Buffalo Design Build Inc.

RFQ Response for
College of William & Mary Building Committee RFQ #2013

September 30, 2013

Presented by:

Myranda Bergman, PMP, LEEP AP
Design Build Project Manager
(560) 643-7410

Cover Letter

Acknowledged Addenda:

- *Addendum No. 1*
- *Addendum No. 2*

Dear College of William & Mary Residence Hall Program Committee and DBIA Student & Academic Committee,

Thank you for the opportunity to demonstrate our interest in response to the College of William and Mary Request for Qualifications for a new Residence Hall. The addendum added on September 24, 2013 has been acknowledged and incorporated into this reply. Buffalo Design-Build Inc. has a history of success in working with various college campuses, many having great historic influence. We are confident that our innovation, experience and dedication will make Buffalo Design Build Inc. the best team for this project.

We have carefully reviewed the elements of design and functions presented in the request. The enclosed response further explains the organization and management of our firm, specific references to our successes, and our proposed design, schedule and cost ideas. Our Virginia branch of Buffalo Design Build Inc. is familiar with projects of this nature and has developed strong relationships with contractors and municipality representatives in the area.

Buffalo Design-Build Inc. strongly believes that we are the most qualified firm for this project. Should you have any questions regarding this response, please do not hesitate to contact us. If requested we would be honored to accept this residence hall project.

Best regards,
Buffalo Design Build Inc.

Myranda Bergman, PMP, LEEP AP
Design Build Project Manager

Table of Contents

1. RFQ – General Information of the D-B Team

Request for Qualifications
for
The College of William and Mary
Residence Hall

Design-Build Team General Information
Attachment 3

Name	Buffalo Design Build Inc.
Address	8751 Park Central Drive
City, State, Zip	Richmond, VA 23227
Contact Phone / Email	(804) 436-4672 / contact-virginia@buffalo-db.com
Type of Organization	☒ **Corporation** ☐ **Partnership** ☐ **JV Agreement**
Year Established	Parent Company: 1963 / Virginia Division: 1989
Has the team executed Teaming Agreements?	☒ Yes ☐ No

1. **List Companies Comprising Team:**

Name (First company is managing member)	Discipline	Years in Business	Years Exp. With Team Members
Buffalo Design Build Inc.	Design-Build Contractor	50	7
Eastern Design & Engineering	Designer/ Architect	16	7

2. **Complete Attachment 4 – Design-Build Team Certification.**

3. **Does your team have in-house design capabilities?** ☒ Yes ☐ No

   If yes what disciplines do you have? Architectural, Structural, MEP, Sustainability, Landscaping_____

4. **Do you utilize any 3D modeling programs?** ☒ Yes ☐ No If yes how do you utilize and what programs do you use? Autodesk Building Design Suite, Including Autodesk Revit 2013_____

5. **Does the team have personnel who have been trained in the Critical Path Method (CPM) of scheduling?** ☒ Yes ☐ No

6. **Has the team used CPM scheduling on any of your projects?** ☒ Yes ☐ No

7. **Has the team utizilized the LCI Pull Planning process on any projects?** ☒ Yes ☐ No

8. **List the main construction firm's Worker's Compensation Interstate Experience Modification Rate for the following years.**

   EMR __0.72_ for 2010 EMR _0.72__ for 2011 EMR__0.70_ for 2012

9. **List three (3) trade references:**

Company	Address	Contact	Phone
Joe's Office Products	8035 Mike Mundie Ln Mechanicsville, VA 23111	Joe Price	(804) 103-9730
Virginia Truck Rental	2505 Hungary Rd Richmond, VA 23228	Dean Miller	(804) 659-9142
Atlantic IT Services	9645 W Broad St Richmond, VA 23233	John Doe	(804) 104-6991

10. **List bank reference(s):**

Company	Address	Contact	Phone
JPMorgan Chase & Co	Chase Tower 10 S Dearborn St	Jessica Smith	(312) 642-7840
Wells Fargo & Co	420 Montgomery Street San Francisco, CA 94104	Chris McKenzie	(415) 617-8272
Virginia Commerce Bancorp, Inc. (For Virginia Division only)	4350 Lee Highway Arlington, VA 22207	Linda Mayor	(703) 534-0700

11. **Have you at any time failed to complete a contract?** ☐ Yes ☒ No

12. **Are there any judgments, claims or suits pending or outstanding against you?** ☐ Yes ☒ No

13. **Have you, in the past five years, been involved in any judgments', claims, suits or arbitration proceedings?**

    ☐ Yes ☒ No

14. **Are you now, or have you ever been involved in any bankruptcy or reorganization proceedings?** ☐ Yes

    ☒ No

COMMONWEALTH of VIRGINIA
(STATE FORM SC-9.0)

ATTACHMENT 4

DESIGN BUILD ENTITY'S CERTIFICATION

I hereby certify that I am the ___Design-Build Project Manager_____ and duly

authorized representative of the Design-Build Team of: __Buffalo Design Build Inc._____

_____

DESIGN BUILD TEAM

Myranda Bergman
Typed Name

Signature

2. Resources of Design-Build Team

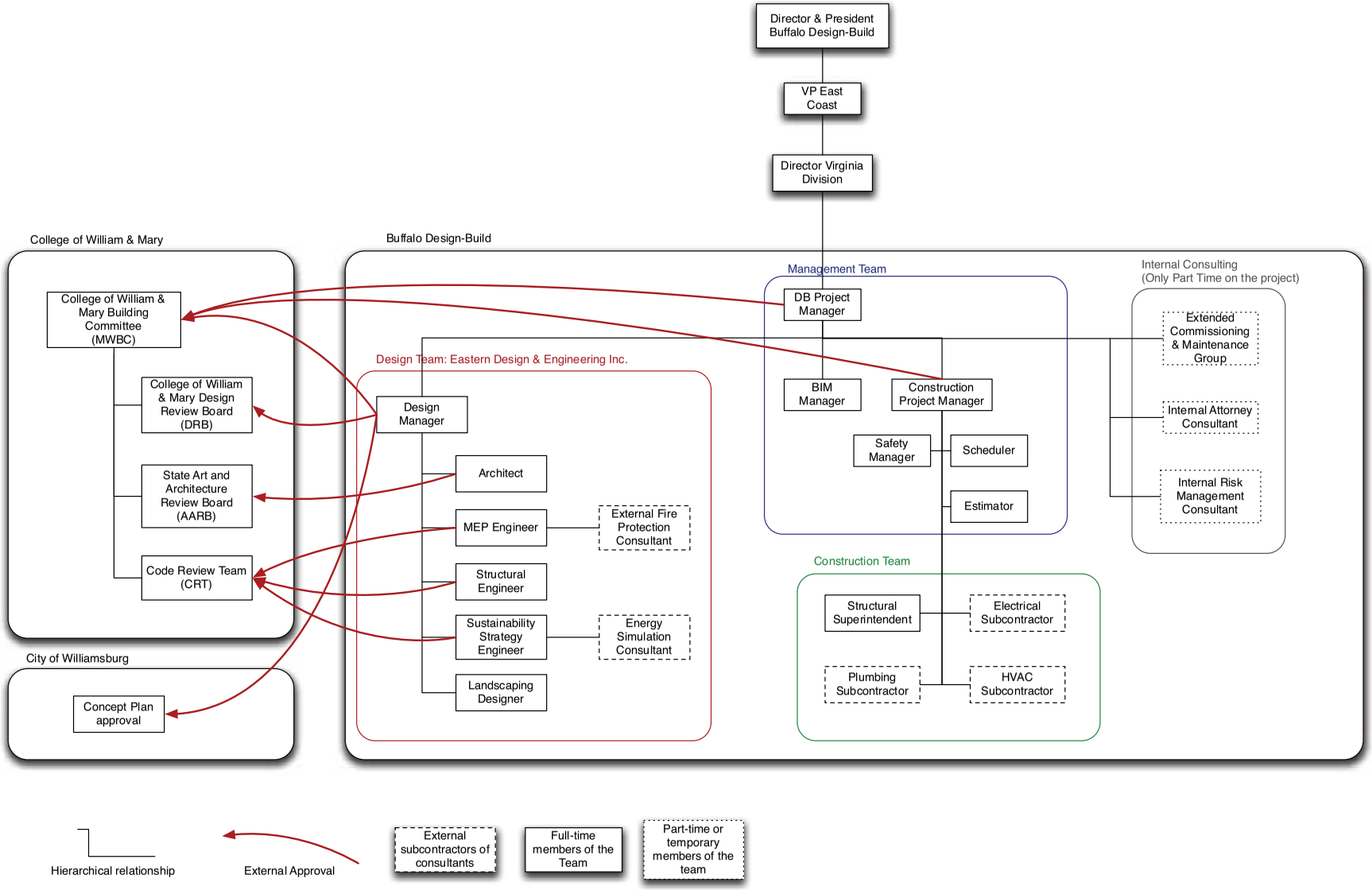
i. Organization Chart

Buffalo Design-Build is a strong, nationwide design-build contractor with more than a decade of experience in Design-Build delivery. For this project, William & Mary SRAP Residence Hall, we're using the "Contractor-led" approach. This structure will help to reduce risk by involving the construction team early in the design phase. Among others, this allows the ability to implement constructability input and safety review with the construction team. Buffalo Design-Build will provide the owner the advantage of a whole company's expertise such as the internal risk management team, BIM management, an experienced Extended Commissioning & Maintenance Group.

The Extended Commissioning & Maintenance Group helps to ensure a high standard of quality for each building we deliver. This company wide department is the primary contact for the owner after the substantial completion of the building and until the warranty expiration. They are in charge of fixing any warranty-covered defect in a very timely manner. In the design phase an Extended Commissioning & Maintenance Group will review the design to give feedback on the technical solution that are subject to behave poorly in time. This, again, ensures a high level of satisfaction of William & Mary. For this project we are teaming with Eastern Design & Engineering Incorporated — an architectural and engineering firm. We have teamed with this group on multiple projects in the last five years ranging from healthcare facilities to student housing. They are committed to designing buildings using its cultural, environmental, and topological context to better fit in its community.

ii. Key personnel

Name	Title	Job description	Reporting Relationship with Buffalo D-B	Reporting Relationship with W&M
Myranda Bergman	Design-Build Project Manager	Leads the Design-Build team from start to finish. She is responsible for the design and construction process. She also manages both the design and construction team to coordinate their work.	Reports to the East Region VP.	Reports to the *William and Mary Building Committee*, The *Design Review Board (DRB)* and the *City of Williamsburg* for concept plan approval.
Katie Teman	Architect	Responsible for the building organization and appearance. Provides a design that matches the campus design guidelines of the *Vision Plan* and local regulations.	Coordinates with the other professionals of the design team and reports to the design manager.	She reports to the *State Art and Architecture Review Board (AARB)*
Pierre Bannier	Construction Project Manager	In the design phase, he is in charge of reviewing the design and leading the management team. In the construction phase, he manages the day-to-day aspects of the project.	Reports directly to the D-B project manager. He has authority over the construction team including the scheduler, safety manager, estimator and the subcontractors	He reports to the *William and Mary Building Committee.*
Charlie Cannon	Structural Engineer	He is in charge of designing the building's structure. He provides the most cost-efficient solutions while complying with the building codes.	Reports to the design manager.	He reports to the *Code Review Team (CRT)*


Director & President
Buffalo Design-Build
VP East Coast
Director Virginia Division
College of William & Mary
College of William & Mary Building Committee (MWBC)
College of William & Mary Design Review Board (DRB)
State Art and Architecture Review Board (AARB)
Code Review Team (CRT)
City of Williamsburg
Concept Plan approval
Buffalo Design-Build
Management Team
DB Project Manager
BIM Manager
Construction Project Manager
Safety Manager
Scheduler
Estimator
Internal Consulting
(Only Part Time on the project)
Extended Commissioning & Maintenance Group
Internal Attorney Consultant
Internal Risk Management Consultant
Design Team: Eastern Design & Engineering Inc.
Design Manager
Architect
MEP Engineer
External Fire Protection Consultant
Structural Engineer
Sustainability Strategy Engineer
Energy Simulation Consultant
Landscaping Designer
Construction Team
Structural Superintendent
Electrical Subcontractor
Plumbing Subcontractor
HVAC Subcontractor
Hierarchical relationship
External Approval
External subcontractors of consultants
Full-time members of the Team
Part-time or temporary members of the team

Myranda Bergman **P.E, P.M.P, M.S.E** **Design-Build Project Manager**

753 Rollingrock Drive | Milford, VA | 560-643-7410 | myranda.bergman@buffalo-db.com

Professional Qualification:

Senior level project manager with 16+ years of experience. Well rounded in customer satisfaction, negotiation, leadership, team building and communication within the community. High-level education in civil engineering and project management helps solving complex issues and on-site adaption. Track record of successful project in commercial, residential and student housing. Expertise in environmentally sensitive areas.

Certifications:

- Design-Build Professional
- LEED AP DB + C
- PMI certified PMP
- Six Sigma Black Belt

Professional Involvement and Awards:

- Design-Build Leadership Award (2010)
- DBIA Mid-Atlantic Chapter president (2011-present)
- PMI Linn Stuckenbruck Person of the Year Award (2006)

Industry experience:

- Since 2008 Buffalo Design Build, Richmond, VA
  - Senior project manager
  - Customer relation
  - Strategic planning
  - Team leadership
- 2004-2008 Kiewit, Denver, CO
  - Project management
  - Creating and managing budget
  - Team leadership
- 1999-2004 Olympic Builders, Seattle, WA
  - Construction management
  - Creating and managing budget
  - Manage staff and provide training
  - Permitting
- 1995-1997 Arup, Boston MA
  - Structural engineering
  - Composite structure calculation
  - Building code compliance check
  - Finite element method

Education:

- M.S. Civil Engineering University of Illinois - Urbana Champaign 1999
- B.S. Civil Engineering Virginia Polytechnic Institute and State University 1995 / Honors

Past Projects at Buffalo Design Build:

- Fraternity Houses and Community Center, Williamsburg, VA (2011-2013)
- Francis P. Gaines Hall, Lexington, VA (2009-2011)
- Kittredge Central Residence Hall, Boulder, CO (2006-2008)

Katie Teman **R.A, M.S.A, AIA** **Architect Designer of Record**

1975 Franklin Drive | Harrisonburg, VA | 560-356-7620| ede@easterndesign.com

Professional Qualification:

Senior level architect, with 13 years of experience. Talented and result-oriented, design buildings with passion and appreciation for details. Track record of managing complex operation, including design-build delivery method, with expertise in healthcare, residential, and student housing. Able to deliver projects in a strict deadline and constrained budget. Recognized creativity while respecting the tradition and history of each environment. Has experience in restoration of Georgian Buildings.

Certifications:

- Registered Architect in the Commonwealth of Virginia
- LEED BD + C
- NCARB Certificate
- Autodesk Revit Certified Professional (2009-2013)

Professional Involvement and Awards:

- USGBC Member
- AIA Associates Award 2009
- AIA Young Architect Award 2005

Industry experience:

- Since 2008 Eastern Design & Engineering Inc., Richmond, VA
  - Architectural Design
  - Residential and Student Housing Buildings
  - Graphic presentation and layout
  - Site planning
  - LEED Certification
- 2000-2008 DC Historic Design LLC, Washington DC
  - Architectural Design
  - Historic preservation specialist
  - Communication with builder
  - Customer relation

Education:

- M.S Architecture - Massachusetts Institute of Technology 2000
- B.S. Architectural Design (Art History minor) - University of Colorado Boulder 1998 / Magna Cum Laude

Past Projects at Buffalo Design Build:

- Kittredge Central, Boulder CO (2012)
- Harrisburg Community Hospital, Harrisburg (2011)
- Woodward Building, Washington DC (2010)
- Colonial Theater restoration, Pittsfield, MA (2009)
- School of Education, Williamsburg VA (2007)

Pierre Bannier **P.E, P.M.P, M.S.E** **Construction Project Manager**

9334 Bear Creek | Lexington, VA| 720.352.3074| pierre.bannier@buffalo-db.com

Professional Qualification:

Senior project manager with more than ten years of experience in the construction industry. He started his career on industrial projects in the gulf coast before moving to Abu Dhabi to manage multiple tunnel projects. Back in the USA, he started working on various multi-family housing projects with a focus on LEED design. His past experience provides him with the rigor, high quality standards and leadership to make any project a success. Pierre is able to efficiently communicate and work with all types of people, while focusing on meeting their requirements.

Certifications:

- Virginia State licensed Professional Engineer (P.E.)
- LEED AP B+C
- PMI certified PMP

Professional Involvement and Awards:

- Director of the James River Green Building Council, Richmond VA
- 2004 - Best young Project Manager of the year, PMI Louisiana Chapter

Industry experience:

- Since 2009 Buffalo Design Build, Richmond, VA
  - Crew Leadership
  - Creating and managing budget
  - Manage staff and provide training
  - Review of design
  - Coordination of estimating and scheduling
  - Permitting
- 2005 - 2009 Bechtel Corporation, Abu Dubai, UAE
  - Design and blueprint review
  - Manage staff and provide training
  - Material management
- 2002 - 2005 James Construction Group, Baton Rouge, LA
  - Design an blueprint review
  - Coordinating with the design team
  - Building code review

Education:

- M.S.E Civil Engineering and Management - University of Colorado Boulder 2002
- B.S Civil Engineering - University of Colorado Boulder 2000 / Summa Cum Laude

Past Projects at Buffalo Design Build:

- Fraternity Houses and Community Center, Williamsburg, VA (2011-2013)
- Francis P. Gaines Hall, Lexington, VA (2009-2011)
- Golden Run Residential Complex, Petersburg VA (2009)

Charlie Cannon **M.S.E., ASCE** **Structural Engineer**

1654 Valmont Street | Lexington, VA | 760-365-3778 | Charlie.cannon@easterndesign.com

Professional Qualification:

Experienced and talented structural engineer with success in multi-disciplines: steel, concrete, and wood. Extensive experience in composite steel-concrete structures. Aptitude in solving complex problems involving many skills and diverse stakeholders. Focusing on economy, safety, reliability, quality and sustainability. More than five years of experiences on LEED certified projects. Proven ability to work in a 3D BIM workflow.

Certifications:

- ASCE
- Virginia Structural Engineer Council

Professional Involvement and Awards:

- Virginia Structural Engineer Council chairman (2011-present)
- NCSEA Excellence in Structural Engineering Award (2009)

Industry experience:

- Since 2009 Eastern Design & Engineering Inc. Richmond, VA
  - Structural engineering
  - Composite concrete-steel structure specialist
  - Sustainable concrete structure
  - Glass design
- 2006-2009 CH2M HILL Arlington, VA
  - Structural engineering
  - Concrete structure design
  - Code compliance review
- 1999-2001 Bechtel Corp., San Francisco, CA
  - On site structural engineer
  - Design an blueprint review

Education:

- PhD Structural Engineering - Massachusetts Institute of Technology 2006
- M.S. Structural Engineering - University of California Los Angeles, CA 2003
- B.S. Civil Engineering - University of California, Berkeley, CA 1999 / Summa Cum Laude

Past Projects at Buffalo Design Build:

- Kittredge Central, Boulder CO (2012)
- Harrisburg Community Hospital, Harrisburg (2011)
- Washington Opera House, Washington DC (2010)
- School of Education, Williamsburg VA (2007)

iii. Office locations and resident expertise

Buffalo Design-Build is an extensive design-build contractor with offices throughout the US. The locations listed here are the main locations and the local offices that will provide services for this project.

Buffalo Design-Build Inc.

Headquarters
5889 Greenwood Plaza Boulevard
Englewood, CO 80111

Services provided:

- General support
- Legal advising

Buffalo Design-Build North-East Division

3520 Union Deposit Road
Harrisburg, PA 17109

Services provided:

- Extended Commissioning & Maintenance
- Risk Management
- IT Support

Buffalo Design-Build Virginia

8751 Park Central Drive
Richmond, VA 23227

Services provided:

- BIM Management
- Procurement
- QA/QC
- Safety Management
- Overall Project Management

3. Project Management Approach of Firm

i. Strategic project approach

Buffalo Design-Build, as one of the nation's leading design-build contractors is committed to excellence. What we design and build is intended to last and leave a positive imprint on the community. We truly believe that a building interacts with its community. Communication with all the project's stakeholders, throughout life of the building is key to keep that relationship positive. Our unique approach of open communication sets us apart from the contractor's community and explains the success of our projects. This open communication strategy is twofold: communication inside the design-build team and communication with the external stakeholders.

The external stakeholders are often ignored, but we think it is pivotal to the success of the project. The real needs of the community need to be clearly assessed in order to avoid any mistakes. When working in the historic and preserved environment of the College of William and Mary, we cannot have any mistakes. This translates very concretely in our design process. Just after the awarding of the contract, we will schedule a kickoff meeting to gather the owner represented by the building committee and the entire design and management team. This informal exchange helps understand the motivation of the owner further than what is in the RFP. We will later meet the community, including students, staff and scholars to gather their input. This input will help us to set up project goals early on in the project. These goals will be used as a metric to gauge our project success. The Buffalo Design-Build team intends to keep an open-line of communication and positive relationship with the general public during the design and construction of the facility. As we have done on our past projects this can be achieved with site visits, online project blog, and/or community feedback mailbox.

We also wish to maintain a fluid communication link with the owner's representatives. This is achieved in part by informal meetings but also through an access on our internal project portal. This enables the owner to see the day-to-day progress but also to electronically approve the submittals. This is fundamental, as the expedited design process comes with an intensification of the design and validation process.

The key advantage of the integrated project delivery (IPD) inherent to the design-build method is the ability to be much more flexible and reactive. To supercharge this reactivity, Buffalo Design Build Inc. also relies on its open communication strategy. Our BIM manager routinely sets up an information sharing, revision and validation strategy. This strategy also includes the use of common tools and exchange formats, so that we are sure that everyone has access to the latest information at anytime during the project.

In addition Buffalo Design Build has a holistic approach of the building. We understand that our action of design and construction is neither the beginning nor the end of the building's life. This project has already a history and will continue after substantial completion. This is why Buffalo Design Build always develops a handover plan using the latest technology such as BIM. This virtual model, and its linked database, will be turned over to William & Mary Facilities Management to provide more efficient maintenance and save energy over the building's life.

To us, every project is unique. In light of this, the team that Buffalo Design-Build has gathered for the College of William & Mary has been carefully tailored to exceed the expectations. Our architects have experience with preserving our historic heritage and our sustainability engineer ensures the protection of

the William & Mary environment while implementing the most sustainable features for the same cost as traditional, less efficient structure. In addition our construction management team has experience in campus housing and is aware of planning and disturbance mitigation efforts to implement into the project. To ensure that the Buffalo Design-Build team performs to a level expected by William and Mary, we have clearly defined the roles, responsibilities, and hierarchical relationship between every member of the team. Moreover, this structure has been proven on projects through our previous partnership with Eastern Design & Engineering.

ii. Services prior experience

The Buffalo Design-Build has demonstrated its efficiency on our past projects. Our open communication strategy enables us to quickly identify the key goals of the owner.

This was the case in our Kittredge project at the University of Colorado Boulder. In our first interactions with the owner and the community we realized that environmental stewardship was key. The RFP documentation requested only the LEED Gold certification. Our sustainable design experts and construction managers with strong LEED experience helped to revise the LEED scorecard and raise the certification level to LEED Platinum without any additional cost to the owner. In an intense design planning, due to the design-build delivery method, revising so deeply the design can be challenging. But Buffalo Design Build has long been a user of Building Information Modeling (BIM). With state of the art BIM technology, editing the building model was easy and we were able to quickly monitor the whole building's energy consumption influence but also the cost through the immediate quantity takeoff and the schedule impact. A great example is the implementation of chilled beams in the common areas. Within a day, our team was able to quantify the energy savings, the cost, and the schedule impact. With all the information in hand to make the decision, we were able to make tradeoffs in order to exceed the environmental expectations of the owner and provide long-term energy savings.

Our utilization of BIM is not limited to the design phase; we also use it to ensure better on-site planning. This was the case on the Orchard Hill Residential Area in Amherst, Massachusetts where we had a construction management at risk contract. We inspired ourselves from the lean construction process and from our industrial construction experience to manage the short term planning. The BIM enabled us to generate work packages of about a week of work for a typical crew using our in-house productivity database. Each work package contains all the permanent and temporary equipment needed to perform the job. Each work package being largely independent from each other if one component of the work package was missing or defective we were able to allocate the crew to another one without breaking the flow of work.

Buffalo Design Build has been involved in the quality management process for the last nine years and has been ISO 9001 certified for the last eight years. In this ever-improving process our latest innovation is the on-site quality control system that we used on our latest project in Virginia, the Francis P. Gaines Hall for the Washington and Lee University. Our project engineers control the quality on-site and record any defects on tablet computers. To every defect we attach a picture, and geotag it relative to the 3D BIM model and assign it to a subcontractor who automatically receive a notification. Following our open communication approach, any defect information is available to anyone in the construction team including the subcontractors. This process proved to create a healthy competition among the subcontractors, which eventually lead to increased quality and reactivity.

Buffalo Design Build has always been committed to ensure safety of everyone on the site. This includes Buffalo Design Build's employees but also those from our partners and subcontractors. Each of our projects has a full-time, dedicated on-site safety manager in charge ensure safe practices and organize the daily safety meetings. In addition to those common tasks the safety manager is in charge of the site-specific safety orientation of the construction management team, he also writes the safety plan that is sent to the owner for approval. To write this plan the safety manager first gathers the general superintendent's input. At Buffalo Design-Build the safety manager is not viewed at the sole person in charge of safety. He is here to gather people around safety issues and maintain that safety spirit.

In the design phase the safety manager also plays a key role. He is part of the design review team that convenes at 50% completion of each major building component. In addition to the safety manager, the team includes the design team, the estimator, the scheduler, the general superintendent, and the representative of the subcontractors. This design review process proved to be very efficient safety-wise. On our project for the University of Colorado Boulder mentioned previously, this meeting lead to significant, yet very practical changes. The initial plan was to assemble in place the roof steel structure. The safety manager suggested prefabricating on the ground large sections of roof. This reduced drastically the exposure to work at height and participated in the excellent safety record of this project.

iii. Methods to achieve "best value" & quality assurance

As mentioned before opening communication is key element of our strategic approach because we think it is the good approach to provide best value to the College of William and Mary. For Buffalo Design Build, opening communication lines start as early as the beginning of the design phase. Meeting with the various stakeholder, students, faculty, staff, and facility management will help to gather the functional needs of the community and prioritize them. In parallel Buffalo Design Build will open a public website to present the project. After the initial conceptual design is done it will be published on this website and open to public comment. Those comments will be reviewed with the College of William and Mary and the design will be edited accordingly.

Also to keep the relationship active with the community Buffalo Design Build will add a blog where members of the design-build team can explain their job and publish pictures of the progress made. We also plan to organize weekly site visits for people wishing to learn more about the project and how it is built.

We acknowledge that the residence hall should not be a campus inside the campus but should rather weave and link with it. This is especially challenging for such a living-learning environment, where people have everything onsite. The chance of this project is being at the crossing major campus paths, Ukrop road and Landrum drive. Ukrop road is also linking two parts of the campus that are separated by the Sunken Garden. Buffalo Design Build will use the input of the community and crowd flow analysis techniques to make the building a stop point. The goal is to make the people from the building communicate with the William and Mary community.

Buffalo Design Build with its expertise will not only provide the best value from an architectural standpoint, but also on the technical side using value-engineering. Once the conceptual design has been defined the design-build team gathers for a value-engineering meeting. This group includes various individuals from the design team. The group follows the SAVE International methodology that focuses on the function of

each component of the building to reach the best solution. Then the team will convene again at 50% completion of the design for each major building component: foundation, HVAC; etc. This is because the design process is not linear in a design-build project. At this time, the value-engineering group will also include professionals from the management and construction teams. This helps to bring innovative ideas on specific parts of the design without compromising the design as a whole. The value-engineering process is made easier by the use of BIM through quick feedback on the "value" of a technical solution.

To ensure the best quality for William & Mary, our quality assurance process starts with coordination of the documentation. Buffalo Design Build team has experience using the Microstation ProjectWise tool to manage the coordination and approval process of the documents. This tool allows tracking and versioning of every document to monitor and correct errors in an effort to make sure that everyone has up-to-date documentation.

To ensure quality of the design we have weekly or bi-weekly coordination meetings with the MEP subcontractors to analyze any conflicts with the BIM model. Each of the clashes is individually reviewed and the design team and subcontractors agree on an action plan: redesign or on-site modification in the clash is minor. This process improves quality and decreases the delays due to rework.

Highlights of Buffalo Design Build:

- Open communication strategic approach with W&M and the community
- A building open to the community and the other facilities on campus
- Strong usage of new technologies that work to bring best value and best quality
- Expertise in innovative construction management such as Lean Construction.

4. Prior Experience/Performance/References of Design-Build Team

i. Past projects team working together

Although a minimum of only four past projects was requested, we have completed five major projects with Eastern Design as a design-build team since 2006, which exemplify our team collaboration and experience. Design-build was the delivery system for each of these projects.

The first project that brought together Eastern Design & Engineering and Buffalo Design Build was a residence hall, Kittredge Central, at the University of Colorado Boulder. This residence hall had a huge emphasis on sustainability. LEED Platinum status was achieved which was a major accomplishment for both the design and construction sections of our team. Extra consideration of student schedules was also taken into account because of the close proximity of existing student housing. Similar to William and Mary, the University of Colorado Boulder enforces strict building codes on the exterior design criteria to remain consistent across campus. This gave our team experience in working with existing designs but adding our own influence.

The Orchard Hill Residential Area was designed and constructed under a large budget, which allowed for lots of creativity among team members. Between the three buildings transitional areas were incorporated to unify the buildings through landscape design and footprint relationships. These buildings all achieved LEED Silver rating. Our next project was the Francis P. Gaines Hall, which had much more specific design goals and, according to the owner, we succeeded in meeting these. This hall contains an Education RAP so all elements of the project, from building organization to final details, revolved around this program.

Most recently Buffalo Design Build has worked with the College of William and Mary on two different projects. The new School of Education building is a state-of-the-art facility with LEED Gold status and includes three floors of classrooms and offices. We were able to get acquainted with the William and Mary campus environment and developed a successful relationship with the committees involved. Due to the success of the School of Education, our team was asked to complete the new Fraternity Houses and a Community Center on campus. This included 12 buildings across campus; which were all unique. Buffalo Design Build embraced the opportunity to collaborate with each fraternity to meet their individual needs and give each group of students a personalized space that felt like home. This also gave our designers the opportunity to express their creativity with many different floor plan options. The representatives from these last projects with William and Mary were very pleased with the innovation and professionalism of our team.

Project Name	Location	Project Dates		Project Size		Cost
		Start	End	# of Bldgs	Sq. Feet	(Million)
Kittredge Central Residence Hall	Boulder, CO	6/2006	4/2008	1	70000	$37.2
Orchard Hill Residential Area	Amherst, MA	8/2010	1/2012	3	171000	$112.5
Francis P. Gaines Hall	Lexington, VA	2/2009	2/2011	1	55900	$41.8
School of Education	Williamsburg, VA	10/2007	3/2009	1	113000	$38.1
Fraternity Houses & Community Center	Williamsburg, VA	11/2011	8/2013	12	78500	$44.3

ii. References

Kittredge Central Residence Hall- Boulder, CO

Owner: University of Colorado Boulder
name: Julie Enger
phone: 303.869.4569
email: ucbdirectors@colorado.edu

Architect: Eastern Design and Engineering Inc.
name: Katie Teman
phone: 631.283.4162
email: ede@easterndesign.com
current position: Senior Architect/Designer
position on project: Architect/ Designer I

Orchard Hill Residential Area- Amherst, MA

Owner: University of Massachusetts
name: Jim Wells
phone: 781.253.6271
email: umdirectors@um.edu

Architect: Eastern Design and Engineering Inc.
name: Katie Teman
phone: 631.283.4162
email: ede@easterndesign.com
current position: Senior Architect/Designer
position on project: Architect/Designer II

Francis P. Gaines Hall- Lexington, VA

Owner: Washington and Lee University
name: Jim Parsons
phone: 540.458.8400
email: wldirectors@wlu.edu

Architect: Eastern Design and Engineering Inc.
name: Katie Teman
phone: 631.283.4162
email: ede@easterndesign.com
current position: Senior Architect/Designer
position on project: Senior Architect/Designer

School of Education- Williamsburg, VA

Owner: The College of William and Mary
name: John Leder
phone: 757.221.4000
email: wmdirectors@wm.edu

Architect: Eastern Design and Engineering Inc.
name: Katie Teman
phone: 631.283.4162
email: ede@easterndesign.com
current position: Senior Architect/Designer
position on project: Senior Architect/Designer

Fraternity Houses and Community Center- Williamsburg, VA

Owner: The College of William and Mary
name: Ken Moritz
phone: 757.221.4000
email: wmdirectors@wm.edu

Architect: Eastern Design and Engineering Inc.
name: Katie Teman
phone: 631.283.4162
email: ede@easterndesign.com
current position: Senior Architect/Designer
position on project: Senior Architect/Designer

iii. Checked References

At the time of completion for the projects above, all owners expressed immense satisfaction with our work. An owner would hire us again because our team is reliable, responsive, and have had success in our past projects, especially in residence halls.

5. Project Background/Success of Design-Build Team

The three most relevant projects completed by a major team member in the last five years include Orchard Hill Residential Area, Francis P. Gaines Hall, and Andrews Hall. All three of these projects focused on building a RAP and community throughout the residential buildings, providing a dining hall and focusing on the history and personality of the established campus and community.

The Orchard Hill Residential Area project was located in Amherst, MA. The timeline of this projects completion was August 2010 to January 2012. The services provided in the 3 buildings of this project include but are not limited to, a dining hall, classrooms, study areas, a LEED Silver certification, a RAP, traditional areas between buildings, an information desk, mail and package services, Community Assistants on-duty, security services, cable television services, equipment checkout, laundry facilities, a kitchenette, computer room, trash and recycling services, and maintenance and custodial services.

The dining hall is located in one of the buildings, with the capacity to serve about 824 students. The food incorporates the culture around campus and is the most popular dining hall on campus. There are two classrooms in each building, providing space for small lectures, RAP and hall meetings and extra study areas for students. This project has a LEED Silver certification with 54 points, which incorporates a grey water system and a dual flush system. The RAP (residential academic program) in the Orchard Hill Residential Area is a sustainable RAP, focusing on sustainability and the environment. There is an information desk located in one of the buildings (the main building with the dining hall) that offers CAs on duty at all times of the day and night, equipment checkout for movies and games and cleaning supplies. In all three buildings, there are laundry facilities on every odd numbered floor, a kitchenette, computer rooms and study areas throughout the building to help students with academics and extracurricular activities, and trash, recycling and maintenance services at all times for any emergencies.

The overall design and construction cost of the project, including initial contract value, was $112.5 Million. There were no change orders for this project; everything went very smoothly. The organizational structure of delivery method under the contract was Design Build. The owner's organization was directly related to the project manager as interfaced with our contract.

The key assigned in-house staff in the Orchard Hill Residential Area are, Lisa Parker the Hall Director, Emily Day the Assistant Hall Director, and Scott Abele the Sustainable RAP Live-in Professor. Scott lives in an end apartment in one of the three buildings with his family, helping to create a sustainable, academic community. The major team member involved in this project was our architect, Katie Teman. (see reference below)

References for the owner and architect of Orchard Hill Residential Area:

Owner: University of Massachusetts
Name: Jim Wells
Phone: 781.253.6271
Email: umdirectors@um.edu

Architect: Eastern Design and Engineering Inc.
Name: Katie Teman
Phone: 631.283.4162
Email: ede@easterndesign.com

The Francis P. Gaines Hall project was located in Lexington, VA. The timeline of this projects completion was February 2009 to February 2011. This project was one building with four floors, and the services provided include but are not limited to, a dining hall, classrooms, study areas, a RAP, an information desk, mail and package services, CAs on-duty, security services, cable television services, equipment checkout, laundry facilities, a kitchenette, computer room, trash and recycling services, and maintenance and custodial services.

The dining hall is located on the second floor of the building, open to all students on campus with the capacity to serve about 346 students. The dining hall is open at all times of the day until 8pm to accommodate students with late classes, meetings, and activities. It also features a "grab and go" add-on to help out students that need to eat but do not have time to sit down and enjoy their meal. There are two classrooms on the main floor of the building, one larger and one smaller. These classrooms provide space for small lectures associated with the RAP, RAP and hall meetings and extra study areas for students. They are also used for outreach programs where young high school students can come and tour the building, and sit in on small lectures to help them decide their career path. The RAP (residential academic program) in the Francis P. Gaines Hall is an education RAP, focusing on bringing students studying education together and helping them academically. Although this residence hall and RAP are geared towards education, they welcome all students to live and enjoy their environment. There is an information desk located near the classrooms that offers Community Assistants on duty at all times of the day and night, equipment checkout for movies and games and cleaning supplies. There are laundry facilities on every floor, and a rather large kitchenette provided for students to cook in. In their education RAP they have a lot of seminars and small meetings that the students and staff cook for. Also, provided in the building, are computer rooms and study areas to help students with academics and extracurricular activities, trash and recycling services, and maintenance services at all times for any emergencies.

The overall design and construction cost of the project, including initial contract value, was $41.8 Million, including one change order. The change order was that the design deliverables were incapable of being complete on time, with a project delay of two days, which added $84,000 to the total cost of the project. The organizational structure of delivery method under the contract was Design Build. The owner's organization was directly related to the project manager as interfaced with our contract.

The key assigned in-house staff in the Francis P. Gaines Hall are, Brent Collie the Hall Director, and Ally Knuddle the Assistant Hall Director. The major team members involved in this project were, our architect Katie Teman and our structural engineer Charlie Cannon. (See reference below)

References for the owner and architect of Orchard Hill Residential Area:

Owner: Washington and Lee University
Name: Jim Parsons
Phone: 540.458.8400
Email: wldirectors@wlu.edu

Architect: Eastern Design and Engineering Inc.
Name: Katie Teman
Phone: 631.283.4162
Email: ede@easterndesign.com

The Andrews Hall project was located in Harrisonburg, VA. The timeline of this projects completion was October 2011 to July 2013. This project was one building with three floors, and the services provided include but are not limited to, a dining hall, classrooms, study areas, a RAP, an information desk, mail and package services, CAs on-duty, security services, cable television services, equipment checkout, laundry facilities, a kitchenette, computer room, trash and recycling services, maintenance and custodial services, a common/great room, a market analysis database reader, boards with live feed of stocks, and a coffee café.

The dining hall is located on the first floor of the building, open to all students on campus, but mostly used by the business students and the students that live in Andrews Hall. The dining hall has a capacity to serve about 280 students. The dining hall is open at optimal times of the day for business students and is open until 8pm to accommodate students with late classes, meetings, and activities. The dining hall has an outdoor section that is open with good weather. There is a coffee café attached to the residence hall that is not only used by students but faculty and staff as well. There are two classrooms on the main floor of the building, one larger and one smaller. These classrooms provide space for small lectures associated with the RAP, RAP and hall meetings and extra study areas for students. The RAP (residential academic program) in Andrews Hall is a business RAP, focusing on bringing students studying business together and helping them academically. There is an information desk on the main floor that offers Community Assistants on duty at all times of the day and night, equipment checkout for movies and games, and cleaning supplies. There are laundry facilities on every floor, and a kitchenette provided for students to cook in. Also in the building provided are, computer rooms and study areas to help students with academics and extracurricular activities, trash and recycling services, and maintenance services at all times for any emergencies. There is a common/great room on the main level, where the coffee café is located, that also houses a market analysis database reader, so students can research any specific information related to a class or club and find instant business statistics from all around the world. There are also 3 boards hanging in the common room with live feed of stocks. This common room brings the students together all day and night whether they are studying or creating community.

The overall design and construction cost of the project, including initial contract value, was $38.6 Million, with no change orders. The organizational structure of delivery method under the contract was Design Build. The owner's organization was directly related to the project manager as interfaced with our contract.

The key assigned in-house staff in Andrews Hall are, Megan Totems the Hall Director, and Sally Hansen the Assistant Hall Director. The major team members involved in this project were, our architect Katie Teman and our Design-Build project manager Myranda Bergman. (see reference below)

References for the owner and architect of Orchard Hill Residential Area:

Owner: James Madison University
Name: Larry Hale
Phone: 542.643.9869
Email: jmdirectors@jmu.edu

Architect: Eastern Design and Engineering Inc.
Name: Katie Teman
Phone: 631.283.4162
Email: ede@easterndesign.com

6. Project Characteristic Successes

For this part the project in consideration is the Orchard Hill Residential Area, a student-housing complex including a dining hall located at the University of Massachusetts located in Amherst, MA. This $112.5 Million project comprises 3 buildings of seven floors each, including two levels of basement.

i. Timeliness

The schedule for this project was particularly challenging. Being on a fully functioning campus involved reduced activity during the school year and even more during the finals periods. The weather was also a challenging factor with a construction period including two winters.

To overcome those issues the Design-Build had to find a technical solution to speed up the construction process. The first initiative was to build the three buildings at the same time. On a congested campus, surrounded by occupied facilities like at the University of Massachusetts this is a logistical challenge that requires extraordinary techniques. The local team called a Buffalo Design Build logistics expert from the Chicago office. The team at the Chicago office is particularly experienced in building in the middle of a large, congested, city with very little amount of space to work with. The expert set up a Delivery Management System. This system consisted in an online portal where each delivery had to register for a thirty minutes timeslot in which unloading the truck had to be done. This method inspired from the just-in-time delivery was successful in avoiding congestion and disruption on the environment.

Another impressive innovation that the design team suggested to increase the construction was to use the “top down” construction process. It consists in the concurrent above and below grade construction as opposed to the traditional approach where the infrastructure is built before the superstructure. This technique enabled the team to speed up the construction of over two months compared to the traditional method.

ii. Budget considerations

The reduced activity due to the active campus was not acknowledged in the RFP and our early discussion with the owner. But our early meetings with the community revealed that disruption was a strong preoccupation. So the schedule acceleration features we implemented came with a cost. This cost had to be offset by saving on other components of the building while preserving its functions.

Buffalo Design Build gathered a value engineering team to find savings and alternative solutions. It quickly emerged that the Grey Water collection system suggested by the owner to meet the LEED Gold requirement was too expensive for the benefit it provided. On top of that the technique was new and still raising health issue. The sustainable design engineer suggested replacing it by a more traditional and far less expensive rainwater collection system from the roof. This alternative brought the same water savings and thus the same amount of point for the LEED rating. In short the team provided the same value for a lower cost.

iii. Quality

In addition to the usual Quality Management System (QMS) in place on every Buffalo Design Build project we implemented an innovative materials tracking systems on the Orchard Hill Residential Area project. This system is linked to the Delivery Management System previously mentioned. Every building material that is delivered on the site had a barcode. This barcode was scanned at the delivery dock and the delivery was inspected to be sure that the right element was delivered and that it is in good condition. Once checked in, the element was considered in stock, and ready for use. This system was enabling the management team to know what was on the site, in which condition and where. This also avoided error from the craft workers that could have installed the wrong element at the wrong place.

iv. Services disruption

As mentioned previously services disruption was the sources of many decisions on the projects. To accommodate the lifestyle of the students living in the surrounding building the schedule had to be adapted. First the work on site was not starting before 8am and no delivery was scheduled before 9:30am to avoid creating traffic jam on campus. Secondly the project was at a near stop during the finals weeks where all noisy activity was banned. Those reduced working hours during the year had to be offset by an increased activity during the summer. To avoid using overtime that lead to productivity loss and decreased safety, we implement shiftwork with doubled crews.

During every construction project dust is usually an important disruption, especially during the earthmoving phases in the summer. To limit the dust impact we developed a dust mitigation plan. This plan implements features like regular water spraying on the ground, cleaning trucks before exiting the worksite and installing opaque fences all around the worksite to catch the remaining dust.

v. Project acceptability

To be sure that Buffalo Design Build reached and even exceeded the expectations of the University of Massachusetts we used our enhanced punch list system. Based on tablet computers connected to the company networks, the system helps the project engineers to record any defect by taking a picture and geo-tagging it. Every defect is then tied to the corresponding subcontractor, who is notified immediately. Upon fixing the problem, the subcontractor can check the defect, indicating that the error has been fixed.

On this project we also performed extensive commissioning using the expertise of an external consultant. This enables Buffalo Design Build that every single piece of equipment was working nominally before handing over the building to the owner. Also to ensure the owner that the building is meeting the expectations in terms of energy consumption.

Highlights of Buffalo Design Build:

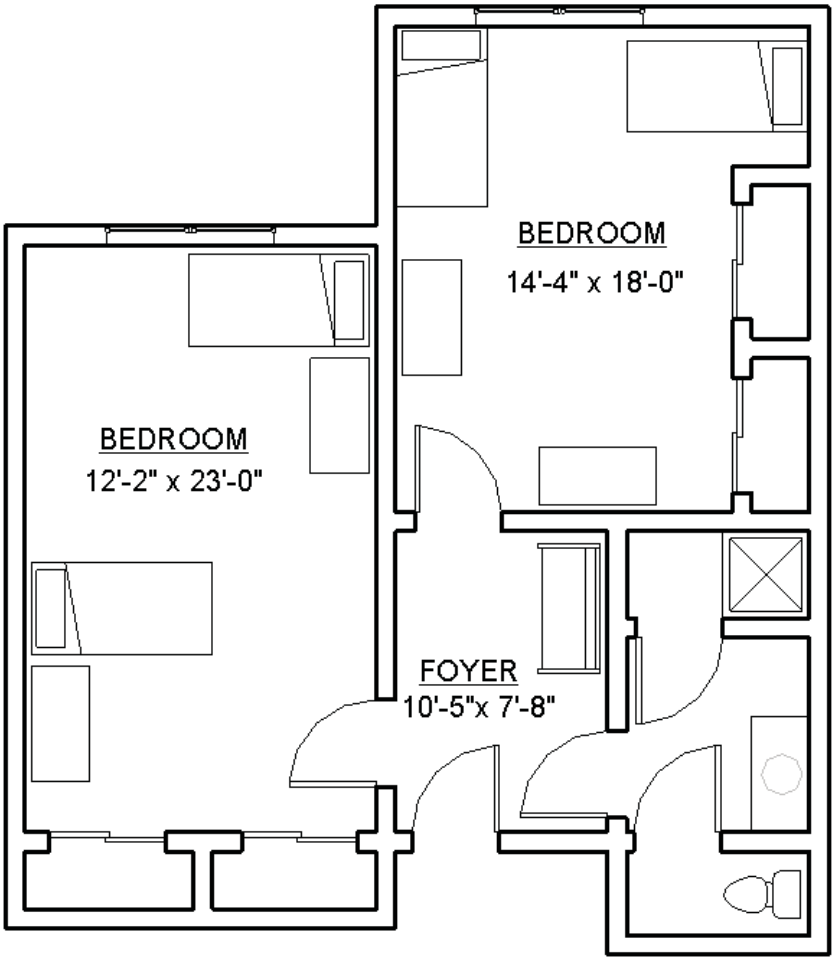
- Innovative techniques to speedup the construction process.
- Ability to bring savings without compromising the scope of the project
- Knowledge of the college environment

7. Design Concept Presentation

i. Single Bedroom with Bath

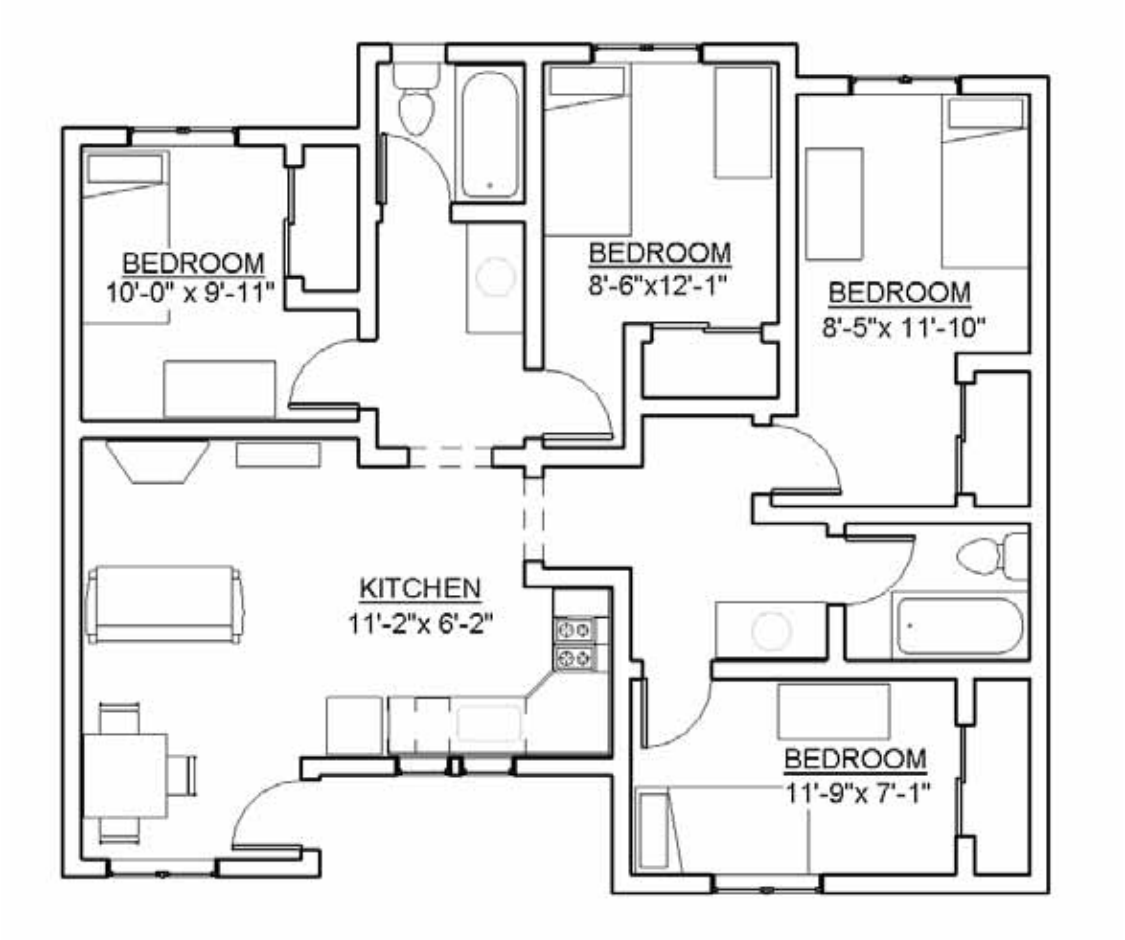
This single bedroom with bath floor plan is a room that was used in the Orchard Hill Residential Area project in Amherst, MA at $112.5 million. It is a total of 240 square feet, and is very spacious. This room is designed for an upper classman that is still living on campus but wants their own space without a roommate. The floor plan provides a spacious bathroom with a shower/tub, and a recessed, large closet for plenty of storage, especially for those students out of state. All bathroom fixtures are isolated from the bedroom and there is a mechanical (equipment) shaft shown near the bathroom. The puzzle piece cut of the room provides options for similar floor plans to fit together in the building. The bedroom is large enough to have a separate study space (desk) from the bed, but still small enough to be considered a single dorm room. In this floor plan, we worked to design a useable space without odd nooks or corners so that the student could get the most out of all space. The spaces are separated, creating a separate bathroom to add privacy for the student living there. There is a large window bringing in a lot of natural light to the space for a positive, healthy environment. This space was also designed large enough to create a separate seating area with consideration of moving around the furniture and possible lofting of the bed.

ii. Two Double Bedrooms with Bath



The layout seen above contains two double bedrooms and a bathroom and worked very well in the Francis P. Gaines Hall, at $41.8 Million that we completed recently. It is a total of 690 square feet, and is very spacious. The foyer acts as a common area for this suite and is even large enough for a sofa and some small furniture. Off of the foyer is the spacious bathroom located in a place that is of equal convenience for all occupants. The entire bathroom fixtures are contained in one area however there are privacy walls for both the shower and toilet. This makes sharing a bathroom between four residents very simple. Each bedroom contains two separate closets so each occupant has their own personal space. Lastly, the straight sidewalls make placement of neighboring rooms easy for the overall floor plan.

iii. Four Bedroom Apartment with Two Baths & Kitchen



This four-bedroom apartment with two baths and a kitchen floor plan is a room that was used in the Kittredge Central Residence Hall project in Boulder, CO at $37.2 million. It is a total of 965 square feet and has a dining and living area. This floor plan provides two spacious bathrooms, one per two roommates, and the sink is separate from the rest of the bathroom for multiple users at the same time. Each bedroom includes a recessed, large closet and has enough livable space for a sleeping and a study area. The goal of this floor plan was to create as much useable space as possible so there was not any wasted space. There is a large window in every bedroom providing natural light for a healthy environment and the way the bedrooms are cookie cut into the space, they are separated enough to create four separate spaces. There is also natural light in the dining area and kitchen, and enough space to have a separate living area that is common for everyone to share. The common area was designed to be very open along with the rest of the floor plan. There are archways leading to each bathroom section, which keeps movement in the space instead of breaking the flow with doors.

8. Design Schedule

i. Schedule

Design-Build Team: Buffalo Design-Build

Activity Descriptions:	2013		2014														2015								
	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.		
Award: 11-6-2013																									
HECO-2 Authorization for Funding																									
Pre-Design w/ WMBC, CRT, AARB, DRB																									
Concept Plan Approval				X																					
Student/Community Support Meeting																									
Pedestrian & Vehical Traffic Analysis																									
Schematic Design Reviews																									
DRB Site/Architectural Review & Approval																									
AARB Architectural Approval (HECO-4)																									
Final Schematic Design Approval					X																				
Initiate Preliminary Design																									
Preliminary Dwgs & Specs Reviews																									
WMBC, CRT, AARB, DRB Approval							X																		
HECO-5 Authorization																									
Final Preliminary Dwgs & Specs Approval																									
Issue Contracts to Subs																									
Request Demolition & Site Permits																									
Initiate Working Dwgs																									
Site Testing																									
Working Dwgs & Specs Review																									
Dwgs Revisions 50% Complete								X																	
Demolition & Utility Preparation																									
Structural Planning																									
Sub-Contractor & Material Submittals																									
Dwg Revisions 80%(Fnd, Core & Shell 100%)									X																
HECO-6 Authorization of Working Dwgs																									
Systems Permits (Site, Fdn, etc)																									
Statement of Structural & Special Inspections																									
City of Williamsburg Approval																									
Working Dwgs & Specs Approval by CRT																									
Student/Community Support Meeting																									
Collect All Final Building Permits									X																
Pedestrian & Vehical Reroute																									
Excavation & Utilities									X																
Geotech Engineer Inspection																									
Pour Foundations																									
Detail & Finishes Dwgs 100% & Approval																									
Structural Steel & Concrete Elements														O											
Enclosure														O	X										
MEP Rough-In																									
Interior Finishes																		O							
Exterior & Landscaping Finishes																					X				
State Fire Marshall & CRT Inspection																									
Certificate of Completion (HECO-13.1/2)																									
Certificate of Use and Occupancy																						X			
Project Completion Report (HECO-14): 7-7-2015																									

X: Project Checkpoint
O: Finals Week, Minimal Construction

ii. Link between schedule and approach

The schedule seen above is a an estimate of both the design and construction timing based on the College of William and Mary Facilities Management Design and Construction Manual (October 2007). Due to the selected delivery method of design-build, many activities will be able to overlap and the overall project will be completed in a timely manner. Once the excavation, utilities and foundation plans are complete and approved this construction can begin. This allows the designers to be more innovative and less rushed with the details of the interior and still stay on schedule. The required reviews and approvals have been allowed enough time to consider the busy schedules of all review committee members involved. Often there are necessary revisions to be made as well which is considered in the extended timing of these tasks.

The involvement of the student population is also very important to the project and Buffalo Design-Build will work hard to incorporate their ideas and opinions based on feedback in both student/community support meetings. Ultimately the students are most important to this project, so extra steps will be taken to ensure that the construction process will not negatively affect their campus experience. Construction workdays will not begin before 8:00am and will finish by 6:30pm so as to not disrupt the sleep and study patterns of the students. Also, construction will be halted as much as possible during the weeks of final exams so that students can have a quiet study environment.

To ensure timeliness, checkpoints have been incorporated into the schedule for key tasks to keep the project on track. It is evident that many of these checkpoints are around the first week of July because it is our goal to break ground on the project by July 7, 2014. This way most of the large and louder elements involved with excavation will be gone from campus by the time classes resume in the fall. There is also a checkpoint at the end of enclosure to seal off the building before the coldest weather of January and February hits. The project will be completed by July 7, 2015 at the latest. The members of Buffalo Design Build pride ourselves on our attention to scheduling and we make it a priority to stay on track throughout the entire design and construction process.

9. Cost Comparison

i. Cost estimating spreadsheet

William and Mary Residence Hall
Request For Qualifications
Structural System Comparison Worksheet
ATTACHMENT 5
All shaded cells have formulas.
System elements identified are suggestions only - delete/change/add elements as required

OPTION I
2-Way Concrete Flat Plate (Post Tensioned)

3 000 Floor SF | 2 630 Skin SF (Assume 100' perimeter) | 12' 0" Flr to Flr

CSI	DESCRIPTION	QUANTITY	UNIT	UNIT COST	ITEM COST	CSI TOTAL	SECTION TOTAL	COST/ SQ. FT.
STRUCTURAL SYSTEM							$99 735	$33,25
03100	**Concrete Formwork (Horizontal)**					25 050		$8,35
	* Post Tension Slabs	334,00	C.Y.	75,00	25 050			
	* Concrete Slab							
03200	**Concrete Reinforcement**					26 129		$8,71
	* Columns	16,00	Ea.	19,44	311			
	* Post Tension Tendons (1.1 #/SF)	3 300,00	Ea.	0,76	2 508			
	* Post Tension Slab Reinforcement (1.25 #/SF)	3 750,00	Ea.	0,80	3 000			
	* Mild Slab Reinforcement (5.8 #/SF)	17 400,00	Ea.	0,80	13 920			
	* WWF	3 000,00	S.F.	1,10	3 300			
	* Deck Chairs, Bolsters & Accessories	3 000,00	S.F.	1,03	3 090			
	* xxxxxxxxxxxxxxx							
03300	**Concrete - Form, Place, Finish**					48 556		$16,19
	* Columns	16,00	Ea.	1 539,00	24 624			
	* PT Slab	3 000,00	S.F.	7,04	21 120			
	* Composite Concrete Slab		S.F.					
	* Pump requirements	1,00	Days	787,38	787			
	* Supervisions requirements	45,00	Hrs.	45,00	2 025			
	* xxxxxxxxxxxxxxx							
	* xxxxxxxxxxxxxxx							
	* xxxxxxxxxxxxxxx							
05100	**Structural Steel**							
	* Steel open web joists							
	* xxxxxxxxxxxxxxx							
05400	**Structural Metal Studs**							
	* Steel bridging studs							
	* xxxxxxxxxxxxxxx							
	* xxxxxxxxxxxxxxx							
	* xxxxxxxxxxxxxxx							
FOUNDATION SYSTEMS							$52 344	$17,45
02380	**Auger Cast Piles**					28 224		$9,41
	* 14" Diameter Auger Cast Pile 32' Depth	1 152,00	V.L.F.	24,50	28 224			
	* 10" Diameter Auger Cast Pile 32' Depth							
03200	**Concrete - Reinforcement**					3 000		$1,00
	* Concrete Slab on Grade Reinforcement	3 750,00	Ea.	0,80	3 000			
	* xxxxxxxxxxxxxxx							
	* xxxxxxxxxxxxxxx							
	* xxxxxxxxxxxxxxx							
03300	**Concrete - Form, Place, Finish**					21 120		$7,04
	* Slab on Grade	3 000,00	S.F.	7,04	21 120			
	* xxxxxxxxxxxxxxx							
	* xxxxxxxxxxxxxxx							
	* xxxxxxxxxxxxxxx							
Note:	**Identify what factor was used for the dfference in foundation system design**							
FIREPROOFING COSTS							$280	$0,09
07811	**Fireproofing**					280		$0,09
	* Firestopping @ Slab Edge	219,08	L.F.	1,28	280			
	* xxxxxxxxxxxxxxx							
	* xxxxxxxxxxxxxxx							
ENCLOSURE SYSTEMS							$13 689	$4,56
05400	**6" Metal Stud Exterior**					1 390		$0,53
	* Exterior Metal Framing System (Per 10' x 10' Bay)	20,00	Ea.	69,50	1 390			
	* xxxxxxxxxxxxxxx							
05500	**Miscellaneous Metals**					159		$0,06
	* Slab Edge Embeds for Support of Skin Elements	24,00	Ea.	3,76	90			
	* Misc metals for attachment of exterior elements	24,00	Ea.	2,86	69			
	* xxxxxxxxxxxxxxx							
07100	**Waterproofing**					395		$0,15
	* Enclosure Moisture Barrier (15# Felt)	2 630,00	S.F.	0,15	395			
	* xxxxxxxxxxxxxxx							
07200	**Thermal Insulation**					2 998		$1,14
	* 6" Batt Insulation	2 630,00	S.F.	1,14	2 998			
	* xxxxxxxxxxxxxxx							
07900	**Caulking & Sealants**					622		$0,24
	* Enclosure Joint Sealants	486,16	L.F.	1,28	622			
	* xxxxxxxxxxxxxxx							

OPTION II
Load Bearing Metal Studs with NAME SYSTEM BEING EVALUATED

3 000 Floor SF | 2 630 Skin SF (Assume 100' perimeter) | 12' 0" Flr to Flr

CSI	DESCRIPTION	QUANTITY	UNIT	UNIT COST	ITEM COST	CSI TOTAL	SECTION TOTAL	COST/ SQ. FT.
STRUCTURAL SYSTEM							$91 044	$30,35
03100	**Concrete Formwork (Horizontal)**					12 525		$4,18
	* Concrete Slab	167,00	C.Y.	75,00	12 525			
03200	**Concrete Reinforcement**					20 310		$6,77
	* Columns							
	* Post Tension Tendons (1.1 #/SF)							
	* Post Tension Slab Reinforcement (1.25 #/SF)							
	* Mild Slab Reinforcement (5.8 #/SF)	17 400,00	Ea.	0,80	13 920			
	* WWF	3 000,00	S.F.	1,10	3 300			
	* Deck Chairs, Bolsters & Accessories	3 000,00	S.F.	1,03	3 090			
	* xxxxxxxxxxxxxxx							
03300	**Concrete - Form, Place, Finish**					48 556		$16,19
	* Columns	16,00	Ea.	1 539,00	24 624			
	* PT Slab	3 000,00	S.F.	7,04	21 120			
	* Composite Concrete Slab		S.F.					
	* Pump requirements	1,00	Days	787,38	787			
	* Supervisions requirements	45,00	Hrs.	45,00	2 025			
	* xxxxxxxxxxxxxxx							
	* xxxxxxxxxxxxxxx							
	* xxxxxxxxxxxxxxx							
05100	**Structural Steel**					7 061		$2,35
	* Steel open web joists	756,00	L.F.	9,34	7 061			
	* xxxxxxxxxxxxxxx							
05400	**Structural Metal Studs**					2 592		$0,86
	* Steel bridging studs	24,00	Row	108,00	2 592			
	* xxxxxxxxxxxxxxx							
	* xxxxxxxxxxxxxxx							
	* xxxxxxxxxxxxxxx							
FOUNDATION SYSTEMS							$42 103	$14,03
02380	**Auger Cast Piles**					17 983		$5,99
	* 10" Diameter Auger Cast Pile 32' Depth	1 152,00	V.L.F.	15,61	17 983			
03200	**Concrete - Reinforcement**					3 000		$1,00
	* Concrete Slab on Grade Reinforcement	3 750,00	Ea.	0,80	3 000			
	* xxxxxxxxxxxxxxx							
	* xxxxxxxxxxxxxxx							
	* xxxxxxxxxxxxxxx							
03300	**Concrete - Form, Place, Finish**					21 120		$7,04
	* Slab on Grade	3 000,00	S.F.	7,04	21 120			
	* xxxxxxxxxxxxxxx							
	* xxxxxxxxxxxxxxx							
	* xxxxxxxxxxxxxxx							
FIREPROOFING COSTS							$280	$0,09
07811	**Fireproofing**					280		$0,09
	* Firestopping @ Slab Edge	219,08	L.F.	1,28	280			
	* xxxxxxxxxxxxxxx							
	* xxxxxxxxxxxxxxx							
ENCLOSURE SYSTEMS							$13 689	$4,56
05400	**6" Metal Stud Exterior**					1 390		$0,53
	* Exterior Metal Framing System (Per 10' x 10' Bay)	20,00	Ea.	69,50	1 390			
	* xxxxxxxxxxxxxxx							
05500	**Miscellaneous Metals**					159		$0,06
	* Slab Edge Embeds for Support of Skin Elements	24,00	Ea.	3,76	90			
	* Misc metals for attachment of exterior elements	24,00	Ea.	2,86	69			
	* xxxxxxxxxxxxxxx							
07100	**Waterproofing**					395		$0,15
	* Enclosure Moisture Barrier (15# Felt)	2 630,00	S.F.	0,15	395			
	* xxxxxxxxxxxxxxx							
07200	**Thermal Insulation**					2 998		$1,14
	* 6" Batt Insulation	2 630,00	S.F.	1,14	2 998			
	* xxxxxxxxxxxxxxx							
07900	**Caulking & Sealants**					622		$0,24
	* Enclosure Joint Sealants	486,16	L.F.	1,28	622			
	* xxxxxxxxxxxxxxx							

William and Mary Residence Hall
Request For Qualifications
Structural System Comparison Worksheet

ATTACHMENT 5
All shaded cells have formulas.
System elements identified are suggestions only - delete/change/add elements as required

CSI	DESCRIPTION	OPTION I 2-Way Concrete Flat Plate (Post Tensioned) 3 000 Floor SF 2 630 Skin SF (Assume 100' perimeter) 12' 0" Flr to Flr							OPTION II Load Bearing Metal Studs with NAME SYSTEM BEING EVALUATED 3 000 Floor SF 2 630 Skin SF (Assume 100' perimeter) 12' 0" Flr to Flr						
		QUANTITY	UNIT	UNIT COST	ITEM COST	CSI TOTAL	SECTION TOTAL	COST/ SQ. FT.	QUANTITY	UNIT	UNIT COST	ITEM COST	CSI TOTAL	SECTION TOTAL	COST/ SQ. FT.
STRUCTURAL SYSTEM							$99 735	$33,25						$91 044	$30,35
03100	**Concrete Formwork (Horizontal)**					25 050		$8,35					12 525		$4,18
	* Post Tension Slabs	334,00	C.Y.	75,00	25 050										
	* Concrete Slab								167,00	C.Y.	75,00	12 525			
03200	**Concrete Reinforcement**					26 129		$8,71					20 310		$6,77
	* Columns	16,00	Ea.	19,44	311										
	* Post Tension Tendons (1.1 #/SF)	3 300,00	Ea.	0,76	2 508										
	* Post Tension Slab Reinforcement (1.25 #/SF)	3 750,00	Ea.	0,80	3 000										
	* Mild Slab Reinforcement (5.8 #/SF)	17 400,00	Ea.	0,80	13 920				17 400,00	Ea.	0,80	13 920			
	* WWF	3 000,00	S.F.	1,10	3 300				3 000,00	S.F.	1,10	3 300			
	* Deck Chairs, Bolsters & Accessories	3 000,00	S.F.	1,03	3 090				3 000,00	S.F.	1,03	3 090			
	* xxxxxxxxxxxxxxx														
03300	**Concrete - Form, Place, Finish**					48 556		$16,19					48 556		$16,19
	* Columns	16,00	Ea.	1 539,00	24 624				16,00	Ea.	1 539,00	24 624			
	* PT Slab	3 000,00	S.F.	7,04	21 120										
	* Composite Concrete Slab		S.F.						3 000,00	S.F.	7,04	21 120			
	* Pump requirements	1,00	Days	787,38	787				1,00	Days	787,38	787			
	* Supervisions requirements	45,00	Hrs.	45,00	2 025				45,00	Hrs.	45,00	2 025			
	* xxxxxxxxxxxxxxx														
	* xxxxxxxxxxxxxxx														
	* xxxxxxxxxxxxxxx														
05100	**Structural Steel**												7 061		$2,35
	* Steel open web joists								756,00	L.F.	9,34	7 061			
	* xxxxxxxxxxxxxxx														
05400	**Structural Metal Studs**												2 592		$0,86
	* Steel bridging studs								24,00	Row	108,00	2 592			
	* xxxxxxxxxxxxxxx														
	* xxxxxxxxxxxxxxx														
	* xxxxxxxxxxxxxxx														
FOUNDATION SYSTEMS							$52 344	$17,45						$42 103	$14,03
02380	**Auger Cast Piles**					28 224		$9,41					17 983		$5,99
	* 14" Diameter Auger Cast Pile 32' Depth	1 152,00	V.L.F.	24,50	28 224										
	* 10" Diameter Auger Cast Pile 32' Depth								1 152,00	V.L.F.	15,61	17 983			
03200	**Concrete - Reinforcement**					3 000		$1,00					3 000		$1,00
	* Concrete Slab on Grade Reinforcement	3 750,00	Ea.	0,80	3 000				3 750,00	Ea.	0,80	3 000			
	* xxxxxxxxxxxxxxx														
	* xxxxxxxxxxxxxxx														
	* xxxxxxxxxxxxxxx														
03300	**Concrete - Form, Place, Finish**					21 120		$7,04					21 120		$7,04
	* Slab on Grade	3 000,00	S.F.	7,04	21 120				3 000,00	S.F.	7,04	21 120			
	* xxxxxxxxxxxxxxx														
	* xxxxxxxxxxxxxxx														
	* xxxxxxxxxxxxxxx														
Note:	**Identify what factor was used for the dfference in foundation system design**														
FIREPROOFING COSTS							$280	$0,09						$280	$0,09
07811	**Fireproofing**					280		$0,09					280		$0,09
	* Firestopping @ Slab Edge	219,08	L.F.	1,28	280				219,08	L.F.	1,28	280			
	* xxxxxxxxxxxxxxx														
	* xxxxxxxxxxxxxxx														
ENCLOSURE SYSTEMS							$13 689	$4,56						$13 689	$4,56
05400	**6" Metal Stud Exterior**					1 390		$0,53					1 390		$0,53
	* Exterior Metal Framing System (Per 10' x 10' Bay)	20,00	Ea.	69,50	1 390				20,00	Ea.	69,50	1 390			
	* xxxxxxxxxxxxxxx														
05500	**Miscellaneous Metals**					159		$0,06					159		$0,06
	* Slab Edge Embeds for Support of Skin Elements	24,00	Ea.	3,76	90				24,00	Ea.	3,76	90			
	* Misc metals for attachment of exterior elements	24,00	Ea.	2,86	69				24,00	Ea.	2,86	69			
	* xxxxxxxxxxxxxxx														
07100	**Waterproofing**					395		$0,15					395		$0,15
	* Enclosure Moisture Barrier (15# Felt)	2 630,00	S.F.	0,15	395				2 630,00	S.F.	0,15	395			
	* xxxxxxxxxxxxxxx														
07200	**Thermal Insulation**					2 998		$1,14					2 998		$1,14
	* 6" Batt Insulation	2 630,00	S.F.	1,14	2 998				2 630,00	S.F.	1,14	2 998			
	* xxxxxxxxxxxxxxx														
07900	**Caulking & Sealants**					622		$0,24					622		$0,24
	* Enclosure Joint Sealants	486,16	L.F.	1,28	622				486,16	L.F.	1,28	622			
	* xxxxxxxxxxxxxxx														

ii. Pro and cons of systems

A takeoff cost comparison of a steel structural system and a concrete structural system reveals that there is a large difference between the two. Each system has its benefits but also its shortcomings. The steel structural system is overall easier and quicker to install. This is due in part to the fact that the materials are significantly lighter. The light weight of the superstructure results in an overall lower total weight. This total weight affects the foundation system as well. A superstructure means that a lighter foundation can be used which decreases total cost and construction time. The materials are also generally purchased for a much cheaper price than concrete. However, the resulting steel structure will not be nearly as strong as a concrete system would be. Structural steel system are also more complicated than concrete during the design process.

There are positives and negatives to both systems and they affect the design and construction phases in opposite ways. While a steel system makes for easier construction, a concrete system makes for a much less complicated design phase. Overall, cost is generally a very important deciding factor and for this reason a steel structural system is the best option.

10. Miscellaneous Considerations

i. Claims/litigation history of Firm

Buffalo Design Build is a large nationwide contractor and as such becomes involved in claims and litigations that usually arise in the course of its business. Company-wide data of this scope is not readily available and this information cannot be accurately ascertained. However, no such disputes or litigation is likely or expected to adversely affect Buffalo Design Build's ability to perform his work. However, Buffalo Design Build's local office, Buffalo Design-Build Virginia, has not been involved in any applicable lawsuit in the last 5 years.

ii. Current Workload

The current projects presented below are the projects managed by personnel mainly from the Buffalo Design Build local office, Buffalo Design Build Virginia, but including personnel from other regional offices as well. Being a large nationwide design-build contractor enables Buffalo Design Build to quickly mobilize personnel from other regional offices or divisions.

Virginia Beach Community Hospital Emergency Facility

- Completion: 90%
- Services Provided: Contractor-led Design Build project management, Architecture, MEP, Medical Fluids (subcontracted), Structure, and Construction Management.
- Remaining time to complete: 2 months

The Carillon at Milford Retirement Community

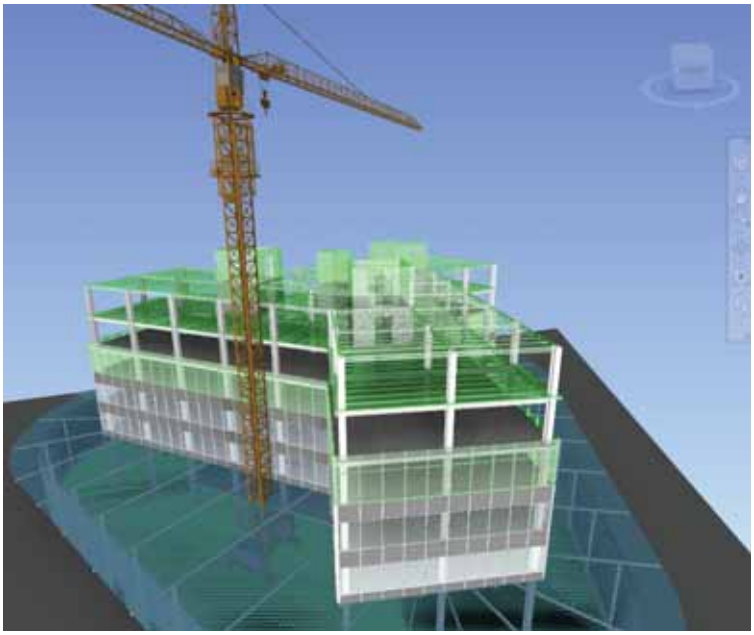
- Completion: 75%
- Services Provided: Contractor-led Design Build project management, Architecture, MEP, Structure, Landscaping, and Construction Management.
- Remaining time to complete: 5 months

iii. Other

The following excerpts are showing how we applied the Building Information modeling concepts on a major office tower project in Chicago. This project was designed and built by Buffalo Design Build Illinois.

Architectural view from the BIM model

Work packages visualization: 1 color = 1 work package = 1 week of work



4D animation of the construction process

11. Team Statement

Buffalo Design-Build has gathered an exceptional team, uniquely qualified to respond to the College of William and Mary's needs. Our team, while exceptionally qualified on their own, completes each other and has been specifically tailored for this project. It includes people with strong sustainable stewardship, community involvement but also strong respect for William & Mary's value and heritage. This translates in our open communication strategic approach to better understand and involve the community throughout the whole design and build process. Buffalo Design-Build believes this is the unique solution to provide a facility that interacts with its surroundings and the community.

The Buffalo Design-Build team also has a strong experience in working together on various projects including many student housing facilities and some living-learning environments. The team also has collectively more than 20 years of experience in LEED certified buildings. With an architect's experience in historic building restoration, William & Mary can be sure that their legacy will be preserved and valued. While overall building components may be contemporary, Buffalo Design-Build will utilize visual reminders of the colonial style such as wood and cobblestone accents to stay true to the existing style.

While respectful of tradition Buffalo Design-Build is also forward-looking and makes advanced use of the latest technologies. Building Information Modeling is at the core of our design and construction practices and helps up to be more flexible, reactive, and provide William & Mary the best value. Scheduling is one of the most prominent parts of any project and our attention to detail and consideration of the community boost us a step ahead of our competitors. We are innovative in our management practices with an extensive use of value-engineering and lean construction.

The success of Buffalo Design-Build is built on our ability to listen to the community and its history while providing state of the art technologies. This enables us to exceed the owner's expectations in terms of cost, schedule and value brought to the community.