

Report on  
**RAP (RISK ASSESSMENT PLANNING)**  
**FOR THE CONSTRUCTION INDUSTRY**

**Prepared by the Building Futures Council**  
**Committee on Management and Contracting Alternatives**

**BUILDING FUTURES COUNCIL**

*Dedicated to Improving the Quality and Efficiency of Building and Construction*

## **Building Futures Council**

The Building Futures Council (BFC) is an independent, nonprofit corporation composed of senior executives of organizations engaged in all aspects of the building and construction process, representing private and public owners, planners, engineers, architects, constructors, attorneys, financiers, accountants, insurers, investors, and academia.

In fulfilling its mission, the BFC makes use of the varied talent of its multidisciplined, diverse membership to improve the process by which the physical assets of our nation's built environment are created and cared for.

Members serve as individuals and act collectively as a think tank to identify critical issues encountered in the building and construction process, analyzing, discussing and advocating guidelines and criteria for improving efficiency in the process and furthering the well-being of our nation.

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## **Foreword**

Too often in construction, flaws in the project or misunderstandings between participants are discovered only after a project has progressed beyond the initial concept and design phases, when problems are relatively easy and inexpensive to correct. Such problems are common because of the divergent backgrounds of the professionals involved in construction projects, the assumption of too much or a certain variety of knowledge on other people's part, and the persistence of inaccurate perceptions. Most problems, however, can be avoided with thorough risk assessment planning, or RAP. The RAP process, which emphasizes the importance of communication throughout the construction process and the use of alternative dispute resolution (ADR) techniques, assists all project participants in strategically planning how to handle construction risks before they become construction problems. RAP therefore helps the industry save time and money.

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John E. Chiaverini  
Chairman of the Board  
Building Futures Council

## **Acknowledgments**

### **Building Futures Council Committee on Management and Contracting Alternatives *Co-Chairmen***

James H. Keil, Principal  
Adaptive Consulting Team, Portland, ME

James J. Myers, Esq., Partner  
Gadsby Hannah LLP, Boston, MA

### ***Members and Contributors***

Nadia Akel, Ph.D. Candidate  
University of California, Berkeley

Nicola A. P. Cullen, Communications Liaison  
Louis Berger Group Inc., East Orange, NJ

Gerry E. Higgs, Chief of Administrative Services  
Inter-American Development Bank, Washington, DC

Joe Kaplan, President  
Joseph Kaplan Inc., South San Francisco, CA

Patrick Kelly (Ret. U.S. Army Major General), Port Development Programs Manager  
Roy F. Weston Inc., West Chester, PA

Richard Kowalczyk, Senior Claims Attorney  
Fidelity & Deposit Baltimore, Baltimore, MD

Frank Muller, President  
Metro Mediation Service, New York, NY

Christopher L. Noble, Esq., Partner  
Hill & Barlow, Boston, MA

Paul Peckar, P.E., Partner  
Peckar & Abramson, Boca Raton, FL

Josh Randall, Senior Vice President  
Tutor-Saliba Corp., Sylmar, CA

Raymond J. Rosendin, Chairman  
Rosendin Electric, San Francisco, CA

Sarkis S. Sarkisian  
S. S. Sarkisian & Associates, Bellingame, CA

Wesley E. Stroup, Vice President  
Schindler Elevator Corp., Morristown, NJ

Irene Willeman, Principal and CFO  
GFDS Engineers, San Francisco, CA

Charles E. (Chuck) Williams (Ret. U.S. Army Major General), President and CEO  
Infrastructure Management LLC, Alexandria, VA

LaRue Williams, Esq., President  
Kinsey Vincent Pyle, Daytona Beach, FL

Derish M. Wolff, President and CEO  
Louis Berger Group Inc., East Orange, NJ

## **Executive Summary**

Construction is and always has been a risky business. Yet contracting authorities expend little time and effort on assessing and strategically planning for probable, or even known, risks. When problems occur on a project—particularly when those problems are unexpected—increased delays and costs can be substantial.

Identifying, allocating, and managing risks at the front end of the project-planning process is the best possible way of ensuring a successful result for everyone involved at all stages of construction, including development, planning, and actual construction. Risk assessment planning (RAP) is a process that assists all project participants in strategically planning how to handle construction risks before they become construction problems.

RAP is a concept that requires first identifying and understanding risks through a systematic process, then following an organized method of managing and allocating those risks. The RAP system is most effective when these four steps are followed:

1. Identify the project risks by using the RAP checklist (included as an Appendix at the end of this report).
2. Communicate among the disciplines and develop mutually agreed-upon methods for managing the risks.
3. Develop voluntary methods of resolving problems before they occur.
4. Require contract language to reinforce the resolution methods agreed upon.

RAP is more than a concept: It is a system of collaboration early in the work cycle to minimize problems before they occur. If it catches on, RAP may become the official “music” of the design and construction industry.

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## **Part I: Background**

### **Different Disciplines Mean Different Perceptions**

The simple fact is that all participants in construction are exposed to real risks. By necessity, construction brings together a range of disciplines and interests that do not always see things the same way. Many technical construction experts see things best through the lenses of their own disciplines and fail to consider the legitimate concerns of others. This often leads to a breakdown in communication, especially between parties representing different disciplines involved in construction.

### **Why Projects Get Off Track**

Any lack of patience among technical experts on a project may, and often does, contribute to flawed communication by causing the experts to react defensively to public concerns. Other experts assume too much in their attempts to communicate ideas. They assume, for example, that everyone has a basic level of knowledge that to them is taken for granted. Others involved in the project team, who have equal or greater skills in other disciplines, may have no idea what is being said because they lack the very basics that have been assumed.

People who work with the technical aspects of risks tend to have a more complete understanding of the disciplines and often totally dismiss the concerns of others as irrational or misinformed. Worse, some technical experts regard the fears of non-technical persons (sometimes the owner) as so irrational that the experts do not attempt to explain the risks and their assessment process. This is dangerous behavior because the owner and public need to not only understand, but also be involved in, the policies that develop from discussion of these issues.

Research indicates that teamwork on perceptions can improve the process of understanding. In workgroups among project participants, the participants can—and should be—challenged to define and explain their perceptions in order to create greater understanding of differing viewpoints. A point to consider: Although driving an automobile is a much greater health risk from almost any perspective, many in the general public perceive the use of pesticides as a far greater risk. This is because lay people use a different set of criteria than do experts when evaluating risk.

### **How RAP Can Help**

A major cause of construction project failures is *the serious lack of early interdisciplinary management planning and communication*. Identifying, allocating, and managing risks early is the best possible way to permit the owner to accomplish his or her objectives, yet allow the contractors, architects, engineers, and subcontractors to perform the job adequately and make the reasonable profit for which they bargain. Precisely because of the risks, owners, designers, and contractors rarely meet often enough as a group to discuss projects beyond their own contractual limits.

As provided for in the risk assessment plan, neutral facilitators can encourage and promote dialogue between participants during the early development of a project. Participants often compete for a limited amount of capital budget dollars (competitors might be agencies of government, tenants within a building, or divisions within a company, for example), and would benefit from facilitated dialogue. Facilitated dialogue brings solid, proven risk management techniques into an area that has needed them for years. These techniques help with identification, quantification, and evaluation of risks, and with development of action teams to deal with them.

People have become fearful of providing ammunition to a potential adversary, often on the advice of their attorneys, because of the possibility of increasingly lengthy and complex litigation. As a result, these meetings are sometimes held to a minimum, rather than encouraged.

Alternative dispute resolution (ADR) in its many forms can be a valuable risk-management tool on complex contractual relationships between owners, designers, and contractors, their subcontractors and suppliers, and their sureties. Through parties working together in informal groups, ADR helps to streamline and improve the identification and quantification of risks, and allow proper allocation and understanding of those risks by all parties involved in a project, even if some of those risks lie outside the contractual lines of the project. The RAP process incorporates many ADR techniques under a single model.

(Note: Any re-allocation of risks outside contractual lines may only take place if *all of the parties jointly agree*. All forms of ADR rely *solely* on the agreement of the parties, and participation is by choice.)

Outside risks might include environmental considerations, issues raised by organized groups of abutters, or other interest groups with a particular stake in a project. Without ADR, these elements of project risk are traditionally ignored and otherwise not involved in project negotiations. Sometimes this places people in positions where it is too late to make what otherwise would have been simple and inexpensive corrections.

## Part II: Awareness and Management of Construction Risks

The Building Futures Council offers the following management processes as helpful in reducing or eliminating many major project risks and in adding significant value to the project by improving project processes, reducing delays, improving safety, and increasing the probability of a successful project:

1. RAP requires *early planning* by all major project participants. It is an absolute necessity because it saves time and money by forcing owners, builders, and designers to express their needs and desires during the conceptual phase, while course corrections are still relatively minor and inexpensive. Instead of using more adversarial techniques like "risk-shifting" to eliminate risk for individuals, the parties involved have a chance to evaluate risk together and sometimes, to allocate it better. RAP allows involved parties the opportunity to work together as members of a team and develop common goals that relate to completion of the whole project. It also allows for the development of "loop-back performance links" to the design phase as construction progresses. Loop-back performance links are designed to monitor construction process details such as exchange of documents, turn-around on approvals, methods of submission, etc., which are proven contributors to construction disputes in many cases. Sound planning must cover all phases of the building process, helping the owner know what can be expected. Generally, an owner's concept of design, permitting, capital sources, insurance, taxes, and maintenance costs are self-oriented, and rarely take into account the other parties involved in the project or their points of view.
2. *Scheduling* remains a key component of effective strategic risk planning. Once procurement of materials and construction begins, fixing any errors becomes much more expensive. The schedule must accurately reflect all the tasks that need to be accomplished, including external factors such as permitting and design-review meetings. It must also reflect realistic time frames for the completion of each task.
3. *Partnering* can be an important part of RAP. Partnering is a risk-management process designed to promote interdisciplinary communication by helping to develop solutions to problems before they become misunderstandings or disputes. Interdisciplinary communication is necessary and needs to be promoted and increased. Opportunities for questions and answers are greater through partnering, and issues can be clarified while large groups of project participants are working together. Pre-construction meetings rarely allow for as much give and take.
4. RAP allows for the development of a *strategic risk plan* that provides the framework for implementing the construction of a project. Partnering can also be used to help determine measurable goals and objectives with specific annual targets, and can establish and implement loop-back performance links for the project.

### **Part III: RAP: Improving the Traditional Standard of Binding Decisions**

The rights and obligations of the parties in every construction project are defined in a contract or series of contracts, and partnering does not alter these contractual obligations. A contracting authority often contracts with more than one entity simultaneously. Objectives are established, and risks are identified and allocated between the contracting parties within the contract terms, but too often without adequate recognition of internal or external risks to the project.

In the traditional approach involving an owner, separate designer, and separate contractor, a series of contracts are drawn up to cover various aspects of construction. In other contract delivery systems, such as design-build or variations thereof, multiple construction management contracts may be negotiated, or a single contract may combine design with construction.

In all contract delivery systems, however, risk is managed largely through the contract, and, in the Building Futures Council's view, too often shifts risks rather than manages them, largely because not enough early evaluation of risk is done between disciplines.

Construction contracts, almost without exception, define methods of compensation for additional work and claims, and include provisions for the procedures to be followed to obtain third-party resolution of disputes. Regardless of contract form or delivery system, should problems, unforeseen risks, or any other issues lead to disagreements, the parties will first turn to their contracts to determine the action to be taken. The Building Futures Council's view is that a potential settlement processes should be explored and discussed much earlier in the process, even before documents are signed, in order to allow continuous management of the risks, even while the project work continues. Without early and continuous efforts to maintain communications, it is easy for events to lead to a dispute between the contracting parties.

## **Part IV: Increased Use of Voluntary Methods to Resolve Disputes**

Because of the costs, delays, and many unsatisfactory decisions resulting from the use of some of the more rigid existing settlement forums such as litigation or binding arbitration, the industry has been gradually moving to the use of more voluntary and nonbinding ADR procedures. These procedures may include use of the following:

1. Advisory opinions
2. Mediation
3. Standing neutrals
4. Minitrials
5. Partnering
6. Crisis-management programs
7. Cycle-time-reduction plans
8. Life-cycle-analysis models
9. Environmental-impact statements
10. Improved evaluative techniques
11. Dispute review board (DRB)

Combining various ADR techniques as part of a larger RAP strategy to avoid costly delays and costs associated with settlement of disputes at the end of a project through joint interdisciplinary design seems to hold the greatest promise.

Again, the common thread among all ADR procedures is that they are voluntary. Even binding arbitration (when a disinterested third party makes a decision for the parties) depends upon prior written agreement of all parties that the decision of the arbitrator will bind the parties.

ADR should be considered by all parties to contracts as the first, and perhaps the best, method of preventing disputes and of managing the resolution of claims when and if they occur. As there is no typical project or client, no single ADR procedure covers every situation. The existence of the various voluntary and nonbinding procedures should be recognized and discussed by contracting parties at the time of contract initiation and negotiation.

As a practical matter an ADR clause, such as a provision for mediation or the use of a standing neutral, should be included in the contract. (The American Arbitration Association, accessible on the World Wide Web at [www.adr.org](http://www.adr.org), can provide model language as well as additional information on the above processes.) Whether included or not, however, ADR's implementation always requires the concurrence of all parties. The key is that there is recognition that effective alternatives to the traditional approaches of resolving disagreements and claims are available.

Because of the failure of the traditional adversarial litigation approach, which is in large part due to the time required to navigate through overcrowded civil courts, ADR should be viewed as an integral link in the chain of steps taken to resolve a claim. ADR does not necessarily replace the third-party decision-making process, but it should precede any such action and will likely minimize the time required. In most ADR processes, settlement negotiations are not simply turned

over to “outsiders.” As a result of parties’ continued involvement in the settlement process, relationships are better preserved.

The process recommended herein, which we feel is a best practice, has obvious benefits. Cost-benefit analysis weighs heavily on the benefit side. Early awareness and willingness of the *owner* to spend a little more money up front will pay greater dividends later in the project.

The Building Futures Council firmly believes the project owner is the primary beneficiary of a better organized, dispute-free project where all participants know and understand their roles and enthusiastically perform them, and where all participants—architects, engineers, contractors, subcontractors, sureties, and their counsel—will share in the pride of participation in a successful project.

## **Appendix: RAP Checklist**

Development of a strategic risk assessment plan for a construction project is a necessary step that must be undertaken at the earliest possible point of development. The plan should emphasize partnering through all phases: concept, design, and construction.

### ***Concept-Phase Partnering***

1. Use a trained, experienced, project-neutral party to facilitate discussions among team members and legal advisors.
2. Create a "corporate" oversight structure or an advisory council for the project.
3. Determine who should be involved in concept development.
4. Establish a joint vision for the project among all disciplines.
5. Establish loop-back performance links that keep the corporate structure apprised of successes/failures. These links could be small workgroups with specific assignments, or part of the establishment of a project Web page or other electronic communications system.
6. Discuss the dispute-management techniques best suited for this project and incorporation into design contract language.
7. Identify, quantify, and discuss the risks as seen by various project disciplines.
8. Develop a strategic risk plan for the project based on the risks identified.
9. Cross-check development of project timelines.

### ***Design-Phase Partnering***

1. Use a trained, experienced project-neutral party to facilitate discussions among team members.
2. Create a new corporate oversight structure to carry through the design and construction phases.
3. Corporate oversight structure continues implementation of the strategic risk plan.
4. Determine who should be involved in design development (including outside stakeholders).
5. Refine a joint vision for the project as the design develops.
6. Manage input into project design through the corporate oversight structure.
7. Monitor and add/delete loop-back performance links as required.
8. Discuss and develop ADR techniques for incorporation into construction contracts.
9. Continue identification, quantification, and discussion of risks as seen by various project disciplines.
10. Continue cross-checking development of project timelines.

### ***Construction-Phase Partnering***

1. Use a trained, experienced project-neutral party to facilitate discussions among team members.
2. Continue the corporate oversight structure.
3. Determine who should be involved in design development (including outside stakeholders).
4. Allow designers to help in refining joint vision for the project as construction begins.
5. Monitor and add/delete loop-back performance links as required.
6. Corporate oversight structure continues implementation of strategic risk plan.
7. Continue identification, quantification, and discussion of risks as seen by various project

disciplines.

8. Continue cross-checking performance against project timelines.
9. Maintain the partnering gains through facilitated project-follow-up meetings as directed by the corporate structure. A suggested guideline for executing follow-up is:
  - 1) The facilitator is available for a few hours pre-meeting to talk with any partnering participants.
  - 2) The facilitator then develops follow-up agenda from the pre-meeting.
  - 3) Project principals participate in follow-up meetings unless otherwise directed by the corporate structure.