Professional Development Program
for the Construction Industry

Exploring Successful Applications of "Partnering" in the Construction Industry

A program to explore experiences and applications of Partnering to maximize the efficiency, effectiveness and quality of working relationships that deliver high quality projects in the construction industry.

Sessions will:

- Identify roles of participants in a partnering plan.
- Determine projects where partnering is applicable.
- Establish guidelines and procedures for structuring the partnering plan.
- Explore experiences and applications of partnering and other appropriate project delivery systems.
- Analyze characteristics, selection and use of project delivery systems.
- Identify and establish alternative dispute resolutions.
- Examine methods and styles of managing destructive conflict.

Sponsored by
The Department of Engineering Professional Development of
The College of Engineering, University of Wisconsin-Madison

November 19-20, 1992 **Madison, Wisconsin**

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WEX Partnering 92 and Related Concepts

- November 19 & 20, 1992 - University of Wisconsin, Madison, Wisconsin
- Speaker - Ralph J. Stephenson, P. E. - Consulting Engineer

I. ***Exploring Applications of Partnering in the Construction Industry*** - The Challenges of Construction Disputes and How to Manage Them

A. **Origins of the partnering concept.**

1. **Introduction**
   a) What is partnering? - A system of conducting business in the planning, design, and construction profession without destructive conflict, or excessive and debilitating external, non neutral involvement.
   b) Effective thinking and workable approaches are integral elements of partnering.
   c) The nature of the participants and the structure within which they work determine in great part, the success the participants will have in managing conflict and resolving disputes through a partnering system.
   d) The existence of unresolved conflict and disputes often requires that a neutral view be considered useful as a tool for positive change.
2. **The basis of the partnering concept**
   a) *That construction claims & disputes need improved resolution.*
3. **Other names and dialogues for partnering**
   a) A gentleman's agreement
   b) "Let's look at the drawings a bit more closely."
   c) "Let's tally up the favor score?"
   d) "Let's settle this over a beer."
   e) A handshake agreement.
4. **The background of contract methods**
   a) The line of action divisions requiring formal agreements have increasingly been made to overlap.
   b) Construction industry contract components are many and their work interrelations are complex.
   c) The number and type of contracts possible in design and construction sometimes exceeds our ability to use them effectively and professionally.
5. **The adversarial nature of construction and its effect on the project team**
   a) As individual managers we are having increasing difficulty controlling the indirect predictable, and the unpredictable impacts on our jobs.
   b) The volume of available information is growing by leaps and bounds, while our ability to use it diminishes.
   c) The hierarchy of issue & dispute resolution is not well understood
   d) Non binding dispute resolution
      (1) *Prevention methods* - produces maximum harmony - usually least cost.
         (a) Intelligent and proper risk allocation
            i) Risk should be assigned to the parties that can best manage or control the risk, i.e.
               (1) The owner, where construction begins before construction documents are complete - the contractor, where full, well

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prepared, and checked construction documents are available.
(2) The architect, if the owner has prepared a well conceived and clearly stated program - the owner, if the a/e is expected to assemble and write the program.

ii) Attempts to shift risks to architects, engineers or contractors not able to absorb these risks is not cost-effective
(1) Reduces competition
(2) Increases costs due to greater contingency allowances.
(3) Increases costs and reduces effectiveness because of the potential for increased numbers and intensity of design & construction project disputes.

(b) Incentives for cooperation
i) Incentives or bonus provisions
ii) Disincentives or penalty provisions

(c) Partnering
i) Stresses good faith agreements
ii) Emphasizes teamwork
iii) Encourages good communications

(2) *Internal negotiation methods* - parties involved conduct negotiations - requires consensus - relatively cost free.
(a) Direct negotiations (often starts at UDM level)
(b) Step negotiations (starts at dispute originating level)

(3) *Informal external neutral methods* - preselected external neutral serves as a informal dispute-resolver - relatively low cost.
(a) Architect/engineer rulings
i) May be respected even though not legally binding.
ii) Must be impartial

(b) Dispute resolution board
i) One member selected by owner and approved by contractor; one by the contractor and approved by the owner; a third by the first two members. Third selection usually acts as chairman.
ii) Those selected should be from the design & construction industry.
iii) Must have no conflict of interest.
iv) Conduct investigations and hearings on disputes and publish prompt opinions re the dispute.

(4) *Formal external neutral method* - preselected external neutral(s) serves as formal dispute resolver - relatively low cost - usually requires considerable preparation, and may require legal assistance.
(a)
(b) Mediation - settlement conferences and informal hearings conducted by a neutral third party.
(c) Minitrial - private settlement method usually initiated by an agreement between the parties - less formal than mediation.
(d) Advisory opinion - neutral expert meets with both parties, obtains information from both, and render prediction as to the ultimate outcome if

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adjudicated.

(e) Advisory arbitration - abbreviated hearing before neutral expert(s). Arbitrator(s) issue advisory award, and render prediction as to ultimate outcome if adjudicated.

e) Binding dispute resolution

(1) *Outside of courtroom* - dispute given to knowledgeable third party - moderate cost - may require legal assistance.

(a) Binding arbitration

(b) Private judge

(2) *Inside of courtroom* - most expensive - usually requires legal assistance.

(a) Bench trial - before a judge

(b) Jury trial - before a jury

B. **Why is partnering applicable in today's construction industry?**

1. **What has made partnering a factor in selecting a project delivery system?**

a) The need to better achieve fulfillment of our professional and business needs and desires.

b) The professional need - must take into account that:

(1) The design and construction professional is obliged, above all, to protect the health, welfare and safety of the public.

(2) The legal professional is obliged, above all, to protect the interest of his or her client. These interests are defined by the body of law. Thus the body of law, not the law professional, is depended upon in legal resolutions to protect the health, welfare & safety of the public.

(3) The legal process has moved too far outside the control of those depending on its proper use to fairly resolve damaging conflict.

(4) Partnering appears to be a sensible alternative route to follow for the planner, the designer, the constructor, the regulator, the owner and the user.

c) The business need

(1) Focuses on profitable production of services and facilities.

(2) Provides solution methods.

(3) Measures the quality of the process leading to the end product - a constructed facility.

(4) Provides a mechanism by which destructive conflict can be managed by intelligent leaders.

(5) Encourages early action on potentially damaging events.

(6) May materially reduce professional liability costs.

2. **What value is added by partnering?**

a) Lower costs to resolve conflicts.

b) Quicker settlement of conflicts.

c) Knowledgeable professionals make the resolution decisions.

d) Decision makers are closer to the resolution process.

e) Nature of decisions rendered lessen the probability of appeal.

f) Participants gain privacy in the resolution process.

g) Probability of fair resolution is increased by more timely consideration of the dispute.

h) Helps cross critical transition points by setting the ground rules for the crossing

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3. **Where and why has partnering been successful?**
   a) Sample of projects reported on which partnering was applied totally or in part
      (1) Hydrographic surveys - Portland District Corps of Engineers
      (2) Bonneville Navigation Lock - Portland District Corps of Engineers
      (3) Columbia River Navigation Projects - Portland District Corps of Engineers
      (4) Cannon AFB facilities, N. M. - Albuquerque District Corps of Engineers
      (5) Black Warrior-Tombigbee Waterway - Mobile District Corps of Engineers
      (6) Cape Canaveral Air Force Test Operation Control Center - Mobile District Corps of Engineers & Air Force
   b) Comments on partnering by Albuquerque District Corps of Engineers staff in a guide to partnering dated February, 1991

      "Our experience is positive based on six contracts with four of them substantially complete." Benefits include:
      (1) Disputes reduced - no formal claims.
      (2) Common objectives achieved (schedule, safety, etc.).
      (3) Increased responsiveness.
      (4) Higher trust levels.
      (5) Improved communication.
      (6) Excellent cooperation & teamwork.
      (7) Increased value engineering proposals.
      (8) Developed expedited process for tracking and resolving open items.
   c) Comments on partnering by Colonel Charles E. Cowen - Commander Portland District Corps of Engineers in a strategy for partnering in the public sector - April 15, 1991
      (1) 80 to 100 % reduction in cost growth over the life of major contracts.
      (2) Time growth in schedules virtually eliminated.
      (3) Paper work reduced by 66%.
      (4) All project engineering goals met or exceeded.
      (5) Completion with no outstanding claims or litigation.
      (6) Safety records significantly improved.
      (7) Pleasure put back in the process for all participants.
   d) Partnering relationships surveyed & studied by the Construction Industry Institute and reported in the publication ("In Search of Partnering Excellence" - July 1991).
      (1) Shell Oil/SIP Engineering - 1984.
      (2) DuPont/Fluor Daniel - 1986.
      (3) Proctor & Gamble/Fluor Daniel - 1986.
      (4) Proctor & Gamble/BGP - 1986.
      (5) Shell Oil/Bechtel - 1987.
      (6) DuPont/MK - Ferguson - 1987.
      (7) Shell Oil/The Ralph M. Parsons Company - 1987.
      (8) Alcan/Fluor Daniel - 1988.
      (9) Union Carbide/Bechtel - 1988.
      (10) DuPont/Day & Zimmerman - 1988.
      (11) Great Northern Nekoosa/Rust International - 1988.

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(12) Pillsbury/Fluor Daniel - 1989.
(13) Hoffman-LaRoche/Day & Zimmerman - 1989.
(14) Chevron/Bechtel - 1989.
(15) Bethlehem Steel/United Engineers & Constructors - 1989.
(16) Proctor & Gamble/M. W. Kellogg - 1989.
(17) Chevron/Besteel - 1990.
(18) DuPont/H. B. Zachry.

4. **Where and why might partnering not be applicable?**
   a) Concerns expressed on partnering by Albuquerque District Corps of Engineers in a guide to partnering dated February, 1991.
      (1) Some contractors expect us to waive requirements.
      (2) A few government employees feel partnering is a conflict of interest
      (3) A few government employees feel partnering is a one-way street, the government gives, the contractor takes.
      (4) Difficult to implement for small contracts.
   b) Other situations in which partnering may be difficult to use
      (1) Where the parties intend to pay lip service only to the partnering effort.
      (2) Where individuals in key technical or management positions choose to resist intelligent discussion and fair decision making.
      (3) Where early commitments by the owner have made made good intercontract relationships difficult or impossible to maintain.
      (4) Where construction contracts are let as the documents are being released for field use.
      (5) Where several parties to the contract prefer to resolve disputes by contested claiming & binding resolution.
      (6) Where poor contract documents are made the basis of the partnering effort.
      (7) Where excessive, one sided conditions are placed on sub contractors by prime contractors.
      (8) Where unfair or obscure payment processing systems are specified and enforced.
      (9) Where risk has been poorly defined and unfairly allocated.

C. **What are some of the ingredients of a successful partnering effort plan ?**
Some of the below are used courtesy of Ed Parks P. E., Chairman of the Board, Albert Kahn Associates, Detroit, Michigan

1. **Develop and maintain a strong desire to achieve project success for all.**
2. **Make intelligent commitments.**
3. **Avoid placing others or yourself at unreasonable risk.**
4. **Interact with integrity.**
5. **Interact from a position of fairness rather than a position of power.**
6. **Avoid either establishing or participating in unattainable schedules.**
7. **Eliminate greed.**
8. **Generate and maintain trust among participants - natural and learned.**
9. **Try to always act ethically**
10. **Assign people to responsible management positions who have sound experience in construction techniques and practices.**

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11. **Understand what it's like to be in the other person's shoes.**
12. **Prepare a good charter, a good partnership evaluation system, and a good issue resolution process.**

D. **Experiences and applications of the partnering concept.**

1. **Types of projects on which partnering may be used - do they require different approaches?**
   a) Bridges
   b) Commercial
   c) Highway
   d) Housing
   e) Industrial
   f) Institutional
   g) Recreational
   h) Site improvement
   i) Tunneling
   j) Utility
   k) Other?
2. **What is it that design and construction professionals have troubles with in designing and building facilities?**
   a) Sample responses to the question - what actions do others engage in that create problems for us, or do we engage in that create problems for others? (samples from an actual charter meeting.)
      (1) Giving directions to proceed without a timely change order.
      (2) Failing to establish clear chain of command.
      (3) Excessive changes - clarifications.
      (4) Excessive testing.
      (5) Inadequate or unfair contingency fund for gaps or omissions in the specs & drawings.
      (6) General contractor covering general conditions costs by charging subs.
      (7) General conditions passing excessive responsibility to contractors
      (8) Lack of timely acceptance of work.
      (9) General contractors passing coordination efforts on to subcontractors.
      (10) Need more flexibility in resolving conflict issues.
      (11) Lack of timely responses to
         (a) RFI's.
         (b) Approval of shop drawings.
         (c) Site activity restrictions.
         (d) Change orders.
         (e) Value engineering.
         (f) Acceptance of work.
      (12) Slow and unfair interpretation of ambiguous documents.
      (13) Unfair evaluation of schedule extensions.
      (14) Improper passing of general conditions responsibility to subs.
      (15) Lack of forum to evaluate and resolve open issues.
      (16) Failure to accept responsibility for errors/omissions.

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(17) Slow submittal turn around.
(18) Slow resolution of change orders.
(19) Unreasonable punch lists.
(20) Scope of changes incomplete/unclear.
(21) Failure to recognize impact of changes on ongoing work.
(22) Incomplete submittal information.
(23) Late submission of proposals.
(24) Excessive numbers of requests for information submitted
(25) Untimely submission of as-builts, operating & maintenance manuals, and training of user personnel.
(26) Untimely solutions and correction to errors, and acceptance of responsibility for same.
(27) Failure to maintain clean efficient, safe working conditions.
(28) Do your own punchlists.
(29) Pretest special systems - equipment start-up.
(30) Nit-picking of changes.
(31) Leaving messy work areas - not sweeping floors ("Electricians don't sweep floors").
(32) Submit inflated proposals & try to negotiate unrealistic dollars.
(33) Unlimited sub-contractor alternate suggestions solicited.
(34) Untimely delivery of owner equipment.
(35) Slow payment.
(36) Design errors and omissions.
(37) Resistance to solving problems perceived as *contractor problems*.
(38) Delay in response of requests for information, & submittals.
  (a) Due to *zeal for perfection*.
  (b) Due to administrative delay.
(39) Changes issued in incomplete form (sketches & narrative).
(40) Slow owner response to concurrent reviews & changes.
(41) Too many changes.
(42) Duplication of requests for information from subcontractors.
(43) Pass through attitude by general contractor.
(44) Weak coordination of subcontractors.
(45) Failure to exercise proper quality control.
(46) Bid shopping.

b) Sample recommendations to help resolve some of the problems we or others cause. (samples from an actual charter meeting.)
(1) Better communications.
(2) Less defensiveness/more openness.
(3) Fast dispute resolution.
(4) Don't take issues personally.
(5) Contractor review requests for information & submittals before processing.
(6) Be willing to propose/suggest solutions.
(7) Submittal schedule provided.
(8) Prioritization of submittals.

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(9) Complete/thorough questions.
(10) Positive attitude.
(11) Recognition of Buy America Act and other boiler plate clause impacts.
(12) Recognition of Owner's need to eventually occupy, operate and maintain facility/systems.
(13) Recognition of importance of paper work.
(14) Allowing necessary contract time for training.

E. **Guidelines for the application and use of partnering concepts.**

1. **Determine the need for a partnering system.**

a) Suggestions and ideas to help in deciding about the use of partnering.

(1) Litigation *should not* be considered as an initial method used to resolve construction disputes.
(2) Partnering is most effective when used early in the project.
(3) Advance commitment to partnering methods helps solve problems at their source and as they arise.
(4) Support for partnering must be gained at all project team levels, particularly at the senior management level in those organizations involved.
(5) Non-binding dispute resolution methods should be considered before resorting to binding dispute resolution.
(6) Job site dispute resolution helps dispose of problems before they multiply.
(7) All partnering participants must take responsibility for their thoughts and actions.
(8) All managers must provide leadership where they can, or where they are expected to lead.
(9) Don't play sum zero games - do play win-win games.
(10) Understand and use ethical principles to gauge your behavior
(11) Partnering assumes most people are honest, concerned, desirous of challenge, need attention, and welcome help in times of turmoil.

2. **Set goals and objectives to be gained from a partnering system.**

a) The goals of a partnering system should be broadly stated by the project mission defined during a charter meeting.

(1) Typical mission statements - from actual charters
(a) We seek to work together as a team producing valuable, accurate , high-quality hydrographic surveys at a fairly negotiated price.
(b) We, the partners for construction of the Bonneville Navigation Lock, commit to trust, cooperation an excellence for the benefit of all stakeholders.
(c) We, the Project Team commit to construct a quality facility, on time and within budget, maximizing safety, communications, & cooperation so that all participants can be proud and profitable in their accomplishments.

b) The objectives of a partnering system should be specific, understandable, and possible.

(1) Typical partnering goals and objectives at random - from actual charters (some paraphrased).
(a) Minimize submittal and approval times for shop drawings.
(b) Define and clearly communicate quality expectations.

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(c) Build it right the first time.
(d) No litigation.
(e) Limit cost growth to less than 5 %.
(f) Have fun.
(g) Minimize paperwork.
(h) Prepare, approve, and commit to a TQM program.
(i) Be a good construction neighborhood.
(j) Close out the job in a proper and timely manner.
(k) Promptly resolve conflicts at the lowest possible level.

3. **Obtain management commitment for use of a partnering system.**
   a) Top management commitment to non binding resolution of conflict issues is vital to partnering success.
   b) All levels of management and operations must be shown where they have value added for them in the partnering process.
4. **Develop a partnering plan of action (the charter).**
   a) Tips for planning the partnering process.
      (1) During the project programming period, encourage the owner, user, and design team to learn about, and consider, a partnering effort.
      (2) During the construction proposal period, encourage prospective prime contractors, vendors and specialty contractors to learn about, and consider a partnering effort.
      (3) Alert all parties that the project staff may, or will, be expected to be operate within a partnering system by which the facility is built.
      (4) May be desirable to hold some early partnering orientation sessions to insure adequate understanding of partnering assumptions and requirements.
      (5) Award contracts on the basis of well thought out partnering principles and guidelines.
      (6) Gain and display the owner/user team support for the use of partnering to all involved.
      (7) Adopt and display the design team support for the use of partnering to all involved.
      (8) Inform and gain as much support for partnering from associations and other trade organizations as may influence the project implementation
      (9) Continually review the partnering guidelines and assumptions for improvement.
   b) Staff and equipment help recommended to write the charter.
      (1) Staff assistance recommended - you may not have all of these people available, but somebody has to do the following if you are going to finish the charter in a single day.
         (a) Someone to introduce the subject - these are the top managers of the project team organizations.
         (b) Someone to chair the meeting - usually an outside neutral individual, a leader who is knowledgeable about the design and construction profession.
         (c) Someone to help take notes during combined group discussions.
         (d) Someone to help break out and reassemble groups.
         (e) Someone to display flip charts and other material as needed.

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(f) Someone to tend, as needed, to the break out groups.
(g) Someone to make and distribute copies.

(2) Equipment recommended
(a) Lap top or portable word processor & someone who knows how to use it.
i) The meeting chair can often type notes and other material as the meeting proceeds.
(b) Copier near at hand capable of quick, high quality duplicating.
(c) Flip charts - probably as many as 5 to 7 with felt pens of various colors available for each.
(d) Chalk boards, chalk, & erasers.
(e) Wall space for display of charts.
(f) Drafting tape - non paint destructive.
(g) Push pins.
(h) Overhead transparency projector with spare bulb.
(i) Large screen - 6' x 6' at least

c) Writing the basic partnering document - the charter.
(1) Select who is to be in charge of the initial organizing effort?
(a) Owner.
(b) User.
(c) Designer.
(d) Contractor.
(e) Neutral party.
(2) Set the date, time and place of the charter meeting.
(a) Make certain all key people can attend!
(3) Invite all involved in responsible project decision making and operations actions to the charter meeting.
(a) Owner.
(b) User.
(c) Financing sources.
(d) Planners.
(e) Architects.
(f) Engineers.
(g) Specialty designers.
(h) Prime contractors.
(i) Sub contractors.
(j) Key vendors.
(k) Key suppliers.
(l) Operators of the facility.
(m) Regulatory representatives - who among these benefits from a good project?
(n) Guests - who do you want to see you in action? Who might benefit from observing the session?
(4) Provide a briefing document to all expected to attend - to be sent over signature of senior management executive (of the owner, designer, or principal contractor).
(a) State objectives of the meeting.

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(b) Explain who is expected to attend.
(c) Present an agenda - well thought out & well written.
(5) Conduct the partnering meeting & write the charter in one day.

d) Sample agenda for a partnering workshop.

* * *

November 13, 19__

Dear _____:

The Network Insurance Mutual Company requests your presence on Friday, November 30, 19__ , at a meeting to prepare a partnering charter to guide construction of their new downtown headquarters building.

Enclosed with this letter is a packet of partnering explanatory materials. I would appreciate it if you would read this material prior to the meeting. Mr. Prince of Prince Construction tells me that you have already attended a briefing session on partnering conducted by their project management staff.

Partnering is fully supported by me, by Network Mutual's senior executive and facilities staff, by Mr. Thomas Bonwitt president of Bonwitt & Providence, the architects/engineers of record, and by Mr. Roy Prince, president of Prince Construction, general contractors for the project.

Below are outlined the meeting objectives and agenda for the November 30, 19__ session. The neutral chair of the meeting will be Marion Day, a well known, and highly respected design and construction consultant in our area.

We appreciate your interest, participation and efforts to help improve the probability of success for you, and for us on this significant project.

Sincerely yours,

Cirro T. Street
President, and Chief
Operating Officer

Purpose of meeting: To develop and adopt a partnering charter for the guidance of

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NIMC's project team.

Location of meeting: Topaz Hotel - **444** Lincoln Street

Those attending: See attached list.

Meeting chairman: Marion Day, Consultant

Timetable

07:00 to 08:00 am - Continental breakfast - Steamship Room - 1st floor level

08:00 to 10:00 am - Session #1
- Introduction - by Cirro Street, Thomas Bonwitt and and Roy Prince.
- Exercise #1 - What actions do others take that create problems for us? - break out for discussion, reassemble, & present findings.

10:00 to 10:15 am - Coffee break.

10:15 to 12:00 noon - Session #2
- Exercise #2 - What actions do we take that cause problems for others? - break out for discussion, reassemble, and present findings.
- Exercise #3 - What recommendations can we make that could improve relations and performance on the Network Mutual project?
- Exercise #4 - In light of exercises #1, 2 & 3 what do I think my organization's mission is on the Network Mutual project.

12:00 to 01:00 pm - Lunch - United States Room - 2nd floor level.
- During lunch a small volunteer task force will meet in a separate room, and prepare a 25 word or less 1st draft mission statement for the project.

01:00 to 03:00 pm - Session #3
- Exercise #5 - Full partnering membership discuss, revise and accept the 1st draft mission statement as revised.
- Exercise #6 - What specific project objectives can we now set within the results of exercises #1, 2, 3, 4, and 5 that will help insure excellent relations and performance on the Network Mutual project?

03:00 to 0315 pm - Break.

03:15 to 05:00 pm - Session #4
- Review principles of alternative dispute resolution.
- Review principles of partnering performance monitoring and evaluation.
- Exercise #7 - Combine all previous discussion into a charter ready for signatures.
- Print final draft of charter.

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05:00 pm - Session #5 - sign charter & receive award memento.

05:15 pm - Adjourn.

* * *

5. **Obtain management commitment to a partnering plan.**
   a) The signing process is designed to accomplish this.
   b) Make certain all attending know that a desired end result of the day is to have a properly written charter, agreed to in principle and signed by all responsible parties attending.
   c) Insure the charter remains as a commitment by those signing to try to achieve the formal contract requirements within an informal handshake agreement as defined in the charter.
   d) The charter must be written so as to not supersede, contradict, or conflict with the design and construction contract documents.
6. **Train and educate project participants in the partnering concept.**
   a) Meetings, seminars, workshops and discussion groups can be all helpful in further implementation of the charter agreement. These should aim to improve the probability of adherence to the charter mission and objectives.
   b) Training and education should include briefing the dispute resolution task force, and the partnering evaluation task force.
7. **Create and implement an issue resolution system.**
   a) Task force appointed.
      (1) Selected from among signatories to partnering charter.
      (2) Must be given the full support of top project management.
   b) General procedures.
      (1) Task force writes and sets issue resolution policy.
         (a) Sample issue resolution policy - from Detroit VAMC partnering agreement.
            i) Policy.

"It is the goal of the participants of this project to first and foremost avoid unnecessary conflict. To achieve this, we will maintain open lines of communications as stated in the Partnering Charter. Further, it is our goal to resolve an issue at the level at which it arose. If this is not possible the issue will be referred promptly to the next highest level for resolution.

In all cases, individuals who are involved in a difference should be businesslike and not resort to personal attack. The principles outlined in the Partnering Charter objectives should be followed at all times in resolving differences.

Upon request, site meetings will be used to discuss any unresolved issue in an attempt to reach resolution. Any issue presented should be

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clearly defined and alternative solutions considered. The resolution process is to work through open communication and looking at the other side's point of view. In addition, issues are to be kept in the forefront to ensure resolution in a timely manner. A log of unresolved issues will be maintained from meeting to meeting.

If resolution cannot be reached at the job site, the principals of the involved firms or agencies should attempt to reach resolution through informal discussion before the formal process outlined in the contract documents is used.

In seeking resolution to an issue, involved parties will attempt to:
- Thoroughly understand the issue.
- Maintain empathy for the other point of view.
- Communicated thoughts openly and clearly.
- Clearly document resolution."

ii) Methodology.
(1) Goal - to encourage and provide a forum for resolution of issues at the lowest possible level, but to provide a mechanism to elevate the issue if needed.
(2) If resolution is not achieved at the lowest level forum, the principals in the firm in conflict will attempt to reach resolution through informal discussion.

(2) Task force sets methods of alternative dispute resolution to be used.
(3) Task force establishes log system to record filing of issues and disputes.

8. **Create and implement a partnering review and evaluation process.**
   a) Task force appointed.
      (1) Selected from among signatories to partnering charter.
      (2) Must be given the full support of top project management.
   b) General procedures.
      (1) Task force writes and sets partnering evaluation procedures.
      (2) Task force sets and maintains a schedule of regular evaluation meetings - each three to six weeks.
      (3) Task force uses charter objectives to measure project partnering effectiveness
         (a) Assigns weights to each objective, & then regularly judges implementation effectiveness by a value applied to each objective.
         (b) Each member of task force makes and and submits individual evaluation.
         (c) Evaluations are combined and averaged for discussion.
      (4) Where dysfunctions are identified, the task force recommends solutions, and acts promptly to resolve the dysfunction and its cause.
9. **Charters - provided by courtesy of project management and staff as noted**
   a) *Veteran's Administration Medical Center Replacement Hospital* - Detroit, Michigan
      (1) Mission statement

- We the undersigned recognize that we all have common objectives. We

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therefore agree to strive together to construct the Detroit VAMC safely, on time and within budget to the highest quality standards commensurate with its mission of serving veterans and the community.

- To achieve our mission we believe in the following principles
  - Commitment
  - Mutual trust
  - Integrity
  - Personal pride

(2) Charter objectives
- (a) 01. Maintain open lines of communications.
  - i) a. Recognize the need for quality information
  - ii) b. Minimize submittal and response times in all matters
- (b) 02. Keep paper and administrative work to a minimum.
- (c) 03. Develop and implement an alternative conflict resolution system.
  - i) a. Prompt resolution of conflicts at lowest possible level
  - ii) b. Eliminate need for Contracting Officer decisions
  - iii) c. Fair interpretation of ambiguities
  - iv) d. Be proactive (not reactive) in problem solving
  - v) e. Maintain objective attitude toward constructability and practicality
  - vi) f. Accept responsibility for your actions or inactions
  - vii) g. Have empathy in all matters
  - viii) h. Clearly describe changes to contract work
- (d) 04. Limit cost growth.
  - i) a. Develop cost effective measures
- (e) 05. Maintain clean, efficient, secure work site.
  - i) a. No lost time due to accidents
  - ii) b. Properly staff project
  - iii) c. Be a good neighbor
- (f) 06. Seek to maintain good job morale and attitudes.
  - i) a. Promotion of partnering attitudes at all levels of contract administration
  - ii) b. Have fun
  - iii) c. Have pride in your product
- (g) 07. Commit to quality control in all project related matters.
  - i) a. Do it right the first time
  - ii) b. Maintain proper work sequence
  - iii) c. Meet design intent
  - iv) d. Recognize owner's needs in occupation and operation of the facility
- (h) 08. Close out job in proper and timely manner.
- (i) 09. Maintain and implement a partnering evaluation system.

b) *Michigan Millers Mutual Insurance Addition & Renovation* - Lansing, Michigan

(1) Mission

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(a) We the Project Team commit to construct a quality facility, on time and within budget, maximizing safety, communication, & cooperation so that all participants can be proud and profitable in their accomplishments.

(2) Objectives - to accomplish our mission we recognize a need to work to the following goals and objectives.

(a) Submittals
- i) Clarify objectives and expectations of the submittal process.
- ii) Minimize submittal and approval times.
- iii) Provide accurate, prompt, clear, concise approvals.

(b) Payments
- i) Make payments in accordance with the published flow chart process.

(c) Information processing & paperwork
- i) Expedite all information and indicate desired response times .
- ii) Maintain open lines of communication among Project Team members.
- iii) Be available.
- iv) Attempt to offer possible solutions to questions within a proper scope.
- v) Provide clear responses to requests for information.

(d) Legal matters
- i) No litigation.
- ii) Settle disputes at originating level .

(e) Abatement
- i) Establish, approve and publish a plan of abatement.
- ii) Abate promptly.

(f) Planning and scheduling
- i) Provide, obtain, and use accurate activity information.
- ii) Clearly monitor the project against the plan and schedule.
- iii) Commit to, and fulfill man hour projections.

(g) Decision making
- i) A/E team to regularly inspect work and advise compliance.
- ii) Define and clearly communicate quality expectations.
- iii) Properly empower those at all decision making levels.

(h) Policies and procedures
- i) Prepare, review, approve and publish policies and procedures that will serve as guidelines to manage the project.

(i) Site layout and management
- i) Formulate and publish a trash removal & parking plan.
- ii) Properly establish and maintain bench marks and control lines.

(j) Processing revisions
- i) Provide written authorization prior to work proceeding.
- ii) Respond to requests for information, bulletins and change orders promptly.
- iii) Prepare, approve & publish a flow chart for processing revisions.

(k) Be a good partnering neighbor
- i) Commit to protecting your work and the work of others.

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ii) Show all participants due respect and acknowledgement.
iii) Maintain proper work sequences.
(l) Total quality management (TQM)
i) Prepare, approve, publish, and commit to a TQM program.

F. Project delivery systems and methods.

1. **The nature of contemporary project delivery systems.**
   a) Project delivery systems used in a planning, design and construction program affect us all. PDS influences extend from the project's conceptual origin through to the end of the warranty period - sometimes even further.
   b) The formal, informal, reporting, staff and informal relations with the project team are all determined by the project delivery system used.
   c) Characteristics of traditional and non traditional project delivery system are not exact, nor are they the same from project to project.
   d) The cyclical nature of the construction industry force delivery systems to change as the pendulum swings back and forth between good times & difficult times.
   e) Delivery systems selected are often an image of the organizations making up the entire project team.
   f) Partnering has great potential for bringing renewed life and vitality to both traditional and non traditional project delivery systems.
2. **Examples of better known project delivery systems (see glossary).**
   a) Design build.
   b) Hard money.
   c) Guaranteed maximum price - gmp.
   d) Time and material.
   e) Construction management.
3. **Methods of combining disciplines to set a delivery method.**
   a) Who is involved?
      (1) Planners.
      (2) Programmers.
      (3) Owners.
      (4) Users.
      (5) Constructors.
      (6) Architects.
      (7) Engineers.
      (8) Regulatory agencies.
      (9) Operators.
   b) What kinds of functional organizations are involved?
      (1) Architectural firms.
      (2) Artists.
      (3) Associations.
      (4) Construction companies.
      (5) Engineering companies.
      (6) Estimating consultants.
      (7) Financing sources.
      (8) Leasing agents.

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(9) Legal firms.
(10) Marketing organizations.
(11) Material consultants.
(12) Planning and scheduling consultants.
(13) Planning firms.
(14) Program writers.
(15) Property managers.
(16) Public engineering bodies.
(17) Public planning bodies.
(18) Real estate companies.
(19) Regulatory agencies.
(20) Sculptors.
(21) Traffic engineers.
(22) Unions.

4. **Allocation of risk in the selection of a project delivery system.**
   a) Where is risk likely to be encountered?
      (1) Crossing critical transition points.
      (2) Awarding initial contracts.
      (3) Starting field work.
      (4) Intermediate contract dates.
      (5) Closing out the project.
      (6) Obtaining legal right to occupancy.
      (7) Obtaining final payment.
      (8) During the warranty period.
   b) Who is best equipped to take the risk being considered?
      (1) What do we mean by *best equipped*?
      (2) *Remember that the owner ultimately pays all the bills!*
5. **Factors necessary for success in temporary organizational combinations such as projects.**
   a) Goals.
   b) Profit.
   c) Sequencing.
   d) Participants.
   e) Problem solving.

G. **Selecting and designing an appropriate delivery system for your project.**
   1. **Determining the scope of work needed to properly execute the project.**
      a) The importance of properly preparing a program for the project. (see definitions)
      b) The must, want & wish lists. (see definitions)
      c) Bridging the critical transition points. (see definitions)
      d) The value of formal reviews & approvals, and acceptance.
   2. **Evaluating the representation authority needed to carry out the work.**
      a) Must be set during selection of the project delivery system.
      b) Identification of relationships is critical to understanding how the project is to be delivered (see definitions).
         (1) Formal.

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(2) Informal.
(3) Reporting.
(4) Staff.
(5) Temporary.

3. **Identifying the services needed to do the work.**
   a) Best set during the programming phase.
   b) Services needed should be confirmed and validated during the selection of a project delivery system.
   c) Project costs committed and spent
4. **Determining and evaluating the capabilities of in-house resources.**
   a) Must be done objectively.
   b) Must consider the prime obligations of each professional talent needed.
   c) Where deficiencies exist training and education can often be used effectively.
5. **Determining the need for outside resources.**
6. **Establishing the degree of risk to be assumed by each organization.**
7. **Evaluating the project delivery systems allowed by project conditions.**
8. **Setting a payment method for the project.**

H. **Alternative dispute resolution systems and their application in construction.**
   1. **Dispute resolution methods (see *Section A. Origins of the partnering concept* for details).**
      a) Non binding
         (1) *Prevention - maximum harmony, usually least cost.*
         (2) *Internal negotiation - requires consensus - relatively cost free.*
         (3) *Informal external neutral- some preparation - relatively low cost.*
         (4) *Formal external neutral - some preparation - relatively moderate cost.*
      b) Binding
         (1) *Outside of courtroom* - considerable preparation - relatively moderate cost.
         (2) *Inside of courtroom* - much preparation - high cost.
   2. **The reasons why disputes are not resolved promptly and fairly.**
      a) Differences in goals and objectives of parties to the project
      b) Lack of clear understandings about the design and construction industry needs.
      c) Lack of value-added for outside interests through prompt and fair settlements.
      d) Excessive resort to legal based delays and road blocks to resolution.
      e) Excessive demands on resolution resources (courts, arbitrators, judges and other agencies involved).
      f) Greed.
   3. **The origin of the negotiated methods of dispute resolution.**
      a) Informal negotiation *was* the delivery technique before excessive legal systems were imposed upon the industry. (or were accepted by us)
      b) Varies with the time.
         (1) In periods of exceptionally high economic activity money can be spent on expensive resolution methods to gamble on a high return on the investment.
         (2) In periods of low economic activity money must not be wasted on high risk, uncontrollable methods of expensive resolution.

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c) Today we cannot afford to spend our, nor our client's, money on high risk gambles. Therefore relatively low cost. non binding resolution processes have become popular.
d) The acrimonious atmosphere surrounding the binding resolution methods has proven demeaning, unpopular, negative, and harmful to how the professional can best do business.

4. **What are alternative dispute resolutions?**
   a) What is ADR?
      (1) In broadest terms, ADR is a method of resolving disputed design and construction claims outside the courtroom.
   b) What does ADR do?
      (1) ADR focuses upon ways to get the disputing parties to settle, rather than having decisions imposed as in arbitration and litigation.
5. **Characteristics of alternative resolution techniques?**
   a) ADR guidelines for effective project use
      (1) Even when problems turn into disputes, litigation should not be the initial method used to resolve them.
      (2) Advance commitment to ADR methods, contributes to effectively and fairly solving problems as they arise.
      (3) Litigation-avoidance approaches are most effective when applied early in the project.
      (4) A cooperative project environment helps prevent disputes.
      (5) Jobsite dispute resolution often helps dispose of problems as they arise & before they multiply.
      (6) Non-binding dispute resolution should be attempted before resorting to binding dispute resolution.
      (7) Dispute resolution proceedings should be conducted expertly, and effectively by experienced design and construction practitioners.
   b) A basic ADR principle - The earlier in a construction project that the participants employ dispute resolution techniques, the more these techniques will contribute to project success.
6. **Partnering and the use of alternative dispute resolution techniques.**
7. **What is needed for success in resolving disputes?**
   a) A desire for a win - win resolution.
   b) A desire for a fair resolution.
   c) People in charge who want a resolution.
   d) A dispute resolution technique that is acceptable to those involved.
   e) Knowledge of how to arrive at a resolution system that can produce a decision.

+ **Handouts for WEX Partnering**
  - A. **Section #1 - Origins of the Partnering Concept**
    1. Ground rules (1) - 368
    2. Thinking patterns (1) - 270
    3. Approach patterns (1) - 271
    4. Participants in designing & building (1) - 268
    5. Generic line of action (1) - 81
    6. Macro matrix boundaries of the construction industry (1) - aspe 01
    7. The dio/pdo/udo intersection (1) - 197
    8. Questions to be asked about your project (1) - 186
    9. Route of issue & dispute resolution - wexp T01
  - B. **Section #2 - Why is Partnering Applicable in Today's Construction Industry?**
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    2. Professional obligations and adr - ASPE oh 3a
    3. Destructive Conflict (1) - 382
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GROUND RULES

1. Open your mind to new ideas & to new applications of old ideas.

2. Listen well & ask helpful questions.

3. Be selective in which techniques you use.

4. Learn more about the subjects of interest to you.

5. Relax and enjoy the company of your professional friends.

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THINKING PATTERNS

Why plan?.....to evaluate

Why translate?.....to communicate

Why control?.....to achieve

Why correct?.....to maintain

Why learn?.....to improve

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APPROACH PATTERNS

1. Improve capabilities
2. Gain control
3. Expand your conceptual grasp
4. Be creative
5. Experiment - in the low leverage areas
6. Continue to learn
7. Solve problems
8. Define goals & turn them into objectives
9. Teach others to achieve what is important

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PARTICIPANTS IN DESIGNING & BUILDING ENVIRONMENTS

There are five basic participants in the process of designing and building environments. These are the conceiver, the translator, the constructor, the operator and the regulator.

Conceivers - Those who conceive the idea and provide the wherewithal to bring the environmental program to a successful conclusion. The conceiver may be the owner but it also might be a governmental agency, a financial source, an architect, an engineer, a contractor, a vendor or a potential tenant looking for space. We identify the conceiver since he usually is the key person driving the project on to completion.

Translators - Those who translate the environmental program into construction language. Traditionally we think of the architect/engineer as the translator. However careful consideration of this matter shows there are many others who translate the conceiver's fundamental ideas into understandable, workable construction language. Subcontractors, suppliers, vendors, manufacturers, contractors and the conceiver may all play a role in translating.

Constructors - Those who interpret the construction language and convert it to a actual physical environment. Occupying this role are general contractors, specialty contractors, vendors, suppliers, manufacturers, artists and others who actually put the materials into place in the field.

Operators - Those who operate and maintain the completed physical environment on a continuing basis. Usually the party responsible for this function is an owner or tenant working through a plant or facilities manager.

Regulators - Those who fill a review & inspection position to help insure protection of the health, safety & welfare of the people. This is usually done by enforcing regulations written and adopted by qualified public or private bodies. Examples of regulators include those who work for building departments, departments of natural resources, public health agencies, fire prevention organizations, technical societies and other such groups.

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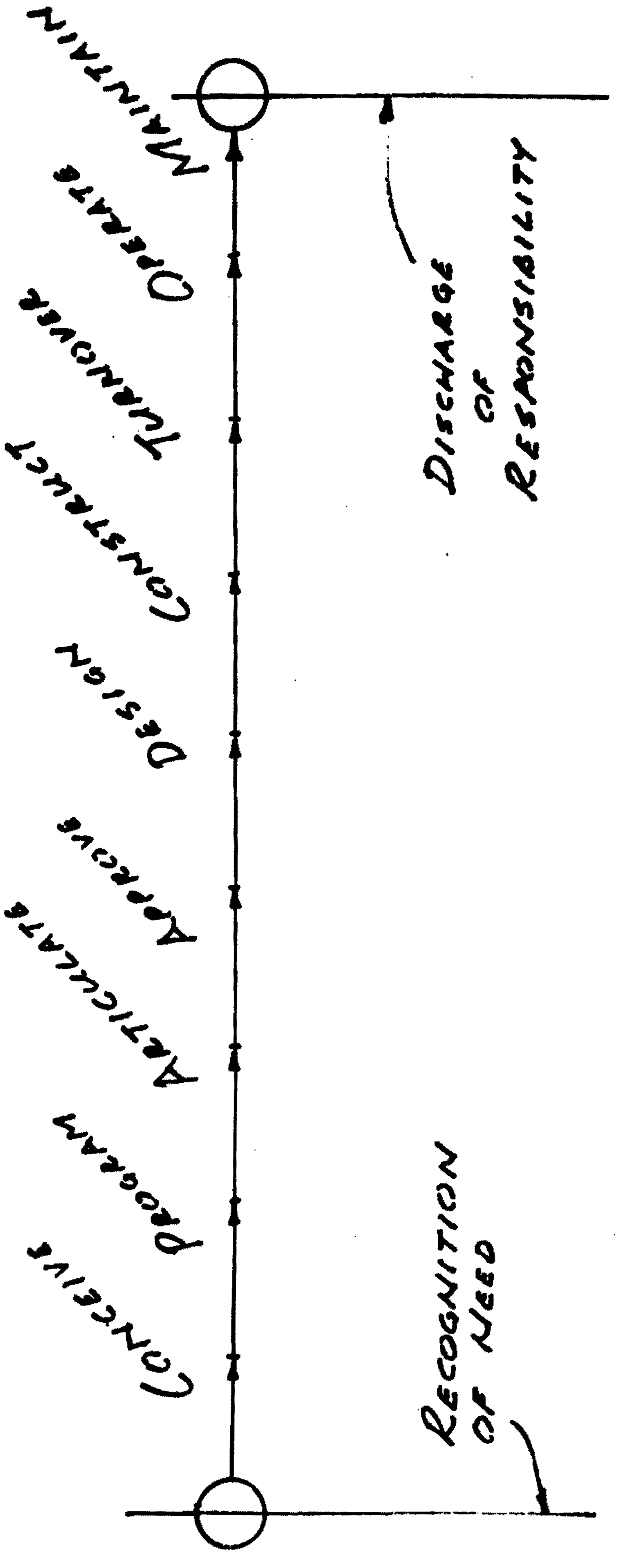
DB 2/4/

LINE OF ACTION



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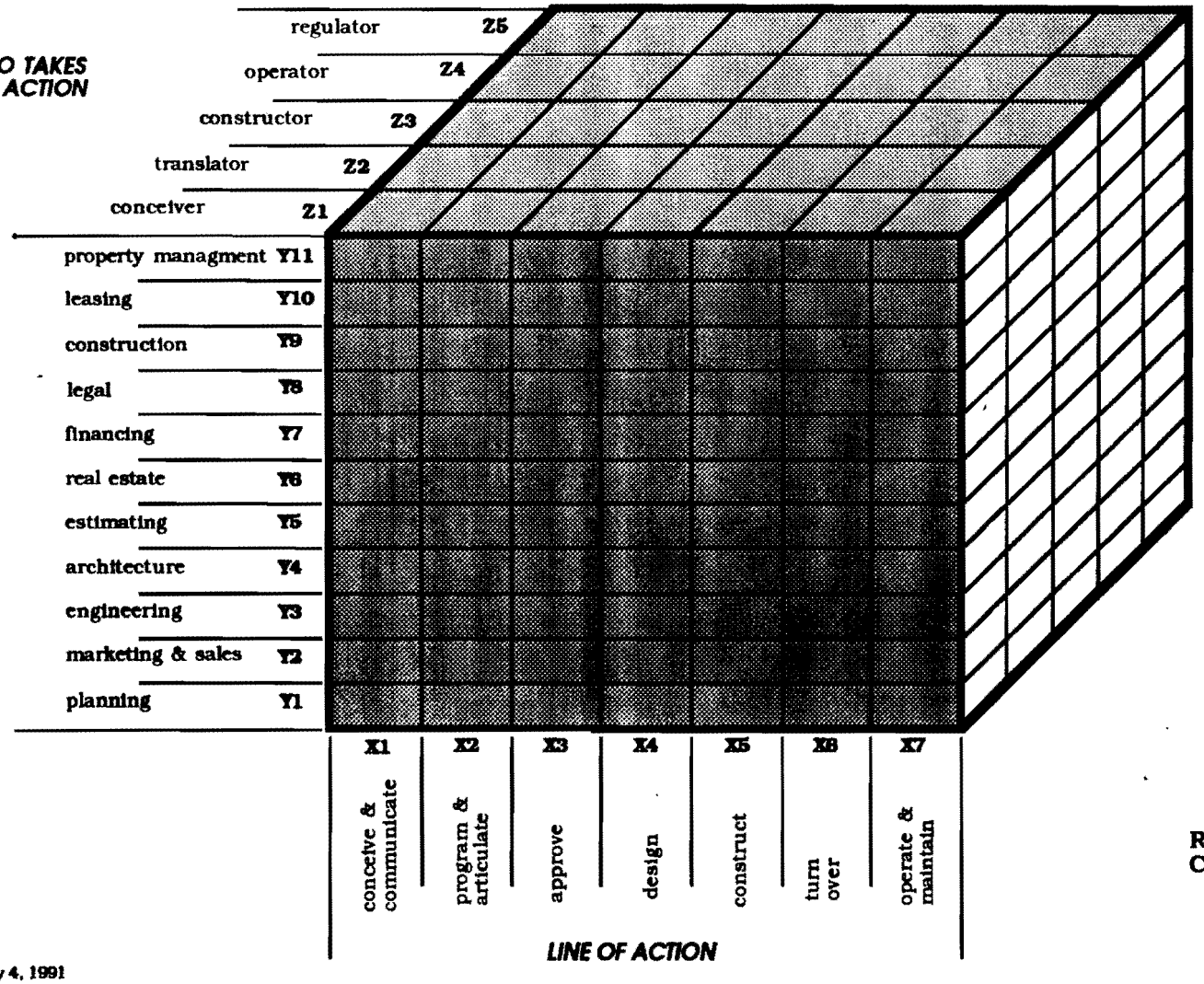
MACRO MATRIX BOUNDARIES OF DESIGN & CONSTRUCTION



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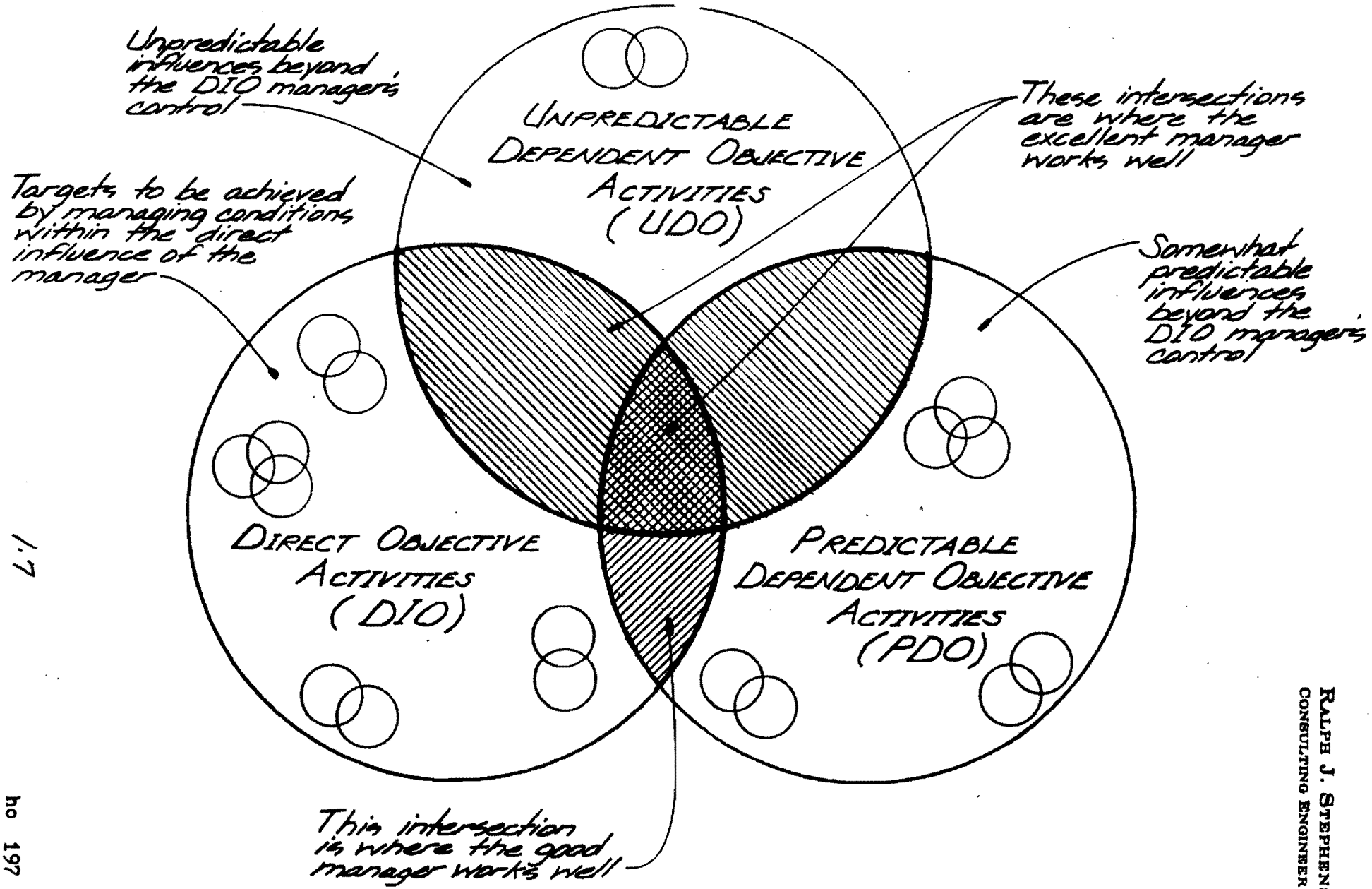

THE DIO/PDO/UDO INTERSECTION

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QUESTIONS TO BE ASKED

1) WHAT? -- What is the scope of the activity?
-- What is the standard of performance?
-- What are our objectives?
-- What are our goals?
-- What is needed to start?

2) WHERE? -- Where will the work take place?

3) WHEN? -- When does the work start?
-- When is the work supposed to finish?
-- When will the work be completed?

4) HOW? -- How do I know when the job is done?
-- How do I know if we've done a good job?
-- How do I get out of the job when it's done?

5) WHO'S? -- Who's responsible?
-- Who's in charge?
-- Who's doing the work?
-- Who's liable?
-- Who's in charge for my client?
-- Who's the ultimate decision maker? (UDM)

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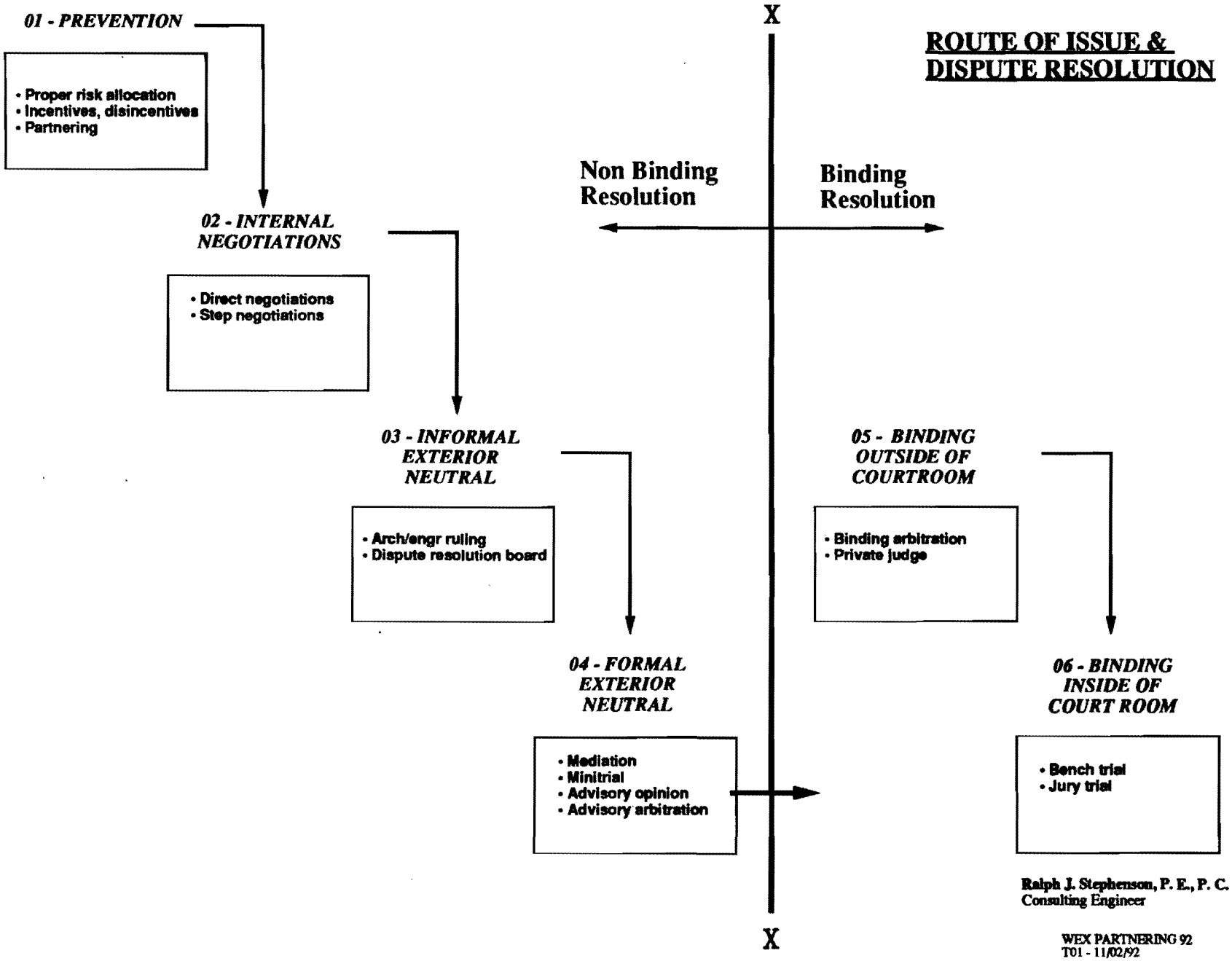

ROUTE OF ISSUE & DISPUTE RESOLUTION

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B. **Section #2 - Why is Partnering Applicable in Today's Construction Industry?**
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   2. Professional obligations and adr - ASPE oh 3a
   3. Destructive Conflict (1) - 382
   4. Positive Conflict (1) - ?
   5. People (1) - 383
   6. Questions to ask to guide ethical decision making (1) - 365
   7. Critical transition point (1) - 183

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OBLIGATIONS

Hierarchy of professional obligations as formulated by Dean Freund

- *Prime - Protection of public health, welfare & safety*
- *Secondary - Your employer or client*
- *Tertiary - Your peers*

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HOW PROFESSIONAL OBLIGATIONS MAY CREATE A NEED FOR ADR

- The design and construction professional is obliged, above all, to protect the health, welfare and safety of the public.

- The legal professional is obliged, above all, to protect the interest of his or her client. These interests are supposed to be defined by the body of law. Thus the body of law, not the legal professional, is depended upon to protect the health, welfare & safety of the public.

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DESTRUCTIVE CONFLICT

Animosity or disagreement which results in lowering the potential for an individual or organization to succeed.

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POSITIVE CONFLICT

Hostility that is managed so that its resolution raises the potential for individuals or organizations to succeed at being excellent.

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PEOPLE

Most people are honest, concerned, desirous of challenge, need attention, and welcome help in times of turmoil.

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QUESTIONS TO CONSIDER

Guides to Ethical Decision Making

1. **Is my decision legal?**

   • Does it violate civil law or company policy?

2. **Is my decision balanced?**

   • Is it fair to all concerned in the short and long term situation. Does it avoid sum zero situations?

3. **How will my decision make me feel about myself?**

   • Will it make me proud?

   • Will I feel good if it is published in the newspaper?

   • Will I feel good if my family finds out about it?

Adapted from "The Power of Ethical Management"
by Kenneth Blanchard & Norman Vincent Peale

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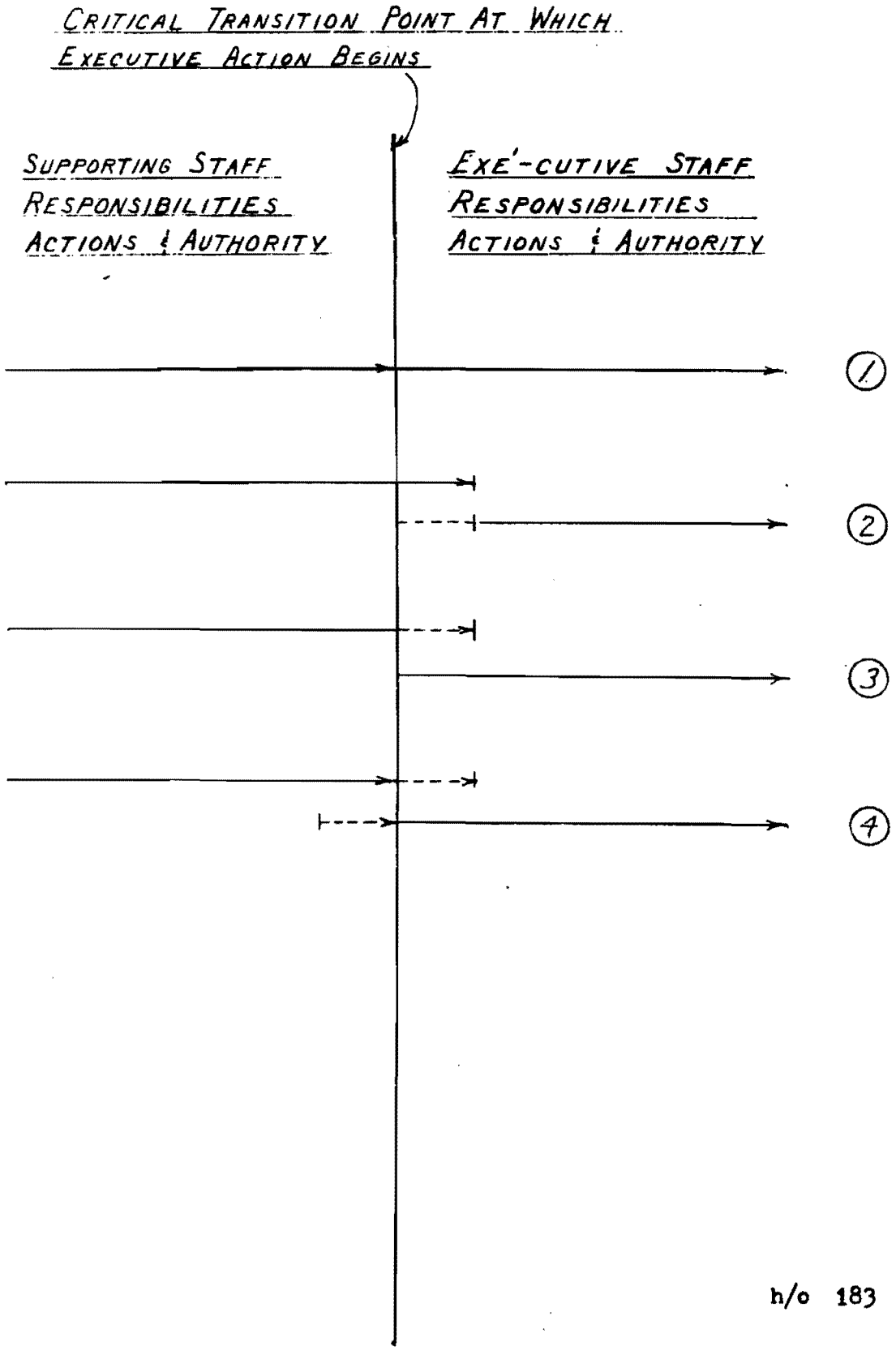

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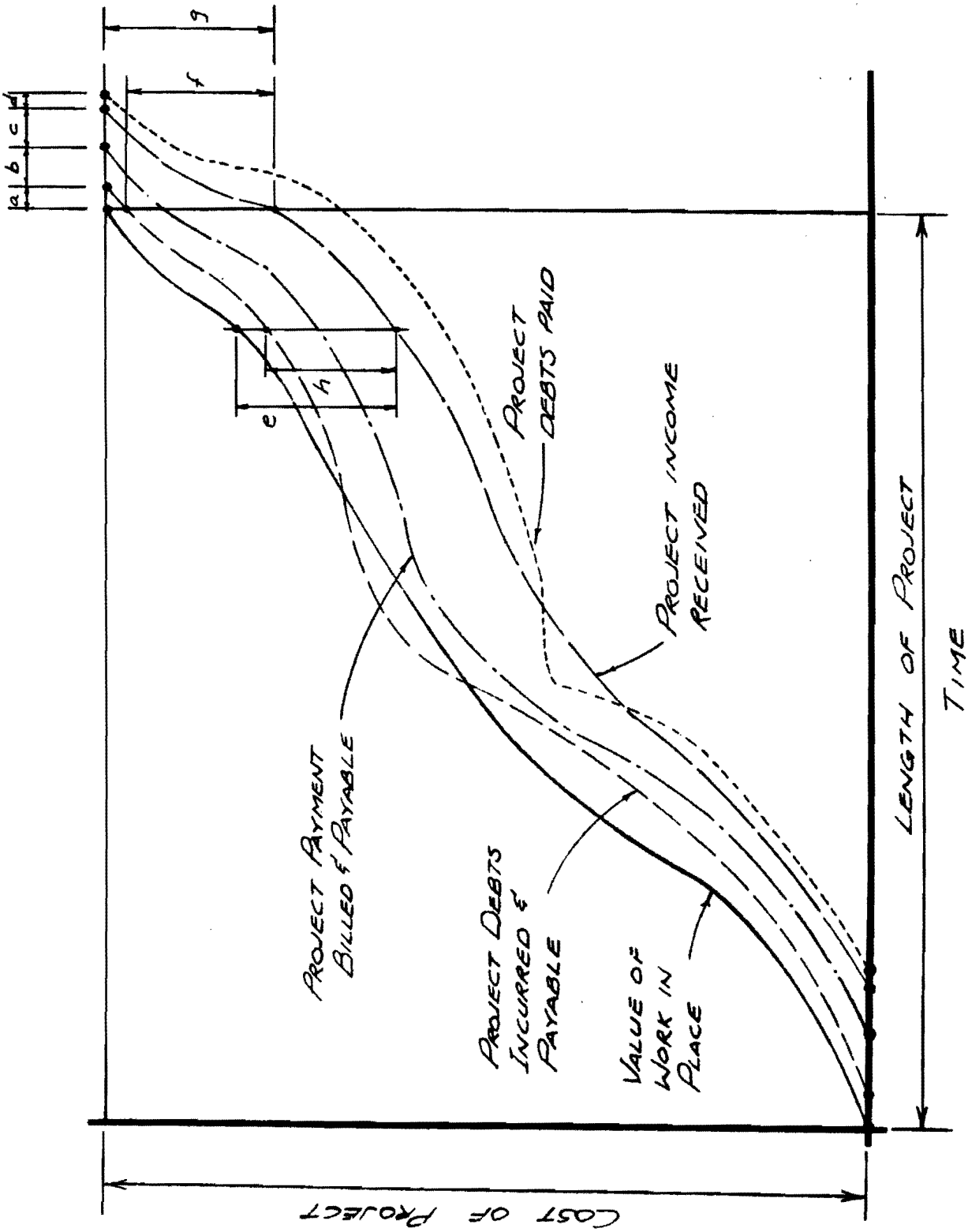

PROJECT MONEY FLOW

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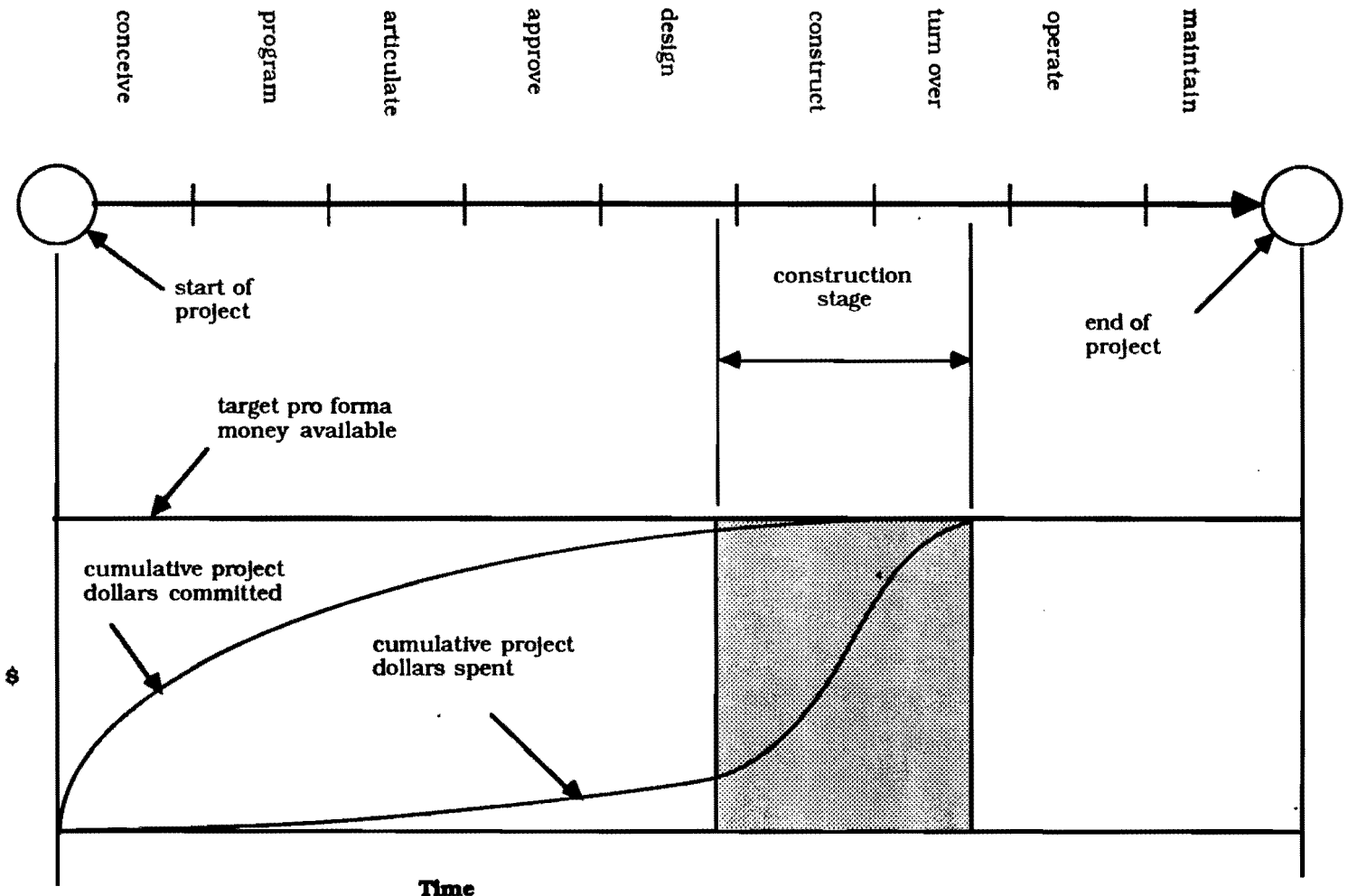

Costs Committed Compared to Money Spent on Construction Projects

3.2

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JOB PLANNING - WHAT IS IT ?

1. PLANNING is to formulate a sequence of actions leading to an end goal.

2. NETWORK PLANNING is to graphically depict this sequence of action.

3. CRITICAL PATH PLANNING is a technique of establishing resource limits on each plan component.

PLAN VISIBLY !

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Act From A Plan

• If you can't plan it, you can't manage it.
• Good plans shape good decisions.

A. Five essential planning questions for the manager to ask and have answered.

1. What?
2. Where?
3. When?
4. How?
5. Who?

B. Essential planning actions for the manager to take

1. Set goals, objectives, and a project delivery system
2. Prepare, approve and translate an action plan
3. Organize, assemble resources and set project systems
4. Do the job

C. Set goals, objectives and a project delivery system

1. Definitions
   a. Goals - targets, desires, wishes and aims expressed without quantification
   b. Objectives - Expressed goals which have been quantified
2. Be specific when setting objectives - projects are objective oriented
3. Set objectives so that movement toward their achievement can be measured

D. Prepare, have approved and translate an action plan

1. May be mental, verbal, text written or graphic
2. May be strategic or tactical, summary or tactical
3. May be short, medium or long range (the manager must set the time scale)
   a. The shorter the time interval covered by the plan, the greater is the chance the plan will succeed. However, the shorter the time interval covered, the greater is the probability that longer range

needs, which truly measure the manager's effectiveness, will remain unmet

b. The higher you are in the management structure, the larger and longer are the planning scales you must use (the higher you are the further you are expected to see)

4. A good manager plans the work and then works the plan

E. Organize, assemble the resources, set the project systems & do the job

1. Build plans based on optimum integration of management viewpoints
2. Define relationships through functional diagraming of interconnections
   a. Formal
   b. Informal
   c. Reporting
   d. Staff
   e. Temporary
3. Make clear cut assignments
   a. The manager should not assume a person will automatically know his full pattern of responsibilities.
   b. Don't leave definition of authority and responsibility to chance. Be specific.
4. Build a feedback system
   a. Organizational grapevines are often used for informal feedback
   b. Formal feedback systems should be built by specific assignment (must have a standard of project performance defined before a formal feedback system can be put in place)
5. Keep organization goal and objective oriented
   a. Keep organization lean - avoid unnecessary staffing
   b. Provide delegation and training opportunities
   c. Tend to build around objectives and needs rather than people (there are major exceptions to this - distinguish these early)
   d. Provide for proper grading of decision to action time spans

F. Common planning failures

1. Not touching all organizational and management bases - use the

what, where, when, how and who system
2. Committing to too many objectives at one time
3. Underestimating the value and need for good forward planning
4. Failing to challenge plans and actions at the right time
5. Not providing proper escape hatches, mouseholes and safeguards
6. Failure to encourage timely, knowledgeable staff participation
7. Failure to obtain higher level approvals of goals and objectives
8. Inadequate monitoring and control of costs, progress, documentation and resource allocation
9. Poor assignment of duties, authority, responsibilities and actions; and
10. Failure to understand that planning is a major responsibility of the manager

- **Ralph J. Stephenson PE**
  - **Construction retentions, collections and final payment - ho 259**
  - **Introduction - Payment as a lifeline**

    Lifeline has many definitions but one in particular strikes me as being most appropriate to the construction profession; "A lifeline is a line or rope for saving life".

    Payment or money flow on a construction project can be just that - a line of strength that can preserve the life, vigor and integrity of a project, or a line of weakness that can cast the project adrift.

    Successful firms are not often heard complaining about payment. This oddity bears close examination from those seeking to emulate them.

  - **General nature of cash flow in the construction industry**
    - Legal background for progress payments

      Governed by the doctrine of conditions

      Doctrine of conditions says that a party should not have to perform its promise without obtaining the other party's promised performance. The principle is central to any discussion of progress payments.

      Who is required to perform first?

      Common law requires that performance of services precede payment

    - Role and obligations of the payer

      To maintain strong financial position that allows prompt payment when deserved

      Makes people want to work for you

      Improves potential for future reductions in proposal prices

      To pay promptly and within the context of the contract
    - Role and obligations of the payee

      To perform well and in accordance with your contract

      To bill accurately and promptly

      To follow the ground rules by which payments are to be made

      Frequently the payee holds the key to successful payment for the work

Points for the payee to consider

Too often we in the construction industry blame everyone but ourselves for not being paid what we think is owed us promptly.

Many times the cause of slow or reduced payment lies with the payee, not the payer.

- **Conditions surrounding collections and payments**
  - Unsuccessful collections & payments often result from
    Mistrust - Inability to work honestly with unwritten standards
    Cupidity - Inordinate desire to get something for nothing
    Doubtful risk taking - A high risk has a corresponding high penalty
    Ultra conservatism - Excites suspicion and slows cash flow
    Incompetence - Produces a lack of desire to pay or work - no incentive
    Claim prone environment

The contested claim brings out the worst in everyone, and most particularly makes the payer reluctant to pay.

Understanding how to reduce the dust, noise and confusion that surround contested claims often can encourage prompt payment even in difficult conflicts.

Common causes of contested claims and their frequency are
Directed change - 48%
Constructive change - 42%
Defective or deficient contract documents - 41%
Delays - 41%
Constructive acceleration - 35%
Maladministration - 33%
Differing site conditions - 31%
Impossibility of performance - 18%
Superior knowledge - 18%
Termination - 7%

Stubborness - A balky mule cannot be depended on to pull the wagon
Dishonesty - Destroys incentives to play fair and pay promptly!

  - Successful collections & payments
    Trustful relations

Construction is a give and take situation. By the end of the job the gives and takes must balance out. The construction machinery is lubricated by the exchange of small favors.

Honesty

Honest people select their business associates carefully. Those who pay for services rendered generally recognize honesty in a company or an individual if they themselves are honest.

Competence

Competent people recognize competence in others. On most jobs, given the presence of a reasonable number of high value factors, the competent payee will be compensated fairly and promptly. Financial check and balance systems ask too many "why" questions to allow competent parties to remain unrewarded.

A willingness to give and take

All taking and no giving by either the payer or the payee will sink a project in a swamp of paper and a sea of red ink. The mistrust that results from this lack of informal give and take will grow to a monster unless it is replaced by a mutual confidence by the parties to the situation.

- **Retentions**
  - Often used for doubtful reasons
    - As a club to assure proper completion
    - To save interest payments for 10% of the job cost
    - To insure construction damage to completed work is repaired
    - To pay for anticipated contested claims
  - The problems of retention are old and will probably remain problems until
    - Properly addressed by the parties involved
    - There is agreement among like parties as to its impact
    - All parties to a contract behave according to their contract
  - Attitudes and realities about retention
    - In 1976 a survey was made of the American Subcontractors Association (ASA)
      - Showed average retention among members was $200,000
      - Members said would reduce bid price 3.7% if retention was eliminated
    - A recent survey of the American Subcontractors Association indicates
      - Subcontractors are willing to give lower bids to generals who
        - Pay them promptly
        - Offer them a fair and equitable contract
      - Of 200 respondents

89% said they give better bids to generals regularly or occasionally
90% did so because the general had prompt payment policies
91% said not paid within 3 days of billings
69% said not paid within 7 days of billings

Policies on retention
+ Recent AGC, ASC and ASA policy calls for payment within 7 days of billing
+ In 1974 GSA went to zero retention
+ At one time Department of Defense eliminated retentions
+ EPA once wrote retention requirements out of its grants
+ About 1984 Michigan Dept of Mgmt & Budget adopted zero retention
Was required by the legislature
Department had 2 choices
Put money in escrow
Problem - couldn't use state treasury for holding vehicl
Problem - private holding would have too complicated
Would have thousands of accounts
Prohibitively expensive and cumberson
Adopt a policy of total payment for completed line items
Each line item was to be explicit
On recent $2,000,000 job
Had about 1100 line items
Listed on 27 pages
Ranged in cost from $100 to nearly $70,000
Adopted zero retention route
Some state officials like it, some hate it
Some contractors like it, some hate it
+ In 1983 the Office of Federal Procurement Policy decided that
A uniform governmentwide policy should be implemented
Retainage was not to be used as a substitute for good contract management
An agency cannot withold funds without good cause
Determinations on retainage are to be made on the basis of
Contractor's past performance
Liklihood that such performance will continue in the future
Suggested that
Retainage not exceed 10%
That it be adjusted downwards as the contract approaches completion
When contract is complete all retainages be paid promptly

Summary - there is no single attitude or reality re retentions!

- **Collections, or better yet, payments**
  - Direct payment from the owner
    Conventional method on self financed projects
    Success of method depends on the integrity and compentence of the owner
  - Direct payment from another contractor
    Evolved when general contractor did most of their own work
    The secondary payment process may be used as a club rather than a tool
  - Direct payment from another party
    Usually called the title company method
    Steps in the title company disbursement method
    A. Monthly draw requests received from the contractors
    B. Supporting documents reviewed by the appropriate tier of contractor
    C. Job inspected by inspecting architect retained by payer
    D. Payment made to the contractors directly
    Sometimes direct to subs
    Sometimes to general contractor for disbursement to subs
    Advantages
    Insures prompt payment to contractors
    Provides third party evaluation to gage performance
    Gives financing source full control of the money flow
    Tends to diminish tendency to front load or unbalance billings
    Disadvantages
    Removes some of prime contractor's leverage to get work done
    Creates excessive dependency on attitudes of financing source
    Owner plays secondary role in motivating performance
    Poorly qualified inspecting architect can create havoc
    Bad attitude toward contractors
    Jealousy between architect of record and inspecting architect
- **Final payment**
  - Elements of record used in closing out the job
    The punch list and the certificate of occupancy
    Usually these provide the rationale behind final payment being made
    You should decide early how the job is to be punched out
    Who is to do it?
    When is it to be done?

What standards of performance are to be used to measure acceptability
When is the contractor's punch list to be prepared?
When is the owner's punch list to be prepared?
The operating and maintenance manuals
Inadequate OMM submittals may be cause for non payment
Get them done and get them submitted!

- **Where successful collections and payment start**
  - The agreement

The starting point for cash flow success is preparation and execution of a well understood agreement up front
Often contractors take jobs that specify impossible performance

Leads to getting into a position where the owner, or the architect engineer feel they can withold payment for personal, subjective reasons, using the impossible clause as a legal reason.

Example: the witholding of payment because the contractor did not submit a acceptable schedule within a given period of time - usually an unreasonable time frame for preparation of a good plan of work and schedule.

Infeasible schedules
Inadequate contract documents
Unworkable contract agreements
Multiple primes
Installation of unknown systems
Undefined responsibility patterns

  - The client - either owner or contractor

Most payment-successful contractors profile a prospect before proposing on a job. This is done with any new client, and sometimes on previous clients with doubtful records.
Profiling a client should follows a basic pattern
What factors describe how a client will pay?
Personal integrity
Business integrity
Past payment record with you
Past payment record with others
Current financial strength

Nature of assembled project financing
Process used for approving payment and releasing funds
Attitudes of the architect/engineer toward you and paying
Methods of closing out jobs

- The project

As with the client, the project must also be profiled. Not every job is for everyone. Be very selective so as to optimize your opportunities for success.

What factors describe a good pay project for you
+ Your past experience in building such facilities
+ The client's past experience in building such facilities
+ Funding sources
  Individuals
  Syndicates
  Trust funds
  Pension funds
  Political entities
+ Payment method
  Direct payment
  Title company payment
  Inspecting architect
  Payment method specified to be used for sub contractors
  Retention specified

- Evaluating the job

Once the client and project factors are identified, it is necessary to analyze them for a decision as to whether the job is potentially a good job or a bad job. Good and bad is evaluated as to the risk and the return on investment.

A. Weigh each factor
  Weight each from one to ten as to its importance to you
    One - totally unimportant to being paid
    Ten - most critical to being paid

B. Assign values to the client and the project which you are proposing upon
  Values should be from one to ten
    One - Client and project produce worst pay potential situation for factor
    Ten - Client and project produce best pay potential situation for factor

C. Multiply the factor weight by the value to get a profile number

Example of profiling

How you might profile the payment potential of a new prospect.

Factor weights multiplied by value for client Jones
Honesty in business - 10 x 08 = 80
Past payment record with you 10 x 06 = 60
Past payment record with others 07 x 03 = 21
Current financial strength 07 x 05 = 35
Nature of assembled financing 05 x 07 = 35
Process for approving payment and releasing funds 08 x 09 = 72
Attitudes of the architect/engineer - 06 x 06 = 36
Method of closing out jobs 07 x 05 = 35
Factor weights multiplied by value for Jones project
Your past experience in building such facilities 05 x 08 = 40
Client past experience in building such facilities 04 x 04 = 16
Funding sources 08 x 08 = 64
Payment method 07 x 05 = 35

Total = 529 out of a total possible of 740, or a 71% potential for good payment relationship

- **Rules for getting paid promptly**
  - Be certain of your agreement and understand what it says
  - Be honest in your dealings and your intent
  - Fulfil your contract
  - Avoid legal entanglements and threats
  - Be willing to use the lubricating oil of small favors exchanged
- **If you aren't entitled to it don't try to get it!**
- **ho 259 - Dec, 87**

D. **Section #4 - Experiences and applications of the partnering concept.**
   1. Identify vital targets (1) - 233
   2. Paretos law (1) - 146
   3. Employ the power of training (3) - 230
   4. Working well with people (5) - 231
   5. 4 i's improvement cycle (1) - 377

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IDENTIFY VITAL TARGETS

Which inputs and outputs most affect the results, the conditions and the performance the manager wishes to achieve? In considering these questions the following should be kept in mind.

A. Rarely is more than one problem out of four worth other than a manager's fleeting glance.

B. The good manager must quickly identify where his efforts are going to do the most good.

C. The effective manager must understand Pareto's law - the principle of the vital few and the trivial many.

D. In general, fewer than one third of the people a manager supervises require more than two thirds of his time.

E. Managerial missteps resulting from not understanding the vital target concept include:
1. Following prejudices
2. Sticking with pat systems
3. Doing what is easiest
4. Playing hunches

F. How to pick the vital few
1. Prepare and use to do lists
2. Set priorities
3. Use a rating system
4. Identify the critical tasks in a plan of action

G. Moving from a situational view (macro) to the vital few (micro)

H. What to do with the trivial many
1. Delegate
2. Defer (How long?)

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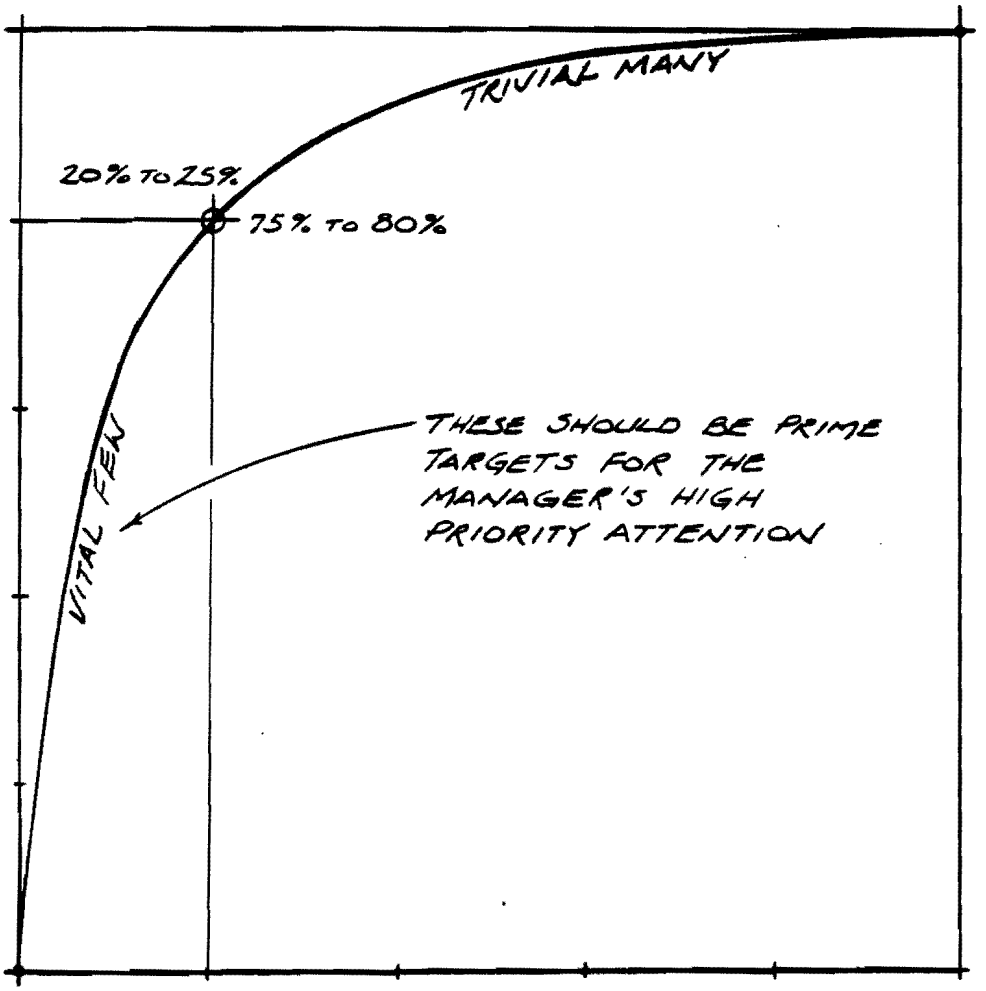
PARETOS LAW - IN AN OBJECT/VALUE SITUATION ONLY A FEW OF THE OBJECTS ACCOUNT FOR THE GREATEST PART OF THE VALUE.



VALUE OR UTILITY

PRICE
COST
DELAYS
MISTAKES
PROBLEMS
PROFIT
REJECTS
SALES
SAVINGS
SHIPMENTS
WASTE

OBJECTS OR RESOURCES

ACTIVITIES
CAUSES
OCCURANCES
PROBLEMS
RESOURCES
PRODUCTS
DECISIONS
FACILITIES
MATERIALS
METHODS
PRODUCTS
SALES CALLS
SERVICES
STAFF

H/C 146

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EMPLOY THE POWER OF TRAINING

A manager multiples his or her's own knowledge and skills by teaching others. When considering a training, educational or coaching effort the following points might be helpful.

• 1. Educating is teaching and learning the generic principals of doing things. It is teaching principles that can be universally applied.

• 2. Training is teaching and learning the specific, explicit process of doing things. It is vocational and procedural.

• 3. Coaching is a limited one on one, or one on few teaching effort to educate, train, or to do both. It is personally guided dialogue between teacher and learner.

• 4. Unguided learning sometimes occurs naturally, but it may turn out to be random, inexact, wasteful and tend to encourage bad habits.

• 5. Good training, educating and coaching usually results in improved staff performance.

• 6. Good staff performance allows the manager to devote more of his time to concentrating upon, initiating action of, and directing and controlling the resources at his disposal.

• 7. The need for good training, educating & coaching is ongoing irrespective of how good or bad business & organizational times are.

• 8. The excellent manager will usually try to teach what he knows to those who wish to learn

• 9. The improvement cycle is an important element of effective training and education. Elements of the improvement cycle - inertia, initiative, insight and improvement (the four I's) - are defined as follows:

A. **Inertia** - resistance to change
   1.) Reasons for inertia
      a.) Fear for safety

b.) Fear for security
c.) Concern for comfort
d.) Doubts about ability
f.) Dislike for schooling
g.) Preoccupation with other problems

2.) Overcoming inertia
a.) Use motivation to get going - habit to keep going
b.) Motivation must be mainly furnished by supervision
c.) Neutralize fear that accompanies inertia

(1.) Show that others in similar positions have benefited from learning.
(2.) Show that added skills give more, not less, security through added employee value.
(3.) Acknowledge doubts as to aptitude or potential.
(4.) Criticize constructively and express willingness to tolerate learning mistakes.
(5.) Show the employee that training will be truly relevant; that what he learns can be used now, for his and the company's benefit.
(6.) Plan the learning program so the participant is rewarded with some quick and simple success experiences.

B. **Initiative** - the removal of inertia as a barrier to learning. Once the reasons for inertia have been removed by the teacher the desire to learn will begin to appear. Initiative is then the responsibility of the learner.

C. **Insights** - the key elements of a subject that deal with the intellectual, the physical and the procedural requirements of learning. Insights are of different kinds:

1.) Intellectual insights - those that concern the whole concept of what is to be learned
2.) Physical insights - those that concern getting the physical feel of the process - the touch, tone, heft and smell of the job
3.) Procedural insights - those related to sequential demands of the operation

D. **Improvement** - Accelerated learning gained by overcoming inertia, taking initiative, gaining insights. Is encouraged by:

1.) Applying learned principals through exercises
2.) Stepping up challenges by increasing levels of difficulty
3.) Accelerating flow of learning challenges until the rate of improvement levels off (this may constitute a return to the inertia plateau and signal the need for a new cycle)

• 10. The basic phases of a training program are planning, instruction, evaluation

A. **Planning**
1.) Survey and analyze needs
2.) Identify and analyze key learning need points
3.) Select training methods
4.) Prepare the training outline

B. **Instruction**
1.) Capture interest and arouse initiative
2.) Give insights
3.) Accelerate improvement

C. **Evaluation**
1.) Review progress
2.) Evaluate results
3.) Make plans to overcome the next inertia plateau

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Working Well With People

Working well with people is the key to multiplying your effectiveness. The good manager reaches his objectives through the work of those in whom he has confidence.

Some pointers to keep in mind as you work with others are:

- 1. Learn about and understand the behavioral sciences
  A. Basic sciences are

     1.) Anthropology (origin, development and behavior of humanity)
     2.) Psychology (attitudes and feelings)
     3.) Physiology (body characteristics)
     4.) Sociology (environmental & group influences & relations)

  B. The manager should start with the assumption that most people want to do a good job
  C. Most people want to share in the success of a common effort
  D. The good manager learns to avoid people manipulation

     1.) Manipulation is excessive management of other's feelings and emotions
     2.) Manipulation is often rooted in fear
     3.) Genuine interest and willingness to trust people is an effective thought pattern that will help avoid manipulation
     4.) Don't play behavioral games with employees or subordinates

  E.) Motivation and maintenance

     1.) Maslow's basic motivational priorities
        a.) Man wants to be alive and stay alive
        b.) He wants to feel safe and secure
        c.) He wants to socialize with other people
        d.) He wants to feel worthy and respected
        e.) He needs to do the work he likes
     2.) Motivational elements
        a.) Nature of work
        b.) Recognition of achievement
        c.) Utilized abilities
        d.) Challenging assignments

e.) Extended involvement and responsibility
f.) Production of something of worth

3.) Motivation is introduced into the work place by providing genuinely satisfying conditions that reflect the hierarchy of human values
4.) Maintenance - those job elements that do not in themselves motivate, but when missing, reduce the incentive to produce
a.) Pay and benefits
b.) Security
c.) Working environment
(1.) Status
(2.) Social activity
5.) Use motivation and maintenance to help avoid managing by force
(a.) Force is primitive rather than scientific
(b.) Force kills the qualities a good manager must encourage in his employees. These qualities are
(1.) Confidence
(2.) Spirit
(3.) Self reliance
(4.) Assurance
(5.) Self sufficiency

• 2. Know and understand the people you work with

A. Elements of importance are:
1.) Name, age, address
2.) Employment record
3.) Education
4.) Military service record
5.) Family and dependents
6.) Medical characteristics
7.) Off job interests
a.) Job related
b.) Recreation, hobbies
c.) Community
8.) Personal beliefs
9.) Personal habits
10.) Life goals

B. A good manager does not

1.) Pry for facts people don't want to reveal
2.) Gossip about people
3.) Reveal confidences
4.) Break trusts

C. Knowing a person well can allow you to more properly place confidence in him

• 3. Express your respect and confidence to people when actually deserved
A. Should be expressed publicly and privately
B. Respect and confidence are reciprocal in a good working relation
C. Don't confuse being liked with being respected
D. The minds of people perceive both what management says and what they do
E. The respected employee wants to be treated well and used well

• 4. Communicate freely
A. Within allowable boundaries keep people informed about
1.) What is going on in the larger picture around them
2.) What changes are planned
3.) What objectives are set for their functional activities
B. Listen carefully to what your people are saying. Try to understand
1.) The outward message
2.) Feelings they are attempting to express but don't or can't
C. To watch out for in communications
1.) Use discretion as to what should and should not be conveyed to your people. Don't show off superior access to information.
2.) Generally, base your actions with people on what you actually know about the situation, rather than on what you think others may be thinking.
3.) Your suggestions as a peer are considered conversation: your suggestions as a boss are generally regarded as an order.

• 5. Provide people with challenging assignments
A. To expect a lot from your staff or crew is to show respect for their abilities, initiative and perseverance
B. Be firm but fair in assignment and in follow up. A boss doesn't have to be liked to be effective
C. Usually challenging work is accompanied by a possibility of failure
D. A challenging assignment should be doable

• 6. Delegate important tasks frequently
A. Don't try to make all decisions about every job by yourself
B. Let your people accept new responsibilities and to make occasional mistakes; that's the way they will learn and improve
C. Make it known that the more important jobs that you delegate are training assignments. You then retain control of the activity and can make comparative critiques of performance without offense
D. Don't be frightened of losing your influence through delegation . Constructive delegation is the path to greater influence and power
E. The delegation sequence

1.) Use guided actions. Be available to help the subordinate do the new work
2.) Show the learners how to do the job, and encourage them to further delegate, where appropriate, by having them train or coach their subordinates in the activity
3.) Delegate the whole job and involve subordinates in the early planning as well as the activity itself

• 7. Study and understand the benefits and shortcomings of each subordinate's participation

For further study:

1. Hawthorne experiment (1927) - encouraging workers to get things off their chest was proven to increase production

2. IBM (1950's) - job enlargement broadened divisions of labor. Improved quality, output and morale

3. Harwood Manufacturing - controlled experiments in employee participation produced impressive improvement. Measured by using three different methods of conveying information about proposed operational revisions

4. Texas Instruments - emphasized use of goal oriented management rather than authority oriented management. Manager exerts most of his leadership in planning. Subordinates carry out the actual plan, control, do cycle

5. American Telegraph and Telephone - used job enrichment process focusing on the work itself. Encouraged employee decisions on HOW the work was to be done.

Resulted in money savings, reduced turnover and improvement in staff utilization.

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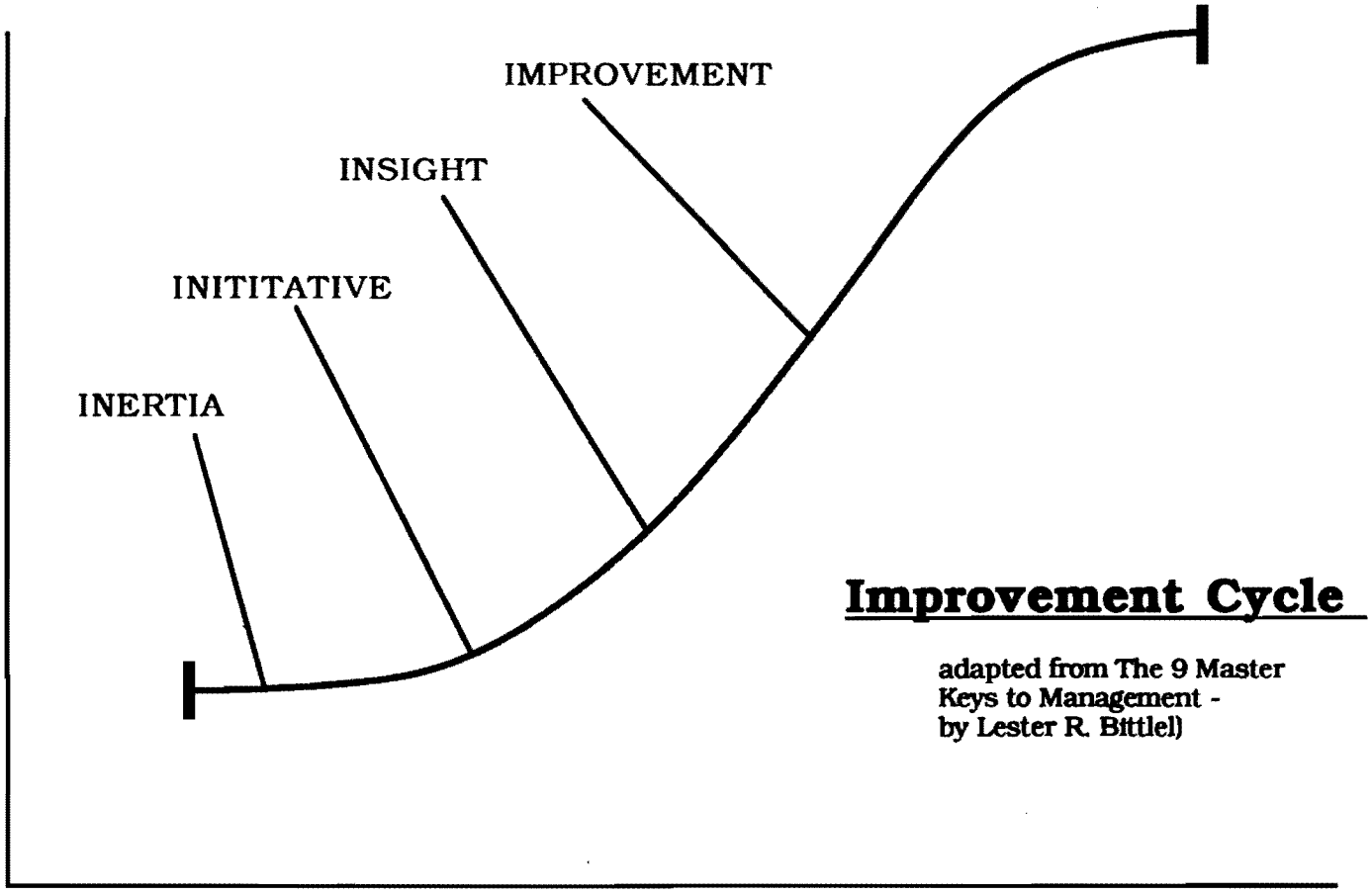

Improvement Cycle

adapted from The 9 Master
Keys to Management -
by Lester R. Bittlel)

4.5

E. **Section #5 - Guidelines for the application and use of partnering concepts.**
   1. Claim prone job characteristics (2) - 125
   2. Common causes of contested claims (5) - 228
   3. Graphic objectives (1) - 121
   4. Goals & objectives definition (1) - 316
   5. Weights & values (3) - 290

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Claim Prone Job Characteristics

During the profiling, proposing and negotiating period, it is often possible to gain a good insight into the expected nature of a job if one is fortunate (or unfortunate) enough to be the successful proposer. The problem job is becoming increasingly serious in our business and professional lives and it should be identified early. The problem job generally results in increased costs during the construction period and quite often requires arbitration or litigation to achieve resolution of costs and damages.

Thus, it is good policy for the perceptive owner, architect/engineer and contractor to become familiar with those characteristics that early identify a job as having potential for being a trouble project.

This list of characteristics is by no means complete, nor is it meant to imply that a job having these features will necessarily be claim prone. It is, on the other hand, an honest effort to state certain unique job features that have been identified in projects that have ended up in litigation or arbitration. The list is at random with no attempt to classify or characterize the features.

Claim prone job characteristics may include:

a. A wide spread in proposal prices.

b. Issuance of a large number of pre-bid addenda and instructions.

c. For subcontractors, a poor general contractor reputation if the project is being built by one prime.

d. For projects with separate primes, poor other prime contractor reputations.

e. More than four to six prime contractors involved(applicable on normal building work only).

f. Poor reputation of architect/engineer preparing contract documents.

g. Excessive how-to-do-it emphasis in contract drawings and specifications.

5.11

Claim Prone Job Characteristics
(continued)

h. Non-liable party involvement in responsible positions, i.e. non-liable construction manager.

i. Large numbers of allowance items.

j. Zero (or excessively small) tolerance specifications.

k. Poorly defined authority and responsibility patterns in the offices of the architect/engineer, the owner, the general contractor or other prime contractors.

l. Inexperienced specialty contractors.

m. Excessive number of pre-selected suppliers for key material and equipment.

n. Large dollar amount or numbers of owner purchased equipment.

o. Location in strike prone areas.

p. Location in jurisdictionally sensitive areas.

q. Heavy use specified for untried products and equipment.

r. Non-liable party involvement in establishing delivery commitments, i.e. construction manager, architect/engineer, owner representative.

s. Involvement of politically accountable owners, architect/engineers or other contractors.

t. Multi responsibility payment structures.

u. Excessively long time periods to award contracts after a proposal.

(Note: This often occurs in public work where many non-project approvals and agencies are involved.)

v. Poor owner reputation.

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COMMON CAUSES OF CONTESTED CLAIMS

Contested construction claims have increased over the past few years and now must be recognized as a serious road block to proper and profitable construction procedures.

The reasons for the increase in contested claims are many and must be understood in the sense that our society has become somewhat legalistic. That is to say, the recourse to legal resolution, as opposed to interpersonal, technical, or administrative resolution of problems has become a common fortunately shows some signs of diminishing as costs and time involvement in legal matters have increased astronomically.

However, there are claims, there always have been claims, and there will probably always will be contested claims. Those in construction should however, thoroughly understand the structure of the contested claim.

Specifically, contested claims lead to resolution by an administrative settlement, litigation, arbitration, or mediation. There are some common causes of conflict and it is these that stimulate the parties to go to a formal settlement by outsiders. It is important for those in construction to understand how to avoid the mistakes that cause wasteful contested claims.

Several years ago a firm specializing in construction claims and their settlements studied some of the most common causes of disputes. Of two hundred occurrence of contested claims the following percentages were found.

1. Directed Change - 48%

A legitimate change within the contract scope for which the owner must pay.

Examples
- Owner changes the door color after the door is painted.
- Owner revises size of electrical room door opening

Advice
- Required extensions of time should be stated in writing.
- Costs for extended general conditions should be agreed upon early.
- The client or owner is obligated to pay for the change, if there is a charge.
- Payment for the work should be explicitly agreed upon before starting.

2. Constructive change - 42%

An owner's action or inaction that has the same effect as a written order.

Examples
- Shop drawing corrections, showing additional work not covered in contract documents.
- Owner's representative tells a superintendent to relocate a wall with no payment intended.

Advice
- Don't assume changes will be free. Find out if there is a cost.
- Don't enrich contract documents.
- Don't enrich shop drawings.
- Make certain the scope and costs of additional work is clearly understood.

3. Defective or deficient contract documents - 41%

Contract documents which do not adequately portray the true contract scope.

Examples
- A retaining wall shown dotted on the contract documents and expected by the architect/engineer and the owner to be built as part of the contract.
- Dimensional errors that cannot be resolved by verbal clarification.
- Contract documents that expect performance by default. For instance, specifying a miscellaneous iron ladder but not showing it on the drawings.

Advice
- Expect to pay your architect and engineer for good quality assurance in the production of contract documents.
- Select your design team on the basis of performance not cost.
- Clearly define design and construction delivery methods to be used.
- Don't expect your contractor to design the job unless it is a design/build project.
- Don't make unrecorded corrections to contract documents.

4. Delays - 41%

A delay situation beyond the control and not the fault of the contractor.

Examples
- Rock encountered that delays the job but was not shown on the contract documents.

Advice
- Be as thorough as possible in defining physical conditions of the site upon which the facility is to be constructed.
- Specify weather standards when it is necessary to clarify time extensions that might be caused by inclement weather.
- Determine delay costs quickly and eliminate them as soon as possible.
- Don't stop field work without proper authority and a very good reason.

5. Constructive acceleration - 35%

More work with no time extensions, or the same work and a shorter time period in which to do it.

Examples
- Owner refuses to grant time extension for work that will take longer to perform.
- Owner makes unauthorized use of critical path time without extension.
- Owner makes use of float time with the expectation that the contractor will not request or require a time extension.

Advice
- Never assume the contractor will do extra work within the contract time.
- Work out an early agreement on the use of float time in the network model.
- Never assume a field order is a no cost, no time extension change.

6. Maladministration - 35%

Owner interference with the contractor's right to enjoy least cost performance.

Examples
- Owner directs contractor to provide a certain space in a facility early without such early turn over having been specified in contract documents.
- Owner directs contractor to start work on an encumbered site.
- Architect/engineer unresponsive to legitimate requests for information.

Advice

- Always allow the contractor to select construction methods and means.
- Make certain the site is fully available to the contractor before the job begins.
- Process submittals promptly.
- Clearly define the time frame and the sequence by which submittals are to be processed, and do it early in the job.

7. Differing site conditions - 31%

The actual site differs from that represented on the contract documents, or deviates from ordinary or normal expectations of such a site in that area.

Examples
- Artesian water encountered in sand seam outside of where soil borings were taken.
- Existing basements encountered but not indicated on contract documents.
- Restrictive easements or assessments on the property not made known to the contractor before contract execution.

Advice
- Expect to pay for and get a good site survey
- Make certain soil borings are adequate to show any unusual conditions.
- Locate and define all easements.
- Check the site history for unusual or restricted conditions.
- Take photos of any unusual conditions encountered.

8. Impossibility of performance - 18%

A situation where it is impossible to carry out the contract work.

Examples
- Expecting a contractor to work on an encumbered site.
- Owner refuses to move interfering utilities he is supposed to relocate by contract.
- Specifying installation of above ceiling work that won't fit in the space provided.

Advice
- Expect the design team to check their work thoroughly for interferences.
- Accept your legitimate design and administrative duties and responsibilities and take care of them.
- Resolve dimensional difference early.
- Do your homework to presolve expected problems and interferences.

9. Superior knowledge - 18%

Withholding data or information during the pre contract period, that affects construction on matters of importance.

Examples
- On a steel erection contract not telling the bidders that the steel had been refabricated from a previous job.
- Failing to tell bidders that there is a cost cap on the first two months costs
- Not telling bidders that there is a high pressure gas line through the site that must be accommodated during construction.

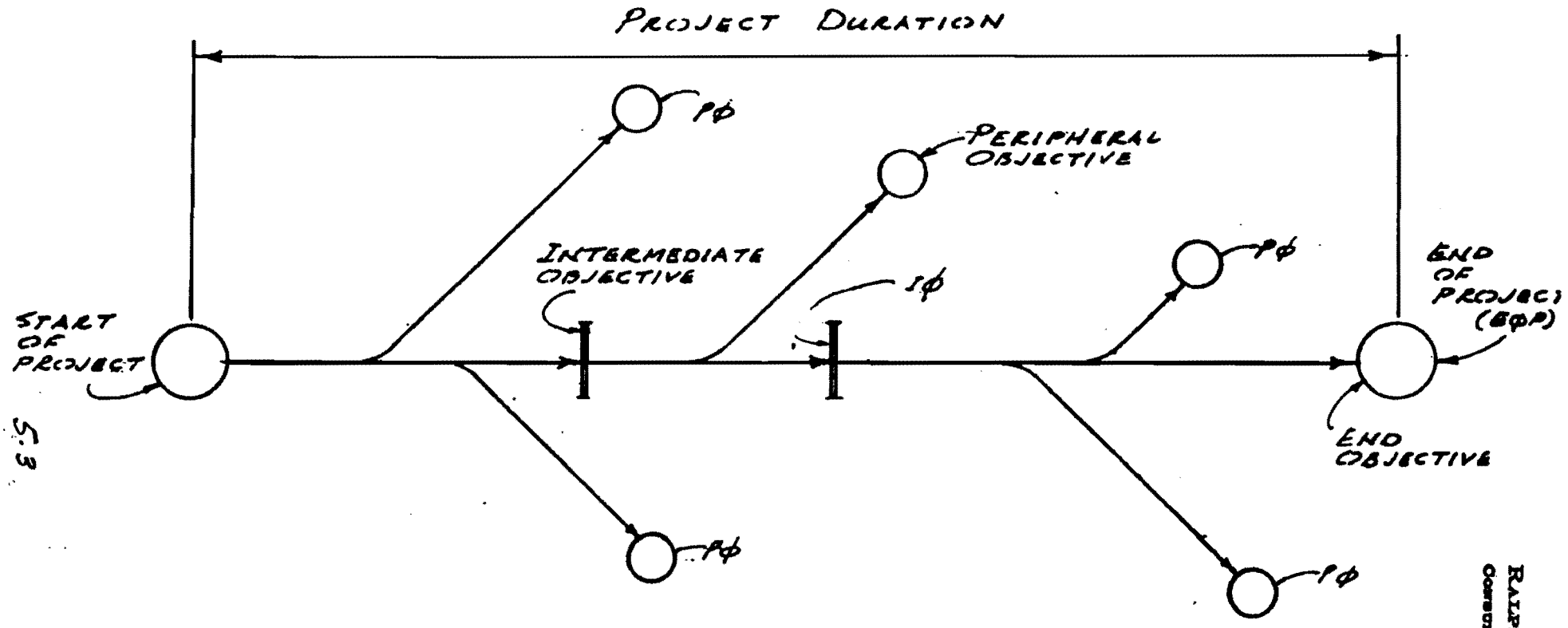
Advice
- Be certain all bidders know as much as they must know to propose properly.
- Be certain demolition contract documents specify all work to be done.
- Locate, to the best of your ability, all site obstructions before bidding.
- Don't expect the contractor or the architect and engineer to read your mind.

10. Termination - 7%

Dismissal from the project for convenience or default.

Examples
- The section of the project is no longer needed and is removed from the contract.
- The contractor is behind schedule.
- The contractor's performance is unsatisfactory.
- The owner doesn't like the way the superintendent talks back to him.
- The contractor doesn't manage submittals promptly and accurately.

Advice
- Be certain the cause for dismissal is legitimate and well defined.
- Don't dismiss for minor reasons. Dismissal is serious business.
- If dismissing, be certain proper notice is given.
- Insure the contract documents give you the right to dismiss.



END, INTERMEDIATE & PERIPHERAL OBJECTIVES

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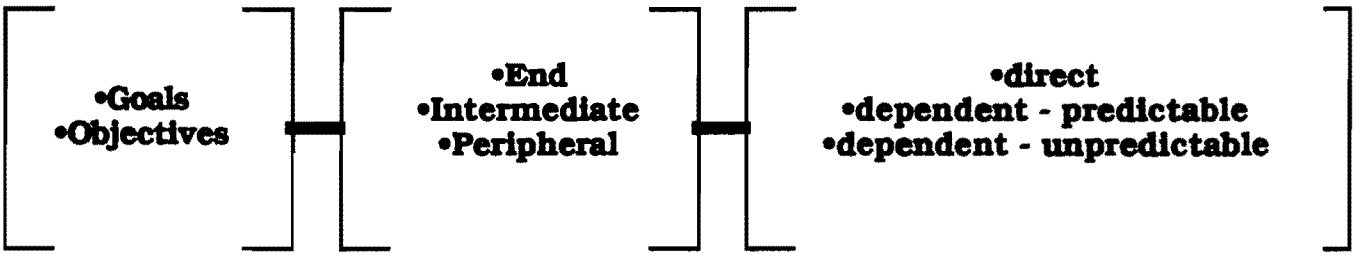
Goals & Objectives Definition



Definitions

- **Goals - Unquantified targets to be achieved**
- **Objectives - Quantified goals to be achieved**
- **End - Goals & objectives realized upon completion of the project or program**
- **Intermediate - Goals & objectives achieved at specific points prior to completion of the project or program**
- **Peripheral - Goals & objectives achieved on an ongoing basis during the project - often are personal, professional,technical, financial or social**
- **Direct - Goals & objectives to be achieved by internal direct influences**
- **Dependent - Goals & objectives affecting the project but to be achieved by external influences - usually are predictable or unpredictable**

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Weights and values as a decision making tool

The weight-value decision making process

In a decision making process the selection is often best made by a multidimensional process based on situational characteristics and factors that are nominally variable.

The purpose of decision making for the responsible project manager is to insure that an objective recommendation is provided to his or her upper management. Upper management is then responsible for adjusting the objective decisions of the project manager to a decision in line with what upper management staff personally, politically, professionally, subjectively, and technically feel is the appropriate selection.

The area addressed in this essay is the application of an orderly procedure to objective decision making. The technique is called the weight-value or WV process.

The WV process is implemented by taking well defined steps necessary to reach project level decisions. These steps are:

1. Select, write down, and verify the various decisions possible. What courses of action are available?

2. Select the major factors of importance in making an objective selection of a best course of action. What are the items that are important to making a proper decision? It is recommended there be no more than ten of these. If you have selected more than ten try to combine factors having similar evaluation characteristics.

3. Assign a weight to each factor that describes numerically, to those to whom the recommendation will be made, how important the project manager and his team think this factor is in selection of a course of action. Factors should be given a weight of one to ten. One means the factor is of minimum importance in the evaluation. Ten indicates the factor is crucial to the evaluation.

It is essential to realize that the factors selected and screened for use must all be of relative importance and that the assignment of weights should spread from one to ten. A help in doing this properly is to determine the most important and critical of the factors and assign it a value of eight to ten. Next select the least important factor and give it a weight of from three to one. The remainder should fall somewhere in between. Remember more than one of the factors being weighed can receive the same number.

You are not ranking the factors, you are weighing them.

4. Assign a value to each potential course of action or each decision possible for each of the factors selected and weighed. If there are three courses of action possible, and you have selected five factors by which these are to be judged, you will have to assign 3 x 5 = 15 values to the entire array. This can be seen in the following matrix example where alternative project delivery systems for constructing a warehouse are being considered.

The three delivery systems under consideration are an award of a hard money contract from a full set of contract documents, retention of a non liable construction manager to run the project, or use of a liable general contractor involved early as a construction consultant and providing iterative estimating help leading to submission and acceptance of a guaranteed maximum price.

Project delivery systems being considered & their value in satisfying the demands of each factor of importance - warehouse project

Factors	Wts.	Values		
		Hd money	Non liable cm	Prog pricing to gmp
1.Capital cost	08 x	08 = 064	04 = 032	06 = 048
2.Function	10 x	09 = 090	06 = 060	10 = 100
3.Appearance	02 x	06 = 012	04 = 008	07 = 014
4.Life cycle cost	04 x	06 = 024	03 = 012	08 = 032
5.In house staff reqmts	08 x	04 = 032	03 = 024	07 = 056
Totals		**222**	**136**	**250**

The selection analysis above indicates the best delivery method of the three being considered is a progressive pricing system leading to submission of a guaranteed maximum price for which the contractor will construct the project.

It should be emphasized that the validity of factor selection, the factor weighing, the selection of alternatives and their valuing depend totally on the exercise of sound judgments by those making the analysis. Usually for each decision to be made such an analysis as above is made by several qualified staff. Some may not even be associated with the project directly but only acquainted with the key demands of the project program and mission. This wider range of views and ideas often lends strength to the recommendations.

F. **Section #6 - Project delivery systems and methods**
   1. Project delivery systems and their users (1) - 272
   2. Project delivery work phases (1) - 363
   3. Professional service contract characteristics (1) - 362
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   11. 37 elements of importance to success in design & construction - (3) - 341

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PROJECT DELIVERY SYSTEMS & THEIR USERS

DEFINITION - A method of assembling, grouping, organizing and managing project resources so as to best accomplish project goals and objectives.

THOSE WHO USE PROJECT DELIVERY SYSTEMS & INFLUENCE THE SELECTION OF THE SYSTEM

Conceiver - the ultimate decision making force behind the entire project
- Developer
- Owner
- User

Translator - transfers the concept into construction documents
- Programmer
- Designer
- Manufacturer
- Vendor
- Contractor

Constructor - builds the components and the job
- Manufacturer
- Vendor
- Specialty contractor
- General contractor
- Construction manager

Operator - operates the completed project
- Facilities planning
- Operation management
- Plant engineering
- Manufacturing engineering

Regulator - insures project adherence to the public good
- Private
- Public
- Quasi public

1. Project Delivery Work Phases

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Phase	Needs
A. Conceive The need for the project is identified and a broad plan for its implementation is formulated.	1. Market analysis 2. Real estate analysis 3. Financing analysis 4. Cost analysis, and Others
B. Validation The project financial feasibility is confirmed, land is controlled, and a formal pro forma made. Some confirmation site and building design studies are made. This phase produces a go or no go decision.	1. Programming 2. Real estate control 3. Financing acquisition 4. Cost analysis 5. Approval 6. Architectural design 7. Land planning 8. Traffic analysis 9. Go or no go approval, and Others
C. Design The design & construction delivery system is selected and documents adequate to construct the project are prepared & issued for construction.	1. Design development 2. Schematics 3. Preliminaries 4. Construction document production, and Others
D. Construction The project is built & given to the owner & occupant using the delivery system selected earlier.	1. Procurement 2. Construction 3. Turnover 4. Warranty, and Others

2. Professional Service Contract Characteristics

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A. Agreement premises

1. Totally negotiated - broad multivalue competition
2. Partially qualified - moderate multivalue competition
3. Totally qualified - narrow multivalue value competition

B. Authority limits

1. As agent
2. As limited agent
3. As contractor

C. Payment methods

1. Fixed total including payroll + overhead + profit + (expenses)
   a. Expenses included
   b. Expenses separate
2. (Payroll costs) x multiplier + fixed fee + expenses
   a. Limit on
   1.) Payroll hours
   2.) Expenses
   b. No limit on
   1.) Payroll hours
   2.) Expenses
3. (Payroll costs) x multiplier for payroll costs & overhead
   a. Expenses included
   b. Expenses separate
4. % of total construction cost
   a. Expenses included
   b. Expenses separate

D. Scope of services

1. Single responsibility
   a. All in house
   b. In house & outside consultants
2. Split responsibility
   a. In house, client & other prime consultants
   b. In house & other prime consultants
   c. In house & client

ho 362 Jan, 90

3. Construction Contract Characteristics

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A. Agreement premises
1. Totally negotiated - broad multivalue competition
2. Partially qualified - moderate multivalue competition
3. Totally qualified - narrow multi valuevalue competition

B. Authority limits
1. As full agent
2. As limited agent
3. As contractor

C. Payment methods
1. Fixed cost (hard money)
2. Time & material + fixed fee
   a. Limit on
      1.) Time & material (gmp) with no shared savings
      2.) Time & material (gmp) with shared savings
   b. No limit on time & material
3. Time & material + % fee
   a. Limit on
      1.) Time & material (gmp) with no shared savings
      2.) Time & material (gmp) with shared savings
   b. No limit on time & material
4. Conditional payments or penalties
   a. Incentive/disincentive
   b. Liquidated damages

D. Scope of services
1. Single responsibility - in house & subcontractors
   a. All trades
      1.) Provide management
      2.) Provide design
      3.) Provide construction labor
      4.) Provide construction materials
   b. Limited trades
      1.) Provide management
      2.) Provide design
      3.) Provide construction labor
      4.) Provide construction materials
2. Split responsibility - in house, subcontractors & other primes
   a. All trades in contract
      1.) Provide management
      2.) Provide design
      3.) Provide construction labor
      4.) Provide construction materials
   b. Limited trades in contract
      1.) Provide management
      2.) Provide design
      3.) Provide construction labor
      4.) Provide construction materials

PICTURE OF A PROJECT

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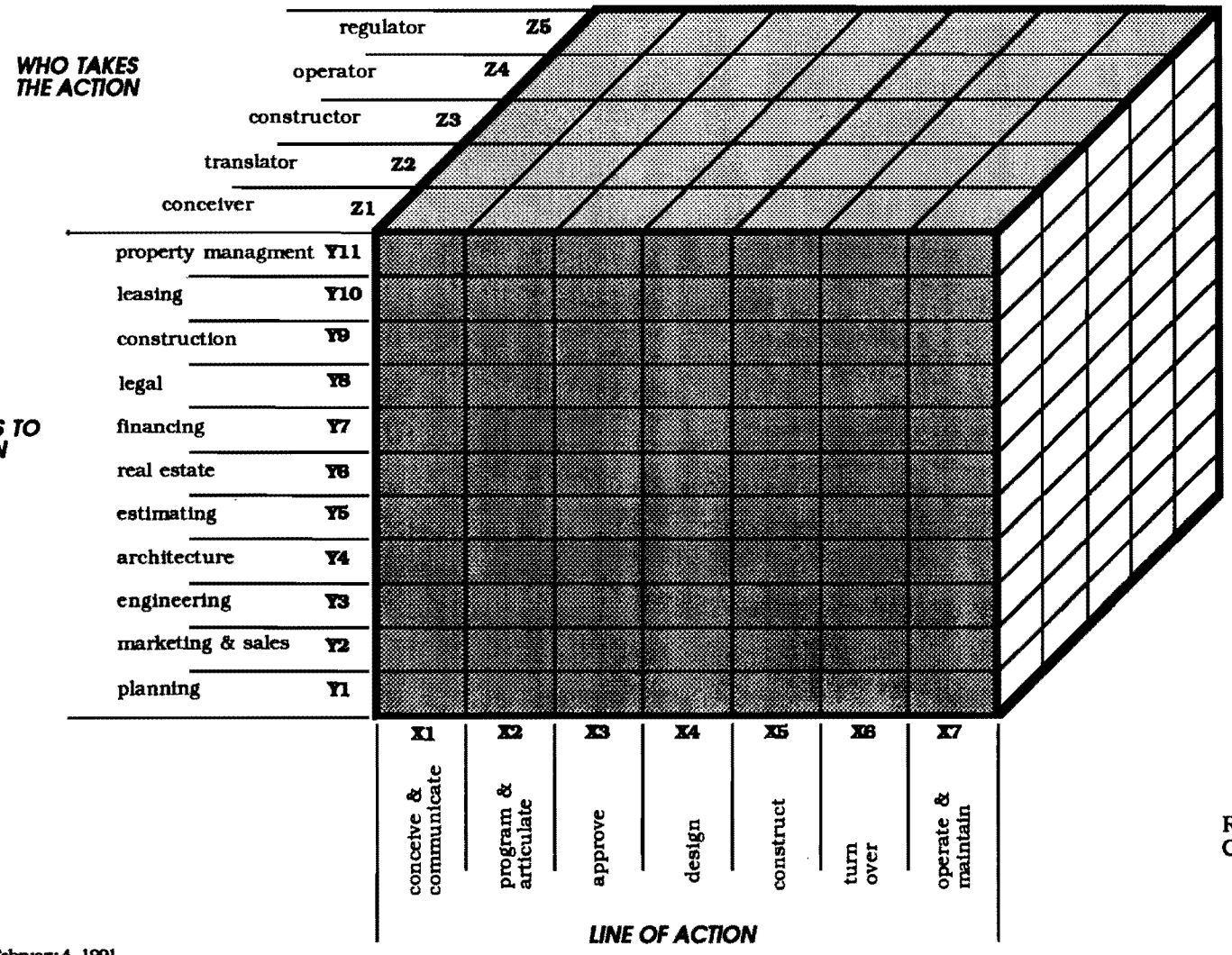
G.S.

H/O 155

MACRO MATRIX BOUNDARIES OF DESIGN & CONSTRUCTION



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Issue #1 - February 4, 1991
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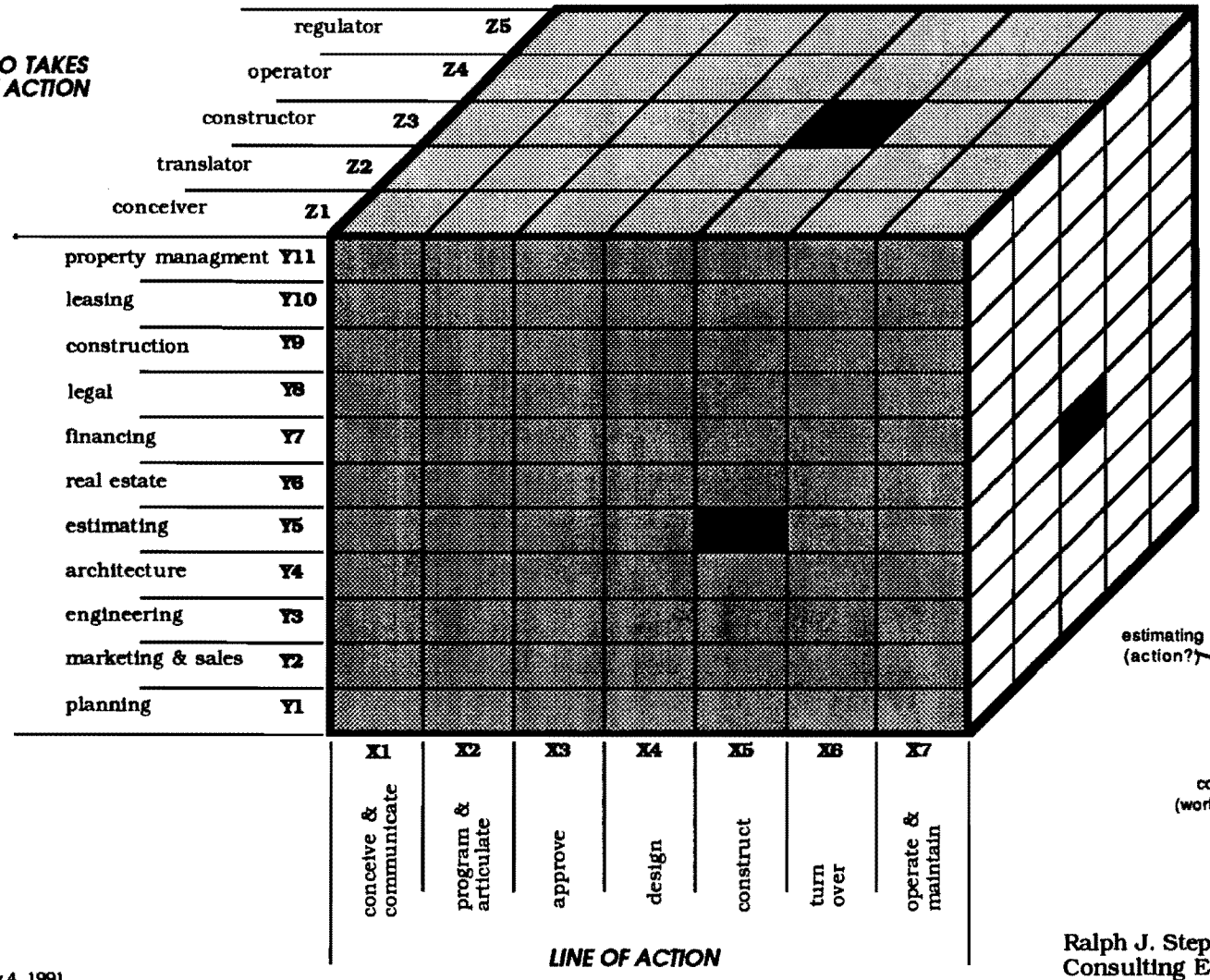
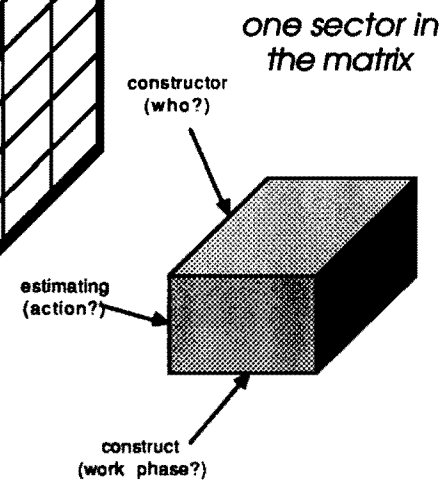
MACRO MATRIX BOUNDARIES OF DESIGN & CONSTRUCTION





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sheet
MM-2

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TRADITIONAL PROJECT DELIVERY SYSTEM CHARACTERISTICS

1. Checks and balances normally built in from start

2. Construction decisions usually based on capital costs

3. Participant selection often made by cost competitive bidding

4. Job control is highly centralized in most stages

5. Project usually being built for owner/users

6. Contract documents completed before bidding

7. Bidders selected from short list derived from long list (occasionally use long list)

8. Bonding is often required

9. Site preparation and expense work often by owner before construction starts

Note - Expense work includes those costs that do not directly increase life or value of the facility.

10. Majority of attention given to the need and want list. Wish list usually considered a luxury.

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NON TRADITIONAL PROJECT DELIVERY SYSTEM CHARACTERISTICS

1. Checks and balances evolve as project proceeds and when need arises.

2. Construction decisions based on capital costs, maintenance costs, operating costs, project quality desired, and desired investment return.

3. Lead participant selection made on professional and technical abilities, and on reputation and past performance, along with estimated project cost.

4. Job control somewhat decentralized during early program and design stages with progressive centralization as the working document and construction phases are approached.

5. Project could be for a variety of conceivers and prime movers including owners, users, investors, developers, funds, syndicates, governmental agencies (privatisation), and groups assembling capital to gain desired returns on investment.

6. Construction is often closely dovetailed with design of the project. Design usually proceeds with construction guidance, and advice from a construction discipline.

7. Capital cost is often negotiated from the pro forma base and reduced in stages to a guaranteed maximum price (gmp).

8. Need for bonding is usually minimized or eliminated by careful selection procedures to maximize probability of success.

9. Site preparation and expense work often done by various members of the selected project or program

team.

Note - Expense work includes those costs that do not directly increase life or value of the facility.

10. Design and construction is heavily influenced by consideration of the needs, wants and wishes of the participants.

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Notes on Forerunner & Conservatively Managed Companies

• What are alternative names to forerunner and conservatively managed companies? Proactive & reactive, positive & negative, front & back, do & wait, high risk & low risk, maximum & minimum, go & no go, try & no try, run & walk.

• The forerunner managed company tries to optimize the probability of being right.

• The conservatively managed company tries to minimize the probability of being wrong.

• It is critical to understand that both types of companies can be, and often are successful or unsuccessful. The style of forerunner or conservative is merely an indication of the way the organization achieves success or goes through the twinges of failure.

• Some characteristics of the forerunner vs the conservative company are:

Forerunner
- Aggressive in their field of work
- Young
- High risk takers
- High leveraging of all resources
- Good morale
- General absence of recognizable management structure
- Healthy cooperation among lower management
- Strong competitive drive at all levels of management
- Strong sensing (not necessarily knowledge) of total purpose about
  - Financial return on investment
  - Social obligation
  - Professional integrity
  - Technical excellence
  - Ethical behavior
- Provision of sense of worth to projects
- Provision of sense of exciting flux to staff
- Maintenance of an exciting environment
- Constant forging ahead in their business arena

- Desire & ability to adapt to positive change
- Desire & ability to institute change
- Desire & ability to accommodate change
- Medium to low levels of incompetence tolerance
- Strong leaning toward high individual performance levels
- Low level of interest in business planning
- Often learn by mistakes

Conservative

- Usually well managed from top down
- Moderately well managed from bottom up
- Tends toward paternalistic management
- Major decision making centered in top management
- Good financial strength, if mature
- Dependable
- Predictable
- Closely controlled employee training
- Modest salary structure
- Good standard employee financial benefits
- Usually stress hygiene as opposed to motivational drive
- High levels of employee loyalty in those who like the system
- Provision of employee security
- Generally pretest decisions at executive management levels

37 Elements of importance to success in design and construction - ho 341

By Ralph J. Stephenson PE PC

- **Summary**

In the design and construction industry there exist many factors which influence the degree of success achieved on a project. They deal with project goals, profit types, project sequencing, the nature of the participants and the kinds of problems most likely to be encountered.

If the parties to a planning, design and construction program recognize the nature and importance of these factors, a major step will have been made toward their proper and effective combination and management.

Below are listed 37 basic influences on project delivery systems. Project management concerns how to combine these into a successful job of which all participants are proud.

- **Six major goals to meet for design & construction project success**

The client, owner & user must be assured upon completion of his job that:

1. The facility program and the facility design have met their needs, desires and wishes.

2. The planning, design and construction work on the project has been accomplished within the time and cost structure required and desired.

3. All relationships on the project have been maintained at a high technical and professional level, and have proven rewarding for those involved and affected.

4. The people involved at all levels of work on the job have realized a financial, professional and technical profit for themselves and their associates by being on the project.

5. The project has been closed out with little or no residual potential for major problems of maintenance or operation.

6. The entire process has been free of unresolved contested claims for additional money, additional time, damage payments, and of the potential for future financial demands after the job has been closed out.

- **Seven types of profit**
  1. **Financial** - an improvement in a money position
  2. **Social** - a gratifying experience contributing to society's well being
  3. **Self actualization** - a gain in personal non financial satisfaction by contributive work
  4. **Value system** - reward gained by application of values in which one believes
  5. **Technical** - acquisition of technical skill or technical data of value
  6. **Enjoyment** - personal enjoyment of a situation gained from involvement in it
  7. **Educational** - learning made possible only by efforts exerted in any given situation
- **Nine major elements in the design & construction sequence & how they are done**
  1. **Conceive the basic project**

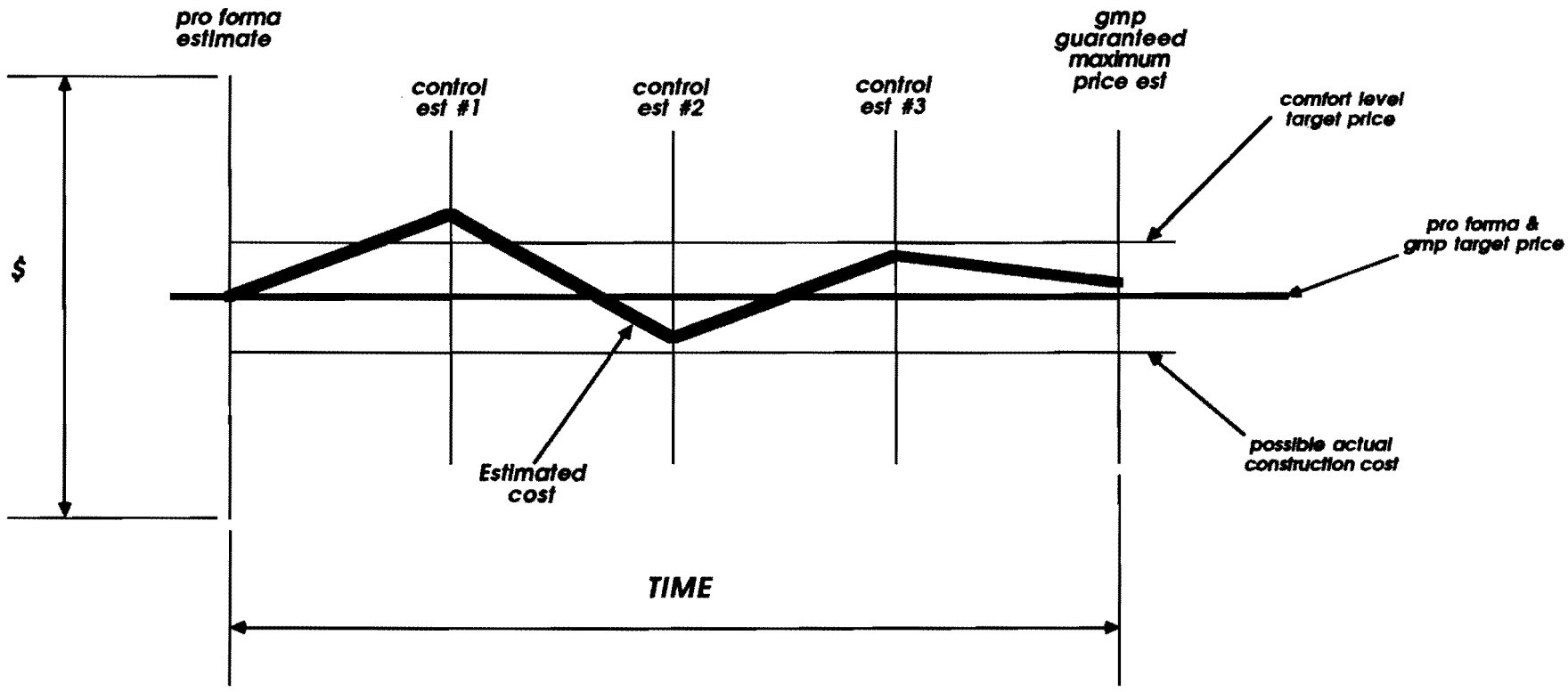
     Visualize and state the fundamental nature of the proposed project, what purpose it is to serve, and its base characteristics.

2. **Prepare the program**
   Set down the physical characteristics of the total project in written and graphic form so as to be able to translate these characteristics into approval documents from which the full design can proceed.
3. **Articulate the program for approval**
   Merge the concept, and the written and graphic program into written and graphic construction language which can be reviewed and released by the ultimate decision makers for full design.
4. **Approve the basic project**
   Approve the concept, the program, and the merging of the two. This approval by those in authority initiates the full design and construction process
5. **Design the project**
   Prepare full contract documents for construction use.
6. **Construct the project**
   Build the project and make it ready for turnover to the owner or user.
7. **Turn over the project**
   Release the constructed project to the owner or user with full documentation needed to operated and maintain the completed environment.
8. **Operate the project**
   Take over, run in, and make the new environment fully operational.
9. **Maintain the project**
   Keep the new environment in proper operating condition by a well conceived and effectively managed maintenance effort.

- **Five major participants in the design & construction process**
  1. **Conceiver** - The ultimate decision making force behind the entire program
  2. **Translators** - The parties that translate the project concept into construction documents
  3. **Constructors** - Those who build the project
  4. **Operators** - Those who operate the completed project
  5. **Regulators** - Those who help assure project adherence to the cause of public good
- **Ten major types of design & construction problems**
  1. **Constructive acceleration**
     An action by a party to the contract that forces more work to be done with no time extension, or the same amount of work and a shorter period of time in which to do it.
  2. **Constructive change**
     A construction action or inaction by a party to the contract that has the same effect as a written order.
  3. **Defective or deficient contract documents**
     Contract documents which do not adequately portray the true contract scope.
  4. **Delay**
     A situation, beyond the control and not the fault of a contract party, that causes a delay to the project
  5. **Differing site condition**
     A situation in which the actual conditions at the site of a project differs from those represented on the contract documents, or from reasonable expectations of a site in that area.
  6. **Directed change**
     A legitimate change within the contract scope for which the owner is obligated to pay.
  7. **Impossibility of performance**
     A situation in which it is impossible to carry out the work within the contract requirements.

8. **Maladministration**
   The interference of one contract party with another contract party's rights, that prevents the latter party from enjoying the benefits of least cost performance within the contract provisions.
9. **Superior knowledge**
   The withholding of knowledge by one party to a contract from another party to the contract during the precontract period, and that, subsequent to contract execution, adversely affects the second party's construction operations in matters of importance.
10. **Termination**
    Dismissal of a party to the project contract for convenience or default.

G. **Section #7 - Selecting and designing an appropriate delivery system for your project.**
   1. The iterative costing sequence (1) - it1 aspe
   2. Managerial leverage (1) - 210
   3. Management by exception graphics (1) - 150
   4. Where do we go from here? U of Q case study - (3) - 232
   5. U of Q organization blanks - (2) - 199



THE ITERATIVE COSTING SEQUENCE

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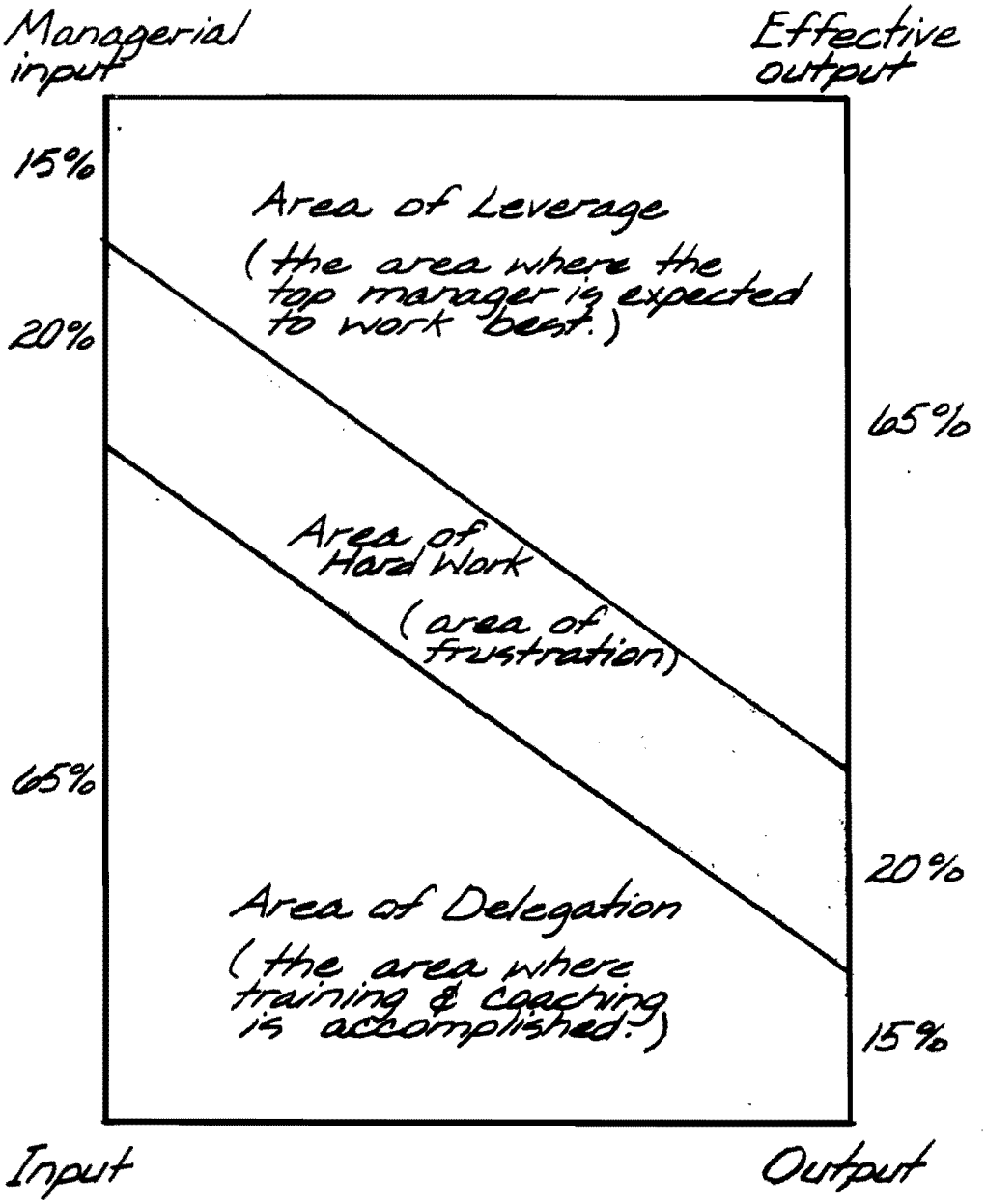

MANAGERIAL LEVERAGE

HO 210

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MANAGEMENT BY EXCEPTION (MX) AND PERFORMANCE LEVEL ACTIONS

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WHERE DO WE GO FROM HERE?

Qitain University, a small private engineering, science, liberal arts school in the northwest United States city of Qitain, is about to embark on a major (for them) expansion plan. It involves the planning, design, and construction of a new university activities building, a modest athletic facility having a gym and indoor pool, along with support facilities, and a small combined library and book store.

The expansion program has been written, the desired planners, architect, and engineers have been selected, and the Board of Regents of the school has given the project a go ahead.

An organizational meeting is in progress with the following people in attendance:

- Frank Carlton - Vice President for University Planning and Operations
- James Tea - Program consultant for the university
- Fred Link - President of the planning/architectural firm of Link and Associates, the possible architects of record for the entire project
- Charles Redrock - Associate, chief architect, and project manager on the project for Link and Associates
- Robert Hagel - President of Hagel Mechanical Engineering Company, the possible mechanical engineers for the project
- Stan Weissman - President of Weissman Electric, the possible electrical engineers for the project
- Richard Goldmark - A wealthy alumnus and key mover in assembling the total funding for the program

The site of the new building group extends across two city public rights of way (ROW), Francis Avenue and Fourth Avenue. Preliminary negotiations have been conducted with the City of Qitain by Mr. Carlton, of the University, and with the city manager, George Dell. It appears that vacation of the ROWs can be accomplished on a reasonable basis. Several live utilities are known to be in the two streets but exact sizes and locations have not yet been determined.

The discussion has generated several questions now being addressed. Some of these include:

1. The only available survey map of the area is an in-house student survey prepared ten years ago as a semester project. A new survey has not been budgeted and might be challenged as an excessive cost by the Board of Regents.

Should a new survey be made?

Why?

What should a new survey contain?

2. Should the University retain a construction manager?

If not, why?

If yes, why?

3. How should the project be organized and what should be the role of the various parties involved?

4. Who should be the ULTIMATE DECISION MAKER (udm) on the project?

5. Should the University appoint a staff representative to the project?

If so, what should be his title, authority, responsibilities and his activities?

6. The contract for architectural, mechanical, and electrical design services are not yet awarded, but all agree that the three firms at the meeting are the ones to do the job. With whom should the architectural, mechanical and electrical engineering contracts be executed?

7. How do answers to the above question affect the claim potential for the project?

8. If you were an alumnus, and a local general contractor serving on the Board of Regents of the University, and acting as an ex officio advisor to the program group, how would you have answered questions 1 through 7 so as to maximize the potential for

claim avoidance (cav)?

9. What role would you recommend Mr. Goldmark be requested to play in the project?

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QITAIN UNIVERSITY - PROJECT

ORGANIZATION STRUCTURE

Robert Hagel
Pres Hagel Mech Engrs

Charles Redrock
Link & Associates

Fred Link
Pres Link & Assoc

Stan Weissman
Pres Weissman Electric-Elect Engrs

Frank Carlton
VP - QU Planning & Operations

James Lea
QU Program Consultant

George Deff
City Manager of Qitain

Richard Goldmark
Alumnus of QU

H. Section #8 - Alternative dispute resolution systems and their application in construction.

I. **Section #9 - Reference material**
   1. Definitions
   2. Record types & their uses (2) - 375
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+ ***WEX partnering definitions - 1992***
  - **Alternative dispute resolution**
    In its generic form, a method of resolving disputed construction claims outside the courtroom.
  - **Claim**
    A demand for something as due; an assertion of a right or an alleged right. In construction generally a demand for something as due, or in which the demand is disputed.
  - **Claim Avoidance**
    A technique and procedure for generation of situations in which the demand for what is due as a result of a contract agreement is honored without formal dispute, or in which the dispute is settled by an administrative settlement.
  - **Claim Potential**
    The measure of potential that any project has to encounter disputes during its implementation.
  - **Closed System**
    A system in which there is no import or export of information or physical materials, and in which, therefore, there is no change of components.
  - **Construction Management**
    A system of attempting to better manage the construction process by providing expert construction knowledge and resources throughout all phases of the project. The goal of the process is to make available to the participants, information best provided by an expert skilled in construction practices, so that when the project moves into the field the managers can provide the owner with the highest potential for project success.
  - **Construction management delivery system**
    A system of attempting to better manage the construction process by providing expert construction knowledge and resources throughout all phases of the project. The goal of the process is to make available to the participants, information best provided by an expert skilled in construction practices, so that when the project moves into the field the managers can provide the owner with the highest potential for project success.
  - **Critical Transition Point**
    The point in a project delivery system at which the responsibility and authority for the work passes from the supportive group to the ex'e'cutive group.
  - **Design/build delivery system**
    A method of providing total design and construction services under one cost and liability umbrella. Usually a design/build contract is based on a scope of work performance specification prepared by the owner or user. Ultimate aim is to provide single source management and liability for the entire program.
  - **Destructive conflict**
    Animosity or disagreement which results in lowering the potential for an individual or organization to succeed.
  - **Dysfunction - Organizational**
    An organizational problem that hinders or prevents achieving objectives. May be temporary or permanent.
  - **Goals**
    The unquantified desires of an organization or individual expressed without time or other resources assigned. (See objectives for related definitions.)
  - **Guaranteed maximum price delivery system**
    The price for a specified scope of work to be provided by a contractor that contractually binds his performance to a specified guaranteed maximum price. Often the guaranteed maximum price is tied to a time and material performance with the price not to exceed the agreed upon maximum.

- **Hard money delivery system**
  A total price agreed to for the entire work, and to be paid in a mutually satisfactory schedule of payments.
- **Issue resolution**
  A method of reaching agreement and closing out disputes and problems at the lowest possible management level, in the shortest possible time, and with the lowest potential for residual hard feelings.
- **Line of Action**
  A sequential statement of activities necessary to conceive, design, build and operate an environment. Related to the generic (G) construction process.
- **Manage**
  To define, assemble and direct the application of resources.
- **Management**
  The act and manner of managing.
- **Mission**
  The statement of the most important result to be achieved by this project being successfully completed.
- **Must list**
  Those items that must be included in the scope of work to make the project a go. If any of the items in the must list are not able to be included the project is a no-go.
- **Objectives**
  Quantified targets derived from established goals. The most commonly used resources in converting goals to objectives are money, time, human abilities, human actions, equipment, and space.
- **Open system**
  A system which exchanges energy, information and physical components with its environments.
- **Partnering - Associated General Contractors**
  A way of achieving an optimum relationship between a customer and a supplier. A method of doing business in which a person's word is their bond, and where people accept responsibility for their actions.

  Partnering is not a business contract, but a recognition that every business contract includes an implied covenant of good faith.
- **Partnering - Construction Industry Institute**
  A long term commitment between two or more organizations for the purpose of achieving specific business objectives by maximizing the effectiveness of each participant's resources.

  This requires changing traditional relationships to a shared culture without regard to organizational boundaries. The relationship is based upon trust, dedication to common goals, and an understanding of each other's individual expectations and values. Expected benefits include improved efficiency and cost effectiveness, increased opportunity for innovation, and the continuous improvement of quality products and services.
- **Partnering - suggested base statement**
  A method of conducting business in the planning, design, and construction profession without unnecessary, excessive and/or debilitating external party involvement.
- **Partnering charter**
  The basic manual for operating a partnering system. Contains at a minimum, the mission of the project team, and their objectives for the project. Usually is signed by those writing the document.

The charter is an agreement in principle and must not supersede or supplant the design and construction contracts in place or to be written.

- **Positive conflict**
  Hostility that is managed so that its resolution raises the potential for individuals or organizations to succeed at being excellent.
- **Problem**
  A deviation from an accepted and/or approved standard of performance.
- **Program - as defining a step in the design process**
  A narrative oriented statement of the needs and character of the proposed user operation, the requirements of the user and owner, the nature of the environment to be planned, designed and built, and the corresponding characteristics of the space that will satisfy these needs and requirements.

  Sometimes called the brief.
- **Program - as defining a total environmental effort**
  A major environmental construction effort made up of several projects
- **Project Delivery System**
  A method of assembling, grouping, organizing & managing project resources so as to best achieve project goals & objectives.
- **Relations - Formal Functional**
  Organizational connections that concern distribution and use of data, information and decisions that flow along formally defined transmission lines. Formal functional communications are usually written and are normally both from and to individuals and groups.

  Formal relations are precisely defined and most day to day business is accomplished within the formal relation framework. The line expressing a formal functional relation usually has an arrowhead at each end to show a mutual exchange of responsibility and authority. If there is a higher authority to be implied a single arrowhead can be used pointing to the superior party.
- **Relations - Informal**
  The natural channels along which organizationally related material is most easily and comfortably transmitted. The informal relation exists by mutual consent of the parties to the relation, and is stimulated to maximum effectiveness by a metal profit gained from the relation.

  Little, if any, authority normally is expressed in informal relations. Communications are usually oral and one to one. Often informal relations define the hidden organization structure. A line defining an informal relation is usually shown dotted with an arrowhead at each end.
- **Relations - Reporting**
  The official channels through which each individual conveys, or is given raises, appraisals and evaluations; is fired, assigned or is provided professional, vocational and personal identity in the organization. The true organizational superior of an employee is usually that individual with whom he maintains a reporting relation. The line expressing reporting relations has an arrowhead at one end pointing to the superior.
- **Relations - Staff**
  The business patterns through which a person or group provides consulting services necessary to achieve goals and objectives. Staff personnel usually have little or no authority over those outside the staff group. The line expressing staff relations has an arrowhead at each end.

- **Relations - Temporary**
  Those relations created when extraordinary or unusual management demands must be met. The temporary relation is usually unstable and should be kept active for only short periods of time. The line expressing a temporary relation can have an arrowhead at one or both ends depending on the nature of the relations.

  Extensive use of temporary relations creates business dysfunctions, breaks down morale and causes internal tensions.
- **Resolve**
  To find and implement a solution that dispels a problem.
- **Standard of Performance**
  A well defined, explicitly stated, approved and accepted statement of the measurements to be used as a gage of performance, and goal and objective achievement.
- **Sum zero game**
  A situation in which there is a winner and a loser. The loser often will lose what the winner wins.
- **Time and material delivery system**
  An agreement in which payment for services and material is made only for those services and materials actually furnished. There may, or may not, be imposed a not-to-exceed amount on the total cost.
- **Training**
  The teaching and learning process by which specific, explicit methods and systems of doing something, usually by rote, are conveyed to the learner.
- **Ultimate Decision Maker (UDM)**
  The individual or group at the lowest management level that has the authority to make a final binding decision in any job related matter.
- **Value added**
  The improvement in the worth of anything that results from the efforts, contribution and involvement of specific people, processes, materials and ideas.
- **Want list**
  Those items that are wanted and can be included in the scope of work, over and above the must list items, since they provide a definable and acceptable rate of return on their cost.
- **Win - win game**
  A situation in which there are no losers. Usually some parties win more than other parties win.
- **Wish list**
  Those items that the owner and the user wish they could include but might not be able to due to budgetary or other reasons. Wish list items are best added, not deleted, as the project moves into construction.

	document	record action	record suptv action	record opin	record chnge	record dec & agrmts	record appvls	record progrs	record resrce flow	record data	record doc procsg	record results
1	Appraisals		x	x					x			x
2	Bulletins				x		x		x		x	
3	Certificates of completion					x	x	x				x
4	Certificates of occupancy					x	x	x				x
5	Change orders				x	x	x		x			x
6	Check lists			x					x	x	x	
7	Claim notification letters	x	x	x	x	x				x		x
8	Clarifications		x	x	x					x		x
9	Color coded network models	x		x			x	x	x	x		x
10	Construction record drawings	x				x	x	x		x	x	x
11	Construction site plan	x	x									
12	Consultant lists		x							x		
13	Contract document sign offs	x				x	x				x	x
14	Contract drawings				x	x	x		x			x
15	Contract specifications				x	x	x		x			x
16	Contractor lists		x							x		
17	Contracts	x	x		x	x	x		x			x
18	Cost estimates		x	x	x		x	x	x	x		x
19	Cost reports		x		x		x	x	x	x	x	x
20	Diaries	x	x	x	x	x	x	x			x	x
21	Document control files									x		x
22	Equipment data tabulations							x		x		
23	Expense reports		x						x	x		
24	Field orders	x			x	x	x					x
25	Field reports	x			x	x	x	x		x		x
26	Guarantees		x									
27	Impact reports	x	x	x	x	x		x	x			x
28	Interoffice memos (IOC)	x		x	x		x					
29	Isoquant line comparisons						x	x	x	x		
30	Letters	x		x							x	
31	Logs	x	x	x	x	x	x	x	x		x	x
32	Maintenance manuals										x	
33	Meeting minutes	x	x	x	x	x	x	x	x		x	x
34	Money flow curves		x					x	x	x		x
35	Monitoring reports	x		x	x	x	x	x	x			x
36	Operation manuals									x		
37	Performance evaluations	x		x		x	x					x
38	Permits		x			x	x	x			x	x
39	Phone records and logs	x	x	x	x		x	x				x
40	Photos	x			x	x		x	x			x

	document	record action	record suptv action	record opin	record chnge	record dec & agrmte	record appvls	record progrs	record reerce flow	record data	record doc procsg	record results
41	Post job critiques	x		x	x		x	x	x		x	x
42	Pro forma financial analyses		x			x			x	x		
43	Project directories									x		
44	Project histories	x			x		x	x	x	x	x	x
45	Project network plans			x	x	x	x	x	x			
46	Project schedules			x	x	x	x	x	x	x		
47	Proposal spread sheets		x							x		x
48	Punch lists	x		x	x	x	x	x		x		x
49	Purchase orders		x			x	x		x			
50	Quantity takeoffs		x						x	x		
51	Requests for change orders	x	x		x	x	x		x			
52	Requests for information		x		x		x					
53	Requests for payment	x	x				x	x	x			x
54	Requests for proposals		x									
55	Resource histograms								x	x		
56	Risk management data		x									
57	Sample logs	x	x		x				x	x	x	x
58	Schedules of values				x				x	x	x	
59	Shop drawing logs				x			x	x	x	x	x
60	Site evlaluation data sheet	x	x	x								x
61	Specifications					x						
62	Testing reports		x	x	x					x		x
63	Time cards	x						x	x	x		x
64	To do lists	x						x				x
65	Transmittals	x			x	x	x	x	x		x	x
66	Waivers	x				x						x
67	Warranties					x						
68	Work orders	x			x	x	x					x

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Documentation Degree

The degree of needed documentation on any project is determined by the current or potential level of difficulty perceived.

One method of setting documentation degree (dd) is by use of a scale of one to ten, one being a minimum amount consistent with good practice and ten indicating a maximum amount needed to protect those involved from current or potential problems.

Expressed another way, level 1 documentation signifies an absolute minimum is being used. Level 10 documentation indicates the project is being fully documented.

The approximate ranges shown below are reference guidelines for selecting and preparing documentation systems:

- **Levels 1 & 2**	Informal job structure - no planned documentation
- **Levels 3 & 4**	Normal job - documentation as specified
- **Levels 5 & 6**	Claim prone jobs on which trouble is conjectural
- **Level 7**	Claim prone jobs on which trouble is very likely
- **Levels 8 to 10**	Claim prone jobs on which trouble is a reality

Usually the degree of documentation index indicates an opinion as to how much trouble can be expected on the project.

A brief description of job conditions which may be encountered corresponding to a need for the degrees of documentation indicated is given below.

Documentation degree #1 to 2 (dd 1-2) - no planned documentation

At these levels the project usually is informally organized, with full trust by all parties of all other parties. Most instructions and requests are oral. Revisions and cost commitments are made on a full confidence basis relative to scope, expected payment and resolution. The project team understands and communicates well internally and externally, and all on the team exhibit a high degree of honesty, competence and

integrity. Usually meetings are held on an as needed basis only.

It should be cautioned that a low dd does not mean the project will not encounter difficulties. The number merely indicates a recommended level of documentation being maintained as of a given point in time.

Documentation degree #3 to 4 (dd 3-4) - normal job with formal documentation as needed; minimal documentation level well defined by contract

In a dd 3-4 project the usual procedures for processing work during programming, planning, design and construction are well defined and followed carefully by all parties to the contracts. Usually the project contract documents have been carefully prepared and checked thoroughly. This helps assure that the scope of work is clear and the project is constructible.

Documentation at dd 3-4 during the process of design and construction is maintained at a minimum level consistent with program and contract requirements. An audit trail of approvals, issues, money flow, revisions and quality of construction in place should be able to be followed easily from the system.

An important characteristic of the good level 3 & 4 documentation system is that it must be of a nature that can be increased to a higher level at any time without extensive backtracking and historical research. The fundamental needs of higher level dd's should be able to be easily achieved from the basic work accomplished in a dd 3-4 system. The reason is that the enormous expense and reduced accuracy of later historical research on a troubled construction program should be avoided by setting a good information filing and retrieval system at lower documentation degree level.

Documentation degree #5 & 6 (dd 5-6) - claim prone jobs on which trouble potential is conjectural

Documentation degrees of 5 or 6 should be set early on projects that show potential for claim, but on which no dominant reasons for such problems have yet appeared. For instance a project may be proceeding well despite having a large number of allowance items, several separate prime contractors, and a general trades contractor noted for his sloppy paper work. These are all indicators of potential difficulties but do not necessarily mean trouble.

In a dd 5-6 the level is set high to permit those involved to more quickly react to sudden project difficulties than on a normal project. **To reemphasize, the dd level is set by the nature of the project and is only raised or lowered when sufficient justification for a change is noticed.**

Documentation degree #7 (dd 7) - claim prone jobs on which trouble potential is very likely

On a dd 7 project, comments for dd 5-6 apply, with the qualification that a yet higher dd level requirement than 7 is highly probable. In other words if the job is claim prone and some of the claim prone characteristics are causing actual problems, the documentation level of 7 indicates a movement into higher levels is near at hand.

An example of this might be a claim prone project dd level of 6 as established by a high spread in proposal prices, poor specialty contractor reputations and an architect/engineer who is slow in submittal turnaround , which upon moving into the field, promptly runs into late submittals by the questionable subs and a reactionary slowness by the a/e in processing submittals. This combination might be cause to move the dd to 7, with a good chance it could go even higher within the next month or so. The dd 7 could be looked at as a holding plateau which might be lowered by prompt corrective action or might increase as negative positions harden and remain unresolved.

Documentation degree #8 to 10 (dd 8-10) - claim prone jobs on which trouble is a reality

Projects requiring a dd level of 8 to 10 can be considered to be in trouble and subject to present or future third party action resolution. Usually the project that has moved to a dd 8-10 level has done so over a period of time during which the problem levels have progressively intensified. If such a project is encountered, the files for third party resolution action should be built as the work proceeds.

If dd 8-10 needs are met on a day to day basis as the documentation is sent or received, the cost will be much less than if it is done later. In addition the analysis will be fresher and more accurate. In addition, the knowledge that such a high level file is being built often acts to dampen the conflict and difficulty and may even lead to quick

resolution of the difficulties.

* * *

As a general help in documentation a brief resume of procedures for preparing project documentation is given below. These steps may vary from situation to situation but can be summarized within seven basic documentation actions taken to respond to various dd levels.

Step 1 - Prepare and arrange the document file material - Document copies are arranged, usually chronologically, for future entrance into a single number filing system.

Step 2 - Month number the the documents - Each document is uniquely identified with a number that relates to the month in which the document was prepared.

Step 3 - Day number the documents - When the document has been assigned its month number it is further numbered sequentially by the date within the month. This system is called a single number filing system, since all documents are now uniquely numbered. For instance there would only be one document 04245, a document prepared in the 4th month from the base date, and being the 245th document chronologically entered in that 4th month.

Step 4 - Build the document control file format - With the document uniquely identified, the document copy of the original is coded and a data base retrieval system established. Code fields to be used might include:

Document control number
Document type
Date document prepared
Date document received
Organization from
Organization to
Individual from
Individual to
Subject codes
Others as needed

Step 5 - Enter the document data in the document control file - If justified and required, document data is now entered into the data base file for storage and retrieval in whatever manner required.

Step 6 - Prepare the project history - A project history is prepared in the form of a chronological narrative summarizing the entire project from the document control file. Each major document is reviewed, if appropriate, and entered as a brief unit description of an event, or of events, occurring within a given time period.

Step 7 - Prepare project problem tracking histories - Specific problems causing contested claims, say unexpected artesian water, are identified and the document control files and project history files are searched. The material found is used to build special chronological files for each problem area. These are then analyzed to determine the course of settlement action to be taken.

Rough guidelines for the relation of **dd level** to **documentation steps** as outlined above might be as follows:

• **dd levels 1 & 2 - totally informal - no planned documentation** - No special provisions made for preparing and arranging documents

• **dd levels 3 & 4 - normal job** - Take steps 1 and possibly 2

• **dd levels 5 & 6 - claim prone jobs on which trouble potential is conjectured** - Take steps 1, 2, 3 and possibly 4

• **dd level 7 - Claim prone jobs on which trouble potential is very likely** - Take steps 1, 2, 3, 4 and 5

• **dd levels 8 to 10 - Claim prone jobs on which trouble is a reality** - Take steps 1 through 6 and possibly 7 as required

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Procedures for preparing project documentation

Project documentation is an essential and routine part of every project. However from time to time a project exhibits signs of difficulty which may demand a heavier than normal documentation effort. One way of classifying the level needed is to give it a rating degree from 1 (the lowest level of documentation) to 10 (the highest level of documentation).

A low level of documentation normally utilizes inexpensive and uncomplicated project communication and record keeping. Level 1 encompasses virtually no documentation at all, a situation not usually encountered. Conventional low level routine documentation on a well operating project is normally rated from 2 to 4.

This memo addresses the higher levels of documentation.

Selecting, designing and maintaining a correct documentation level is called document control. Good document control starts with an appropriate method of filing the large number of documents that flow to, from and within the project. Documents include letters, transmittals, bulletins, requests for information, change orders, field orders, shop drawings, change instructions and on & on infinitum. To file these by subject, by document type, by project, by company, or by any other classification system most helpful to those using them. is necessary & desirable in most cases. The project management and the project team must determine how the main filing system classification is to function.

For a document control system the basic classification system is much simpler. A document irrespective of type or classification is filed by a single number assigned to it as it is received. This number is referenced to the date of its production and filed wherever possible in order according to that date. Thus a document dated July 30, 1987 is set earlier in the stack than one dated July 31, 1987 and receives a lower number in the sequence.

This is the fundamental classification system used in the project documentation system described in this discussion. The system is sometimes called a single number filing system.

The basic physical arrangement within the file system recommended here is in ascending order of date of document. Once consecutively numbered however, there

are many other criteria by which the documents might be arranged, the content identified and the document retrieved.

A brief step by step description of the total process is given below:

Step #1- Preparing and arranging the document control material

To start the process a single document control copy is made of all written material received, sent or circulated internally that pertain to the project. These are physically arranged chronologically by their official date (the date of the document).

The documents are next divided into time span packets, punched with an oversized punch and put in loose leaf binders. A packet period of one month has been found to work well in most cases.

Step #2 - Month numbering the documents

Each document is given a number that will identify it uniquely (the only document in the file that has that number). A workable system is to number by the month in which the document was prepared. Using this method a base month is selected and designated as month #1. Month #1 is preferably January of a year in advance of starting major work on the project. Succeeding months are numbered in ascending order. For example if the base date selected is January 1, 1987, then January, 1987 is considered period #1. February, 1987 is period #2, March, 1987 is period #3 and so on.

Thus a document written in June, 1987 and being filed in a document control system using a base date of 01 as January, 1987 will be assigned a document number starting with 06. When there are a large number of documents to be filed it is advisable to use a self advancing numbering stamp.

Step #3 - Day numbering the documents

Once the first two digits of the document identification number is assigned, the last three are then assigned. The remaining three digits reflect the approximate chronological position of the document within the month. If a letter is received dated March 20, 1987, with a control system base month #01 date of January, 1987, and it is the 102nd document entered chronologically in March, 1987, it will be assigned a document number 03102.

Now, every document in the entire file has a unique number and will be identified by that number as to the month and the approximate position in the month it was dated. The name of the system, single number filing, is used since every document filed is identified with a single number irrespective of what type of document it is.

Step #4 - Building the document control file format

With the document identification method set & the documents arranged in ascending document number order, a document retrieval system file is designed and built.

A retrieval data base file should contain the following minimum fields:

1. Document control number (dcn)
2. Document type (dty) - letter (ltr), transmittal (trm), etc.
3. Date document prepared (the basic criteria of the order of the documents in the file) (ddp)
4. Date document received (ddr) - all incoming documents should be date stamped
5. Organization from (ofr)
6. Organization to (oto)
7. Individual from (ifr)
8. Individual to (ito)
9. Subject codes (sco) - Subject codes identify the content nature of the document. For instance a letter concerning mud sills (msi), forming (fmg), supported decks (sde) and building 148 (148) along with a request for information (rfi) would be assigned all the subject codes indicated.

Step #5 - Entering document data in the document control file

The document records (unit entries in a data base program) are next put into the data base file. Methods of entering data vary but the guidelines below should assist in setting the procedure.

a. Item 1 through 8 in step #4 above are entered directly as a routine data entry task, directly from the master document file material.
b. The subject codes, item #9 in step #4 above, are assigned to the chronological file document by someone familiar with the subject codes and capable of abstracting the subjects to be entered by reading the document. As

the documents are read, subject codes should be written directly on the document control copy.

c. Also as the files are read it is helpful to underline and annotate document control file copies to make subject identification as easy and rapid as possible.

d. Once a packet of material has been subject coded (probably one month's file) the subject codes should be entered in the master document control file. Usually the routine entries, items #1 through #8 are entered earlier and in larger batches. Subject codes will generally be assigned at a later date.

Step #6 - Preparing the project history

Let us assume the document file has been prepared for several months of document control records and you wish, or are required, to move to the next level of documentation by conditions encountered on the project.

This level of documentation usually involves preparing a project history from the master document file. The project history is an abstracted chronological narrative of important events on the job.

To prepare a project history, the master document file is read and annotated so each document (depending on relative importance) can be abstracted and put in some type of narrative. Often the annotation is completed in step #5 as subject codes are assigned.

The program selected to process the narrative should be a word processor of some type. For example Think Tank or More can be used by entering the document number number as a heading followed by the document date. Next, the main heading is exploded and a brief summary (under 30 words) of the document is entered in the exploded area. Thus when prepared properly, the information can be sorted by document number or date (whichever is typed first). In addition the abstracts can be searched for key words to build subject files for specialized uses.

The important pivot is the unique document control number which allows the document to be filed in ascending order of document number and to always be found in the file as a numbered file document, no matter how many subject codes it is assigned. For instance document number 09124 can always be found after 09123 and before 09125 in the master chronological file, no matter how many subjects are assigned or what the subject being sought.

An extended use of the project history is to build special reference files for specific uses. For instance one such use is to search the data base subject codes for a set of documents, and then to call each of the project history abstracts of these documents from the file, and to print and assemble them into a subject file to be used for a deposition.

It is important to understand that not all related documents are abstracted in preparing a project history or the special use file. For instance a transmittal may have no impact on the project history and may not have to be made a part of the history. However the transmittal is still available for reference by a search of the data base file. It is simply not stored in the abstract file.

Step #7 - Preparing specific project problem tracking material

When the project history is partially or wholly available, the document control file can be used at a higher level by selecting major classifications of project problem areas. This selection is made on the basis of the strong positions the preparer of the claim feels he has.

Experience indicates it may be best to concentrate early on the strong positions and win them by good logic and sound documentation. However, additional strong points sometimes emerge by a combination of proper actions taken in a variety of smaller and apparently unimportant points and issues. The analyst must be able to discern and select what information is to be used in any given situation.

Problem areas on a job may cover a variety of situations. It is often of help to use a basic list of normal complaints (causes of contested claims) and to derive from these the specific complaints that are related. Let us take an example.

Presume a project has encountered apparent excessive interference of non liable parties acting as agents of the owner. In this hypothetical example, the agent, say a non liable construction manager, decides that the prime contractors under his control, should be working in a sequence that best suits the owner in the opinion of the non liable construction manager agent. Say further that the prime contractors have either individually or in concert given the non liable construction manager an intended plan of action, that in their opinion as liable parties to a contract arrangement with the owner (the ultimate decision maker), will satisfy the project contract they have with the owner,

their client. This plan conflicts with that of the non liable construction manager.

When the owner's agent, the non liable construction manager, pits his desires against those of the prime contractor's, relative to achieving project objectives, the conditions of the contract must be closely analyzed.

In a hard money, fixed time contract, use of time and money are generally the prerogative of the contractor so long as the ends are achieved. Any interference with how the contractor achieves these ends must be viewed as an interference with the contractor's right to enjoy an optimum profit derived from the job plan which he has signified as his intended plan of work.

Such interference is legally known as maladministration. It is a common occurrence and many times is a result of honest misunderstandings about the project. However the dangers of maladministration are felt when the owner and/or his agents, by their actions or inactions affect the potential for a contractor to make an expected profit, within the bounds of agreed upon performance standards. When owner interference occurs the contractor is entitled to reimbursement for the reduction in his ability to earn an intended profit, and to fully cover his costs on the job.

The proof in such situations is however often difficult to provide. But if the document control system is properly prepared, the subject coding accurately done and the project histories well written, it is a relatively simple matter to retrieve all documents relating to the problem and to build a special history for any specific delay or interference.

* * * * * *

Not all the above steps are taken in the preparation of project documentation. If the level of documentation called for is at 2 to 3, it is generally adequate to prepare a subject file of the documents and only take Step #1 above if specific minor problems are encountered in a well defined, limited time period.

If the problems mount on the job and a documentation level of 4 or 5 is indicated, Steps #1, 2, 3 might be advisable to implement. A higher level of project difficulty, say a level of 6 to 8 might call for Steps #4 and 5 to be put into work.

When the level of project difficulty is raised to 9 or 10 which indicates a job upon which very serious problems are being encountered, Steps #6 and 7 should be initiated.

Hopefully a full Step #6 and 7 program will not be needed, but on especially troublesome jobs, may be necessary.

Ralph J. Stephenson PE PC
Consulting Engineer

General Steps Taken in Processing A Construction Claim

Review and study draft only

The starting point of most construction related claims is when one of the parties involved feels they have been harmed in some manner by the actions of another involved party. Of course there are many variations on this basic theme. Due to the number, complexity and combinations of circumstances under which a contested claim may arise, let us first take a specific set of project delivery criteria and examine the steps that might be followed in resolving a typical dispute.

Assumptions - The project is a hard money, fixed time job in which the construction firm doing the work is considered a prime contractor, with a conventional construction contract with the owner. The owner has had his design team prepare a relatively complete set of contract documents from which contractor selection was made by competitive bidding from a short list.

Further assume that at some point in the construction process the owner takes an action that seems to interfere with the right of the contractor to enjoy a maximum profit from his construction efforts (sometimes called maladministration), while, in the contractor's opinion, he is still performing in accordance with his contract obligations.

To describe an instance where this could actually happen, suppose the contract calls for completion of the total facility by September 1st with no specified intermediate dates for owner occupancy of the facility. Part way through the job the owner makes it known to the contractor that he wants the upper floors delivered by July 1st, but will still take the lower floors on September 1st. The owner says this should be at no additional cost to him since the contractor was planning to be done about that time anyway. The contractor proceeds to try and accommodate the owner.

Usually in a good contractor/owner relation a matter of this nature can be worked out amiably and to the mutual operational and financial satisfaction of both parties, the owner and the contractor.

However in this case, assume the revisions apparently cause considerable disruption of sequencing, delivery commitments and manpower assignment to the project over what had been planned by the contractor. An effort to resolve the matter equitably for both parties has been made and was unsuccessful. Clearly, where the financial and other losses of the contractor, real or imagined, is sizable, another method of approaching a

settlement must be found.

Now, the first step in a formal resolution takes place - making a decision on the preferred or specified method to use to settle. Usual methods are:

- Administrative settlement
- Mediation
- Arbitration
- Modifications or combinations of the above

Usually the preferred solution by most parties to a dispute is by some type of administrative settlement through discussion among the operational and executive staffs of the owner and the contractor. Where this proves difficult or impossible, succeeding steps are usually taken.

For our example let us start by considering litigation.

Litigation is the settlement of a dispute through the efforts of a third party operating under legal rules governing the presentation, consideration and judgments rendered in the case. It is to be emphasized that the steps outlined below are not to be considered the formal legal steps to be taken, but within the writer's experience are steps most contested claims in which he has been involved with follow to their resolution.

There may be considerable variation in the sequence in which the steps are taken. However at some time in the process each of the following actions must be considered, and if appropriate, taken. The steps are lettered for convenience of reference, but are not necessarily listed in the sequence in which they may be taken.

- **Step A** - The need for a claim emerges and the parties involved discuss the matter. There is either a resolution, a decision to pursue the matter further administratively, or a decision to file for formal action resulting from the discussions.

- **Step B** - If a resolution is not achieved, the contractor will probably prepare additional submittal material identifying the circumstances, the effects, the impacts and the approximate reimbursement felt due him as a result of imposition of other than contract conditions on his work.

- **Step C** - This submittal material is then presented by the contractor to the owner and further discussions are held. These hopefully will lead to an administrative settlement. If

not, the contractor may file through his legal advisors, a request for one of several kinds of formal third party decision actions, such as mediation, arbitration or litigation. The discussion in this paper deals primarily with the technical steps usually followed in litigation.

• **Step D** - The contractor through his legal advisors, then actually files for litigation. This is a complex and formal process, a description of which is beyond the scope of this essay.

• **Step E** - As the petition for litigation is being filed, the contractor selects the issues to be addressed that have contributed to the claim, and the level of documentation he and his technical and legal counsel feel appropriate.

• **Step F** - If a relatively low level of documentation has been deemed adequate, since the causes and proof of the contested claim issues seem apparent, the contractor's staff will usually assemble the claim file and estimate the cost of the damages caused by the owner's apparent interference.

If the nature of the claim is such that many complex and obscure factors have contributed to the claimed loss, or the proof of loss appears excessively complex, the contractor may call in an outside qualified and objective expert to help assemble the documents, the facts and the amounts to be claimed.

• **Step G** - The backup documentation concerning correspondence, transmittals, estimates, change processing, directives, and other pertinent historical records is assembled into a data system which allows the location, printing, abstracting and relative rapid analysis of groups of documents or records relating to any subject, chronology, organization or other classification system desired.

• **Step H** - Concurrent with preparation of detailed document files, the discovery of evidence by both parties is pursued. This discovery period is often characterized by demands for what are called interrogatories and depositions. It is to be emphasized that the discovery period in litigation is primarily to uncover evidence, its source, its existence and its nature.

Because of the often difficult nature of activities during discovery in the litigation process it is usually an advantage for the contractor to have his outside experts work directly for the legal advisor. This may provide some protection to the consultant work product and thus shield it from those not friendly to the contractor.

• **Step I** - As discovery proceeds, the parties to the dispute should be, and usually are, trying to agree on an administrative settlement as the various claims and counter claims statements emerge.

Also, during the discovery period face to face attempts to uncover evidence are accomplished most commonly by deposition. The deposition consists of testimony and questioning, again aimed at evidence location. The deposition period will usually continue over a period specified loosely by the governing judicial body in the matter.

From depositions, additional documentation is found, and if wanted by a party to the dispute, subject to acquisition by the subpoena process. This process usually does not allow material prepared by a consultant for an attorney to be acquired through subpoena. This is the main reason for having the legal consultant work directly for the legal consultant and prepare confidential data and analyses for the attorneys. This material is sometimes known as a protected work product.

An important feature of the discovery/subpoena process is that few if any documents prepared during the course of the job can be totally shielded from acquisition by the opposition. Therefore there is a strong need for good, intelligently written documentation of the job during its construction.

• **Step J** - At some point, usually determined by the governing legal body, the discovery period is declared closed and formal legal hearings now begin. By this time a selection and settlement on the type of litigation decision making process has been made. The two most common methods are the bench trial and the jury trial.

A bench trial is conducted by a judge only, and he makes the decision in the matter after the hearings have been completed. The jury trial uses a jury of lay individuals to hear the testimony and to judge the merits of the case.

In technical matters, such as construction, it is most often found that a bench trial is preferable to the jury trial due to the difficulty in presenting understandable evidence to a group of lay people, who often are not acquainted either with the legal process or the design and construction industry.

• **Step K** - During the formal trial process the parties to the contested claim present their respective views in arguments, displays of evidence, direct questioning and cross examination of witnesses. The judge, in a bench trial, or the jury, in a jury trial, listens to the presentation of evidence until the arguments are exhausted, and both sides or the judge

calls it quits.

During the hearing process many people may be called to the witness stand to answer questions. Those who have given depositions may be closely questioned on statements made by them during the deposition, particularly in relation to additional information that has come out during subsequent depositions, interrogatories or in court.

• **Step L** - Once the governing legal body declares the trial completed, the case is closed and either the judge, in a bench trial, or the jury, in a jury trial, retire to review the evidence, think about the testimony and the evidence, and to make a decision from the choices presented during the trial.

• **Step M** - When a decision as to the relative merits of each party's case is reached by the judge or the jury, the decision is announced and the settlement of claim is decided on by the governing legal body. This then closes out the case as originally heard and judged upon. From this point on there are several legal actions possible that could reopen the matter of the contested claim and its merits. A discussion of these is beyond the scope of this paper.

MIND PROBER

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Agree	Disagree	
		Talkative - chatty, always speaking
		Egotistic - self-centered, individualistic
		Empathetic - aware of another, compassionate
		Apprehensive - fearful, worried, afraid
		Unconventional - unusual, not the norm, rebellious
		Kind - gentle, considerate, warmhearted
		Rigid - still, unchanging, inflexible
		Impatient - excitable, unable to wait
		Sympathetic - comforting, understanding
		Reserved - restrained, self-controlled, shy
		Adventuresome - daring, willing to take chances
		Uncaring - lacking in warmth or sympathy
		Quiet - still, silent, not talkative
		Sarcastic - joking in a biting or cynical way
		Concerned - aware, caring, interested
		Distant - remote, inaccessible, removed
		Competitive - seeking to win, ambitious, achieving
		Apologetic - sorry, regretful, makes excuses
		Outgoing - sociable, friendly
		Independent - self-reliant, autonomous
		Sensitive - perceptive, touchy, nervous
		Meek - humble, submissive, patient
		Meticulous - extremely careful, scrupulous
		Suspicious - doubtful, distrust, uncertainty
		Fun-loving - playful, carefree, spontaneous
		Help-seeking - looking for assistance or comfort
		Charitable - generous, kind, giving
		Neighborly - friendly, amicable, familiar
		Achieving - accomplishing, persevering, striving
		Approval-seeking - wanting acceptance and praise
		Self-blaming - guilt, fault finding
		Precise - clearly defined, exact
		Guarded - kept safe, protected, watched over
		Carefree - free of worry or responsibilities
		Dependent - needing aid or assistance
		Comforting - soothing, relieved, consoling

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MIND PROBER

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Agree	Disagree	
		Affiliative - associated, connected
		Ambitious - enterprising, striving, eager
		Status-conscious - attentive to position and wealth
		Humble - reserved, self-conscious, modest
		Accurate - correct, clear-cut, beyond doubt
		Defensive - protective, shielded, careful
		Joking - witty, wisecracking, jesting
		Defenseless - unguarded, unprotected, needing shelt
		Consoling - solace, to cheer up
		Hospitable - welcoming, warm, receptive
		Goal-oriented - seeking success and achievement
		Seeks Attention - wanting to be noticed
		Obedient - compliant, amenable, dutiful
		Responsible - accountable, trustworthy
		Wary - cautious, watchful, on guard
		Playful - implish, mischievous, frivolous
		Trusting - confident, committed
		Protective - defended, guarded, careful
		Loyal - steadfast, faithful, devoted
		Striving - contending, exerting effort
		Seeks Recognition - wanting to be praised
		Yielding - deferring, relenting, gives in
		Tidy - neat, orderly, clean
		Secretive - covert, underhanded, concealed
		Pleasure-seeking - seeking gratification or delight
		Insecure - inadequate, unsure, shaky
		Nurturing - nourishing, supporting, fostering
		Individualistic - one-of-a-kind, independent
		Accomplishing - successful, to bring to completion
		Socially Striving - seeking respectability

a:wmis1120 - WEX Partnering seminar - Friday, November 20, 1992

Operative mission related words

Team
Commit
Quality (owner's expectation)
Workmanship
Pride
Fair
Timely/schedule
Teamwork
Budget
Schedule
Safety Communications
Functionality
Responsibility
Cooperate
Foresight
Respect
Scope/doc's
Profitability
Ordinances

Mission statement:

Objectives

Planning & scheduling
- Complete project on time
- Monitor progress
- Proper management of sequential work

Payments
- Prompt review & approval of payments
- Accurate pay requests
- Timely payment to contractor & subcontractors

Commnication & managment
- Clear & accurate communication
- Efficient managment of information
- Set policies, procedures & guidelines to manage project

Maintain quality
- Valued workmanship
- Protect & respect other's work

Safety
- Maintain good safety practices
- Periodic safety reviews/meetings

Fair treatment
- Team approach to goals

Fair interpretations
Fair costing on changes
Good citizenship

Timlyness
Timely decision making
Timely submittal process

Cost managment
Control budget
Claims management
Alternative dispute resolution

Above is from team left front (bmk)

Below is from team center front

Safety
01. Adhere to safety obligations
02. Have a clean job site

Responsibility
01. Take resoponsibility that's yours.
02. Clary chain of command & adhere to it

Changes
01. Minimize
02. Control costs
03. Manage properly

Partnering/fairness
01. Work as a team
02. Respect others
03. Timely response
04. Equitable distribution of incentives

Problem resolution
01. Solve in timely manner using adr
02. Minimize claims and document same

Schedule
01. Set realistic schedules
02. Maintain schedule
03. Meet schedule
04. Anticipate problems

Qualit
01. Take responsibility for quality at all levels.
02. Comply with intent of program

Review process
01. Timely, thorough, submittals and review of submittals (shop drawings, punchlist, pay request, etc.)

Team rear center

Time
Timely start-up, completion, and close out
Meet job progress schedule
Expeditious processing of rfi's, submittals and documents

Communication
Establish and maintain an open communicatio system among all stakeholders
Respond accurately, clearly, promptly

Safety
No lost time accidents
Weekly safety meetings for all field personnel
Enforce safety requirements

Money
Within budget
Minimal cost growth
Minimize changes
Pay on time

Partnering
Promote partnering attitudes at all levels
Enjoy project and maintain trust as a cornerstone of partneship
Work together harmoniously
Utilize evaluation system

Litigation
Resolve disputes at lowest level possible
Utilize adr methods
Proactive problem avoidance

Team right rear

01. Scheduling
Each player to develop. maintain and adhere to schedule
Individual schedules will support overall completion date

02. Payments
Make payments in accordance with agreed cash flow

03. Quality
Do it right the first time
Meet the design intent
Recognize owner's needs

04. Decision making
Make at lowest appropriate level
Make promptly

05. Chain of command
Establish clear chain
Follow it

06. Problem resolution
Avoid litigation
Anticipate problems
Involveoall appropriate parties
Accept responsibility for actions

07. Cost control
Complete project within budget
Usaw quantitative method

08. Site management
Maintain clean safe site
Follow plan for trash removal, access, and parking
Protect the work of all

09. Safety
No lost time due to accidents
Follow osha
Consider safety of others

10. Submittals
Deadlines for all
Expedite processing

11. Job morale
Maintain open communications
Promote partnering
ve pride in work
Have some fun!

Team right front

Team performance
Measure improvement
Avoid rework

Project citizenship
Respect all environmental requirments
Cooperate with regulatory officials

Discover opportunity
Achieve dimen consist in submittals
Offer field discovered opportunity (tell me)

Regulatory compliance
Provide all required access
Provide supervisor support & cooperation fo regulator
Provide all required contractor tests

Close out and turnover
Finish and close promptly
Plan to close from the start
Intermediate objectives
End objectives
Coordinate, start, test, turn off, turn over systems

Change management
Emphasize responsibility and accountability for decisions and actions (have an action plan)

Objective categories:

Schedule
Quality control
Claims
Payment
Review process
Safety
Responsibility roles
Changes
Cooperation and respect
Punch list
Close out
Problem resolution
Team performance
Schedule & timing
Measuring progress
Project citizenship
Money
Environmental awareness
Scheduling
Quality
Payments
Decision making
Chain of commmand
Problem resolution
Cost control
Site management
Safety
Submittals
Planning and scheduling
Payments
Quality
Safety
Change management
Civil and fair treatment
Timeliness
Cost management

Objectives:

Charter:

Charter for University of Qitain new Activities Building - WEX Partnering meeting - November 20, 199

Misson statement

This partnering team commits to deliver a quality project on schedule and within budget, with pride, respect and cooperation in a safe and profitable manner.

Objectives:

01. Planning and scheduling
 a. Complete project on time.
 b. Monitor progress regularly.

02. Management
 a. All parties submit complete, accurate & timely billings.
 b. Develop and publish a payment procedure.
 c. Promptly resolve payment disputes.

03. Management
 a. Set policies, procedures and guidelines to manage project.
 b. Establish and maintain chain of command.
 c. Communicate in a clear, accurate and timely manner.
 d. Establish and maintain a submittal sequence requirements.

04. Quality
 a. Take responsibility for quality at all levels.
 b. Avoid rework.
 c. Take pride in workmanship.

05. Safety
 a. General contractor establish and monitor safety program.
 b. Follow good safety practices at all levels.

06. Fair treatment
 a. Protect and respect other's work.
 b. Be a good neighbor.
 c, Provide equitable treatment concerning cost and interpretation.

Cost management

Problem resolution

Site management

Discover opportunity

Close out and turn over

Change management