GOVERNMENT/INDUSTRY FORUM

REDUCING CONSTRUCTION COSTS: USES OF "BEST DISPUTE RESOLUTION PRACTICES" BY PROJECT OWNERS

Thursday, September 23, 2004

National Academy of Sciences
2101 Constitution Avenue, NW
Washington, DC

Co-Sponsored by
National Academy of Construction
and
The Federal Facilities Council

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National Academy of Sciences Auditorium

Background: The infinite complexities of designing and delivering a constructed project, the multiplicity of organizations and individuals involved in the process, and the pressures of time and money, create many opportunities for disagreements during the course of a construction project. The National Academy of Construction has concluded that the costs of disputes are one of the greatest problems facing the industry today. To change the current operating environment, key decision makers in the owner community must demand the use of best dispute resolution practices on their projects.

The Problem: Disputes on construction projects disrupt and delay the process, increase construction costs, and cause the involved parties to incur substantial transaction costs in resolving disputes resolved through litigation and arbitration. The cumulative economic effects of disputes substantially increase the costs of construction.

The construction industry has taken steps to correct this problem by devising many techniques and tools, referred to as "dispute resolution best practices". These best practices are designed to prevent, control, manage, and achieve early resolution of disputes, thus avoiding the high costs of litigation and arbitration. Experience has shown that if these best practices are instituted and implemented by owners of construction projects, disputes can be avoided and projects can be successfully accomplished.

Purpose: This national Forum will highlight the costs and benefits of using best dispute resolution practices on construction projects, inquire why they are not more widely used, and explore ways to encourage responsible leaders of construction projects to eliminate or quickly resolve disputes in order to save construction costs and enhance the success of their projects.

Audience: Those who initiate, own, and manage construction projects; architects, engineers, contract officers, and other stakeholders.

Co-Sponsors: This forum is co-sponsored by the National Academy of Construction and the Federal Facilities Council.

The National Academy of Construction is a group of senior construction industry leaders who make themselves available to the nation for advice and service in the interest of improving the construction process. Additional information about NAC is available from The Secretariat, NAC, c/o Center for Construction Industry Studies, The University of Texas, Austin, Texas 78712-1076, (512) 471-3541.

The Federal Facilities Council (FFC) is a cooperative association of federal agencies having interests and responsibilities related to all aspects of federal facility design, construction, operation, and management. Established in 1953, the FFC operates under the National Research Council, the principal operating agency of the National Academies, congressionally chartered, private, non-profit corporations. Additional information is available at **http://www.nationalacademies.org/ffc**

AGENDA

REDUCING CONSTRUCTION COSTS: USES OF "DISPUTE PREVENTION AND RESOLUTION BEST PRACTICES" BY PROJECT OWNERS

7:45-8:45 Continental Breakfast and Registration

8:45-9:00 Welcoming Remarks:

William W. Brubaker, Smithsonian Institution; Vice-Chair, Federal Facilities Council
James G. Slaughter, Jr., S& B Engineering & Construction; President, National Academy of Construction

9:00-9:30 Keynote Address: "Changing the Adversarial Culture of the Construction Industry"

Thomas J. Stipanowich, President and CEO, CPR Institute of Dispute Resolution (formerly Center for Public Resources)

9:30-10:30 Brief Review of Typical "Dispute Prevention and Resolution Best Practices"

- Pre-Project Planning and Prevention: *Using CII Best Practices; Selecting the Appropriate Project Delivery Method; Realistic Risk Allocation; Providing Incentives for Cooperation; Partnering*
- Mutual Problem Solving: *Negotiations and Step Negotiations*
- Dispute Control: *Geotechnical Baseline Summary Report, Escrowed Bid Documents*
- Jobsite Dispute Resolution in "Real Time": *Dispute Resolution Boards* Global Dispute Control and Management: *Using "Stepped" Techniques; Project Neutral; Project Counsel; Project Alliancing*

James P. Groton, NAC; Past President, American College of Construction Lawyers
Robert A. Rubin, NAC; Past President, American College of Construction Lawyers

10:30-11:00 **Break**

11:00-12:30 Specific Examples of Successful Uses of Dispute Prevention and Resolution Best Practices

Documentation of Successful Results From Using CII Best Practices
Hans Van Winkle, Director, Construction Industry Institute

Washington Metropolitan Area Transit Authority Successful Uses of Dispute Resolution Best Practices
Takis Salpeas, Assistant General Manager, WMATA Capital Projects

- Using "Bridging" and Dispute Resolution to Improve Design/Build Projects
George Heery, President, Brookwood Program Management

Project Success in the Pentagon Renovation Through Dispute Resolution Best Practices
Andrew Blumenfeld, Chief Counsel, Pentagon Renovation Project

12:30-1:30	Lunch (box lunches will be served)
1:30-2:45	Current Extent of Use of Dispute Prevention and Early Resolution Practices Among Project Owners; Why Aren't They More Widely Used? Principal Speaker: **Paul Barshop, Chief Operating Officer, Independent Project Analysis** Commentators: **Theodore C. Kennedy, Founder, BE&K, Inc.** **James B. Porter, Jr., Vice President, Engineering & Operations, DuPont** **Michael Womack, General Manager, Strategic Sourcing Transition, Cinergy** Moderator: **Richard Little, Director, Board on Infrastructure and the Constructed Environment, National Research Council**
2:45-3:00	**Break**
3:00-4:00	Exploring Ways to Encourage and Implement Greater Uses of Dispute Resolution Best Practices **G. Edward Gibson, Director, Center for Construction Industry Studies, University of Texas** **Lester Edelman, former Chief Counsel, U. S. Army Corps of Engineers** **Thomas J. Stipanowich, President, CPR Institute of Dispute Resolution** **Michael C. Vorster, Ph.D., Construction and Management Engineering, Virginia Polytechnic Institute**
4:00-4:15	Summary of Key Points of the Forum, and Adjournment
4:15-5:30	Reception (wine and cheese will be served)

Speaker Biographies

Paul Barshop is Chief Operating Officer of IPA. Paul joined IPA in 1994. Paul was IPA's Quality Manager from 1997 to 1999. Starting in 2000 until mid-2004, he was the Director of IPA's Netherlands office. IPA Netherlands is responsible for serving clients in Europe, the Middle East, and Africa. As a project analyst, Paul has focused on evaluating downstream process projects, especially in the petroleum and chemical areas. He has led numerous benchmarking efforts and has conducted over 75 individual analyses of capital projects. Paul also led research to understand the performance and drivers of control system projects. His latest research effort was the study of the effectiveness of engineering value centers. Paul has written two articles published in European Chemical News. The topic of the first article was portfolio management of manufacturing site projects. The second article discussed project performance differences between U.S. and European chemical companies. Paul has also presented a paper at the 2003 Arabian Gulf Chapter PMI Conference. Paul Barshop holds a Masters Degree in Business and a Bachelors Degree in Chemical Engineering. Prior to joining IPA, Paul worked for Shell Oil in the United States.

Andrew Blumenfeld, Esq. is the principal legal advisor to the Pentagon, Renovation Program, a position he has held since 1998. Prior to coming to the Pentagon Renovation Program, Mr. Blumenfeld, while with the Army Corps of Engineers, provided legal counsel to the Kennedy Center for the Performing Arts' Capital Restoration program, the American Battle Monuments Commission, Arlington National Cemetery and a variety of other large federal construction projects. Mr. Blumenfeld has practiced before the Armed Services Board of Contract Appeals, the Corps of Engineers Board of Contract Appeals and the Comptroller General. He holds a B.A. from Hobart College and a J.D. from the Catholic University Law School.

William W. Brubaker is the Director of Facilities Engineering and Operations at the Smithsonian Institution in Washington, D.C. and has held this position since March 2001. He leads all of the Smithsonian's facilities planning, design, construction, maintenance, real property management, safety, and protection services activities. Mr. Brubaker started his career in 1972 as a civil engineer with the Southern Railroad in Atlanta and in 1976 began work with the U.S. Army Corps of Engineers. From then until 1992 he held various positions with the Corps in Germany, Florida, California, and Oregon. He was a major participant in the Mount St. Helen's volcano recovery effort that earned the American Society of Civil Engineers Outstanding Engineering Achievement of the Year Award in 1991. He was Chief of Army Construction Programming in the Pentagon, managing the programming and budgeting of Army construction worldwide, when selected into the Senior Executive Service (SES) as Deputy Director of Facilities Engineering at NASA Headquarters in 1992. He was named NASA's Director of Facilities Engineering in 1995 and held that position six years before coming to the Smithsonian. He holds Bachelor and Master of Science degrees in civil engineering from the University of Virginia and Georgia Tech, respectively, a Master of Science in business administration from Boston University, and professional engineer registration in two states. He is a Fellow of the American Society of Civil Engineers, Vice Chairman of the Federal Facilities Council, and former Chairman of the Executive Committee of the Construction Industry Institute. Bill was selected Federal Engineer of the Year by the National Society of Professional Engineers and NASA Engineer of the Year, both in 1997. He is also a recipient of the SES Meritorious Presidential Rank Award, NASA Exceptional Service Medal, Army Meritorious Civilian Service Medal, and Army Commander's Medal.

Lester Edelman is Senior Counsel/Senior Advocate at Dawson & Associates in Washington, DC and an attorney with over 40 years of legal and legislative experience with the US Army

Corps of Engineers and the Committee on Transportation and Infrastructure of the United States House of Representatives. He retired from Federal service in 1998 as Chief Counsel of the Corps of Engineers, a position he held for 19 years. Prior to that he was Counsel to the above-mentioned Congressional Committee for 11 years. As Chief Counsel his emphasis was on preventive law and on finding better ways to prevent and resolve disputes. Recognizing that litigation often imposes an unacceptable price on the Government and on society, he focused his energies and those of the Corps of Engineers toward becoming part of the solution to this problem by pioneering in the use of alternative dispute resolution (ADR) and partnering (dispute avoidance) techniques instead of costly litigation. Awards include the Presidential Ranking of Distinguished Executive in the Senior Executive Service. President George W.H. Bush personally presented this in a ceremony at the White House. Among numerous other awards, he received the Center for Public Resources "Outstanding Practical Achievement Award for Excellence in Alternative Dispute Resolution", the Engineering News Record Award for Exceptional Services to the Construction Industry, and the National Performance Review "Hammer Award" for his ADR/Partnering Teams "contribution to building a government that works better and costs less". Additional awards and recognition include "Captain of the Industry" by the Construction Business Review, the "William R. Murden Lifetime Public Achievement Award" by the Dredging Contractors of America, the "Marvin M. Black Lifetime Public Achievement Award for Pioneering Cooperation with the Construction Industry and Exemplifying the Highest Ideals of Partnering" by the Associated General Contractors of America, twice awarded the Department of the Army's "Decoration for Exceptional Civilian Service" and the United States Court of Federal Claims "Lifetime Achievement Award" presented at a Special Session of the Court on May 11, 2000. He currently serves on the Board of Governors of the American College of Construction Lawyers, the Advisory Committee of the United States Court of Federal Claims and is a Principal to the Council for Excellence in Government. Mr. Edelman has been a frequent speaker and published extensively on the subjects of Alternative Dispute Resolution and Dispute Avoidance, Partnering, Water Resources, Water Quality, Environment, Government Procurement and "Pride in Public Service."

G. Edward Gibson, Jr. is a Professor of Civil Engineering and the Austin Industries Endowed Faculty Fellow in the Construction Engineering and Project Management program at the University of Texas at Austin. He received his Ph.D. in Civil Engineering from Auburn University in 1990 and an M.B.A. from the University of Dallas in 1987. He served as Associate Chairman of the Civil Engineering Department in charge of the Architectural Engineering program at UT from 2000 to 2003. He currently serves as a member of the Board of Governors for the Architectural Institute within the American Society of Civil Engineering and co-director of the Center for Construction Industry Studies at the University of Texas at Austin. Dr. Gibson's research interests include organizational change, pre-project planning, risk management, construction productivity, electronic data management, and automation and robotics. In 1996, and again in 2004, he received the Construction Industry Institute's Outstanding Researcher Award for his pioneering work in pre-project planning and risk management. He is an author or co-author of numerous articles and reports on this subject. Among these documents are CII's *Pre-Project Planning Handbook, Project Definition Rating Index (PDRI), Industrial Projects, Project Definition Rating Index (PDRI), Building Project* and the *International Project Risk Assessment (IPRA)* tool and method. Dr. Gibson has developed several CII Education Modules for continuing education. He has taught over 200 short courses to industry in such topic areas as objective setting, team alignment, continuous improvement, pre-project planning, and materials management. In 1996, Dr. Gibson received the Lockheed-Martin Teaching award for outstanding teaching by an Assistant Professor in the UT College of Engineering. In 1998, he was named the Construction Industry Institute's Instructor of the Year for his efforts in developing and teaching continuing education short courses. In 2002, he was named the Outstanding Engineering Educator by the National Society of Professional Engineers as well as

Outstanding Graduate Teacher at the University of Texas at Austin. Dr. Gibson has consulted with many organizations such as Amgen, NASA, TxDOT, 3M, BroadWing, U.S. Department of Health and Human Services, BECK Group, DuPont, Ontario Power Generation, Hensel Phelps, Smithsonian Institution, U.S Department of State, U.S General Services Administration, and Union Carbide among others. He currently serves on a National Research Council committee investigating project management practices at the U.S. Department of Energy. Dr. Gibson has several years of industry experience and is a licensed professional engineer in Texas.

James P. Groton is a retired partner of the Atlanta and Washington D.C. law firm of Sutherland, Asbill & Brennan, and has spent most of his legal career working on construction industry and dispute resolution matters, and established a reputation as an expert in preventing, controlling and achieving prompt resolution of construction project problems and disputes. Since his retirement in 2001 Jim has served as a neutral arbitrator and mediator, and has been engaged in a number of educational and public services activities in the construction and dispute resolution fields. Jim was a founder and chairman of the construction industry's Dispute Avoidance and Resolution Taskforce (DART), and he has received numerous construction industry and dispute resolution awards, including the *Engineering News-Record* Medal of Excellence, two CPR Institute for Dispute Resolution awards for practical achievement in dispute resolution, the American Arbitration Association's Whitney North Seymour Sr. Arbitration Medal, and honorary membership in the American Institute of Architects. He is a Fellow in the Chartered Institute of Arbitrators and the College of Commercial Arbitrators, a former President of the American College of Construction Lawyers, and a member of the National Academy of Construction. He is a graduate of Princeton University and the University of Virginia Law School.

George T. Heery, FAIA RIBA, is Chairman/CEO of Brookwood Program Management and an internationally recognized leader in both the construction program management and architectural professions. Mr. Heery's career continues to be one of innovation and leadership. In the mid 1960s he was one of a handful of American design and construction professionals who led the development of the new profession of construction management and construction program management. Construction Program Management, the professional management of planning, design and construction on behalf of the owner or user, is often referred to as Program Management. As early as 1961 Mr. Heery had already developed advanced project management procedures for controlling time and cost through the pre-design, design and construction phases of projects. In 1974 he authored Time, Cost and Architecture, said by its publisher, McGraw-Hill to have been "the first definitive work on construction management". In 1981 he developed a real estate and facilities planning concept, Strategic Facilities Planning (SFP), a component of business planning for business corporations with multiple facilities. In 2002, he developed a modified version of SFP for colleges and universities. In 1983, after working for several years to develop a new way to organize the roles of architects, engineers and contractors, he brought the new method to a point of specific procedures. The purpose of the new method was to reduce risks, costs and post construction problems for project owners. In 1989, one of Mr. Heery's professional colleagues, his oldest son, Shepherd, gave the new method the name of Bridging. In recent years the Bridging method has been embraced by more and more owners, project managers and architects. A hybrid of the traditional design-bid-build method and design-build, Bridging retains the better features of both and eliminates those aspects of each which often cause problems for the owner. Bridging greatly reduces the owner's risks and costs while retaining full control over design and construction quality and details. During the period of 1994-96 Mr. Heery led Brookwood into real estate development on behalf of the firm's principals, developing The Wakefield, Atlanta's highest quality and most luxurious high rise apartment building (a cooperative). He personally led both the development and design work. The project proved to be a trend setter for the Buckhead area of Atlanta. In the

mid 1990s he lead Brookwood into developing a set of services for the professional management of development for colleges, universities and other non-profits. Development Management includes carrying out economic feasibility studies, assisting the client in obtaining financing, managing the design and construction program, and managing all other related procurements for the complete development of alternatively financed academic, research, recreation, administrative, sports and housing facilities. In 1999 he introduced a new and more reliable system for tracking the cost of a project during design, Multi-Track / Reconciliation Costing. The method is also applicable for pre-design cost budgeting. As of January 1, 2004, Brookwood Group's program management practice became Brookwood Program Management LLC with significant new investment in building the practice and its capabilities. Simultaneously, Laura M. Heery, AIA formerly Director of Planning and Design, became the sole owner of the firm's design practice in a separate entity. Mr. Heery and his father, architect C. Wilmer Heery, founded Heery & Heery, Architects in 1952. George Heery became its CEO in 1961 and led the firm, later known as Heery International, to become a 500-person, multi-disciplinary professional corporation with offices throughout the United States and Europe. In 1986 Mr. Heery and his colleagues sold Heery International to British interests. Mr. Heery was required by the terms of the sale to remain as CEO until early 1989. The many design projects by Mr. Heery have included the major expansions of the corporate headquarters of The Coca-Cola Company in the mid 1980s, the Woodruff Medical Center Administration Building at Emory University, the 999 Peachtree high rise office building, The Wakefield luxury coop, and many collegiate and professional sports stadiums along with a large number of commercial and industrial projects. Major construction programs that Mr. Heery has directed as Program Manager included over $4 Billion in infrastructure projects throughout the United States and a number of other public sector projects such as the Georgia State University Student Recreation Center in downtown Atlanta, completed in 2002. He has also carried out both design and construction programs in Europe, Mexico, the Middle East and Japan. A native of Atlanta and Athens, Georgia, and a World War II veteran (U.S. Navy), he received a Bachelor of Science and the five year Bachelor of in Architecture from Georgia Tech and completed the Advanced Management Program at the Harvard Business School. He and his wife, Elizabeth Wood Heery live in Atlanta and have four children and seven grandchildren. He is a Fellow of the American Institute of Architects and a member of the Royal Institute of British Architects having lived and practiced in London and the EU for several years while leading Heery International.

Ted C. Kennedy is a founder of BE&K, Inc., a worldwide engineering, construction, and contract maintenance firm. Mr. Kennedy served as national president of Associated Builders and Contractors in 1980. He served on the Contractor's Advisory Committee for The Business Roundtable for 14 years, and was chairman of the Construction Industry Institute in 1988. Under his leadership, BE&K was named one of the top 16 medalist companies out of 300 companies honored in the book *Companies That Care -- The Most Family-Friendly Companies in the United States*. Fortune Magazine recognized BE&K as one of the 100 best work places in America, and BE&K's Child Development Center, BEKare, received the NOVA Award in 1991 for innovation in providing benefits to construction workers and recruiting women into the construction workforce. Mr. Kennedy received the first Crystal Vision Award from the National Association of Women in Construction for his role in the promotion of women in construction. In 1981 and 1989, *Engineering News-Record* magazine recognized Mr. Kennedy as a "Man Who Made His Mark". And, in 1999, *Engineering News-Record* magazine recognized Mr. Kennedy as one of the top 125 industry leaders within the past 125 years. Both Mr. Kennedy and BE&K have been honored as inductees into the Alabama Engineering Hall of Fame. He is a member of the National Academy of Engineering and the National Academy of Construction.

Richard G. Little is Director of the Board on Infrastructure and the Constructed Environment of the National Research Council (NRC) where he develops and directs a program of studies in

building and infrastructure research and maintains outreach and liaison with federal agencies, the legislative branch, and affiliated organizations. He has directed NRC study activities, participated in workshops and panels, and written papers dealing with many aspects of infrastructure management and technology. Mr. Little has over thirty years experience in planning, management, and policy development relating to public facilities including fifteen years with local government. He has been certified by examination by the American Institute of Certified Planners and is a member of the Federal Planning Division of the American Planning Association. Mr. Little holds a B.S. in Geology and an M.S. in Urban-Environmental Studies, both from Rensselaer Polytechnic Institute.

James B. Porter Jr. is vice president of Engineering and Operations for DuPont, and joined the company in 1966 as a chemical engineer in the engineering service division (ESD) field program at the Engineering Test Center in Newark, Delaware. He left in March of 1966 for a two-year tour in the United States Army. He returned to DuPont as a field engineer at the DuPont Textile Fibers plant in Chattanooga, Tenn. In 1970, Mr. Porter was reassigned to the design division as a process engineer at Louviers and returned to ESD in 1971 as a campus recruiter. In 1972, he was reassigned to the Engineering Test Center as supervisor of the chemical engineering testing group. In 1975, he became a member of the ESD field staff. Mr. Porter became field manager at Chambers Works Construction in 1979, followed by an assignment in business methods and investment division as manager of investment engineering in 1981. In 1983, he returned to design as a design manager for Textile Fibers and then assumed the responsibility of facilities design manager for Chemicals in 1988. With the restructuring of DuPont Engineering in November 1990, Mr. Porter became director – Engineering Operations. In September 1992, he was named director of operations for the Fluoroproducts business. On May 1, 1995, Mr. Porter was appointed director of operations. He also assumed the position of vice chairman of the DuPont Corporate Operations Network. Mr. Porter was named vice president of Engineering on Nov. 1, 1996, and assumed his present position as vice president of Engineering and Operations in January 1999. In 2000, Jim served as Chair for the Construction Industry Institute and Delaware's United Negro College Fund. He participates on various industry advisory boards including AIChE's Center for Chemical Process Safety and is a member of the University of Tennessee's College of Engineering Board of Advisors. Born Aug. 21, 1943, in Knoxville, Tenn., Mr. Porter received a B.S. in chemical engineering from the University of Tennessee in 1965.

Robert A. Rubin is an Adjunct Professor, Columbia University, faculties of law and civil engineering. Since entering the practice of law in 1964, his practice has been limited to construction matters, principally in the resolution of complex construction disputes. He has authored two texts and numerous chapters and papers and he has lectured for the American Bar Association, American Society of Civil Engineers, Practicing Law Institute and other societies and universities on construction contract documents, construction claims, surety law, professional liability, alternative dispute resolution, and government contract law. Mr. Rubin is a member of the New York State Bar and is a licensed Professional Engineer in New York. He is a member of the National Academy of Construction and the Construction Industry Arbitration and Mediation Panels of the American Arbitration Association, and is a member of the Construction Panel, CPR Panel of Distinguished Neutrals, CPR Institute for Dispute Resolution. He is a Fellow of the American Society of Civil Engineers; a Fellow and Past President of the American College of Construction Lawyers; and is a member of The Moles. Mr. Rubin is a member of the Advisory Council of the Cornell University, School of Civil and Environmental Engineering; a member of the Construction Group Advisory Board, Construction Contracts Law Report, Thomson/West; President-Elect of the Dispute Resolution Board Foundation; a Director of the Building Futures Council; and a Director of the ACE Mentor Program. He received a

Bachelor of Civil Engineering from Cornell University and a Juris Doctor from Columbia University.

James G. Slaughter, Jr., is President of S & B Engineers and Constructors, Ltd., with home offices in Houston, Texas. The company specializes in engineering and construction services for the refining, chemical, infrastructure, paper and power industries, and prides itself for having perhaps the best safety performance of any major construction company for the last 15+ years. Mr. Slaughter is a native of Houston and received a BSChE from the University of Houston, and attended the University of Toledo and Harvard Business School. He has spent his entire career at S & B, starting as a draftsman in 1967 and filling both engineering and construction positions. Mr. Slaughter is President of the National Academy of Construction, an organization founded in 1999 for the purpose of honoring engineering and construction leaders for their contribution to construction improvements on a national level. He has served as Vice President, chair of the Membership Committee and chair of the initial ad hoc committee that studied dispute avoidance/dispute resolution. He serves on the Construction Industry Institute (CII) Executive Committee. He twice chaired the CII Strategic Planning Committee. He chaired the Front End Planning Team that developed the Project Definition Rating Index (PDRI) and also a tool for assessing project alignment, the Alignment Thermometer. He is a Member of the CII Benchmarking and Metrics Committee, providing leadership on the subcommittee developing National Productivity Metrics for both Design and Construction. He is past President of the Houston Area Contractors' Safety Council.

Thomas J. Stipanowich is the President & CEO of the CPR Institute for Dispute Resolution, an international non-profit coalition of corporate counsel, senior attorneys, judges and scholars spearheading innovation and promoting excellence in public and private dispute resolution. Since its founding in 1979 as the Center for Public Resources, the CPR Institute has been a primary multinational resource for the avoidance, management and resolution of business-related disputes by holding conferences and convening task forces of its coalition, producing and publishing information, and resolving disputes. The Institute works with federal and state courts, agencies, and other public and private institution here and abroad to promote appropriate use of mediation and other forms of dispute resolution. The organization is currently sponsoring international projects and programs in the European Union, China and other parts of the world. When he took the helm of CPR in 2001, Stipanowich brought to the role broad credentials as a mediator, arbitrator (on the CPR and AAA panels), federal court special master, and facilitator. A long-time chaired professor of law, he is an award-winning author of many articles on ADR subjects. He is co-author of a forthcoming text for law schools on dispute resolution, to be published by Aspen Publishing (2005). He has co-authored two of the leading books on commercial arbitration law and practice, including Federal Arbitration Law: Agreements, Awards and Remedies (Little, Brown & Co./Aspen 1994) a five-volume treatise that has been cited by the U.S. Supreme Court and many other federal and state courts. As the Director of the CPR Commission on the Future of Arbitration, he edited an extensive set of guidelines entitled Commercial Arbitration at Its Best: Successful Strategies for Business Users (2001). He has advised or participated in important national efforts at statutory reform (the Uniform Arbitration Act and Uniform Mediation Act), served as chief drafter of a protocol for consumer ADR programs, and played an important role in the development of the leading construction and securities ADR rules and policies. He has conducted empirical research and analysis on the use of arbitration, mediation and other approaches in different settings, and recently produced a major study on the growth and impact of ADR for the Journal of Empirical Legal Research. Prior to coming to CPR, he founded a non-profit court-connected mediation center (still in operation). In his capacity as first director of the program, he helped establish programs for mediation of circuit and district court matters of all kinds; worked with peer mediation courses in the public schools; and created and implemented mediator training and

accreditation programs and ethical standards. In addition to serving as a mediator in many kinds of cases, he facilitated the resolution of various major community issues involving ethnic and workplace conflict. Stipanowich served as a Public Member and Chair of the Securities Industry Conference on Arbitration (SICA from 1997-2004), as a member of the Board of Directors of the American Arbitration Association, and as Chair of the Advisory Committee to the Global Disputes Research Center. Trained as an architect (B.S. Arch, Illinois, with Highest Honors, Alpha Rho Chi Medal; M.Arch, Illinois, Ryerson Traveling Fellowship, AIA School Medal) before going to law school (Illinois, *magna cum laude*; Order of the Coif), his initial exposure to arbitration and mediation came through the national practice of Smith, Currie & Hancock, a leading construction law firm in Atlanta. More recently, he was Counsel to the southeastern law firm of Stites & Harbison. Stipanowich is a Fellow of the American College of Construction Lawyers and a Founding Fellow of the American College of Commercial Arbitrators. He is one of four (and the only non-British) Companion of the Chartered Institute of Arbitrators, an Honorary Member of the Marie Garibaldi A.D.R. Inn of Court, and an Honorary Fellow of the American College of Civil Trial Mediators. He is a frequent speaker on dispute resolution topics and has been quoted in The Wall Street Journal, The New York Times, The Financial Times, The American Lawyer, The National Law Journal, The American Bar Association Journal, Trial, Corporate Legal Times, The China Daily, and many other print and online publications.

Hans VanWinkle is Director of the Construction Industry Institute. On September 1, 2003, he became only the third CII Director, following Ken Eickmann (1998-2003) and the original Director, Dr. Richard L. Tucker (1983-1998). As Director of CII, VanWinkle now leads a collaborative effort by almost 100 organizations from the engineering and construction industry in funding research to improve one of the nation's largest industries. More than 700 individuals are involved in CII research, implementation, and education projects involving more than 30 of the nation's top universities. Prior to joining CII, VanWinkle (Maj. Gen., U.S. Army, Retired) was Deputy Commanding General of the U.S. Army Corps of Engineers in Washington, D.C. He oversaw the Corps' military construction and real estate services for the Army and Air Force, the Army's national water resources program, and the design, construction management, and real estate services for other Defense and Federal agencies. The Corps' annual budget of $14 billion makes it one of the largest public engineering organizations in the world. During his distinguished and highly decorated military career, he had many key command and staff assignments, among them Director of Civil Works, U.S. Army Corps of Engineers; Deputy Chief of Staff, Engineer, U.S. Army Europe and Seventh Army, Heidelberg, Germany; Director of Training, U.S. Army Engineer School at Ft. Leonard Wood, Missouri; Commander, Division Engineer Brigade, 4th Infantry Division (Mechanized), Ft. Carson, Colorado; and Commander, 8th Engineer Battalion, 1st Cavalry Division, Ft. Hood, Texas. Among his military awards are the Distinguished Service Medal, the Legion of Merit, the Bronze Star Medal, and campaign awards from Operation Desert Shield/Desert Storm in Iraq and Operation Joint Endeavor in Bosnia. VanWinkle, a graduate of the U.S. Military Academy at West Point, is a Registered Professional Engineer (Virginia). In addition, he holds a Master of Science degree in public policy from the University of California-Berkeley.

Mike Vorster is the David H Burrows Professor of Construction Engineering at Virginia Tech. He served as founding Coordinator of the Construction Engineering and Management Program from 1986 to 1993 and as Associate Dean for Research and Graduate Studies in the College of Engineering from 1993 to 1997. Prior to coming to Virginia Tech, Mike worked in industry and academia in South and Central Africa. In industry, he was directly involved in the field construction of heavy Civil Engineering projects at various levels of responsibility from 1965 to 1975. In academia, he was Assistant Director of the Graduate School of Business and, later, Chairman of the Department of Civil Engineering at The University of Cape Town. While at the

University of Cape Town he established an executive level construction management program which provided inspiration and input for similar operations at Stanford and Texas A&M and Virginia Tech. His teaching and research interests focus on construction equipment, contract administration, and contract dispute resolution. He is a consultant to various companies in these areas and has served on a number of Dispute Review Boards for a major projects. He is the academic advisor to the Association of Construction Equipment Managers for whom he has presented a number of seminars and short courses focusing on the management aspects of Construction Equipment. He holds a BS in Civil Engineering and an MBA from the University of Cape Town and a Ph.D. in Engineering from the University of Stellenbosch. Mike is a member of the National Academy of Construction and a recipient of the South African Institution of Civil Engineers Basil Reid Gold Medal for contributions to construction, the Virginia Tech Alumni Award for Excellence in Teaching and the State Council of Higher Education for Virginia, Outstanding Faculty Award.

W. Michael "Mike" Womack is General Manager, Strategic Alliances, of Cinergy Corporation. He has almost 30 years of experience in Project Management and Construction Management. Early in his career, Mike worked for various large national contractors including Dravo, Dillingham, and Blount. During his 10 years with Blount Construction, Mike spent time as Chief Engineer, Senior Project Manager and Director, Project Control Systems. For the past 12 years, he has worked for Cinergy Corp. managing various aspects of their power generation capital projects. Most recently, Mike was the Project Executive for a combined heat and power (CHP) plant built to supply electricity and steam to a large industrial client. The project was named by POWER magazine as one of their "Top Plants of 2004". Mike received a BS degree in Mathematics from Millsaps College and an MS degree in Civil Engineering from Columbia University. He is a registered professional engineer in the state of Indiana.

AN OUTLINE OF CONSTRUCTION DISPUTE PREVENTION AND EARLY RESOLUTION TOOLS

James P. Groton and Robert A. Rubin

A. Pre-Project Planning and Prevention Tools

1. Follow CII Best Practices for setting up the project in a way that will minimize problems, e.g.

Pre-Project Planning
Project Definition Rating Index (PDRI)
Alignment
Constructability
Design Effectiveness
Planning for Startup
Team Building
Quality Management
Change Management

2. Select the most appropriate project delivery method. The construction industry has developed many different methods of delivering a project, such as traditional design-bid-build, cost-plus, cost plus subject to a guaranteed maximum price, construction manager at risk, construction manager as agent, design/build, bridging with design/build, etc. The project delivery method for the project must be chosen with care, depending on the nature of the project.

3. Allocate project risks realistically. Assign each project risk to the party who is best able to manage, control or insure against the risk. If a party is saddled with a risk that it cannot handle, this creates resentment and adversarial relationships, and sows the seeds of countless potential disputes.

4. Provide financial incentives to parties to encourage cooperation. An example is a "bonus pool" which will be divided among all the subcontractors in proportion to their contract amounts provided they all meet certain defined goals of cooperation and teamwork. The bonus is payable either to everyone or to no one, thus encouraging the participants to support and assist each other by focusing on legitimate project goals, and subordinating selfish interests for the ultimate benefit of all project participants.

5. Try to predict the likelihood of the project to generate disputes, and take action to prevent the most likely disputes. The Construction Industry Institute has developed a predictive tool for this purpose called the Disputes Potential Index. If administered at the beginning of the project, project leaders can take action in certain vulnerable areas to minimize the risks of project disputes.

6. Use Partnering. This is a team-building effort in which the parties establish cooperative working relationships to work together to achieve project goals and resolve potential problems. It can be used for long-term relationships or on a project-specific basis.

B. Problem Solving Tools

7. Negotiation. This is the time-honored method of discussing problems and resolving them consensually by focusing on the legitimate interests of both parties in getting the problem solved so they can move ahead with the project. The focus should be on "First, let's fix the problem," rather than "First, let's fix the blame."

8. Step Negotiations. Sometimes the negotiation process is structured so that if the jobsite representatives are not able to resolve a problem at their level, their immediate superiors, who are not as closely identified with the problem, are asked to resolve the problem. If they fail, the problem will be passed up to higher management of both parties. Because of an intermediate manager's detachment and interest in demonstrating to higher management the intermediate manager's ability to solve problems, there is a built-in incentive to resolve disputes before they go to the higher level.

C. Dispute Control Tools

9. Geotechnical Baseline Summary Report. Where a project may encounter unanticipated geotechnical conditions, it is useful to establish, at the time of contracting, a geotechnical "baseline" of expected underground conditions, from which any changed conditions can be measured, with price adjustments at pre-agreed unit rates. This device generally results in more uniform bid prices, less exposure to claims involving interpretation of subsurface data, and a transparent non-controversial changes procedure which should foster a climate of openness and candor.

10. Escrowed Bid Documents. Because of the likelihood of changes to any construction project and the need to obtain the most reliable pricing information for changes, it is often helpful to place the successful bidder's estimating calculations in escrow, so they can be consulted whenever either party believes that reference to the original quantity and price calculations can provide information helpful to the pricing of changes. This device also fosters a climate of openness and candor on the project.

D. "Real Time" Dispute Resolution at the Job Site

11. Architect's or Engineer's Decision. The expert design professionals who designed the project have traditionally been called on to make rulings on questions of compliance with the contract requirements and workmanship. These decisions, while not binding on the parties, can often help resolve problems in the field promptly.

12. Dispute Review Board. A more modern and much more successful alternative to architect's or engineer's decisions is the dispute review board, usually consisting of three neutral construction experts, chosen mutually by the owner and contractor at the commencement of the project, who are asked to become generally familiar with the project and its progress, and be available to render advisory decisions promptly on any problems that the parties have been unable to resolve between themselves. The existence and ready availability of trusted expert neutrals who have been chosen by and have the confidence of the parties, and the knowledge that if asked they will render objective decisions which will administer "a dose of reality" to the parties, has many advantages in encouraging the parties to resolve disputes promptly. This process has enjoyed great success in both preventing disputes and achieving early consensual resolution of disputes on virtually every project in which it has been used.

13. Standing Arbitration Panel [less effective]. A variant of the dispute review board process is the designation by the parties of one or more arbitrators at the commencement of the project to render binding decisions promptly on problems that the parties have been unable to resolve between themselves. This technique has not been as successful as dispute review boards have been, largely because the prospect of a binding decision will almost invariably cause the parties to get lawyers involved, thus adding expense, polarizing positions, and escalating adversarial attitudes. This process also takes away the ability of the parties to cooperatively work out their own mutual resolution of the dispute.

14. Standing Mediator [less effective]. Another variant of the dispute review board process is the designation by the parties of a mediator at the commencement of the project to assist the parties in resolving disputes. This technique is rarely used, probably because what the parties need at this point is not a facilitator to encourage them to compromise every dispute, but rather an objective expert who can administer the "dose of reality" referred to above, a process that is more likely to give the parties a principled basis for resolving the dispute. Also, as in the case of arbitration, parties confronted with the prospect of mediation are likely to get lawyers involved; thus adding expense, polarizing positions, and escalating adversarial attitudes.

E. Overall Project Organization and Dispute Control and Management Techniques

15. Designing "Stepped" Approaches to the Prevention, Control and Early Resolution of Disputes. As has been illustrated above, there are many techniques and approaches to preventing, controlling and resolving disputes. Since problems and potential disputes can occur in many different ways and at different times during a construction relationship, no one size of dispute resolution mechanism fits all problems and disputes. Therefore the most successful approach is, at the beginning of a construction relationship, to acknowledge the reality that problems and disputes will occur, try to anticipate the kinds of problems and disputes that are most likely to occur, and design a system of techniques, controls, filters and dispute resolution devices that will insure that all disputes are promptly and realistically dealt with by the parties and resolved at the earliest possible time, before they fester and grow into serious disputes. A typical "stepped" approach would be for the parties to design a system of techniques that will, first, establish a cooperative project environment; second, set up controls that will minimize the frequency and severity of problems and third establish real time or jobsite techniques designed to get disputes resolved during construction. Then, in the unlikely event that these techniques do not resolve all problems, provide for a "backstop" combination of mediation and finally arbitration before expert construction industry arbitrators as the final resort.

16. Employing a "Project Neutral". On some large, complex, many-phase construction projects involving many different parties over a long period of time, it has been useful to employ a full-time expert in both construction and dispute resolution to continuously monitor the project to make sure that all of its dispute prevention, control and resolution mechanisms are operating well, and if they are not, to recommend to the parties other dispute resolution techniques that will make it certain that all disputes are successfully resolved.

17. Designating a "Project Counsel." On large projects which are expected to involve many different complex legal relationships and questions, the project can be well served if all of the parties collectively select and employ an expert construction lawyer who would be the legal advisor for, and represent, the "project" as a whole, not any individual party. The task of Project Counsel would be to help the parties to select the most appropriate project delivery system, assure that all contracts and insurance arrangements on the project are consistent with each other and integrated, participate in team building processes, work with the parties to design project-wide systems for dispute prevention, control and resolution, and otherwise guide

the project through the thicket of the complex legal relationships between the parties so that the project as a whole is successful, thus benefiting all parties to the project.

18. Project Alliancing. This is a process of structuring the organization of the Project in such a way as to align the commercial interests of all the parties, share risks and rewards equitably between the parties, provide incentives to work cooperatively and openly and perform well and even exceptionally, and align attitudinal objectives of the parties so as to create mutual commitment, trust, openness, flexibility and teamwork.

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