



# PROPOSAL

Construction Management Services

---

STEM Building Project  
Western Carolina University



## TABLE OF CONTENTS

Section 1: Profile of Proposer ..... Page 1

Section 2: Project Experience..... Page 7

Section 3: Key Personnel .....Page 15

Section 4: Project Planning.....Page 29

Matthew J. Ketchum, AIA  
Office of Facilities Management  
3476 Old Cullowhee Road  
Cullowhee, North Carolina 28723

STEM Building  
Western Carolina University



Dear Mr. Ketchum,

TUESDAY | JULY 26 | 2016

**R**ENTENBACH CONSTRUCTORS INCORPORATED is pleased to submit our firm's response to the Request for Proposal for Construction Management services for the STEM Building project at Western Carolina University. We are honored to be considered as your partner on this exciting project and welcome any questions or comments you may have in regard to this response or our services.

As you will discover in our response, Rentenbach is an industry leader and dedicated partner for higher education clients across the country. Our past project experience and expert staff are perfectly suited to provide Western Carolina University the very best in value, quality and project outcome for the STEM Building project. Please consider the following reasons to select Rentenbach as your construction manager and partner:

**We are laboratory and specialized higher education construction experts:** Our enterprise has constructed \$1.5 billion worth of scientific and laboratory research facilities for public and privately held companies. Each and every one of these projects has brought us lessons learned and a fresh approach to this type of construction. We understand all of the intricacies associated with educational laboratory and research facilities and are confident we can bring the same success to Western Carolina University's STEM Building project. Our team is also currently partnered with Lord Aeck Sargent, the chosen laboratory designer for this project, on our 13th Street Science Laboratory at The University of Tennessee in Knoxville. Our existing relationship with this crucial part of your team will seamlessly transition onto your campus.

**Our team is familiar with the Western Carolina University campus:** Not only did we complete the Balsam and Blue Ridge Residence Halls on the campus in 2010, but we also gained an expert part of our team from Western Carolina University, Cody Scott. Cody joined our team as a construction management student on-site during construction of the residence hall. He joined our team full-time after graduating from WCU. He has since been promoted to Assistant Project Manager. As an alum, Cody brings unparalleled insight into the campus and vision at Western Carolina University.

I can personally attest to the quality and experience of this project team and look forward to the opportunity to make your project a great success. We are eager to share more details of our planning and construction teams at the interview stage of this proposal process.

Very truly yours,

**RENTENBACH CONSTRUCTORS INCORPORATED**

A handwritten signature in black ink, appearing to read "Marty Gibbs".

Marty Gibbs, P.E.  
Vice President and Regional Manager

Attachment

# SECTION I PROFILE OF PROPOSER

## Proposer's Name and Principal Office Serving this project:



### Rentenbach Constructors Incorporated

Marty E. Gibbs, P.E., LEED GA  
1102 Grecade Street  
Greensboro, NC 27408  
marty.gibbs@rentenbach.com  
p. 336-333-2872 | f. 336-273-4035

## Acknowledgment of Addenda:

Addendum No. 001 - Dated July 19, 2016

*A. Give corporate history of the company including organizational structure, years in business and evidence of authority to do business in North Carolina.*

Rentenbach Constructors is a full-service construction management firm, continuously in business since 1946. We are one of the Southeast's largest privately-held contracting firms and have been ranked among "America's Top 400 Contractors" by Engineering News-Record for over 35 years. Rentenbach also enjoys a distinguished record for successful completion of North Carolina CM-at-Risk projects for the UNC System, municipalities, and for the private sector. We have called North Carolina home since 1971, maintaining a full service office in Greensboro for over four decades. The Christman Company, our parent company with whom we operate as a single entity, has been in continuous operation since 1894. We have a very diverse portfolio of projects, primarily CM-at-Risk work for higher education, healthcare, municipal, industrial and corporate projects.

We have been awarded the prestigious "Build America" award by the Associated General Contractors of America in 1977, 1982, 2000 and 2006. Our most recent awards were presented in March of 2014 by the NC State Building Commission, both for **Excellence in Project Implementation**, and for Minority Contractor Outreach for our work at Fayetteville State University (see project profiles), and an AGC Carolinas Pinnacle Award for our work at UNC High Point Regional Hospital. Our Diversity Program was also honored by the UNC System Triad Coalition for our ongoing efforts in minority contractor mentorship.

Our substantial client base offers the greatest testimony to the quality and integrity of our work - more than 75 percent of our work is performed for repeat clients. Throughout our history and many diverse projects, we have been guided by the maxim that we are only as good as our most recent project.



Image above: 2016 NC State Contractor License (#5596)

## Number of Full-Time Construction Professionals



B. Provide annual workload for each of the last five (5) years; number of projects and total dollar value.

ANNUAL WORKLOAD					
	2011	2012	2013	2014	2015
# of Projects	38	29	36	57	52
Volume	\$314 mm	\$319 mm	\$439 mm	\$625 mm	\$654 mm

C. List Projects for which the company is currently committed including name & location of each project, time frame & dollar amount of each project.

CURRENT RENTENBACH PROJECTS				
Project Name	Value	Completion	Location	
Steven Tanger Center for the Performing Arts	\$58,000,000	2019	Greensboro, NC	
FedEx Sort System Reconfiguration	\$400,000,000	2019	Memphis, TN	
John Sevier State Office Bldg. Ext. Updates	\$12,000,000	2017	Nashville, TN	
University of TN Student Union – Phase II	\$77,000,000	2018	Knoxville, TN	
University of TN 13th Street Science Laboratory Facility	\$80,000,000	2018	Knoxville, TN	
Well Spring Retirement Resident Activities Cntr. & Theater	\$31,000,000	2017	Greensboro, NC	
UNC Hospital High Point Regional Hosp. 3rd Floor Reno.	\$23,000,000	2017	High Point, NC	
First Presbyterian Church Renovations and Additions	\$8,600,000	2017	Knoxville, TN	
Tusculum College Meen Center for Science and Math	\$18,900,000	2017	Greenville, TN	
TN School for the Deaf, New High School	\$18,700,000	2017	Knoxville, TN	
TN Veterans Home - Cleveland	\$31,000,000	2017	Cleveland, TN	
Novant Health Clemmons Medical Center	\$38,000,000	2017	Clemmons, NC	
Asheville Foundry Inn	\$22,413,000	2017	Asheville, NC	
Ganns Middle Valley Elementary School	\$29,400,000	2016	Chattanooga, TN	
Cumberland Medical Center Emergency Dept. Addition	\$4,700,000	2016	Cookeville, TN	
UNCG Recreation Center	\$69,000,000	2016	Greensboro, NC	
UNCG Union Square Medical Teaching Campus	\$20,000,000	2016	Greensboro, NC	
Grundy County Detention Center	\$6,600,000	2016	Altamont, TN	
University of TN Strong Hall Science Laboratory	\$92,000,000	2016	Knoxville, TN	
UNC Hospitals High Point Regional Hosp. Exp.	\$26,000,000	2016	High Point, NC	
St. Pius Catholic Church Office and Preschool Addition	\$9,000,000	2016	Greensboro, NC	



Image above: The interior of the anatomy laboratory of the Health Sciences Building at the University of Georgia.



Image above: The Strong Hall Laboratory for the University of Tennessee. This project is coordinated entirely in BIM by our team, and features extensive laboratory spaces for chemistry, biology, as well as storage and habitat for live animals.

D. Financials - Attach latest balance sheet and income statement if available, based on company type. Audited statements preferred. If not available, attach a copy of the latest annual renewal submission to the relevant licensing board. Indicate Dunn & Bradstreet rating if one exists. (Firms must submit financial data and clearly indicate a request for confidentiality to avoid this item becoming part of a public record.)

As a privately held company, Christman Enterprises (Rentenbach's parent company) prefers not to disclose the most intimate details of its financial position. **Enclosed separately is a balance sheet attesting to our financial capability. We respectfully request that the information provided therein is maintained in the strictest of confidence, that no copies are made and that it is returned to us in the envelope provided.**

E. Attach letter from Surety Company or its agent licensed to do business in North Carolina verifying proposer's capability of providing adequate performance and payment bonds for this project.

Please see the following page for a letter from our bonding agent.

F. List all construction projects performed by the proposer for agencies and institutions of the State of North Carolina during the past 10 years.

PROJECTS FOR NORTH CAROLINA PUBLIC AGENCIES 2006—2016			
Project Name	Owner	Delivery	Value
High Point Regional Infrastructure	UNC Hospitals	CM-at-Risk	\$26,000,000
UNCG Recreation Center	UNC Greensboro	CM-at-Risk	\$71,000,000
Pharmacy Reconfiguration	UNC Hospitals	GC	\$3,000,000
Balsam & Blue Ridge Residence Halls	Western Carolina University	GC	\$45,000,000
Department of Public Health	Cumberland County, NC	CM-at-Risk	\$20,000,000
City Center Park	City of Greensboro, NC	CM-at-Risk	\$5,000,000
Train Station Restoration	City of High Point, NC	CM-at-Risk	\$4,000,000
Municipal Building Renovations	City of Asheville, NC	CM-at-Risk	\$9,000,000
Three Projects	Pardee Hospital	CM-at-Risk	\$25,000,000
Rams Head Center	UNC-Chapel Hill	CM-at-Risk	\$63,000,000
Science and Technology Building	Fayetteville State University	CM-at-Risk	\$20,000,000
Zeiss Science / Multi-Media Center	UNC-Asheville	CM-at-Risk	\$13,000,000
Elliot University Center	UNC-Greensboro	CM-at-Risk	\$5,000,000
Union Square Nursing Edu. Bldg.	UNCG/GTCC/NCA&T/Cone	CM-at-Risk	\$19,000,000

G. Litigation/Claims. If yes to any of the questions below, list the project(s), dollar value, contact information for owner and designer and provide a full explanation with relevant documentation.

1. Has your company ever failed to complete work awarded to it? **No**
2. Has your company ever failed to substantially complete a project in a timely manner (i.e. more than 20% beyond the original contracted, scheduled completion date)? **No**
3. Has your company filed any claims with the North Carolina State Construction Office within the last five years? **No**
4. Has your company been involved in any suits or arbitration within the last five years? **Yes**
5. Are there currently any judgments, claims, arbitration proceedings or suits pending or outstanding against your company, its officers, owners, or agents? **Yes**
6. Has your present company, its officers, owners, or agents ever been convicted of charges relating to conflicts of interest, bribery, or bid-rigging? **No**
7. Has your present company, its officers, owners, or agents ever been barred from bidding public work in North Carolina? **No**

Rentenbach has a long and successful history of working proactively with our clients, trade contractors, suppliers and other partners to build a culture of cooperation in which leadership, accountability and open communication prevent misunderstandings and minimize disputes. As would be expected for a construction firm of our size and volume, Rentenbach has been involved in various claims and/or litigation cases, most of which are inconsequential cases brought by a trade contractor or other party. In our judgment, **there are no current outstanding legal cases or judgments rendered with significant potential to adversely impact Rentenbach's overall financial position, nor have there been within the past ten years.**



*J. Smith Lanier & Co.*

*Insuring People And Business Since 1868*

July 20, 2016

Matthew J. Ketchum, AIA  
Office of Facilities Management  
Western Carolina University  
3476 Old Cullowhee Road  
Cullowhee, North Carolina 28723

Re: Rentenbach Constructors Incorporated  
Project: Western Carolina University STEM Building

Dear Mr. Ketchum:

J. Smith Lanier & Co. and The Federal Insurance Company are currently engaged in the surety program of Rentenbach Constructors Incorporated. We have underwritten bonds for single projects up to \$125,000,000.00 within an overall program of \$1,000,000,000.00. We are prepared to provide the bid, payment, and performance bonds required for the captioned project should Rentenbach Constructors Incorporated request us to do so.

Our support is conditioned upon completion of our standard underwriting process, including satisfactory review of contract documents, confirmation of financing and our ongoing review of the operational and financial capacity of Rentenbach Constructors Incorporated.

Please note the Federal Insurance Company is a writing company for the Chubb Corporation, which has an A.M. Best rating of A++ (Superior) and a Financial Size Category of XV. The Federal Insurance Company was treasury listed to support any single bonded obligation up to \$1,342,970,000.00 as of July 2, 2015 and is licensed to do business in all states.

We are pleased to share with you our favorable experience and high regard for Rentenbach Constructors Incorporated. This letter is not an assumption of liability and is issued only as a prequalification reference request from our client. It should be understood that any arrangement for bonds is strictly a matter between Rentenbach Constructors Incorporated and Federal Insurance Company.

Sincerely and respectfully,

A handwritten signature in blue ink that reads 'Catherine L. McMillan'. The signature is written in a cursive, flowing style.

Catherine L. McMillan  
Sr. Account Manager

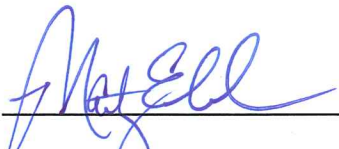
413 North Shore Dr. SW • Knoxville, TN 37919  
865.588.7200 • 800.752.1231 • Fax 865.588.7224  
[www.jsmithlanier.com](http://www.jsmithlanier.com)

# NON-COLLUSION AND NON-SUSPENSION STATEMENT


The undersigned certifies that **Rentenbach Constructors Incorporated, 1102 Grecale Street, Greensboro, NC 27408-8710**, North Carolina General Contractor License Number **5596**, has not in connection with this proposal or in any instance engaged in any conspiracy, combination, or any other act in restraint of trade or commerce declared to be unlawful by the provisions of N.C.G.S. 75-1 and 75-2 where the combination, conspiracy or other unlawful act in restraint of trade involves a contract for construction, renovation or repair, let or to be let by a governmental agency or a subcontract for construction renovation or repair with a prime contractor or proposed prime contractor for a governmental agency. N.C.G.S. 133-24.

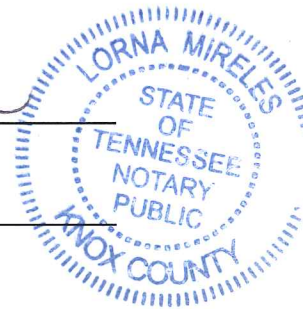
Furthermore, the undersigned certifies that it is familiar with the response to the RFP for the **Western Carolina STEM Building** project and that said response, is fair and proper and is not tainted by any collusion, conspiracy, connivance or unlawful agreement on the part of the undersigned or any of its agents, representatives, owners, employees or parties in interest. N.C.G.S. 133-30.

Finally, the undersigned certifies that it has not been suspended from bidding by the North Carolina State Building Commission or any other State building authority and that it is not an affiliate or subsidiary of any company suspended by the North Carolina State Building Commission or any other State building authority.

By   
Title **Vice President**  
Date **July 26, 2016**

IN WITNESS WHEREOF, I have hereunto set my hand and Notarial Seal this the **26th**-day of **July**, **2016**.

Official Signature of Notary   
Notary's Printed or Typed Name **Lorna Mireles**  
My Commission Expires: **September 30, 2017**



# Verification

This the 26th day of July, 2016

Rentenbach Constructors Incorporated

By: Marty E. Gibbs

Title: Vice President and Regional Manager



Attest: Matthew Chappelle

(Corporate Seal)

## VERIFICATION

I HEREBY CERTIFY THAT THE RESPONSES OF Marty E. Gibbs ARE CORRECT AND TRUTHFUL TO THE BEST OF MY KNOWLEDGE AND FOR THOSE RESPONSES GIVEN WHICH ARE BASED ON INFORMATION AND BELIEF, THOSE RESPONSES ARE TRUE AND CORRECT BASED ON MY PRESENT BELIEF AND INFORMATION.

This the 26th day of July, 2016

Rentenbach Constructors Incorporated

By: Marty E. Gibbs

(Corporate Seal)

President

Attested: Matthew Chappelle

Secretary



STATE OF North Carolina

COUNTY OF Guilford

I, Sandra J. Jasinski, a Notary Public in and for the County and State aforesaid, hereby certify that Matthew Chappelle personally came before me this day and acknowledged that he/she is secretary of Rentenbach Const. and that by authority duly given and as the act of the corporation, the foregoing instrument was signed in its name by its president, sealed with its corporate seal, and attested by him/herself as its secretary.

Witness my hand and official seal, this the 26th day of July, 2016.

Sandra J. Jasinski  
Official Signature of Notary

Sandra J. Jasinski, Notary Public

Notary's Printed or Typed Name

December 30, 2016

My Commission Expires:



SANDRA J. JASINSKI  
NOTARY PUBLIC-STATE OF MICHIGAN  
COUNTY OF EATON  
My Commission Expires Dec. 30, 2016



## SECTION 2 PROJECT EXPERIENCE

A. List three projects of similar size, scope and complexity performed by the proposer.

Please see the following pages for project profiles on these similar projects:

- **Fayetteville State University** Science and Technology Building
- **University of Tennessee** 13th Street Science Laboratory
- **University of Tennessee** Strong Hall Science Laboratory

B. For each of the three projects, include specific details on the extent to which pre-construction and construction phase services were provided.

Please see the project profile on each project for details of which pre-construction and construction services were provided.

C. For the three projects listed above where CM services were provided, list the Guaranteed Maximum Price (if given), or if not given, the estimated cost provided by you, and the total cost of the project at completion.

- **FSU Science & Tech:** \$18,805,538 GMP — \$18,805,538 Final Cost
- **UT 13th Street:** \$83,854,000 GMP — \$83,854,000 Projected Final Cost
- **UT Strong Hall:** \$92,980,000 GMP — \$92,980,000 Projected Final Cost

D. For each of the three projects listed above where CM services were provided, compare the number of days in the original schedule with the number of days taken for actual completion.

- **FSU Science & Tech:** 492 Original Days — 492 Actual Days
- **UT 13th Street:** 1,065 Original Days — 1,065 Current Scheduled Duration
- **UT Strong Hall:** 1,065 Original Days — 1,085 Current Scheduled Duration

E. For the three projects listed above, attach owner references including the name, telephone and fax numbers, and e-mail address of the owner representative.

Please see the project profile on each project for owner reference information.



**Above:** Chemical research laboratories at Fayetteville State University, a double award winning project.



**Above:** Extensive anatomy and pathology teaching laboratories at the Oakland University Human Health Building.



**Above:** UNC Asheville's Zeiss Science Building, a science and classroom facility constructed by Rentenbach.

# FAYETTEVILLE STATE UNIVERSITY

## Science & Technology Building

**\$18,805,538 Total Cost**

**On-Budget Project**

**64,000 SF**

**LEED: Silver**

**CM-at-Risk**

**Completed in 2012**

**On-time Completion**

**44% Minority Participation**

### OWNER

Fayetteville State University  
1200 Murchison Rd  
Fayetteville, NC, 28301  
(910) 672-1433

### Contacts:

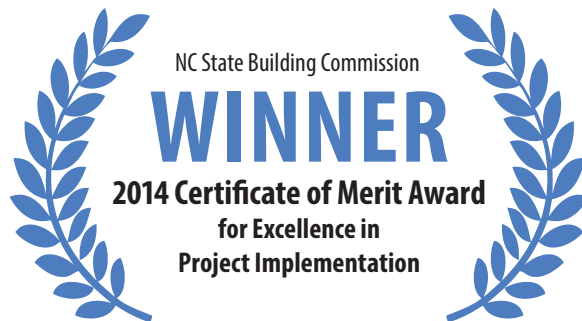
Mr. Rudy Cardenas  
FSU University Architect  
910-672-1431

Mr. Chuck McGoogan  
FSU Facilities Engineer  
910-672-1977

### ARCHITECT

Heery Design International  
434 Fayetteville Street,  
Suite 1500  
Raleigh, NC, 27601  
Mr. Bob Naegele  
919-838-6755

This building includes 64,000 SF of floor space spread over 4 floors located in the center of campus. The building consists of faculty offices, math and computer classrooms, physics labs, forensics labs, and chemistry labs. The lab wing consists of over 30,000 SF of dedicated lab space, all making use of “smart” communications and AV equipment. Rentenbach performed the role of a true construction manager on this project, leading the project team, providing cost and value management and constructability reviews that not only improved project quality but saved money as well.



**Rentenbach's project team was honored by the state building commission with an award that recognizes excellent CM-at-Risk project delivery and collaboration with design.**



## Pre-construction Collaboration

In order for the University to maintain the cutting-edge feel of the science building, our team lead an extensive value management process in collaboration with the owner and designer. Some of the more creative cost savings measures included:

- Adjusted materials on exposed shear-wall finish system on the building's exterior (\$308,000 savings)
- Suggested deletion of entire hard tile flooring scope in favor of finished exposed concrete (\$65,000 savings)
- Found redundant waterproofing details and suggested deletion of membrane in favor of sheet product only where required (\$168,000 savings)
- Suggested foundation changes that allowed more shallow footings using less concrete, while maintaining applicable engineering requirements (\$29,000 savings)

One example of successful collaboration during this project is the erection and waterproofing of the project's central cone. This key feature of the building posed a great water-tightness challenge as it contained over 1,000 individual vertical seams where water infiltration could potentially occur.

Understanding that every detail of the cone could not be tested in the office, we partnered with the cone subcontractor to erect a mock-up of the cone in the field that could be tested at every step of the design.

An air chamber was also erected to test for any movement from inside to out, or vice-versa. The structure passed every test with flying colors and to date we have had zero incidences of moisture infiltration at any of the roughly 1,000 potential points of water/moisture entry.



*“We at Fayetteville State University (FSU) have truly enjoyed, and continue to enjoy working with Rentenbach Constructors as the CM @ Risk, on our Science and Technology Building project. Their professionalism, and ability to solve potential conflicts, has been excellent. From the beginning, Rentenbach has worked diligently and effectively with the design team and FSU, to ensure the project stays within budget. They have also put forth a great effort that has contributed to the success of the integrated design process. We truly appreciate the hard work Rentenbach continues to provide and are grateful they are part of our winning team.”*

**—Rudolph Cardenas**  
Associate Vice Chancellor of Facilities Management  
Fayetteville State University

# UNIVERSITY OF TENNESSEE

## 13th Street Science Laboratory

\$77,900,000

224,000 SF

CM/GC

Completion in 2018

### OWNER

The University of Tennessee  
Mr. Michael Cate  
Project Manager  
865-974-2231

### ARCHITECT

McCarty Holsaple McCarty  
Mr. Doug McCarty  
865-544-2000

### Laboratory Designer:

Lord Aeck Sargent  
Atlanta, GA  
Mr. Ramsey Martin  
877-929-1400



The 13th Street Science Laboratory at The University of Tennessee in Knoxville, Tennessee is a science and classroom facility located in the heart of campus. The departments utilizing the building for teaching and research include Biochemistry, Molecular Biology, Microbiology, Nutrition, and Psychology. The facility will house flexible laboratory space, laboratory support space, a vivarium, shared core labs, teaching labs, general purpose classrooms, student spaces and administrative spaces. Upon completion in 2018, this facility will provide a collaborative learning and research environment for Tennessee's future professionals.

### Pre-construction Collaboration

Our pre-construction team worked very closely with the owner, designer and laboratory designer, Lord Aeck Sargent, for 18 months before breaking ground on this complex project. The owner group included Facilities Planning, Campus Facility Services and the College of Arts and Sciences user group leaders. Through involving a larger owner group and including end users in the review process, our team gained insight into the University's vision for the space. We also involved the end users in the early mock-up review process in order for them to envision the look and feel of their project.



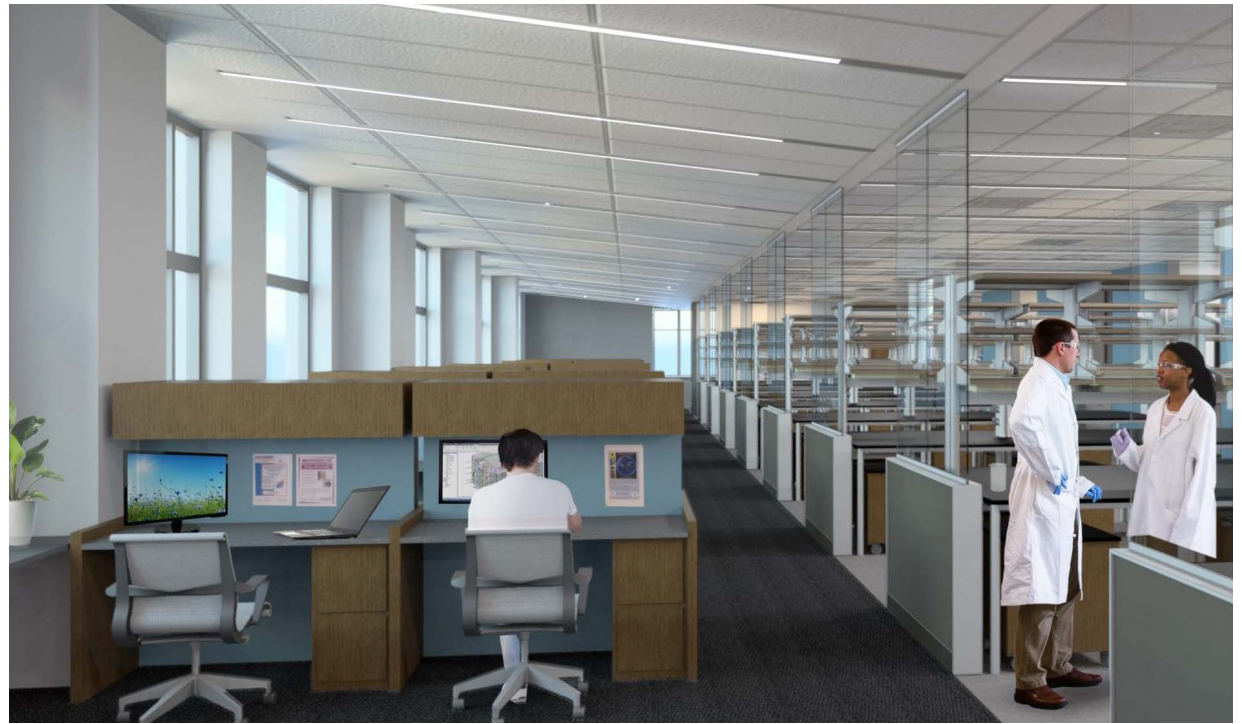
Our Pre-construction Planning Team developed a comprehensive pre-construction schedule which included owner, designer and contractor responsibilities. The team reviewed and updated this schedule at each biweekly project team meeting. This collaboration with the entire project team made it possible for our team to actively identify crucial early bid packages in order for construction to kick off during the correct time of year.

By meticulously planning, our team has been able to add value to the project and maintain the Guaranteed Maximum Price (GMP) and original construction schedule.

We also performed extensive constructability reviews on the design documents at each phase of design, and were able to provide valuable insight into mechanical and electrical tie-ins required across other buildings. We prepared a site utilization plan to phase the demolition and construction on a very limited site. To ensure quality and value for the University, we pre-qualified all of the trade contractors before accepting bids.

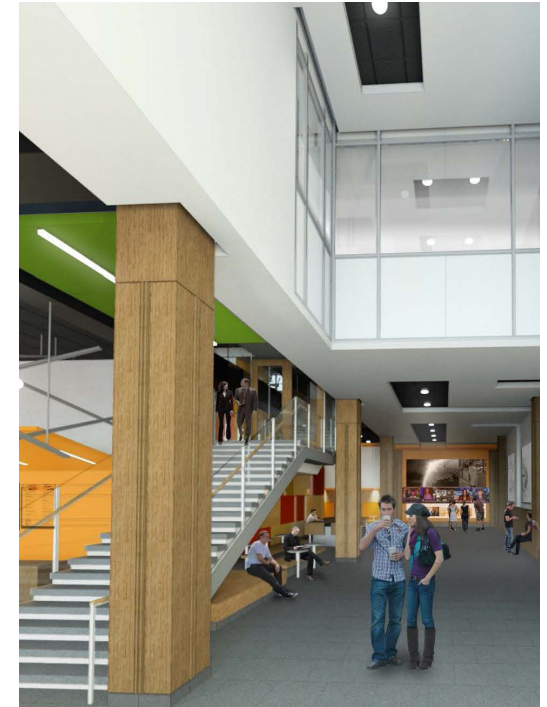
After accepting bids and finalizing trade contracts, our team then provided Building Information Modeling (BIM) to the University. BIM coordination has been beneficial to the coordination process to accelerate off-site fabrication and solve any clashes with the MEP and fire protection trades prior to installation.

A key member of this project team is Lord Aeck Sargent, who is also the lab design for the proposed STEM Building. Due to our current partnership, our teams are very familiar with each other and this relationship will seamlessly transition into your project.



#### KEY PROJECT FEATURES

- Flexible laboratory and research space
- Shared core laboratories
- Teaching laboratories and general purpose classrooms
- Student and administrative spaces
- Teaching and research space for biochemistry, molecular biology, microbiology, nutrition and psychology departments
- Complex phasing of demolition and construction on a limited site
- Extensive pre-construction and CM/design team collaboration
- Thorough constructability review process



# UNIVERSITY OF TENNESSEE

## Strong Hall Science Laboratory

**\$92,980,000**

**268,000 SF**

**LEED Design Principles**

**CM/GC**

**Completion in 2017**

### **OWNER**

The University of Tennessee  
5723 Middlebrook Pike  
Knoxville, TN 37919  
Mr. Thom Haeuptle  
Project Manager  
865-974-2231

### **ARCHITECT**

The Lewis Group Architects/  
Mr. Doug Shover  
865-584-5000

### **Laboratory Designer:**

SLAM Collaborative



Currently under construction is a new, state-of-the-art, 268,000 square foot, Science Laboratory Facility for the University of Tennessee at the site of the existing Sophronia Strong Hall dormitory and the 18th century Cowan Cottage. The facility will provide new, replacement spaces for the Anthropology, Earth and Planetary Science departments that include modern research and teaching laboratories, offices, administrative spaces, support spaces, and a range of learning spaces for both undergraduate and graduate level students that place an emphasis on collaborative learning settings.

The building will provide new and improved teaching laboratories for general biology and chemistry, as well as general classrooms that will be used by the wider university population.

Strong Hall was built in 1925 and served as a women's residence hall until 2008. The project will preserve 20,000 square feet of the original structure, including the building's distinctive front arches, the front stone wall, and footbridge across Cumberland Avenue. The project includes the restoration of a small Queen Anne style gardener's cottage on the north corner of the site.



## Pre-construction Collaboration

Rentenbach was selected as the construction manager (CM/GC) for the project immediately following the designer selection. Through this early involvement, we were able to bring value to the team by assisting with the analysis of all design options starting immediately after the programming phase. This included value and constructability reviews of the earliest conceptual and “block” diagram design options. The team worked closely together performing a full range of budgeting, scheduling, value analysis, constructability and planning efforts for 16 months through completion of the construction documents.

The initial Guaranteed Maximum Price was \$92,980,000. At approximately 75 percent complete, the cost remains within the original GMP amount.

The original construction phase duration was set by the owner at 35 months and included relocation of existing site utilities, environmental abatement, demolition of the existing dormitory and construction of the new lab building. The original duration was negatively impacted by unanticipated subsurface conditions and above average inclement weather. However, the planned completion date still provides for the owner to take occupancy and conduct classes in the new lab space in the Spring 2017 semester as originally planned.



### KEY PROJECT FEATURES

- Research and teaching laboratories
- Offices and administrative spaces
- Collaborative learning spaces and design
- Learning spaces for undergraduate and graduate level students
- Laboratory space for biology and chemistry departments
- Preservation of existing stone arches and gardener's cottage on property
- Complex phasing of demolition and construction on a limited site
- Extensive pre-construction and CM/design team collaboration
- Thorough constructability review process



## Additional Similar Experience: Project Comparison Chart

Project Client	Project Name	Pre-Construction Services	Laboratory Facility	Research Facility	Classroom/Lecture Spaces	Flexible Learning Space	Higher Education Client	Phased Construction	Site Demolition	Campus Site
Fayetteville State University	Science & Technology Building	✓	✓	✓	✓	✓	✓		✓	✓
The University of Tennessee	13th Street Science Laboratory	✓	✓	✓	✓	✓	✓		✓	✓
The University of Tennessee	Strong Hall Science Laboratory	✓	✓	✓	✓	✓	✓		✓	✓
Eastern Michigan University	Mark Jefferson Science Building Addition & Reno.	✓	✓	✓	✓	✓	✓	✓		✓
Albion University	Science Complex	✓	✓	✓	✓	✓	✓			✓
Michigan State University	The College of Human Medicine - Secchia Center	✓	✓	✓	✓	✓	✓	✓	✓	✓
Oakland University	Human Health Building	✓	✓	✓	✓	✓	✓			✓
Michigan State University	Molecular Plant Sciences Building	✓	✓	✓	✓	✓	✓			✓
Laboratory Corporation of America	Project Infinity	✓	✓	✓				✓		✓
University of Georgia	Health Sciences Campus	✓	✓	✓	✓	✓			✓	✓
Wayne State University	Advanced Technology Education Center	✓	✓	✓	✓	✓	✓		✓	✓
University of Alabama in Huntsville	College of Nursing Addition & Renovation	✓	✓		✓	✓	✓	✓	✓	✓
Tennessee Technological University	STEM Center	✓	✓	✓	✓	✓	✓		✓	✓
Montcalm Community College	MTEC Renovation & Advanced Tech. Center	✓			✓	✓	✓			✓
Bayer Corporation	Research Triangle Bee Care Labs	✓	✓	✓	✓	✓				



## SECTION 3 KEY PERSONNEL

A. List of key personnel who will be assigned to the project. Attach sworn statement that the above persons will be exclusively assigned to this project for its duration.

Our dedicated team for the STEM Building at Western Carolina University is comprised of the following Experts, Leaders and Partners:

- **Marty Gibbs, P.E., LEED GA**, Principal in Charge (PIC) and Project Executive
- **Justin Hall, LEED AP**, Senior Project Manager
- **Shawn Murdoch**, Assistant Project Manager
- **Cody Scott**, Assistant Project Manager
- **Aaron Isbill**, Senior Project Superintendent
- **Joe Lane**, Project Superintendent
- **Tommy Wolf, LEED AP**, Pre-construction Planning Manager
- **Ralph Risoldi, LEED AP BC&C**, Mechanical, Electrical and Plumbing Estimator
- **Frank Bills**, Architectural, Structural and Civil Estimator
- **Jeremy Taylor, LEED AP**, BIM/LEED Coordinator
- **Patsy Matthews**, Diversity Coordinator

B. For each person listed above, list what aspects of pre-construction or construction the person will handle. For those persons who will divide their time between pre-construction and construction phases, indicate what percentage of their time will be devoted to each phase.

Please see the two tables to the right and on the next page for a detailed breakdown of what aspects of pre-construction and construction each person will handle, and the percentages of time they will be devoted to each phase.

C. For each person listed in response to A & B above, list his/her experience with firm, other prior and relevant experience with projects of similar size and scope in construction/design, and the person's location. Attach the resumes and references for each person listed.

Please see the following pages for detailed resumes, including relevant experience with project of similar scope and size, location and references for each member of our team.

D. Attach project organizational chart indicating the placement of the persons listed in response to A & B above.

Please see page 17 for an organizational chart for our entire pre-construction and construction team.

TEAM MEMBER	PRE-CONSTRUCTION	CONSTRUCTION
<b>Marty Gibbs</b> PIC/PROJECT EXECUTIVE	20%	10%
<b>Justin Hall</b> SENIOR PROJECT MANAGER	20%	100%
<b>Shawn Murdoch</b> ASSISTANT PROJECT MANAGER	5%	100%
<b>Cody Scott</b> ASSISTANT PROJECT MANAGER	5%	100%
<b>Aaron Isbill</b> SR. PROJECT SUPERINTENDENT	10%	100%
<b>Joe Lane</b> PROJECT SUPERINTENDENT	0%	100%
<b>Tommy Wolf</b> PRECON PLANNING MANAGER	15%	2%
<b>Ralph Risoldi</b> MEP ESTIMATOR	30%	0%
<b>Frank Bills</b> ASC ESTIMATOR	60%	0%
<b>Jeremy Taylor</b> BIM/LEED COORDINATOR	5%	10%
<b>Patsy Matthews</b> DIVERSITY COORDINATOR	5%	0%

PRE-CONSTRUCTION ACTIVITIES

CONSTRUCTION ACTIVITIES



Responsibility

TEAM MEMBER	TEAM COORDINATION / MGMT.	CONSTRUCTABILITY / DESIGN REV.	COST ESTIMATING	VALUE ANALYSIS / TVD	MEP SYSTEMS ANALYSIS	MEP FIELD STRATEGY PLANNING	SCHEDULING	BID PACKAGING / PROCUREMENT	PHASE / LOGISTICS PLANNING	CONTRACT REVIEW	TRADE CONTRACTOR RECRUITMENT	FIELD TEAM MANAGEMENT	SUBCONTRACTOR COORDINATION	SCHEDULE ADHERENCE	CHANGE ORDER REVIEW	QUALITY / CLIENT EXPERIENCE	SAFETY POLICY ENFORCEMENT	TESTING / INSPECTIONS	PAYMENT APPROVAL	OWNER/FACILITIES COORDINATION
<b>Marty Gibbs</b> PIC/PROJECT EXECUTIVE	★									★		★								★
<b>Justin Hall</b> SENIOR PROJECT MANAGER	★	★					★	★	★	★	★	★	★		★	★	★		★	★
<b>Shawn Murdoch</b> ASSISTANT PROJECT MANAGER								★	★						★	★		★		
<b>Cody Scott</b> ASSISTANT PROJECT MANAGER									★						★	★		★		
<b>Aaron Isbill</b> SR. PROJECT SUPERINTENDENT		★					★	★	★			★	★	★		★	★	★		★
<b>Joe Lane</b> PROJECT SUPERINTENDENT									★			★	★	★		★	★	★		
<b>Tommy Wolf</b> PRECON PLANNING MANAGER		★	★	★	★		★	★		★	★				★					
<b>Ralph Risoldi</b> MEP ESTIMATOR			★	★	★	★														
<b>Frank Bills</b> ASC ESTIMATOR			★	★																
<b>Jeremy Taylor</b> BIM/LEED COORDINATOR		★			★	★														
<b>Patsy Matthews</b> DIVERSITY COORDINATOR											★									


# Organizational Chart

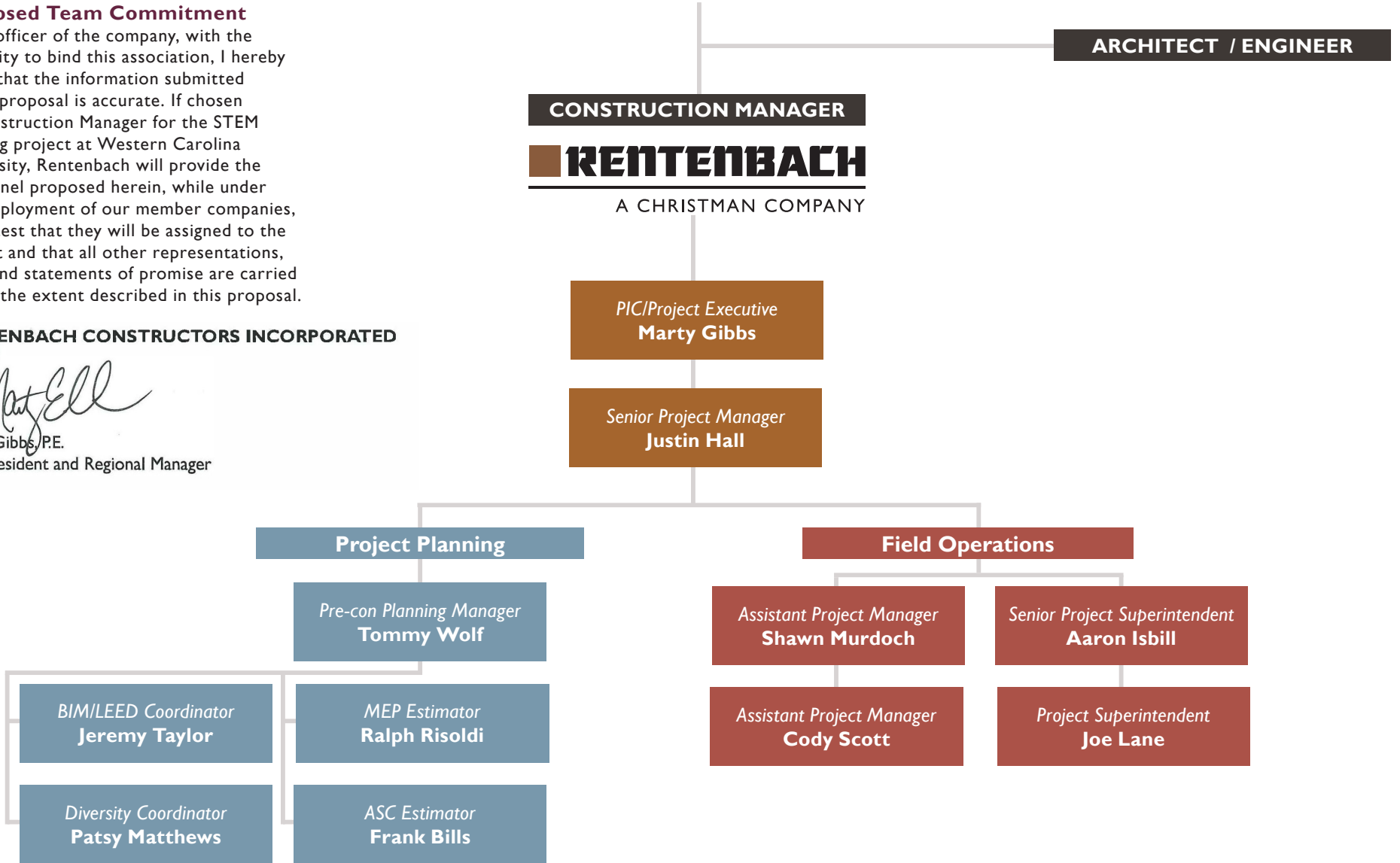


## Proposed Team Commitment

As an officer of the company, with the authority to bind this association, I hereby attest that the information submitted in this proposal is accurate. If chosen as Construction Manager for the STEM Building project at Western Carolina University, Rentenbach will provide the personnel proposed herein, while under the employment of our member companies, and attest that they will be assigned to the project and that all other representations, goals and statements of promise are carried out to the extent described in this proposal.

## RENTENBACH CONSTRUCTORS INCORPORATED

  
 Marty Gibbs, P.E.  
 Vice President and Regional Manager





**Marty Gibbs, PE., LEED GA**  
**Principal in Charge and**  
**Project Executive**  
 Knoxville, TN

B.S., Civil Engineering,  
 University of Tennessee

Engineering Registration:  
 Tennessee PE No. 108854

LEED Green Associate

American Society for Healthcare Engineering (ASHE):  
 Healthcare Construction Certificate

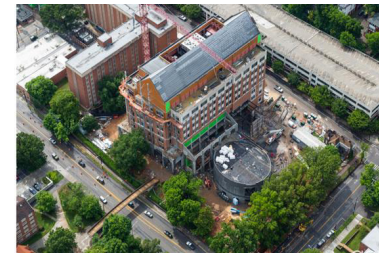
**REFERENCES**

Mr. John Sealy  
 Facilities Planning  
 University of Tennessee  
 Knoxville, Tennessee  
 865-974-2231

Mr. Danny Edsell  
 Covenant Health Properties  
 Knoxville, Tennessee  
 865-531-5797



University of Tennessee  
 13th Street Science Laboratory  
 \$98 million



University of Tennessee  
 Strong Hall Science Laboratory  
 \$93 million



University of Tennessee  
 Student Union Phases I & II  
 \$135 million

**Additional Experience**

- **State of TN Department of General Services, STREAM, Tennessee School for the Deaf** new high school and dining hall
- **State of Tennessee, Nashville, TN,** John Sevier Building exterior upgrades
- **First Presbyterian Church, Knoxville, TN,** Renovations and additions throughout church
- **Cumberland Medical Center,** Emergency department renovation
- **LeConte Medical Center, Sevierville, TN,** New hospital campus with multiple office buildings and patient facilities
- **Methodist Medical Center,** Med/surgical patient floor renovation
- **Roane Medical Center, Harriman, TN,** New hospital and professional office building
- **Ft. Loudoun Medical Center, Lenoir City, TN,** New hospital and medical office building
- **UT Battelle ORNL, Oak Ridge, TN,** 21,500 SF Chestnut Ridge new maintenance shops
- **Sevier Heights Baptist Church, Knoxville, TN,** New worship center and classroom building

## Tennessee School for the Deaf High School and Dining Hall



**Justin Hall, LEED AP**  
**Senior Project Manager**  
Knoxville, TN

B.S., Concrete Industry Management  
Middle Tennessee State University

LEED Accredited Professional

American Society for Healthcare Engineering (ASHE):  
Healthcare Construction Certificate



Vanderbilt University Medical Center  
Laboratory and Vivarium Facility  
\$22 million



Vanderbilt University Medical Center  
Medical Research Building and Lab  
\$124 million



New Orleans Bioinnovation Center  
Biomedical Research Laboratory  
\$40 million

### REFERENCES

Mr. Bobby Otten  
Vanderbilt University Medical Center  
615-343-8822

Mr. Ron Hellmund  
Director of Facilities  
Cumberland Medical Center  
Crossville, Tennessee  
931-484-9511

### Additional Experience

- **Vanderbilt University Medical Center**, 75,000 SF renovation of The Vanderbilt Clinic that was impacted by the 2010 Nashville flooding.
- **Vanderbilt University Medical Center**, Design and construction of a \$2 million Cyclotron Laboratory Facility for positron emission tomography
- **Vanderbilt University Medical Center**, Budgeting and completion of a renovation and installation of a new Cyro-EM Microscopy Suite.
- **Cumberland Medical Center**, Emergency department addition
- **Tennessee School for the Deaf**, New high school and campus infrastructure upgrades
- **Baptist Hospital**, \$4 million operating room renovation and five other smaller projects.
- **Baptist Hospital**, \$7 million operating room renovation
- **Maryville College, Maryville, TN**, Renovation of the historic Pearsons Hall built in 1918.
- **Matsuo USA**, Design-build process management of expanding the existing warehouse facilities
- **Swaggerty Sausage, Kodak, TN**, New 40,000 SF processing and storage facility
- **Mt. Cavalry Baptist Church**, Rebuilt 400-seat sanctuary destroyed by fire



**Aaron Isbill**  
Senior Project Superintendent  
Knoxville, TN

30-year industry veteran

**REFERENCES**

Mr. Jim Campbell  
Facilities Planning  
University of Tennessee  
865-974-2231

Mr. Danny Edsell  
Covenant Health Properties  
Knoxville, TN  
865-531-5797



University of Tennessee  
Strong Hall Science Laboratory  
\$93 million



University of Alabama at Huntsville  
Nursing School Addition  
\$16 million



Johnson University  
Global Tech/STEM Building  
\$3.2 million

**Additional Experience**

- **Johnson University**, Two new dormitories
- **University of Tennessee**, Hodges library addition
- **Roane Medical Center, Harriman, TN**, New hospital and professional office building
- **Harrar’s Cherokee Casino**, \$230 million multi-phased renovation and expansion
- **Harrar’s Cherokee Casino**, \$40 million casino
- **Methodist Medical Center**, Expansion of existing facility and parking deck addition
- **Wilson Memorial Hospital**, Multi-phased addition and renovation
- **WestCare Health System**, Expansions and renovations to Harris Regional Hospital
- **WestCare Health System**, Expansions and renovations to Swain County Hospital
- **Dana Corporation**, 147,000 SF manufacturing plant
- **Wal-Mart Stores, Inc.**, 1,200,000 SF distribution center



Tusculum College Science and Math Center



**Joe Lane**  
**Assistant Proj. Superintendent**  
 Knoxville, TN

Associates Degree - Business Science  
 Roane State Community College

18-year industry veteran

**REFERENCES**

Dr. Nancy Moody  
 President  
 Tusculum College  
 423-636-7300

Mr. David Martin  
 Facilities Manager  
 Tusculum College  
 423-636-7300

Mr. Joe Mills  
 Austin Peay State University  
 Clarksville, TN  
 931-221-7444



Tusculum College  
 Science and Math Center  
 \$18.8 million



Austin Peay State University  
 New Residence Hall  
 \$21 million



East Tennessee State University  
 New Campus Apartments  
 \$26.6 million

**Additional Experience**

- **East Tennessee State University**, New parking deck
- **Walker County School Board, Rock Spring, GA**, New elementary school
- **University of Tennessee**, Pellissippi ambulatory surgery center
- **Cardinal Health, La Vergne, TN**, Secured medical distribution center
- **Harrah's Cherokee Casino**, \$40 million casino
- **Powell United Methodist Church, Knoxville, TN**, New worship center and renovations
- **North Richland Hills Baptist Church, Dallas, TX**, Campus expansion and renovations
- **Two Rivers Church, Knoxville, TN**, New church campus
- **Knox County Public Building Authority**, Powell branch library
- **Belk Stores, Inc.**, Expansion to Parkway Place Mall store, Huntsville, Alabama
- **Knox County, TN**, Young Williams Animal Center
- **Blount County, TN**, Blount County courthouse historic renovation and addition of juvenile justice center



UT Strong Hall Science Laboratory



**Shawn Murdoch**  
**Assistant Project Manager**  
 Knoxville, TN

B.S., Construction Management  
 Georgia Southern University

30-Hour Safety Training, Occupational Safety and Health Association (OSHA)

American Society for Healthcare Engineering (ASHE):  
 Healthcare Construction Certificate

**REFERENCES**

Mr. Jim Campbell  
 Facilities Planning  
 University of Tennessee  
 865-974-2231

Mrs. Krista Coleman-Silvers  
 Office of University Architects  
 University of Georgia  
 706-542-3605



University of Tennessee  
 Strong Hall Science Laboratory  
 \$93 million



University of Georgia  
 Health Science Campus Phase II  
 \$7.5 million



University of Georgia  
 Health Science Campus Phase III & IV  
 \$12 million

**Additional Experience**

- **Georgia College & State University**, Beeson Hall dormitory renovation
- **Athens-Clarke County**, Library addition and renovation



## Western Carolina University Residence Halls



**Cody Scott**  
Assistant Project Manager  
Greensboro, NC

B.S. Construction Management  
Western Carolina University

10-Hour Safety Training, Occupational Safety and Health  
Association (OSHA)

### REFERENCES

Mr. John Austin  
Western Carolina University  
Cullowhee, NC  
828-227-7442

Mr. Joe Mills  
Austin Peay State University  
Clarksville, TN  
931-221-7444

Mr. Peter Groenendyk  
University of Memphis  
Memphis, TN  
901-678-2295



Western Carolina University  
New Residence Halls  
\$23 million



Austin Peay State University  
New Residence Hall  
\$21 million



University of Memphis  
New Residence Hall  
\$46 million

### Additional Experience

- Nuclear Fuel Services, Site and building renovations

## Tennessee School for the Deaf High School and Dining Hall



**Tommy Wolf**, LEED AP  
Precon Planning Manager  
Knoxville, TN

M.B.A., University of Tennessee

B.A., Business Administration  
University of Tennessee

LEED Accredited Professional

### REFERENCES

Ms. Allyson Shumate, OMO  
Project Manager  
Parsons Brinckerhoff  
615-741-1277

Mr. Barry Brooke  
Executive Vice President, Commercial Development  
Lawler Wood  
865-549-7466



Tennessee School for the Deaf  
New High School and Dining Hall  
\$20 million



Cumberland Medical Center  
Emergency Dept. Addition  
\$4.5 million



The State of Tennessee  
Cleveland, TN Veterans Home  
\$31 million

### Additional Experience

- **Maryville College**, Pearson Hall dorm and kitchen renovation
- **University of Tennessee**, Veterinary hospital emergency center
- **Clayton Homes**, Phased renovation of cafeteria and exercise area
- **Hawkins County, Tennessee**, New Hawkins County courthouse
- **TeamHealth**, 40,000 SF billing center
- **Park Med Hospital**, Renovation of three urgent care facilities



**Ralph Risoldi**, LEED AP BD&C  
**MEP Estimator**  
 Greensboro, NC

Virginia State Plumbing Instructor

LEED Accredited Professional, Building Design and Construction

American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) Member

37-Year Industry Veteran

**REFERENCES**

Mr. John Quiocho  
 Engineered Designs  
 919-439-8086

Mr. Randy Shepherd  
 BE&K Building Group  
 281-216-2803



Tennessee School for the Deaf  
 New High School and Dining Hall  
 \$20 million



University of NC at Greensboro  
 Student Recreation Facility  
 \$69 million



The State of Tennessee  
 Cleveland, TN Veterans Home  
 \$31 million

**Additional Experience**

- **Appalachian State University**, Science building
- **Appalachian State University**, New campus library
- **Duke University**, Global Health and Research Building
- **Duke University**, Perkins Library renovations
- **Duke University**, School of Law
- **University of North Carolina**, Bell Tower
- **Guilford County Schools**, High Point Central High School
- **Well-Spring**, Theater/performance venue
- **ARMC Cancer Center**, Addition and emergency department renovation
- **Roper St. Francis**, Bon Secours vertical expansion
- **Lincoln Medical Center**, Lincolnton, NC
- **Mission St. Joseph's**, Asheville, NC
- **Central Carolina University**, Baynes Residence Hall
- **NC State Veterinary School and CEP Upgrades**



University of Tennessee  
13th Street Science Laboratory



**Frank Bills**  
ASC Estimator  
Knoxville, TN

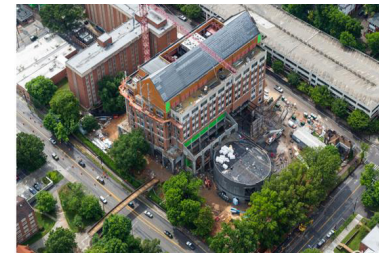
B.S., Architecture  
University of Tennessee

Certified Professional Estimator

30+ years estimating experience



University of Tennessee  
13th Street Science Laboratory  
\$98 million



University of Tennessee  
Strong Hall Science Laboratory  
\$93 million



Tusculum College  
Science and Math Center  
\$18.8 million

**REFERENCES**

Mr. Mike Cate  
University of Tennessee  
Knoxville, TN  
865-974-2231

Mr. Doug McCarty, AIA  
President and CEO  
McCarty Holsaple McCarty, Inc.  
Knoxville, TN  
865-544-2000

**Additional Experience**

- **University of Alabama in Huntsville, Huntsville, AL**, School of Nursing Expansion and Renovation
- **University of Tennessee, Knoxville, TN**, Student Union phases I & II
- **University of Tennessee, Knoxville, TN**, Neyland Stadium Improvements
- **University of Tennessee at Chattanooga, Chattanooga, TN**, Natatorium facility addition
- **The State of Tennessee, Knoxville, TN**, New East Tennessee Veterans Home
- **Roane Medical Center, Harriman, TN**, 145,000 SF New Hospital and 53,000 SF Professional Office Building
- **LeConte Medical Center Sevierville, TN**, New Replacement Hospital, Medical Office Building, Women's Center and Cancer Center
- **Methodist Medical Center, Oak Ridge, Tennessee**, \$28 million, 180,000 SF expansion of existing medical facility.
- **Ft. Loudoun Medical Center, Lenoir City, TN**, New 50-bed Hospital and Medical Office Building
- **Fort Sanders Regional Medical Center, Knoxville, TN**, New Parking Garage
- **State of Tennessee, Knoxville, TN**, The Ben Atchley State Veterans Home



**Jeremy Taylor, LEED AP**  
**BIM/LEED Coordinator**  
 Greensboro, NC

LEED Accredited Professional

ITT 1998, Electrical Engineering

30-Hour OSHA / CPR Training

Autodesk Revit & Navisworks Manage(tm) Software Training

Construction Quality Management Training

US Army QCS Software Training

**REFERENCES**

Mr. Rudy Cardenas,  
 University Architect  
 Fayetteville State University  
 910-672-1431

Mr. Chuck McGoogan  
 Facilities Engineer  
 Fayetteville State University  
 910-672-1977



Fayetteville State University  
 Science and Technology Building  
 \$18.8 million



University of Tennessee  
 13th Street Science Laboratory  
 \$98 million



University of North Carolina Hospitals  
 High Point Reg. Hospital Expansion  
 \$52 million

**Additional Experience**

- **High Point Regional Hospital Infrastructure Improvements**, High Point, NC: \$26M full replacement of energy plant and extensive utility upgrades/renovations
- **Fort Benning Troop Medical Center**, 31,000 SF design/build project that achieved 75 percent construction waste reuse/recycling
- **LabCorp, Inc.**, Various laboratory renovations
- **Granville Medical Center**, Medical Center renovation with BIM modeling of underground utilities and steam lines
- **Hayes Taylor YMCA of Greensboro, NC**, \$9M New YMCA building featured extensive value engineering and “Spot BIM” to maximize cost and schedule savings



Fayetteville State University  
Science and Technology Building



**Patsy Matthews**  
Diversity Coordinator  
Greensboro, NC

**Fayetteville State University, New Science and Technology Building**

Developed project and market-specific Diversity and Outreach plan that went on to break the state record for minority participation with 44 percent. The NC State Building Commission honored Patsy with the 2014 “Good Faith Effort” for her work at Fayetteville State University.

**Minority Contractor Mentorship and Participation Successes (Multiple Projects)**

Created Rentenbach’s Minority Contractor Mentorship Program, which was honored with an award for “Building Capacity in Others” by the UNC Triad Coalition in 2012. Achieved 42 percent participation on the Hayes-Taylor YMCA, 21 percent of which was African-American participation.

**Wesley Long Hospital Cancer Center addition and Renovation, Greensboro, NC**

Patsy overcame many obstacles on this technically-demanding renovation project to exceed all expectations with 25 percent minority participation.

**Other Accomplishments...**

- Member of the United States JAG Corps, Fort Meade, Md.- Attorney/ Captain, US Army
- Provided legal assistance to soldiers and their families in the areas of family law and estate planning.
- Family Self Sufficiency Case Manager – Planning & Development Commission Workforce Development, Rutherford County, NC
- Developed and implemented a five year plan to in order for twenty-six Section 8 families to graduate from public assistance through education; training, resource development and housing counseling.
- Pisgah Legal Services – Community Educator – Rutherford County, NC
- Organized a grassroots community group into a Community Development Corporation to identify and address community issues such as small business development and affordable housing.
- Cultivated M/WBE subcontractor participation on various UNC projects, including the \$71M UNCG Recreation Center

**Associations and Memberships**

United Minority Contractors of North Carolina (UMCNC), North Carolina M/WBE Coordinators’ Network, North Carolina and National Association of Realtors, EcoBroker, National Association of Realtors’ Green Realtor, Triad Green Building Council

JD (1986) North Carolina Central University, Durham, NC

B.S. (1979) University of North Carolina at Greensboro

**Role and Responsibilities**

Patsy Matthews is responsible for identifying, cultivating, and recruiting HUB and small business firms to participate on our construction projects. She is an active participant in minority contractor networking and outreach groups, and has established close ties with university and municipal HUB directors and facilitators.

**REFERENCES**

Mr. Rudy Cardenas  
University Architect  
Fayetteville State University  
910-672-1431

Mr. Chuck McGoogan  
Facilities Engineer  
Fayetteville State University  
910-672-1977

## SECTION 4 PROJECT PLANNING

A. Provide a brief, overall description of how the project will be organized and managed, and how the services will be performed in both pre-construction and construction phases. Project planning that offers the same project manager for pre-construction and construction phases shall be given preference.

### Realizing your Vision as One Team

The STEM Building project requires a unified team, whose actions are guided each day by Western Carolina University's priorities and project goals. Rentenbach assumes those project priorities and goals as our own and evaluates our success based on our ability to help achieve those objectives and attain Western Carolina University's highest level of satisfaction.

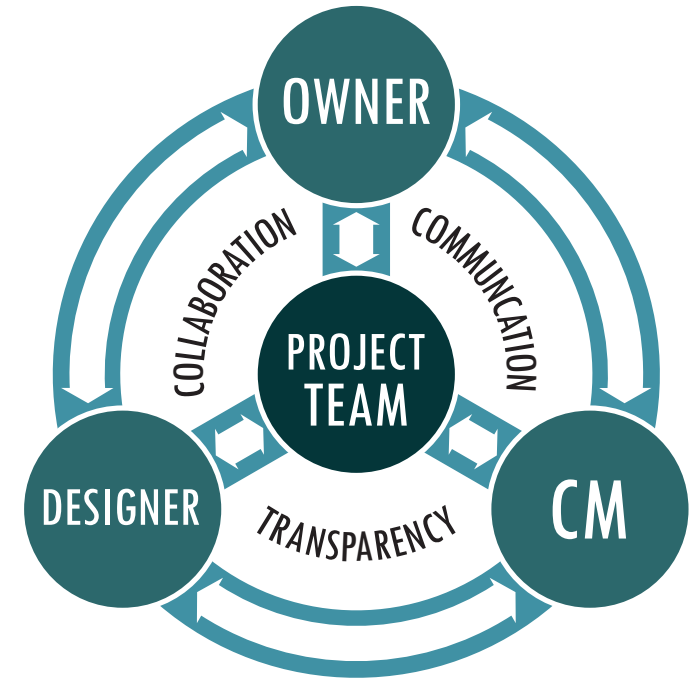
**We pledge to create an atmosphere of one team—of mutual trust, respect and transparency for this critical project.** Rentenbach understands how to lead the team and what it is to be a team player.



We will realize this vision together through a team-oriented, *project-first* focus.

Rentenbach's approach to construction is based on a seamless interaction with Western Carolina University, the designer and members of the trade contracting community. We serve as the point of integration for these entities. **Principal in Charge and Project Executive Marty Gibbs, Senior Project Manager Justin Hall, and Pre-Construction Planning Manager Tommy Wolf** will be assigned to this project from day one through completion.

**Rentenbach values the benefits of a high performing team.** Confidence in a team is based on the knowledge that your partners make and meet commitments. Rentenbach inspires that confidence by modeling the behavior and expectations for the entire team. **Western Carolina University can count on Rentenbach as a dependable, committed partner.** Through a holistic, complete building design and construction approach, Rentenbach leaders from Operations, as well as the Project Planning Group, work in close communication with the entire project team—including the client, the architect, the construction staff, engineers, trade contractors and consultants.



***The Rentenbach Management Approach:*** Collaboration, communication, and transparency are the building blocks of a true team approach and partnership among Owner, Designer and Construction Manager.

Rentenbach strongly believes in the concept of “value analysis,” and we will implement value analysis studies at each major phase of design and pre-construction on the Western Carolina University STEM Building project. Improved operations and collaboration within Western Carolina University’s space can reduce the square footage of the building. Life-cycle analysis identifies materials that do not increase the overall budget, but are easier or less expensive to maintain and last longer. Mechanical and electrical systems are a significant part of this project. Evaluating the correct system and its life cycle with overall capacity can reduce cost or improve efficiencies. Constructability is also important for adding value. Our technique includes carefully reviewing the materials and sequence of construction to optimize both schedule and a field assembly of systems.

Rentenbach’s extensive experience with higher education laboratory spaces and private research and development facilities brings our team the advantage when planning for science, technology, engineering and math classroom spaces.

We will perform value engineering and value analysis during the schematic and design/development stage of the project. With Rentenbach and all other team members working together during the design stages, we will help ensure that the scope of work and the specifications for materials contained therein will not cause the project to exceed the targeted project cost. We will also receive input from qualified and uniquely specialized subcontractors regarding costs and value analysis as the project is being designed. If it appears that the budget is in jeopardy during the design stage, we will recommend alternative types of materials or construction methods to ensure that budget goals are maintained. Rentenbach’s Cost Studies and Value Analysis at the SD and DD levels of design will allow WCU to “steer project cost” into predetermined budget parameters.

The primary benefit of value engineering is that many decisions regarding potential changes or alternates can be made prior to the preparation of final working drawings, thus eliminating expensive redesign or field change orders. Our team is experienced in providing value engineering advice to owners and architects not only during the design phase, but throughout all construction phases. Our management and estimating team is experienced in analyzing design to offer cost-saving ideas.

TCC Ref. No.	DESCRIPTION OF IDEA	Option Set	Est. Direct Trade Cost	Status	CURRENT VE- Approved	Pending	Rejected	APPROVED VE INCORPORATED INTO DESIGN - VALUE ISSUED FOR REFERENCE ONLY	Staff Count	Cost Savings Potential	Comments
<b>A1. SUBSTRUCTURE</b>											
A10	Driv. waterproofing at below grade foundation walls - required per 5001 - Waterproofing at elevator pits remain.			Approved				(10,992)			
A10	Review assumptions for elevator pit installation - achieve without ERS	Option 1	(122,000)	Approved				(122,000)			TCC feels elevator pit installation is achievable w/o ERS
A10	Delete the replacement of the driveway asphalt pavers on the loading dock side (west side). Will be a mix of concrete paving where necessary		(49,251)	Approved				(49,251)			
A10	Delete the replacement of the driveway asphalt pavers on the loading dock side (east side). Add of traffic topping			Approved				(20,791)			
A10	Cost allowance for dewatering			Approved				(40,000)			Not required per EYP email. 10/23/15
A10	Allow allowance back in for dewatering	Option 2	40,000	Approved				40,000			Revised required per EYP email 5/20/16
A10	Remove areas of wood flooring removal and replacement with concrete topping - value is a design goal reduction	Option 2	(51,105)	Approved				(51,105)			INCORPORATED
A10	Do not remove any wood floors except in the parking area and at the rear serviceable area. Any removal of wood floor to access below the slab for work such as footing and plumbing will be patched with a single pour of concrete. The remaining areas of wood block would remain and would not be refinished.			Approved				(58,311)			
A10	Remove Kansas Shady Street vehicular ramp associated with junior sidewalk elevations and the existing senior ramp alignment.	Option 2	(8,189)	Approved				(8,189)			Slope of ramp is reduced, thus there is less fill over the entire area and CP retaining wall can be shortened
<b>D. SHELL</b>											
D20	Remove rooftop terrace adjacent to snack shop including associated roofing			Approved				(66,617)			Pricing has been updated to reflect Douglas Seal
D20	Driv. connection from stair tower to rooftop terrace			Rejected							
D20	Reduce size of rooftop terrace adjacent to snack shop by 500 SF - EYP Design Goal Reduction			Rejected							
D20	Utilize modular metal wall panel in lieu of aluminum panel assembly as detailed - for Perchouse - based on Canora Formwall		(481,770)	Rejected				(481,770)			Not visually acceptable to EYP
D20	Utilize modular metal wall panel in lieu of aluminum panel assembly as detailed - for Perchouse - based on Canora Formwall		(291,910)	Rejected				(291,910)			Rejected due to perimeter being omitted
D20	Utilize modular metal wall panel in lieu of aluminum panel assembly as detailed - for Spur Tower - based on Formwall - Pricing assumes removing backup system		(264,727)	Rejected				(264,727)			
D20	Utilize modular metal wall panel in lieu of aluminum panel assembly as detailed - for Spur Tower - based on Formwall			Rejected							

Above: Examples of Rentenbach’s thorough value analysis process documentation.



## Value Leadership

Rentenbach takes great pride in collaborating with our project teams to realize significant savings when we are involved throughout the design phase. Our value engineering process draws from our vast experience with laboratory and classroom spaces, resulting in cost savings for each client through our extensive, detailed and collaborative work in the pre-construction and construction phases.

At the **Human Health Building at Oakland University**, our team was able to provide the following suggestions in the planning stage that translated into significant savings on the project:

- Installing a mass foundation system in lieu of deep foundations: \$250,000 savings
- Reusing excavated soils from future development on campus: \$100,000 savings
- Reusing asphalt millings for construction roads and staging: \$40,000 savings
- Managing the technology and low voltage work ourselves, in lieu of the client and competitively bidding: \$100,000 savings

Our team was also able to return more than 86 percent, \$1.2 million, in construction contingency to Oakland University. We have returned construction contingencies to Oakland University on all of our projects completed in the last 5 years.

Collaboration defined the **Jackson National Life Headquarters Expansion** project from its very conception. The result is the realization of nearly 19.5 percent more value than initially projected and a national-caliber headquarters that advances Jackson's brand position, as well as the attraction and retention of highly recruited talent.

- Through early onboarding and design-assist partnerships, the team achieved a project site that is seven acres larger than anticipated
- Within the original budget, this project accommodated a signature-design conference center that is three times the original size at a cost that is below benchmark
- The connector size increased by more than 3,500 s.f. and offered a slight increase in value per square foot
- The office building underwent a \$1.4 million reduction in cost due to a slight reduction in square feet (240,000 to 233,730 s.f.); through layout and design adjustments, 100 more occupants were accommodated than originally planned

Other benefits that were not quantified, but add value to the space, include increased speed to occupancy, avoidance of winter costs through early site work completion and increased efficiency/reduced operating costs per occupant.



*Above: The Human Health Building at Oakland University.*



*Above: The Jackson National Life Headquarters Expansion project.*

## CONSTRUCTABILITY ISSUES

Constructability analysis and plan reviews, which are closely aligned with value analysis, will be major components of the pre-construction. **Project Superintendent Aaron Isbill will provide this review, along with Pre-construction Planning Manager Tommy Wolf.** Aaron's extensive experience at the University of Tennessee's Strong Hall Science Laboratory, along with his more than 30 years in construction, will prove invaluable.

This multi-level review process combines results of a) cross-disciplinary drawing reviews conducted by project planners looking for clarity, consistency and quality, and b) superintendent reviews, in which the documents are analyzed for logistics, phasing, trade contractor efficiency, weather and other field-related concerns.

The outcome is a thorough and balanced analysis, which identifies inconsistencies and potential problems to be identified and corrected on a proactive basis, saving time and money.



**Above:** On the UT Strong Hall Laboratory, Proposed Senior Superintendent, Aaron Isbill, partnered with the designer and owner during a 16-month pre-construction process that included extensive constructability review.

## COST MODEL/ESTIMATES

### Continuous Estimating

The nature of the design process is iterative and dynamic. To be a value-added process, it demands inputs from all members of the project team. For these reasons, to truly offer a continuous estimating approach and to assure successful outcomes, Rentenbach made significant investments in human capital in its Project Planning Group, our multi-disciplinary team of cost estimators, value engineers, BIM specialists and sustainable building experts.

The cornerstone of our approach to continuous estimating is detailed, timely and accurate cost modeling as the project develops.

### Proven methods and approaches Rentenbach provides on our projects include:

- **Continuous Cost Information:** We provide timely cost information as the design develops, keeping the project in budget and supporting the achievement of performance and quality goals.
- **Historical Cost Data:** We will leverage historical benchmarking cost data from Rentenbach's \$1.5 billion worth of scientific laboratory projects across the country. By pulling quantitative data through a qualitative filter, the data is incredibly useful in helping the project team achieve cost certainty at early stages in the design, and set meaningful targets when target value design is used.
- **Cost Modeling:** We develop detailed cost models by laying out systems and developing quantities, and by coordinating with and challenging the project team. This fosters design discipline and cost control during pre-construction; by knowing exactly where costs are exceeding historical averages, the team can make better-informed design choices. This avoids budget-busting surprises during design development and eliminates time consuming re-designs.
- **BIM:** The majority of top-tier design, construction management and trade contractor firms are using BIM to benefit their work flow; however, it is often done in a manner that best suits their needs with little consideration to other parties. To fully harness the power of BIM, it is critical that an experienced manager aligns each of these groups to tailor a plan that satisfies their primary BIM functions while also accommodating the team's use of the models. This approach results in the production efficiencies they've previously developed while also supporting their peers to create exponential benefits to the project

team. Our team on University of Tennessee’s 13th Street Science Laboratory incorporated BIM technology into their pre-construction planning process and actively avoided potential clashes in mechanical systems of surrounding buildings. The entire team of trade contractors was also able to benefit from these BIM files, because our team shared and reviewed the files with each contractor before construction began.

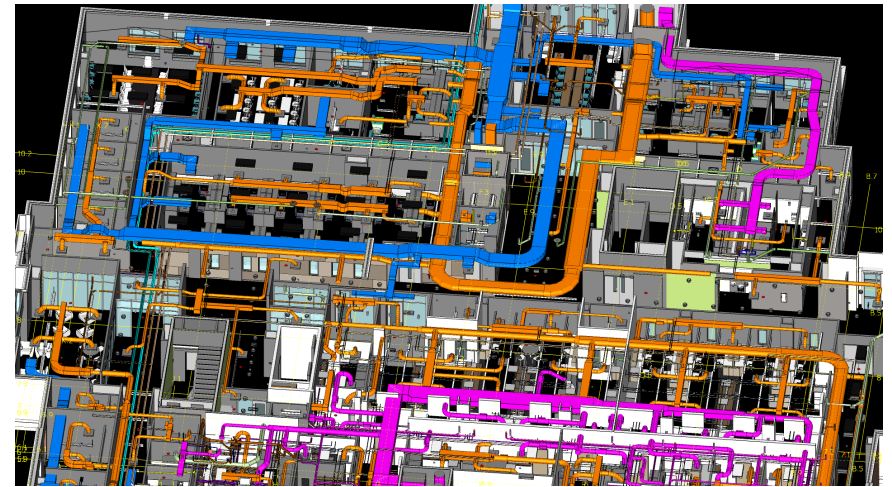
- **Data for Effective Decision-Making:** Quantity extraction from the models allows our team to quickly understand the scope of designed elements and shift the team’s expertise to more valuable areas such as conceptualization of undefined scope, analyzing alternative scenarios, and wringing value out of the design. This technique is particularly effective on an integrated approach in which our in-house estimators can strategically focus on specific building systems at critical decision points.
- **Mock-ups to Support Effective Collaboration:** Use of virtual mock-ups in an immersive, highly-collaborative environment is a critical component of the process, ensuring technical and aesthetic design details support the long-term usage of the space. Our alignment of user groups, design team and trade contractors fundamentally creates value and efficiencies in the execution of the work and delivery at project completion.
- **Intelligent Subcontracts:** We group work during the Construction Document stage into packages, called work categories. Each work category is thoughtfully developed taking into account: Available subcontractors, project goals, schedule, complexity and HUB/MWBE participation goals.

### Benchmarking and Cost Efficiency

Rentenbach’s benchmarking capabilities are unique in that we not only provide the project teams with cost and efficiency metrics from Rentenbach projects across the country, we also provide qualitative “data” from this same set of projects. The former is critical to cost control, budget validation, and evaluation of alternative design approaches. The later is essential for communicating how these parameters factor into the larger equation of creating projects that supports a given institution’s mission and priorities.

Our process begins with the identification of recently-completed Rentenbach facilities that are comparable in scale and complexity to the proposed project. With our extensive, national database, we can quickly generate a list of past projects that are similar to yours in terms of:

- Building type
- Program
- Departments and curriculum
- LEED status
- Physical attributes



**Project Planning for Higher Education Laboratories:** Above, the 13th Street Laboratory project, fully coordinated with Engineers and Designers in BIM by Rentenbach’s proposed BIM/LEED Coordinator for the STEM Building, Jeremy Taylor.

Cost Benchmarking Analysis															RENTENBACH A CHRISTIAN COMPANY		
Ambulatory Care Facilities/Medical Office Buildings																	
Project Name	Location	Architect	Construction Start	Completion	Program	Structural Frame	Roofline	MEP	LEED	USP	Cost Under Budget	Cost Over Budget	Under Budget	Over Budget	Unit Cost (\$/Sq.Ft.)	Unit Cost (\$/Sq.Ft.)	
VA Veterans Affairs Clinic	Columbus, OH	SmithGroupJJR	2015	2018	Various levels of inpatient/outpatient primary care and specialty clinics, as well as ambulatory surgery center and full range of ambulatory healthcare services	Structural Steel Frame	Concrete	HA	LEED Silver	200,000	\$4,300,000	\$4,700,000	\$24,000,000	\$50,000,000	1.14	\$250.84	\$10.00
Levermore Health Center	Grand Rapids, MI	URS Construction	2016	2018	Various inpatient and ambulatory services	Structural Steel Frame	Concrete	HA	LEED Gold	200,000	\$4,400,000	\$4,700,000	\$24,000,000	\$50,000,000	1.19	\$251.85	\$10.00
Prologis Health and Wellness Center	Chicago, IL	Stoneman	2013	2014	General ambulatory care, including specialty services and imaging	Structural Steel Frame	Concrete	HA	LEED Gold	200,000	\$3,800,000	\$4,300,000	\$15,000,000	\$30,000,000	1.04	\$231.31	\$10.00
Alphagene Health and Wellness Center	Indianapolis, IN	Perkins+Waters	2016	2018	General ambulatory care, including specialty services and imaging	Structural Steel Frame	Concrete	HA	LEED Silver	200,000	\$3,500,000	\$4,000,000	\$14,000,000	\$28,000,000	1.04	\$234.47	\$10.00
Parsons Health Center	Washington, DC	SmithGroupJJR	2016	2018	General ambulatory care, including specialty services and imaging	Structural Steel Frame	Concrete	HA	LEED Silver	200,000	\$3,700,000	\$4,000,000	\$14,000,000	\$28,000,000	1.07	\$234.91	\$10.00
UNC - Chapel Hill	Chapel Hill, NC	HOK	2016	2018	General ambulatory care, including specialty services and imaging	Structural Steel Frame	Concrete	HA	LEED Silver	200,000	\$3,600,000	\$3,900,000	\$13,000,000	\$26,000,000	1.08	\$234.78	\$10.00
Providence Park Medical Center	Chapel Hill, NC	SmithGroupJJR	2016	2018	General ambulatory care, including specialty services and imaging	Structural Steel Frame	Concrete	HA	LEED Silver	200,000	\$3,500,000	\$3,800,000	\$13,000,000	\$26,000,000	1.09	\$237.93	\$10.00
West Shore Medical Center	Thomson, IL	URS Construction	2017	2018	General ambulatory care, including specialty services and imaging	Structural Steel Frame	Concrete	HA	LEED Silver	200,000	\$3,400,000	\$3,700,000	\$12,000,000	\$24,000,000	1.11	\$241.28	\$10.00
East Regional Medical Office Building	Des Moines, IA	URS Construction	2018	2018	General ambulatory care, including specialty services and imaging	Structural Steel Frame	Concrete	HA	LEED Silver	200,000	\$3,300,000	\$3,600,000	\$11,000,000	\$22,000,000	1.17	\$246.88	\$10.00
West Michigan Health Services Medical Office Building	Grand Rapids, MI	URS Construction	2018	2018	General ambulatory care, including specialty services and imaging	Structural Steel Frame	Concrete	HA	LEED Silver	200,000	\$3,200,000	\$3,500,000	\$10,000,000	\$20,000,000	1.15	\$254.71	\$10.00
Trayer III	Grand Rapids, MI	URS Construction	2019	2021	General ambulatory care, including specialty services and imaging	Structural Steel Frame	Concrete	HA	LEED Silver	200,000	\$3,100,000	\$3,400,000	\$9,000,000	\$18,000,000	1.10	\$248.00	\$10.00
Trayer II	Grand Rapids, MI	URS Construction	2017	2018	General ambulatory care, including specialty services and imaging	Structural Steel Frame	Concrete	HA	LEED Silver	200,000	\$3,000,000	\$3,300,000	\$8,000,000	\$16,000,000	1.11	\$248.00	\$10.00
Harbor Cities	Charleston, SC	Perkins+Waters	2017	2018	General ambulatory care, including specialty services and imaging	Structural Steel Frame	Concrete	HA	LEED Silver	200,000	\$2,900,000	\$3,200,000	\$7,000,000	\$14,000,000	1.11	\$248.00	\$10.00
Colony Health	Greenville, SC	Perkins+Waters	2017	2018	General ambulatory care, including specialty services and imaging	Structural Steel Frame	Concrete	HA	LEED Silver	200,000	\$2,800,000	\$3,100,000	\$6,000,000	\$12,000,000	1.15	\$248.00	\$10.00

**Figure Above:** A sample of a Cost Benchmarking Report, prepared by Rentenbach’s Project Planning Group. The report gathers information from past Rentenbach projects according to building type, systems, and programming, then localizes the data for labor and materials, providing a detailed guide with which to predict—and steer—project costs toward desired outcomes. Our Project Planning Group’s benchmarking methodology is so effective, it has become a stand-alone “product” for clients interested in having early and accurate data that can inform budgetary decision makers.

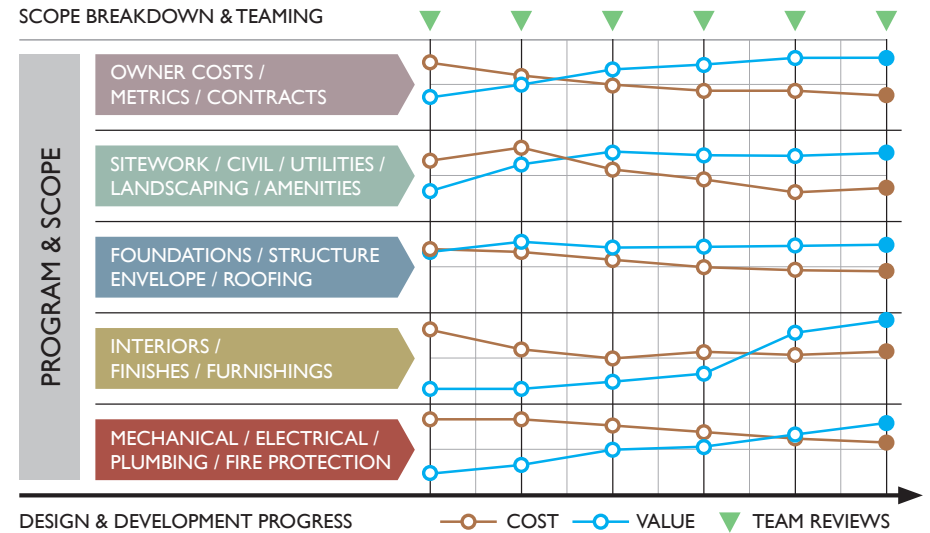
For each project deemed to be truly comparable to yours, the benchmarking study reviews final cost reports and the GMP in order to determine the total reported cost of construction. Once verified, total construction costs are categorized by building system (i.e., “foundations, superstructure, exterior wall, interior construction, etc.”), which enables us to deduct costs related to sitework, major utility/central plant upgrades, minor renovations, and bridges/tunnels. Costs are then adjusted for time and location, and the result is the emergence of a clear framework in which meaningful “apples-to-apples” comparisons can be made across a broad spectrum of projects on a variety of levels, including:

- \$/GSF
- \$/NSF
- \$/Cubic foot
- Ratios of facade, surface area and volume to gross floor area ratios
- Cost by area/department
- Core/shell versus fit-out costs
- \$/GSF of various building systems

These metrics provide the Project Team with a set of powerful cost management tools. By way of example, Rentenbach's benchmarking data will clearly indicate cost ranges for exterior wall systems, and this range can be used to guide the design process toward the selection of materials and assemblies that meet aesthetic and programmatic requirements in the most cost effective manner.

### Target Value Design

This project could also benefit from target value design, a principle and approach that Rentenbach relies on when serving as the cost leader for our partners. This data-driven process is utilized in the manufacturing sector. Target value design's most powerful contribution is realized in its use for building design and construction. Instead of the traditional method of estimating a project's value post-design, target value design first establishes the client's expected price, performance and quality requirements—creating a precise target which reflects the business case. This method consistently works to reduce or eliminate waste and rework in the design/estimate/redesign cycle.



**Figure Above:** In conjunction with the information provided through Cost Benchmarking, Target Value Design delivers a project centered on the Owner's defined value—the target—identified through a highly collaborative effort between the Owner, Designer and Constructor. Rooted in the methods of Integrated Project Delivery (IPD), Target Value Design uses the desired cost/value outcome as a starting point. In contrast to the traditional method of estimating a project's value post-design, Target Value Design first establishes the customer's expected price, performance and quality requirements, creating a precise target appropriate to the business case. This method works to reduce or eliminate waste and rework in the design/estimate/redesign cycle, typically resulting in a savings of up to twenty percent of the owner's initial expected cost.

Owners can realize savings of up to 20 percent of initial expected costs.

**Rentenbach understands the most well-defined targets for the STEM Building project are a result of purposeful, structured communication across our project team from day one.** This type of collaboration serves as the ideal environment for solution-driven innovation—creating results that meet, and often exceed, owner expectations. In addition to our role as constructor, Rentenbach takes the lead in facilitating these collaborative efforts; guiding the target value design process. We ensure that project feasibility is assessed thoroughly, and that all project team members are aligned and in agreement with the cardinal rule—never exceed the target.

Rentenbach’s Project Planning Group applies its knowledge and experience providing constructability insights and estimating at regular intervals. In small collaboration teams, typically divided by building system and led by estimators, we set meaningful targets utilizing rich data sets.

Staffed with the industry’s best estimators with diverse expertise in multiple building systems, our team provides frequent estimates, throughout the design process, ensuring achievement of your desired value without straying from Western Carolina University’s expected price.

## PROJECT TRACKING/REPORTING

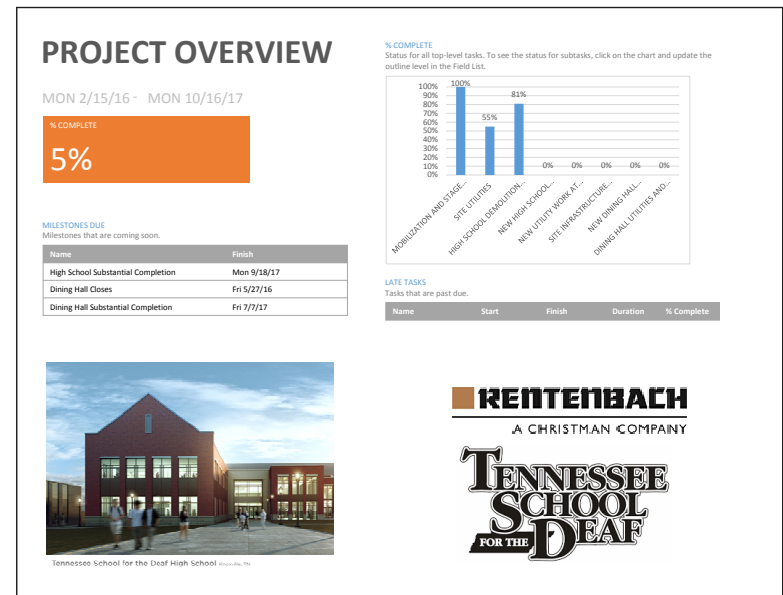
Rentenbach’s project tracking and reporting techniques are supported through our use of ViewPoint, our proprietary project management and cost control software. For cost control, our labor costs are entered on a weekly basis, utilizing a six-digit coding system. Real-time reports are available to our management team on-demand. Our cost control programs compare project cost expenditures against estimates and projects a savings or loss for each individual task involved in constructing the project. Subcontract and material expenditures are also logged into our computer system as costs are incurred. Projections can then be readily made to identify potential overruns or savings, so that real-time adjustments can be made accordingly.

Rentenbach utilizes a pending change system of tracking changes to the project. When Western Carolina University or the design team desires a change in the plans, or if a trade contractor requests compensation for an alleged change, we assign a pending change number and log it for tracking purposes. The price is reviewed and acted upon, and the change is incorporated in the contract by change order if Western Carolina University desires. Western Carolina University reviews and approves all changes prior to billing.

*“I would like to express my deepest gratitude to your organization and to compliment your company on its ability to supply a rare commodity in today’s construction market: the ability to successfully complete complicated renovations and additions to operational facilities in a cost effective, professional, and timely manner. We completed [our project] on time and under budget! I will give great credit for the success to your project managers, including your superintendent who provided actual day-to-day supervision. These guys were fantastic.”*

—David Tayson

Construction Manager, Owner’s Rep,  
Hugh Chatham Memorial Hospital, Elkin, NC



**Above:** A sample project schedule progress report. These processes and reporting methods allow our team to closely monitor the project schedule.

## REQUEST FOR INFORMATION (RFI) AND SHOP DRAWINGS

Rentenbach tracks all RFIs via the project's website. Our log shows all RFIs to date and can be sorted by open items and by due date. Rentenbach works with Western Carolina University to help communicate priorities to ensure continuous project progress.

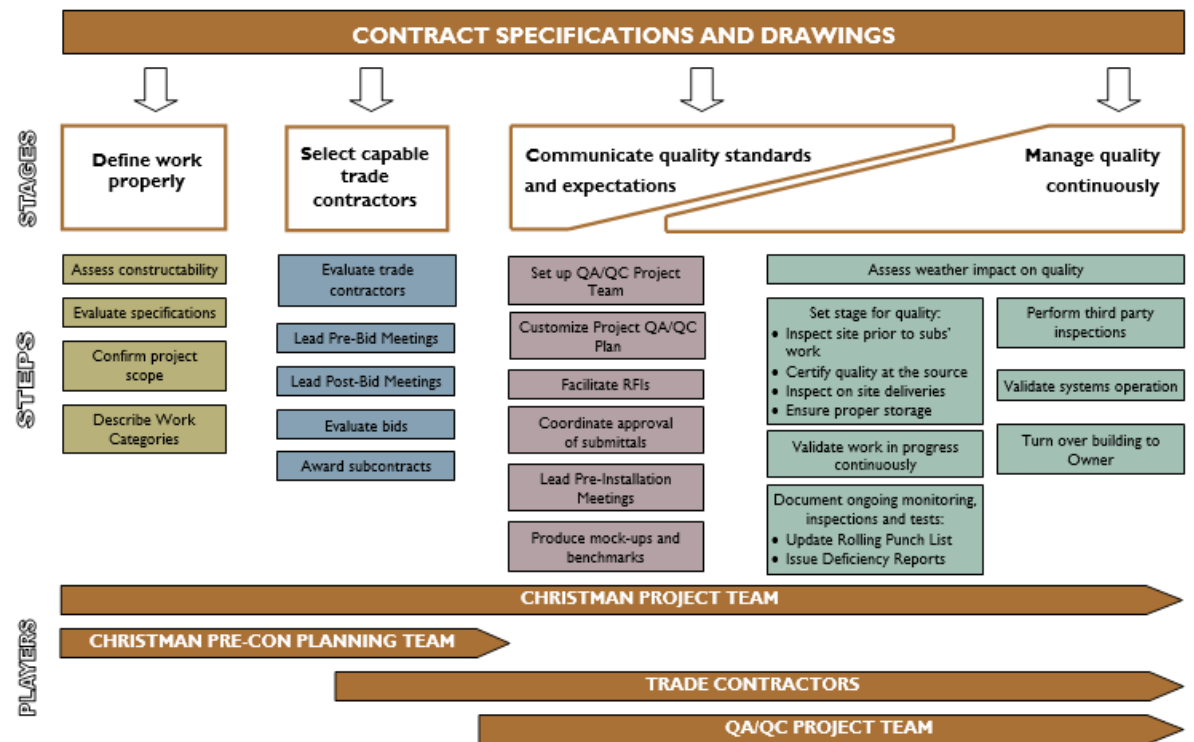
We stress to our team, including trade contractors, the importance of accurate pre-review of RFI and shop drawing information. Prior to soliciting information from the design team or requesting any clarifications, Rentenbach thoroughly reviews and exhaustively attempts to resolve any issue. We also offer suggested solutions with our RFIs when appropriate to facilitate a team approach to resolution of any issue.

## QUALITY CONTROL

Our project-specific QA/QC philosophy for the Western Carolina University STEM Building project spans the entire construction process and consist of four key stages:

- **Define work properly.** Stage 1 of the QA/QC program focuses on analyzing the contract documents to fully understand Western Carolina University's expectations, anticipate potential quality issues and plan the work accordingly. This stage ensures we are executing a quality project from the beginning.
- **Select capable trade contractors.** In Stage 2, we will carefully select trade contractors capable of meeting the demands of the project to fine-tune our approach to quality challenges.
- **Communicate quality standards and expectations.** During Stage 3, we finalize a project-specific QA/QC plan that guides our team's quality leadership efforts. We will ensure that the quality standards are clear to each trade contractor, taking care to thoroughly answer all of their questions. By effectively preparing each trade contractor, we reduce the risk of costly interruptions and rework during construction. We also pave the way for on-time delivery of a facility that meets the established quality standards.
- **Continuously manage quality.** During Stage 4, which covers the physical implementation period, we monitor installation activities daily to ensure high standards of quality are met in both the construction process and the finished product. We also perform or oversee specified inspections and tests to provide assurance that the building's structure and systems are sound, durable and perform to Western Carolina University's expectations.

**This four-stage approach to assuring quality provides us with multiple opportunities to identify and correct potential quality problems before work has been put in place.**



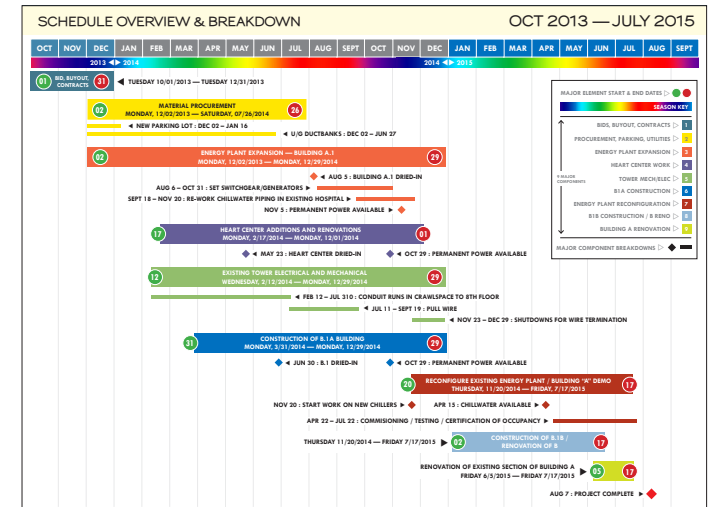
# SCHEDULE AND STAFFING PLAN

Please see Tab 3, Key Personnel, for our staffing plan for the STEM Building project at Western Carolina University.

**Rentenbach schedules in an interactive and collaborative fashion.** Working with the project leadership team we discuss key dates that pertain to the project's goals and establish a preliminary schedule. Based on those project goals the team determines what dates to secure as project milestones and, as the design progresses, the detail between the milestones is refined.

Phasing is a byproduct of the schedule and is added as efficiencies and dependencies dictate. Ideally, construction begins when design is complete, but that does not have to be the case; design and site constraints are considered in this determination. The project schedule continues to evolve as the design progresses and more project milestones and constraints are known.

**As trade partners join, they provide further detail and more project-specific information which perfects scheduling.** Our final construction schedule is detailed enough to properly communicate our team approach, flow of construction and strong attention to detail. We will update the overall schedule, and use two-week look ahead schedules at our progress and foreman meetings. The two-week look ahead schedule is an easy way for trade contractors and workforce to understand weekly goals and overall schedule.



*Above: In addition to the master construction schedule, Rentenbach created a large presentation board with a schedule breakdown to help UNC's High Point Regional Hospital administrators understand (and explain to staff) the components of what was the largest and most complex infrastructure improvement in their history. This \$26 million project involves a complete replacement of the hospital's energy plant at the heart of an occupied hospital campus.*

13th Street Science Building 6 Week Look Ahead													Color Key		Updated 7/25/2016									
Task	Master Schedule Duration Remaining	7/29/16	7/28/16	7/27/16	7/26/16	7/25/16	7/24/16	7/23/16	7/22/16	7/21/16	7/20/16	7/19/16	7/18/16	7/17/16	7/16/16	7/15/16	7/14/16	7/13/16	7/12/16	7/11/16	7/10/16	7/9/16	7/8/16	
Upcoming Meetings																								
BIM Coordination																								
OAC																								
Contractor Coordination Mtg																								
Site Utilities																								
Water Main activation	2 days																							
Sanitary Sewer	10 days																							
Grade Beams and Foundations	10 days																							
Grade Beams 6-10/A-F (SW Corner)																								
Grade Beams 6-10/G-L (SE Corner)																								
Foundation Walls	20 days																							
F&P Wall Grid line 1/A-9-D																								
F&P Wall Grid line 1/D-6																								
F&P Wall Grid line 1/G-1.5																								
F&P Wall Grid line 1/J-1.5-K-1-2/K																								
F&P Wall Grid line 2-4/K																								
F&P Wall Grid line 3-5/A-9																								
F&P Wall Grid line 4-6/K																								
Columns	20 days																							
F&P Columns Grid line 2																								
F&P Columns Grid line 3																								
F&P Columns Grid line 4B.5																								
F&P Columns Grid line 5-5B.6																								
F&P Columns Grid line 7-7.3																								
F&P Columns Grid line 8 & 9																								
F&P Columns Grid line 10																								
Slab On Grade	45 days																							
Underslab Utilities	30 days																							
Plumbing CD0.14 SE corner																								
Plumbing CD0.14 SW corner																								
Plumbing CD0.1a NW corner																								
Plumbing CD0.1b NE corner																								

*Above: Sample six-week look ahead.*

B. *Minority Participation: Describe the program (plan) that your company has developed to encourage participation by Minority and other HUB firms to meet or exceed the goals set by North Carolina General Statute 143-128.2. Attach a copy of that plan to this proposal. Provide documentation of the Minority and other HUB participation that you have achieved over the past two years on both public and private construction projects. Outline specific efforts that your company takes to notify Minority and other HUB firms of opportunities for participation. Indicate the minority participation goal that you expect to achieve on this project.*

## **Rentenbach and Diversity An Award-Winning Combination**

Rentenbach develops, mentors and relies upon the services of minority and women-owned businesses on all of our projects.

**Our goal for Western Carolina STEM Building project is 20 percent HUB/MWBE participation.**

We are proud to say that we consistently exceed industry-standard HUB/MWBE goals through the efforts of our award-winning in-house diversity program. Some of our project successes include:

- 44% participation on Fayetteville State University Science and Technology Building
- 25% participation on Wesley Long Cancer Center
- 42% participation on Hayes-Taylor YMCA
- 35% participation on Union Square Campus
- 26% participation on University of North Carolina Chapel Hill Rams Head Student Center
- 38% participation on High Point Central High School

Our Diversity Director, Patsy Matthews, aggressively seeks out minority and women owned businesses and develops tailored plans that address their needs for each type of project.

Patsy Matthews, our Diversity Director, is uniquely qualified to understand the requirements involved and to help break down the barriers faced by these historically underutilized businesses. Among the barriers they face, there may be a lack of information about the bidding process or difficulty in obtaining financing, bonding, or insurance. Some may be hindered by unnecessary restrictions in contracts, or a lack of experience or skills in a critical area. Others might be burdened by slow payments from their own vendors, contractors, or trade contractors. With the mentorship and guidance of an established, experienced construction management firm like Rentenbach, these barriers are surmountable. More than just addressing shortcomings, our program's ultimate purpose is to build upon the strengths of HUB/MWBE firms, with the specific goal of increasing their experience and capabilities. With Patsy's leadership, our strong commitment to diversity benefits the projects themselves, our communities, and adds value for our clients.



**Above:** Rentenbach receives an award in 2012 from the UNC Triad Coalition for “demonstrated leadership ability in building capacity in others”.



**Above:** The UNC Triad Coalition Award.



Rentenbach's HUB/MWBE Participation Plan is focused on relationship and capacity building at the trade contractor /supplier levels.

### Identification

Upon award of the project, Rentenbach contacts HUB/MWBE trade contractors and suppliers from our in-house database who have bid and worked on Rentenbach projects. We have developed a database of more than 400 contractors and suppliers. Patsy Matthews and Justin Hall will schedule a meeting with the Western Carolina University HUB coordinator and university project manager to identify a list of first and second-tier MWBE trade contractors and suppliers who have completed university projects.

### Notification

Rentenbach believes that casting a wide notification net offers greater opportunity for bid participation. Patsy Matthews provides information about the project to local, regional and statewide agencies; publications and plan rooms that provide support and training to HUB/MWBE firms such as the North Carolina Institute of Minority Economic Development; the Hispanic Contractors Association of the Carolinas; the Metrolina Minority Contractors Association; the United Minority Contractors of North Carolina and Greater Diversity News. Trade contractors and suppliers also have free access to Rentenbach's online plan room at iSqFt.com, as well as the public plan rooms of the Reed Construction Data Bulletin.

### Extensive Project Information and Outreach

Rentenbach hosts two outreach events in the community to educate trade contractors about the project. The first outreach is an all day event focused on the pre-qualification process and HUB certification. We do a detailed overview of the pre-qualification form; scoring sheet and the appeal process. In particular, we emphasize the importance of providing the correct supporting documents to ensure maximum points and avoid being denied. We have a certification specialist from the state office to assist with HUB certification issues; specifically, we have every MWBE firms' HUB status checked to ensure that it is current and if it is not, we have the HUB office follow-up with them to let them know what is needed to bring it current, as well beginning the certification process.

After this outreach, we schedule at least two dates in different locations where contractors can meet with members of our project planning team to assist them with preparing their pre-qualification forms.

Our second outreach focuses on forming relationships between large majority firms with small HUB/MWBE firms. We group contractors and suppliers together by trade with a Rentenbach facilitator. We introduce the project as it relates to the particular trades and allows each trade contractor to introduce themselves. Patsy Matthews floats between each group and talks in specifics about the HUB participation goal and offers guidance on how it can be achieved.



**Capacity Building and Mentorship of Small Firms:** Rentenbach is proud to have a successful legacy of providing opportunities to grow for small, local, and minority-owned businesses. For projects public and private, we create bid packages that allow maximum participation by qualified firms. Photo above taken during the construction of Bayer Crop Science's Bee Care Labs, Durham, North Carolina.

