Reviews (SD, DD, CD) *
  - Review & comment; Report Card

- Operations Review Meeting (during Design Reviews) *
  - Check compliance to Standards

- Construction Site Visits (monthly) *
  - Check compliance with design drawings

- Mock-up Panel Review (during construction) *
  - Review & finalize exterior material samples, detailing, etc.
• Integrated Change Control:

- **DOM Standards Meeting** (monthly)
  - Review requested changes & impact
  - Update associated documents
  - Issue Standards Directive

- **Project Standards Review** (monthly)
  - Review issued Standards Directives for applicability to project
  - Review impact of change

- **Implement Standards Directives** (monthly)
  - PM to Architect = OD, OSI or Change Directive
  - Architect to G.C. = ASI or Change Directive
  - G.C. to Architect & PM = Change Order

- **Implement misc. changes** (as needed) *
  - Same process

Approve changes, defect repair, preventive and corrective actions
- **Risk Audits & Conflict Resolution:**
  - Issue Log *
  - Review during all Progress Meetings

- **Report on Performance:**
  - Exec. Development Meetings (monthly)
  - Track against ProForma

- **Administer Contracts:**
  - Building Permit *
    - Permission to build
  - Certificate of Occupancy *
    - Permission to occupy; building fit for use
  - Certificate of Substantial Completion *
    - Confirm project consultants met contract obligations
    - Ready for delivery to Customer
V. CLOSING:
Delivery to Customer
Turn-Over...Move-In...Lessons-Learned
**Develop closure procedures**
- Complete contract closeout
- Confirm work is done to requirements
- Gain formal acceptance of product
- Final performance reporting

**Index and archive records**
- Develop Closure Procedures:
  - Certificate of Occupancy (95% completion) *
    - Certify building is fit for use; ready for occupancy
  - Punch List (95% completion) *
    - Detailed review of all items to be complete
  - Substantial Completion (Punch-List completion) *
    - Certify Punch-List is complete

- Index and Archive Records:
  - Record Documents (after completion) *
    - As-built documents (drawings + specifications)
  - Facility Management Documents (after Record Doc.) *
    - Facility management, training, CAFM software, etc.
  - Update Dev. Project Database *
    - Archive project files, drawings, specifications, correspondence, documents, issue logs, etc.
• Hand Off Project to Customer:
  - **Pre-Occupancy Meeting** (monthly, 4 x before opening)
    - Detailed review & preparation for customer move-in & Grand Opening
  - **Orientation Meetings** (90 days before opening)
    - Present & introduce product to customer
  - **Operations Move-In** (after completion)
    - Move FF&E
    - Employee move-in
  - **Operation Turn-Over** (after move-in)
    - Building systems training (MEP, IT, etc.), CAFM software, warranties, etc.
    - Hand over keys
  - **Resident Move-In** (after turn-over; on-going)
    - Resident move-in
  - **Grand Opening** (official opening)
    - Formal; ribbon-cutting ceremony, official tours, etc.
Update Lessons Learned Knowledge Base:

- **Lessons Learned Report** (30 days after opening)
  - Detailed review & walk-through
  - Issue Report to PMO

- **Resident Survey** (90 days after opening)
  - Questionnaire sent in advance
  - Issue Report to PMO

- **Post-Occupancy Report** (12 years after opening)
  - Questionnaire sent in advance & walk-through
  - Confirm functionality, warranty status, etc.
  - Issue Report to PMO

- **Update Development Standard Library** (PMO)
  - Store project documents:
   - Record Documents
   - Design Reviews
   - Drawings + specifications
   - Lessons learned knowledge database
   - Etc.

* Submit Request to Change Standard (based on lessons learned knowledge base)
Release Resources:

- Certificate of Final Completion *
  - Finalizing payments & fees
  - Clarify warranty information
  - Release of project consultants
Residential Buildings
Rapid Growth & Growing
Thank you!

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