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Handouts for AIA talk, Saginaw Valley Chapter

Part 1 - Aspects of project management that are basic to all construction organizations.

01	On Correct Language
02 and 03	Definitions
04	Basic Line of Action
05	Development Line of Action
06	Macro Matrix Boundaries
07	Profit
08 and 09	Problem mentions
10	8 Most Frequently Mentioned Problems
11 and 12	Causes of Destructive Conflict
13	Resolving Potentially Destructive Conflict
14	Managing Complex Change

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15 and 16	Project Delivery Systems
17	Program Management
18	Professional Service Contract Characteristics
19	Construction Contract Characteristics
20	Budgeting Terms
21 thru 23	Partnering Charter
24	Route of Issue and Dispute Resolution

Part 3 - How architects can bring themselves to a level equal to other professions.

25 thru 29	Recommendations to Improve

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ON CORRECT LANGUAGE

"If language is not correct, what is said is not what is meant: What ought to be done remains undone: Morals deteriorate: Justice will go astray: And the people will stand about in hopeless confusion." (quote from Confucius)

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Definitions that are important to all liable members of the design and construction profession

I. **Construction**
The business or work of building. The way in which something is put together.

II. **Construction heirarchy**
A range of construction classifications from the smallest component through to the largest component .

A. Specialized construction - S construction
The field of business practice that encompasses single phases of the construction profession. Examples of "S" construction organizations are architectural/engineering firms and departments, mechanical contractors, plastering contractors, and planning consultants, among others. Includes nearly any single organizational unit active in design, planning, construction or related fields.

B. Macro construction - M construction
The immediate business, act, or process of building on or improving real estate so as to raise the value of the property. To convert a concept and its related plans and specifications into an actual physical environment. The act of using some or all of the specialized building occupations to build a facility that is under one general management responsibility.

C. Generic construction - G construction
The field of business practice that encompasses all phases of the construction industry, including programming, planning, designing, building, operating, and maintaining facilities. Described best as the full set of activities shown in the line of action. (See line of action.)

D. Universal Construction - U construction
Universal construction (U construction) is the application of S, C and G construction in the full range of economic, business, technical, social, professional and other components that make up our world civilization.

The all encompassing name applied to a profession, discipline, grouping, organization or other combination of elements that collectively make up an enterprise or effort ultimately resulting in all, or part, of a physical object that is useful to the society engaging in its creation.

III. **Glossary of terms**
A list of difficult or specialized words with definitions.

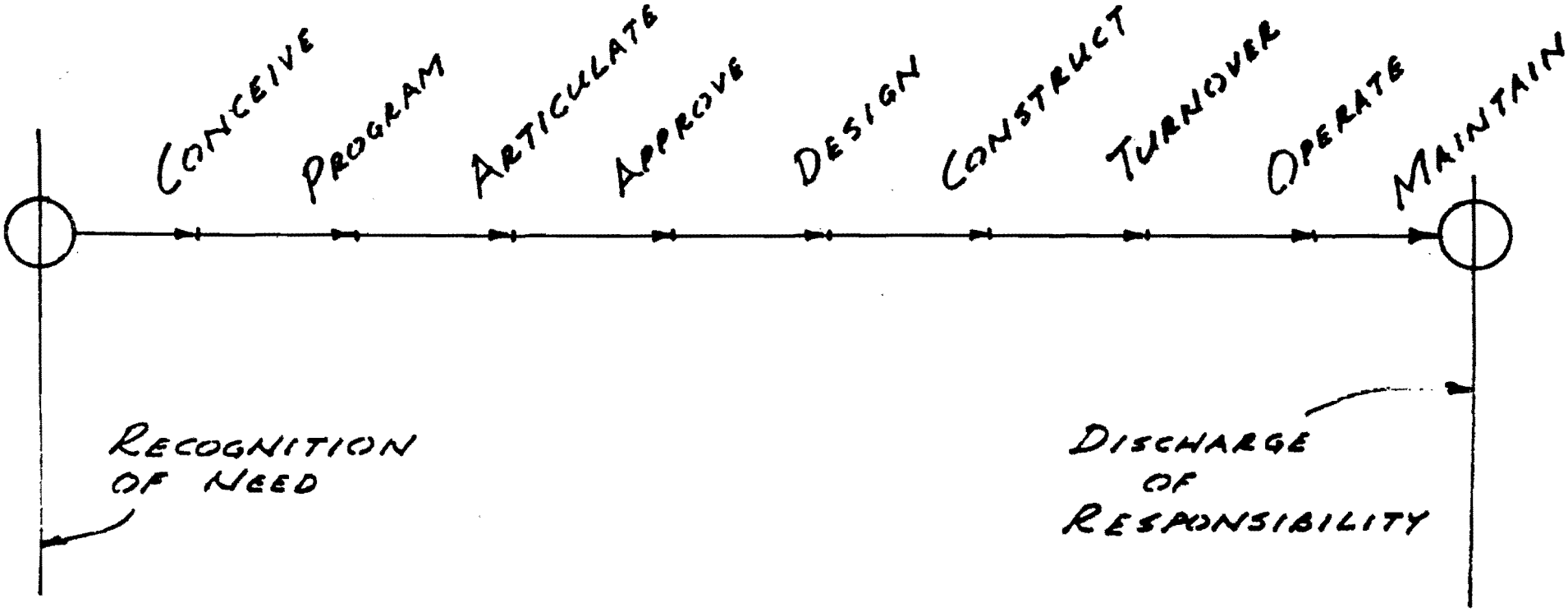
IV. **Leverage**
The effective use of vested and earned authority to solve problems and achieve goals and objectives.

V. **Operative words**
Those words, usually nouns, verbs, and some adjectives, which best, and most quickly, convey the true meaning of a sentence or thought to the reader or listener.

VI. **Professional**
Having great skill or experience in a special contributive field of work that is gained by extensive training and education in those fields of effort requiring specific and related education.

VII. **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.

VIII. **Universal**
The sphere or realm in which something exists or takes place.



LINE OF ACTION

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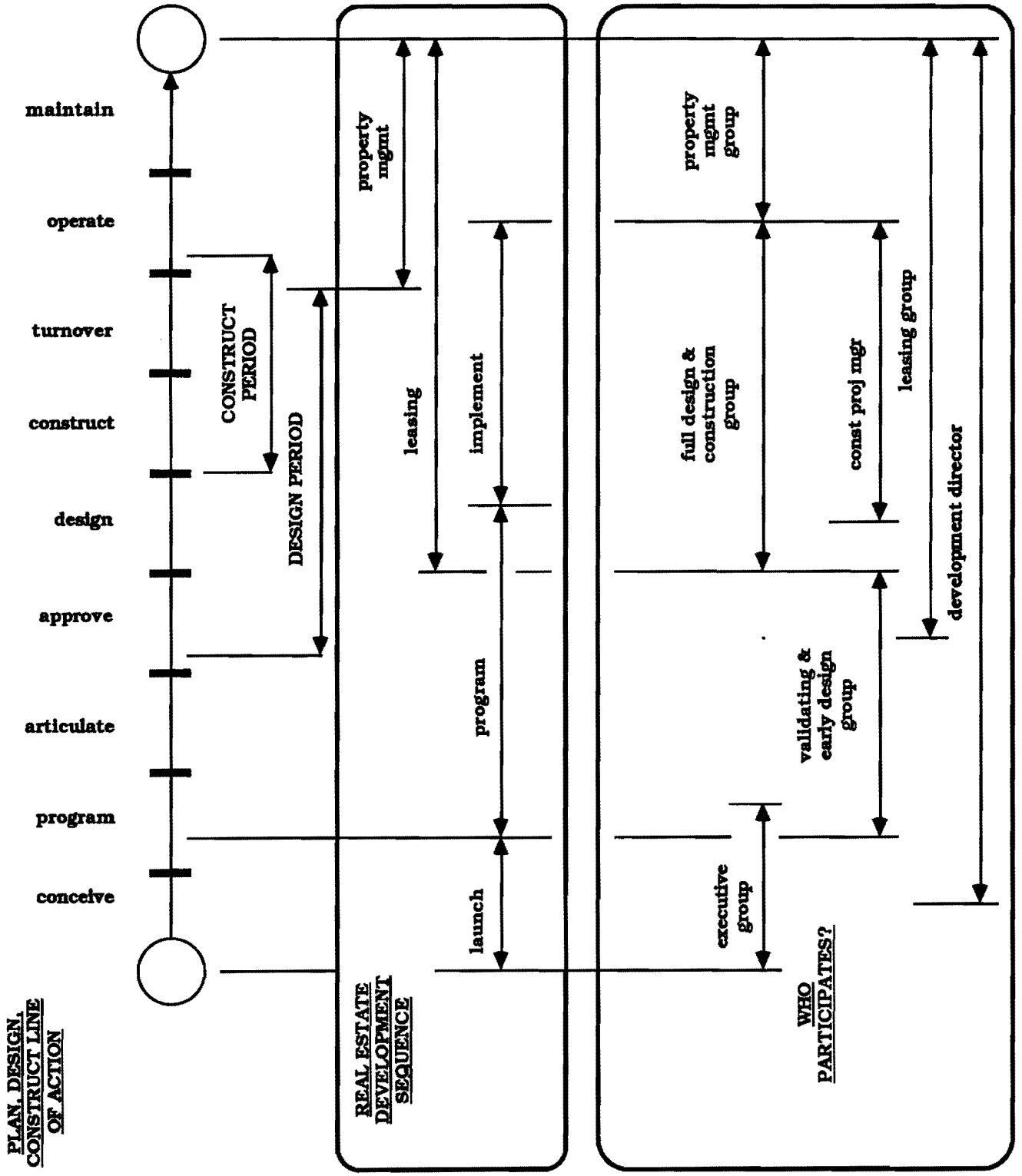

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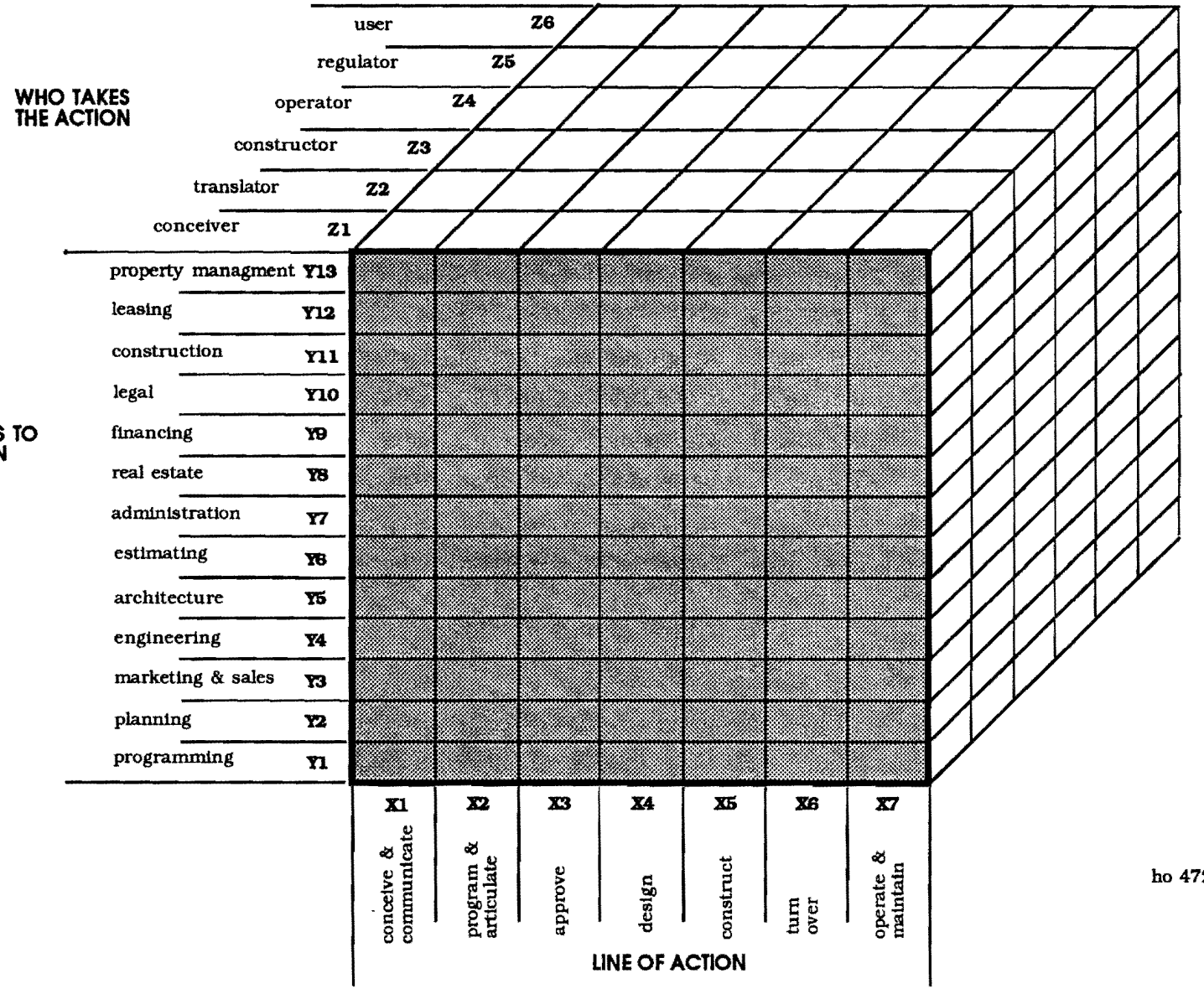
DEVELOPMENT CYCLE ACTIONS & ORGANIZATION

Oct, 1988 - ho321

FIGURE 472
MACRO MATRIX BOUNDARIES
OF DESIGN AND CONSTRUCTION



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PROFIT

The return in resources obtained by investing other resources in a business or an enterprise. Usually the returned resource has a greater value to the investor than does the invested resource.

THE KEY QUESTION IS ---
WHAT VALUE
DOES THE PROFIT EARNED HAVE
TO THE INVESTOR?

March 2000

PROBLEM MENTIONS

Total assignments of problem types from 2,855 responses to the questions "What job difficulties are caused by us and by others?" Listed by frequency of appearance.

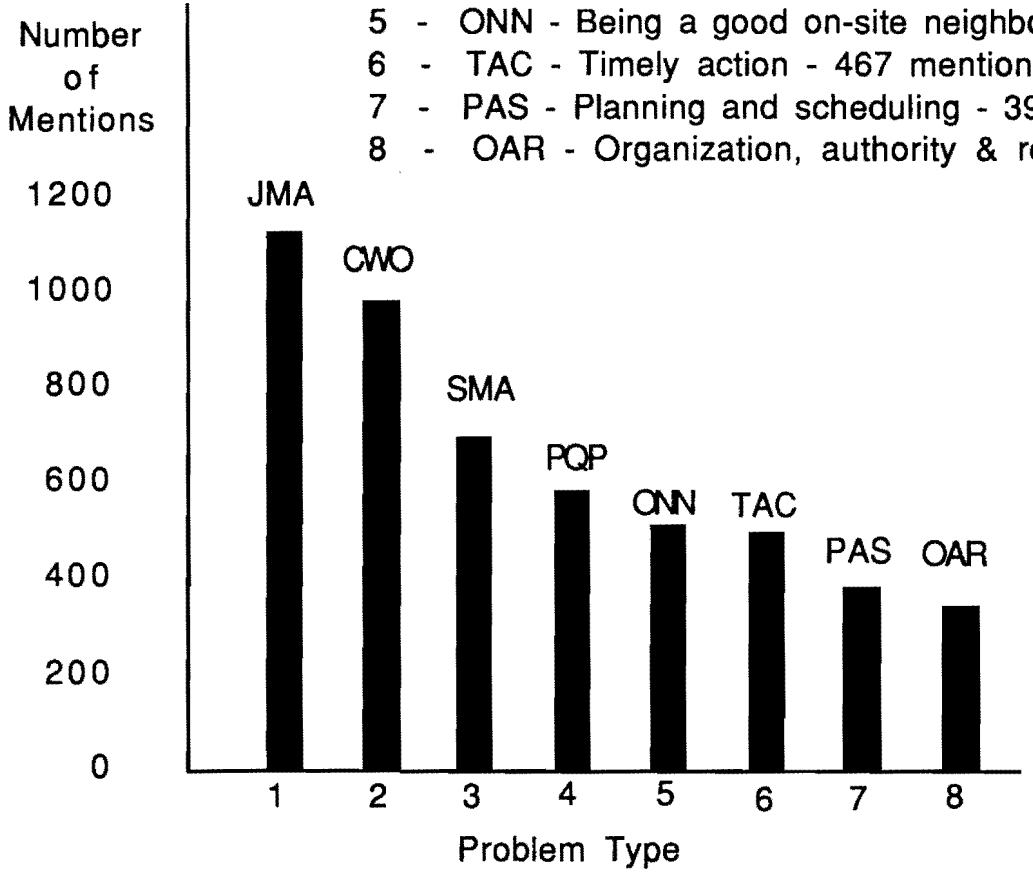
01. 1146 - Job management.
02. 0984 - Communicating with others.
03. 0684 - Staff morale and attitudes.
04. 0593 - Personnel quality and problems.
05. 0475 - Being a good on-site neighbor.
06. 0467 -Timely action.
07. 0396 - Planning and scheduling.
08. 0371 - Organization, authority, and responsibility.
09. 0288 - Work site conditions.
10. 0268 - Revision processing.
11. 0267 - Construction document quality.
12. 0233 - Program conditions.
13. 0205 - Submittal processing.
14. 0166 - Issue, conflict, and problem resolution.
15. 0166 - User group interaction.
16. 0145 - Equipment and material problems.
17. 0141 - Documents and documentation.
18. 0133 - Decision making.
19. 0125 - Procurement of materials and equipment.
20. 0116 - Project cost structure.
21. 0112 - Closing out the project.
22. 0097 - Contract interpretation.

23. 0097 - Quality management.
24. 0095 - Payment processing.
25. 0092 - Paper and administrative work.
26. 0090 - Approval processes.
27. 0088 - Being a good off-site neighbor.
28. 0073 - Time growth.
29. 0070 - Policies and procedures.
30. 0069 - Inspecting and testing.
31. 0069 - Staffing and manpower.
32. 0064 - Cost growth.
33. 0058 - Substitutions and alternates.
34. 0052 - Maintaining regular project evaluations.
35. 0052 - Safety.
36. 0049 - Regulatory agency matters.
37. 0022 - Constructibility.
38. 0022 - Training.
39. 0022 - Value engineering.
40. 0014 - Labor conditions.
41. 0014 - Legal matters.
42. 0011 - Backcharges.
43. 0011 - Financial problems.
44. 0010 - Weather conditions.
45. 0005 - Warranty conditions

- The eight most frequently mentioned design &construction problems. From a total of 2,855 responses to the question "what job difficulties are caused by us and by others?"

Problem Type

1 - JMA - Job management - 1146 mentions
2 - CWO - Communicating with others - 984 mentions
3 - SMA - Staff morale & attitudes - 684 mentions
4 - PQP - Personnel quality & problems - 593 mentions
5 - ONN - Being a good on-site neighbor - 475 mentions
6 - TAC - Timely action - 467 mentions
7 - PAS - Planning and scheduling - 396 mentions
8 - OAR - Organization, authority & responsibility - 371 mentions



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Destructive conflict in today's technical world is often caused by:

- Not understanding that conflicts lead directly to results.
- Frustration over a lack of control of events affecting performance.
- Differences in goals and objectives of parties in the project.
- Lack of understanding about the needs of others also involved in the planning, design, and construction process.
- Resentment or dislike resulting from a perceived lack of value added to projects by those responsible for adding value.
- Excessive technical and legal delays to resolution of conflict.
- Excessive demands on resources normally depended on to assist in the resolution of conflict.

- Greed.
- Incorrect assumptions made from biased perceptions.
- Demands for higher quality than specified.
- Failure to meet commitments.
- Insufficient time to make required decisions.
- Lack of ability to do the job.
- Poor or inadequate training.
- Inadequate credentials to do the job.
- Indifferent leadership.
- Actual or perceived overwork.
- Bad blood among participants.
- Desire to take advantage of those in weaker positions.
- Misplaced attempts to demonstrate who is in charge.

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Seven actions to smooth out and resolve potentially destructive conflict

- Action 1) Understand the cause of the conflict.

- Action 2) Put yourself in the other person's shoes.

- Action 3) Understand the relative importance of resolution vs. nonresolution.

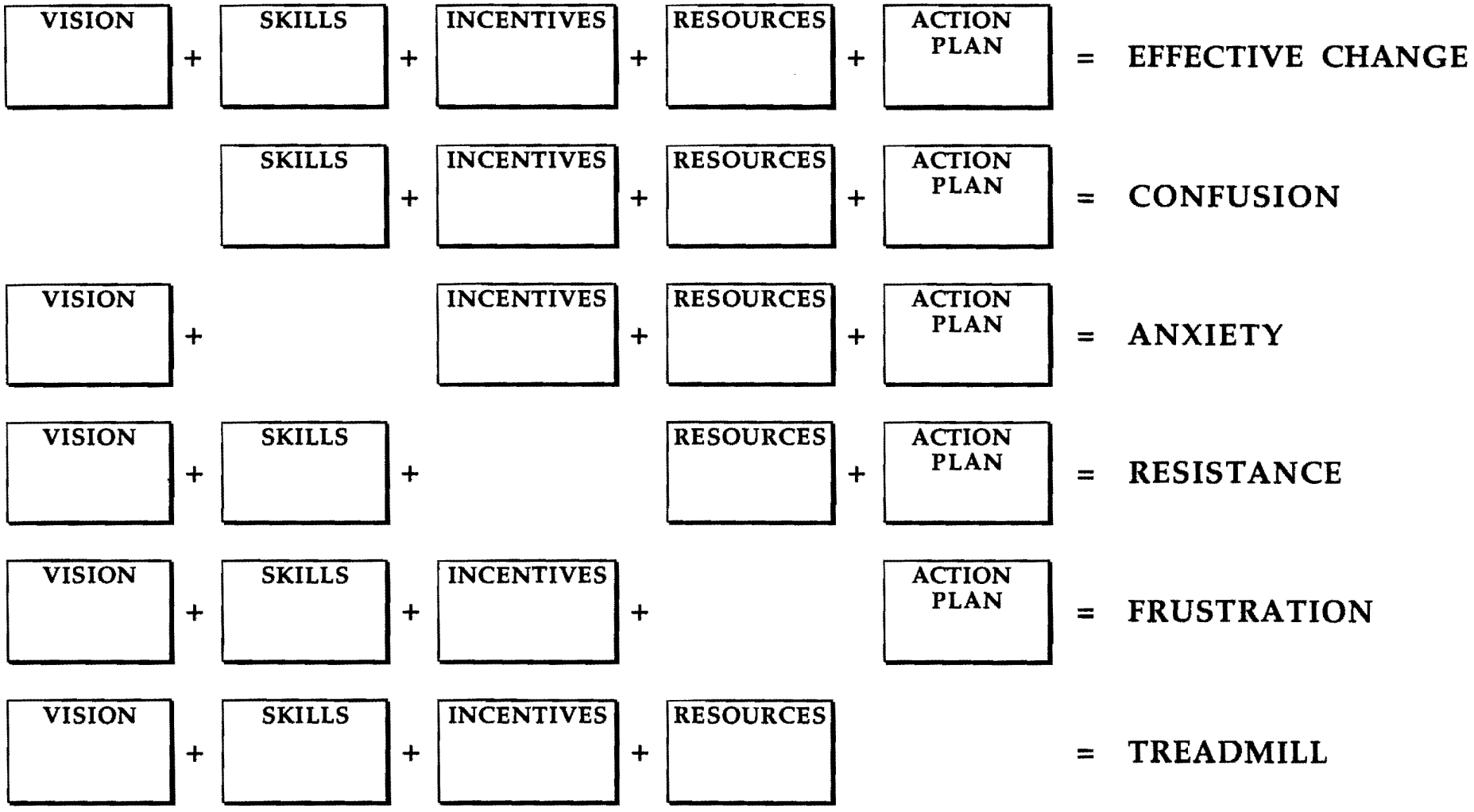
- Action 4) Become competent in properly applying the technical and professional management tools of our profession.

- Action 5) Don't lie.

- Action 6) Thoroughly understand the obligations you have to society and to your clients, your employer, and your peers.

- Action 7) Understand everything you can...not just your own field, and work to be effective in managing intersections of diverse interests.

MANAGING COMPLEX CHANGE



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Various project delivery systems by which architects deliver their professional product?

I. **By simple characteristics such as:**
   A. Traditional
   B. Non traditional
   C. Fast track
   D. Design and build
   E. Master builder
   F. and other of these general characteristics

II. **By primary methods - see Appendix A - page 191, Project Management for Building Designers and Owners - by Howard Birnberg - Association of Project Managers, CRC Press**
   A. Traditional straight-line
   B. Fast-track
   C. Design-build

III. **By end product**
   A. A set of documents which define the scope of the job to be built.
   B. The management skills by which the gap is bridged between the scope definition and the physical product to be built from the contract documents.
   C. The financial resources by which the gap is bridged between the scope definition and the physical product to be built from the contract documents.
   D. The physical product to be built from the contract documents.

IV. **By name description - see pages 44, 45, 46, 47 & 48 in Architectural Practice - Robert Gutman - Princeton Architectural Press**
   A. Planning
   B. Designing
   C. Constructing
   D. Design and build
   E. Design and develop
   F. Design and construct
   G. Development

V. **By organizational characteristics of the firm doing the work - see Managing Architectural Projects - The Process - The American Institute of Architects - David Dehaviland**
   A. The generalist organization - pages 7 through 12
   B. The studio organization - pages 9 through 12
   C. The department organization - pages 9 through 12
   D. The matrix organization - pages 9 through 12

VI. **By classification in which the elements of a project delivery system are defined in relation to the other elements - the basic elements of the classification system are:**

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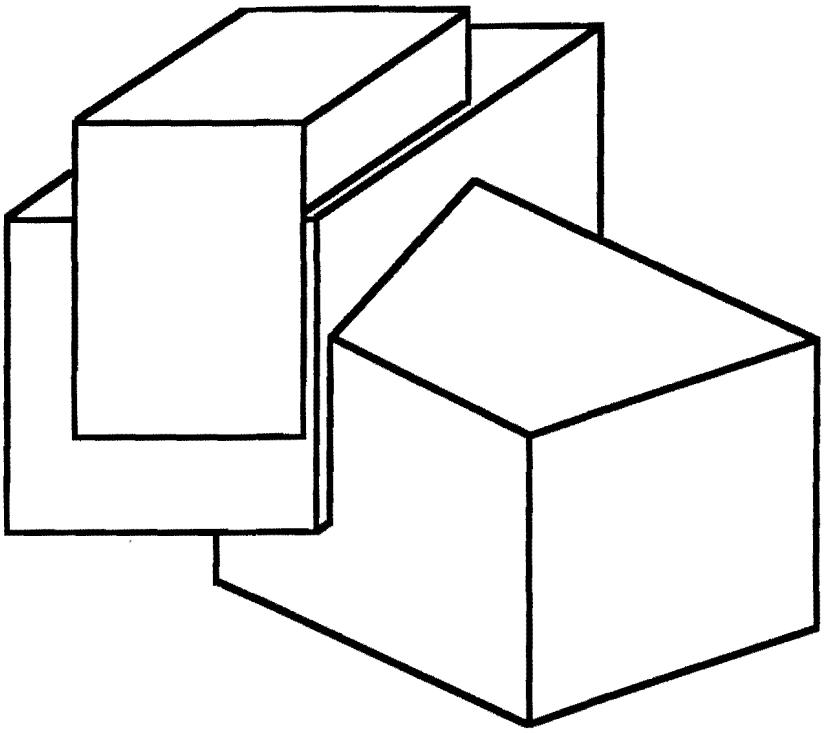
A. Agreement premises
B. Authority limits
C. Payment methods
D. Scope of services



PROGRAM

MANAGEMENT

ho 540 - April 4, 2000
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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

Budgeting terms

I. Proforma - in real estate development

A financial model unusually built early in a construction program to show by projecting income and expenses, how the money flow to and from the project will occur. It is often used to establish the capital amount to be allocated to a project based on simulated operating conditions. The term pro forma means according to form.

II. 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.

III. Program - as defining a generic construction effort

A major planning, design, construction, and operational construction effort made up of several projects.

IV. Must list

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.

V. Want list

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.

VI. Wish list

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.

A. Charter for construction of the Central Michigan University - Library Remodeling and Addition

1. Mission of the Central Michigan University Library Remodeling and Addition Project Partners

It is our mission as CMU Library Project Partners, to safely and profitably construct, on schedule and within budget, a high quality library. We will accomplish this through cooperative efforts, positive communication, teamwork and ethical practices which maximize satisfaction, minimize conflict and create lasting relationships.

2. Charter objectives for the Central Michigan University Library Remodeling and Addition Project

In recognition of the importance of achieving their mission all CMU Project Partners will strive to:

a) **Maintain high job morale and cooperative attitudes among all project participants.**
b) **Make timely decisions in all project related matters.**
c) **Provide required documentation and approvals within mutually agreed upon time frames.**
d) **Be accountable for your actions.**
e) **Do it right the first time and strive to minimize remaining punch list items at substantial completion.**
f) **Provide reasonable interpretations of the contract documents.**
g) **Provide timely communications, responses, decisions... and be available.**
h) ***Prepare, publish, keep current, and respect a chart of channels of communication, responsibility, and authority. (to be compiled by a team from the Department of Management and Budget, the General Contractor and the A/E of record.)**
i) **Promote among the CMU Library staff, an understanding of construction documents and the construction process.**
j) **Anticipate and communicate, through appropriate channels the impact that construction activities may have on the environmental integrity and safety of all ongoing CMU operations.**

k) **Communicate the principles of partnering and encourage participation of all parties at all project levels in the process and the spirit of partnering.**
l) **Prepare, package, and process submittals in a timely, fair, and considerate manner consistent with the priorities of the contractors, designers, and owner.**
m) **Take pride in our work, respect the ideas and work of others and treat others as you would have them treat you.**
n) **Maintain a clean, safe, accessible , and well-planned work site.**
o) ***Prepare and publish an issue resolution policy which stresses the timely resolution of conflict at the originating or lowest possible management level and seeks to avoid litigation. (draft by general contractor and refined by a task force of stakeholders)**
p) ***Prepare and implement a partnering evaluation system (draft by general contractor and refined by a task force of stakeholders).**
q) **Practice fairness in price proposals, backcharges, and all other financial matters.**
r) **Promptly prepare, submit, and process all payment requests.**
s) **Distribute and regularly monitor and discuss, with subcontractor input, a master project schedule, and update schedules as required.**
t) **Provide proper resources to support the agreed-upon plan and schedule of work.**
u) **Maintain a close relationship between expectations and reality**
v) **Anticipate, identify, and accurately communicate potential job problems, while being mindful of future service access requirements.**
w) **Make progress and technical meetings productive and brief by preparing well, and bringing both problems and solutions to the table.**
x) **Provide for timely and professional technical inspection services with appropriate documentation and feedback to those affected.**

y) **Be willing to suggest and consider cost and time effective options.**
z) **Respect financial profit as an incentive for private sector stakeholders.**
aa) **Have fun and celebrate the successful completion of the project.**

* indicates objective requires special preparation by CMU Library Project Partners.
( ) indicates who is to be primarily responsible for preparing special materials

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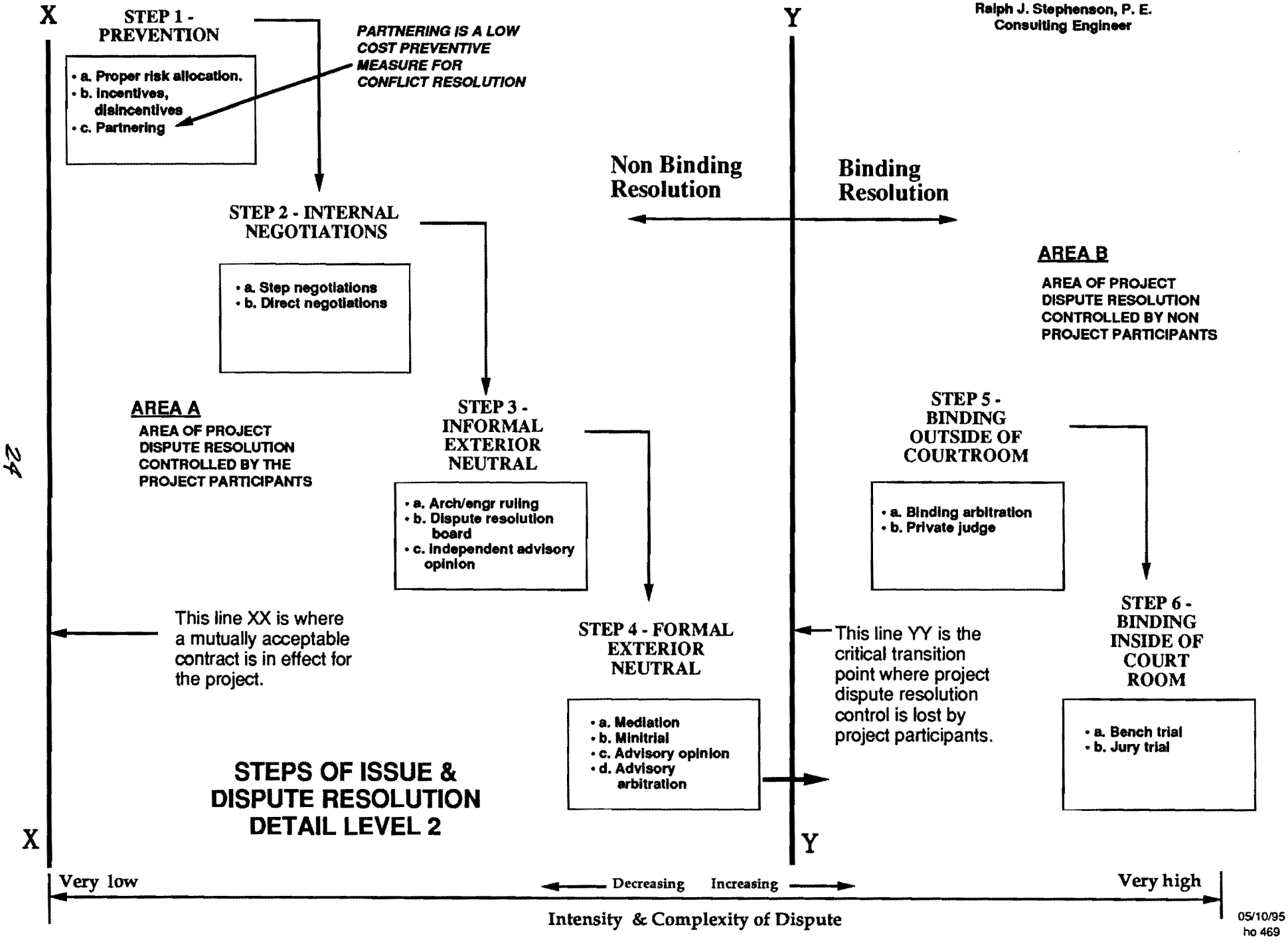

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RECOMMENDATIONS TO IMPROVE OUR PROFESSIONAL AND BUSINESS PRACTICES

- Manage the job as if all team members are working toward the same project end objectives.

- Set a good example for other managers on your project.

- Exercise intelligent, consistent decision-making tempered with good judgment and empathy for others.

- Plan the project well, communicate the plan, & know yourself what your plan says.
- Listen well.

- Avoid using emotional words in project discussions.

- Try to match your non-word world with your world of words.

- Submit properly prepared pay requests.

- Learn to close out your job quickly and cleanly.

• Properly manage the submittal system.

• Consider the regulatory agencies as friends and important participants in your project.

• Educate and train your staff in partnering principles.

• Take the project mission and the partnering charter seriously and work hard to accomplish both.

• Set a good example to industry newcomers. They are the hope of today,

and the you of tomorrow.

- Be available.

- Believe that others on the job want to do well -- it's contagious.

- Keep the job clean and the site well organized.

- Keep good people on the job by making them want to stay.

- Be honest and open with the project team about your plans and schedules.

• Determine early in the job what each party's profit motive is, and then help them achieve that specific profit.

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Glossary of Terms for ASPE Seminar

I. **84 to 89 Definitions that are important to all liable members of the design and construction profession**

Alternative dispute resolution - adr

In its generic form, is a method of resolving disputed construction claims outside the courtroom.

Includes systems of resolving disputes in planning, design and construction by cooperative, internal, or third party assistance methods that are alternatives to conventional dispute resolution methods currently in common use. Conventional methods are usually considered to be litigation and binding arbitration.

Alternative dispute resolution may make use of non traditional combinations of conventional dispute methods.

Construction

The business or work of building. The way in which something is put together.

Construction hierarchy

A range of construction classifications from the smallest component through to the largest component . Shown below are other possible names for classes of construction.

Specialized construction - S construction

The field of business practice that encompasses single phases of the construction profession. Examples of "S" construction organizations are architectural/engineering firms and departments, mechanical contractors, plastering contractors, and planning consultants, among others. Includes nearly any single organizational unit active in design, planning, construction or related fields.

Macro construction - M construction

The immediate business, act, or process of building on or improving real estate so as to raise the value of the property. To convert a concept and its related plans and specifications into an actual physical environment. The act of using some or all of the

specialized building occupations to build a facility that is under one general management responsibility.
Generic construction - G construction
The field of business practice that encompasses all phases of the construction industry, including programming, planning, designing, building, operating, and maintaining facilities. Described best as the full set of activities shown in the line of action. (See line of action.)
Universal Construction - U construction
Universal construction (U construction) is the application of S, C and G construction in the full range of economic, business, technical, social, professional and other components that make up our world civilization.

The all encompassing name applied to a profession, discipline, grouping, organization or other combination of elements that collectively make up an enterprise or effort ultimately resulting in all, or part, of a physical object that is useful to the society engaging in its creation.

Destructive conflict
Animosity or disagreement which results in lowering the potential for an individual or organization to succeed.
Education
The teaching and learning process by which the principles of doing things are conveyed to the learner.
Estimate
A statement of what would be the approximate cost for a certain work to be done in the future. The work can be done by the estimator or by others.
Glossary of terms
A list of difficult or specialized words with definitions.
Interactive
A group of actions that may or may not be designed to have an effect on each other, but do. Does not imply goodness or badness as a result of the effect.

Leverage
The effective use of vested and earned authority to solve problems and achieve goals and objectives.

Neutral
An unbiased outside expert capable of objectively listening, analyzing, and evaluating construction-related demands or claims which are in dispute and rendering an opinion or decision as to its disposition.

Operative words
Those words, usually nouns, verbs, and some adjectives, which best, and most quickly, convey the true meaning of a sentence or thought to the reader or listener.

Organization
The arrangement of resources (talent, skill, money, time, space, people, et al) that has evolved, or been selected, to accomplish the functions, activities, and management, and goals and achieve the objectives of a business or institution.

Partnering - a base statement
A method of conducting business in the planning, design, and construction profession without the need for unnecessary, excessive and/or debilitating external party involvement.

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 - project or tactical
A method of applying project-specific management in the planning, design, and construction profession without the need for unnecessary, excessive and/or debilitating external party involvement.

Partnering - strategic
A formal partnering relationship that is designed to enhance the success of multi-project experiences on a long term basis.

As each individual project must be maintained, a strategic partnership must also be maintained by periodic review of all projects currently being performed - Ida B. Brooker 1994 WEX

Planning
Establishing and arranging necessary and desired actions leading to end, intermediate and peripheral objectives.

Professional
Having great skill or experience in a special contributive field of work that is gained by extensive training and education in those fields of effort requiring specific and related education.

Profit - financial
Fundamentally, the difference between organizational cash income and organizational cash expense. Further definitions of financial profit are complex and often unique to an organization or project.

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.

Resolution
A course of action determined or decided upon that can result in clearing conflict or dispute.

Risks
Exposures to the possibility of harm, danger, loss, or damage to people, property, or other interest.

Schedule
A graphic or written tabulation of project activities showing where the activities are to start and finish. The schedule is derived from the plan of action and the network model by locking the tasks and the resources they require into a specific time position.

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Training
The teaching and learning process by which specific, explicit methods and systems of doing something, usually by rote, are conveyed to the learner.

Universal
The sphere or realm in which something exists or takes place.