How to Plan Your Projects Effectively

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A Web-based Seminar
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TOPICS

- Introduction
- What Is a Project Plan?
- The Elements of a Project Planning & Control System
- Setting Project Objectives
- The Importance of Contracts in Project Planning
- Developing The Project Schedule
- Developing The Project Budget
- Developing the Project Team
- Developing Project Standards
- Wrapping the Plan Together

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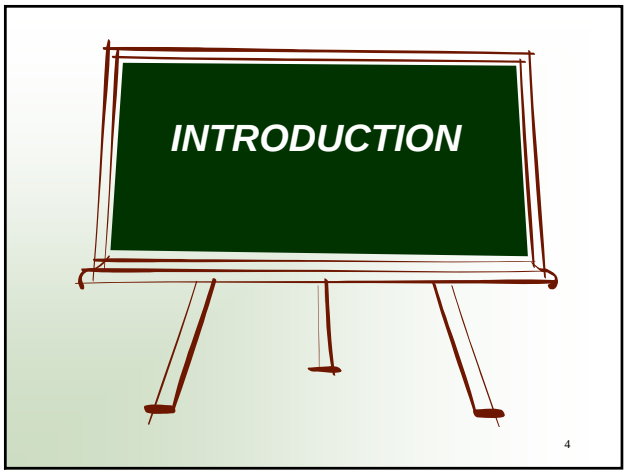

I believe ***EFFECTIVE PLANNING IS THE MOST IMPORTANT THING ANY PROJECT MANAGER DOES!***

From the initial contact with a potential client or the receipt of an RFP, the Project Planning Process is the singularly most important process to assure a successful project. It is the portion of the project that usually receives the least amount of attention.

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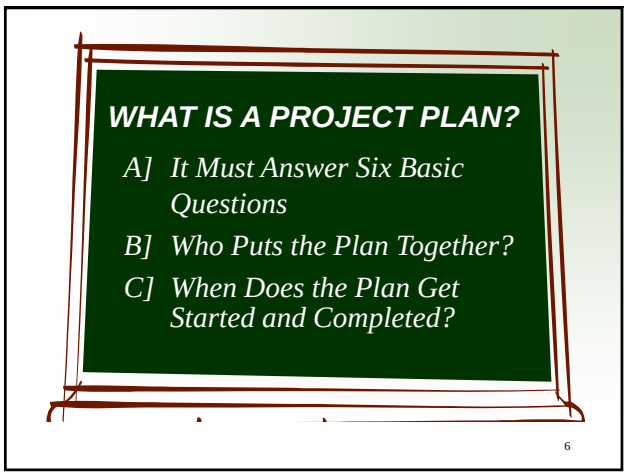

A] It Must Answer Six Basic Questions

The plan for any project is the STRATEGY that outlines the sequence of future events, along with the required supporting information, which is necessary to achieve one or more desired results (or objectives).

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Full development of that strategy requires answering the following questions:

1] What are the ***objectives*** to be met on the project (both the client's and the consulting firm's)?

2] What is the ***time frame*** for meeting these objectives?

3] What is the ***financial framework*** for meeting these objectives?

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4] What total team ***resources*** are required and how will they be contracted with and organized in order to meet the objectives?

5] What existing ***standards*** must be met and what new standards must be developed in order to meet the objectives?

6] Through what ***process*** will the internal resources be acquired to meet the objectives?

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B] Who Puts the Plan Together?

It is the ***Project Manager's*** overall responsibility.

The PM depends on key sources of input at different stages to build the plan.

Let's discuss why more project planning isn't done

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C] When Does The Plan Get Started and Completed?

- Certainly ***not*** started after the contract is signed
- The ***Go/No-go Decision***
- Planning ***before*** selection
- The critical nature of ***assumptions***
- ***Due diligence*** leading to contract negotiations
- Revisions to the Plan ***before*** major work is started
- The ***evolution*** of the Plan

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REMEMBER:

You can't control that for which you have no plan

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Elements of a Project Planning & Control System:

A] The Tools to ***Define Objectives***

B] The Tools to ***Develop Planning Information***

C] The Tools to ***Measure Project Progress***

D] The Tools to ***Control Change***

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A] The Tools to Define Objectives

Detective work is required.

- Objectives = Desired Results--***but whose?***
- ***Stated*** vs. ***Unstated*** Objectives
- ***Organizational*** vs. ***Individual*** Objectives

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B] The Tools to Develop Planning Information

- ***Master Schedule*** - design time tied to overall project planning
- ***Budgets*** for the entire project (all costs) and the portion relating to the Design Consultant's portion
- ***Technical requirements*** of the total project (performance requirements at macro and micro levels)
- ***Detailed checklist*** of services required and who provides them
- ***Documentation*** of all existing conditions

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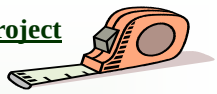
C] The Tools to Measure Project Progress



A Project Plan is nearly worthless unless it is put into action and monitored regularly to compare ***actual results*** with what was ***supposed to happen***.

Key Elements to Monitor Progress:

- A visible, clear, regularly updated, and widely communicated ***schedule***.
- ***Regular budget reports*** (design as well as construction cost trends).
- ***Regular review*** of individual & group performance relative to ***established*** technical standards.

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D] The Tools to Control Change

- **Sensitivity to scope change**
- **Major vs. minor changes**
- **Defining project close-out up front**

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Setting Project Objectives:

A] The ***Importance*** of Project Objectives

B] The ***Difference*** Between Objectives, Scope of Work, and Checklist of Services

C] Establishing ***Priorities*** and Hierarchy of ***Objectives***

D] ***Criteria*** for Sound Project Objectives

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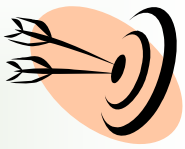
A] The Importance of Project Objectives



- Make sure you're ***headed in the right direction***
- To ***measure results*** against stated expectations
- To know ***when and by how much*** the project is off target in order to take corrective action
- Be able to determine individual, subgroup, and total ***team goals and work tasks*** (work breakdown system)

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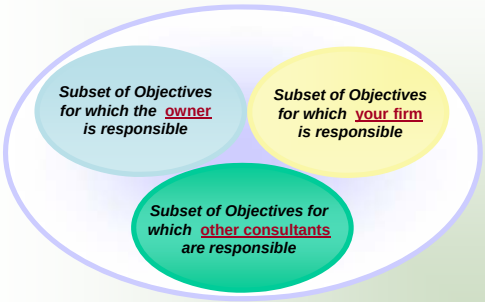
Set of *Total* Project Objectives



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B] The Difference Between Objectives, Scope of Work and Checklist of Services

- The ***level of detail*** defines them
- ***Must define responsibility:*** Owner, Design Consultants, Other Consultants, Construction Manager or other players
- ***Scope of work must be consistent*** with stated objectives
- Scope of work and checklist of services used to ***develop work breakdown structure***--Who does what

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C] Establishing Priorities and a Hierarchy of Objectives

- ***Find out the Owner's priorities***
  - Time
  - Cost
  - Quality
  - Function
  - Others: Aesthetics, Environmental or community impact, etc.
- ***Reach agreement with client*** on priorities and ***communicate*** to the Project Team
- Establishing priorities ***identifies constraints on project execution***

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D] Criteria for Sound Project Objectives

- Must be ***clear and specific*** rather than general or vague
- Must be ***measurable***
- Must be ***reasonable and attainable***
- Must be ***understood by all***
- Must ***clarify areas of conflict*** from Owner and Consultant point of view
- Should ***provide challenge and growth*** for the firm and individuals involved (not always possible for certain kinds of repeat or repetitive projects)
- Must be ***consistent with consultant's mission, values, operational plans, policies & procedures*** (some projects may require procedure modifications)

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A contract is a primary document for defining the relationship between client and consultant.

It may be:

- A ***client's standard contract***
- A ***consultant's proposal*** signed by the client
- A ***consultant's standard contract***
- A ***design industry standard contract***
- A ***newly formulated document*** for a specific project

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A] Essential Elements of a Contract

- An ***identification*** of the parties of the contract.
- A ***physical description*** of the project under consideration.
- A ***clear definition*** of the scope of services for the consultant.
- A ***disclaimer*** as to services not to be provided by the consultant or that will be provided by the client.
- The ***time schedule*** for the performance of the consultant's work.

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- The ***compensation*** to be paid by the owner for the consultant's services.
- The ***method and time requirements*** of payment of this compensation.
- A ***listing of other probable services*** that might be required and methods of compensation for these, should they be required.*
- ***Provisions*** for changing the contract.*
- A ***delineation of applicable law*** governing the contract.*

* *Not mandatory,* ***but very desirable****.*

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- A ***limitation of the consultant's liability***. (To be included wherever it is acceptable to the client.)*
- ***Provisions for adjudication of disputes*** between the client and the consultant.*

Please also refer to Appendix I (slides 105-109 of this document) for more "Important Elements to Consider for Professional Service Contracts"

* *Not mandatory,* ***but very desirable****.*

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B] Who is The Client Really?

- Know if ***representative has authority***
- Know the client's ***legal status***
- Know if ***funds are available*** to pay for services
- Is the ***correct organization's name*** on the contract?

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C] Project Description

- ***Clearly define*** project parameters
- ***List*** physical, legal, and environmental constraints

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D] Scope of Services

- Must ***enumerate*** all services, materials and equipment ***consultants will provide***
- ***Define services***, etc. ***by stage or phase*** as required
- ***Unusual or special services*** defined in detail
- ***Separate section for services not included*** but could be added for additional compensation
- ***List of services***, tasks, responsibilities that the ***client is to provide***
- ***List of services***, tasks, responsibilities that the ***consultant is not providing***
- Use of ***"Detailed Services Checklist"***

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E] Client's Responsibility

- Specific ***list of client provided documents*** and time requirements
  - Existing operations and maintenance manuals
  - Original construction as-builts
  - Existing survey, land, and zoning documents
- Means and methods of ***access to client's existing facility***
- Means and methods, and ***authority for prompt decisions by the client***

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F] Compensation for Services

- ***Everything*** the consultant does should be paid for ...

  Amateurs work for free
- Different clients want to buy ***different*** levels of service for the ***same*** general scope of work
- The ***same client may buy different levels of service*** on separate projects
- There should be a ***profit target on every project***

- ***Profit is not a dirty word***-- never apologize for making a good one

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G] Conditions for Payments

- ***Not*** just "how much?"--***but "when?"***
- Ask for a ***retainer***
- Paid ***monthly***
- ***Penalties*** for late pay
- ***Terms to minimize work-in-progress*** (WIP)

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Most projects are a race against time ...

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A] The Relationship Between a Plan and a Schedule

- Planning ***precedes*** scheduling
- You ***can't schedule*** what you ***haven't planned***

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B] The Information and Logic Needed to Develop a Schedule

- ***Project*** size and complexity ***determine*** the size and complexity of ***schedule***
- All ***listed items*** on checklist of services ***provided on schedule***
- Activity durations ***match*** overall project length
- ***Understand Restrictions*** that control activity sequencing
  - Physical restrictions
  - Special contract or client requirements
  - Company policy (either consultant's or client's)

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For Activity Sequence Development, Always Ask These Three Basic Logic Questions:

1] **"What activity(ies) *must be completed* before I can start this activity?"**

2] **"What other activities can be *occurring at the same time?*"**

3] **"What activity(ies) *can start* once I *complete* this activity?"**

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A realistic duration must be established for each activity based on the anticipated available resources and their historic as well as projected production rates.

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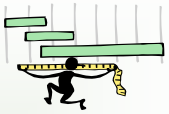
VARIOUS TYPES OF SCHEDULES



- Calendar To-Do Lists
- Graphic Methods
- Bar Charts
- Network Diagrams (CPM, PERT, Precedence Networks)

- Full Wall Schedules
- Milestone Charts
- Computer vs. Manually Generated

Monitoring and schedule updating may depend on type of schedule.

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Looking at Multiple Budgets

A] <u>The Construction Budget</u>

- The Consultant ***must know before*** the contract is negotiated
- Must be ***consistent*** with Owner's objectives and Design Consultant's scope of work
- The Owner ***must trust the Design Consultant*** enough to divulge any available contingency funds
- ***Every design decision***, from start to finish, has an impact on construction costs (+ or -). This requires a constant awareness of cost trends.

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- Unreasonable construction budgets ***must be cleared up before*** the design contract is signed
- ***Most*** Design Consultants are poor construction cost estimators
- Understand and ***discuss*** Life Cycle Cost and Cost Allocation Analysis ***with the Owner***
- ***Understand the difference*** in ...
  - Order of Magnitude or Parametric Estimating
  - Preliminary Design or Systems Estimating
  - Final Construction Documents (detailed take-off) Estimating

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B] The Professional Design Services Budget

13 Steps to follow regardless of Project Size:

1. Understand preliminary scope of work
2. Develop preliminary work break-down statement and work with department managers to allocate work and time required
3. Develop preliminary budget (basis for priced proposal)
4. Negotiate contract
5. Revise scope of work for finalized contract
6. Revise work breakdown statement and communicate to department managers

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7. Work with department managers to reallocate work and time requirements
8. Finalize budget for input to computer
9. Receive and discuss regular cost reports with department managers and Design Team
10. Negotiate any scope issues
11. Reallocate work and time required
12. Revise total project budget
13. Submit revisions to computer

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C] Negotiating for Buy-In

REMEMBER:

The more people that have input into the project plan
(especially schedule & budget)
the easier it is to get buy-in

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When Negotiating for Buy-In, consider ...

- Who are the ***"musts"*** for buy-in?
- Who are the ***"also desirables"*** for buy-in?
- The goal is ***what's best for your firm*** and the client--***NOT*** who is right or wrong on any issue.
- Use the Buy-In Process to ***build trust*** within the Project Team.
- ***Don't*** let false perceptions get in the way.
- In communicating with your project team, ***don't assume mutual understanding***; ask for and give feedback on ***all*** key issues.
- Ask open-ended questions of others to ***get their points of view***.

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Please also refer to **Appendix II** (slides 110-113 of this document) for more on **"Project Manager Responsibilities"**

A] The Project Manager's Role and Responsibilities

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1] Fitting the Building Blocks Together

It is critical for the Project Manager to ...

- Define & communicate ***appropriate*** decision-making authority to all team members
- Build a ***constructive & cohesive*** team climate
- Encourage ***team creativity***
- Define suitability and ***expectations*** of team membership

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2] Project Authority

- The Project Manager ***seldom*** has unilateral authority for all decisions
- The ***PM takes the lead*** in reaching consensus with Sr. Management, department managers, and team members whenever possible
- The ***PM primarily defines "when" and "what"*** regarding most project activities
- Technical managers and team members determine ***"how"*** work gets done
- This brings us back to the critical nature of buy-in to the project plan

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3] Cohesive & Constructive Team Climate

Key Elements:

- ***Commonly*** understood vision and objectives for the total project
- ***Mutually*** supported values and attitudes
- ***Mutually*** supported work relationships
- ***Sharing*** constructive feedback without defensiveness
- ***Adequate*** resources to complete work effectively

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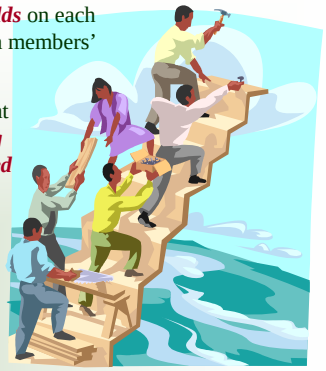
- A PM who ***builds*** on each individual from members' strengths
- An environment where ***listening skills are valued*** more than speaking skills



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4] Encourage Team Creativity

Key Elements:

- Give positive feedback for ***every*** creative effort
- ***Clarify and deal with*** problem issues with sensitivity
- Give ***clear written and oral guidelines*** and requirements
- ***Encourage*** brainstorming and timely decision making on complex problems
- ***Support*** education and cross-training of new skills among team members where possible

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5] Team Membership

Key Elements:

- ***Technically competent*** members (with senior backup as required)
- Mutual respect and support for ***both*** technical and non-technical skills
- Willingness to ***be flexible***
- Understanding that another team member's ideas might just be ***"right"***
- ***Willingness*** to communicate openly--asking for and receiving feedback to reach understanding and win-win solutions to all issues

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B] The Stages of Team Development

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Great Project Management Leadership ***develops individuals into high-performing team members*** by practicing the following:

- Manage team members by interacting with them in their space ***(MBWA)***
- Acknowledge good work ***regularly***
- ***Handle controversy with diplomacy*** and sensitivity

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- Be aware of opportunities to celebrate success***--what is rewarded will be repeated***
- Push for a pattern of success (schedule, budget, quality, etc.) ***early*** in the project; this will get the team pumped
- ***Regularly*** ask for suggestions to shorten schedule and increase profit
- Prepare task assignments with member name in accordance with time schedule and work breakdown structure

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STAGES OF TEAM DEVELOPMENT

The following table demonstrates the manner in which most teams develop. You need to be aware of where ***individuals*** and the ***team*** are, in order to always ***move toward Stage IV***:

Stage I *Collection*	**Stage II** *Group*	**Stage III** *Developing Team*	**Stage IV** *Hi-Performing Team*
People are: - cautious - guarded - wondering	Developing: - identity - purpose - interest	Developing: - goals - roles - relationships	Acting on common goals with: - synergy - high morale - high productivity
Little visible disagreement	People are taking risks & getting to know one another	Learning to appreciate differences in people	Easy shifting of roles from one to another
Lacks an identity	Conflict is in fits & starts, non-productive	Conflict is usually on issues not egos	Differences are valued
Little investment in the group	High level of frustration &/ or confusion	Communication open & clear	Looking out for one another's interests
Watching for norms here to see what is okay or expected of members	Pairing & cliques	Sense of belonging	Spontaneous collaborative efforts
		Sense of progress	Sharing all relevant information
		Enjoying work	Conflict is frequent, often looks like problem solving
(0)	***(3)***	***(6)***	***(9)*** ***(12)***

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from **Collective Excellence** by Mel Hensey, ASCE Press, 1992

1] Leadership

No single individual has all the skills or capabilities required for effective management.
Be aware of your own strengths and limitations. Draw on the strengths of others to fill in your own weak areas.

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The effective project manager shares leadership, enabling all the following six functions of management to flourish on each project.

- ***Core Competencies:*** Intimate knowledge of and skills relevant to your firm's services, including all aspects of design.
- ***Organization:*** Abilities that create order from chaos and develop the systems needed to handle large as well as small projects.
- ***Entrepreneurship:*** Practical creativity and enthusiasm to capture the interests of colleagues, serve the needs of clients and recognize potential for new projects.

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- ***Human Relations:*** Understanding the feelings, values, needs and interests of team members, and the ability to influence people with different interests to work together toward common goals.
- ***Growth and Development:*** The drive and skills to develop people and organizations to be all they can be, helping them grow, improve, survive and prosper.
- ***Finance and Business:*** Every consulting firm needs skills in pricing, budgeting, negotiating, contracting, funding, tracking and other aspects of cost-effective management on every project.

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2] Coordination

Defined as the integration of all resources and activities both inside and outside your firm.

Practices for better coordination:

- ***Team member duties vary*** from project to project. Be specific in duty assignments to match specific project requirements.
- ***Individual job description*** for project tasks (coordinated with or done by department managers in some firms) shared with all shows who's responsible for what.

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- ***Larger projects may require a matrix*** to show the inter-relationship of work tasks.
- ***Discuss and document*** the project decision-making process, including who has what authority.

- ***Define who, what, when, where, and format*** of regular team meetings.
- ***Establish ground rules for conduct*** of team meetings, and make sure each meeting has a stated purpose, written agenda, statement of expected results, and a record of all decisions made, conclusions, and assignments.

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GROUND RULES FOR EFFECTIVE GROUP WORK

1. ***Speak candidly*** (and courteously) as you expect others to.
2. ***Listen carefully*** enough to be able to paraphrase what was said.
3. Accept that ***"information" comes in many useful forms***; including facts, perceptions, feelings, hunches, opinions, ideas, mistakes, and silence.
4. ***Seek the collective wisdom of the group***; the more we hear, the more we know.
5. ***Feedback*** (information on how we're doing) ***is often useful***, even it it's distressing.
6. ***Aim for balanced participation***, not monopolizing or withdrawing.
7. ***Expect disagreement***, don't personalize it, seek to learn from it.
8. ***In disagreements, seek new information*** and new options while avoiding—blame-placing, isolation, fixed positions.

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3] Controversy

Controversy leads to conflict. Unresolved conflict leads to disharmony among team members. Properly managed and resolved conflict leads to stronger team units.

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Practices to deal with controversy:

- ***Do not frustrate the team*** by trying to avoid conflict; it's not possible.
- Realize that ***conflict is often useful*** to achieve most effective team decisions.
- ***Show respect for others*** and their ideas and opinions.
- ***Be patient with the process*** of conflict resolution.
- ***Be persistent in moving toward resolution***--don't give up early.
- ***Work hard for alternative solutions*** that satisfy all team members (if possible).

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- ***Explore creative options*** not previously explored.
- ***Manage your own actions*** and reactions, despite your feelings.
- ***Let all members know their views are welcome*** --even if others disagree.
- ***Compromise is usually necessary*** by some or all team members to reach **CONSENSUS**.

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A] Who Is Responsible for Planning Quality Assurance?

- The ***Project Manager has overall responsibility*** to plan all quality objectives.
- Except for the smallest of projects, ***the PM needs help in doing this***.
- Technical and non-technical ***work needs standards to achieve quality results***.

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- ***Standards to achieve quality*** come from:
  - ***Documented standards*** and the ***culture of the design firm***.
  - Documented standards or ***guidelines required by client*** and/or owner.
  - Standards required by ***regulatory or approving agencies***.
  - Specific standards ***developed uniquely for a given project***.

Everyone on the Project Team must be aware of the standard required for each work task (initial, intermediate or final), so they can visualize what the required quality looks like.

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B] Communication of Quality and Standards to the Team

- Every employee has their own ideas about ***what "quality" work is***.
- Each firm should ***plan, document and communicate the standards*** to achieve quality work in all technical and non-technical tasks.
- The ***PM must review all corporate standards*** or quality assurance procedures that apply to their project.
- ***Variances, additions or deletions*** to those standards and procedures required for a specific project must be ***documented in the project plan*** and all team members made aware.

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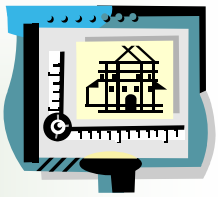
Partial List of Work Output Categories that Require a Definition of Quality Standard



- CADD drafting
- Title blocks
- Method of representing revisions on drawings
- Symbols, abbreviations, and drawing details
- Standardized layering of drawing information
- Outline specifications and Preliminary design specifications
- Construction documents specifications
- Boundary or topographic survey work products
- GIS work products

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- ***Standard forms, methods, and approaches*** for construction cost estimates
- ***Standard form, methods, and approaches*** for preparing the consultant's fee budget
- ***Checklists for everything possible***
- Standard information for completing SF 330 forms
- ***Standards for various written communications,*** including emails, letters, memos, transmittals, responses to RFQ's, etc.
- ***Standard approaches*** to kick-off all types of meetings including project planning meetings, design meetings, pre-bid meetings, pre-construction meetings, and various other kinds
- Standard contracts where possible to use
- Electronic data and information transmission

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In Summary ...

If any activity or work product is done regularly (some/many times a day) and what is expected is communicated (specifically shown) to those doing it, then that becomes the standard used to guage quality.

If the firm's culture promotes attitudes and practices that develop and consistently use such standards for regularly repeated activities and work products, then the entire firm and each project team will be on their way to assuring quality results.

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C] Assuring Quality Services and Profit

Something is drastically wrong if profit is sacrificed in order to deliver quality services.

Practices to achieve quality services and maximize profit:

- Regular firm-wide small group or project team ***meetings to brainstorm ways to improve service*** at no additional cost--document ideas for use throughout the firm.
- ***Use your firm's standards*** for all procedures and work products whenever possible with minimum exceptions.
- When using a client's standards, ***make sure you have the latest version*** (and have reviewed them thoroughly) **BEFORE** you negotiate the contract.

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- Many large clients have complete ***design manuals which must be followed***.
- Formalize procedures for ***regular checking of developing work products*** and encourage the client to be part of this process.
- Schedule informal discussions with the client to ***make sure your firm's work and the client's expectations are still in agreement***.
- Keep the ***client as the key figure in all major discussions***. Your leadership will allow informed, technically correct decisions.

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– ***Make sure your entire team knows the client's and your firm's initial objectives***--in detail--and any changes to those objectives that will affect their work.

COMMUNICATE
DOCUMENT
COMMUNICATE

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D] Government Agency/Code Reviews

– Most projects ***require compliance with numerous codes***--local, state or federal.

– All applicable codes must be taken into account ***before*** schedule, fee budgets or quality standards are finalized in a contract.

– The Project Manager ***must see that all design disciplines are aware of agency/code restrictions*** that affect any work effort ***before*** the contract is finalized.

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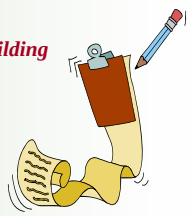
– Be extra careful of agency/code requirements ***before finalizing a contract*** **when** … in a new location, with a new client or for a different type of facility or project, a new calendar or revision period for codes is coming up, and when new or junior personnel are not as experienced in dealing with code requirements.

– Most projects fall under ***local building and zoning codes***.

– A ***checklist of various codes*** that may apply is given in **Appendix III** (slides 114-120 of this document).



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E] The Test is Performance, Not High Morale

- Quality performance yielding quality work products is a means to an end--***not*** an end unto itself.
- Quality performance results in satisfying the project's objectives.
- The plan ***defines the specific objectives*** and the standards of quality ***in all work*** areas to achieve those objectives.
- Defining standards and expectations ***before work is started*** creates an environment for quality performance yielding quality results.

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- Feedback on quality performance is a ***key factor in creating high morale*** in individual team members.

Trying to create high morale in employees without giving them the standards and expectations to perform quality results, will only lead to poor performance, missed project objectives, low morale, and dissatisfied clients.

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F] Managing Risk

1] *When does project risk start and stop?*

- It ***starts the instant the firm decides to pursue a project***.
- It diminishes some after the design is complete.
- A little more after viable bids are received.
- A lot more at the completion of construction.
- Much more after any start-up operation is successful.
- It ***never ends completely if a constructed facility is involved***.

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2] *At risk means being vulnerable to being hurt*

a] A few areas for potential hurt:

- Financial
- Firm's image or reputation
- Physical safety of anyone during construction or operation
- Future client relationship
- Other concurrent projects
- Loss of key personnel

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b] A few possible causes for potential hurt:

- ***Schedule overruns*** - regardless of who's at fault
- ***Design budget overruns*** - regardless of who's at fault
- ***Construction budget overruns*** - regardless of who's at fault
- ***Loss of critical team members*** - regardless of the reason

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- ***Any scope change*** - the bigger, the greater the hurt potential, unless managed correctly
- ***Quality deficiencies*** - design, construction or operation
- ***Unforeseen changed conditions*** (during design or construction)
- ***Health and safety*** issues
- ***Not meeting client objectives and expectations*** - perhaps the biggest

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Following the suggestions in this webinar on Better Project Planning will help to minimize your exposure to risks.

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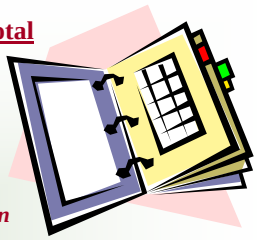
A] <u>The Project Plan in Total</u>



- The ***PM leads the plan compilation***
- The PM ***keeps the master copy*** in a binder
- The Plan has ***much confidential information***
- ***Many portions*** of the plan are ***to be shared*** with team members, firm's management, client, public agencies and other project consultants
- There are two major divisions: ***The Plan Summary*** and the ***Plan Details***

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1] *Project Plan Summary*

The Plan Summary **outlines the essence of the project** and usually **contains far less confidential information** by degree than the plan details. Following are many of the key items of information that will be listed in a standard form for the project plan summary.

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- Project ***name and location***
- The consultant's ***project number*** and the client's project number
- ***Client organization*** (who's the contract with), address, phone and fax numbers, email, contact person(s) with title(s)
- ***End-user organization***, address, phone and fax numbers, email, contact person(s) with title(s)
- Key information pertaining to any ***project web sites***

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- Statement of ***client's project objectives***
- The ***consultant's*** project manager, partner-in-charge, and office-in-charge of the project
- ***Management structure*** of the project
- ***Technical description*** of the project (one paragraph to one page depending on size and complexity)
- State ***date*** (contract date and possibly the date at which the consultant is authorized to proceed) along with a ***Gantt chart or major project milestones chart***
- ***Other consultants*** (prime or sub to your firm)
- ***Total proposed fee*** or contract price (of the consultant)

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- ***Final total fee*** or contract amount (of the consultant)
- Owner's ***total initial project budget***
- Owner's ***budget + available contingency funds***
- ***Major*** risks, uncertainties, or contingencies
- ***Key lead personnel*** of the consultant (perhaps all team members listed)

There will be some deviations from this list for very small or very large projects. This will serve as a useful guide.

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2] *Project Plan Details*

The details should be **assembled and kept in the same binder as the summary**. It should have its **major sections clearly partitioned and marked**. See **Appendix IV** (slides 121-124 of this document) for the full list of these details.

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B] Getting Approvals

Key points to remember for the approvals required to create the plan and complete its execution:

- Formal approval ***usually*** comes from Senior Management.
- The ***PM should know*** (to the extent possible) ***what authority they*** have to act on what issues and to what level.
- ***When not defined***, the PM's judgment on when to act and when to take decisions to the next level is critical.

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- Approval from peer managers and team members is really the ***consensus "buy-in"*** and commitment needed to follow and implement the plan.

  This kind of approval comes from ***persuasion, negotiation and effective communication of needs and expectations with all concerned***. It ***does not*** come from dictatorial direction--if you want a committed team.
- Approval from clients, public agencies, or other consultants may be provided by contract terms, compliance with codes, negotiation or the power of the PM's personality. In the project planning phase, ***judgment must be used to determine when or what approvals are necessary for your plan***. Often, it is best to "plant the seeds" to harvest an easier approval later during the project execution.

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C] Pre and Post Planning Kick-off Meetings

- Conduct a formal meeting with the team (and sub-consultants as required) at the beginning of the planning phase (after the contract is finalized).

  NOTE: There have probably been one or more team meetings during the proposal and contract negotiation phases.
- After the project plan is completed, conduct a formal meeting before major project execution activities begin.

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NOTE: Sometimes it is necessary to hold the execution kick-off meeting before all details in the project plan have been compiled.

- On ***small projects***, these two meetings may be ***hours or a few days apart***.
- On very ***large projects***, these two meetings may be ***weeks or months apart***.
- ***Both of these meetings have the same purpose:*** To share what you (as PM) know at that point in time; to ***describe what, who , when and where*** something needs to be done to plan the total project or to execute the plan, how it's supposed to happen and get feedback and their ideas from everyone who is involved in getting the desired results.

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– **The effectiveness of these two meetings (more if required) will have a major impact on the overall success of your project.**

The Planning Phase is the most important phase of any project, but it usually gets the least attention. A well-planned project has a much better chance of being a well-executed project.

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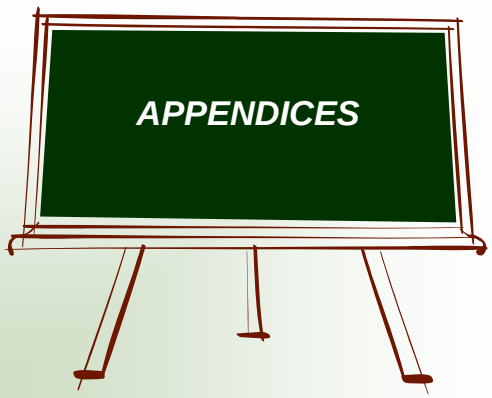

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Appendix I
Important Elements to Consider for Professional Service Contracts

1. Clear Identification of Legal Parties to Contract
2. Clear Description of the Project (not the same as Scope of Work)
3. Clear Scope of Design Firm Services (use detailed checklist of activities for every phase of the project - Go over with client).
4. Information/Existing Documents or Services to be Supplied by Owner
5. Disclaimer on Services Not Provided by Design Firm
6. Time Schedule for Design Phase and Perhaps Total Project
7. Compensation for Professional Services
8. Invoice Format - Payment Terms and Methodology

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9. Penalty for Late Payments
10. Possible Other Services Required by Design Firm Not in Base Contract and Method for Pricing
11. Provisions for Changing Contract
12. Provisions for Contract Termination by Either Party
13. Applicable Laws Governing Contract
14. Limitation of Liability
15. Alternative Dispute Resolution
16. Partnering
17. Design Review Process (who, when, where and how do work products get approved?)
18. Timing of Signed Contract and Notice to Proceed
19. Design Quality
20. Certification to Indemnifications
21. Ownership of Documents
22. Copying of Documents for Bidding - Scope Issue

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23. Limitations on Future Use of Documents
24. Firm's Name in Press Releases
25. Right to Photograph Project for Marketing
26. Firm's Name on Job Site Signs
27. What Expenses are included in Direct Cost and which are Reimbursable
28. Reimbursable Expense Back-up
29. Stop Work for Non-payment
30. Restart Fee if Project is Put on Hold
31. Lien Provisions
32. Form of Construction Documents (drawings vs. computer discs, etc.)
33. Specific Times, Duties and Responsibilities During Construction (overall time of construction period basis) - Scope Issue
34. Special Drawings or Specifications Required by the Owner

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35. Design Firm Participation in Pre-bid Meetings with Contractors - Scope Issue
36. Role (if any) of a Construction Manager - Could be a Scope Issue
37. Continuation of Payment of Fee on Undisputed Amounts
38. Indemnification on Maintenance/Warranty Issues
39. Statute of Limitations - Third Party Suits
40. Taxes (where applicable)
41. Relationship of Final Contract and Initial Formal Proposal
42. Fee Retainer Up Front
43. Relationship and Control with any other Consulting Firms, Including Subconsultants
44. Shop Drawing Review Process - Scope Issue
45. Review of Pay Request by Contractors - Scope Issue
46. Unusual Studies, Constructibility or Value Engineering Analysis Requirements - Scope Issue

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47. Use of Email and Electronic Data Transfer for Daily Communication, Meeting Minutes, and Design Review of Construction Documents at All Phases of the Project, including Records Documents

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Appendix II
Project Manager Responsibilities

- Total management of the projects he/she is assigned.
- Preparing a budget for the proposed fee (with help from others), adjusting the final budget after the fee is agreed to and the contract is signed, and monitoring that budget against actual expenditures as the project progresses.
- Be the primary contact with the client to see that all required information is obtained from the client (or designated agents) and that all appropriate information is communicated to the client (or designated agents).
- Working with others (inside and outside of your firm) in preparing a scope of services, project schedule, budget, project description, personnel assignments, arranging purchase of an subconsultants required and developing contingency plans where appropriate.
- Conducting periodic meetings with the client, their agents, and your firm's project team to share information, make decisions, and plan courses of action, or in some cases reaction, to put out fires (the frequency, type and participants for meetings is very dependent on size and duration of a project).

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- Preparation of appropriate memos covering decisions made by the client or their agents that affect project work.
- On large, complex or technically challenging projects, arranging for reviews of procedures, results or recommendations with one or more senior engineers or architects at your firm.
- Overseeing and approving the detailed project plan, the purpose of which is to see that the objectives of the clients for the project are met as well as the objectives of your firm.
- Coordinating all activities and personnel assigned to the project (even if some of this coordination is delegated to someone else, the project manager is still responsible to see that it happens and happens correctly).
- If there are various phases to a project, getting approval from the client for the results of that phase and authorization to proceed to the next phase; if only one phase or set of tasks, seeing that the client is satisfied with those results—and if not—why?
- Maintaining surveillance on a regular basis of the expended labor hours and out-of-pocket costs, comparing those costs to the original budget and taking corrective action with team members where required.
- Personally seeing that all invoices for projects are timely, correct, sent to the correct person and address for timely payment.

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- Final review and approval of all client documents issued by your firm. The creation of these documents may be done by the project manager or by assignment to others.
- Coordinate and manage all of your firm's activities during the construction and start-up phases, site observations, lab or field tests, reports, etc. and maintain appropriate consultation or communication with the client.
- **At the completion of the project:**
  - Review project approach, problems and results with your firm's team (this may be in a meeting or interoffice memo depending on the size of the project, type of problems encountered, lessons to be learned for future projects, etc.).
  - Review project results with client and solicit feedback from client on your firm's performance.
  - Consolidate, clean up and prepare project files for archiving in accordance with your firm's permanent file system.
  - Prepare statistical data sheets or other pertinent information for future use in business development and proposals.

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- Discuss the opportunity for more work (same kind as current project or other services that your firm can provide) and professionally ask the client if they were pleased with your firm's services and would they recommend you to other business associates of theirs.

Effective project managers make the right things happen on their projects in order to complete those projects in a timely, cost-effective, professional manner, while accomplishing the desired results with the appropriate level of quality—instead of reacting to situations that arise and then making excuses that conditions were beyond their control.

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Appendix III
Zoning Code Review Form

Client:	**Date:**
Project:	**Project No.:**
Location:	**Prepared by:**

Zoning Code Authority:

Name:	
Address:	
Phone No.:	**Date:**
Persons Talked To:	

1. Zoning Classification _____ (check with local zoning department). Once classification has been determined, check to determine if intended use is permissible.
2. Set-back requirements (search for amplification of set-back, height and area requirements).

   Front yard: _____

   Side yard: _____

   Rear yard: _____

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3. Maximum height _____. Minimum lot area per dwelling unit _____.
4. Maximum floor area ratio = total floor area ÷ total lot area = _____. Maximum allowable per code = _____.
5. Off-street loading spaces required _____.
6. Off-street parking spaces required _____.

The above is intended as a preliminary review only. Detailed review of all applicable code sections must also be done. If any doubt whatsoever, check and verify with local zoning authorities. Any information you receive, write a confirming letter.

Other Codes that Must Be Reviewed Include:

1. **NFPA (National Fire Protection Association) Codes, including Life-Safety Code.**
   Agency Name: _____
   Address: _____
   Person Talked To: _____
   Phone: _____ *Fax:* _____ *Email:* _____

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2. **OSHA (Occupational Safety and Health Association) Code.**
   Agency Name: _____
   Address: _____
   Person Talked To: _____
   Phone: _____ *Fax:* _____ *Email:* _____
3. **City of _____ Code which contains special provisions for the handicapped (for buildings used by the public), cut and fill requirements, air pollution requirements, as well as many other miscellaneous requirements not in the State code.**
   Agency Name: _____
   Address: _____
   Person Talked To: _____
   Phone: _____ *Fax:* _____ *Email:* _____
4. **City or county codes relative to streets, sidewalks, curb cuts, drainage, sewers, etc.**
   Agency Name: _____
   Address: _____
   Person Talked To: _____
   Phone: _____ *Fax:* _____ *Email:* _____

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5. **Metropolitan Sewer District requirements.**
   Agency Name: _____
   Address: _____
   Person Talked To: _____
   Phone: _____ *Fax:* _____ *Email:* _____
6. **National Electric Code for electrical requirements.**
   Agency Name: _____
   Address: _____
   Person Talked To: _____
   Phone: _____ *Fax:* _____ *Email:* _____
7. **Local utilities for their service requirements.**
   Agency Name: _____
   Address: _____
   Person Talked To: _____
   Phone: _____ *Fax:* _____ *Email:* _____

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8. **Local or State codes for elevators, escalators, etc.**
   Agency Name: _____
   Address: _____
   Person Talked To: _____
   Phone: _____ *Fax:* _____ *Email:* _____
9. **EPA (Environmental Protection Agency) requirements for air or water pollution.**
   Agency Name: _____
   Address: _____
   Person Talked To: _____
   Phone: _____ *Fax:* _____ *Email:* _____
10. **Construction on riverbanks, Corps of Engineers requirements.**
    Agency Name: _____
    Address: _____
    Person Talked To: _____
    Phone: _____ *Fax:* _____ *Email:* _____

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11. **Construction on tributaries and streams, local Conservancy District Requirements. (May also require Corps of Engineers approval.)**
    Agency Name: _____
    Address: _____
    Person Talked To: _____
    Phone: _____ *Fax:* _____ *Email:* _____
12. **Board of Health requirements for swimming pools, restaurants, commissaries, etc.**
    Agency Name: _____
    Address: _____
    Person Talked To: _____
    Phone: _____ *Fax:* _____ *Email:* _____
13. **In addition, most government agencies have their own codes for work done under their jurisdiction, i.e. USAF Code, US Navy Code, etc.**
    Agency Name: _____
    Address: _____
    Person Talked To: _____
    Phone: _____ *Fax:* _____ *Email:* _____

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14. **US Department of Agriculture, Consumer and Marketing Service for meat packing plants.**
    Agency Name: _____
    Address: _____
    Person Talked To: _____
    Phone: _____ *Fax:* _____ *Email:* _____
15. **Specific requirements of the insurance agency having jurisdiction, such as Factory Mutual Engineering Corp. (FM) or Factory Insurance Association (FIA).**
    Agency Name: _____
    Address: _____
    Person Talked To: _____
    Phone: _____ *Fax:* _____ *Email:* _____

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Appendix IV
Project Plan Details

The details should be assembled and kept in the same binder as the summary. It should have its major sections clearly partitioned and marked. The major sections of the plan details are as follows:

- Client/project intelligence information
- Strategy of attack to meet objectives (both the client's and the consultant's)
- Unusual project requirements (management, technical, space, administrative, or whatever)
- List any special skills, special training, equipment, or other required resources
- Meetings (who, what, when, where) which may be in the plan summary
- Copy of proposal and support data
- Copy of contract and support letters of understanding
- Definitive description of work scope

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- Checklist of services included in contract
- List of additional optional services
- Project review criteria (both internal and external)
- Any special publicity, PR, or advertising allowances or restrictions
- MIS submittal requirements for accounting department
- List of services contractually provided by others (names, addresses, phone and fax numbers, email addresses, contacts and titles)
- Work breakdown statement or chart and listing of all major roles and responsibilities
- Project budget, by phase, disciplines, and perhaps activity
- Any special insurance, bonds, liability requirements
- Invoicing information, payment agreements
- Cash flow projections (significantly large projects) and any extraordinary cash requirements
- Project website—Who creates it, what it is comprised of and how it will be used

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- Project schedule (master and detail) along with criteria for updating
- Any special facility or logistical requirements (either at the consultant's office or client facilities such as security badges or drug tests)
- A project flow chart (this is not a schedule)
- Organization plan for project files (centralized or decentralized)
- Code requirements (every code that applies)
- Public agency approvals or meetings required
- Correspondence plan (who gets what, when and how; is fax OK, or is email the primary communication tool; use of overnight service; etc.).
- This section may define an information control center for the project.
- Copy of client functional program or performance specs, where applicable
- Detailed project organization chart
- Computers, special hardware or software requirements imposed by the consultant, client, end user, or public agency (make sure of hardware/ software compatibility with all)

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- Any necessary special standards needed for delivering a total quality project
- How “mini-drawings” or other approaches will be used to plan and control the content, number, and sequencing of drawings
- Any special specification requirements, especially those dictated by the client, end user, or regulatory agencies that affect front end or “boilerplate” as well as technical sections
- Close-out or start-up requirements not defined in scope of work or checklist of services

There may be other information required for certain specialty projects, but this list should take care of practically everything you will need to plan your projects.

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Gary D. Bates, PE, F.ASCE

Gary Bates, a partner in the management consulting firm of Roenker Bates Group, is a former construction industry senior executive and educator. He has specialized in the techniques of “effective management through positive communication” and “systems for continuous improvement.”

(more …)

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As a registered professional engineer, Gary has nearly three decades of experience in the management of organizations and related design and construction projects valued over $1 billion for domestic and international markets. This included the general management of a 5 office, 700 employee architectural/engineering operation and the development of a new engineering market in Europe and Africa. The last 21 years have involved a wide variety of consultation, facilitation, and training programs for numerous organizations, mostly in the design, construction, and health care industries. He is known nationally for his expertise in partnering, team-building and effective communication, and has facilitated or presented at over 500 workshops, seminars, or meetings throughout the US.

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He received his Bachelor and Master of Science in Civil Engineering from the University of Kentucky. Gary is an active member of the American Arbitration Association and Rotary International. He is active in many other professional and civic organizations including the American Society of Civil Engineers, for which he is the Editor-Emeritus of the Journal of Management in Engineering, an international publication. He is the co-author of the book ***Win-Win Negotiating: A Professional's Playbook***. Gary has been listed in many biographical registries, including Who's Who in the Midwest and Who's Who in Science and Engineering.

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