PROJECT MANAGEMENT PLAN

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EMBRY-RIDDLE AERONAUTICAL UNIVERSITY

MASTERS OF SCIENCE PROJECT MANAGEMENT CAPSTONE

PMGT 690

JANUARY 2016

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Scope of Work

Project Title: Team 3: Date: 20 June 2014 Prepared by: Team 3
Project Justification: Billionaire Bruce Wayne has contracted with Team 3 to construction a storage facility to serve as an alternate Bat Cave to provide continuity of operations (COOP). Budget $500,000; however, Mr. Wayne insists cost is a secondary concern to functionality. .
Product Characteristics and Requirements: 1. Sufficient room to garage the Bat Mobile 2. Additional workshop with sufficient capability to provide continuity of operations (COOP) and serve as an alternate Bat Cave 3. Constructed on the Wayne Manor property 4. Meet all Gotham Building Department Code requirements
Summary of Project Deliverables Project management-related deliverables: Scope of work, Work breakdown structure (Microsoft Project 2013), Communications plan, Responsibilities matrix, Budget, Network diagram (forward pass, backward pass, identifying the critical path) (Microsoft Project 2013), Quality plan, Management Plan (including a PERT), Change Control Process, Resources categories and constraints, Baseline the schedule & budget (Microsoft Project 2010), Time phased cash flow plan, Human Resource plan, Recommendations to reduce the schedule length and calculate impact on the budget (include examples of outsourcing with applicable example contracts), Status report format, and Closeout checklist Product-related deliverables: 1. Formal Briefing 2. Detailed Project Plan for review, critique, and grade
Project Success Criteria: 1. Storage Facility meets the Wayne contract requirements 2. Structure is Gotham Development Department Code compliant

Project Requirements / Tools and Techniques

REQUIRMENT	WBS ELEMENT	TOOL/TECHNIQUE
1 Plan project requirements with Mr. Wayne	1.1.1	Interview/Brainstorming
2 Generate SOW	1.3	Assign to Project Manager
3 Review SOW requirements with Mr. Wayne	1.3	Nominal Group Technique
4 Plan Construction	1.5	Nominal Group Technique
5 Determine People Resources Required	1.5, 2.1, 3.1, 4.1, 5.1	Research and Analysis
6 Determine Material Resources Required	1.5, 2.1, 3.1, 4.1, 5.1	Research and Analysis
7 Determine Equipment Resources Required	1.5, 2.1, 3.1, 4.1, 5.1	Research and Analysis
8 Acquire Resources	1.3 & 2.3	Assign to Senior Manager
9 Establish Quality Management System	1	Benchmarking
10 Construct Alternate Bat Cave	3,4,5	Do it
11 Post Construction Inspection	6	Do it
12 Meet all Gotham Building Code Requirements	1 & 8	Do it

Work Breakdown Structure

Task Name	Duration	Start	Finish	Predecessors
1 Planning and Authorization	17 days	Mon 8/4/14	Tue 8/26/14	
1.1 Develop preliminary design plans and drawings	5 days	Mon 8/4/14	Fri 8/8/14	
1.1.1 Hold initial planning meeting with Bruce Wayne	1 day	Mon 8/11/14	Mon 8/11/14	2
1.2 Request bids from sub-contractor	1 day	Tue 8/12/14	Tue 8/12/14	3
1.3 Finalize development plans - select subcontractors	1 day	Wed 8/13/14	Wed 8/13/14	4
1.3.1 Hold plan approval meeting with Bruce Wayne	1 day	Thu 8/14/14	Thu 8/14/14	5
1.4 File application for permit	1 day	Fri 8/15/14	Fri 8/15/14	6
1.4.1 Energy calculations, asbestos forms, obtain estimated costs, job type and building informational system (BIS) number for application	3 days	Mon 8/18/14	Wed 8/20/14	7
1.4.2 Submit application, pay fees	1 day	Mon 8/18/14	Mon 8/18/14	7
1.4.2.1 Gotham Development Department reviews plan	6 days	Tue 8/19/14	Tue 8/26/14	9
1.4.2.2 Gotham Development Department approves plan	1 day	Tue 8/19/14	Tue 8/19/14	9
1.4.3 Submit approved plan to Gotham Records Room for microfilming	1 day	Mon 8/18/14	Mon 8/18/14	7
1.4.4 File with Gotham Development Department for permit	1 day	Mon 8/18/14	Mon 8/18/14	7
1.4.4.1 Gotham Development Department issues permit	1 day	Tue 8/19/14	Tue 8/19/14	13
1.5 Coordinate development plan with sub contactors	1 day	Wed 8/20/14	Wed 8/20/14	14
2 General Site Preparation	17 days	Wed 8/27/14	Thu 9/18/14	1
2.1 Review building plans and Statement of Work with the site prep subcontractor	1 day	Wed 8/27/14	Wed 8/27/14	1
2.1.1 Identify and locate site prep equipment requirements	1 day	Thu 8/28/14	Thu 8/28/14	17
2.2 Conduct site survey	1 day	Thu 8/28/14	Thu 8/28/14	17

2.3 Transport equipment to work site	1 day	Fri 8/29/14	Fri 8/29/14	19
2.4 Clear land of structures and vegetation per site plan	3 days	Mon 9/1/14	Wed 9/3/14	20
2.4.1 Ensure waste and debris is removed in accordance with regulations	1 day	Thu 9/4/14	Thu 9/4/14	21
2.5 Level and grade land	3 days	Fri 9/5/14	Tue 9/9/14	22
2.6 Dig utility trenches	3 days	Wed 9/10/14	Fri 9/12/14	23
2.6.1 Lay and connect temporary utilities to support construction	2 days	Mon 9/15/14	Tue 9/16/14	24
2.6.2 Install lighting and other temporary services to support construction	3 days	Mon 9/15/14	Wed 9/17/14	24
2.7 Safety and permit inspection	1 day	Thu 9/18/14	Thu 9/18/14	26
3 Foundation	10 days	Fri 9/19/14	Thu 10/2/14	16
3.1 Review building plans and SOW with subcontractor	1 day	Fri 9/19/14	Fri 9/19/14	16
3.2 Layout and pour concrete foundation and driveway	4 days	Mon 9/22/14	Thu 9/25/14	29
3.3 Allow time for foundation to cure	5 days	Fri 9/26/14	Thu 10/2/14	30
4 External Structure	17 days	Fri 10/3/14	Mon 10/27/14	28
4.1 Review building plans and SOW with subcontractor	1 day	Fri 10/3/14	Fri 10/3/14	28
4.2 Construction materials delivered to site	3 days	Mon 10/6/14	Wed 10/8/14	33
4.3 Begin framing	6 days	Thu 10/9/14	Thu 10/16/14	34
4.4 Sheathing, roof decking, flashing, doors, windows	5 days	Fri 10/17/14	Thu 10/23/14	35
4.5 Install siding	2 days	Fri 10/24/14	Mon 10/27/14	36
4.6 Paint exterior	2 days	Fri 10/24/14	Mon 10/27/14	36
5 Internal Construction	12 days	Tue 10/28/14	Wed 11/12/14	32
5.1 Review building plans and SOW with subcontractor	1 day	Tue 10/28/14	Tue 10/28/14	32
5.2 Utilities	1 day	Wed 10/29/14	Wed 10/29/14	40

5.2.1 Plumbing	4 days	Thu 10/30/14	Tue 11/4/14	41
5.2.2 Electrical	4 days	Thu 10/30/14	Tue 11/4/14	41
5.2.3 HVAC	4 days	Thu 10/30/14	Tue 11/4/14	41
5.2.4 Communications	3 days	Thu 10/30/14	Mon 11/3/14	41
5.3 Interior walls and ceilings	1 day	Tue 11/4/14	Tue 11/4/14	45
5.3.1 Insulation	3 days	Wed 11/5/14	Fri 11/7/14	46
5.3.2 Drywall	3 days	Wed 11/5/14	Fri 11/7/14	46
5.4 Paint interior	3 days	Mon 11/10/14	Wed 11/12/14	48
6 Post Construction Gotham Inspections	1 day	Thu 11/13/14	Thu 11/13/14	39
7 Landscaping	6 days	Fri 11/14/14	Fri 11/21/14	50
7.1 Construction clean up	2 days	Fri 11/14/14	Mon 11/17/14	50
7.2 Grate land for drainage	2 days	Tue 11/18/14	Wed 11/19/14	52
7.3 Lay foundation of dirt/gravel below top surface	2 days	Thu 11/20/14	Fri 11/21/14	53
7.4 Sprinkler system installation	2 days	Fri 11/14/14	Mon 11/17/14	50
7.5 Lay sod	1 day	Tue 11/18/14	Tue 11/18/14	55
8 Close	2 days	Mon 11/24/14	Tue 11/25/14	51
8.1 Collect payment from Bruce Wayne	1 day	Mon 11/24/14	Mon 11/24/14	51
8.2 Provide keys to Bruce Wayne	1 day	Tue 11/25/14	Tue 11/25/14	58

Communications Plan

What Information	Target	When	Method of Communication	Provider
Project Status Report	All Team Members and customer	Weekly	Meeting	Project Manager
Team Status Report	Project Manager	Weekly	Email	Architect and Foreman
Communicate with material supplier	Project Manager	Bimonthly	Phone/Email	Project Manager
Issues Report	Project Manager and Bruce Wayne	Weekly	Meeting	Architect and Foreman
Change request review board	All Team Members and customer	As required	Meeting	Project Manger
Statement of Work (SOW) Review	All Team Members and customer	Monthly	Meeting	Project Manger
Planning and Authorization Report	All Team Members	Monthly	Email	Project Manger

Quality Plan

1.0 Quality Assurance Plan

1.1 Introduction: Billionaire Bruce Wayne has contracted with Team 3 to construction a storage facility to serve as an alternate Bat Cave to provide continuity of operations (COOP). Budget TBD, but Mr. Wayne insists cost is a secondary concern to functionality.

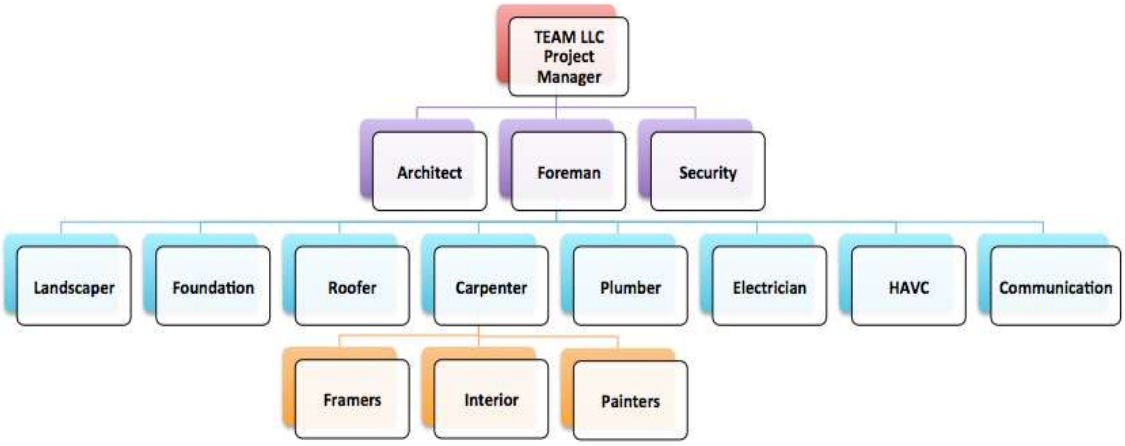
1.2 Purpose: While quality construction has been the goal of Team 3 since its humble beginnings long ago, the Quality Assurance Plan is to serve as a guideline for insuring the Wayne Construction Project upholds the company's traditional performance.

1.3 Policy Statement: Team 3 is committed to our motto: "Do it well nor not at all." Every job we contract for will be completed to the highest possible standards.

1.4 Scope: All aspects of this project are important parts of the continuing commitment to excellence Team 3 enterprises.

2.0 Management

2.1 Organizational Structure: Modification to the organization may occur, especially is subcontracting companies are contracted to fill the rolls of the various specialty crews shown above as responsible to either the Foreman or the Carpenter. Individuals may fill multiple roles in the above organization breakdown structure. For example, our Program Manager for Team 3 construction projects is traditionally the Foreman. The initial team organization is as follows:



2.2 Roles and Responsibilities:

2.2.1 Technical Monitor/Senior Management: The project manager will serve in the position, overseeing all aspects of the project from initial planning and authorization to the closing. For task breakdown, see the responsibility matrix in the human resources section of this plan.

2.2.2 Task Leader: The Foreman and Carpenter will ensure all tasks being performed by the specialty teams are complete IAW stakeholder and regulatory requirements. The Architect will work directly for the Project Manager, but will during some task either obtain or provide consult to other players to ensure project quality issues are performed. For task breakdown, see the responsibility matrix in the appendix of this plan.

2.2.3 Quality Assurance Team: The Project Manager is the leader of the Quality Assurance Team, working either as or closely with the Foreman in addition to the Architect and project Carpenter. The Carpenter will assure the quality of the Framers, Interior, and Painter crews maintain Team 3 standards.

2.2.3 Technical Staff: The Foreman, Architect and Carpenter are the top-three technical experts for this project. They will ensure quality along with the proper completeness of the project.

3.0 Required Documentation: Before construction begins, the Architect will either compute or acquire the documents to assemble with 3 complete drawings for application submission: energy calculations, asbestos forms, obtain estimated costs, job type and building informational system (BIS) number for application. After Gotham issues the permit, a copy of the permit will be presented in a weatherproof display for any city inspectors or code enforcement officials to view. Copies of the permit will be maintained by the Team 3 administration service in addition to the digital copies being stored in at least two cloud locations until the project is process with Team 3 legal department following the project's closing.

4.0 Quality Assurance Procedures

4.1 Walkthrough Procedure: During construction, the Foreman will conduct daily inspections of the worksite and potential problems will be brought to the attention of specialty teams as necessary. NLT one day prior to Gotham's post construction inspection, the Quality Assurance Team will conduct a preliminary inspection to identify and clear potential problems. During the inspection, the Project Manage will accompany the city inspection and all specialty teams will have a representative available for immediate recall and action if problems arise.

4.2 Review Process

4.2.1 Review Procedures: IAW Gotham Development Department codes.

4.3 Audit Process

4.3.1 Audit Procedures: IAW with Gotham Development Department codes and established Team 3 practices.

4.4 Evaluation Process: IAW with Gotham Development Department codes and established Team 3 practices.

4.5 Process Improvement

5.0 Problem Reporting Procedures.

5.1 Noncompliance Reporting Procedures: IAW with Gotham Development Department codes and established Team 3 practices.

6.0 Quality Assurance Metrics

6.1 Stockholder Compliant: Meet or exceed Bruce Wayne's contracted requirements.

6.2 Gotham Development Department Compliant: Identify and meet all applicable Gotham Development Department codes.

6.3 PGMT 501 Compliant: Satisfy all requirements to not only earn an A but also to enhance the Project Manager skillset in the members of Team 3.

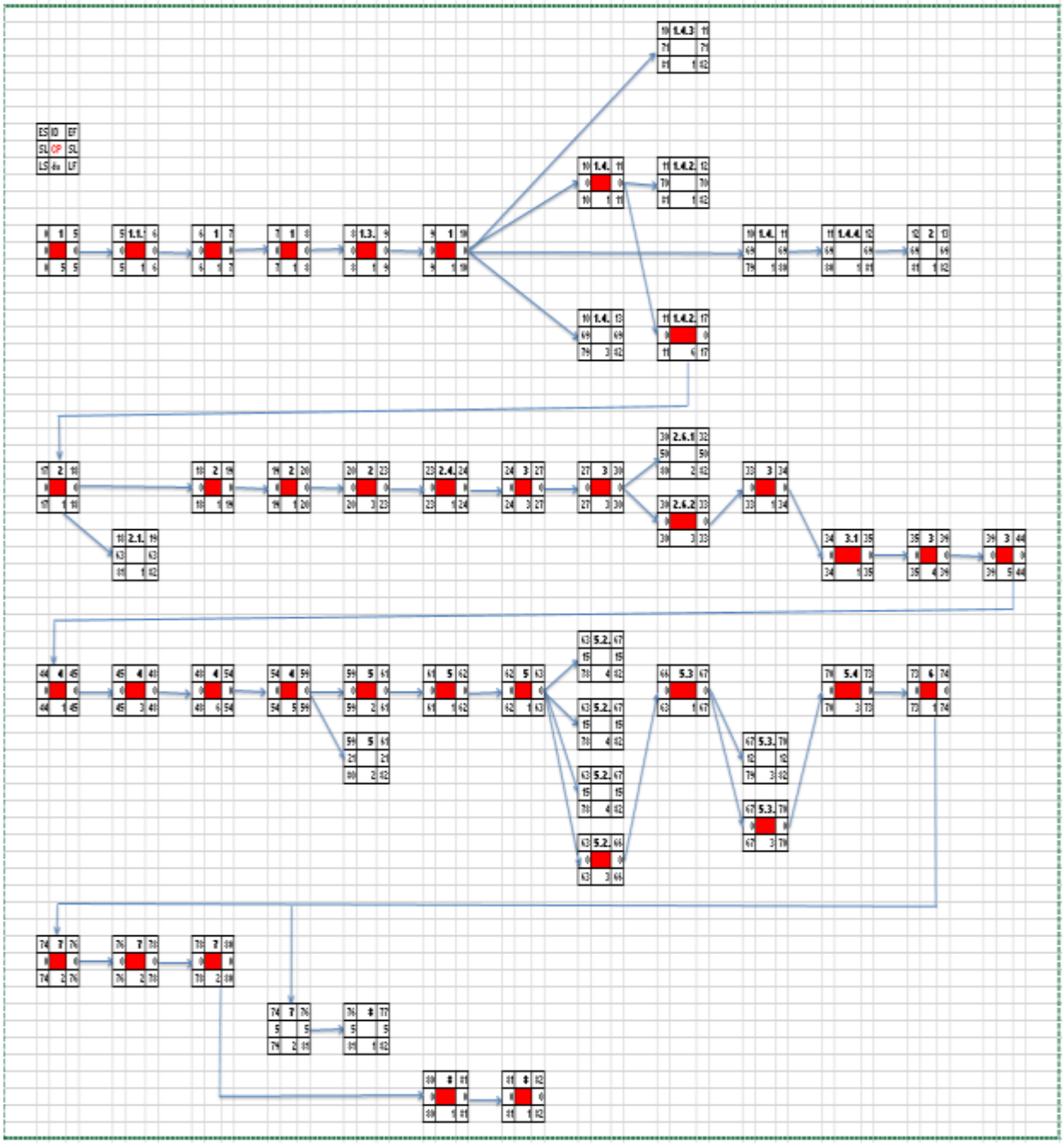
Budget

	# Units/Hrs.	Cost/Unit/Hr.	Subtotals	WBS Level 1 Totals	% of Total
WBS Items					
1. Planning and Authorization				$126,910	26%
1.0 Project Manager	1200	$100	$120,000		
1.1 Preliminary design plans	40	$125	$5,000		
1.3 Finalize design	8	$125	$1,000		
1.4 File application for permit		$230	$230		
1.5 Coordinate plan with all subcontractors	8	$85	$680		
2. General Site Preparation				$16,676	3%
2.1 Site prep subcontractor	160	$85	$13,600		
2.2 Site survey		$1,000	$1,000		
2.3 Transport equipment	8	$15	$120		
2.4 Clear land	24	$27	$648		
2.5 Level and grade land	24	$27	$648		
2.6 Dig utility trenches	24	$15	$360		
2.7 Safety and permit inspection		$300	$300		
3. Foundation				$13,200	3%
3.1 Subcontractor	32	$85	$2,720		
3.2 Concrete for foundation and driveway		10,000	$10,000		
3.2 Labor foundation and driveway	32	$15	$480		
4.External Structure				$106,520	22%
4.1 Subcontractor	112	$85	$9,520		
4.2 Materials delivered to site	24	$15	$360		
4.3 Framing labor	48	$20	$960		

4.3 Framing materials		$28,000	$28,000		
4.4 Sheathing, roof decking, flashing, doors, windows labor	40	$20	$800		
4.4 Sheathing, roof decking, flashing, doors, windows materials		$28,000	$28,000		
4.5 Siding labor	16	$25	$400		
4.5 Siding materials	16	$28,000	$28,000		
4.6 Paint exterior labor	16	$30	$480		
4.6 Paint exterior materials	16	$10,000	$10,000		
5. Internal Construction				$136,440	28%
5.1 Subcontractor	152	$85	$12,920		
5.2 Utilities labor	96	$40	$3,840		
5.2 Utilities materials		$80,000	$80,000		
5.3 Walls and Ceilings labor	48	$20	$960		
5.3 Walls and Ceilings materials		$28,000	$28,000		
5.4 Paint interior labor	24	$30	$720		
5.4 Paint interior materials		$10,000	$10,000		
7. Landscaping				$5,744	1%
7.1 Clean up	16	$15	$240		
7.2 Grate land for drainage	16	$27	$432		
7.3 Dirt & gravel foundation	16	$27	$432		
7.4 Sprinkler system labor	16	$30	$480		
7.4 Sprinkler system materials		$1,000	$1,000		
7.5 Sod labor	8	$20	$160		
7.5 Sod materials		$3,000	$3,000		
8. Close				$2,500	1%

8.1 Closing costs		$2,500	$2,500		
9. Reserves (20% of total estimate)			$79,949	$79,949	16%
Total project cost estimate				$487,939	

Network Diagram



Risk Management Plan & PERT

This risk plan defines the steps required to maintain risk free environment throughout the planning and execution of that plan. The project risk plan will be achieved by accomplishing the following:

Methodology

The project group will double as the risk management group, consisting of each member of the current project team: the Project Manager, Architect, and Foreman. The risk management group will monitor the tasks and ensure the plan is followed. Once the project execution starts, the on-scene risk manager will hold meeting as necessary to address any obstacle that might jeopardize the project from completing as planned. To monitor risk, the manager shall use MS Project 2013 and any other tools deemed appropriate to monitor and control risks. Construction team leaders of the various specialty groups will be briefed to notify the on-scene risk manager if potential risks appear evident.

Timing

The Wayne storage building construction will take 36 days, beginning on 8/4 and ending on 9/18. Mr. Wayne insists there will be no fanfare following the completion. The Risk Register identifies six known risks in three categories (1) Cost (2) Quality and (3) Time. The Risk Register contains expected trigger events leading to the risks along with mitigation and contingency responses for each risk.

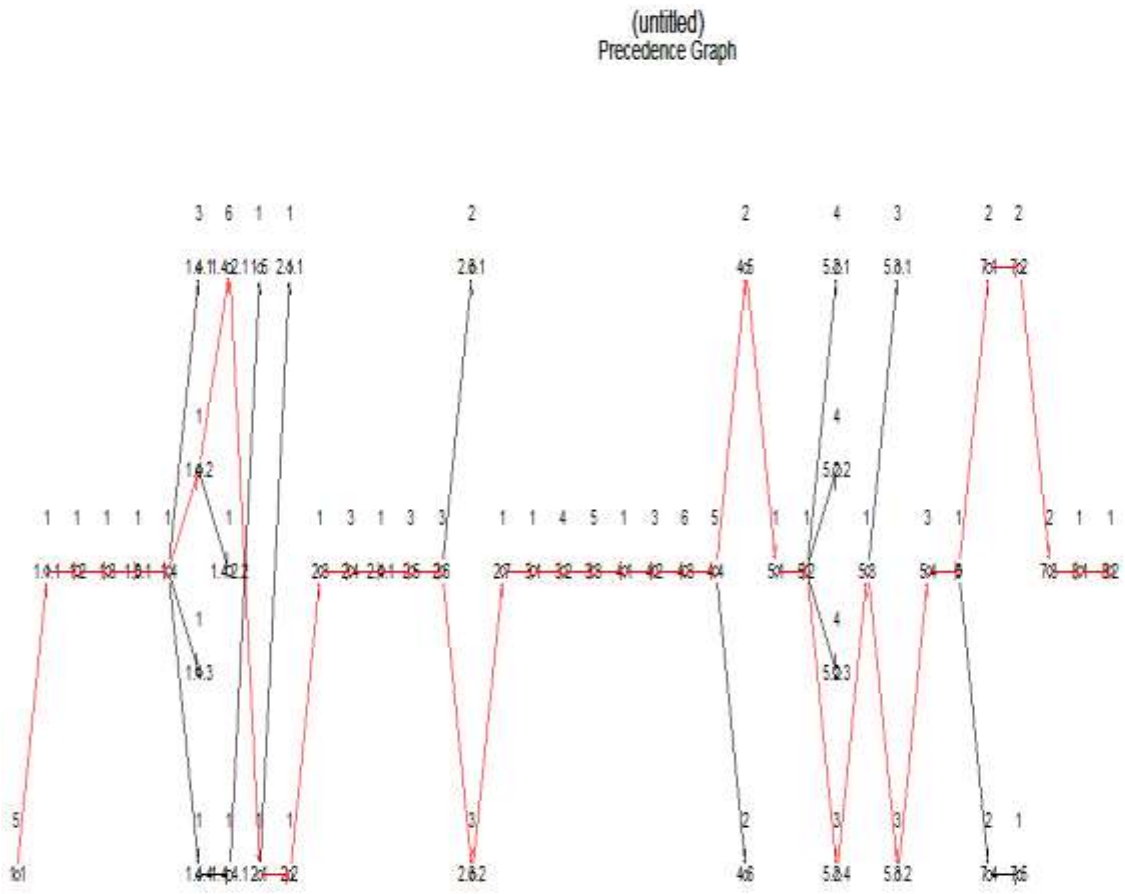
Enhanced Security

Billionaire Bruce Wayne, the financing stakeholder agreed to cover security concerns during the hours of darkness. While our company will hire off-duty Gotham

police officers for site security during the day, Mr. Wayne has arranged for special security and site monitoring during the night. The number 1 ranked risk to our project is sabotage from nefarious people known as Joker, Riddler, Penguin, Two-Face, Poison Ivy, Cat Woman and Mr. Freeze. The risk mitigation and contingency responses to this likelihood are explained in the Risk Register below.

Description	Category	Root Cause	Triggers	Potential Responses
Cost, exceeding upper limit of $500,000	Cost	(1) Incorrect estimates (2) recovery from sabatoge	Any planned milestones expenses exceed estimates (2) any acts of sabatoge by Batman's enemies	Mitigate: Double check cost estimates Contingency: Counsel with Billionaire, Bruce Wayne
Not meeting technical requirements of COOP for the Bat Cave	Quality	Technical errors	Technical Misunderstandings	Mitigate: Contract specific deliverables Contingency: New contract for changes or uncontracted requests
Not having storage room for Batmobile	Quality	Planning errors	Design misunderstandings	Mitigate: Document size and storage requirements. Contingency: Not expected, but make it right if it happens
Not meeting Gotham building codes	Quality	Planning errors	(1) Design misunderstandings (2) Construction mistakes	Mitigate: Quality inspections documented for each milestone Contingency: Not expected, but make it right if it happens
Security risks of construction sabatoge by Batman's enemies	Time	Joker, Riddler, Penguin, Two-Face, Poison Ivy, Cat Woman, or Mr. Freeze	Any antagonist discovers the connection between the construction project and Batman's mission to fight evil	Mitigate: Minimize public announcements, hire off-duty Gotham police for site security Contingency:Clean up damage, repair and continue with construction
Injury of assigned workers	Cost	(1) Safety error (2) collater damage from act of sabatoge	(1) Worker's violating established safety rules (2) act of sabatoge by Batman's enemies	Mitigate: Daily saftey briefings, saftey bulletin board, keep First Aid kits on site. Contingency: Call 911, Adminster First Aid as required

Activity	Activity time	Early Start	Early Finish	Late Start	Late Finish	Slack
Project	11					
1.1	5	0	5	-70	-65	0
1.1.1	1	5	6	-65	-64	0
1.2	1	5	6	-64	-63	0
1.3	1	5	6	-63	-62	0
1.3.1	1	5	6	-62	-61	0
1.4	1	5	6	-61	-60	0
1.4.1	3	5	8	8	11	3
1.4.2	1	5	6	4	5	0
1.4.2.1	6	5	11	5	11	0
1.4.2.2	1	5	6	10	11	5
1.4.3	1	5	6	10	11	5
1.4.4	1	5	6	-60	-59	0
1.4.4.1	1	5	6	-59	-58	0
1.5	1	5	6	-58	-57	0
2.1	1	5	6	-57	-56	0
2.1.1	1	5	6	10	11	5
2.2	1	5	6	-56	-55	0
2.3	1	5	6	-55	-54	0
2.4	3	5	8	-54	-51	0
2.4.1	1	5	6	-51	-50	0
2.5	3	5	8	-50	-47	0
2.6	3	5	8	-47	-44	0
2.6.1	2	5	7	9	11	4
2.6.2	3	5	8	-44	-41	0
2.7	1	5	6	-41	-40	0
3.1	1	5	6	-40	-39	0
3.2	4	5	9	-39	-35	0
3.3	5	5	10	-35	-30	0
4.1	1	5	6	-30	-29	0
4.2	3	5	8	-29	-26	0
4.3	6	5	11	-26	-20	0
4.4	5	5	10	-20	-15	0
4.5	2	5	7	9	11	4
4.6	2	5	7	-15	-13	0
5.1	1	5	6	-13	-12	0
5.2	1	5	6	-12	-11	0
5.2.1	4	5	9	7	11	2
5.2.2	4	5	9	7	11	2
5.2.3	4	5	9	7	11	2
5.2.4	3	5	8	-11	-8	0
5.3	1	5	6	-8	-7	0
5.3.1	3	5	8	8	11	3
5.3.2	3	5	8	-7	-4	0
5.4	3	5	8	-4	-1	0
6	1	5	6	-1	0	0
7.1	2	5	7	0	2	0
7.2	2	5	7	2	4	0
7.3	2	5	7	4	6	0
7.4	2	5	7	6	8	1
7.5	1	5	6	8	9	3
8.1	1	5	6	9	10	4
8.2	1	5	6	10	11	5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Precedence Graph

Change Control Process

The change control process shall be as follows:

1.0 The requester will submit a Change Order (form 1572) to the Project Manager for review.

2.0 The Project Manager is responsible for submitting the Form 1572 to the change review board in accordance with (IAW) the Team 3 Communications Plan.

3.0 The Change Review Board is responsible for the following:

- 3.1 Determine the new requirements;
- 3.2 Determine if the capabilities and capacities exist;
- 3.3 Discuss the new requirements with the customer;
- 3.4 Produce material and labor estimates;
  - 3.4.1 Approve material and labor estimates.
- 3.5 Approve or disapprove requested changes.

4.0 If approved the project manager shall sign the Form 1572 and submit to customer for signature and adjust budget.

5.0 If approved the customer shall sign the Form 1572.

Change Order

Project Name_____

Requestor Name_____

Reason for
change_____
_____

Description of Change_____
_____
_____
_____

☐ Approved
☐ Disapproved

Signature of
Requestor_____Date_____
Signature of Project Manager_____Date_____
Signature of Customer_____Date_____

Form # 1527

Resources Categories and Constraints

The purpose of this plan is to determine how resources will be managed in the project.

1.0 Responsibilities for resources

1.1. Project Manager is responsible for monitoring the status of all project resources.

1.2 Task Leader/Technical Monitor is responsible for managing the people and material of their task assigned and reporting to senior management.

Note: The Task Leader/ Technical shall report directly to senior management.

1.4 Senior Management is responsible for managing labor hours and material.

2.0 People Resource Types

- 2.1 Carpenters
- 2.2 Electricians
- 2.3 Landscapers
- 2.4 Plumbers
- 2.5 Painters

3.0 Material Resource Types

- 3.1 Wood
- 3.2 Concrete
- 3.3 Steel
- 3.4 Siding
- 3.5 Paint
- 3.6 Shingles
- 3.7 Utility materials
- 3.8 Dirt and Gravel
- 3.9 Sod
- 3.10 Consumables (nails, screws, wiring, dynamite, etc.)

4.0 Equipment Resource Types

- 4.1 Crane
- 4.2 Backhoe
- 4.3 Scaffolding

5.0 Constraints

- 5.1 Time Constraints

5.2 Cost Constraints

5.3 People Constraints

RAIC	Person							
Activity	Project Manager	Task Leader	Senior Manager	Carpenters	Electricians	Landscapers	Plumbers	Painters
Planning and Authorization	AI	I	R					
General Site Prep	AI	R	I					
Foundation	I	C	I	R	R		R	
External Structure	I	C	I	R	R		R	R
Internal Construction	I	C	I	R	R		R	R
Landscaping	I	C	I			R		
R=Responsible A=Accountable I= Inform C=Consult								

Time Phased Cash Flow Plan

WBS ID	Budget	Week						
		1	2	3	4	5	6	7
1	126910	31726	31726	31726	31726			
2	16676				4196	4196	4196	4196
3	13200							
4	106520							
5	136440							
7	5744							
9	2500							
Total	407990	31726	31726	31726	35922	4196	4196	4196
Cumulative		31726	63452	95178	131100	135296	139492	143688
		8	9	10	11	12	13	14
1	126910							
2	16676							
3	13200	6600	6600					
4	106520			26630	26630	26630	26630	
5	136440						45480	45480
7	5744							
9	2500							
Total	407990	6600	6600	26630	26630	26630	72110	45480
Cumulative		150288	156888	183518	210148	236778	308888	354368
		15	16	17				
1	126910							
2	16676							
3	13200							
4	106520							
5	136440	45480						
7	5744		5744					
9	2500			2500				
Total	407990	45480	5744	2500				
Cumulative		399848	405592	408092				

Human Resource Plan & Responsibilities Matrix

Internal Human/External Resource Plan

The purpose of this plan is to describe how human resource needs will be managed for the project. The team is comprised of fourteen functional positions. Some functions are performed as teams, others as individuals, and some individuals may perform more than one function.

Roles and Responsibilities

Each member of the team brings a specific expertise to the team as identified in the roles within the matrix below. The project depends heavily on the leadership collaboration between the Project Manager and three key positions: Foreman, Architect, and Carpenter. The Project Manager may function as the Foreman, who will oversee day-to-day execution of this project. The Architect is the operational planner. The Carpenter is the technical subject material expert to oversee specialty positions/teams. The matrix on the following page denotes the responsibility matrix for the team.

	Project Manager	Foreman	Architect	Site Prep and Landscaping	Carpenter	Foundation	Roofer	Plumber	Electrician	Framer	Interior	Painters	HVAC	Security
Planning and Authorization	A	I	R											I
General Site Preparation	A	C		R										I
Foundation	A	C			I	R								I
External Structure	A	I			C		R			R		R		I
Internal Construction	A	I			C			R	R		R	R	R	I
Landscaping	A	C		R										I
Close	A	I												I

R – Responsible for completing the work
A – Accountable for ensuring task completion/sign off
C – Consulted before any decisions are made
I – Informed of when an action/decision has been made

Recommendations to Reduce the Schedule Length

A way to reduce the schedule length would be to crash the activities. The chart on the following page shows options and associated costs of crashing.

Activity	Normal time	Crash time	Normal Cost	Crash Cost	Crash cost/pd	Crash by	Crashing cost
Project	81	26					
1.1	5	3	125	200	37.5	2	75
1.1.1	1	0	125	200	75	1	75
1.2	1	0	0	0	0	1	0
1.3	1	0	125	200	75	1	75
1.3.1	1	0	125	200	75	1	75
1.4	1	0	230	255	25	1	25
1.4.1	3	2	230	255	25	0	0
1.4.2	1	0	230	255	25	0	0
1.4.2.1	6	4	230	255	12.5	0	0
1.4.2.2	1	0	230	255	25	0	0
1.4.3	1	0	230	255	25	0	0
1.4.4	1	0	230	255	25	1	25
1.4.4.1	1	0	230	255	25	1	25
1.5	1	0	85	110	25	1	25
2.1	1	0	160	185	25	1	25
2.1.1	1	0	160	185	25	0	0
2.2	1	0	1000	1025	25	1	25
2.3	1	0	15	40	25	1	25
2.4	3	2	27	52	25	1	25
2.4.1	1	0	27	52	25	1	25
2.5	3	1	27	52	12.5	2	25
2.6	3	1	15	40	12.5	2	25
2.6.1	2	1	15	40	25	0	0
2.6.2	3	1	15	40	12.5	2	25
2.7	1	0	300	325	25	1	25
3.1	1	0	85	110	25	1	25
3.2	4	2	15	40	12.5	2	25
3.3	5	3	0	25	12.5	2	25
4.1	1	0	85	110	25	1	25
4.2	3	1	15	40	12.5	2	25
4.3	6	2	20	45	6.25	4	25
4.4	5	2	20	45	8.33	3	25
4.5	2	1	25	50	25	0	0
4.6	2	1	30	55	25	1	25
5.1	1	0	85	110	25	1	25
5.2	1	0	40	65	25	1	25
5.2.1	4	2	40	65	12.5	0	0
5.2.2	4	1	40	65	8.33	0	0
5.2.3	4	2	40	65	12.5	0	0
5.2.4	3	1	40	65	12.5	2	25
5.3	1	0	20	45	25	1	25
5.3.1	3	1	20	45	12.5	0	0
5.3.2	3	1	20	45	12.5	2	25
5.4	3	1	30	55	12.5	2	25
6	1	0	0	25	25	1	25
7.1	2	1	15	35	20	1	20
7.2	2	1	27	52	25	1	25

7.3	2	1	27	52	25	1	25
7.4	2	1	30	55	25	1	25
7.5	1	0	20	45	25	1	25
8.1	1	0	2500	2525	25	1	25
8.2	1	0	0	25	25	1	25
TOTALS			7475				1170

Project time	Period cost	Cumulative cost
81	0	0
80	0	0
79	6.25	6.25
78	6.25	12.5
77	6.25	18.75
76	6.25	25
75	8.33	33.33
74	8.33	41.67
73	8.33	50
72	12.5	62.5
71	12.5	75
70	12.5	87.5
69	12.5	100
68	12.5	112.5
67	12.5	125
66	12.5	137.5
65	12.5	150
64	12.5	162.5
63	12.5	175
62	12.5	187.5
61	12.5	200
60	12.5	212.5
59	12.5	225
58	12.5	237.5
57	12.5	250
56	12.5	262.5
55	12.5	275
54	20	295
53	25	320
52	25	345
51	25	370
50	25	395
49	25	420
48	25	445
47	25	470
46	25	495
45	25	520
44	25	545
43	25	570
42	25	595
41	25	620
40	25	645
39	25	670
38	25	695
37	25	720
36	25	745
35	25	770

34	25	795
33	25	820
32	25	845
31	25	870
30	37.5	907.5
29	37.5	945
28	75	1020
27	75	1095
26	75	1170

Status Report Format

	Task Name	Sheduled Duration	Actual Duration	Budget	Percent Complete	EV	AC	PV	CV	SV
3	1 Planning and Authorization	17 days	15 days	$126,910	100%	$126,910.00	$126,823.00	$126,910.00	$87.00	$0.00
4	2 General Site Preparation	17 days	17 days	$16,676	100%	$16,676.00	$17,235.00	$16,676.00	-$559.00	$0.00
5	3 Foundation	10 days	11 days	$13,200	100%	$13,200.00	$13,012.00	$13,200.00	$188.00	$0.00
6	4 External Structure	17 days	15 days	$96,520	100%	$96,520.00	$99,382.00	$96,520.00	-$2,862.00	$0.00
7	5 Internal Construction	12 days	13 days	$126,440	100%	$126,440.00	$127,100.00	$126,440.00	-$660.00	$0.00
8	6 Post Construction Gotham Inspections	1 day	1 day	$0	100%	$0.00	$0.00	$0.00	$0.00	$0.00
9	7 Landscaping	6 days	In work	$2,744	70%	$1,920.80	$2,744.00	$2,744.00	-$823.20	-$823.20
10	8 Close	2 days		$2,500	0%			$2,500.00		
11	8.2 Provide keys to Bruce Wayne	1 day		$0	0%					
12	Reserve	0 days		$75,949	0%					
13	Cumulative Total	83 days		$460,939		$381,666.80	$386,296.00	$384,990.00	-$4,629.20	-$823.20

Closeout Checklist

	Task	Yes	No	Comments
	Team			
1	Was the project completed on time?	X		Project was completed in less than 82 days
2	Have the carpenters been paid and released?	X		
3	Have the plumbers been paid and released?	X		
4	Have the electricians been paid and released?	X		
5	Have the landscapers been paid and released?		X	Landscapers have been paid partially. Landscapers will fix plants run over by lawn mower
6	Have the painters been paid and released?	X		
	Vendors /Contractors			
7	Have performance reviews been conducted with contractors?	X		All contractors received A+ rating. Landscapers will receive A rating due to lawn mower accident
8	Have all accounts been closed?	X		Yes, less petty cash fund for minor repairs
9	Have all parties involved signed non-disclosure agreements stating they will not discuss the location of the alternative Bat Cave?	X		All agreements have been signed and notarized. One copy was given to Bruce and one copy to the Project Manager.
10	Have all contractors been interviewed and provided feedback?	X		Yes, all contractors provided positive feedback except the painters. Painters complained that the paint selected was too thin and required multiple coats.
	Equipment			
11	Has all equipment been removed from the property	X		All equipment has been removed and verified by the Task Leaders.
	Customer			
12	Has Bruce Wayne been interviewed by the Project Manager?	X		Bruce was happy that the Bat Cave was built in accordance with the Scope and Project Requirements
13	Has customer signed off on product?	X		Bruce was happy with the pre closing inspection and signed off on product at closing.
14	Has the management team been interviewed and given feedback by Bruce Wayne?	X		Yes, all positive feedback

15	Has the crime rate in Gotham City Dropped due to the alternate Bat Cave.	Too early to tell but the Penguin was captured last night.
15	Mail Customer Survey (form 985) after closing?	Will mail December 2014.

Team 3 Customer Survey

	Disagree				Agree
Was the project completed as expected?	1	2	3	4	5
Was the project completed on time?	1	2	3	4	5
Do you have any quality problems with the property?	1	2	3	4	5
Does everything work as required?	1	2	3	4	5
Would you recommend us for additional work?	1	2	3	4	5
Were all Team 3 members helpful?	1	2	3	4	5

What can team 3 do to improve overall customer service?_____
_____
_____
_____

Please return survey to:
Team 3 Builders
1994 Old Gotham Street
Gotham City

Form 985

References

A guide to the Project Management Body of Knowledge (PMBOK guide), fifth edition (5th ed.). (2013). Newtown Square, Pa.: Project Management Institute.

Gray, C. F., & Larson, E. W. (2014). *Project management: the managerial process* (4th ed.). Boston: McGraw-Hill/Irwin.

Microsoft Project 2013 (software)