

The Indoor Training Facility:

Ensuring the Future of Academy Athletics

By Ann Collum

A TYPICAL SPRING DAY AT THE UNITED STATES AIR FORCE ACADEMY OFTEN INCLUDES HEAVY SNOWFALL, STINGING BARRAGES OF SLEET, AND WHITE-OUTS DRIVEN BY 40 MILE-PER-HOUR WINDS. ACADEMY ATHLETES ARE FACED WITH THE SAME DEMORALIZING PROSPECTS THEY HAVE DEALT WITH ALL WINTER: COMPETE FOR PRACTICE SPACE IN THE ALREADY OVERCROWDED CADET FIELD HOUSE OR RESIGN THEMSELVES TO ANOTHER SESSION OF WEIGHT TRAINING OR REVIEWING PLAY FOOTAGE. A TYPICAL SPRING DAY AT THE ACADEMY MEANS ONE LESS DAY TO PRACTICE AND TRAIN, ANOTHER DAY LOST IN A SHORTENED SPORTS SEASON.

NEXT SPRING WILL BE DIFFERENT, THOUGH—THE CADETS WILL HAVE A NEW COMPETITIVE ADVANTAGE. A STATE-OF-THE-ART INDOOR ATHLETICS TRAINING FACILITY WILL STAND JUST NORTH OF THE 40-YEAR-OLD CADET FIELD HOUSE. STANDING EIGHTY FEET TALL, WITH A 94,000 SQUARE-FOOT INTERIOR, THIS FACILITY WILL HOUSE A REGULATION-SIZED FIELD THAT CAN ACCOMMODATE LACROSSE, FOOTBALL, SOCCER, AND A MULTITUDE OF OTHER SPORTS ACTIVITIES, SO CADETS CAN SAFELY HONE THEIR ATHLETIC SKILLS YEAR-ROUND.





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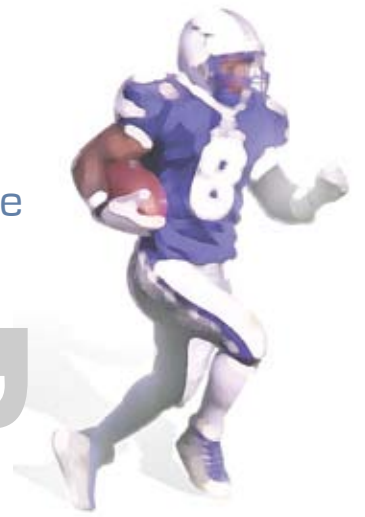
All-season athletic training has never before been possible at the Air Force Academy. Nestled at the base of the mountains, the Academy is subject to a variety of unpredictable weather conditions. Violent thunderstorms, high-speed winds, and snowfall that extends from October to May all undermine outdoor practice conditions and jeopardize cadet safety. “Lightning strikes are another big concern,” says Ken Wiseman, the architect who designed the new Indoor Training Facility. “The Academy is in one of the top lightning zones in the country. With the Indoor Training Facility, all the athletes have to do is go inside and keep playing, which is great. More practice makes for a better athletics program.”

He knows what he’s talking about. Wiseman’s first introduction to the Academy was over 20 years ago when, as a young architect, he was charged with making the Cadet Chapel handicapped accessible. He worked for Skidmore, Owings and Merrill, the architectural and engineering firm that originally designed the Academy. Wiseman

advanced at SOM, becoming an associate partner and leading all design master planning at the Academy for the next ten years. He then started his own design firm, going on to design the Olympic Training Center in Colorado Springs and becoming an expert in sports-related design. He designs sports facilities internationally; his latest achievement is the Richmond Oval, the speed skating venue for the Vancouver 2010 Olympics. He is now President of Professional Services for Cannon Design, which is collaborating with the firm G.E. Johnson to design and build the ITF. He is excited about the benefits that the new facility will bring. “It acts in concert with the existing Field House and Gymnasium, extending the practice season and opportunities to play,” he says. “Schools all over the country have built similar indoor athletics facilities; the Academy is a little behind.” The Army and Naval academies have recently built indoor athletic training facilities, in addition to six of the other eight schools in Air Force’s Mountain West Conference.

Wiseman is even more enthusiastic about the development and design of the ITF itself. He was careful to remain true to the underlying architectural style required at the Academy, working closely with Duane Boyle, the Academy’s resident architect and preservationist. Boyle ensures that all new building designs complement and comply with the Academy’s original planning and design standards. “The entire Academy is built on an extremely consistent 7-foot planning module, which has been used over decades of construction and expansion” Wiseman explains. “It’s an imaginary grid that goes across the whole base and everything in the Cadet Area lands on it perfectly.” The strips of marble on the terrazzo, the shape of the buildings, the classrooms, the Chapel—all are composed of 7-foot modules. For example, a dorm room is comprised of 2 modules, making each room 14 feet wide. Every bit of architecture at the Academy reflects the function that occurs inside the building and

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is a testament to the Academy's enduring values. When viewing the Cadet Area from the Chapel, one can see that the terrazzo itself continues through all of the buildings, accommodated by strategically placed gaps in the buildings' architecture. The buildings are made of durable materials, meant to endure the elements and time—aluminum, marble, and glass—highlighted with whimsical splashes of red, yellow, and blue throughout. “The precise design is a tribute to the Academy's leadership,” he says. “The Academy has the best assemblage of mid twentieth-century modern buildings on the planet. There's a tremendous responsibility to maintain that architectural character for future generations.”

The ITF's design is based on the same planning module and takes its cues from the buildings that surround the ITF site. Wiseman used the adjacent Gymnasium, one of the original sports facilities on campus, as the point of departure for the ITF design. “My main challenge in designing the ITF was figuring out how we can be respectful of Academy traditions and be smart and sustainable at the same time,” he says. His goal for the ITF design was to incorporate the traditional standards with green design applications to maximize the building's functionality for sports activities. Green design tries to minimize negative impacts on a building's environment—water, air, vegetation, soil, and energy usage—while maximizing positive environmental effects. For example, the roof of the ITF is designed to capture and filter rain water and snow melt before it goes back into the ecosystem. Wiseman even chose low

volatile organic compound paint for the ITF to minimize harmful off-gassing that might affect the athletes practicing inside. Also, Academy leadership has green design standards in place that must be met for all new construction on the base. Wiseman's goal was to design the ITF so that it qualifies for a LEED Silver certification, a nationally-recognized designation of how “green” a building is by the Leadership in Energy and Environmental Design.

At its most basic level, the ITF is simply a large, enclosed space for a multi-use playing field. Its excellence lies in the carefully considered details of its design. Wiseman's main concern was creating a facility that best supported its end users. “In the 1960s, when the other sports facilities were built, you would just build a large room, put a bunch of bright lights in it, and let the cadets practice,” he says. “But the world has changed since that time.”

The ITF's design incorporates the best lighting possible for sports practice, using a combination of natural and artificial light. Wiseman implemented aggressive daylighting by utilizing translucent polycarbonate on the north and south faces of the facility, which provides all of the building's daytime light needs, year-round. The reliance on natural lighting eliminates the hot spots and glare that can come with overhead lighting, while seriously reducing the building's energy consumption. He also developed a series of sun screens, reminiscent of the Cadet Chapel, to control the intensity of the western sun in the afternoons. At night, the ITF uses a lighting system that casts light upward, indirectly and uni-



formly lighting the ceiling so a ball in play can be spotted easily by athletes without blinding them or causing them to lose the track of the ball.

Other design features enhance effective game playing conditions. “We took advantage of the building’s height to maximize the ‘chimney principle,’” he says. “Hot air rises, creating a chimney effect that moves air passively through the facility. It eliminates the need for duct work, and there are no big fans to move the ball around in the air during play.” The new facility recreates the actual playing conditions in Falcon Stadium. The size and crown of the ITF field, the degree to which the center of the field is higher than its edges, is exactly the same as that of the stadium field. The turf inside the ITF is a sophisticated improvement over rug burn-inducing Astroturf; it is composed of two inches of a recycled rubber granular material that mimics the sponginess of real earth, with an inch of synthetic grass protruding from it to provide the same traction as outdoor stadium grass.

The swift design of the building and its ambitious construction schedule are the product of the heroic efforts of many dedicated individuals. Staff in the athletics department at the Academy, from coaches to the director, met extensively with the design firm to offer their input.

Retired Brigadier General David Swint, the former head of the Civil Engineering Department at the Academy, coordinates the construction of the ITF. Ground-breaking for the ITF is slated for this summer, with completion estimated for early 2011. This aggressive timeline wouldn’t be possible without the support of Academy leadership and impressive private donor support provided through the USAFA Endowment, the non-profit foundation that raises funds in support of the Academy. Wiseman emphasizes, “We can’t overlook the USAFA Endowment’s efforts to make this facility a reality. They tackled a project that costs over \$10 million in the worst economic environment in this country in half a century and they were successful at it. A lot of colleges wouldn’t have that nerve or passion. The Endowment staff is made of can-do people who have done an extraordinary thing for the Academy.”

Erv Rokke, president of the USAFA Endowment, demurred, “We couldn’t have done any of it without the generous support and trust of our amazing graduate community and friends of the Academy.” The ITF is the largest privately-funded capital project in the Academy’s history; none of its funding comes from the Academy budget. The Academy also received the largest graduate donation in its history from Bart and Lynn Holaday, expressly dedicated to the construction of the ITF. In recognition of the Holadays’ generous leadership, it is expected that the new facility will be named the Holaday Athletic Center, pending Air Force approval.

There are still many opportunities to contribute toward the goal of raising \$16 million to complete the facility. For more information, please contact the Endowment’s Director of Major Gifts, Jimmy Martello, ’00, at jimmy.martello@usafaendowment.org or (719) 472-0300 ext. 200. 