DGS-30-456
(Rev. 10/18)

Construction Management at Risk
Procurement Review Submittal Form

General Project Information

Agency Name:	Virginia Tech
Is the agency a covered institution per §2.2-4379?	Yes
Project Name:	Data and Decision Sciences
Project Number:	208-18413-000

Other Project Information

Advising A/E Name:	Moseley Architects	License Number:	410000059
COV Sections: §2.2-4380.B.2, §2.2-4381.C.2			
Attach written determination for use of CM at Risk.			
COV Sections: §2.2-4380.C.2, §2.2-4380.B.1; §2.2-4381.D.2, §2.2-4381.C.1			
Is the procurement process proposed a two-step process?			Yes
COV Sections: §2.2-4380.C.2, §2.2-4380.B.7; §2.2-4381.D.2, §2.2-4381.C.7			

Agency Reasons for Use of CM at Risk

Construction Cost (COV Sections: §2.2-4381.B.1, §2.2-4380.C.3, §2.2-4381.D.3)	Yes
Building Use (COV Sections: §2.2-4381.B.1, §2.2-4380.C.3, §2.2-4381.D.3)	Yes
Project Timeline (COV Sections: §2.2-4381.B.1, §2.2-4380.C.3, §2.2-4381.D.3)	Yes
Need for Project Phasing (COV Sections: §2.2-4380.C.5, §2.2-4381.D.5)	Yes
Project Complexity (COV Sections: §2.2-4381.B.1, §2.2-4380.C.4, §2.2-4381.D.4)	Yes
Value Eng. and/or Constructability Analysis Concurrent with Design (COV Sections: §2.2-4381.A)	Yes
Need for Quality Control/Vendor Prequalification (COV Sections: §2.2-4380.C.5, §2.2-4381.D.5)	Yes
Need for Cost/Design Contol (COV Sections: §2.2-4380.C.5, §2.2-4381.D.5)	Yes

Supporting Information for Procurement Method Selection

The Data and Decision Sciences (D&DS) building will provide a cutting edge platform for academic programs keyed to technology-based industries and cyber security work. It will associate an array of disciplines including engineering, computer science, statistics, mathematics, business and international affairs into a highly complex facility geared for data manipulation through the use of IT-based communications infrastructure and support systems. The facility must be designed and constructed to integrate extensive data management functions with advanced academic delivery methods.

The building will be 120,000 SF spanning five floors. Principal components of the D&DS building include 8 large data processing laboratories, 19 student-team data management/project spaces, 32 large classrooms and 106 shared office spaces. The academic spaces will incorporate intensive cyber security and IT-based communications infrastructure for full connection with the University's vast computing power to efficiently translate immense amounts of data. It will provide state-of-the-art data visualization spaces for real time processing, flexible classroom spaces supporting multiple modes of instructional delivery, and support spaces where teams of students and faculty can explore and develop solutions for challenging and data-heavy problems.

Design and construction of the facility must be accomplished on an accelerated timeline in light of the recent commitment by the Commonwealth to increase the throughput of undergraduate and graduate students with STEM degrees feeding into northern Virginia at the Innovation Campus. Planned enrollment increases by more than 2,000 students across the next four to five years is driving the need for rapid establishment of this building and the programs it will house. Overall, in light of the intense need for this highly complex building on a rapid timeline, it is vital to minimize the overall duration of this project through the use of CMaR.

Note: The D&DS facility is one of four buildings making up the Global Business Analytics Complex (GBAC) that will be constructed on the Virginia Tech campus in Blacksburg. The other three facilities consist of the New Business College that will adjoin the D&DS building; and two living learning community (LLC) residence halls totaling 700 beds that will be constructed within walking distance nearby.

Project Use (i.e. lab, classroom, office, etc.): (COV Sections: §2.2-4380.C.3; §2.2-4381.D.3)				
Construction Cost:	$59,250,000	(COV Sections: §2.2-4380.C.3; §2.2-4381.D.3)		
Project schedule: (COV Sections: §2.2-4380.C.3; §2.2-4381.D.3)	Design Start Date	Jul-19	Design Compl. Date	Sep-20
	Const. Start Date	Jun-20	Const. Compl. Date	Jun-22
	Attach bar chart schedule to illustrate fast tracking or other schedule complexities. (COV Sections: §2.2-4380.C.3, §2.2-4380.C.4; §2.2-4381.D.3, §2.2-4381.D.4)			

Additional description to highlight key attributes that affect the project complexity, need for value engineering/constuctabilitiy analysis, qualitiy control/vendor prequalification, and cost/design control as indicated by "Yes" answers above:

Construction Cost: Collaborative involvement by the CMaR with the A/E throughout the preliminary design and working drawing phases well before construction begins will better inform design processes, enhance project cost estimation, ensure sequencing of work is efficiently planned and budgeted, and provide constructability analysis—all of which are critical to the maintaining overall project costs within budget. Value engineering and constructability analysis will enhance project quality through elimination of costly and time consuming change orders. The creation, evaluation and pricing of alternative solutions to complex technical constraints will optimize construction of the complicated and specialized systems envisioned within this building.

Project Timeline and Phasing: Academic programs supported by the GBAC facilities are already in demand and dictate the need for rapid execution of the D&DS project. The University is accelerating establishment of this critical building to support academic program milestones—specifically, the ability to instruct an additional 2,000 STEM-degree students across the next four to five years. Additionally, the D&DS building itself will be constructed on a fast-track basis with a planned early release package for site work, utilities construction and building foundation work. Engagement by the CMaR with affected organizations during pre-construction phases is essential to meeting project milestones for long-lead items including structural steel, IT-infrastructural components, transformers, etc. The D&DS building and the planned New Business College will adjoin each other and share key infrastructure components and features including centralized HVAC systems and controls, IT-infrastructure, and data visualization systems. Extensive zoning of HVAC systems, controls, and lighting will be incorporated into the D&DS building and will be expected to seamlessly integrate with future New Business College. Use of CMaR, particularly during the design phase, will ensure the components of the D&DS building align with and compliment those anticipated for the New Business College.

Project Complexity: Given the overall size of the building, the foundation intended includes aggregate piers with concrete spread footing systems including significant foundation/below grade excavation. However, the site location is also a known area of underground karst formations and sub-surface bedrock that may drive the need for alternative foundation systems and below grade building characteristics. Use of CMaR, particularly during the design phase, will ensure optimal construction techniques are identified early on thus optimizing cost and time. Additionally, site complexity for this project will be intense. During the construction phase, neighboring areas immediately adjacent to the site will also have significant ongoing construction projects, specifically: the Undergraduate Science Lab building, the Multi-Modal Transfer Facility, Hitt Hall & New Dining Hall, and Chilled Water Phase II. The site is also immediately adjacent to the only parking garage on campus which will remain fully operational throughout construction. The resultant impacts to the D&DS site include: high volume student/pedestrian foot traffic and vehicular traffic management challenges, little to no adjacent laydown area, just-in-time material deliveries, extensive underground utilities coordination requirements, shared project borders and associated project site control systems.

Need for Quality Control/Vendor Prequalification: Use of two-step procurement procedures will help ensure selection of a CMaR with the qualifications, expertise and experience best suited for this project. Due to budget constraints and the intense timeline associated with this project, subcontractor pre-qualification by the CMaR for certain work packages will be essential for effective financial management and cost control.

(COV Sections: §2.2-4380.C.4; §2.2-4381.D.4)

Submitted by: Christopher H. Kious Date: 4/5/19

Signature:

Title:

(Agency Head or Authorized Representative)

For DGS Use Only

Based upon the information provided by the Agency, the use of Construction Management at Risk is recommended for this project.

Recommended by:

W. M. Coppa 4/8/19

W. Michael Coppa, RA
Director, Division of Engineering and Buildings