

The Project Manager's Game Planner
for Radical Reduction in Project Cycle Time



Construction Industry Institute

3M	ABB Lummus Global
Abbott Laboratories	ALSTOM Power
Air Products and Chemicals	AMEC
Amgen	AZCO
Anheuser-Busch Companies	Aker Kværner
Aramco Services Company	BE&K
BP America	BMW Constructors
CITGO Petroleum Corporation	Baker Concrete Construction
Cargill	Bechtel Group
Celanese	Black & Veatch
ChevronTexaco Corporation	Bovis Lend Lease
ConocoPhillips	Burns & McDonnell
Dofasco	CB&I
The Dow Chemical Company	CDI Engineering Solutions
DuPont	CH2M HILL/IDC/Lockwood Greene
Eastman Chemical Company	CSA Group
ExxonMobil Corporation	Day & Zimmermann International
General Motors Corporation	Dick Corporation
GlaxoSmithKline	Emerson Process Management
Intel Corporation	Fluor Corporation
International Paper	Foster Wheeler USA Corporation
Kraft Foods	Fru-Con Construction Corporation
Eli Lilly and Company	Gilbane Building Company
NASA	Grinaker-LTA
NOVA Chemicals Corporation	Hatch
Ontario Power Generation	Hilti Corporation
Petrobras	Honeywell International
Praxair	Jacobs
The Procter & Gamble Company	Johnson Controls
Rohm and Haas Company	Kellogg Brown & Root
Shell Oil Company	Kier/CCC USA
Smithsonian Institution	Kiewit Construction Group
Solutia	M. A. Mortenson Company
Southern Company Services	Mustang Engineering
Tennessee Valley Authority	Parsons E&C
U.S. Army Corps of Engineers	Perot Systems Corporation
U.S. Department of Commerce/NIST/ Building and Fire Research Laboratory	Primavera Systems
U.S. Department of Energy	S&B Engineers and Constructors
U.S. Department of Health and Human Services	The Shaw Group
U.S. Department of State	Technip USA Corporation
U.S. General Services Administration	Turner Construction Company
U.S. Steel	Victaulic Company of America
Weyerhaeuser Company	Walbridge Aldinger Company
	Washington Group International
	Williams Group International
	Yates Construction
	Zachry Construction Corporation
	Zurich North America

Project Manager's Game Planner

Prepared by the
Construction Industry Institute
Radical Reduction in Project Cycle Time Project Team

Implementation Resource 193-2
June 2004

© 2004 Construction Industry Institute®.

The University of Texas at Austin.

CII members may reproduce and distribute this work internally in any medium at no cost to internal recipients. CII members are permitted to revise and adapt this work for the internal use provided an informational copy is furnished to CII.

Available to non-members by purchase; however, no copies may be made or distributed and no modifications made without prior written permission from CII. Contact CII at <http://construction-institute.org/catalog.htm> to purchase copies. Volume discounts may be available.

All CII members, current students, and faculty at a college or university are eligible to purchase CII products at member prices. Faculty and students at a college or university may reproduce and distribute this work without modification for educational use.

Printed in the United States of America.

Key Points

- Radical reduction in project cycle time requires four key drivers: 1) Compelling business need, 2) Owner commitment, 3) High-performance team, and 4) Detailed project planning.
- In conjunction to CII Best Practices, schedule reduction and management techniques from other industries are required to achieve radical reduction.
- Use of CII Best Practices is a key component in the “Best of the Best” (top 5) radical reduction techniques. Over the five project phases, the following five have been identified as the important CII Best Practices: 1) Alignment, 2) Constructability, 3) Design Effectiveness, 4) Materials Management, and 5) Pre-Project Planning.
- The Game Planner can assist companies to develop an approach to radically reduce project cycle time.

Notes:

The data used herein are taken from responses to the questionnaire by the CII membership and case studies on projects that have achieved greater than 25 percent reduction in project cycle time. Hence, it could be said that on implementing the Game Planner, one could achieve greater than 25 percent reduction over the entire project cycle time.

Radical Reduction Techniques (RRTs)

- * Alignment
- * Constructability
 - Construction–Driven Schedule
- * Design Effectiveness
 - Efficient Packaging for Transportation
 - Employee Involvement
 - Freezing of Project Scope
 - Lump-Sum Contract
 - Material Coordination
 - Material Identification on Purchase Documentation
- * Materials Management
 - Non-Traditional Drawing Release
 - Pareto’s Law Management
 - Participative Management
- * Pre-Project Planning
 - Prioritize Procurement of Material
 - Realistic Scheduling
 - Safety in Workspace
 - Start-Up–Driven Scheduling
 - Supplier/Engineer Early Interaction
 - Supplier Submittal Control
 - Temporary Start-Up Systems
 - Use of Electronic Media
 - Well-Defined Organizational Structure
- * Zero Accident Techniques

- * CII Best Practices

How to Read the Game Planner

Radical Reduction Techniques (RRTs) per Phase

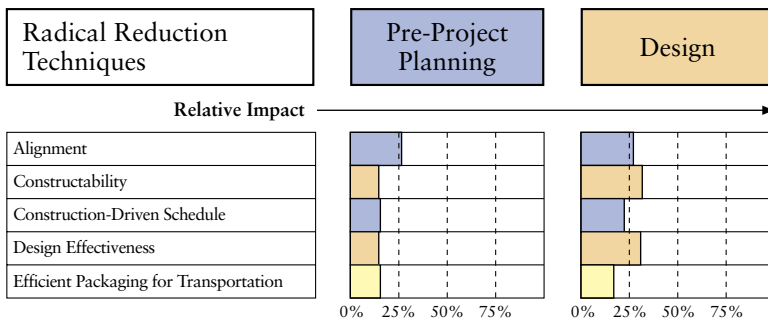
The Top 10 RRTs under the Pre-Project Planning phase are represented with the color blue (see pages 6–7). From these, the RRTs that repeat themselves in the other four project phases are also highlighted in blue. Similarly, RRTs that are first implemented during Design are highlighted in tan. If these repeat in any of succeeding project phases, then they are also represented by the same color. This color coding is repeated for the other project phases (see pages 6–7) where Materials Management (MM) has been assigned the color yellow, Construction (C) the color green, and Start-Up (SU) a purple color.

Relative Impact of Radical Reduction Techniques on Project Cycle

A list of 25 RRTs in alphabetical order, considering the project as a whole, is presented on page 3.

Relative Impact

The horizontal bars show the relative impact (effectiveness) of a particular Radical Reduction Technique when applied during that particular phase (see below and pages 8–9). For example, Alignment as a reduction technique may not have the same degree of effectiveness (impact) when implemented in all of the five project phases. These horizontal bars show the normalized relative impact of Alignment during each of the five project phases. These horizontal bars have been color coded as explained above, where the Top 10 RRTs from the Pre-Project Planning phase are represented with a blue color, Top 10 RRTs for Design with a tan color, etc. However, the techniques that first appear in Pre-Project Planning and repeat in the succeeding project phases retain the blue color as illustrated for Alignment in the figure below. The color tan under the Pre-Project Planning phase implies that the technique originates during the Design phase but has an impact and also should be considered in the previous phase to achieve full effectiveness of the technique.



Radical Reduction Playcard

The planning template (Playcard on pages 14–15) has the following two objectives:

1. As a tool for developing radical reduction strategies for a given project, it is used to assign ranks and color-coding of appropriate boxes as explained above.
2. As a reference for future projects, it can track reduction achieved during various project phases when implementing the different RRTs.