

DEPARTMENT OF MILITARY AFFAIRS

**REQUEST FOR ARCHITECTURAL & ENGINEERING
DESIGN SERVICES**

Challenge Academy

Fort McCoy, WI

Project No. 23G2R

February 2024

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AGENCY REPRESENTATIVE: Joni Mathews
Challenge Academy Director
Department of Military Affairs

AUTHORIZING SIGNATURE: Anna Oehler
Budget Director
Department of Military Affairs

Background

The Challenge Academy is currently located in the 600/700 block area of Fort McCoy and occupies 20 World War II-vintage buildings. These buildings are spread out over a five-block area, making program administration and Cadet accountability problematic. Many of these structures were built in the 1940s, and only meet minimal fire, safety, mechanical, electrical, lighting, or energy standards. Most of the buildings have no centralized alarms, and none of the buildings have fire suppression systems. Of particular concern are six two-storied wooden buildings used to house the Cadets. All the buildings have inadequate/obsolete HVAC systems, non-ADA compliant toilets, and are not energy efficient.

At full capacity, there is no single building that can accommodate the entire Corps of Cadets, staff and faculty. The buildings are also at or exceeding capacity, limiting their ability to serve all students that are eligible for the program, and not providing for any expansion of the program.

In accordance with Fort McCoy's Master Plan, the 600 block is scheduled for demolition in order to support future building construction for Army Force Generation (ARFORGEN) supporting activities. In August 2011, Fort McCoy notified the Wisconsin National Guard Challenge Academy to vacate the existing buildings they occupy by December 2016. Currently the eviction notice has been rescinded, however the master plan stays in effect and the Challenge Academy will eventually be asked to relocate either off base or to a new facility built on land provided on Fort McCoy.

Purpose and Scope of Project

This project will construct a 71,000 GSF to 150,000 GSF institutional facility for the Wisconsin National Guard Challenge Academy located at Fort McCoy, WI.

The Challenge Academy requires a modern facility that provides educational classrooms, administrative areas, vocational/technical shops, storage, toilet/shower facilities, kitchen and dining area, billeting and locker room space.

This project will be constructed on federal land provided by Fort McCoy at no cost to the State.

Architecture and Structure: The new building addition will be constructed with concrete masonry unit (CMU) backup walls and brick exterior veneer, low slope membrane roof with single-ply membrane roofing, and concrete slab on grade floors. If this is cost prohibitive, other measures like insulated metal cladding, or precast concrete should be explored.

Heating, Ventilation and Air Conditioning (HVAC): Offices, classrooms, and other spaces requiring air conditioning will be heated and cooled. Ventilation intake louvers for the mechanical system will be located at roof level to conform to AT/FP requirements. New high-efficiency gas-fired hot water boilers will be installed to generate hot water to heat the auditorium and serve as supplemental heat to exterior offices and classrooms. New exhaust systems for the toilet rooms, lockers, kitchen, and auditorium will be provided.

The agency will consider the feasibility of geothermal or other renewables, per DFD sustainability guidelines for renewable energy, if not cost prohibitive

HVAC Controls: Due to the nature of the Challenge Academy occupancy, the HVAC systems will be highly controllable to allow the system to reduce energy consumption when not in use. An

efficient, centrally controlled DDC system would be installed to control and monitor all new devices.

Plumbing Systems: The new plumbing systems will consist of gas-fired hot water heaters, domestic water supply, water softening equipment, sanitary and storm sewer.

Fire Suppression: The Challenge Academy will be fully sprinkled. The fire protection system will meet all UFC, state, and local code requirements.

Electrical Service: The building will be served by 800 ampere, 208Y/120 Volt, 3 Phase, 4 wire electrical service from a utility owned pad-mounted transformer. The meter / transformer cabinet will be located on the exterior of the building in an area enclosed within a fenced off area. The service will terminate in a Main Distribution Panel located in the main boiler room. Backup generator is needed to supply continuity of operations. The agency will consider the use of photovoltaic panels per DFD sustainability guidelines for renewable energy if not cost prohibitive

Lighting System: The interior lighting will consist of LED fixtures. Spaces, typically, will be controlled by manual switch with occupancy sensor located in space to provide automatic shut-off of lighting. Several spaces will have multi-level lighting control such as classrooms and billeting. Emergency lighting will consist of emergency battery lighting units.

The exterior LED lighting will cover 100 feet from the main building and provide complete coverage of the parking area. Lights will be self-controlled and turn on and off depending on daylight conditions.

Special Systems: Special Systems will include paging throughout the facility and be connected to the General Administration office. Communication drops will be provided throughout the facility in addition to wireless access points. Closed area camera systems will be provided and accessible by the General Administration Office and Cadre areas. Telecom will be provided throughout the facility per the Department of Military Affairs requirements. See attached IT plan for more specifics (Appendix A).

Billeting Rooms: Cadet billeting will be an open bay with latrine. The latrine will consist of a toilet and shower area per bay. Each open bay will hold up to 80 cadets. Each bay will also have attached rooms consisting of a laundry area, a quarantine area and a storage area.

Furniture: Billeting will include barracks furniture that consist of bunk beds with built-in drawers. Other furniture needed for the facility consists of tables, desks, chairs and other general furnishings to be used in classrooms and other common areas.

Kitchen: The kitchen will be used to prepare and provide meals on-site to cadets and staff. The kitchen will provide a full range of appliances (refrigerator, freezer, range, microwave), cabinets and counter space to prepare, store and cook meals. The range will include a range hood vented to the exterior.

Gymnasium: The gymnasium will consist of a standard basketball court size with attached storage room. Flooring will be durable and for multiuse needs. This space will require air conditioning.

Parking: The parking lot will hold up to 250 vehicles and be able to be used as a drill area. Light poles will need to be located on the exterior but be able to provide lighting of the entire area. The agency will consider electric vehicle charging stations if not cost prohibitive.

Challenge Ropes Course: A challenge course needs to be located near the main facility. For safety and security, the stairwell needs to be secured to restrict access when course is not in use. The Ropes course is used to build the cadets confidence, communication skills and physical fitness. It is also used for three of the eight core components of the program (physical fitness, leadership/followership, and life-coping skills). The ropes course consists of the following: belay system, climbing wall with rappeling, cargo net, cable ladder, zip line, pipe traverse, bosun swings, broken bridge, spinning blocks, swinging islands, lilly pads, and a burma bridge element.

Occupants and Activities

The Challenge Academy is a volunteer improvement program for at risk youth ages 16 through 18, that is administered through the National Guard. The Wisconsin National Guard's Challenge Academy is built around a strict, disciplined, military style environment which focuses on self-improvement and personal responsibility. Cadets enrolled in the Residential Phase of the program live at the Challenge Academy located at Fort McCoy, 24 hours a day for 22 weeks. During each 16-hour training day, cadets work toward earning a State of Wisconsin High School Equivalency Diploma (HSED) and gaining employment skills. The Challenge Academy has a 75% graduation rate, of which 87% have earned their HSEDs and 80% of graduates are still employed or attending school a full year following graduation.

The current facilities allow up to 172 cadets per class, while the program target is to serve 250 cadets per year. If at full capacity of cadets, additional space may be required for an up to sixteen staff (one teacher, one counselor, fourteen cadre) to oversee the cadet training and activities. Activities include training/education, administration, physical fitness, supply storage, and billeting.

Challenge Academy Estimated Needs

A. Administration	Required	Unit of Measure
1. General Administration	8,700	SF
2. Medical/Aid Station	400	SF
3. Supply	2,400	SF
4. Publication Storage	1,750	SF
5. Material Reproduction/Mail Center	600	SF
6. Admissions Area and briefing room	2,000	SF
7. Counseling Area and conference room	1,050	SF
8. Case Management Offices	840	SF
9. Conference rooms	900	SF
10. Latrines (Visitors)	250	SF
11. Latrines/Shower/Lockers (Staff)	1,400	SF
SUBTOTAL	20,290	SF

B. Education		
1. Classrooms	11,000	SF
2. Instructor Prep/Counseling	1,000	SF
3. Multi-Purpose Training Area	7,000	SF
4. Auditorium	3,000	SF
5. Library	600	SF
6. Learning Center	1,000	SF
7. Training Aid Storage	1,000	SF
8. Audiovisual Storage	1,000	SF
9. Test Control Storage	100	SF
10. Break Area	1,500	SF
11. Weight Room	1,600	SF
12. Gymnasium	4,900	SF
13. Toilets (Cadets)	1,250	SF
14. Toilets (Staff)	400	SF
SUBTOTAL	35,350	SF
C. Dining Facility and Billeting		
1. Dining Area and Kitchen	4,100	SF
2. Cadets (Open Bays)	22,500	SF
3. Cadre	1,000	SF
4. Lounge	2,500	SF
5. Laundry	1,800	SF
6. Quarantine Area	450	SF
7. Latrine (Students)	12,500	SF
8. Latrine (Mentors)	300	SF
SUBTOTAL	45,150	SF
Total Net Challenge Academy Space	100,790	SF
Maintenance and Storage (3% of Total Net Area)	3,024	SF
Mechanical/Electrical Room (5% of Total Net Area)	5,040	SF
Telecom/IT (1% of Total Net Area)	1,008	SF
Circulation Allowance (15% or 22% of Total Net Area)	20,158	SF
Structural Allowance (10% of Total Net Area)	10,079	SF
Total Gross Challenge Academy Space	140,098	SF
Common Supporting Items	Required	Unit of Measure
1. Service and Access Aprons – Kitchen Access	250	SY

2. Service and Access Aprons – Auditorium Access	300	SY
3. Flexible Pavement - Privately owned vehicle (POV) parking	5,500	SY
4. Access Road and Entrance Throat	4,000	SY
5. Sidewalks	1,000	SY
SUBTOTAL	11,050	SY

Site Development and Utility Services

1. Site/Existing Conditions: Located on a 20-acre site within Fort McCoy. The site is undeveloped landscape. An access road would need to be installed from an existing nearby roadway.
2. Existing Utilities: All utilities are commercially or municipally provided.

Special Considerations

The budget and schedule are contingent on approval, availability, and timing of receipt of funds.

2023 Wisconsin Act 19 allocated \$700,000 to develop preliminary plans and specifications for the Wisconsin National Guard Challenge Academy. DMA will request additional funding in subsequent capital budgets to complete all work

Estimated Budget

Construction	\$23,000,000
Contingency	\$3,450,000
A/E Fees (Design)	\$2,070,000
DFD	\$920,000
Commissioning	\$230,000
Equipment	\$0
TOTAL project costs	\$29,670,000

Estimated Schedule

Program Approval:	July 2023
A/E Selection:	May 2024
Design Report:	August 2025
SBC Approval:	October 2025
Bid Opening:	December 2025
Construction Start:	May 2026
Substantial Completion:	January 2027
Final Completion:	March 2027

Appendix A; New Facility IT Planning

General Network Requirements

- Fiber connection to server room from ISP for internet access.
- Fiber connection between all network switch locations throughout the facility as needed.
- All ethernet cable runs need to be at a minimum Cat 6 compliant.
- Ethernet cable drops will connect to the closest switch location in the facility.
- Switches will have Power Over Ethernet (POE) capability to support the connection of Phones, Security Cameras, Wireless Access Points, and similar devices.
- Single occupancy office spaces will have a minimum of two network jacks per wall greater than six feet.
- Classrooms will have multiple network jacks depending on classroom size.
- Billeting areas will have a minimum of two network jacks for the staff members desk area.

Phone System

- VOIP phone system supporting up to 100 IP device connections.
- Fax phone line to Headquarters office.
- Individual phones for each office space as needed.
- Cadet Phone access integrated with billeting (can be temporary IP phones that are used during Sunday evening phone calls).
- Phones and devices are all POE.

Intercom System

- Facility wide intercom system integrated with the VOIP phone system.
- Allow for alerts and information to be broadcast in the facility as needed.
- Classroom Bells/Alerts will also be integrated with the intercom system.

Wireless Access Points

- Access points will be Cisco Meraki Cloud based POE access points.
- Access points will provide wireless coverage to all office space, common areas, billeting, classroom areas, and to select outdoor locations.
- Wireless networking will have 4 Service Set Identifier's (SSID's) to control Wireless Access.
- Ethernet cabling provided to all Access Point locations.

GED Lab

- Requires network jacks for 60 computers in the computer lab.
- Must have an adjoining office space to accommodate the GED administration office.
- Occupancy for 60 computers spaced to allow for GED administration (4 feet from each computer station on all sides or utilize divider partitions between the computer stations).
- The GED Lab should be isolated as much as possible with sound dampening in the walls to allow for a quiet environment.

Security Systems

- Axis network security camera system.
 - Cat 6 Ethernet cabling to all camera locations
 - AXIS cameras and servers – 2 servers, each with a minimum of 36 TB of data storage for security footage
 - H.265 encoding
 - Separate VLAN for the security system
- Outdoor lighting at all exterior door entrances.
- Card access control for the following location types.

- Exterior Doors
- Office Doors
- Server Room
- IT Closets
- Classrooms
- Billeting
- Supply
- Furnace and/or equipment rooms
- Axis access control integration with Security Camera system.

Server Room and Management Information System (MIS) Office Space

- Climate control for server room – requires separate cooling to maintain equipment temperatures.
- Space for storage of IT equipment and two full size server racks with equipment
- ISP Fiber connection.
- The server room should be connected to the MIS Office space and be insulated well to reduce noise from the servers to the IT office.
- MIS office space needs to be adequate to allow for the setup and configuration of multiple computers/equipment.

Printers/Copiers/Fax

- Color multifunction Ricoh printers will be utilized and connected to the network.
- The total number required will vary depending on the facility layout.
- Network drops provided for each printer location.
- The headquarters office will have fax capability.

Billeting

- In-Speaker audio system will be needed in each billeting area and be controlled at the team leader desk area.
- Security camera coverage in all areas except bathroom spaces.
- Phone call area with multiple network drops

Classrooms/Auditorium(s)

- AV Equipment to allow for instruction, presentations, and virtual meetings.
 - Sound System
 - Microphone(s)
 - Large Display
 - Lectern with computer, monitor, AV system equipment, and AV controls.

Project Scope Consideration Checklist	Yes	No
1. Is this project request an extension of another authorized project? If so, provide the DFD project #.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Is project phasing or multiple bid packages expected? If yes, describe here.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Is furniture, fixtures, and equipment required? If yes, explain who will select, procure, and install. Included as part of construction bid. Selected, procured and installed by construction vendor with final input from Challenge Academy staff.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4. Will the building or area impacted by the project be occupied during construction? If yes, explain how the occupants will be accommodated during construction.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Is commissioning beyond Level 1 Commissioning required? If yes, describe here. Unknown	<input type="checkbox"/>	<input type="checkbox"/>
6. Are hazardous materials involved? If yes, what known materials are involved and how will they be handled?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7. Will the project impact the utility systems in the building and cause disruptions? If yes, to what extent?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Will the project impact the heating plant, primary electrical system, or utility capacities supplying the building? If yes, to what extent? New connection from Fort McCoy utilities.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
9. Are other projects or work occurring within this project's work area or within .5 miles of the project site? If yes, provide the project # and/or description of the other work in the project scope.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
10. Have you identified the WEPA designation of the project, Type I, Type II, Type III?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
11. Is the facility listed on a historic register (federal or state), or is the facility listed by the Wisconsin Historical Society as a building of potential historic significance? If yes, describe here.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
12. Are other studies, testing or investigations required to confirm the scope or existing conditions? If yes, describe here.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
13. Will the construction work be limited to a particular season or window of opportunity? If yes, explain the limitations and provide proposed resolution.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
14. Will the project improve, decrease, or increase the function and costs of facilities operational and maintenance budget and the workload? If yes, to what extent? Maintenance and operational needs include staff to maintain facility and grounds.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
15. Are there known code or health and safety concerns? If yes, identify and indicate if the correction or compliance measure was included in the budget estimate, or indicate plans for correcting the work.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
16. Are there potential energy or water usage reduction grants, rebates or incentives for which the project may qualify (i.e. Focus on Energy < http://www.focusonenergy.com/ > or the local utility provider)? If yes, describe here.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
17. If this an energy project, indicate and describe the simple payback on state funding sources in years and the expected energy reduction here.	<input type="checkbox"/>	<input type="checkbox"/>

18. Is project certification above and beyond the DFD Sustainability Guidelines (LEED etc.) being pursued? If yes, describe here.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
19. Are deliverables required above and beyond the requirements of the DFD AE Policy and Procedure Manual (renderings for raising gifts etc.) If yes, describe here.	<input type="checkbox"/>	<input checked="" type="checkbox"/>