

# ArchEX

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## **Integrated Project Management: Tools and Training**

**Christopher Martersteck, AIA, LEED AP, DBIA** **PSMJ Resources**



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# Integrated Project Management: Tools and Training

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# Learning Objectives

Participants will be able to:

- Understand the needs for consistent tools and processes in managing AEC projects
- Focus training and monitoring programs to encourage and track factors leading to successful projects and client relationships
- Utilize the project work planning process as a foundation for improved team-building and management of AEC projects

# Who Is Your Speaker?



## Christopher P. Martersteck, AIA, LEED AP, DBIA

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# Project Management

The **planning, directing, and controlling** of resources to achieve a **particular objective** within a predetermined **budget** and by a **set date**.

# Project Management

**Critical to the success of our firms  
and our clients:**

- **Client goals**
- **Design quality**
- **Business profitability**
- **Positive team environment**

# Project Management Outline



- **What is needed?**
- **Why?**
- **How to do it**
- **Training**
- **Tools**
- **Tracking**
- **Q & A**

# Project Management



What is  
Needed?

Why?

# What Do Our Clients Want?

- **Faster completion with less finger pointing**
- **Fewer change order hassles**
- **Fewer claims and other legal problems**
- **Early and accurate cost commitments**
- **Better quality and lower lifecycle cost**
- **Minimize their own risks**
- **Less time spent managing the project --  
so they can get back to their *real* jobs**
- **Understand and meet *their* expectations**



# What Are the Implications?

- **Need to define and commit to scope earlier**
- **Better information and sooner decisions  
required by entire team**
- **Out of sequence work, rework, and value  
engineering are continuous facts of life**
- **Change management systems needed**
- **Collaborative behavior and sharing timely  
information is not just desirable –  
it's a necessity!**

# What Do Our People Want?

- More enjoyment of the design process
- Work on quality award-winning projects
- Be part of something bigger
- Responsive team members and leaders
- Adequate recognition and autonomy
- Less time spent managing the project
- Training and more design / technical expertise
- Job security...and a share of the \$\$\$

# How Can We Retain our Best People?

- **Consistent process and tools**
- **Greater autonomy**
- **More communication and delegation**
- **Structured training and mentoring programs**
- **Increased involvement in the entire process**
- **Better leadership**
- **Strong Project Management focus**
- **Collaborative behavior by all participants**

# Why Do We Need Strong PMs?

- **Principal – PM Partnership**
- **PM – Client Relationship → Success Factor**
- **Design Quality**
- **Successful Firms**
- **Successful Projects**
- **Happy Clients**
- **Profitability**
- **Positive Team Environment**

# Integrated Project Management



## How to Do it



# How Do We Need to Respond?

- **Teamwork - Minimize Conflicting Goals**
- **Articulate Client Strategic Business Goals**
- **Professionalism - Create Environment of Mutual Trust & Respect**
- **Leadership - Not Just Management**
- **Partner - Not Just a Designer**

# What Are Our Strategies for Success?

- **Partnering & Team Building:**
  - **Insure the Entire Team – including the Client – is ‘On the Same Page’**
- **Get All Team Members Involved Earlier**
- **Consistent Project Management Process**
- **Standard, Accessible, User-Friendly PM Tools**
- **Communication – Process of Endorsement**
- **Training of *ALL* Team Leaders**
- **Clarify Expectations**
- **Reminders, Support ...& Enforcement**

# Project Management Training

- **Internal Firm Training**
- **Systematic and process oriented**
- **Clear and measurable goals**
- **External PM Training**
- **Complementary programs:**
  - **Mentoring program**
  - **Fellowship Program**
  - **Intern Development Program**

# Integrated Project Management

## Training



# Culture for Success



“Companies that enjoy enduring success have **core values** and a **core purpose** that remain fixed while their **business strategies** and **practices** endlessly **adapt** to a changing world.”

*Harvard Business Review on Change*

# Core Values

- **Vision**
  - **Purpose**
  - **Core Values**
  - **Goals**
  - **Guiding Principles**
- **Strategic Plan**
- **Firm Business Plan**
- **Leadership support and commitment**
- **Key staff involvement at all levels**

# Project Management Expertise

**It is not enough to just do  
your best or work harder,  
you must know  
what to work on.**

W. Edwards Deming

# Project Management Learning

- **Not What You Learned in School**
- **Seminars**
  - ‘Project Leadership’
  - ‘Change Management’
  - ‘Developing a Budget’
  - ‘Scheduling’
  - ‘Project Management Forum’
- **Webinars**
- **OJT**

# Integrated Project Management



## Tools

Initiation

Ongoing

Closeout

# PM & Team Expectations

- **Defined Job Responsibilities**
- **Project-Specific Roles & Responsibilities:**
  - **Who Does What?**
- **Focused Communication**
- **Relationships**
- **Feedback - Immediate**
- **Performance Evaluations - Longer Term**

# Team Building

- **Project Work Planning**
- **Goal Setting**
- **Process of Endorsement**
  - **Input**
  - **Incorporate**
  - **Gain Commitment**
- **Buy-In**
- **Communication**

# PM Tool Best Practices

- **Consistent Process**
- **Standardized & Easily Accessible**
- **Summary Reporting Formats**
- **Timely & Accurate Tracking Data**
- **Scalable**
- **Intranet-Enabled**
- **Web-Based**
- **Simpler = Better – but...**
- **Use the ones you already have first!**

# Project Initiation Tools

- **Proposal**
- **Work Plan**
  - **Goals**
  - **Critical Success Factors**
  - **Scope Definition**
  - **Schedule**
  - **Budget**
  - **Team Organization**
  - **Communication**
  - **Quality**
  - **Change Process**
  - **Risk Management**
  - **Client Care**

# Project Proposal

- **Vision / Goals**
- **Statement of Understanding**
- **Delineation of Scope**
- **Preliminary Schedule**
- **Consulting Teaming**
- **Terms and Conditions**

# Project Proposal - Goals

- **Vision / Goals**

  - What the Client gets out of this

  - Client's key issues and 'hot buttons'

  - Critical success factors, quantified if possible

- **Statement of Understanding**

  - Our understanding of the scope of work

  - Inclusions and exclusions

  - Subconsulting services included

  - Additive or deductive alternate service offerings



# Proposal - Scope & Schedule

- **Delineation of Scope**

  - Deliverables

  - Bottom-up Budget

  - Top-down Budget

  - Detailed scope summary with deliverables

  - Detailed list of tasks and deliverables

  - Associated hours

- **Preliminary Schedule**

  - Overview of start, completion, and major milestone dates

  - Critical activities beyond firm's control or by Client



# **Proposal - Consultants & Contract**

## **Consulting Teaming**

**Major consultants identified**

**Estimated costs for services**

**Prequalification database**

## **Terms and Conditions**

**Standard contract terms**



# **Proposal - Update After Award**

## **Proposal Evolution to Project Work Plan**

**Develop an Agenda and summarize initial information**

**Prior to the meeting prepare and distribute a preliminary outline framing known information and focusing the discussion of key areas**

**Assemble the in-house team**

**Review and facilitate a discussion of all key elements**

**Incorporate notes and publish summary**

**Copy Senior Management and those unable to attend**

**Hold a similar meeting with the Client team and key firm team members, excluding financial information not required by contract and internal risk assessment issues**



# **Project Work Planning - Part 1**

**Team Members**

**Project Description Overview**

**Client Vision / Goals**

**Our Firm's Goals**

**Scope of Work**

**Detailed Schedule**

**Financial Plan**

**Team Organization, Resources, Responsibilities**

**Project Delivery Strategies**

**Quality Control Process**



# **Project Work Planning - Part 2**

**Change Management Process**

**Communication Plan**

**Contingency and Risk Management Plan –  
Internal Risks**

**Contingency and Risk Management Plan –  
External Risks**

**Client Required Data and Reviews**

**Client Care Plan with Potential Expanded  
Services and Relationship Growth**

**Next Steps / Immediate Actions**



# **Project Work Planning - Overview**

## **Team Members**

**Introduction**

## **Project Description Overview**

**What we know about the project at this point**

**Project size**

**Location**

**Client**

**Major functional components**

**RFP essential elements summary**



# **Project Work Planning - Client**

## **Client Vision**

**What the Client is trying to achieve**

**Client's business plan / strategic objectives**

**Client priorities relative to stated objectives**

## **Client Goals**

**Client Critical Success Factors with performance metrics**

**Elements central to the Client's success**

**Quantified descriptions wherever possible**

**Construction cost budget**

**Schedule goals**

**Who approves the design**



# **Project Work Planning - Our Firm**

## **Our Firm's Goals**

**Profitability goals**

**Strategic firm objectives**

**Market sector goals**

**Future business opportunities**

**Award potentials**

**High-performance team opportunities to achieve better /  
faster / more profitable results**

**Sustainability opportunities**

**Quantifiable measures of firm success**



# Project Work Planning - Scope

## Scope of Work

Services provided

Disciplines

Joint venture partners

Distribution of responsibilities

Subconsultants with identified partner firms

Excluded services or scope

What is reimbursable

What is not reimbursable



# **Project Work Planning - Schedule**

## **Detailed Schedule**

**Fleshed-out milestone schedule for smaller projects**

**Bar chart schedule for larger projects**

**All known milestone dates**

**Activity sequencing**

**Meeting dates**

**Client review durations**

**Assumed permitting and construction durations**



# **Project Work Planning - Financial**

## **Financial Plan**

**How fees have been established**

**Bottom-Up Budget**

**Top-down Budget Comparison**

**Work Breakdown Structure – convert into Tasks & Deliverables of approximately \$10,000 fee each**

**Insertion of WBS into Weekly / Monthly Earned Value Tracking and Baseline Fee Projection / Cash Flow model**

**Construction Cost Model – indicating how it will be established**

**Accounting issues summary – dates and process for submission & payment of invoices, accounting kickoff, payment issues or concerns**



# **Project Work Planning - Team**

**Team Organization, Resources, Responsibilities**

**Project Organization Chart**

**Who Does What**

**Definition of Client responsibilities**

**Subconsultants identified with team leaders**

**Possible outsourcing opportunities**

**Work to be done in other offices if relevant**

**What other offices will do**

**Who champions what**

**Schedule**

**Communication**

**Meetings**

**Travel costs**



# **Project Work Planning - Delivery**

## **Project Delivery Strategies**

**How can we improve our process?**

**Initial weekly efforts and deliverable goals**

**Critical project delivery issues**

**Construction delivery intentions**

**Expanded service CM / PM / DB opportunities**

## **Quality Control Process**

**Schedule**

**Tasks**

**Responsibilities**

**Summary write-up by Quality Leaders**



# **Project Work Planning - Change**

## **Change Management**

**How a change is identified**

**Contract change language**

**How the fee for a change is developed**

**How the added time for a change is calculated**

**Who approves a change in scope, schedule or fee – both  
for Client and the firm**

**Standard change letter / Additional Services Request**



# **Work Planning - Communication**

## **Communication Plan**

**Communication matrix - who gets what, when**

**Potential items include work plan, meeting minutes, drawings, project directory, review sets, project review meetings, main client point of contact, distribution list, project communication / master file**

**FTP site for drawing exchange / possible PM Website**

**Weekly conference call**

**Client approval matrix → Who approves what / when**

**Communication plan - internal team members Client & users**

**'Project Binder' for team members – especially Client**

**Client submittal standards**

**PM copied on everything - all Client communications need to go through PM**



# Work Planning - Internal Risk

## Contingency Planning & Internal Risk Mgmt

Internal risk issues that could potentially impact firm's ability to deliver appropriate quality work meeting / exceeding client scope / schedule / budget goals

Risk issues that could impact firm's ability to meet / exceed profitability goals

Examples might be:

- Severe time constraints

- Availability of people to staff project per budget

- Unusual project type

- Code issues

- Multi-office coordination needs

- Client approval / staffing / personality issues



# Work Planning - External Risk

## Contingency Planning & External Risk Mgmt

External issues possibly outside of Client's and firm's ability to impact, except to maintain awareness and minimize potential impact if they occur

Examples might be: potential site problems, code compliance or review / approval challenges, tight budget or time relative to Client goals, lack of documentation of existing conditions, environmental issues, market costs

External issues within Client's impact but which need to be focused on to assure their impact is minimized or mitigated

Examples might be: complex internal Client approval process, numerous stakeholder groups with conflicting goals, meeting or approval schedule requiring unrealistically accelerated or numerous meetings or approvals, lack of availability of decision-makers to conform to schedule needs



# **Work Planning - Required Data**

## **Client Required Data and Reviews**

**Survey data**

**Existing conditions information**

**Soils report**

**Accessibility plan**

**Master plan**

**Client standards**

# **Work Planning - Client Care Plan**

## **Client Care Plan with Potential Expanded Services and Relationship Growth**

**Added service opportunities and action plan**

**Possible 3D Renderings**

**Potential expanded services – XAE, PM, CM, D-B**

**Expansion of building size + cost for rework of work to date**

**Premiums to recover schedule slippage due to client failure to review & provide direction per agreed schedule – or at least get ‘good will’ if no formal ASR**

**Other added service opportunities and action plans?**

**Future service opportunities**

**Internal responsibilities and proactive plan for Client relationship maintenance and growth**



# **Work Planning – Next Steps**

## **Next Steps / Immediate Actions**

**What do we need to immediately achieve to move forward**

**Resolve all Contract / Letter of Intent / JV issues ASAP**

**Accounting kickoff / Invoice issues / payments process**

**Reconcile Bottom-Up Budget & revise Project Initiation**

**Develop list of deliverables per phase**

**Develop a Meeting Schedule with dates, agendas, attendees, approval durations, information or reviews**

**Invoice against any initial work accomplished**

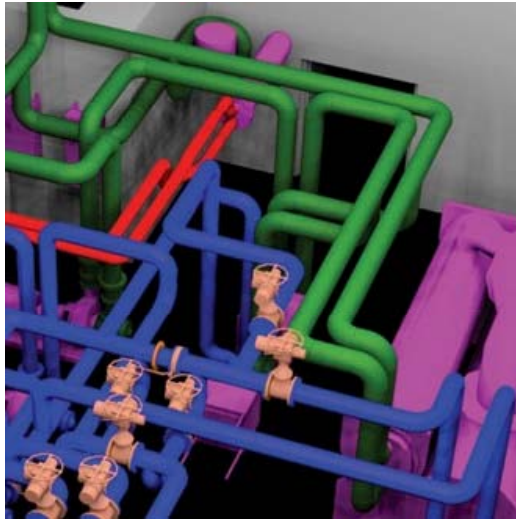
**Do not proceed with work until A/R is up to date**

**Incorporate Work Plan discussion points from meetings into Final Work Plan, schedule Summary Work Plan Review with entire internal team – then invoice for initial deliverable**

**Schedule Client Visioning / Work Plan review**



# Integrated Project Management



Tools

Ongoing

# **Project Reporting/Communication**

## **Project Status Reporting & Documentation**

**Project Work Planning**

**Regular Client review meetings**

**Weekly written Client Project Status Reports**

**Weekly project team meetings**

**Monthly schedule update**

**Review meetings with Operations Leader with standardized summary reporting & PM Key Performance Indicators**

**Monthly records management**

**Project Work Plan communication & coordination activities**

**Intranet Project Data Base with PM Critical Success Factors**



# **Project Ongoing Tracking**

## **Tracking, Monitoring & Corrective Actions**

**Weekly project team meetings**

**Development and review of Earned Value 3-line diagram**

**Monthly analysis of task and deliverables completion**

**Review of required corrective actions if needed**

**Monthly schedule update**

**Monthly / semi-monthly review meetings with firm      Senior  
Management – review PM KPIs & actions to correct**

**Quality reviews at milestones**

**Regular interval Design / Budget alignment**

**Continuous 'PM Dashboard' business data management**

# **Project Change Management**

## **Change Management Process**

**Establish our change control processes before work begins, not when the actual first change appears**

**Detail our change control mechanism in the client contract and include it in our Project Work Plan**

**Address and adapt to changing circumstances**

**Accommodate changes in scope and services**

**Immediately assess impacts to scope/schedule/budget/fee**

**Issue documentation and expedite client approval before added work begins**

**Know what is in the contract scope**

**Watch out for scope creep**



# **Project Business Tools**

## **Business Management Process**

**Establish invoicing & payment processes before work begins**

**Development of a Bottom-up budget with Deliverables**

**Development and review of Earned Value 3-line diagram**

**Involvement of the entire team in knowing and tracking progress against their respective scope/schedules/budgets**

**Review of required corrective actions if needed**

**Timely identification & Client approval of Add Services**

**Expedited review of draft invoices and transmittal**

**Expedited Client review and approval of invoices**

**Pursuit of outstanding Accounts Receivable**

**Project Manager focus on Client Relationship Management**



# **Project Standard Format Tools**

## **Project Management Standard Tools**

**Proposal Letter Template**

**Project Scheduling Applications**

**Financial Indicators Software**

**Earned Value Analysis Software**

**Construction Administration Metrics Software**

**Basic Services Matrix**

**Bottom-up Budget Templates & Samples**

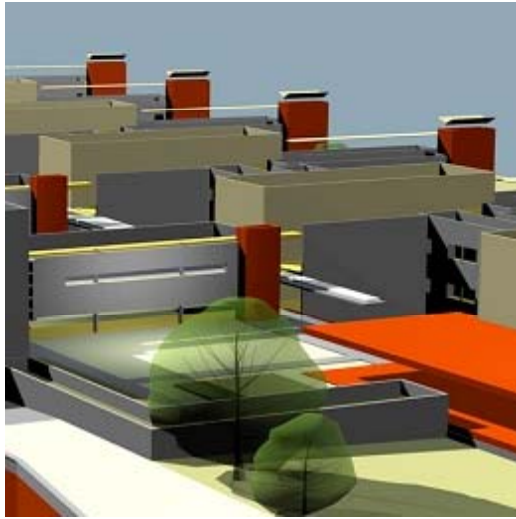
**Firm Standard A/E Agreements**

**Consultant Database**

**Intranet Sample Forms / Formats / Tools and Instructions**



# Integrated Project Management



What is best  
to remember  
from today?



# Project Management Equations

**Teamwork =**

**Relationships of Mutual Respect and Trust**

**Coordination = Communication + Documentation**

**Earlier Input = Sooner Results = Higher Profits**

**Facilitate Process = Continuously Clarify &  
Resolve Scope & Monitor Results**

**Expedite Work Progress = Define Issues,  
Expedite Decisions & Actions**

**Status = Past / Present / Future**

**Actions / Dates / Responsibilities**

# Project Management Bottom Line

**Project Work Planning is not just a Deliverable –  
it's a *continuous*  
*Team-Building and Goal-Setting Process* for  
*Buy-In + Higher Efficiency of all Team Members***

**Defined Scope stems from Known Goals,  
Priorities & Expectations →**

***Client Critical Success Factors***

**Facility Goals are still a *Means to a Business End*  
-- know your Client's *Strategic Business Plan***



# Keys to Success

Create Client and team *relationships* of mutual respect and trust

Define process, scope & goals in detail

Expand key professional role:

Consultant → Problem-Solver →

Client Advocate / Partner → *Trusted Confidant & Steward of Client's Limited Resources*

Management critical but *Leadership* central

Provide your Leaders with continuous *Training* plus consistent and simple / scalable *Tools*



# In Conclusion

**. . . the future . . .  
usually arrives before  
we're ready for it.**

Arnold H. Glasow



**Thank you for your time!**

**QUESTIONS??**

about

**Integrated Project Management: Tools and Training**

**Questions on A/E/C Project Management?**

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