

**CONSTRUCTION MANAGEMENT AT RISK**  
**within**  
**THE UNIVERSITY OF NORTH CAROLINA**

With the approval of the Higher Education Improvement Bond Program in the fall of 2000, the University faced the unprecedented challenge to complete this program on time and within budget and to place the 4.1 billion dollar program under contract in six years.

**The existing state construction delivery method was archaic.**

- The only standard construction contracting method available for state work prior to the passage of Senate Bill 914, which became effective January 2002, was the multi-prime construction delivery system which required separate prime contracts for the General, Mechanical, Plumbing and Electrical work.
- In January 2002, only two states in the entire country were using this unusual and dated construction delivery method.
- Many of the larger and more sophisticated general construction contractors needed to successfully implement the UNC Bond Program had previously chosen not to compete for state work because of the multi-prime system.

**The University became the change agent to modernize the state construction delivery methods.**

- The projects to be constructed in the Bond Program were larger and more complex than ever before. Also, without some change, the non-bond program was at risk as well.
- The University understood that a broader base of contractor participation and more effective construction delivery methods were essential to the successful completion of its capital construction program.
- In January 2001, the State Building Commission, upon the request of the University, authorized the use of Construction Manager at Risk (CM at Risk) as the construction delivery method for a number of large projects.
- The University, together with the Office of the Attorney General and the State Construction Office, developed a new set of procedures and contract documents for the CM at Risk delivery system in the public sector in North Carolina.
- As experience was gained, these procedures and contract documents were refined to make the delivery method even more efficient. The refinement continues based on additional experience.

**The University was attracted to the CM at Risk delivery system for a number of significant reasons.**

- CM at Risk had improved work in the private sector since World War II and has evolved into the delivery method of choice in the private sector.
- Investigation revealed that almost every state now uses some form of the CM at Risk construction delivery method in the public sector. The more progressive states such as

California and Texas have already aggressively improved their processes for maximum return.

- The selection of a construction manager early in the project design brings a construction perspective and expertise to the design process by providing constructability reviews, market based cost estimating, and realistic schedule development thus providing greater assurance those projects will be completed within budget and on time.
- The Construction Manager brings a project coordination and management capability to the Owner's (i.e. the University's) staff not otherwise available.
- The qualifications-based selection of the CM at Risk eliminates the 'built in' adversarial relationship between the contractor and owner associated with the design-bid-build and multi-prime delivery methods, resulting in more successful projects.
- Expensive construction claims and attendant litigation common with design-bid build and multi-prime is minimized or eliminated under the CM at Risk method.
- Projects are an open book from a financial standpoint, and are routinely examined upon completion to ensure accurate expenditures and that all unused funds are returned to the owner.
- The bulk of the work is bid competitively to trade and specialty subcontractors, thus guaranteeing the traditional competitive nature of public construction while achieving the lowest reasonable price.
- Prequalification of trade and specialty subcontractors assures that qualified subs are on the project.

#### **Statistics verify the success of the method.**

- The Project Delivery Institute at Penn State University conducted a study, acknowledged nationally to be the most credible of its kind, which compared 351 projects (since expanded to 1000) in terms of cost, schedule and quality. The study compared the three predominate construction delivery methods: design-bid-build, design-build and CM at Risk.
- The study concluded, among other things, that "...Projects delivered under the construction manager at risk project delivery system took an average of 13.3% less time to deliver and had a unit cost of 1.6% less than similar projects delivered using the design-bid-build project delivery system. Relative quality measures showed that design-bid-build projects on average resulted in the lowest possibility of meeting owner expectations..."

#### **The results to date within the University are a very positive work in progress.**

- The University has attracted the participation of an increasing number of the progressive, experienced and sophisticated contractors who did not previously participate in state work and who are essential to complete the program.
- Thirty-six of the first 62 companies proposing on CM at Risk projects had never participated in state work, and that number continues to grow.
- Even though Senate Bill 914 allows single prime contracting, which is also essential, several of the larger construction firms have chosen to compete only for CM at Risk projects.

- As of December 2006, 50 of the 68 current CM at Risk projects have either been completed or are under construction at a total cost exceeding \$1.1 billion with no contractor claims (two designer claims), essentially on time, excellent quality, and within available funds.
- Delivery of several of the completed projects was accomplished in a timeframe that could not be achieved by design-bid-build or multi-prime.
- HUB participation achieved by the CM at Risk projects is almost 50% higher than the other delivery methods.
- CM at Risk firms can associate (joint venture) with HUB firms for effective and efficient mentoring.

**The learning process must continue.**

- There have been 10 projects where the CM at Risk has been released at the end of pre-construction services and the projects bid as single prime general contracts. Reasons for this vary, but can be summarized as the failure of the project designer, CM at Risk and/or owner to form an effective project planning team – part of the learning process for all parties.
- Notwithstanding the tremendous progress, the CM at Risk concept is still not fully understood in some isolated sectors of the local design and construction industry as well as within the state construction bureaucracy.

**With a solid foundation, aggressive improvement and refinement is the next step.**

- The University's experience to date mirrors The Project Delivery Institute study, as well as experience from the private sector and other states - while there are marginal cost savings in the work and significant potential cost savings in claims and litigation with the CM at Risk delivery system over the design-bid-build system, there is a significant savings in time and an increase in quality.
- The University stands ready to continue to provide the leadership necessary to refine the CM at Risk process and continue to bring North Carolina's construction delivery methods into the 21<sup>st</sup> Century – its citizens deserve nothing less.