

September 16, 2011

Grinnell College Building Committee  
Grinnell College  
1121 Park St.  
Grinnell, Iowa 50112-1690

RE: Grinnell College Design-Build Recreation Center/Multi-Purpose Fieldhouse

Dear Grinnell College Board of Directors,

Magnum Constructors is proud to present our proposal for the upcoming Recreation Center/ Multi-Purpose Fieldhouse at Grinnell College. Our goal is to provide premier design and construction services at best value by integrating, and maximizing the efficiency of both. Since our inception, Magnum has provided top-of-the-line quality while keeping schedule and budget a main priority. By utilizing the latest Building Information Modeling technology throughout the entire project to increase integration, collaboration, and as a means of clash detection, we are able to achieve our goal: to deliver a promise. We put our reputation on the line with every project. We look forward to providing premier services to a distinguished institution like Grinnell College.

When you choose Magnum Constructors, you don't just get a single line of communication for an entire project, but you also get nationally renowned safety and quality programs, multiple years of experience satisfying owner's project needs, and most importantly, you get piece of mind. Choosing Magnum allows you to be with a company that invests a great amount of effort to embrace the Design-Build method by staying current with a rapidly progressing industry and sustainable practices, and raises the bar with every project we complete.

Magnum Constructors would like to thank you for the opportunity to present our proposal for the Grinnell College Design-Build Recreation Center/ Multi-Purpose Fieldhouse. We look forward to and take pride in building a lasting relationship with Grinnell College.

The cost to complete this project will be \$27,899,771, and with a duration of 580 work days.

If you have any questions or concerns, please feel free to contact me personally.

Regards,

**Magnum Constructors**



Kyle Coffman  
President  
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303.979.4800

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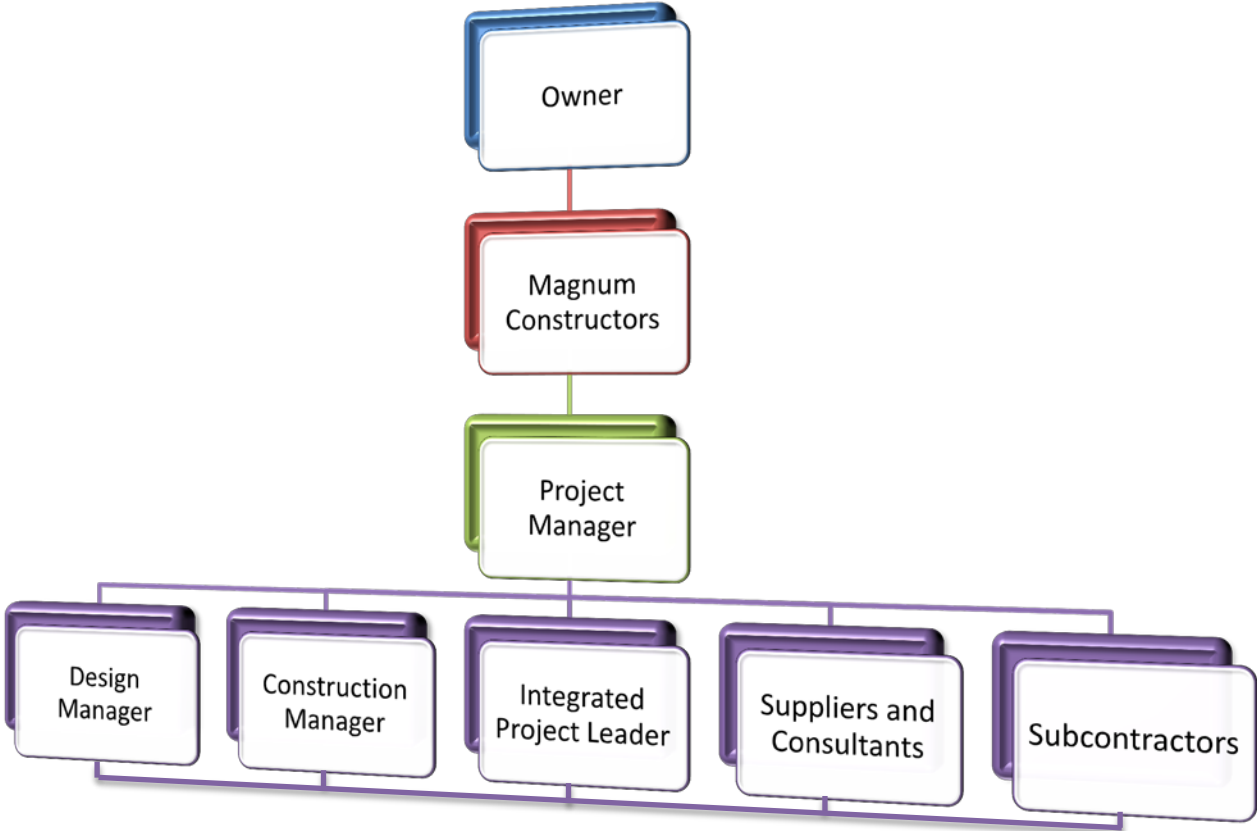
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# Project Team Organization

## Design-Build Team Approach

The model below shows the single line of communication between Grinnell College and Magnum Constructors. It also signifies how the Design-Build team has collaboration between all disciplines.



## Job Descriptions

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Magnum Constructors is dedicated to maximizing efficiency through team communication and collaboration. Our integrated approach to project organization allows us to maximize time and money by gathering ideas and input from the entire team in the conceptual phase.

Magnum is structured to be Design-Builders. As Design-Build we to commit to learning from one another and behave in a way that integrates the total project Design-Build team. To become a team, all members must let go of their ego and listen to the input that other professionals have and how everyone's opinion can create the most optimal outcome. We chose our team by carefully selecting members from various backgrounds and specialties. Because we have a special cultural fit within our team members it gives a unique perspective, where each discipline conspires to achieve the ultimate task of satisfying the owner's needs. With our technical expertise, business ethics, and diverse experience Magnum combines the optimal combination of performance.

Magnum Constructors holds a meeting in the proposal stage of each project where we bring in our project team, including: consultants, subcontractors, and strategic partners (including regulatory agencies and code officials). With everyone on the same team from day one, we are able to guarantee quality through creating synergy amongst one another. The objective is first and foremost to design and construct the project safely, on time and within budget, and to the expectations of the owner. Design-Build gives a unique opportunity to implement sustainable practices throughout the design and construction phases.

At Magnum we believe we have the best subcontractors and consultants on our team. Through continual effort we have built and maintained the trust and communication level to complete projects at the efficiency and quality for which we are known. Creating an environment of trust is an essential part of effectively operating a team. It is important everyone on the team understands that decisions will be made for the best interest of the project.

Magnum has a policy of committed openness. Committed openness means that everyone on the Design-Build team must have transparency, and all information is shared. By allowing everyone access to all information, we eliminate any need for distrust. This policy has shown continual success throughout Mangum's lifetime.

Magnum has a team structure that will be the most effective way to keep the project moving at maximum productivity. Kyle Coffman will be the project manager for the full duration of Grinnell College's Recreation Center/ Multi-Purpose Fieldhouse. The project manager will be the main point of contact between Grinnell College and Magnum Constructors. Coffman will be in charge of keeping the perspective of owner his top priority. The project manager maintains smoothness of communication and flow of the project as a whole. He will oversee the design development and construction phases ensuring the owner needs are being met throughout the project. Having this role within our own company is unique to Design-Build, and is crucial to the effectiveness of the project.

Ian Darnell will be the lead designer for the extent of the Recreation Center/ Multi-Purpose Fieldhouse. Because we have an in-house design team, we eliminate the need for RFI's. Ian will have the unique opportunity to incorporate the value engineering from the entire Design-Build team into the initial design and as construction proceeds. This allows for a more savings and higher value for Grinnell College. The owner will be aware of any changes in design at regular development meetings.

Zach Belsey will be the superintendent for Grinnell College's Project. The superintendent will be responsible for making sure the budget and schedule are met. The superintendent is essential during the design and construction phases. Not only will the superintendent be giving input about constructability of the design, but also about budget and schedule issues that may arise from the design. By highlighting these topics early in the design, the construction phase will run infinitely smoother.

Other important team members will include all subcontractors, consultants, suppliers, sustainability consultants, and others that will be involved in construction and design. It is essential that these members are involved from the preliminary meeting in the proposal stage of the project so everyone is on the same page from the very beginning. All members will have equal access to information about the project and are encouraged to give feedback about their disciplines early in the project to enhance the flow the design and construction phases early on.

## Design-Build Philosophy

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### Strategic Project Approach

Magnum Constructors will be utilizing BIM as a main tool for 5D modeling, communication, and project planning. For us, BIM is not just the modeling software we use, but a complete management tool that accurately measures the schedule, cost, and building progress. Through properly applying BIM into whole project systems, we are able to obtain complete and accurate: schedules, estimates and drawings whenever the project or owner demands. BIM will be our tool for other purposes as well; we will use a communication line that is integrated into the software. PC's and now tablet computers are being implemented onsite to show real time drawing updates and communication line between the designers and contractors. Magnum is able to use this web based technology to completely eliminate the delays that were associated with bouncing emails through a long line of associates. The owner will also be trained on BIM software so that increased communication with the owner may be utilized. The owner can instantly view the current design and comment on anything he wants implemented or changed. These elements of BIM, which are usually associated with integrated project delivery, have equally important roles in Design-Build.

Since BIM's emergence in the construction industry, Magnum has been the first to implement the benefits of the advanced system. Magnum realizes in order to get ahead in this industry we must be able to adapt to an ever-changing technological environment. By doing this, Magnum has shown that it will be continually competitive with some of the largest construction companies in the business. Projects that fully utilize this advanced technology are shown to be more advanced in term of climate management, energy efficiency, and many other aspects. Magnum is able to successfully create a "smart building." We consider a smart building to be a building that has technology designed into it to recognize when to perform specific tasks to make itself more energy efficient. For example, we have created buildings that are able to recognize when the building is too hot and the air outside is at an appropriate temperature, so the building will automatically open the windows to cool the building off without needing to run energy intrusive air conditioning systems. This and many other sustainable and technologically advanced systems can be discussed if Grinnell decides advanced technology is something desired in the proposed building.

Magnum will hold a community outreach meeting at the beginning of the project as well as regular intervals throughout the completion of the project. These meetings will allow the college and town communities to tell Magnum Constructors what they expect to see in their new Recreation Center/ Fieldhouse. A college campus is the best place for innovative ideas and Magnum will utilize these valuable resources to deliver the best building for the community as well as the owner. The college community will be encouraged to attend these meetings and share their ideas with design on how to best facilitate the college environment so that construction does not impact the students valuable learning experience. All ideas brought up will be discussed with the owner for feasibility and possible impact on project if implemented. Magnum will also show finished designs of the

proposed buildings along fencing of the project so that students will be able see first-hand what they can look forward to upon project completion.

## **Quality Assurance**

Magnum Constructors believes in the philosophy “Do it right when no one is looking.” Quality is something that is ingrained in the values of our company. Magnum Constructors is proud to say that over 70% of our annual revenue is from repeat clients. Our clients continue to work with Magnum Constructors because we stick to a stringent quality program utilizing in house and third party testing agencies, and quality control forms for all work being constructed on our jobs. In addition we select subcontractors and vendors that share the same philosophy; this will guarantee the complete project team is on the same page when it comes to quality. The quality assurance program we have in place for our design team entails weekly quality meetings with our structural, architects, mechanical designers, contractors and subcontractors to insure the projects constructability throughout the duration of the design phase.

Magnum has a high reputation for producing high quality buildings. Since the creation of the company, we have continually exceeded all quality standards that are in the industry. Later, Magnum decided that the industry quality standard were not enough for us to call requirements. We created our own quality standards so that we would always be bettering our quality and therefore adding value to our company and each project we completed. Each project Magnum takes on, we make it our personal goal to beat our last project in performance and quality. This keeps Magnum at the top of the industry and brings premiere owners like Grinnell College to want to contract with our company. Its owners like Grinnell that keep Magnum challenging our competitor to meet our quality standards.

When awarded the project for Grinnell College Recreation Center/ Fieldhouse, Magnum will immediately be going over what quality standards we will be meeting and what quality goal we would like to achieve to beat our quality from our previous project. Grinnell will always have the final say in which standards they would like to go into their project. If desired and feasible, Magnum will make the new Grinnell project the envy of the industry for quality and sustainable design standards.

Sustainable features can be directly related to quality standards. By making the Recreation Center/Fieldhouse LEED Gold, you are already adding quality and value to your building. Magnum makes sure that all LEED features are installed with low maintenance, and easily operable. Almost all LEED features that will be implemented in the building will be operated automatically. This ensures that maximized efficiency is being achieved without any additional effort or training.

## **Selection Method**

Design-Build requires a complete team involvement from design through construction in order to reach substantial completion on the desired date. Magnum Constructors will provide Grinnell College with the

highest value sub-contractors, consultants, materials, and suppliers. Value is achieved by understanding a company's approach to safety, discovering their philosophy on quality and researching past project history. Magnum Constructors always select a company that creates value for the project.

Magnum Constructors believes in the team mentality of Design-Build, it is also important that the selection of sub-contractors, consultants, materials, and suppliers be analyzed to make high valued decisions. To do this, we select sub-contractors that provide our clients with the best value service per the specific project. We prefer to utilize successful sub-contractors that we have worked with on previous jobs. The reason for this is because Magnum Constructors subs out about 90% of our work and with this being a Design-Build project, having a good relationship will allow the project to run smoothly.

In selecting consultants we again use our value selection method. Consultants are an integral part of our projects providing feedback and suggestions that Magnum might not see at first glance. These checks allow our projects to be turned over to our clients with the certainty that we have done everything possible to make the owners dream a reality.

We select our materials and suppliers based on a reputation for quality and value. Having higher quality materials greatly increases the value of the building over time. At Magnum Constructors, we want to ensure the building we provide you with will continue to have the same value for generations to come.

In order to deliver a complete and cost competitive proposal for the Grinnell College's Recreation Center/ Multi-Purpose Fieldhouse, we short list all sub-contractors, consultants, materials, and suppliers based on the value aspects we have provided. The short list will then prepare estimates for us to include in the total project proposal. We ensure that all quotes provided by materials and suppliers are based on the best value for the project at hand.

Using these methods, we have constructed multiple projects that have obtained national recognition for quality and sustainability. If awarded the Grinnell College Recreation Center/Multi-Purpose Fieldhouse we can add another nationally renowned building to our quality driven repertoire.

## **Manage and Track Schedule**

Magnum Constructors has a specific team member, called the integrated project leader; that is dedicated to ensuring that with each new design passed it will be checked and approved for schedule and budget constraints. The integrated project leader is the main source of communication between all disciplines and will know what is going on for all construction and design phases. This individual will report daily to the superintendent of any new or upcoming design changes and how they will affect long term and short term schedule.

The integrated project leader position was established due to the constant changing environment that is associated with Design-Build. Magnum has had great success utilizing this highly qualified individual to coordinate schedule and communicate between the disciplines. Since the position inception, Magnum has

experienced decreased schedule by 25% and increased productivity by 50%. With these numbers it is fair to say that this could very well be the most important position in the Design-Build process.

We chose the integrated project leader to manage the schedule because of the extremely high communication level the position has between the disciplines. The position is required to consider the timeline of the owner first. But when looking at schedule, he must also pay attention to when the design of various phases needs to be completed and how much lead time the construction team needs to have in order to maximize efficiency. The integrated project leader is an integral part of the team and is highly respected within the company.

In Design -Build, the material procurement schedule is slightly more difficult to manage because complete material quantities may not be completely known until after construction starts. This can create problems with fast-tracking a project and scheduling material deliveries for products that have a high lead time for procurement. The integrated project leader is in charge of managing what materials need high lead times for procurement and to have the design team produce accurate quantities for those materials with enough time for them to be appropriately ordered. Our integrated project leader has done a great job at this task, and we can boast having one of the most successful fast-track systems in the industry.

The Project Manager will be the team member responsible for making sure that subcontractors are starting and completing work when they are required. Magnum spends great effort to choose sub-contractors that are familiar with the Design-Build system. Accept that their schedule has the potential to change at any time in the project, and will be required to adapt to this schedule. The sub-contractors we chose are happy to accommodate because they are brought into the project from the beginning, so they are able to understand what comes with our Design-Build projects. We have maintained a great rapport with the sub-contractors that we have done business with because they appreciate being asked how the project can be structured for each individual task to be completed at the highest efficiency possible. They understand that if they embrace the Design-Build system they will be able to complete more work at a higher efficiency, which results in profit for them.

With the work of the integrated project leader and the higher planning level at the beginning of the project, Magnum Constructors can claim shorter schedules compared to not only traditional Design-Bid-Build methods, but also among other Design-Build methods. Integrated Design-Build is the superior method for managing schedule, and is one of the main reasons Magnum embraces the method.

## **Change Orders**

Design-Build does greatly reduce costly change orders. Any design issues the contractor comes across that normally would result in a change order with a price and schedule increase are eliminated in Design-Build. Design-Build allows for fast communication between the design and construction disciplines on constructability issues. Historically this has reduced our change order amount by 60% below the national average. However, there are still situations when Magnum Constructors can issue a change order to the owner. The first scenario is

a scope change or disruption during the construction of the project. Understandably this will cause more design changes and can increase the previously determined budget and schedule. The other scenario is if there are unforeseen conditions on the site. When addressing these issues with Grinnell College, Magnum will put together a legal document stating what the change order was about, why it wasn't included in the original proposal and several different actions that Grinnell can take to correct the issue.

## **Construction Safety**

At Magnum Constructors our employees work by the Motto "Make it Personal, Take it Personal." We work by this motto so we can insure everyone goes home to his or her family every day. SAFETY is the number one priority on all of Magnum Constructors jobs. Magnum Constructors provide all of our employees with OSHA 30 hour safety training with no cost to our clients. Magnum Constructors provides all of our jobs with a full time safety manager for the full duration of the project to insure that all employees, subcontractors and surrounding community are safe at all times. Magnum Constructors has a job specific Accident Prevention Program (APP) that meets and beats all OSHA standards and regulations. Every person who comes on the jobsite has to go through a site specific safety orientation and APP training.

Magnum Constructors is proud to say that we have worked since 1986 with zero time loss injuries and have an EMR rating of 1.3; with this outstanding Safety record we have a higher bond rating and lower insurance premiums which is cheaper for our clients. At Magnum Constructors we believe that in order to achieve a quality project you must first have a safe project. Magnum Constructors understands not all injuries are preventable but we can insure Grinnell College that Magnum Constructors goes above and beyond to make a project safe.

Magnum has daily tailgate meetings that will go over the scope of work each day and what scope specific safety precautions need to be taken. All employees will attend those meetings that will be on the jobsite that day. Whether it is subcontractors, managers, owners' representatives, or even the president of the company, we believe no one is above getting injured and we make the necessary precautions to avoid it each and every day. In addition to the daily scope specific meetings, Magnum will require that each employee must complete monthly job training and informational meetings. These meetings will go over everything from awarding good practices that have been observed from the previous month to continually making our safety program better. We encourage employee recommendations on how to make the job site a safer place; this has proven to be exceptionally helpful in creating safety standards.

Magnum has been recognized by OSHA as being in the highest safety record category for companies younger than fifty years. This is an accomplishment that Magnum does not take lightly. We are committed to maintaining that standard, not for the awards and recognition that the company receives, but the fact that all of our employees can go home to their families each night is reward enough.

## Program Statement

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### Architectural Narrative

Grinnell needed to design and build a Recreation Center/ Multi-Purpose Fieldhouse to accommodate numerous design initiatives that do not fit the traditional university environment. Grinnell College has clearly outlined its strategic plan for end-user satisfaction and a regard for building life-cycle. Magnum Constructors presents our response to these critical expectations with the same enthusiasm. Our value-based goals for facility use and maintenance have one underlying objective – to optimize multi-use spaces, maximizing efficiency.

By meeting the Design-Build-Operate-Maintain RFP requirements, Magnum comprehensively identifies building performance levels. This was easily completed by utilizing a complete collaboration of integrated tactics. From the onset, the design team worked closely together, using BIM technology, allowing the development of appropriate building adjacencies to meet Grinnell’s overall aesthetic preferences; it also assisted in the development of below-grade athletic space considerations. The following is a list of additional development permits that most likely will be required from the City of Grinnell to construct the new facility:

- City of Grinnell Conditional Use Permit
- City of Grinnell Grading and Drainage Permit

Given the building site’s atypical shape, connection to the existing Darby Gymnasium, and a shallow water table, Magnum encountered some concerns, including: noise and vibration concerns relative to the adjacent railway, building access, and sustainability measures. Although zoning regulations implied a maximum of four stories, the design team delivered a three-story Recreation Center by the use of carefully thought-out MEP systems.

In facilitating the team to handle program conformity early on, anticipate problems before they arise, BIM will continue to be a key differentiator in the project’s end result – an aesthetically pleasing, cost effective, and functional building that excellently exceeds the college’s program requirements. A feature of this technology, design visualization allowed Magnum to gain an instant understanding of intricate space conditions. It supported early collaborative decision-making, reducing the bearing to project costs. Our design proficiency is rooted our integrated methods so as to encourage the design by verifying owner needs are being met. Additionally, BIM was used to analyze various construction methods and techniques and alert design team members of potential opportunities for efficiency while maintaining design intent. Because of these constructability reviews, rework on the project will be substantially reduced, which will greatly increase safety on the project.

Complete team collaboration reinforced the analysis of several innovations for sustainability, contributing to the LEED Gold certification essential to maintain Grinnell’s commitment to sustainable leadership. Sustainability plays a role in every aspect of the design, including the mechanical systems. Air filtration was a concern due to the volumetric nature of the Fieldhouse. In order to provide clean, dust-free air to the building

occupants, High Efficiency Particle Air filters were assessed to provide the most comfortable interior environment possible. These air purifiers provide excellent air purification of large spaces, having high energy ratings as well. As a result of the colder climate of Grinnell, Iowa, humidification of interior air is often necessary due to constant heating which makes the air drier, resulting in uncomfortable air quality and increased static electricity. Magnum designed the facility to make use of a vaporizer humidification system. In order to support indoor air quality, the facility was designed with central circulation paths and careful space planning allowed for spaces to share or borrow as much clean air intake as possible.

While our current design incorporates systems with high-efficiency equipment, there are numerous innovations that would make the Grinnell College Recreation Center/ Multi-Use Fieldhouse a more sustainable and accommodating facility. A mixing chamber would be highly beneficial to assist in controlling the ratio between the return, outside, and exhaust air. Another enhancement to the Grinnell facility would be a heat recovery device or exchanger, which may be fit to the air handler between supply and exhaust airstreams for extra energy savings and also to help increase capacity. We suggest a thermal wheel, or rotary heat exchanger as the most appropriate system by reason of Grinnell's variable outdoor temperatures. Heat recovery efficiency for the facility would be up to 80 percent in savings. Additionally vibration isolators can be installed into the air handling system to minimize vibration of attached ductwork; it can be further isolated by suspending it, which will ease the transfer of vibration through the floor. If Grinnell chooses to add to the scope of the project, we would be happy to provide a cost estimate that includes this added benefit.

## **Structural Narrative**

Magnum Constructors will be self-performing all structural work for the Grinnell College Recreation Center/ Multi-Purpose Fieldhouse. Because of the bulk of structural work that is required for this project, this will create substantial savings over subcontracting this scope, which Magnum will then pass over to Grinnell College allowing higher quality in other areas of the project.

Magnum has used a combination of structural steel, concrete slab-on-metal deck, and CMU foundation walls. The structure will meet all IBC 2009 and ASCE codes and specifications. Utilizing these systems will maximize the performance, while optimizing the fast-track method. The structure of the Recreation Center will meet all load requirements that are incorporated into the system now, and for any addition levels that Grinnell desires in the future. The Fieldhouse has been equipped with the hardware necessary to add an optional mezzanine in the future.

The steel column, girder and beam system is the best choice Design-Build because it has the best ability to adapt to changes involving project scope. Magnum Constructors has done a cost analysis for steel column, girder and beam system vs. other structural systems, and concluded that this system would be the best value for strength, speed and cost. Magnum has decided that the SOG flooring would be the best option, because it

provides the strength needed for the high impact nature of the building. The roofing structure chosen is steel girders and beam for the Fieldhouse to accommodate for high snow load possibilities.

The sustainable features of this project were chosen because they meet LEED criteria without jeopardizing strength of the structure. 90% post-consumer recycled steel was used when able to meet strength requirements. Utilizing this structural system increases the life cycle of this system, which will require less maintenance than other system possibilities.

## **Mechanical Narrative**

The Recreation Center/ Multi-Purpose Fieldhouse was designed with the end user in mind, keeping health, safety and comfort as top priorities. The mechanical systems for the Grinnell College Design-Build Recreation Center/Multi-Purpose Fieldhouse, Magnum Constructors identified the two systems would be different. With the Fieldhouse only requiring exhaust fans and intake louvers while the Recreation Center asking for a full HVAC system we have broken down the two in to the individual systems.

Per the RFP we have placed six exhaust fans and intake louvers in the Fieldhouse to meet the ASHRAE suggestion of 8 air exchanges per minute for ventilating a gymnasium that is 3,036,548 CF. Acoustical attenuators, used to reduce a fan's sound, increase the pressure drop of the AHU. Consider the disadvantages of high-efficiency but noisy fans that will require acoustical attenuation devices. These devices can negate the energy savings from face velocity reductions. The RFP states that there is a strong interest in having the Fieldhouse heated and cooled so Magnum Constructors stubbed in the duct for the potential augmentation of a heating and cooling system in the future, allowing for quick connection to two TRANE 360 ton roof-top units which can easily be installed. If Grinnell decides to heat and cool the Fieldhouse it will be an additional \$750,000 in total for the whole system. Per the RFP we have done a cost analysis for heating the Fieldhouse at \$36,439 annually and cooling costs of \$72,877 annually. The advantage of adding the heating and cooling system is that utilizing the campus steam/chiller plant will reduce the total amount of long term costs because Grinnell would not need to add expensive individual boilers and chillers.

The mechanical system we have utilized in the Recreation Center follows what the RFP has outlined. The four-pipe FCU's are a very important part of this projects design, and LEED goals. This upgraded system has a slightly higher initial cost, but will save Grinnell College money over the life of the system. Through increased efficiency, improved occupant comfort, and ease of maintenance. In allowing the FCU's to be individually controlled for example the athletic facilities will be able to lower the temperature in the winter when more people are occupying these areas which creates a higher temperature due to body heat will allow Grinnell to saving money. Again tying into the campus steam/chiller plant will result in a lower long run cost. Magnum Constructors will install a Building Monitoring System that allows Grinnell College to track the performance of individual units to help control over all system costs.

## **Electrical Narrative**

Standard, high quality products will be used for the basis of design. The following information outlines key portions of the design:

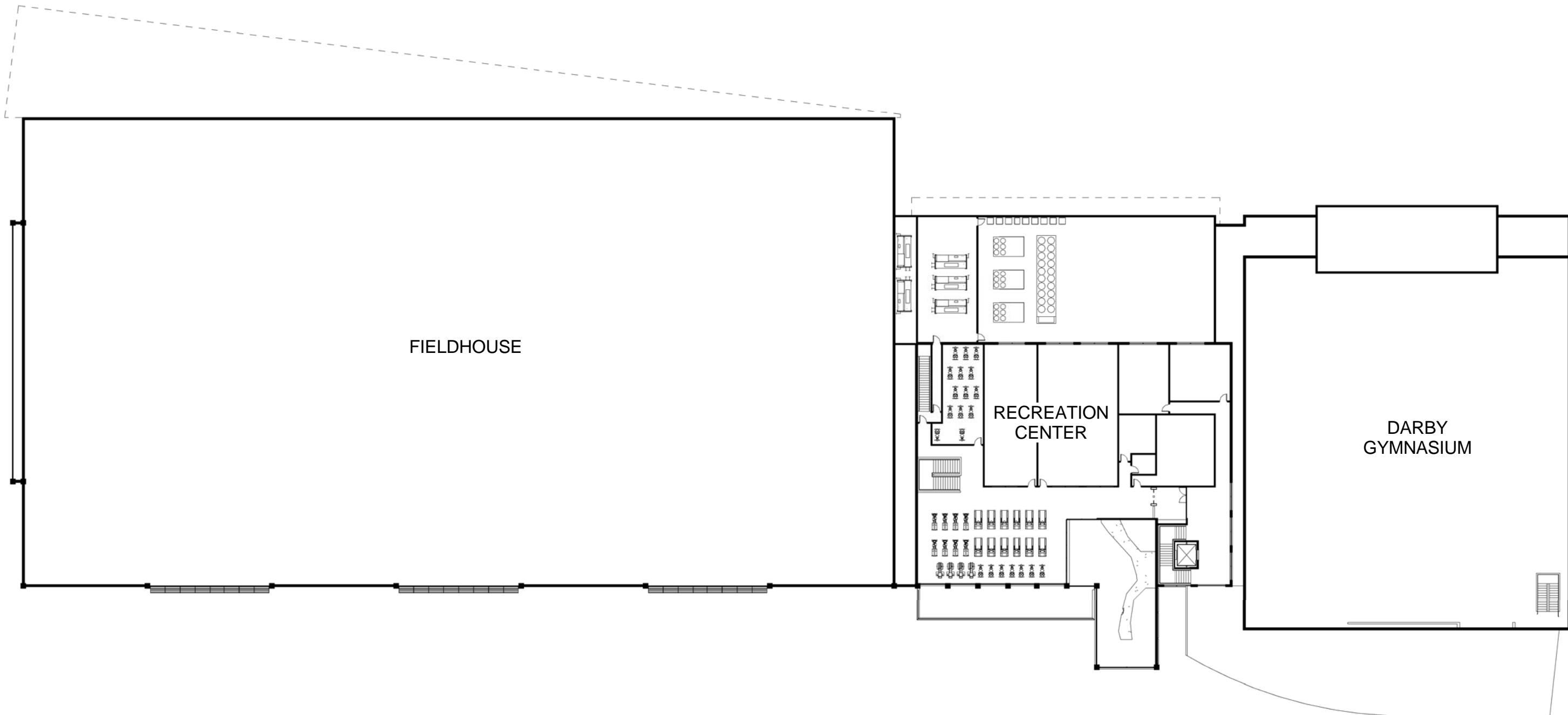
A 3-phase line extension will be expected to supply the new facility. This extension will begin at a riser pole located in the right-of-way of the service road east of the site, and continue to a pad-mounted utility transformer located in close proximity to the main mechanical/electrical room for the building. Alternatively, an existing

overhead transformer bank may be utilized. The correct routing and arrangement will be determined during design development. A single utility service will provide power to the building. This utility service will provide power to the building at 208Y/120 volts, 3-phase, 4-wire as described above.

Preliminary calculations indicate that an 800 Amp service will be required. A single main circuit breaker distribution panel located in a main electrical room will serve the building. The main distribution panel will allocate power to branch circuit panels located throughout the facility, and will comply with current regulations.

An on-site emergency back-up power generation system will be provided and will be sized to support the entire facility. At a minimum, the generator will be a Level 1, Type 10, Class 2 generator. This chamber will be connected to a sub-grade fuel/oil storage tank to supply and allow an extended run time. Additional panels, including emergency lighting and alarms, will be in compliance with Article 700 and 702 of the National Electric Code (NEC).

High-efficiency LED and fluorescent lighting will be employed in most interior spaces. In public areas the use of high output fixtures will be considered for efficiency. A range of fixture types will be used to distribute light in a controlled way that will be efficient, flexible and will complement the architecture in their respective spaces. To avoid the typical institutional look of most facilities, fixtures will be built into architectural elements as much as possible. Fixtures will meet the requirements of the Toxic Characteristic Leaching Procedure defined by the Environmental Protection Agency. Lighting concepts have been fully developed to include sustainable design solutions for daylight harvesting in areas with an abundance of natural daylight.

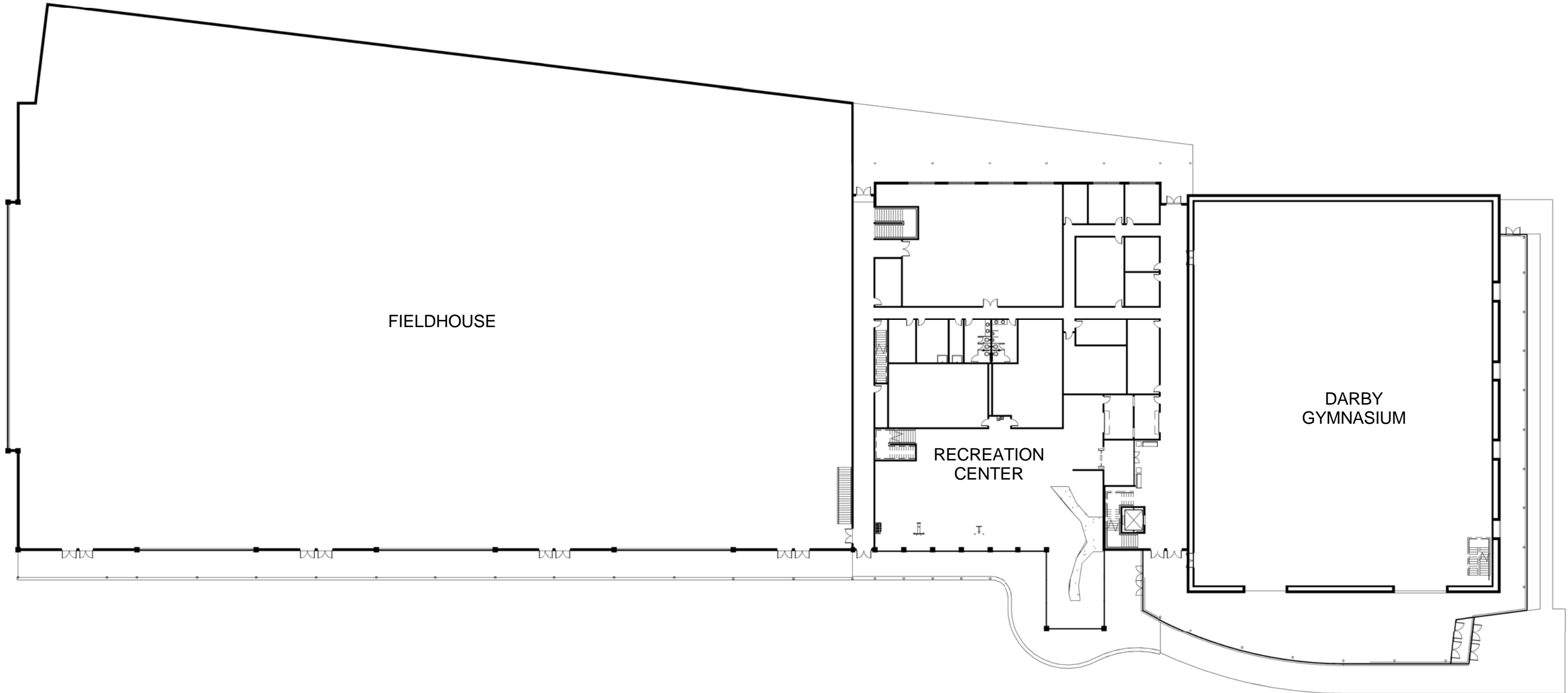


**UPPER LEVEL**

Scale 1" = 40'-0"

**Recreation Center/ Multi-Purpose Fieldhouse**

Grinnell College



FIELDHOUSE

RECREATION  
CENTER

DARBY  
GYMNASIUM

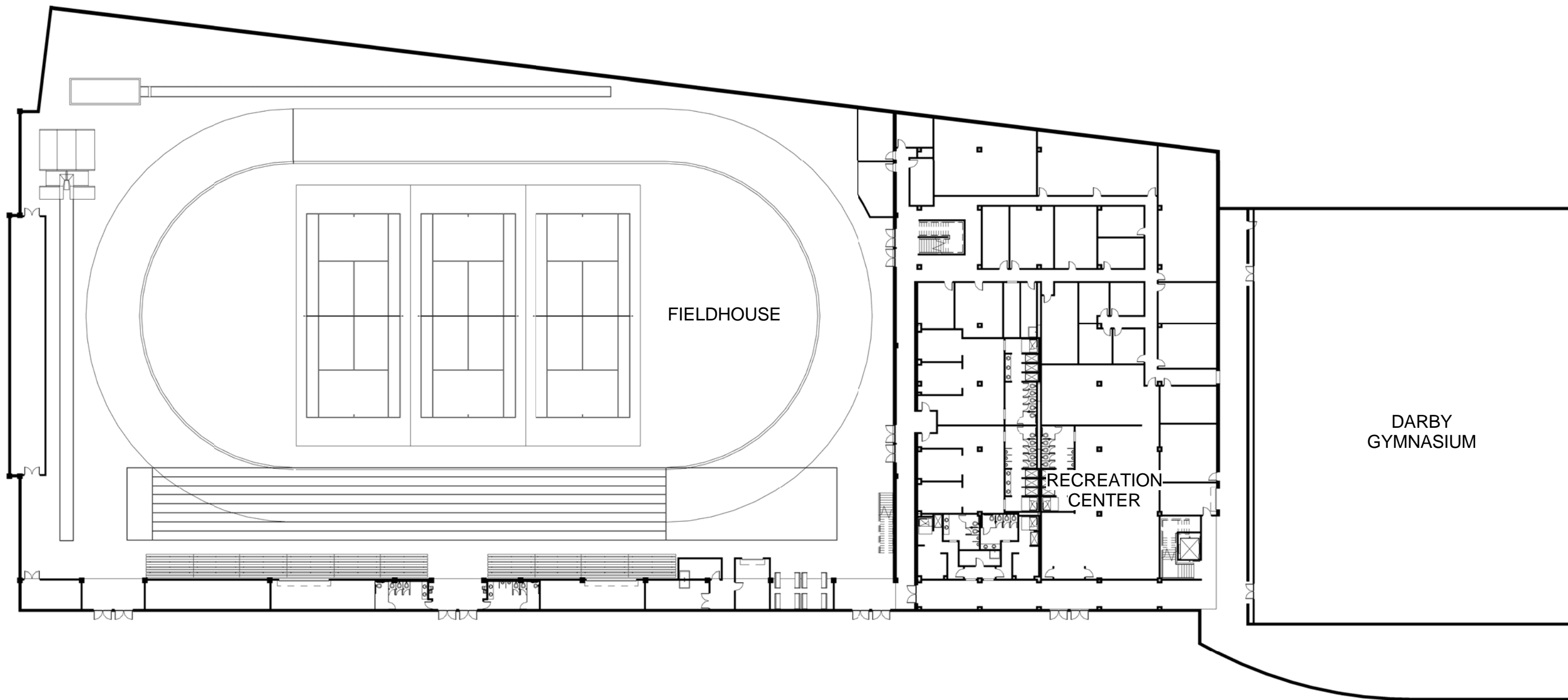


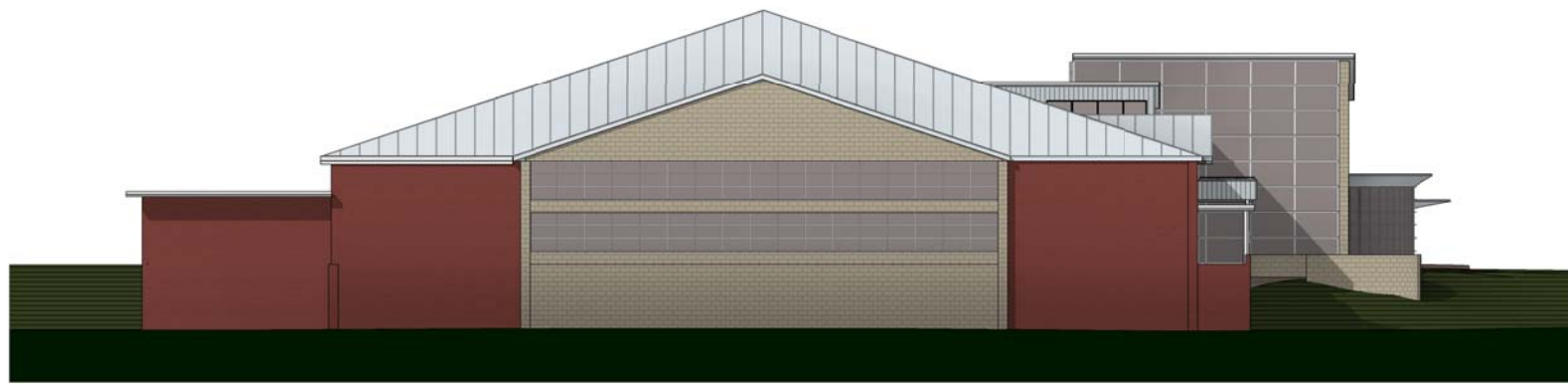
MAIN LEVEL

Scale 1" = 40'-0"

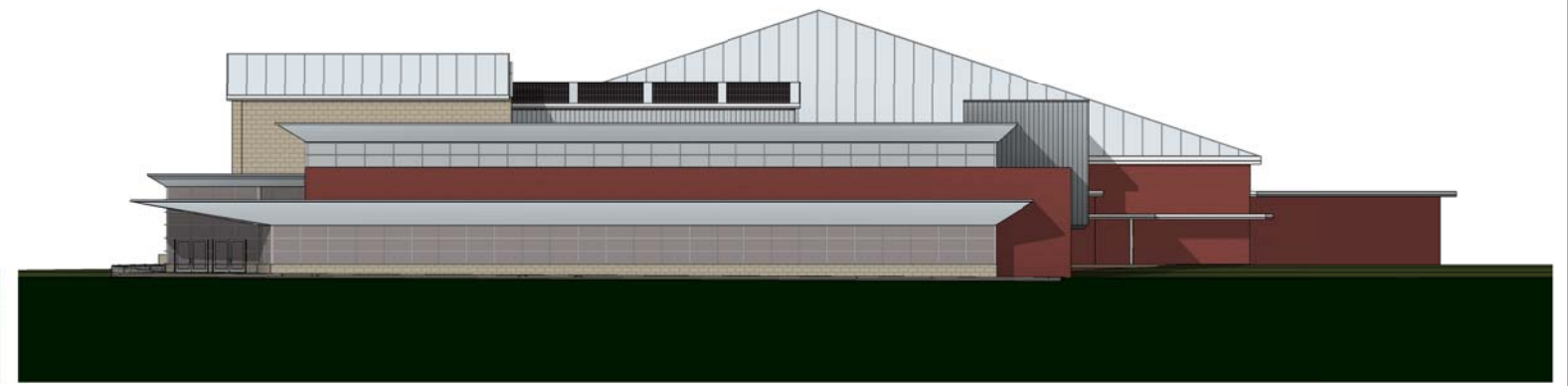
Recreation Center/ Multi-Purpose Fieldhouse

Grinnell College





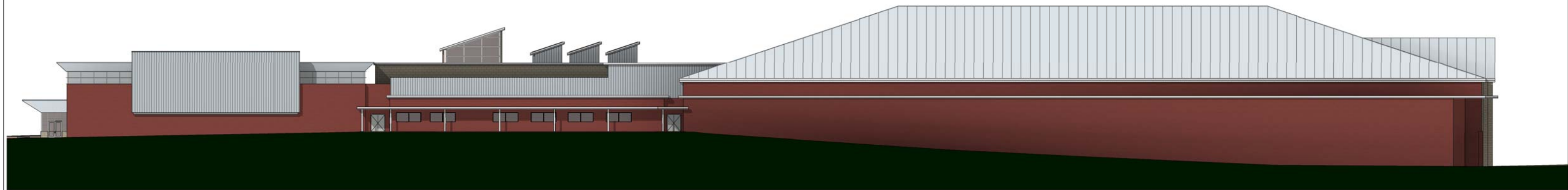
NORTH



SOUTH



WEST



EAST



ELEVATIONS

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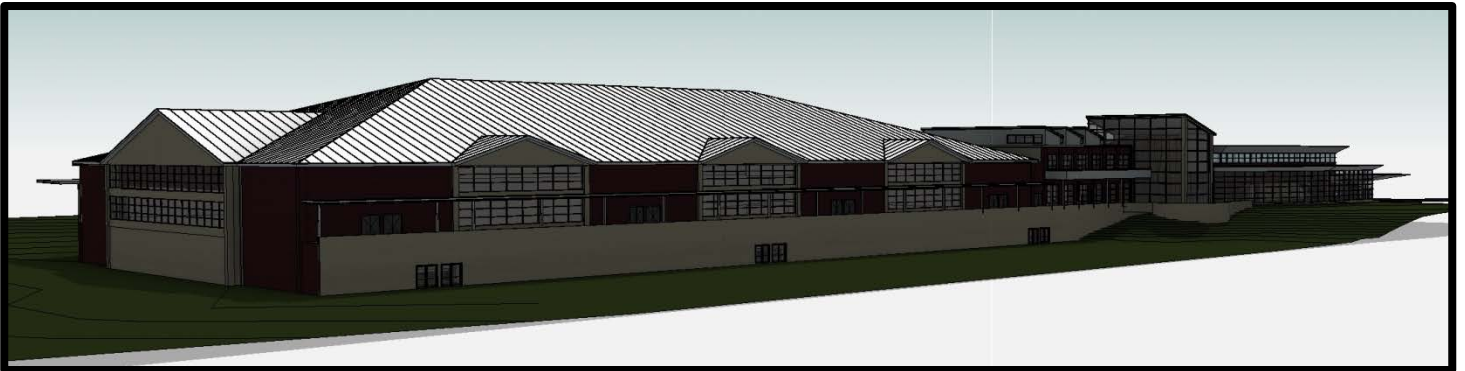
Recreation Center/ Multi-Purpose Fieldhouse

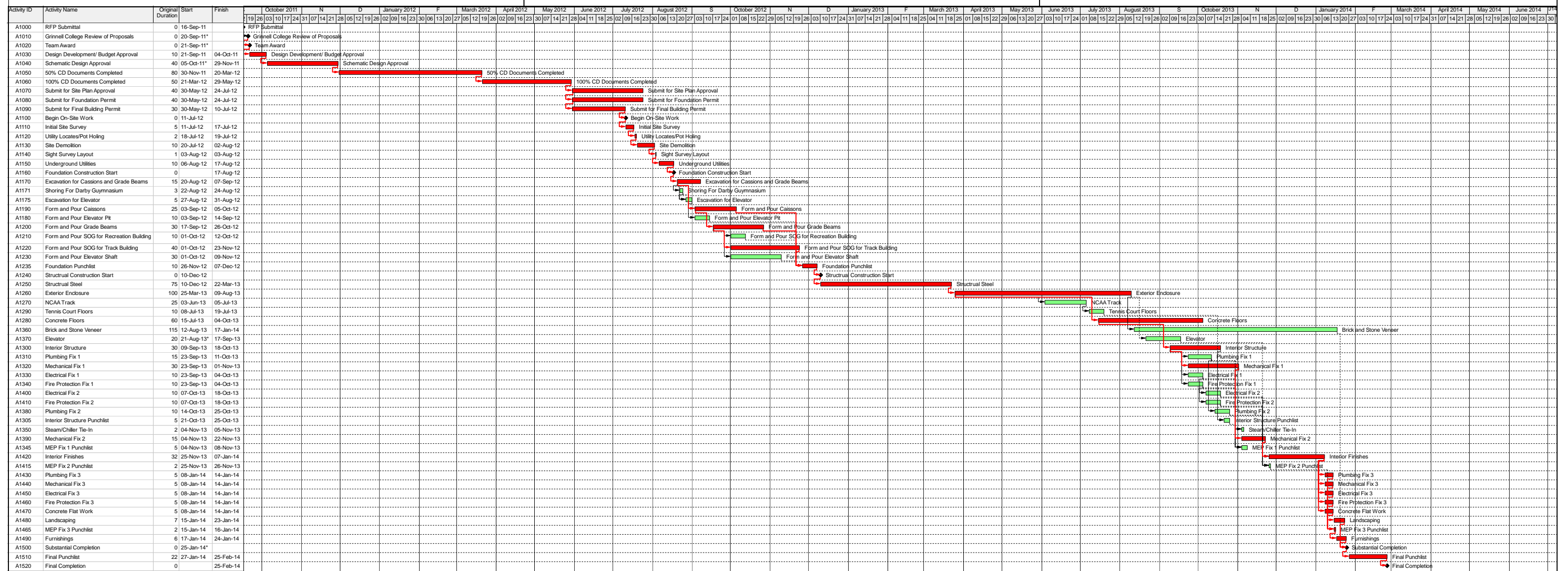
Grinnell College

## Design Development Narrative

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The comprehensive design intent for Grinnell serves as a source to document a distinct testimony of the design and performance objectives and enhancement alternatives for this building project and the benchmarks used to gage the success of these intentions. Preliminary design requirements have been met and are specified and presented as a qualitative report – pinpointing the importance of value to Grinnell. Magnum Constructors requests the Grinnell Building Committee to review each qualitative objective presented in the program Statement mentioned in this RFP response taking into account the narratives of how our design will meet each program requirement. If awarded this contract, Magnum offers a comprehensive design development package to identify and determine any additional performance objectives as suggested or otherwise. Such life-cycle cost pay-back alternatives such as environmental sustainability, and energy use, and facility quality, when quantified shall result in the most impressive and cost-effective building on the Grinnell campus. Part of Magnum’s owner/architect agreement encompasses multi-faceted design review sessions so that continual learning and collaboration can be achieved. Performance objectives will be developed for each design objective statement and energy analysis commissioning can be arranged.





- █ Actual Work
- █ Remaining Work
- █ Critical Remaining Work
- ◆ Milestone
- Summary

### Grinnell College Design-Build Recreation Center/Multi-Purpose Fieldhouse



## Program Schedule

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Magnum Constructors number one priority is to insure the safety of our employees and the surrounding community, whether that is a college or the local public. When composing the schedule for the Grinnell College Recreation Center/Multi-Purpose Fieldhouse, safety drives how the project will be scheduled. To minimize the risk to students we have scheduled to begin on-site construction on July 11, 2012, which is when students are on summer break. We have also decided to begin structural work on December 10, 2012 two days prior to the start of Winter break. We feel these two activities pose the highest risk to students.

Magnum Constructors is proposing a 5-day work week Monday through Friday with a normal 7:00am to 3:30pm Central Standard Time with a half-hour lunch break. At this point Magnum Constructors can complete construction by the substantial competition date of January 25, 2014 without working weekends or holidays. With the project being on the Grinnell College campus, we understand night work will be out of the question. This work week and hours are always negotiable with Grinnell College. In the unfortunate case that weather becomes a factor and delays the project Magnum Constructors will submit a formal request to work weekends to make up lost time so the total project duration will not be affected.

All project milestones called out in the RFP have been calculated and included within the project schedule. Magnum Constructors will implement a ten-day turnaround time on all product submittals. Failure to meet this deadline by Grinnell College could result in extended contract days. To insure that the final competition date of February 14, 2014 is met, Magnum Constructors is proposing to utilize milestone and MEP punchlists, which will reduce the time it will take to do final punchlist drastically.

By utilizing the Design-Build delivery method a fast track schedule will be implemented. Magnum Constructors will continually coordinate with the subcontractors, contractors and design team through weekly team meetings to insure the project stays on schedule. Magnum Constructors proposes a bimonthly scheduling meeting with Grinnell College to keep the project flowing smoothly.

# RFP SYSTEMS ESTIMATE SUMMARY

PROJECT **Grinnell College Design-Build Recreation Center / Multi-Purpose Fieldhouse**  
 PROJECT NO. **DBIA 2011**  
 BLDG SF **122,792**



## DBIA ROCKY MTN STUDENT COMPETITION 2011

DESCRIPTION	TOTAL SYSTEM	COST PER SQUARE FOOT PER SYSTEM	PERCENT OF TOTAL COST PER SYSTEM	REMARKS
<b><u>COST OF WORK</u></b>				
GENERAL CONDITIONS	\$1,017,650	\$8.29	3.65%	
EXCAVATION / FOUNDATIONS	\$774,639	\$6.31	2.78%	
STRUCTURE	\$3,063,460	\$24.95	10.98%	
ENCLOSURE	\$4,547,903	\$37.04	16.30%	
ROOF	\$1,653,377	\$13.46	5.93%	
INTERIORS	\$2,634,179	\$21.45	9.44%	
EQUIPMENT / FURNISHINGS	\$0	\$0.00	0.00%	
CONVEYING SYSTEMS	\$72,960	\$0.59	0.26%	
MECHANICAL SYSTEMS	\$4,482,142	\$36.50	16.07%	
ELECTRICAL SYSTEMS	\$3,043,246	\$24.78	10.91%	
SITE WORK	\$454,274	\$3.70	1.63%	
<b>SUB-TOTAL SYSTEMS ESTIMATES</b>	<b>\$21,743,830</b>	<b>\$177.08</b>	<b>77.94%</b>	
<b><u>OWNER ALLOWANCES</u></b>				
3rd Party Commissioning	\$30,000	\$0.24	0.11%	
Statement of Special Inspection	\$10,000	\$0.08	0.04%	
Equipment & Information Technology	\$500,000	\$4.07	1.79%	
Furnishings	\$200,000	\$1.63	0.72%	
XXX	\$0	\$0.00	0.00%	
XXX	\$0	\$0.00	0.00%	
<b><u>TEAM COSTS</u></b>				
BUILDER'S RISK	\$69,580	\$0.57	0.25%	
GENERAL LIABILITY INSUR	\$217,438	\$1.77	0.78%	
BOND COST	\$163,079	\$1.33	0.58%	
BUILDING PERMIT	\$138,291	\$1.13	0.50%	
PLAN CHECK FEE	\$108,719	\$0.89	0.39%	
DESIGN FEE	\$1,630,787	\$13.28	5.85%	
CONTINGENCY	\$434,877	\$3.54	1.56%	
FEE	\$706,674	\$5.76	2.53%	
TAXES	\$1,946,495.64	\$15.85	6.98%	
XXX	\$0	\$0.00	0.00%	
<b>TOTAL COST</b>	<b>\$27,899,771</b>	<b>\$227.21</b>	<b>100.00%</b>	



**DBIA BUDGET DEVELOPMENT**

PROJECT

**Grinnell College Design-Build Recreation Center / Multi-Purpose Fieldhouse**

PAGE TWO

DESCRIPTION	TOTAL QUANTITY	ACTUAL LABOR COST	UNTAXED MATERIAL COST	SUB QUOTE OR F & I COST	LABOR W/ BURDEN 0.0170	TAXED MATERIAL 0.0320	SUB QUOTE OR F&I TOTAL	ITEM TOTALS	REMARKS
<b>ENCLOSURE</b>									<b>\$4,547,903</b>
									37.04
Brick Veneer	54,989.0	SF		26.15	0.00	0.00	1,437,962.35	\$1,437,962	Assume Common Bond B2010.130 522C
Stone Veneer	21,363.0	SF		53.60	0.00	0.00	1,145,056.80	\$1,145,057	Assume Iowa Limestone B2010 128 400C
Cold Form Metal Framing	6,286.0	LF	20.00	36.00	55.95	2,137.24	7,241.47	\$361,080	16 Gauge
Insulator	76,352.0	SF		5.20	0.00	0.00	397,030.40	\$397,030	Assume 2"x6" EFIS
Overhead Doors	5.0	EA		1,650.00	0.00	0.00	8,250.00	\$8,250	24 GA Sectional
Exterior Metal Doors and Frames (Single)	2.0	EA		408.00	0.00	0.00	816.00	\$816	FR 3 Hr
Exterior Metal Doors and Frames (Double)	6.0	EA		616.00	0.00	0.00	3,696.00	\$3,696	FR 3 Hr
Glazed Curtain Walls	15,405.0	SF		24.40	0.00	0.00	375,882.00	\$375,882	Low E Tinted Insulated Glazing
Entrances and Storefronts	12.0	OPNG		5,400.00	0.00	0.00	64,800.00	\$64,800	
Glazing	938.5	SF		36.50	0.00	0.00	34,255.98	\$34,256	Low E Energy Efficient Glazing, Triple Pan
CMU Wall	30,505.0	SF		14.65	0.00	0.00	446,898.25	\$446,898	12x8x16
Metal Panels	20,745.0	SF		13.12	0.00	0.00	272,174.40	\$272,174	
					0.00	0.00	0.00	\$0	
					0.00	0.00	0.00	\$0	
					0.00	0.00	0.00	\$0	
					0.00	0.00	0.00	\$0	
					0.00	0.00	0.00	\$0	
					0.00	0.00	0.00	\$0	
					0.00	0.00	0.00	\$0	
					0.00	0.00	0.00	\$0	
					0.00	0.00	0.00	\$0	
<b>ROOF</b>									<b>\$1,653,377</b>
									13.46
Ballast	4,554.0	SF		1.30	0.00	0.00	5,920.20	\$5,920	
EPDM Roof System (Fully Adhered)	21,936.0	SF		4.23	0.00	0.00	135,089.28	\$135,089	Firestone Recycled Roofing
Roof Drainage	2,937.0	LF		7.99	0.00	0.00	23,466.63	\$23,467	Aluminum Mastic Backing
Walking Pads	462.5	SF		4.62	0.00	0.00	2,136.75	\$2,137	
Standing Seam	68,565.0	SF		18.20	0.00	0.00	1,247,883.00	\$1,247,883	20 oz. Painted Aluminum
Rigid Insulation	63,872.0	SF		3.74	0.00	0.00	238,881.28	\$238,881	2 Layers
					0.00	0.00	0.00	\$0	
					0.00	0.00	0.00	\$0	
					0.00	0.00	0.00	\$0	
					0.00	0.00	0.00	\$0	
					0.00	0.00	0.00	\$0	
<b>INTERIORS</b>									<b>\$2,634,179</b>
									21.45
Interior Glazing	6	EA		445.00	0.00	0.00	2,670.00	\$2,670	
Mirrors	3,173	SF		15.75	0.00	0.00	49,974.75	\$49,975	Bathrooms and Gym
Interior Metal Doors and Frames	74	EA		300.00	0.00	0.00	22,200.00	\$22,200	Vision Hollow Metal Doors
Gypsum Board	207,351	SF		1.37	0.00	0.00	284,070.87	\$284,071	
Ceramic Tile	10,273	SF		8.05	0.00	0.00	82,697.65	\$82,698	
2X2 Tegular ACT	22,135	SF		3.55	0.00	0.00	78,579.25	\$78,579	
2X4 ACT	21,740	SF		2.62	0.00	0.00	56,958.80	\$56,959	
Synthetic Multi-Purpose Floor System	63,952	SF		17.42	0.00	0.00	1,114,043.84	\$1,114,044	
Carpeting	7,746	SF		4.50	0.00	0.00	34,857.00	\$34,857	
NCAA Regulation Track	1	LS		80,000.00	0.00	0.00	80,000.00	\$80,000	
Interior Painting, low VOC	276,050	SF		0.29	0.00	0.00	80,054.50	\$80,055	
Ceramic Tile Wet Walls	11,735	SF		7.30	0.00	0.00	85,665.50	\$85,666	
Concrete Sealant	1,166	GA		20.50	0.00	0.00	23,898.08	\$23,898	
Epoxy Paint	15,628	SF		0.62	0.00	0.00	9,689.36	\$9,689	
Sheet Vinyl Flooring	7,337	SF		5.65	0.00	0.00	41,454.05	\$41,454	
Tile Flooring	14,159	SF		13.40	0.00	0.00	189,730.60	\$189,731	
Multi-Purpose Flooring	8,986	SF		15.00	0.00	0.00	134,790.00	\$134,790	
Acoustical Wall Coverings	6,050	SF		3.60	0.00	0.00	21,780.00	\$21,780	
Epoxy Flooring	984	SF		4.50	0.00	0.00	4,428.00	\$4,428	
Rubber Flooring	3,130	SF		7.05	0.00	0.00	22,066.50	\$22,067	
Fire Tape Drywal	1,134	SF		1.68	0.00	0.00	1,905.12	\$1,905	
Climbing/Bouldering Wa	1	LS		75,000.00	0.00	0.00	75,000.00	\$75,000	
Lockers	50	EA		298.00	0.00	0.00	14,900.00	\$14,900	
Track Display Board	2	EA		10,000.00	0.00	0.00	20,000.00	\$20,000	
ADA Grab Bars	10	EA		57.00	0.00	0.00	570.00	\$570	
Toilet Tissue Dispensors	31	EA		45.00	0.00	0.00	1,395.00	\$1,395	
Bleachers	400	SEAT		35.00	0.00	0.00	14,000.00	\$14,000	
Overhead Coiling Doors	6	EA		1,000.00	0.00	0.00	6,000.00	\$6,000	
StoreFront	14	EA		5,400.00	0.00	0.00	75,600.00	\$75,600	
Double Metal and Frame Doors	13	EA		400.00	0.00	0.00	5,200.00	\$5,200	

**DBIA BUDGET DEVELOPMENT**

PROJECT

**Grinnell College Design-Build Recreation Center / Multi-Purpose Fieldhouse**

PAGE THREE

DESCRIPTION	TOTAL QUANTITY	ACTUAL LABOR COST	UNTAXED MATERIAL COST	SUB QUOTE OR F & I COST	LABOR W/ BURDEN 0.0170	TAXED MATERIAL 0.0320	SUB QUOTE OR F&I TOTAL	ITEM TOTALS	REMARKS
<b>EQUIPMENT / FURNISHINGS</b>									
					0.00	0.00	0.00	\$0	
					0.00	0.00	0.00	\$0	
					0.00	0.00	0.00	\$0	
					0.00	0.00	0.00	\$0	
					0.00	0.00	0.00	\$0	
					0.00	0.00	0.00	\$0	
					0.00	0.00	0.00	\$0	
<b>CONVEYING SYSTEMS</b>									
									\$72,960
									0.59
Elevator	1.0	LS		72,960.00	0.00	0.00	72,960.00	\$72,960	Hydraulic High Capacity 100FPM/ 3 STOP HC Comp
					0.00	0.00	0.00	\$0	
					0.00	0.00	0.00	\$0	
					0.00	0.00	0.00	\$0	
					0.00	0.00	0.00	\$0	
					0.00	0.00	0.00	\$0	
<b>MECHANICAL SYSTEMS</b>									
									\$4,482,142
									36.50
HVAC Equipment Recreation	52,310.0	SF		36.40	0.00	0.00	1,904,084.00	\$1,904,084	
HVAC Equipment Field House	70,590.0	SF		18.70	0.00	0.00	1,320,033.00	\$1,320,033	
Plumbing System	60,000.0	SF		10.05	0.00	0.00	603,000.00	\$603,000	
Fire Protection	122,792.0	SF		2.75	0.00	0.00	337,678.00	\$337,678	
Building Heat Final System During Constructio	122,792.0	SF		1.65	0.00	0.00	202,606.80	\$202,607	
Temperature Controls	1.0	LS		35,000.00	0.00	0.00	35,000.00	\$35,000	
Test and Balance	1.0	LS		15,000.00	0.00	0.00	15,000.00	\$15,000	
Commissioning	1.0	LS		12,500.00	0.00	0.00	12,500.00	\$12,500	
Urinals	11	EA		475.00	0.00	0.00	5,225.00	\$5,225	Waterless
ADA Water Closets	10	EA		850.00	0.00	0.00	8,500.00	\$8,500	1.28 GPF
Water Closets	21	EA		815.00	0.00	0.00	17,115.00	\$17,115	1.28 GPF
CO2 Sensors	30.0	EA		30.00	0.00	0.00	900.00	\$900	
Service Sink	6.0	EA		1,500.00	0.00	0.00	9,000.00	\$9,000	
Lavatories	25.0	EA		460.00	0.00	0.00	11,500.00	\$11,500	



## Program Estimate and Budget Concerns

Magnum Constructors has put considerable effort into creating the most accurate and complete estimate possible for the preliminary nature of the Grinnell College Design-Build Recreation Center/Multi-Purpose Fieldhouse. We have created the Recreation Center/ Multi-Purpose Fieldhouse to achieve LEED Gold status upon completion. The sustainable feature implemented in the building will provide substantial savings throughout the lifecycle of the building. Thanks to a finely tuned Design-Build process we can easily and affordably make any changes that Grinnell College desires.

Initial assumptions begin with the ground level of the site condition. Surveyors' for Magnum found the starting ground level to be the same level as the football field located adjacent to the proposed Fieldhouse. We designed the foundation and floor plan based on the assumption that there will be a basement in the Recreation Center only. All excavation prices were based on per unit pricing from Subcontractor quotes.

Magnum will be self-performing all structure operations for the project. All prices were derived from historical data of previous Magnum projects and supplier's prices from the time the proposal was submitted. Cold-formed metal framing on concrete slab-on-metal deck will be used for entire structure above a 10 foot CMU foundation wall.

Magnum can assume that Standing Seam roofing will be used for the Fieldhouse and fully adhered EPDM roofing will be used above Recreation Center so that Photovoltaic panels and roof top units (RTU) can be installed and maintained easily. Rain water will be captured and stored in an underground system for use in irrigation. A mix between brick veneer and Iowa limestone veneer will be used to match existing Grinnell structures, as well as enhance sustainability and thermal performance of the structure.

Pricing for all interior design and construction was based on current subcontractor and supplier pricing and innovated designs for the needs of this project. The interior of the building will be consistent with the cold-formed metal framing for the enclosure based on pricing estimates. Many different flooring systems will be used based on the various needs for this structure, the flooring in the high traffic areas will be tile for easy and cost effective maintenance. Recycled carpet will be used in classrooms and reception seating area, film rooms and like, which meets sustainability requirements. Interior paint is assumed to be low VOC to meet sustainable building standard requested by owner. Track size and material and like activities will meet NCAA standards for all requirements. All built-in furniture will be included in estimate as stated in proposal documents. Film rooms and similar will be equipped with dimmable light switches per requirement. Acoustical ceiling tiles will be used in all called out room as stated in proposal. The MEP room will meet all safety requirements including but not limited to sealed concrete floor, fire taped drywall, and painted exposed ceiling.

The mechanical estimations for this project were based on standards from the design; however a few assumptions were made. The elevator proposed is a hydraulic 100 feet per minute, with at high loading capacity of 4800lbs to accommodate for high volume traffic during sporting events and class period times. All

mechanical systems for heating/cooling have been accounted for and will be priced out based on initial cost and annual cost in mechanical/electrical description in proposal.

The electrical systems for the proposed building have been built around sustainable designs and low annual maintenance and costs. Dimmable LED lighting will be used in the field house to accommodate for high lighting provided by curtain wall systems integrated in Field house. Appropriate electricity and lighting accommodations have been made in Fieldhouse and Recreation Center to meet high electricity demand periods as well as sustainable methods to keep annual maintenance budget low.

According to the proposed budget by Grinnell College, Magnum is proud to present our estimate for the highest value building using sustainable methods and innovative designs and techniques available. We are positive that our practices and design will meet or exceed your LEED accreditation expectations within the proposed budget and schedule. We have taken great measures to ensure students and faculty will be able to use the building to its highest potential as well as expanding the athletic program to Grinnell's deserved reputation.

We are proud to present you with a budget of \$27,899,771. This is a very competitive pricing for the specification Grinnell has provided, including the extensive size and use of this building and aggressive LEED accreditation ambition. Our estimate is the best option for getting the high quality building for the tight schedule that Grinnell proposed. Any budget concerns that the owner may have can be addressed at the primary meeting or at the bimonthly meetings throughout construction.

## **Sustainable Design Solutions**

Magnum Constructors makes sustainable practices a top priority for every job. Whether achieving LEED Platinum or a project that isn't registered with LEED, we take every step to practice the most sustainable habits. So far, on the ten projects that we have completed that have requested a LEED rating, we have achieved the desired rating. Magnum has trained all managers to be certified as LEED AP. We invest this time and money to build sustainable habits from the ground up.

A large part of our sustainable practices involve lean design. When in the conceptual design, our design team will put together a checklist of all LEED credits and sustainable design concepts that can be built along with their associated costs. Then when the owner approves the sustainable features for their building, we are able to design the building around those features. Sustainable construction practices such as recycling and waste management are standard practices for all projects. We are continually going above and beyond the requirements for LEED by trying innovative techniques in both the design and construction phases to push the boundaries of the industry.

Magnum has proposed several innovative sustainable designs for the Grinnell College Design-Build Recreation Center/ Multi-Purpose Fieldhouse. The first concern was to deconstruct minimal materials, and recycle deconstructed materials and reuse whatever possible when attaching onto Darby Gymnasium. Recycling and sustainable information poster will be placed throughout the building so that students will be able to contribute to sustainability throughout the life of this building. LED lighting will be utilized for the entire project, which will account for hundreds of dollars a month in electricity savings. Dimmable lighting will be used in the Field house to reduce electricity demand during high sunlight times. Photovoltaic energy will be integrated within the building, which will account for most of the lighting energy. Auto tinted windows can be used in the field house to maximize lighting in low light times and will also reduce glare during high light times.

We will be using several local materials for construction on the Design-Build Recreation Center/ Multi-Purpose Fieldhouse. Locally quarried Iowa limestone will be used on the outside of the building to both use sustainable materials and contribute to local businesses. The landscape will utilize 40% recycled materials including wood chips and mulch from local beetle kill logging companies. Lastly, storm water will be redirected and used to water shrubs and plants around surrounding buildings.

Magnum Constructors is proud to work with an owner like Grinnell College who is dedicated to making humanity more sustainable. Through pushing the limitations on sustainable building practices and owners like Grinnell College who are willing to invest the extra dollar to make humanity a little more sustainable, we can really make a difference in the world.



