



DISPUTE PREVENTION AND RESOLUTION

Alternative Dispute Resolution in Construction with Emphasis on Dispute Review Boards

**A Report to the Construction Industry Institute
The University of Texas at Austin**

**Prepared Under the Guidance of the
Dispute Prevention and Resolution Task Force**

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**SD-95
July 1993**

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Discourage litigation. Persuade your neighbors to compromise whenever you can. Point out to them how the nominal winner is often a real loser -- in fees, expenses and waste of time.

Abraham Lincoln

ACKNOWLEDGEMENTS

I would like to acknowledge the substantial contributions made to this research by members of the CII Dispute Prevention and Resolution Task Force. We enjoyed many hours of lively conversation and every thought contributed. While some good points have gone unrecorded, I sincerely hope that the essence of what was learned has been captured.

Many other individuals in industry and academia gave of their time for discussion and interview. I would like to acknowledge each individually, but the list would be too long. All contributions were valued and there is no doubt that the work benefited from the interest and enthusiasm shown.

Every research project forms part of a spectrum of knowledge. In this regard, I would like to acknowledge the Technical Committee on Contracting Practices of the American Society of Civil Engineers' Underground Technology Research Council. Their pioneering work on dispute review boards provided both motivation and guidance. The Construction Disputes Committee of the Center for Public Resources also provided valuable input through their work in alternative dispute resolution.

With regard to those who will follow, I gladly offer my assistance. This is an important subject and research in the area must not be allowed to stop.

Mike Vorster
Blacksburg, Virginia
July 1993

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EXECUTIVE SUMMARY

This source document describes the work done during an investigation into alternative dispute resolution (ADR) in construction. The full spectrum of ADR techniques is reviewed. Emphasis is placed on dispute review boards (DRBs) because of their documented success in resolving disputes at the project level.

The research was performed under the guidance of the CII Dispute Prevention and Resolution Task Force and set out to achieve four specific objectives:

- 1) To gain an understanding of the nature of disputes in construction and of the steps needed to prevent and resolve disputes as part of the construction contract administration process.
- 2) To study the growing field of alternative dispute resolution in construction with particular emphasis on techniques which either prevent disputes from occurring or assist in the timely on-site resolution of those which do occur.
- 3) To study the functioning of dispute review boards (DRBs) in the field in order to identify the factors which contribute to their success or failure.
- 4) To determine whether DRBs can be successfully implemented in the private commercial and industrial sector of the industry, and:
 - i. If the conclusion is negative, state why DRBs cannot be used.
 - ii. If the conclusion is positive, develop practical guidelines for implementing DRBs in the private commercial and industrial sector of the industry.

The methodology adopted to achieve the objectives included the following distinct activities:

- 1) A period of desk research and broad-based field interviews to develop a thorough knowledge of the subject.
- 2) A period spent trying to identify pilot projects on which DRBs could be implemented and studied.
- 3) A questionnaire-based survey of CII member companies to gather information on the need for and perceptions regarding alternative dispute resolution procedures.
- 4) A fifteen-month period spent monitoring the functioning of a DRB throughout the construction of a major commercial building.

- 5) A number of visits to functioning DRBs to observe their operational dynamics and note the different approaches used in implementing the concept.

The knowledge gained throughout the research was discussed in depth at Task Force meetings. This made it possible for Task Force members to review the work in progress and use their observations, knowledge and experience to provide input. The final conclusions and guidelines developed are thus a product of the research as well as the knowledge, experience and unique perspectives of the Dispute Prevention and Resolution Task Force members.

The understanding of disputes in construction gained during the research led to five main conclusions. These may be summarized as follows:

- 1) The industry must change. Conflict and litigation in the construction industry must be reduced by adopting a comprehensive and systematic approach to the prevention and resolution of disputes.
- 2) The change requires three key steps. The process must start right to prevent problems from arising, it must stay right to prevent problems from escalating into disagreements and disputes, and it must provide for resolution to prevent disputes from crossing the "continental divide" and escalating into conflict and litigation.
- 3) DRBs work. DRBs facilitate the timely on-site resolution of disputes. They emphasize the early and continuing involvement of respected experts. They do not start too late, take too long and cost too much [ASCE 1991].
- 4) Project personnel must remain directly involved. Disputes are best resolved on-site with the project managers playing a major role. This insures that those directly involved in the dispute remain involved with the resolution. This helps in avoiding litigation and returns construction back to the engineer and construction professional [ASCE 1991].
- 5) Owners hold the key to implementing the system. Owners hold the key to starting right, staying right and providing for resolution. This does not diminish the contractor's role in dispute prevention and resolution. Implementing the system may, primarily, be the owner's responsibility; successful operation is shared by owner and contractor.

It is recommended that the findings of this research be implemented through the development and deployment of training courses. These should focus on dispute prevention as well as resolution. They must emphasize the fact that positive, proactive on-site dispute resolution is more effective than the negative reactive approach currently plaguing the construction industry.

The emphasis placed on DRBs throughout the research and the comprehensive field work done to study their operation confirmed that DRBs can be successfully implemented in the private commercial sector of the industry. The concept requires that three expert neutrals are appointed at the commencement of construction to visit the site regularly and assist the project participants in reaching timely agreement on matters they cannot resolve between themselves. The informal trust-based nature of the board's role is consistent with the concept of partnering. The on-site focus of board activities and the emphasis placed on timely resolution of disputes by the project participants is consistent with the principle that disputes are best resolved by those directly involved.

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CHAPTER 1

1. INTRODUCTION

This chapter introduces the report by describing its purpose, objectives, scope and limitations. The research methodology used is described and a brief introduction to alternative dispute resolution and dispute review boards is presented.

1.1 Purpose of the Report

The report describes the research performed during an investigation into dispute review boards undertaken by the Dispute Prevention and Resolution Task Force. It is intended to be a complete and comprehensive presentation of the work for readers interested in the subject at a detailed level. The key research findings and practical guidelines for implementing dispute review boards on construction projects will be summarized in the CII publication based on this report.

The report will be of value to those who realize that an even-handed approach to preventing and resolving construction disputes is essential to good relationships between contracting parties as well as to those who believe that disputes are resolved by the weight of argument, money and power. It presents the details needed to understand why dispute review boards have been so successful and gives guidance as to how the concept may be successfully implemented. The essential facts and guidelines presented in the CII publication will be of value to those interested in the subject at a summary or purely implementation level.

1.2 Alternative Dispute Resolution

Methods of resolving construction disputes without recourse to litigation have been the subject of substantial study in recent years. Edelman reports that the Corps of Engineers began looking for ways to "off-load cases which could be resolved short of litigation" in the early 1980's when "the amount of management time needed for litigation support became unbearable" [Edelman 1990].

The Center for Public Resources depicts a broad range of dispute resolution approaches beginning with prevention and ending with litigation in the stair step model format given in Figure 1.1. The rising steps of the model "reflect escalating levels of dispute resolution, which also convey the message that these escalating procedures reflect escalating levels of hostility and cost to the participants" [CPR 1991].

Construction Dispute Resolution Steps

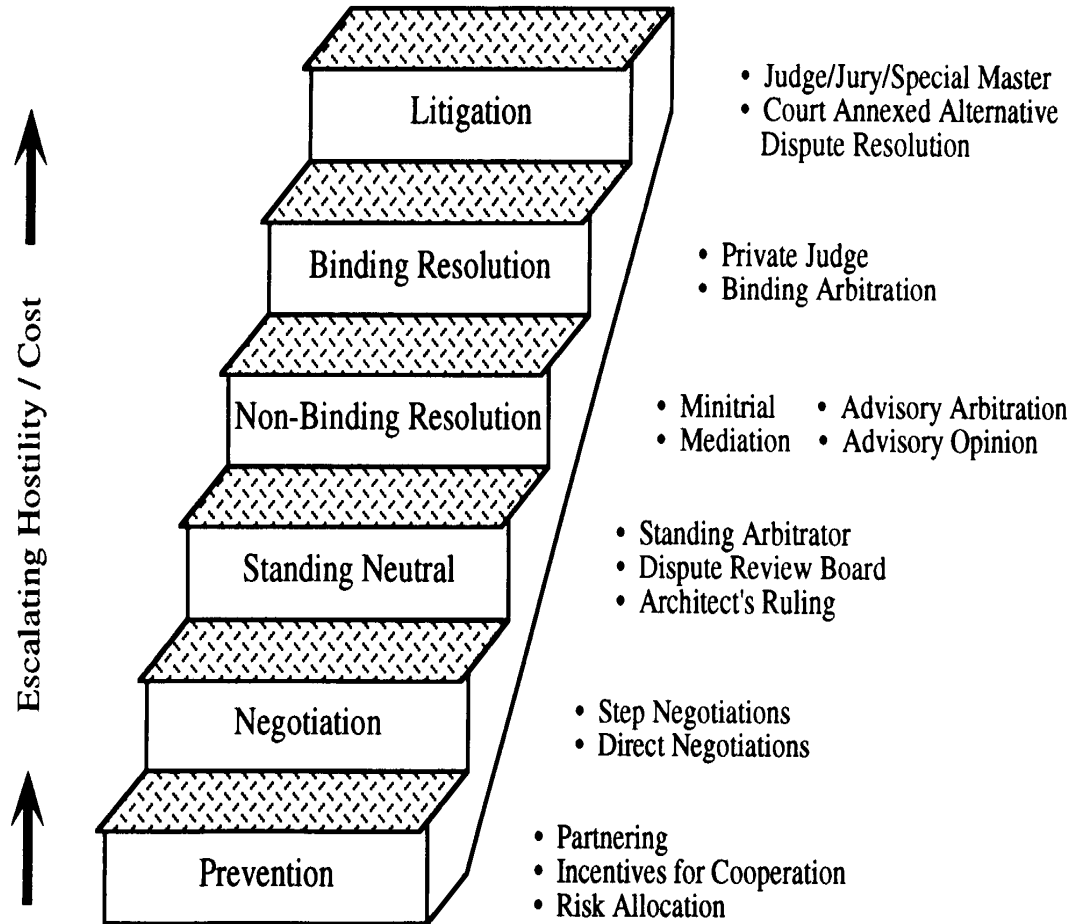


Figure 1.1 Steps in Construction Dispute Resolution
Different techniques exhibit rising levels of hostility and cost.
Source: Preventing & Resolving Construction Disputes, CPR 1991.

Figure 1.1 shows dispute review boards as one of the approaches associated with the concept of a standing neutral. This is consistent with the definition of a dispute review board developed by the Task Force:

A dispute review board (DRB) is a small group of independent, knowledgeable and respected individuals selected by the owner and contractor and appointed under the contract to review and make recommendations on disputes which arise on the project. The board is appointed at the outset of the project. It visits the project regularly and has a long-term perspective on any issue it is asked to address. The recommendations it makes are the first step in the dispute resolution process. The recommendations are not binding and they do not preclude either party to the contract from exercising any of the other mechanisms for resolving claims. [Vorster 1990]

DRBs have been and continue to be implemented on a number of public heavy civil engineering projects. They have been remarkably successful in this arena, and it is reported that a total of \$3.2 billion worth of work was completed or under construction in the period 1975 to 1991 with 81 disputes heard and none taken to litigation [ASCE 1991]. Disputes on projects without DRBs do not show a similar pattern [ENR 4/29/91b]. Despite this apparent success, two issues warrant further investigation:

- 1) No structured research has been undertaken to determine exactly why dispute review boards are so effective. It is known that they work but the reasons have neither been studied nor well documented.
- 2) It is not known whether dispute review boards can be implemented in the private commercial and industrial sector of the construction industry with the same degree of success that they have enjoyed in the public heavy civil engineering sector.

This research will develop an understanding of dispute prevention and resolution with an emphasis on DRBs. It will aim to resolve these two issues and thereby contribute to the growing body of knowledge concerning the use of review boards in construction.

1.3 Objectives of the Research

The research described in this report was undertaken to achieve four specific objectives:

- 1) To gain an understanding of the nature of disputes in construction and of the steps needed to prevent and resolve disputes as part of the construction contract administration process.

- 2) To study the growing field of alternative dispute resolution in construction with particular emphasis on techniques which either prevent disputes from occurring or assist in the timely on-site resolution of those which do occur.
- 3) To study the functioning of DRBs in the field in order to identify the factors which contribute to their success or failure.
- 4) To determine whether DRBs can be successfully implemented in the private commercial and industrial sector of the industry, and:
 - i. If the conclusion is negative, state why DRBs cannot be used.
 - ii. If the conclusion is positive, develop practical guidelines for implementing DRBs in the private commercial and industrial sector of the industry.

1.4 Scope and Limitations

The detail scope of the research was limited to DRBs. It is acknowledged that there exists a "continuum of techniques for alternative dispute resolution" [Edelman 1990] and that the dispute review board concept is only one of many approaches with potential for success in the industry.

Techniques such as partnering, mediation, minitrials and arbitration were not specifically studied during this research. The work of others in this area was reviewed and is described in order to provide a broad analysis of the various techniques available in practice.

1.5 Research Methodology

The information gathering and learning phase of the research encompassed five distinct activities:

- 1) A period of desk research and broad-based field interviews to develop a thorough knowledge of the subject.
- 2) A period spent trying to identify pilot projects on which dispute review boards could be implemented and studied.
- 3) A questionnaire-based survey of CII member companies to gather information on the need for and perceptions regarding alternative dispute resolution procedures.

- 4) A fifteen-month period spent monitoring the functioning of a DRB throughout the construction of a major commercial building.
- 5) A number of visits to functioning DRBs to observe their operational dynamics and note the different approaches used in implementing the concept.

The knowledge gained throughout the research was discussed in depth at Task Force meetings. This made it possible for Task Force members to review the work in progress and use their observations, knowledge and experience to provide input. The final conclusions and guidelines developed are thus a product of the research as well as the knowledge, experience and unique perspectives of the Dispute Prevention and Resolution Task Force members.

1.6 Outline of the Report

This introductory chapter will be followed by seven chapters structured as follows:

Chapter 2: The Construction Claims Process

This chapter provides background for understanding the nature of the construction claims process. It shows where breakdown can occur and describes how alternative dispute resolution techniques in general and dispute review boards in particular assist in halting the process. Standard terminology is introduced for describing the parties involved and the stages in the claims process.

Chapter 3: Alternative Dispute Resolution

This chapter presents a brief review of alternative dispute resolution techniques which have been successfully used and highlights differences between the various methods. It is shown that a systematic approach to dispute prevention and resolution throughout the design, documentation and construction phases of a project can reduce the litigious nature of the construction industry.

Chapter 4: Dispute Review Boards

The unique attributes of dispute review boards are identified in this chapter. The classic dispute review board methodology developed by the Underground Technology Research Council is explained in full and a checklist for assessing compliance is presented. The understanding of dispute review boards developed in this chapter provides a framework for the research results, research conclusions and implementation guidelines presented in Chapters 5, 6, and 7.

Chapter 5: Field Research Results

The research undertaken for the project will be described in detail. Lessons learned from the desk research, the questionnaire survey, the long-term monitoring of a dispute review board on a pilot project and the visits to existing review boards will be discussed. The results and lessons learned will be summarized to provide the material needed for Chapter 6.

Chapter 6: Research Conclusions

The results of the research will be reviewed and conclusions drawn regarding the technical aspects of dispute review boards and the apparent reasons for their success or failure. Emphasis will be placed on findings specifically relating to the use of DRBs in the private commercial and industrial sector of the industry. The conclusions will synthesize the results of Chapters 2-5 and provide valuable input for the implementation guidelines developed in Chapter 7.

Chapter 7: DRB Implementation Guidelines

The research conclusions will be used to develop practical guidelines for implementing a dispute review board on a given project and administering the process in an effective manner.

Chapter 8: Conclusions

A brief chapter will present the final conclusions of the research.

A number of appendices will be used to provide detail not considered appropriate for the body of the report.

CHAPTER 2

2. THE CONSTRUCTION CLAIMS PROCESS

This chapter provides the necessary theoretical starting point for the research. The nature of the construction claims process is discussed and standard terminology is defined for the parties involved as well as for the stages in the claims process. The information presented supports the more detailed and practical work in subsequent chapters.

2.1 The Nature of the Problem

The Center for Public Resources states that "the adversarial nature of this [the construction] industry takes a terrible toll on the economy of the United States" [CPR 1991]. Conflict, disputes and claims are not new to the construction industry. There is, however, substantial evidence that the incidence and cost of dispute resolution has reached a level where many participants in the construction process believe there must be a change in the way the industry settles its differences. The existence of the Dispute Prevention and Resolution Task Force within CII, the activities of the Business Roundtable, the work done by the Construction Disputes Committee of The Center for Public Resources and the recent establishment of the Construction Industry Dispute Avoidance and Resolution Task Force (DART) are examples of the many initiatives aimed at producing the desired change.

An understanding of the basic nature of the problem is required before meaningful change can be made. Many studies have been conducted into the reasons for and the causes of disputes in the construction industry [NCHRP 1983, Long 1988, BRT 1991]. All develop comprehensive lists and most cite factors such as incomplete scope definition, inappropriate contract type and poor communication as underlying factors.

Howell and Mitropoulos take a broader view and state that "contractual problems flow from a combination of uncertainty and the limited ability of people to think and communicate." They contend that the risk of one party taking an unfair advantage of another exists "whenever a limited number of opportunistic parties are bound together to create something which only has value on completion" [Howell 1993].

Their reasoning leads them to define three basic factors that they believe drive the development of disputes. These factors may be summarized as follows:

- 1) A high degree of uncertainty arising from complexity and pre-existing conditions on projects.
- 2) Imperfect contracts drawn by people who cannot see into the future and who are

limited in their ability or willingness to reason and communicate.

- 3) Opportunistic behavior arising from parties trying to take advantage of one another as circumstances unfold.

The three basic factors identified by Howell and Mitropoulos are consistent with the findings of the Task Force which, after substantial deliberation, identified the following three groupings for the underlying causes of dispute:

- 1) Project Uncertainty: Uncertainty arising from pre-existing conditions, outside forces and complexity which cause change beyond the expectation of the parties.
- 2) Process Problems: Problems in the contracting process including imperfect contracts, incomplete scope definition, unrealistic expectations with regard to cost or completion date and poor performance in executing the work.
- 3) People Issues: Issues and problems arising between people as a result of poor interpersonal skills, poor communication, lack of responsiveness and unethical or opportunistic behavior.

A large number of problem situations can be represented on a two dimensional matrix, given as Figure 2.1 [Howell 1993]. The vertical axis shows the parties' relative agreement on entitlement, while the horizontal axis shows the extent of agreement on quantification. Problems where there is agreement on both entitlement and quantification appear in the lower left quadrant. Such problems are easy to negotiate based on principles established in the contract documentation and will probably not be the subject of dispute.

Problems where there is limited agreement on either entitlement or quantification appear in the upper left or lower right quadrants. These are amenable to solution if:

- 1) The negotiators have the flexibility, authority and motivation to reach agreement on entitlement and move from 2 to 1, or if
- 2) The negotiators have the data, records, technical ability and motivation to analyze the situation, agree on quantification and move from 3 to 1.

Problems where there is limited agreement on entitlement and quantification lie in the upper right quadrant. These are extremely difficult to resolve by negotiation between the project participants due to a number of factors, not the least of which are the following:

- 1) Personalities and hardened personality-based positions make it difficult to agree on entitlement and move from 4 to 3.

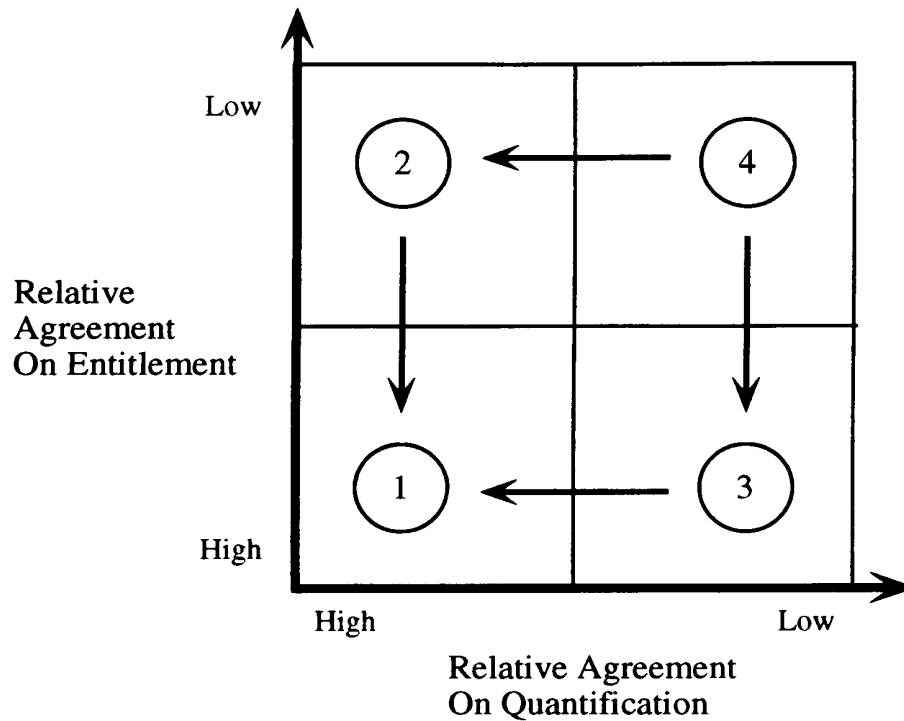


Figure 2.1 Problem Definition Matrix

Problems arise from disagreement on entitlement and quantification.

[Adapted from "A Model for Understanding, Preventing and Resolving Construction Disputes," Howell and Mitropoulos.]

- 2) Pressure of work, constraints on project-level resources and a close focus on project goals makes it difficult to agree on the quantifiable effects of the change and move from 4 to 2.
- 3) The competence and attitude of the negotiators make a crucial difference.

Problems which lie in the upper right quadrant therefore frequently require review and resolution by personnel not directly involved with the project, neutrals or other third parties. These are the problems which lead to complex disputes requiring resolution of both entitlement and quantification.

2.2 Claims and the Claims Process

The effects of project uncertainty, process problems and people issues are frequently felt as contract changes, change orders and claims. These must be resolved between owner and contractor in a process described by Bramble et al. as follows:

Problems arise every day on construction projects. This is not unusual or unexpected. Indeed, the entire design and construction process involves resolving challenges and managing the risks inherent in building. However, certain problems go beyond the expectations and risks initially accepted by the parties. The mere occurrence of problems may not be significant. However, a construction problem becomes a claim when someone asks for money, additional performance time or a change in the method of performance - although eventually it all comes back to money. The affected parties will try to pass the additional cost on to others and thus, the claims process begins. [Bramble 1990]

The concept of a "claims process" is also apparent in the Contract Disputes Act of 1978 (41 U.S.C. 601-613) which establishes procedures and requirements for asserting and resolving claims in government contracts. This act defines a claim as

A written demand or assertion by one of the contracting parties seeking the payment of money, the adjustment or interpretation of contract terms, or other relief arising either under a contract or relating to the contract terms. [Healy 1990]

The Act requires that all claims exceeding \$50,000 must be certified. The certification must state the following:

- 1) That the claim is made in good faith.
- 2) That the supporting data are accurate and complete to the best of the claimant's knowledge.
- 3) That the amount requested in the claim accurately reflects the contract adjustment for which the claimant feels the government is liable.

Civil penalties are provided for either fraudulent contractor claims or claims based on misrepresentation of fact [Healy 1990].

The Task Force debated the definition of a claim at length before choosing the following language:

A claim is an unresolved request for additional compensation and/or schedule adjustment. Any request for equitable adjustment (time and/or money) becomes a claim when it cannot be resolved at the project level with established procedures in a timely fashion. [CII 1990b]

This definition adds two important new dimensions. First, claims occur when problems cannot be resolved at the project level. Second, claims occur when problems cannot be resolved in a timely manner using established procedures.

Established procedures, presumably, preclude methods which rely on the weight of argument, money and power. Emotion does, however, play a part, as is evident in the definition of a claim prepared by the American Institute of Architects which defines a claim and the responsibility to substantiate a claim as follows:

A Claim is a demand or assertion by one of the parties seeking, as a matter of right, adjustment or interpretation of contract terms, payment of money, extension of time or other relief with respect to the terms of the Contract. The term 'Claim' also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. Claims must be made by written notice. The responsibility to substantiate Claims shall rest with the party making the Claim. [AIA 1988]

The emotional undertones associated with words such as "demand" and "right" are summarized by Gaede who contends that

The litigious impulses of the construction industry are captured using the word 'claim.' By a claim, we do not mean a disagreement, problem or dispute. Disagreements and problems occur on all construction projects, and it is fortunate that there are not more, given the nature of the industry. Most disagreements and problems are resolved daily as the construction projects are performed. We use claim to mean a disagreement which is not resolved, and one party takes a formalized position seeking relief. [Gaede 1992]

A claim is thus a product of dispute between parties to a contract. The term has many adversarial and litigious connotations and its meaning changes as the process grows in hostility and cost. In the early stages, a claim may be little more than a position paper expressing a point of view and requesting a contract change. In the later stages, a claim can be a comprehensive document forming the basis for binding adjudication.

An effort should be made to move away from the concept of a claim as the product of a dispute. Emphasis should be placed on the claims process, the individuals involved and the level at which negotiations are undertaken in order to provide a framework for understanding and managing the conflict and emotion associated with claims. The balance of the report will adopt this emphasis and the term claim will be used within this context.

2.3 Suggested Terminology

There is little, if any, agreement on the terminology used to describe either the individuals involved or the stages in the process as a claim grows from a simple construction problem to a complex and expensive litigation. It is thus necessary to define suggested terminology and, if need be, change old meanings to develop a consistent framework for the report.

The following terms and definitions for the individuals involved and the stages in the claims process will be used throughout the report.

1) The Individuals Involved

1. Project Managers

The individuals, employed by the owner, the engineer, the architect or the contractor, who are directly involved with the project at the project level and who are responsible for the day-to-day decisions needed to perform the work within the scope of their contract.

2. Project Sponsors

The individuals, employed by the owner, the engineer, the architect or the contractor, who are responsible for the overall success of the project at a home office or corporate level. Their responsibility stretches beyond the narrow confines of their contract to include long-term business and customer satisfaction objectives.

3. Standing Advisors

The expert consultants and legal advisors retained by the owner, engineer, architect or contractor to assist with the resolution of technical problems and disputes on an ongoing basis throughout the duration of the project.

4. Standing Neutrals

The individuals selected and appointed by owner, engineer, architect or contractor to provide ongoing assistance with dispute resolution throughout and in parallel with the performance of the project.

5. Consultants

The consultants, legal advisors and other experts retained by owner, engineer, architect or contractor to provide advice on specific identified technical or contractual issues.

6. Neutrals

The individuals selected and appointed by owner, engineer, architect or contractor to assist with the resolution of identified technical or contractual problems on an issue-by-issue basis.

7. Litigators

The lawyers, arbitrators and judges involved in reaching a final binding resolution on specific matters referred to them.

The above terminology is summarized in Figure 2.2, which lists the individuals involved and their primary responsibilities.

2) Stages in the Claims Process

1. A Problem

Problems arise from project uncertainty, process problems or people issues and are a normal part of construction. Most are resolved when the project participants agree on the resolution of the problem as part of their normal day-to-day management of the project.

2. A Disagreement

Disagreements arise when the project participants cannot resolve a problem without recourse to substantial honest negotiation. Each party will notify the other, in accordance with the contract documents, of its position in writing and the project participants will use this as the basis to seek a negotiated agreement at the project level.

Individuals Involved	Primary Responsibility	
	Primary responsibility is to the continuing progress and success of the project.	Primary responsibility is the resolution of a specific issue or point of contention on the project.
Project Managers	Managers make day-to-day decisions needed to perform work.	
Project Sponsors	Responsibility stretches beyond their contract and includes long-term business relations.	
Advisors and Consultants	Standing advisors assist with the resolution of technical and contractual problems on an ongoing basis.	Consultants are used to provide specific advice on identified technical or contractual issues.
Neutrals	Standing neutrals are selected and appointed to provide ongoing assistance with dispute resolution.	Neutrals are selected and appointed to assist with the resolution of problems on an issue-by-issue basis.
Litigators		Litigators are involved in reaching final binding resolution on specific matters referred to them.

Figure 2.2 Summary of Individuals Involved
Various individuals are involved with different primary responsibilities.

3. A Dispute

Disputes arise when the project participants are unable to resolve a disagreement in a timely manner. Project sponsors, standing advisors or standing neutrals will become involved in an attempt to resolve the dispute and reach agreement at the project level.

4. A Conflict

Conflicts arise when project sponsors, standing advisors or standing neutrals can not resolve a dispute at the project level. Internal or specialized consultants will be required to quantify the disputed issue as accurately as possible and address unresolved questions of entitlement and quantification. The time, cost and management effort needed to reach agreement escalates dramatically as negotiations or dispute resolution procedures become complex and protracted.

5. Litigation

Litigation occurs when internal and specialized consultants are unable to reach agreement on quantification and entitlement despite their best efforts and when the parties involved have considered the implications of protracted arbitration or court proceedings. Under these conditions final resolution is sought through binding arbitration, the courts or other legal forums.

The above five stages are summarized in Figure 2.3, which also details the roles played by the parties involved. The progression from problem to litigation presented is similar to the "continuum of alternative resolution techniques" presented by Edelman who states that

There is a point on the line where the authority to resolve the dispute is turned over to a third party. The procedures to the left of the point are controlled by the parties who make their own decision to settle the dispute. The procedures to the right of the point grant decision making authority to a third party, usually a judge. [Edelman 1990]

The line between dispute and conflict is one stage earlier than the point identified by Edelman. It is, nevertheless, very significant in that it represents the point beyond which consultants and neutrals appointed on an issue-by-issue basis become involved and resolution is sought at levels removed from the project.

Individuals Involved	Stages in the Claims Process				
	Problem	Disagreement	Dispute	Conflict	Litigation
Litigators					Formal court documentation and proceedings
Consultants & Neutrals				Assist with quantification and entitlement on an issue-by-issue basis	
Sponsors, Standing Advisors & Standing Neutrals			Attempts at resolution removed from day-to-day management		
Project Managers	Routine discussions & negotiations	Substantial honest negotiation on defined problem			
Level of Resolution	On the Project			Removed from the Project	

Figure 2.3 Stages in the Claims Process
Claims escalate from simple problems to complex and expensive legal battles.

2.4 A System for Success

The focus that this report places on preventing and resolving disputes makes it difficult to remember that the construction industry is, or should be, structured for success. Competent work in the pre-construction phase can minimize as much uncertainty as possible. Good decisions regarding processes used and constructive behavior of parties involved insure that projects move from conception to completion in a cost-effective manner.

Figure 2.4 outlines a system that has opportunities for success but frequently leads to conflict and litigation. The system may be described as follows:

- 1) Project uncertainty, process problems, and people issues combine to create problems. These should be discussed and resolved by the project managers on-site and quantified as additional or varied work through the change order process. If this is not done, disagreements occur and the problem escalates to a more formal level.
- 2) Disagreements can and should be resolved by the project managers through substantial honest negotiation. Issues regarding entitlement and/or quantification need to be resolved and any necessary change orders issued. If this does not occur in a reasonable, timely manner, then disagreements become disputes.
- 3) Project sponsors, standing advisors or standing neutrals with perspectives or technical ability beyond those available on the project can assist in reaching agreement on quantification and entitlement when the project managers declare a dispute. Success leads to an agreed settlement; failure leads to conflict.
- 4) Conflict occurs when disputes cannot be resolved and when specialist consultants and neutrals must be used to negotiate agreement on entitlement and quantification on an issue-by-issue basis. Failure causes the conflict to escalate and litigation or other binding forms of adjudication are used to reach a final resolution and award.

The system provides owners, engineers, architects and contractors with many opportunities to resolve matters among themselves and avoid litigation. Much can be done to insure that the system functions successfully by focusing on the following:

- 1) The pre-construction phase, when many of the seeds which later grow to problems and disputes are sown.
- 2) The dispute prevention phase, when the project managers can exercise their technical and interpersonal skills to quantify and negotiate the resolution of problems and disagreements.

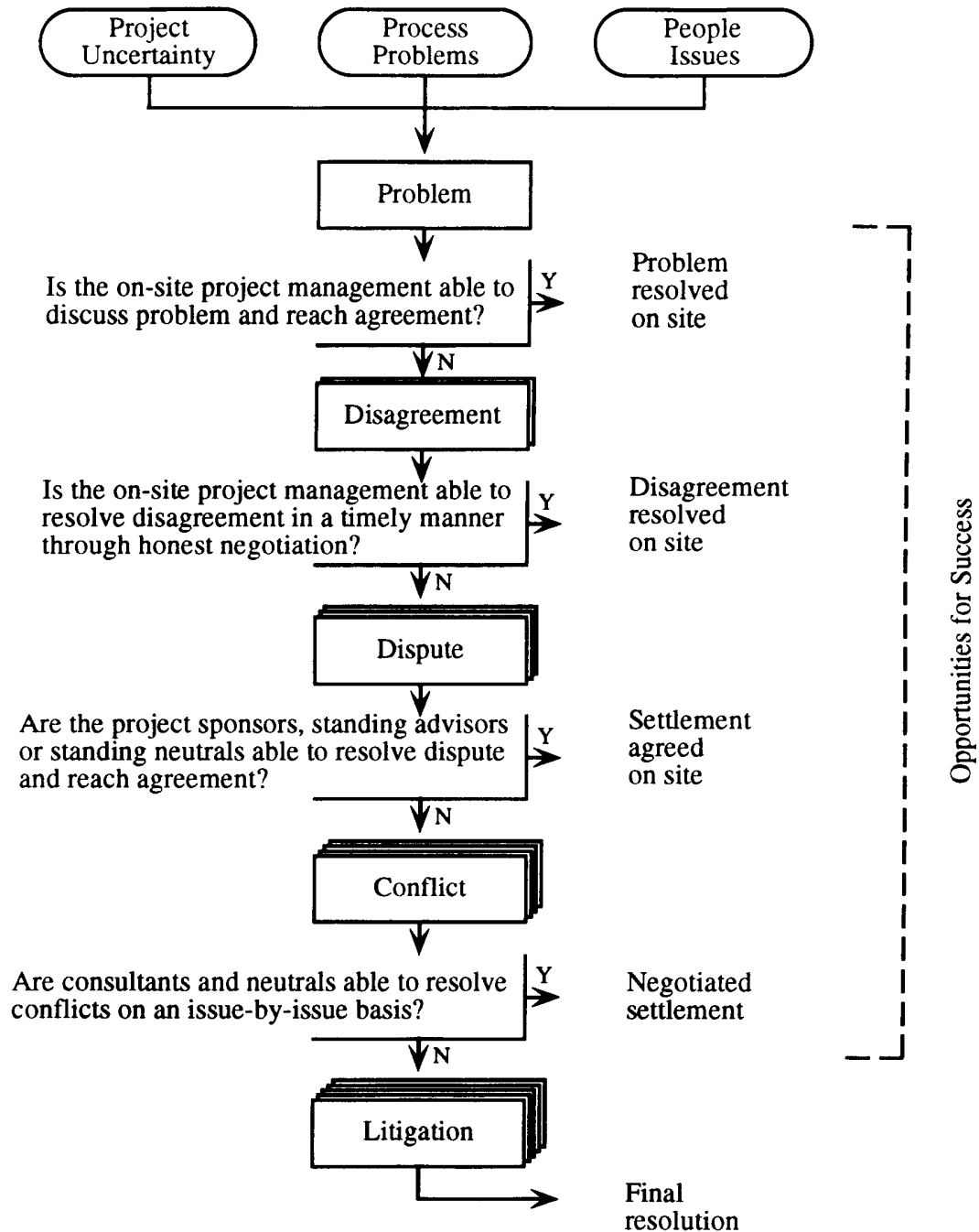


Figure 2.4 A System for Success

The system provides owners, engineers, architects and contractors with many opportunities for success.

- 3) The dispute resolution phase, when alternative dispute resolution procedures may be used to settle matters prior to conflict and litigation.

2.5 System Failure

An understanding of the nature of the problem and of the system, which should lead to success but which often leads to conflict and litigation, provides a framework for understanding why the Construction Industry Institute has stated that "litigation related to design and construction continues to increase" [CII 1991]. The Business Roundtable has also observed that the construction industry is in "a constant state of confrontation" with the parties involved in an "adversarial dance" [BRT 1983]. The following overloads result in a chain reaction failure of the system as presented in Figure 2.4.

- 1) Poor Project Definition. Complexity and uncertainty in the project, haste or incompetence in design and contract documentation and many other factors give rise to problems and disagreements. Documentation which does not recognize this and makes it difficult to administer the contract and resolve problems places a heavy burden on the field negotiation process.
- 2) Failed Field Negotiation. There are three basic reasons why the field negotiation process can fail. The first stems from the sheer volume of negotiation which must occur if the project definition is less than competent. The second stems from the fact that project participants typically lack the resources and authority to agree on quantification and entitlement. The third stems from the lack of responsiveness or opportunistic behavior which can and does occur between the parties. The three factors are not independent. Growth in the volume of problems overloads the resources needed to negotiate and agree; a lack of resources and authority to negotiate and settle encourages opportunistic behavior; the negotiation process fails, disagreements grow to become disputes and conflicts.
- 3) Unsuccessful Conflict Resolution. Success in the project definition and change order negotiation stages prevents conflict. Failure causes conflict to arise and places a heavy burden on the individuals responsible for conflict resolution. Growing demands for accountability in all sectors of the industry make it difficult for project sponsors and standing advisors to resolve disputes without recourse to neutrals, specialized consultants or lawyers on an issue-by-issue basis. This increases the level of hostility between the parties as well as the time and cost of resolution. When the system fails at this level, the control of the process passes out of the hands of those involved and litigation or other forms of binding adjudication are required.

2.6 Summary

This chapter has provided a necessary theoretical starting point for the research. The claims process has been discussed and terminology describing the parties involved and the stages in the process has been presented.

The three basic factors that drive the claims process (project uncertainty, process problems and people issues) have been described. It has been shown that parties must reach agreement on both quantification and entitlement in order to resolve claims which do occur.

A system designed for success in avoiding conflict and litigation has been presented, and the conditions under which this system fails have been described.

The terminology and concepts developed in this chapter will be used in future chapters which focus more closely on the objectives of the research.

CHAPTER 3

3. ALTERNATIVE DISPUTE RESOLUTION

This chapter contributes to the report in two areas. First, it reviews the state of the art in alternative dispute resolution and describes some techniques available. Second, it shows how the various dispute resolution techniques are used to insure that the system for success given in Figure 2.4 succeeds. The stage at which dispute resolution passes off the job site and out of the hands of those involved with the long term success of the project is identified as an important dividing point in the dispute resolution process.

3.1 A Growing Field

Alternative Dispute Resolution (ADR) has traditionally been understood to mean the use of either mediation or arbitration as alternative methods of resolving disputes which would otherwise go to court. Change in this narrow concept was foreseen by Coulson who reviewed a number of contract types and stated that "effective dispute resolution under the evolving 'performance models' (contract types) may require somewhat more virtuosity than was once required. The issue by issue arbitration model may no longer be appropriate. Fortunately voluntary dispute settlement has great flexibility" [Coulson 1983]. His point of view was correct, and in 1992 Groton wrote "There has been a veritable explosion in the development and use of new dispute resolution techniques, particularly techniques for resolving disputes at the job site during the course of construction" [Groton 1992].

The Army Corps of Engineers has assumed a major leadership role in adopting and encouraging the use of ADR [Cushman 1991]. This role is summarized by Edelman who states that "We want to encourage our managers to experiment with ADR to create new or hybrid procedures . . . We want to encourage creativity rather than prescribe a list of "accepted" ADR procedures" [Edelman 1990]. He does, however, present a list, or "continuum of techniques" ranging from "the hot tub where disputes are somehow resolved while everyone gets a nice hot soak" to "the ultimate dispute resolution technique, litigation, which I equate to war." He comments on the continuum as follows:

Another important characteristic of the continuum is that there are vacant spaces in the list. These spaces indicate that ADR is a developing field; new procedures and approaches to dispute resolution are being created as experience grows. [Edelman 1990]

ADR is a growing field. New methodologies, new thoughts and new experiences are reported on an ongoing basis.

The state of the art as described in the sections which follows will surely change but the principles will remain the same: there are alternatives to litigation for the resolution of disputes; there is great flexibility in voluntary dispute settlement; creativity should take precedence over a prescribed list of accepted procedures.

3.2 The State of the Art

The Center for Public Resources is a New York based think tank which promotes dispute resolution throughout American business and industry. In 1990 it became interested in the problem of disputes in the construction industry and formed a Construction Disputes Study Committee. This committee published a report in late 1991 entitled "*Preventing and Resolving Construction Disputes*" [CPR 1991]. The report was reviewed by the Task Force while in draft form and comments were provided to the study committee. CII found the final document to be totally consistent with the research done to date, and copies were distributed to members of the Board of Advisors in January 1992. Much of what follows is extracted from this report and presented here in summary form.

The Center for Public Resources is not alone in its promotion of ADR concepts. Many agencies are actively involved in the process and this research can therefore not be taken as definitive over time. The state of the art is constantly developing under the leadership of the organizations listed in Figure 3.1.

The spectrum of ADR techniques identified by the Center for Public Resources will be grouped under the following four headings to permit a concise review in the next four sections.

- 1) Pre-Construction Techniques.
- 2) Dispute Prevention Techniques.
- 3) Dispute Resolution Techniques
- 4) Conflict Resolution Techniques.

3.3 Pre-Construction Techniques

Much can be done during the pre-construction engineering and documentation stage to minimize disputes and to develop guidelines for managing any that do occur. A substantial portion of the work done to date by CII to improve construction cost effectiveness has a direct impact on dispute prevention. Specifics include the following:

- 1) Competent Engineering and Documentation. This subject was discussed at length in chapter 2 when it was shown that uncertainty and imperfect contracts are two of the basic factors which drive the claims process. CII has done substantial work in this area [CII 1986a, 1988a; CII 1990a]. Many of the recommendations developed become even more effective when their potential impact on dispute prevention is taken into account.

Dispute Resolution Organizations

American Arbitration Association
140 West 51st Street
New York, New York 10020-1203
(212) 484-4000/(212) 307-4387 (fax)

Center for Public Resources, Inc.
366 Madison Avenue
New York, New York 10017
(212) 949-6490/(212) 949-8859 (fax)

Dispute Avoidance and Resolution Task Force
1150 Connecticut Avenue, NW, Suite 600
Washington, DC 20036-4199
(202) 296-5775/(202) 296-5795 (fax)

Construction Industry Business and Professional Organizations

Construction Industry Institute
3208 Red River, Suite 300
Austin, Texas 78705
(512) 471-4319/(512) 499-8101 (fax)

Business Roundtable
200 Park Avenue
New York, New York 10166-0097
(212) 682-6370/(212) 682-0194 (fax)

Construction Industry Presidents Forum
345 Warwick Avenue
Douglaston, New York 11363
(718) 631-0827/(718) 631--742 (fax)

American Society of Civil Engineers
345 East 47th Street, 3rd Floor
New York, New York 10017
(212) 705-7391/(212) 980-4681 (fax)

National Construction Dispute
Resolution Committee
140 West 51st Street, 9th Floor
New York, New York 10020-1203
(212) 484-4000/(212) 307-4387 (fax)

Associated General Contractors
1957 E Street, N.W.
Washington, DC 20006
(703) 391-1200/(703) 391-9323 (fax)

International Individuals and Organizations

Ian Eilenberg
Dept. of Building & Construction Economics
Royal Melbourne Institute of Technology
124 LaTrobe Street
Melbourne
Vic 3000, GPO Box 2476V
Australia
Tel: 61 3 660 3449

Sir Christopher Leeds
Universite de Nancy II
BP 33-97
54015 Nancy Cedex
France
Tel: 83 96 43 83

John Uff
Center for Construction Law & Management
Kings College
London
United Kingdom
Tel: 071-873 2446

Peter Fenn
Department of Building Engineering
UMIST
Manchester M60 1QD
United Kingdom
Tel: 061-200 4233

Figure 3.1 Organizations Actively Involved in Promoting ADR Concepts

A growing number of organizations are promoting ADR concepts.

- 2) Constructability Analysis. Many of the errors, omissions and impracticalities in design which lead to problems and disagreements during field construction can be eliminated if constructability concepts are used in planning, design and procurement. The procedures and benefits have been studied and documented by CII [CII 1986b]. A technique whose primary objective is to improve the quality of design is again seen to be of substantial value in preventing disputes.
- 3) Realistic Risk Allocation. Substantial work has also been done by CII in this area [CII 1988a, 1988b]. The principles developed contribute directly to the prevention of disputes and their importance cannot be overstated. Suffice it to say here that many disputes arise when parties are forced to contest the adverse impacts of an unreasonably allocated risk.
- 4) Dispute Resolution Clauses. Many contracts are silent with regard to techniques for dispute resolution. The assumption is that problems and disagreements will be resolved by litigation and that the parties carry this risk. The CPR study makes two very clear recommendations aimed at overcoming this situation:
 - Even when problems turn into disputes, litigation should not be the method used to resolve them.
 - If participants commit in advance to using dispute resolution techniques when problems arise, they create an atmosphere conducive to solving problems.

The report states that "participants in a construction project should commit themselves contractually in advance to explore non-adjudicative dispute resolution options before resorting to binding arbitration or litigation" [CPR 1991].

- 5) Partnering. CII has played a major role in formalizing the concept of partnering which has been defined as follows:

... 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. The relationship is based upon trust, dedication to common goals and understanding each other's individual expectations and values. Expected benefits include improved efficiencies and cost effectiveness, increased opportunity for innovation and continuous improvement of quality products and services. [CII 1991]

Much has been written about partnering. A full discussion or even partial record of its success is beyond the scope of this report. The concept is endorsed by many agencies and it has proven to be an effective method for articulating shared goals, improving communication, building trust and conducting honest negotiations.

- 6) Incentive Programs. These provide another mechanism for sharing goals and improving relationships between owner, engineer and contractor. CII has again been active in this area and studies have shown that incentive programs can be used to promote superior performance and avoid disputes [CII 1988c].

The above specifics show that much of the work done by CII to improve construction cost effectiveness is able to play a major role in dispute prevention, greatly enhancing the value of the work and providing additional motivation for implementing the principles developed. A number of reports have been cited in the above sections; Figure 3.2 summarizes these and lists other relevant CII publications.

3.4 Dispute Prevention Techniques

Dispute prevention techniques are aimed at resolving problems and disagreements among field project managers before they escalate to higher and more complex levels. Again, the title "Dispute Prevention Technique" may seem over elaborate for procedures which would normally be considered sound business and contract administration practice. These procedures include the following:

- 1) Project Partnering. This is a variation on the long term partnering concept championed by CII and discussed in 3.3, item 5. The modifications needed to implement the concept on a project-by-project basis have been promoted by the U.S. Army Corps of Engineers, who are effectively precluded from entering long-term multiple-project relationships outside the competitive contracting process. The principles remain the same as for long-term partnering and are summarized by Cowan as follows:

Partnering offers a new paradigm for owner/contractor relationships. Under partnering, all parties agree from the beginning, in a formal structure, to focus on creative cooperation and work to avoid adversarial confrontation. Working relationships are carefully and deliberately built, based on mutual respect, trust, and integrity... Partnering aims at empowering problem solving on the lowest possible level and at the earliest possible time. [Cowan 1991]

I. Publications

i.	Guidelines for Implementing a Constructability Program	3-2	July '87
ii.	Project Objective Setting	12-1	April '89
iii.	Impact of Various Construction Contract Types and Clauses on Project Performance	5-1	July '86
iv.	Incentives Plans: Design & Application Considerations	5-2	November '88
v.	Contract Risk Allocation and Cost Effectiveness	5-3	November '88
vi.	Scope Definition and Control	6-2	July '86
vii.	Project Control for Construction	6-5	September '87
viii.	Management and Project Risk Uncertainties	6-8	October '89

II. Source Documents

i.	Constructability Improvement During Conceptual Planning	SD-4	March '86
ii.	Constructability Improvement During Engineering Procurement	SD-5	May '86
iii.	Advanced Building Technology (ABT) Matrix	SD-42	November '88
iv.	Bar Coding Implementations, Part II: Tutorial	SD-46	March '89
v.	Control of Construction Project Scope	SD-6	March '86
vi.	Incentives in Construction Contracts	SD-8	April '86
vii.	Contract Clause Study Data	SD-9	April '86
viii.	Determining the Impact of Various Construction Contract Types and Clauses on Project Performance, Volume I	SD-10	April '86
ix.	Analysis of Construction Contract Change Clauses, Volume I	SD-14	April '86
x.	Unique Features of Construction Contract Incentive Plans	SD-40	October '88
xi.	Risk Management in Capital Projects	SD-41	October '88
xii.	Impact of Risk Allocation and Equity in Construction Contracts	SD-44	March '89
xiii.	Construction Change and Change Orders: Their Magnitude and Impact	SD-66	April '91

III. Special Publications

i.	Guidelines for Implementation Program		September '89
ii.	In Search of Partnering Excellence	Special Publication	17-1 July '91
iii.	Manual for Special Project Management		July '91
iv.	Organizing for Project Success	12-2	February '91
v.	Partnering: Meeting the Challenges of the Future		August '89

Figure 3.2 CII Publications
Many CII publications are relevant to dispute prevention.

Effective partnering and the effect it has on team building enhance the field project managers' ability to resolve disagreements and agree on changes through honest negotiation. Its record in preventing disputes is impressive and the Corps of Engineers "has found partnering to be a very valuable management technique" [Jones 1991]. The process is fully described in IWR Pamphlet-91-ADR-P-4 [USACOE 1991]. Details can also be found in a document published by the Associated General Contractors of America [AGC 1991].

- 2) Training and Development. The behavior, skills and attitudes of the individuals responsible for project execution determine the climate within which decisions are made and problems are resolved. Many relationships in the construction industry are traditionally adversarial in nature and "if ADR is to be adopted, mind sets must change" [Edelman 1990]. The key to this change lies in training and development that focuses on the technical aspects of contract administration and dispute resolution as well as the interpersonal and negotiation skills needed to succeed. CII, the Corps of Engineers and many other agencies are actively involved in the area.
- 3) Honest Negotiation. Resolving disagreement requires honest negotiation based on performance, documentation and communication. The contractor's ability to perform and show that the project goals will be met on time and on budget is an extremely important factor in maintaining a positive environment for negotiation. Timely, accurate and complete documentation is essential if facts are to be recorded and agreement is to be reached on entitlement and quantification. Open and professional communication based on good documentation and an understanding of the facts is a prerequisite for negotiation and settlement.

Dispute prevention techniques focus on the team-building and interpersonal skills needed to maintain healthy relationships and resolve disagreements during construction. They complement the technical and contractual steps outlined for the pre-construction phase and provide the basis for good day-to-day management of the project.

3.5 Dispute Resolution Techniques

Disputes arise when the field project managers are unable to resolve a disagreement and when project sponsors, standing advisors or standing neutrals become involved in an attempt to reach agreement. Three factors are important.

First: Individuals with a long-term or ongoing advisory interest are involved. They thus have a good understanding of project goals, are available when required without the need for specific briefing and are independent of the posturing associated with issue-by-issue dispute resolution.

Second: The individuals involved are somewhat removed from the day-to-day demands of the project's management. They are more able to separate personalities from disagreements and can bring new perspectives and skills to bear on the issue at hand.

Third: The individuals concerned are directly associated with the project and resolution takes place on the job site in parallel with the performance of the work. The project participants remain involved in the process and they carry a responsibility for the disagreement as well as its resolution.

The Center for Public Resources emphasizes the concept that dispute resolution is a "job-site" function as opposed, presumably, to a "board room" or "courtroom" function. They identify two "new job-site dispute resolution devices" as examples of techniques which have shown promise:

1) Step Negotiations.

One proposed new technique is the "Step Negotiations" procedure. Under this technique, if the representatives of parties who are most intimately involved in the disagreement are not able to resolve it at their level, their immediate superiors, who have not been closely identified with the disagreement, are asked to confer and try to reach agreement. If this is not possible, then the disagreement will be passed on to higher management in both organizations. Because of an intermediate manager's interest in keeping messy problems from bothering higher management, and demonstrating to higher management the manager's ability to solve problems, there is sometimes a built-in incentive to resolve disputes before they have to go to a higher level [CPR 1991].

2) Standing Neutral.

The most promising recent development has been the movement to establish a pre-selected neutral to serve the parties as a dispute-resolver throughout the construction process. This concept involves an independent neutral designated variously as a "dispute review board," "standing mediator," "referee," "standing arbitrator" or "adjudicator." The concept provides that, at the inception of the construction phase of the project, the parties select one or more independent construction industry experts to be available as a standing board, panel or single neutral throughout the project. The neutral acts immediately to resolve any disputes which the parties cannot resolve themselves [CPR 1991].

This research focuses specifically on the functioning of dispute review boards in order to make recommendations on their implementation in the private commercial and industrial sector of the industry. A special knowledge of dispute review boards, as a variation of the standing neutral concept, is thus needed to provide a framework for the research findings and conclusions, and this is provided in Chapter 4.

3.6 Conflict Resolution Techniques

Conflict resolution techniques are aimed at reaching a negotiated settlement or final resolution in the event that disputes cannot be resolved on-site using existing procedures. A large number of techniques, many differing from another by only subtle variation, have been used. All share one characteristic: the neutral or group of neutrals involved are appointed on an issue-by-issue basis. They have no involvement with the project other than that required for the resolution of the defined conflict and are appointed and briefed accordingly.

The following is a brief summary of techniques listed in the Center for Public Resources publication "Preventing and Resolving Construction Disputes." A full description is outside the scope of this report and should be sought in the referenced document.

- 1) Advisory Opinion. An independent, mutually agreed upon neutral expert meets with both parties to obtain information and render a non-binding decision or prediction of the ultimate outcome.
- 2) Fact-Based Mediation. This provides for an extension of the advisory opinion concept in that the neutral issues detailed reports to the parties assessing the facts and stating a recommended basis for settlement.
- 3) Mediation. Mediation is a process of resolving conflicts through settlement conferences conducted by the neutral. The mediator facilitates negotiations between the parties but has no inherent power and can make no decisions that will bind the parties. Flexible rules for the conduct of mediations have been developed by the American Arbitration Association.
- 4) Minitrial. A minitrial is a private non-binding settlement procedure in which attorneys from each side make summary presentations of their case to executives representing the disputing organizations. The executives gain an appreciation of the relative merits of their case and are able to use their decision-making authority to reach settlement. Procedures are more structured than those used in mediation, attorneys are involved and case preparation frequently includes limited discovery. A neutral third party may be involved to promote the process and evaluate the relative merits of the situation. Model procedures for the conduct of minitrials have been developed by a number of agencies including the Center for Public Resources.

- 5) Non-Binding Arbitration. A non-binding arbitration is similar to a minitrial in that summary presentations are made by attorneys for each side. The presentations are, however, made to a panel of three or a single highly respected expert neutral who issues an advisory award or a prediction of the likely award if the case were submitted in a binding adjudication procedure. The award or prediction provides the parties with a realistic assessment of the case which frequently results in a negotiated settlement.
- 6) Binding Arbitration. Arbitration, litigation and private judging (discussed under 7 below) focus on adjudication and final resolution rather than negotiation. As such, they are not really alternative dispute resolution procedures and are included here in very summary form for the sake of completeness.

Binding arbitration differs from non-binding arbitration in two dimensions. First, the presentations made and particularly the discovery processes which precede the presentations are relatively full and formal. Second, the findings of the arbitration panel or arbitrator are final and binding.

The American Arbitration Association and other agencies have developed complex rules for the conduct of arbitrations in the construction industry. They have been implemented under a number of conditions but there remains controversy in many quarters as to the relative merits of arbitration and litigation. The speed, efficiency, cost, informality and the expertise of the decision-maker in arbitration are factors which must be weighed against the more formal judicial trial and appeal processes.

- 7) Private Judging. Private judging has its place in this list of ADR techniques because it provides a middle ground between arbitration and litigation. The procedure, which is permitted in a limited number of states, makes it possible for parties to try a dispute before a mutually accepted neutral and have the resulting decision become the judgment of the appropriate trial court with the right of appeal. The temporary judges or referees are normally retired judges and the parties involved may agree on a number of simplifying procedures. These together with the ability to by-pass the trial court calendar and expedite the process make the procedure attractive under certain conditions.

The conflict resolution techniques discussed in sections 1 through 7 above occupy the fourth and fifth steps in the six-step spectrum presented in figure 1.1. They are indicative of the volume of work which has been done by various professionals in the industry to reduce the burden of litigation that "can add transaction costs to construction projects that frequently cancel out the profits of every participant in the project, regardless of who ultimately 'wins' the battle" [Groton 1992].

3.7 The Continental Divide

A system which provides owners, engineers, architects and contractors with many opportunities to minimize conflict and litigation was presented in Chapter 2. It was also shown how shortcomings in project definition, field negotiations and conflict resolution preclude the system from functioning properly and cause a "substantial dilution of effort and diversion of capital from what should be the goal of the industry - creation of works and structures to serve the public" [ASCE 1991].

Pre-construction techniques, dispute prevention techniques and dispute resolution techniques have been discussed in Sections 3.3, 3.4 and 3.5. It is extremely important to realize that these techniques can and should be used in a systematic way during the project life cycle to provide overlapping layers of security against conflict and litigation. This is shown in Figure 3.3, which builds on the flow chart presented in Figure 2.4 to emphasize the following three points:

- 1) Implementation of the concepts developed in much of the work done by CII will prevent disputes in the pre-construction phase. Prevention minimizes problems and keeps matters above line A-A.
- 2) Partnering and team building, either on a long-term basis as developed by CII or on a project-by-project basis as developed by the Corps of Engineers, is an extremely effective dispute prevention technique aimed at keeping matters above line B-B.
- 3) Dispute review boards, the primary subject of this research, will be shown to be effective in the resolution of disputes. They facilitate agreement by the parties at the project level and thus stop disputes from crossing line C-C.

Line C-C is extremely important as it represents "the continental divide of dispute resolution" [Ashley 1993]. Disputes resolved prior to this line remain at the job site and settlement is under the control of those directly involved. Beyond this line disputes pass out of the control of those involved. Quantification and entitlement are argued by lawyers or consultants on an issue-by-issue basis. Resolution is neither timely nor cheap and is seldom satisfactory.

There is every reason to believe that a combination of techniques used systematically throughout the design, documentation and construction phases of a project will cause problems, disagreements and disputes to remain above line C-C, the "continental divide." Implementation of CII recommendations in the pre-construction phase will work above line A-A to reduce problems; partnering and team building will work above Line B-B to assist in settling disagreements; dispute review boards will work above line C-C to resolve those disputes which do occur. This integrated and systematic approach to ADR will surely reduce the "awful litigious nature of the construction industry" [CPR 1991].

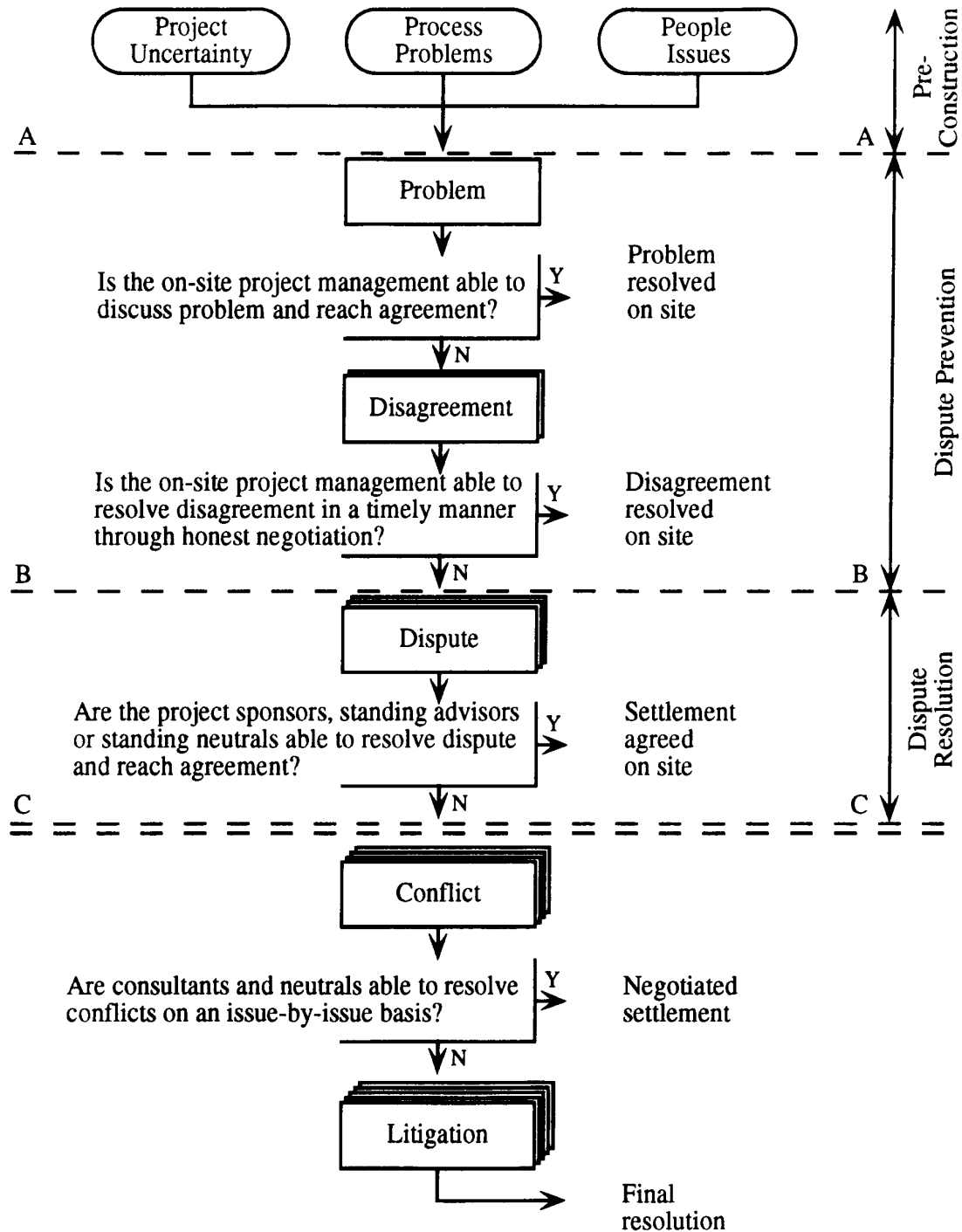


Figure 3.3 The Continental Divide
Line C-C marks the stage at which dispute resolution moves off the job site.

3.8 Summary

Sections 3.1 and 3.2 described ADR as a growing field and reviewed the state of the art. A number of ADR techniques currently used in practice were described in sections 3.3 to 3.6, which borrowed heavily from the work done by the Center for Public Resources. Section 3.7 defined the "continental divide" of dispute resolution and showed how ADR techniques could be used in a systematic way throughout the project life cycle to preclude conflict and litigation.

Four important issues merit additional emphasis:

- 1) The Pre-Construction Techniques of competent documentation, constructability analysis, realistic risk allocation, partnering, incentive programs and dispute resolution clauses all focus in the zone above line A-A to minimize the effect of project uncertainty, process problems and people issues.
- 2) The Dispute Prevention Techniques of project partnering, team building, training and development, and honest negotiation are designed to assist project participants in resolving disagreements and keep matters above line B-B, the dividing line between disagreement and dispute.
- 3) The Dispute Resolution Techniques involving step negotiations and standing neutrals, particularly dispute review boards, function above line C-C, the continental divide of dispute resolution. They attempt to insure that matters "are controlled by the parties who make their own decision to settle the dispute" [Edelman 1990] at the job site and thereby minimize the use of specialized consultants or litigators appointed on an issue-by-issue basis.
- 4) The Conflict Resolution Techniques of advisory opinion, mediation, minitrials, arbitration and private judging are all techniques aimed at reaching a negotiated settlement or a final resolution without recourse to litigation. The techniques escalate in complexity, cost, time and effort but fall short of the cost, time and effort required to prevail, or fail, at court.

Chapter 4 presents a detailed study of dispute review boards to provide a framework for the research results and research conclusions presented in Chapters 5 and 6.

CHAPTER 4

4. DISPUTE REVIEW BOARDS

The primary objective of this research is to study the functioning of dispute review boards in order to identify the factors which contribute to their success or failure. This chapter contributes to the objective by providing a detailed description of the classic dispute review board methodology as developed by The Underground Technology Research Council. A checklist for assessing compliance with the classic methodology is developed for use in Chapter 5.

4.1 Historical Development

Dispute review boards were introduced in section 3.5 as one of the techniques associated with the use of standing neutrals to serve the parties to the contract and assist with the resolution of disputes throughout the construction process. The concept grew from a 1974 publication of the U.S. National Committee on Tunneling Technology titled "Better Contracting for Underground Construction." This included the following specific recommendation:

Disputes - Provide a process for addressing disputes in their early stages before they affect the progress of the work, create adversary positions and lead to litigation. [ASCE 1989]

The key phrases in the above recommendation are "in their early stages" and "before they . . . lead to litigation." In order to satisfy these requirements dispute review boards exhibit two unique characteristics:

- 1) The standing neutrals who comprise the board are acknowledged experts in the type of construction involved. They are appointed at the start of the project and are kept informed of progress, problems and disagreements through regular meetings. They thus have a good background knowledge and are available to assist in resolving disputes at short notice.
- 2) The board conducts most of its activities on the job site and makes recommendations regarding the resolution of disputes to the project participants. This encourages resolution and settlement at a project level and insures that those responsible for the dispute are involved in its resolution.

A dispute review board (DRB) was first used on the second bore of the Eisenhower Tunnel in Colorado in 1975. The concept has matured and grown under the sponsorship of the Technical Committee on Contracting Practices of the Underground Technology Research Council of the American Society of Civil Engineers (UTRC). This group has promoted the use of DRBs on various projects and monitored the results achieved. These are impressive: \$3.2 billion of contracts completed and under construction from 1975 to 1991 with 81 disputes heard by DRBs and none taken to litigation [ASCE 1991]. These figures and many other reports [ENR 2/11/91, ENR 3/29/90, ENR 4/29/91a] provide the motivation needed to study the methodology developed by UTRC and seek ways to implement the concept across a broad range of construction projects.

4.2 Classic DRB Methodology

The UTRC has published a definitive set of guidelines for the implementation and use of DRBs [ASCE 1991]. The document reflects the experience gained since 1975 and includes a set of suggested specifications to be used when implementing a DRB. The concept described appears deceptively simple but there is no doubt that the UTRC and its technical committee have nurtured and refined the concept over the years, as is reflected in the following statement taken from the introduction to the specifications:

These specifications represent the latest product in a continuing evolutionary process. It is cautioned that apparently minor revisions to certain sensitive elements of the specifications can seriously dilute the effectiveness of the dispute resolution process. [ASCE 1991]

A copy of the suggested specifications is given as Appendix A.

The guidelines published by UTRC constitute what has come to be accepted as the classic DRB methodology. This will be described under the following headings:

- 1) Contract Requirements: The changes or additions which must be made in order that a DRB may be instituted on a given project.
- 2) Member Qualifications: The qualifications desired of DRB members.
- 3) Member Selection: The procedures for selecting and appointing members to a DRB.
- 4) Operating Procedures: The normal operating procedures followed by a DRB.
- 5) Conduct of Hearings: The procedures followed by the parties in the event that a dispute is brought to the board.

- 6) Timing and Sequence of Events: The sequence of events and time limitations placed on the board in making its recommendations.
- 7) Limitations of Authority: The limitations placed on the parties to insure the proper operation of the board.
- 8) Subsequent Proceedings: The limitations placed on the use of DRB rulings in any proceeding which may follow a board ruling.
- 9) Costs: The procedures used to compensate board members.

1) Contract Requirements

The provisions required to establish a DRB must be included in the contract documents and noted in the instructions to bidders. These provisions must be coordinated with other provisions in the contract relating to the resolution of disputes between owner and contractor.

The inclusion of dispute resolution clauses in the contract has been cited as an important pre-construction ADR technique (see Section 3.3, item 4). The opinion of an owner organization is quoted as follows:

There is no better way for an owner to signal the contracting industry the intention to deal fairly with the contractor than to include a DRB in the contract documents. The board provides on-going insulation from unfair treatment; this is reflected in the lower bid prices enjoyed by the owner. [ASCE 1991]

2) Member Qualifications

The success of a DRB depends, as with every other ADR technique, on the qualifications of the neutrals involved. Both owner and contractor must have a high regard for the members selected and must believe that they will serve the parties equally and impartially. They must have relevant technical expertise and must be able to exercise sound judgment when considering engineering, construction and contract administration matters, show no partiality and have no conflict of interest.

The professional standing, knowledge and status of the board members and their ongoing involvement with the project is the basis for the trust needed by owner and contractor to accept recommendations as fair and reasonable. It is also the basis for the fact that the presence of the board encourages the project participants to resolve disagreements and display competence in the presence of the board members for whom they have a high regard.

3) Member Selection

The member selection process used to appoint members to a DRB is such that both owner and contractor are involved but neither controls the process. Four steps are involved:

1. The owner and contractor each nominate one individual whom they believe satisfies the requirements for board membership.
2. These nominees are discussed and, if mutually approved, the individuals are appointed as the first two members of the board.
3. The first two members meet and select a third member whose appointment is approved by owner and contractor. It is intended that the third member complements the experience of the first two and provides leadership for the board's activities, normally acting as chairperson for all board activities.
4. The owner, the contractor and each board member enter into a three-party agreement which describes the scope of work, the responsibilities of the parties, limitations on liability and other aspects. A copy of the agreement as proposed by UTRC is given as Appendix B.

Two additional features of the member selection process developed by UTRC merit attention. First, it is intended to progress quickly; step 2 above is to be complete within six weeks of contract award and the whole process is to be complete in an additional eight weeks. Second, it is not intended that appointment be permanent; the three-party agreement provides for termination and "if, at any time, the board believes that the process might work better with other board members, it should step aside. This necessity would arise if the board senses that either the owner or contractor has lost trust in their impartiality or judgment" [ASCE 1991].

4) Operating Procedures

The member appointment procedures make it clear that the board is to be organized soon after the award of the contract and certainly before disputes arise. The board remains active throughout the duration of the contract and terminates its activity only after final completion and payment.

The board formulates its own rules of operation under the guidance of the chairman. These must follow the provisions of the contract and should not deviate from the proven principles developed by UTRC. The rules of operation will detail the procedures needed to fulfill the board's three main functions: keeping abreast of construction developments and progress, conducting hearings and making prompt recommendations.

Keeping abreast of construction developments and progress will require that members receive and study regular written progress reports and other relevant data. It also means that board members visit the construction site at regular intervals to meet with project participants, inspect all active segments of the work and receive formal briefings from the project participants on the status of the work. The project participants and the board will agree on the frequency of the visits depending on the progress of the work.

Hearings arise when either owner or contractor makes a written declaration of dispute to the board. The hearings are conducted on the job site during normal, scheduled visits or at other times as agreed.

5) Conduct of Hearings

Either owner or contractor may request that the board convene a hearing to review and consider a dispute. The request is made when either of the project participants feels that honest negotiations have broken down. It is normally in writing and must clearly define the nature and scope of the dispute to be addressed.

The board may request written documentation and argument in advance of the hearing and project participants are strongly encouraged to prepare a single compilation of background documents and exhibits. Both owner and contractor shall be adequately represented at all hearings. Successive rebuttal, questioning and requests for clarification are permitted under the direction of the chairperson. Outside technical consultants may present expert opinion but their participation should be limited. Attendance by legal counsel is strongly discouraged.

The board meets to formulate its recommendations after the hearings are concluded. Deliberations are held in private and individual views are kept confidential. The final recommendations are made to the project participants and are presented in writing with a full explanation. It is extremely important that recommendations be well considered, well written and convincing. They are not binding, and the quality of the arguments made will determine the degree of acceptance. The board's recommendations are admissible as evidence in any subsequent proceedings if agreement is not reached.