



# World Outreach Expansion Project

Key Stakeholder Presentation

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# Background

## Status

Tom Grott from American Constructors, Inc. (ACI), is working on a construction project at World Outreach Church (WOC) in Murfreesboro, Tennessee to expand the size of one of their churches, as of right now they have 3 pending projects prior to delivery date. Seems like the projects are excessively complex for the firm to finish on time.

## Budget

Original: 31M

Revised: 34M

Will it be necessary to increase the budget to complete the projects on time?

## Deadline

Original: March 2010

Desired: Thanksgiving 2009

Compromise: Dec 14th, 2009

Will it be necessary to come up with an alternative delivery date given the current state of the project?

## Pending

Lobby

Sanctuary

Bookstore - Cafe - Kitchen

Punch list ACI

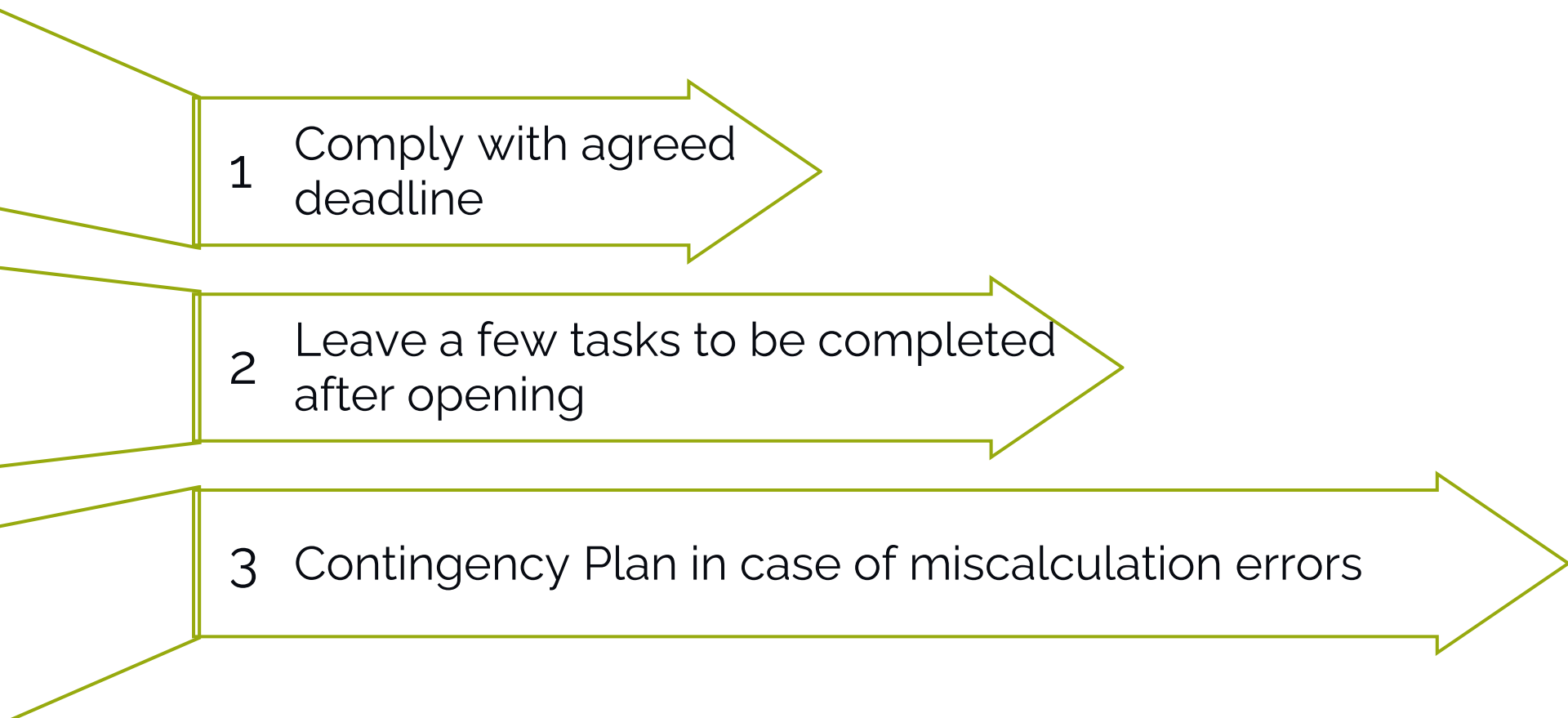
Fire Marshal Inspection

Punch list Architect

Warranty

Release of Lien

# Project Goals



1 Comply with agreed deadline

2 Leave a few tasks to be completed after opening

3 Contingency Plan in case of miscalculation errors



# Key Stakeholders

## 1. Tom Grott

**Senior Project Manager for ACI**  
Assigned with the task of completing the World Outreach Church.

## 2. Dan Brodbeck

**President of WOC**  
Responsible for building the church and convinced to join ACI.

## 3. Subcontractors

Cage Drywalls, Integrity  
Architecture millwork, Charlie  
Irwin Planning, Southern States  
Masonry, Inc.

## 1. ACI Workforce

Ten crew members in charge of carpeting, furnishing, cleaning, and operations.

## 2. Bridget Brodbeck

**Project Coordinator**  
Responsible for scheduling subcontractors

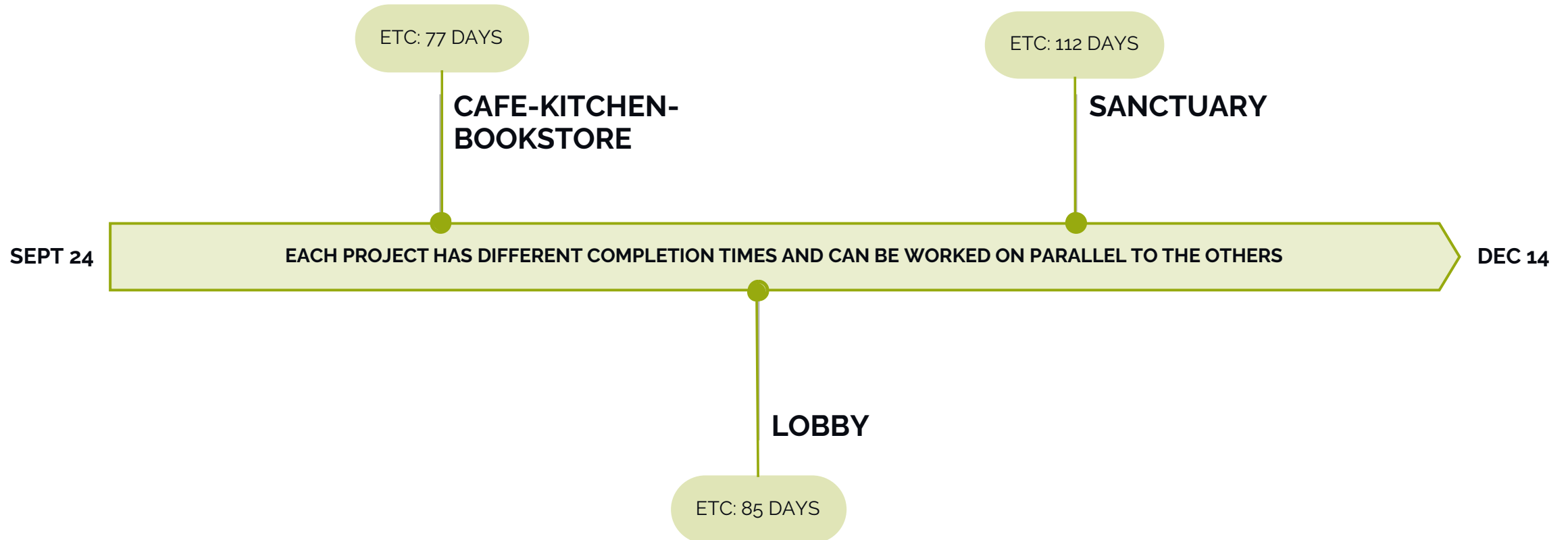
## 3. Larry Hawker

**Project Superintendent**  
Responsible for supervising the crew's work

# Project Status: 24 Sept 2009

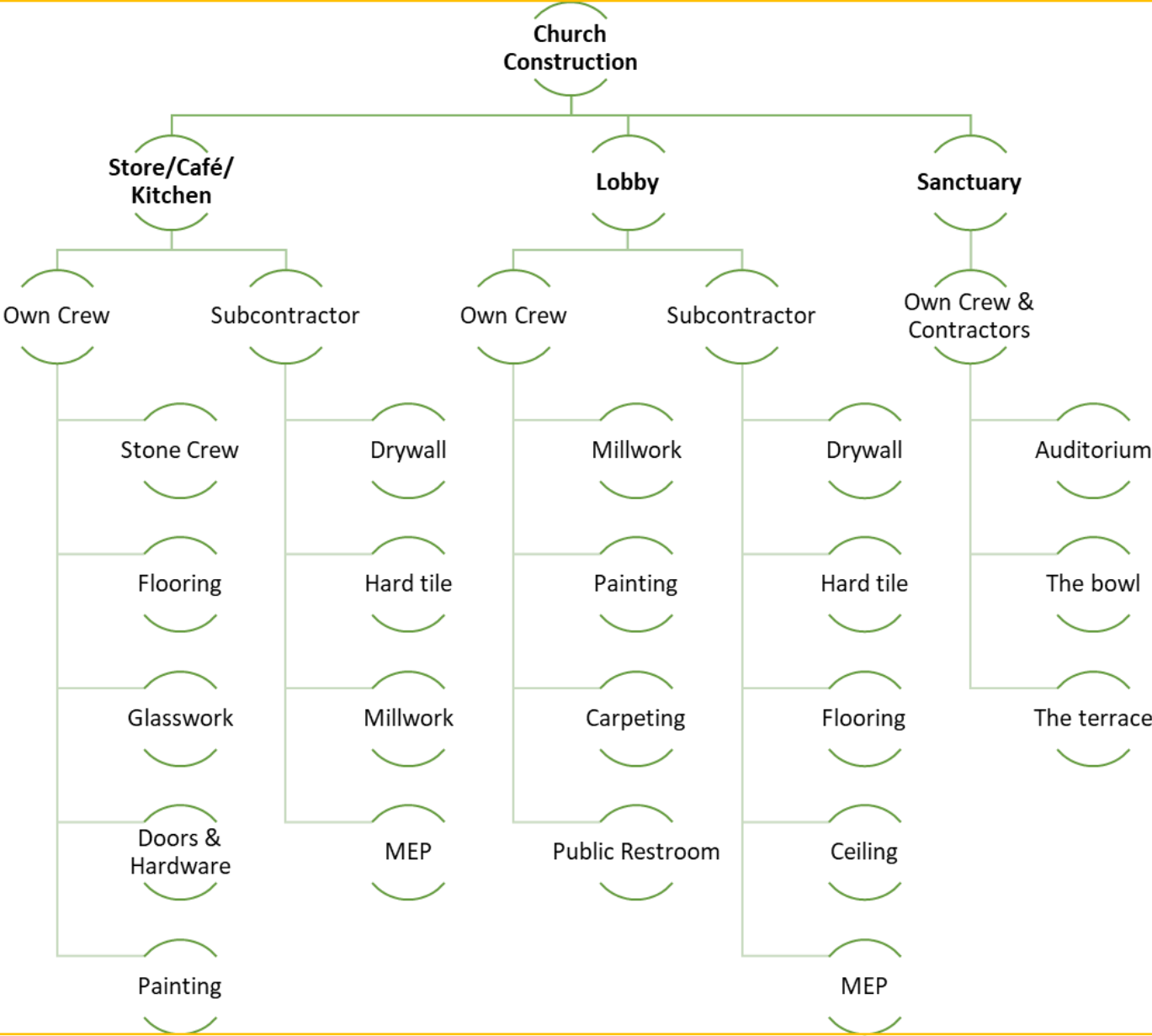
81 DAYS TO REACH THE DEADLINE

## MANDATORY TASKS TO COMPLETE BY OPENING DAY: Best case scenario



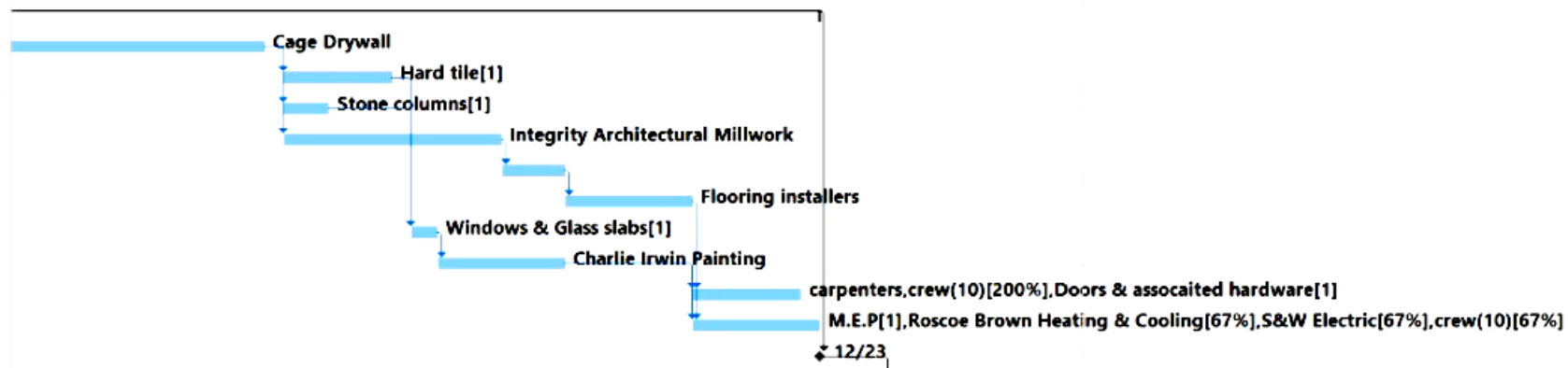


# Work Plan

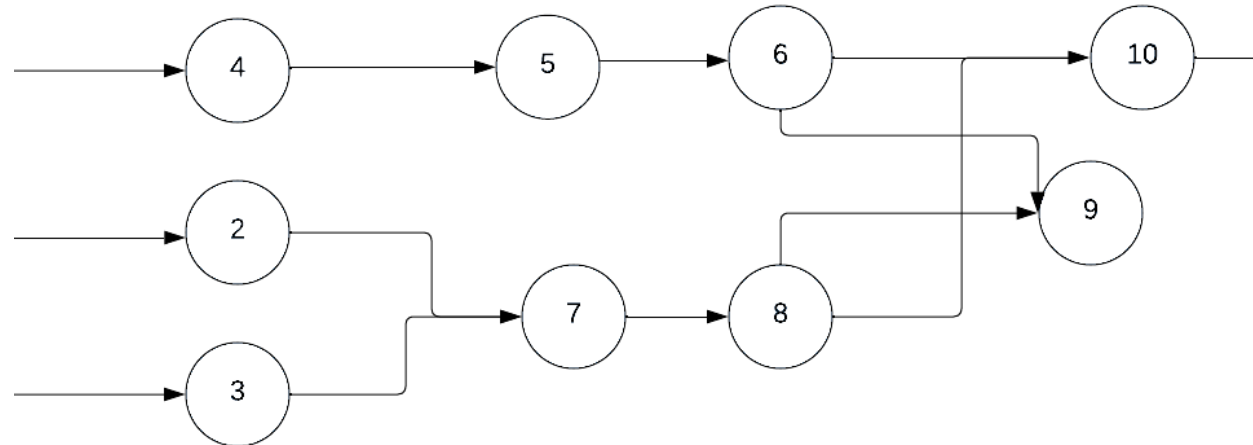


# Gantt Chart & Network Diagram – Book Store, Café, Kitchen

• Book store/ Café/ Kitchen	65 days	Thu 9/24/09	Wed 12/23/09
Framing/Hanging/Finishing drywall	22 days	Thu 9/24/09	Fri 10/23/09
Install hard tile	10 days	Mon 10/26/09	Fri 11/6/09 3
Finishing stone columns	5 days	Mon 10/26/09	Fri 10/30/09 3
Millwork	18 days	Mon 10/26/09	Wed 11/18/09 3
case work (Cabinetry)	5 days	Thu 11/19/09	Wed 11/25/09 6
Installation of Flooring	10 days	Thu 11/26/09	Wed 12/9/09 7
Install glass	3 days	Mon 11/9/09	Wed 11/11/09 4,5
Painting	10 days	Thu 11/12/09	Wed 11/25/09 9
Install doors & Hardware	8 days	Thu 12/10/09	Mon 12/21/09 8,10
Mechanical, Electrical, Plumbing	10 days	Thu 12/10/09	Wed 12/23/09 8,10
Book store/café/Kitchen COMPLETE	0 days	Wed 12/23/09	Wed 12/23/09 2



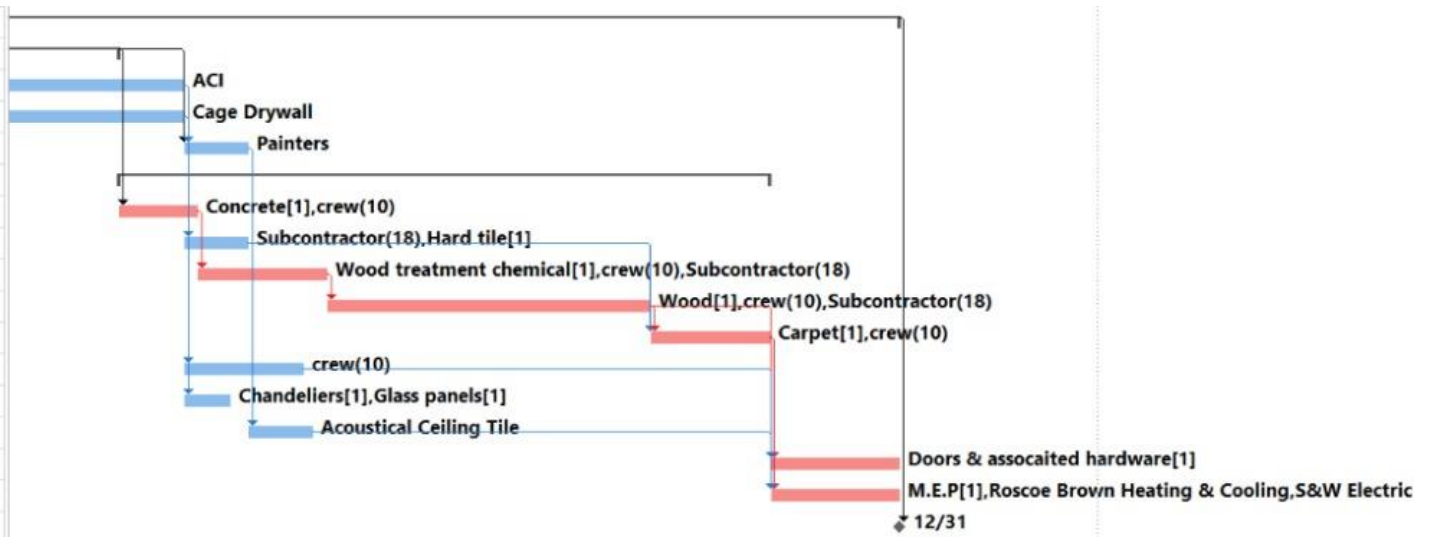
1	Cage Dry wall	
2	Install hard tile	1
3	Finishing stone columns	1
4	Scheduled Integrity Arch Millwork	1
5	case work (Cabinetry)	4
6	Installation of Flooring	5
7	Install glass	2,3
8	Charlie Irwin Painting	7
9	Carpenters (Install doors & Hardware)	8,6
10	Mechanical, Electrical, Plumbing	8,6
11	Milestone1 Bookstore/ Café/Kitchen Complete	10



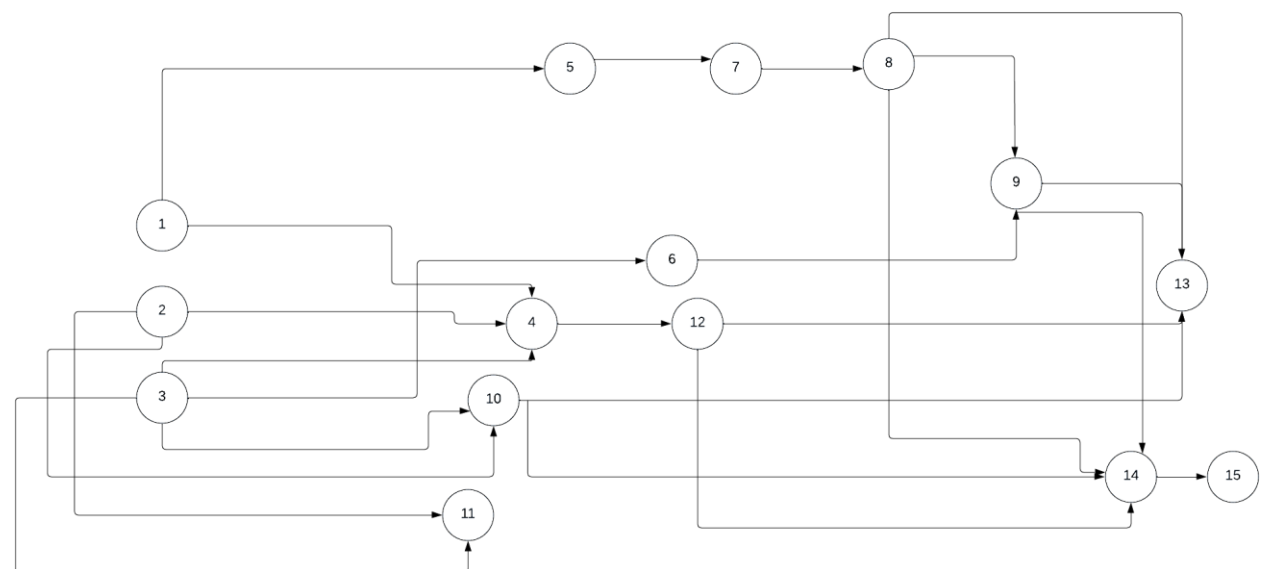


# Gantt Chart & Network Diagram – Lobby Section

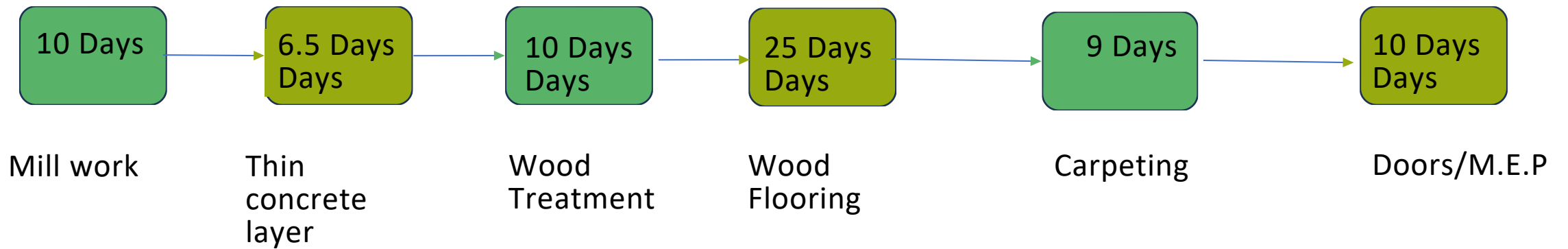
<b>Lobby</b>	<b>70.5 days</b>	<b>Thu 9/24/09</b>	<b>Thu 12/31/09</b>	
<b>Reception area-Millwork</b>	<b>10 days</b>	<b>Thu 9/24/09</b>	<b>Wed 10/7/09</b>	
Hard Ceiling	15 days	Thu 9/24/09	Wed 10/14/09	
Drywall installation	15 days	Thu 9/24/09	Wed 10/14/09	
Painting for 1/F & 2/F lobby	5 days	Thu 10/15/09	Wed 10/21/09	15,19,20
<b>Flooring</b>	<b>50.5 days</b>	<b>Thu 10/8/09</b>	<b>Thu 12/17/09</b>	
Put a thin concrete layer	6.5 days	Thu 10/8/09	Fri 10/16/09	15
Hard tile in the lobby	5 days	Thu 10/15/09	Wed 10/21/09	20
Wood treatment	10 days	Fri 10/16/09	Fri 10/30/09	23
Wood flooring installation lobby	25 days	Fri 10/30/09	Fri 12/4/09	25
Carpeting	9 days	Fri 12/4/09	Thu 12/17/09	24,26
Public restroom	9 days	Thu 10/15/09	Tue 10/27/09	19,20
Glass & chandeliers installation lobby	3 days	Thu 10/15/09	Mon 10/19/09	19,20
Ceiling tile	5 days	Thu 10/22/09	Wed 10/28/09	21
Doors & hardware installation lobby	10 days	Thu 12/17/09	Thu 12/31/09	26,27,28,30
M.E.P Lobby	10 days	Thu 12/17/09	Thu 12/31/09	26,27,28,30
Lobby COMPLETE	0 days	Thu 12/31/09	Thu 12/31/09	14



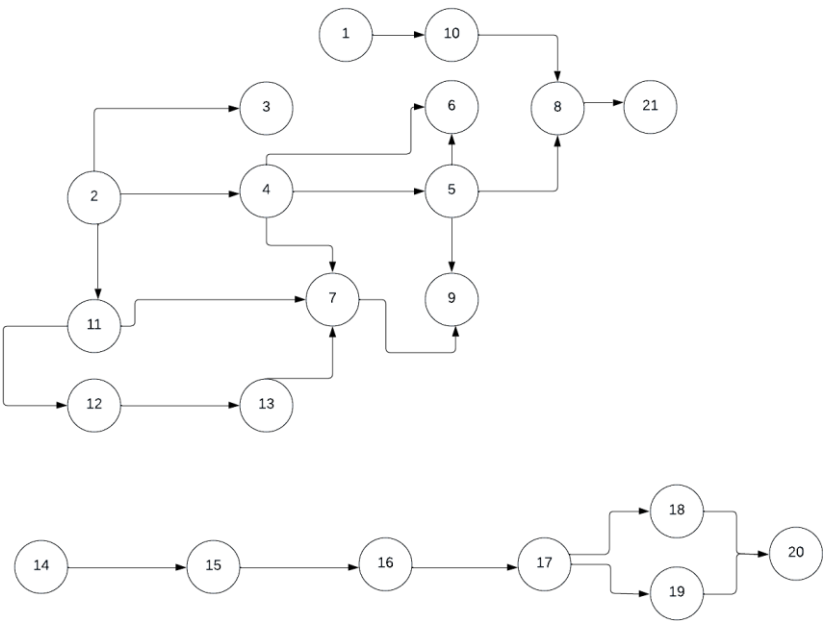
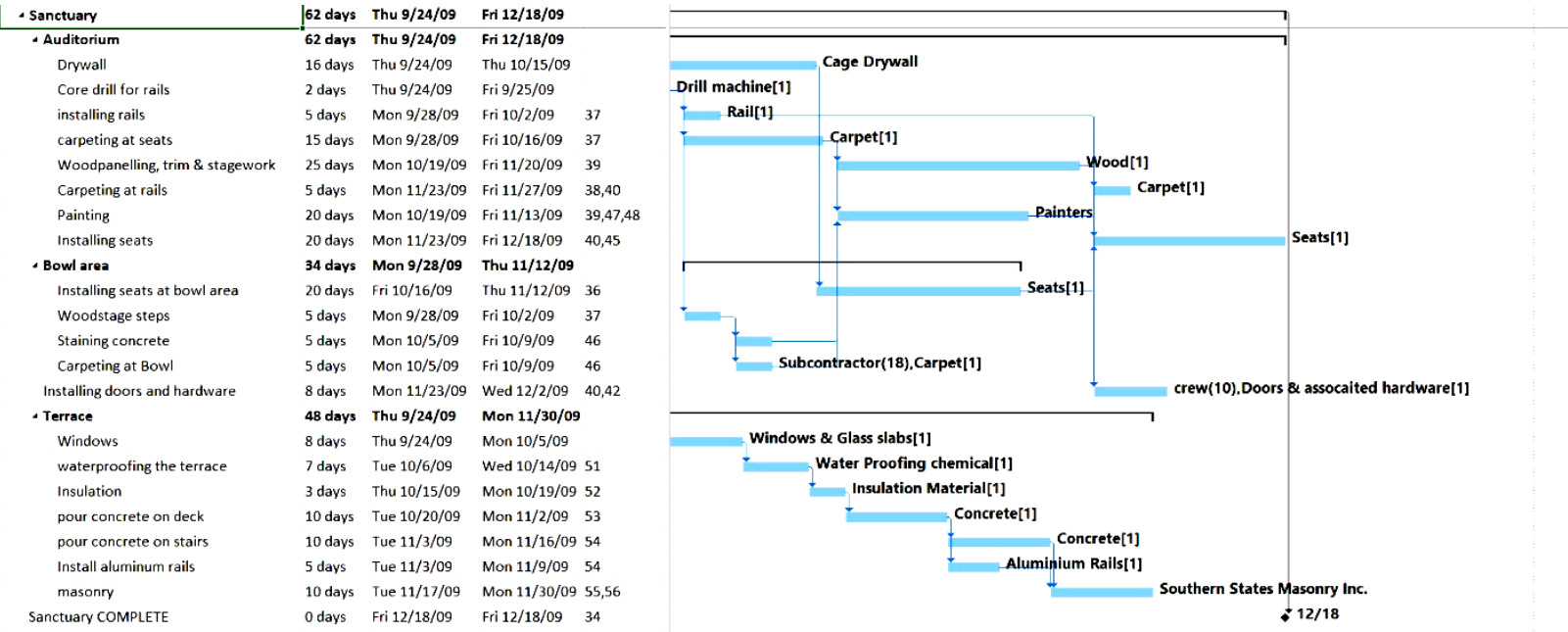
1	Millwork (Reception Walls, Counter, Rails)	
2	Hard Ceiling	
3	Drywall installation	
4	Painting for 1/F <sub>[No Title]</sub> lobby	1,2,3
5	Put a thin concrete layer	1
6	Hard tile in the lobby	3
7	Wood treatment	5
8	Wood flooring installation lobby	7
9	Carpeting	6,8
10	Public restroom	2,3
11	Glass installation lobby	2,3
12	Ceiling tile	4
13	Doors & hardware installation lobby	8,9,10,12
14	M.E.P Lobby	8,9,10,12
15	Milestone2 Lobby complete	14



# Critical Path – Lobby (70.5 days)



# Gantt Chart & Network Diagram – Sanctuary



# Key Assumptions and Crashing Assumptions

- Grott predicted that the work already in progress on framing, hanging & finishing the drywall would be completed in 21 days (at most 23 days) by the subcontractor.
- The weather-dependent task of the concrete layer for carpeting was assumed to be completed in 7 days.
- As the material was laid with precision, 3 additional days were not required.

# FMEA: Failure Mode and Effects Analysis

	FMEA TABLE															
	Item	Failure Mode	Failure Effects	SE V	Causes	OC C	Controls	DE T	RP N	Actions Recommended	Responsible	Actions Taken	SE V	OC C	DE T	RP N
ARCHITECT & ACI	Architects Punchlist	Takes longer than 15 days	Doesnt delay any project	1	Longer final delivery	1		1	1	Architect and WOC dependant	Architect	none	1	1	1	1
WOC & ACI	Signing the Warranty	Takes longer than 1 day	Delay on the release	2	Longer final delivery	1		1	2	Non ACI dependant	WOC	none	2	1	1	2
Bookstore, Cafe, Kitchen	Finishing Drywall	Longer than 23 days	Delays other projects	7	Chain reaction delay	8		3	168	Incentives to external contractors	Bridget Brodbeck	Provides incentives	7	3	3	63
	Cabinetry	Longer than 5 days	Delays other projects	4	Chain reaction delay	6		3	72	Incentives to external contractors	Bridget Brodbeck	Provides incentives	4	2	3	24
	Flooring and Painting	Longer than 10 days	Delays other projects	9	Chain reaction delay	8		2	144	Incentives to external contractors	Bridget Brodbeck	Provides incentives	9	3	2	54
	Hardware and doors	Longer than 8 ddays	Delays other projects	8	Chain reaction delay	4		4	128	Overtime: Nights and weekends, Incentives for Hawkers employees	Grott –Hawker	Provides overtime and incentives	8	1	4	32
	MEP	Longer than 2 extra days from H&D	Delays other projects	10	Chain reaction delay	4		1	40	Incentives to external contractors for overtime	Brodbeck	Provides incentives	10	1	1	10
	ACI Punchlist Cleanup	Longer than 4 days	Delays fire marshal	6	Chain reaction delay	4		2	48	Overtime: Nights and weekends	Grott	Provides overtime	6	1	2	12
	Fire Marshal Revision	Longer than 5 days	Delays opening	10	Chain reaction delay	1		1	10	Non ACI dependent	Fire Marshal	none	10	1	1	10
Lobby	Reception	Longer than 10 days	Delays other projects	6	Chain reaction delay	4		1	24	Overtime: Nights and weekends	Grott	Provides overtime	6	1	1	6
	Hardceiling and Drywall	Longer than 5 days	Delays other projects	9	Chain reaction delay	6		4	216	Incentives to external contractors for overtime, Incentive for Drywall employees	Cage Drywall & Brodbeck	Provides incentives	9	2	4	72
	Painting and Hardtile	Longer than 5 days	Delays other projects	4	Chain reaction delay	4		2	32	Overtime: Nights and weekends, Incentives to external contractors for overtime	Brodbeck and Grott	Provides overtime and incentives	4	1	2	8
	Concrete & Carpeting	Longer than 8 days (weather dependant)	Delays other projects	6	Chain reaction delay	7		4	168	Overtime: Nights and weekends, Incentives for Hawkers employees, Incentives to external contractors for overtime	Brodbeck, Grott and Hawker	Provides overtime and incentives	6	2	4	48
	Wood Flooring	Longer than 38 days	Delays other projects	7	Chain reaction delay	8		1	56	Crash down 8 days, Incentives for Hawkers employees	Hawker and Grott	Provides overtime and incentives	7	3	1	21
	MEP & Stairwell	Longer than 10 days	Delays other projects	10	Chain reaction delay	4		1	40	Overtime: Nights and weekends	Grott	Provides overtime	10	1	1	10
	Clean up	If it isnt ready at the same time 4 days extra	Delays fire marshal	6	Delays fire marshal	1		2	12	Overtime: Nights and weekends	Grott	Provides overtime	6	1	2	12
Sanctuary and Terrace	Drywall, Waterproofing floor, Windows	Longer than 16 days	Delays other projects	9	Chain reaction delay	6		1	54	Incentives to external contractors for overtime, Overtime for direct employees, Incentive for Drywall employees	Cage Drywall, Brodbeck and Grott	Provides overtime and incentives	9	2	1	18
	Core Drill, rails and carpeting seats	Longer than 22 days	Delays other projects	5	Chain reaction delay	4		3	60	Overtime: Nights and weekends	Grott	Provides overtime	5	1	3	15
	Installing Seats, Insulate Terrace, carpeting and stairs	Longer than 38 days	Delays other projects	9	Chain reaction delay	6		2	108	Overtime: Nights and weekends, Incentives for Hawkers employees	Stairs Hawker, the rest Grott	Provides overtime	9	2	2	36
	Concrete in terrace	Longer than 10 days	Delays other projects	9	Chain reaction delay	8		3	216	Incentives for Hawkers employees	Hawker/weather dependant	Provides incentives	9	3	3	81
	Masonry, Carpet, Carpeting rails, Painting, MET	Longer than 65 days	Delays other projects	7	Chain reaction delay	4		3	84	Incentives for Hawkers employees, Incentives to external contractors for overtime	Hawker, Brodbeck, Subcontractor	Provides incentives	7	1	3	21
	Clean up and Punch List ACI	If it isnt ready at the same time 4 days extra	Delays fire marshal	6	Longer final delivery	1		1	6	Overtime: Nights and weekends	Grott	Provides overtime	6	1	1	6
WOC & ACI	Sign release of Lien	Once every contractor has been paid	Delays on delivery	7	Delay on final delivery	3		1	21	WOC Dependant	WOC Dependant	none	7	1	1	7

Current RPN Ave: 74.3

New RPN Ave: 24.7

# Risks



Terrace, hard ceiling, drywall, and flooring are the biggest delays in the construction according to the FMEA



# Recommendations



## For ACI

- Delaying the delivery date by explaining the time constraints versus the desired outcome.

- Reducing their profit to pay more for overtime and incentives, so that in the best case scenario, with the risk reductions, the deadline is met.

## For WOC

- Compromising on deliverables by December 14th, using only one part of the church could make it possible to finish on time.

- Increasing the budget for ACI to hire more subcontractors, being able to pay more overtime and incentives.