This division will assess objectives related to the management of architectural projects including organizing principles, contract management and consultant management. The division will focus on issues related to office standards, development of project teams, and overall project control of client, fee, and risk management. Candidates must demonstrate an understanding of and abilities in, quality control, project team configuration, and project scheduling. In addition, candidates must demonstrate the ability to establish and deliver project services per contractual requirements in collaboration with consultants.

- Contract management
- Control of client, fee, and risk
- Quality control
- Flow of the work
- Delivery of the work
PRACTICE MANAGEMENT

Table of Contents

• Lecture discussions organized in the order of the ARE 5.0 objectives

• Guest Lecturers

• Example projects and goals matrix

• Scenario considerations

• Questions

• Going into the studio
Table of Contents

- Lecture discussions organized in the order of the 5.0 objectives
- Guest Lecturers
- Example projects and goals matrix
- Scenario considerations
- Look at sample contracts
- Questions
- Going into the studio
Terminology

- Firm, office, partnership, design corp.
- “Practice”
- Architect, designer, intern
- Consultant
- Contracts (AIA documents)
- Project delivery
- Design Bid Build
- Design Build
- Construction Manager
- Fast-track
- Multi-Prime
- Developer
- Integrated Project Delivery
- Agency
PRACTICE - BASICS

Terminology

- Firm, office, partnership, design corp.
- “Practice”
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- Consultant
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- Construction Manager
- Fast-track
- Multi-Prime
- Developer
- Integrated Project Delivery
- Agency
PROJECT TEAMS

In-house staff:

Criteria for putting together a team?
• Useful experience
• Political connections
• Special skill-sets (over time)
• Production capacity
• Schedule
• Diversity
PROJECT TEAMS

Consultants and contractors

Criteria for putting together a team?
• Useful experience
• Political connections
• Special skill-sets (over time)
• Production capacity
• Schedule
• Diversity
PROJECT TEAMS

Managing project resources:

What are the criteria? Why?
- Billable hours
- Future opportunities
- Build skills
- Build teamwork and trust
- Fill the schedule
PROJECT RESOURCES

Managing project resources:

- Project Schedule
  - Pre-Design (additional services)
  - Schematic Design SD
  - Design Development DD
  - Contract Documents CD
  - Bidding B
  - Construction Administration CA
  - Post Occupancy (additional services)

- Fill the schedule
PROJECT RESOURCES

Project Schedule Criteria

• Coordination issues
• Funding
• Owner requirements
• Lead times / contractor issues
• Weather / regional issues
• Economic market
Managing project resources:

- People
- Computer time
- Prototyping
- Physical modeling
- Researching / library
- Printing and deliverables
**PROJECT RESOURCES**

Project Schedule Criteria

- Billable hours per phase
- Who’s hour
- Their billable rate
- Time = money

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<tr>
<th>Schematic Design</th>
<th>Design Development</th>
<th>Contract Documents</th>
<th>Bidding</th>
<th>Construction Admin</th>
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QUESTIONS

1. The Owner wants to complete the project ASAP. What would you likely discuss with the Owner to help them understand the options?

2. Overall fee for the architecture project is $100,000. How much of that fee is set aside for the Bidding phase of the work?

3. The Owner wants a review of the new building performed after one year to determine if everything is working as planned. What part of the project would this time be billed to?
PLANNING THE WORK

Project Schedule (overall timeline)
• Pre-Design
• Schematic Design
• Design Development
• Contract Documents
• Bidding
• Construction Admin
PLANNING THE WORK

Systems for keeping track of the work / billing
PLANNING THE WORK

Project Schedule (drawing types)
• Pre-Design
• Schematic Design
• Design Development
• Contract Documents
• Bidding
• Construction Admin
PLANNING THE WORK

Terminology through the schedule
• Design drawings
• Bid documents
• Contract documents
• Record drawings
• As-buils

• Design alternatives, options
• RFI
• Addenda
• Change orders
• Construction change directives
PLANNING THE WORK

Project Schedule
• “Model” vs. “drawing”
• Plans
• Elevations
• Site plans
• Sections
• Specifications
• Wall sections
• S, M, P, E, civil, etc.
• Interior elevations
• Details
• Schedules

Coordination
PLANNING THE WORK

Systems for keeping track of the work / billing
PLANNING THE WORK

Project Schedule Issues

- Coordination issues
- Funding
- Owner requirements
- Lead times / contractor issues
- Weather / regional issues
- Economic market
PLANNING THE WORK

Systems for maintaining the schedule

• Project Manager reviews of current billing

• Regular meetings in-house

• Regular meetings with consultants

• Realistic deadlines

• Thorough communication with clients and other stakeholders
PLANNING THE WORK

Thorough communication with clients and other stakeholders:
  • Regular design meetings
  • Meeting minutes
  • Regular coordination meetings
  • VE meetings
  • Milestones for design drawing issuance
  • Communication systems appropriate to use (client, code official, estimator, etc.)
# PLANNING THE WORK

**Issues that drive project planning:**

<table>
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PLANNING THE WORK

Leaving a paper trail:

• Meeting minutes
• Design drawings
• Design decision logs
• RFI's, addendas, memos to file, transmittals
• Project management website protocols
• Change orders / Construction Change Directives / the state of the contract
• Predetermined systems
PLANNING THE WORK

Leaving a paper trail:

• Meeting minutes
• Design drawings
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• Predetermined systems

Consider
The client calls from the airport and is running to catch a plane but wants to make a change to the design which they hurriedly tell you about over the phone (while the flight attendant is telling them to turn off their phone). What comes next?
PLANNING THE WORK

Leaving a paper trail:

• Meeting minutes
• Design drawings
• Design decision logs
• RFI's, addendas, memos to file, transmittals
• Project management website protocols
• Change orders / Construction Change Directives / the state of the contract
• Predetermined systems

Consider
What about texts? How about Facebook? Instagram?

The ephemeral / forever conundrum of current communication technologies
PLANNING THE WORK

Leaving a paper trail:

- Meeting minutes
# PLANNING THE WORK

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PLANNING THE WORK

Suburban High School Project
PLANNING THE WORK

Urban Adaptive Reuse Residential & Retail Project
QUESTIONS

1. The Owner is considering Fast Track as a project delivery method? What advice would you give them?

2. One of the contractors calls and asks for clarification on the drawings that they are bidding on. You should ...?

3. One of the contractors calls and asks for clarification on the drawings that they are the GC for. You should ...?

4. The Work Plan for the project has 32 hours of time associated with the Schematic Design portion of the project, but after adding up all the hours already spent on the project, the PM realizes they have spent 48 hours so far. What options are there? What impact is it likely to have?
CONTRACTS

A101 Owner / Contractor
• Means and methods
• Schedule
• Controls safety on job site

B101 Owner / Architect
• Design intent
• Decision making
• Code compliance

A201 General Conditions
• Sets the context
• Defines the terminology
CONTRACTS

Various terms

• Instruments of service / copyrights
• The Work
• The Project
• The Right to Stop the Work
• The Right to Carry Out the Work
• Contractors construction schedules
• Shop drawings, samples, mock ups
CONTRACTS

Various terms

• Indemnification
• Administration of the Contract
• Inspections
• Right to test the Work
• Interpretations of the design intent
• Change Orders / Construction Change Directive
• Essence of the contract
CONTRACTS

Various terms

• Schedule of Values
• Application for Payment
• Pencil Draw / % of Trades work done
• Approval of Draw
• Retainage
• Certificate of Payment / Progress Payment
• Stored material?
CONTRACTS

Various terms

• Substantial Completion
• Final Completion and Final Payment
• Contractor liability insurance
• Owners liability insurance, Builder’s Risk
• Performance Bonds
• Subrogation
• Termination for Cause / Suspension for Convenience
CONTRACTS

• Reviewing contracts
• Process / procedures
• Milestones
• Implications
• Making changes
• Sharing with the project team
## CONTRACTS

### Contracts and Project Delivery

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1. The Architectural Intern walks onto the site and sees a mason hanging precariously over the side wall to tuckpoint the lintels. The intern says “Stop, that is unsafe. Provide that worker with a safety harness.” What just happened?

2. The contractor has all of the copper piping for the plumbing work sitting beside the building, and now has it listed on draw. But they are not planning on using it for three weeks. How does this impact your certificate of payment?

3. While driving around the old neighborhood you see a bunch of houses that look an awful lot like the ones you designed for that developer. You ask around, and sure enough, the developer is rebuilding more houses with your design. Is this ethical? Does it meet the contract?
PROJECT EXECUTION

Budgeting

Assemblies:
- Linear and Square Foot comparables, unit type, square footage
- Location factors square footage, assemblies
- Economic factors assemblies, full estimates
- Contract Documents bids, full estimates by discipline
- Bidding
- Construction Admin specific changes

Linear foot and square foot
Location factors
Economic factors
Owner sign off
Considerations for estimate changes
Clarifying what is in which budget
Suburban High School Project
PROJECT EXECUTION

Urban Adaptive Reuse Residential & Retail Project
PROJECT EXECUTION

Scope Creep

• Changes that are understandable

• Changes that are unintentional

• What was expected

• What is included

• Contingency

• Multiple budgets, what goes where
  
  FF&E
  Acquisition and soft costs
  Hard costs (construction)
PROJECT DOCUMENTATION

Relationship between documentation systems and the project delivery method

• Timing?

• Who has control?

• How detailed?

• What is included?

• Expectations
PROJECT DOCUMENTATION

Relationship between documentation systems and the code compliance

• What codes?
  Building code, zoning code, specialty

• When?

• Who is responsible?

• Safety

Code Review
PROJECT CODE COMPLIANCE

Relationship between documentation systems and the code compliance

• Occupancy / construction type
• Egress
• Fire ratings
• Materials and systems
• Expectations / Specialty
PROJECT CODE COMPLIANCE

Relationship between documentation systems and the code compliance

- Occupancy / construction type
- Egress
- Fire ratings
- Materials and systems
- Expectations / Specialty

Consider
The Client wants a building that is 14,000 sf on each floor, but as you read the code it clearly states that a building of this construction type for this particular occupancy type has a limitation of 10,000 sf per floor. What to do?
PROJECT CODE COMPLIANCE

Relationship between documentation systems and the code compliance

• Occupancy / construction type

• Egress

• Fire ratings

• Materials and systems

• Expectations / Specialty

Consider
Imagine, for a moment, a hotel on the beach in Cancun. What does it look like - what is its shape? Why?
PROJECT CODE COMPLIANCE

Relationship between documentation systems and the code compliance

• Zoning district / permitted uses
• Setbacks
• FAR
• Massing / outdoor
• Parking / dropoffs / loading
• Expectations / Specialty
Considering
A client calls and asks you to do a walk-through at a potential Day Care Center location. The space is an existing tenant space in an old loft building. What should you do prior to going to the meeting?

PROJECT CODE COMPLIANCE

Relationship between documentation systems and the code compliance

- Zoning district / permitted uses
- Setbacks
- FAR
- Massing / outdoor
- Parking / dropoffs / loading
- Expectations / Specialty
PROJECT CODE COMPLIANCE

Relationship between documentation systems and the code compliance

• Zoning district / permitted uses
• Setbacks
• FAR
• Massing / outdoor
• Parking / dropoffs / loading
• Expectations / Specialty

Consider
Administrative Adjustment
Variance
Amendment
PUD
**PROJECT CODE COMPLIANCE**

What are the issues that might be a problem?

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PROJECT CODE COMPLIANCE

Suburban High School Project
PROJECT CODE COMPLIANCE

Urban Adaptive Reuse Residential & Retail Project
QUESTIONS

1. The FAR is 3.5. The site is 100' by 100'. How big a building can you build on the site? How many floors?

2. You have been asked to work on a Frank Lloyd Wright house. As a conscientious architect you immediately go to the Building Code to review any issues that might come up. What else should you check into?

3. The egress path starts in the unit and ends where?
PROJECT QUALITY CONTROL

Mitigation of Risks

• Milestone review of Code Review

• Comparison of Code Review to current set of drawings

• Third party review

• Note and review areas of common code compliance difficulties

• Code officials

• Relationship to client and contracts
PROJECT QUALITY CONTROL

Mitigation of Risks

• Don’t take on others liabilities
• Clarity of drawing set
• Expectations for drawing set
• Ability to review and change
Mitigation of Risks

- Understanding sequencing / constructibility
- Multiple eyes review / different points of view
- Training program - Code
- Training program - Contracts
- Lessons learned reviews
PROJECT QUALITY CONTROL

Mitigation of Risks

- Understanding sequencing / constructibility
- Multiple eyes review / different points of view
- Training program - Code
- Training program - Contracts
- Lessons learned reviews

Consider
The Work Plan has 200 hours for Design Development work by 3 interns and two young designers in the office. The PM thinks that this is the minimum number of hours needed to physically to do the work. Who will do the necessary code check? Who will do the necessary contract / client review?
## PROJECT QUALITY CONTROL

### Tracking the work

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PROJECT QUALITY CONTROL

Suburban High School Project
PROJECT QUALITY CONTROL

Urban Adaptive Reuse Residential & Retail Project
QUESTIONS

The client has just been presented with DD set and is quite happy with where the project is. What are the next steps?

What should you have the client do?

What should the PM and the architecture team do?

What should the PM / PA and the consultant team do?

What should the interns do? Probably get some sleep.