



The Tallmadge Recreation Center, with its emphasis of offering a cost-effective venue for citizens to gather and pursue exercise, health and social interests, was started in June, 2003 and was completed January, 2004. The 105,000 square foot facility was completed at a cost of \$56 per square foot, versus over \$250 per square foot for similar structures in surrounding communities. The Recreation Center, with its curve-walled central-lobby hub, unique two-story, open design and bridged mezzanines, welcomes visitors and allows members a panoramic view of the sporting activities during their exercise sessions. With its spacious and secure parking, attractive landscaping, and conveniently accessed location, it is a much-needed amenity to the Tallmadge community.



Excellence in Client Service

The contracting client was the City of Tallmadge, but in a broader sense, it was the citizens who ultimately would choose to utilize and support the facility through their monthly membership fees. It was imperative to build a cost-effective, but lifestyle enhancing facility. Carmen Construction Co. worked closely with Jim Evans, Architect and the Tallmadge Recreation Center Building Design Committee. Together we visited other recreational facilities throughout Ohio to come up with the most cost-effective design that would accomplish these goals.

Throughout construction, Carmen Construction Co. facilitated ongoing weekly meetings with the City Engineers, Tallmadge City Service Director, City Mayor, Building Inspectors and sub contractors. The meetings were held to address all construction and scheduling challenges. The tight building schedule and unique construction requirements, coupled with the wettest season on record, demanded efficient sequencing of the project and effective scheduling of subcontractors. Constant coordination was paramount to accomplishing the project. Carmen Construction Co. anticipated problem areas and recommended necessary project adjustments. For example, the originally specified Padenpour™ interior padded floor required a low-moisture content concrete, impossible to achieve in the required timeframe under the prevailing weather conditions. Instead of adhering the pad directly to the concrete floor as originally contemplated, a floating-underlayment design was incorporated. This allowed construction to continue and the schedule to be maintained.



despite numerous construction challenges, the project was completed on schedule and within the allotted budget. This was critical to the ongoing success of the project. The financial viability of this facility would hinge on citizen memberships. In Ohio, spring and summer are typically dominated by outdoor activities. It was paramount that the facility be open on schedule by February 1, during the winter season, when its indoor venues would be most appreciated. Once introduced and experienced, its quality and convenience would attract the initial 2000 sustaining members required for ongoing financial stability. This critical goal was accomplished through intense coordination during all phases of construction. As a result, membership quickly soared to well over the needed 2000 members to the current 3600+ members. The Center was quickly operating “in the black” due to the widespread acceptance and utilization of what the citizens realized was an excellent facility giving good value.

Meeting the Challenges of a Difficult Job

This project presented a number of construction challenges. The short completion schedule, desired by the city, was particularly challenging for a project of this size incorporating special state-of-the-art features. In addition, the construction period was during the wettest season on record. Prior to raising the site four feet from existing grade, the site had to be de-watered and approximately two feet of saturated topsoil removed. The continued precipitation made de-watering of the site all the more difficult, and limited delivery of the required fill material.



Soil stabilization and other alternative processes for preparing the site would be costly, an additional expense the city hoped to avoid. Soil was dried and re-dried several times, only to have rain spoil the work already accomplished. As Tallmadge Public Service Director, David Kline put it, “We have to play the cards we’ve been dealt, and right now, our hand has us fighting Mother Nature”.

The facility features interior padded sports floors and running/walking track. The padded floor required a low-moisture concrete base impossible to obtain under construction conditions. It was decided that instead of using a pad adhered to the floor, a floating underlayment would be substituted.

The job required an extremely accurate layout. The building utilizes a pre-engineered metal building system. The large size (105,000 sq. ft.) floor required precise positioning of the floor foundation column anchor bolts. Normally column anchor bolts extend into the piers. For this particular job, however, the structural design calculations required that the anchor bolts extend all the way into the concrete footing. This fact made for a difficult layout in the field. Horizontal loads of building had to be transferred via anchor bolts all the way through the piers and into the footings as the normal pier vertical reinforcing would not be adequate in and of themselves to handle the required loads and stresses of the design.



The open design, with clear span expanses and variable distances between beams, required precise engineering offset lines. The beams would form the total support for the bridged mezzanine as well as support the roof beams and rafters. The columns also formed the support for the brickwork, which was tied into them via hook and anchors with an allowed expansion space to compensate for different material expansions. The basketball backboards, support structure and netting required additional and close steel coordination with the pre-engineered meal building system. The large clear-span structure required the use of large concrete-encased steel tie bars below the floor to "tie" the rigid steel frames together. This system holds the large frames from spreading apart under wind and gravity loads imposed on the building. The concrete foundation had to be over designed in mass to provide temporary stability of the massive rigid frames until the steel tie bars could be placed.



When the pre-engineered building system arrived, two of the steel main frames were out of plumb. Field adjustments were required by Carmen Construction Co. to straighten and make it work since there was not enough time to order proper frames. To go back to the supplier and reorder would have brought the job to a screeching halt.



Another major challenge was the difficulty of construction of the mezzanines inside of the already erected metal building. This introduced difficulties of setting the mezzanine floor steel joists in a confined space.

Scheduling of subcontractors was also challenging due to the uncertain weather conditions. Contractors needed to be scheduled to install plumbing and electrical utilities prior to pouring the main concrete floor base. Coordination of the mezzanine floor utilities was also critical. The mezzanine floor is wire-mesh reinforced poured concrete over the metal deck structure which served as the concrete forms. All utility channels were incorporated across the deck flooring and needed to be established prior to the pour.

Because the grand opening date of the Recreation Center was established prior to construction and the concurrent weather difficulties, a presentable temporary concrete complete entrance was built. By design, this would be removed later and replaced with the permanent entrance per design after ground thaw.

Innovation in Construction Techniques and Materials

The public enters the building through a spacious 1000 square foot vestibule, which acts both as an energy-conserving entrance and waiting area. This vestibule leads to the main lobby/reception area. Unique to this lobby are its curved walls and an expansive ceiling height. The delineation of this space creates a strong sense of arrival to the Center. In addition, all activities of the facility are sensed and obvious from this central hub location.

Members' magnetic card swipes allow efficient entrance to the facility by avoiding check-in lines, as well as track facility utilization.

The spacious semi-circular staircase leads to innovative mezzanines featuring bleachers that offer members an unobstructed view of the soccer and basketball areas. The fitness mezzanine also offers multiple television monitors for members' favorite programs or workout DVD's, in addition to access to the facilities security cameras. This enables members to keep an eye on children they may have dropped off earlier in the children's supervised play area. The elevated spectator mezzanine was specifically designed both for elevated viewing of sporting activities on either side, while discouraging "spectator coaching" due to its distance from the playing fields.

A combination of innovative floor surfaces was utilized throughout the exercise areas.

- The soccer field features AstroPlay™ Rubber Filled Turf System, the same artificial grass surface used for Super Bowl XXXIX. This state-of-the-art material consists of artificial grass blades with rubber particulates interdispersed to give real grass playability. It is particularly suited to soccer requirements. Additionally, the surface allows use of the soccer field for lacrosse, baseball, football, golfing, and field hockey. It also offers a midwinter opportunity for children to play on "grass".
- Surrounding the soccer field is an 8 foot high, half glass, half solid panel dasher board system topped by suspended mesh netting to contain balls, but allow viewing of ongoing games.



- Three of the four basketball courts have maple surfaces. They feature a patented under-the-floor Scissor-Loc II™ air flow ventilation system between the concrete slab and the playing surfaces. This design incorporates a blower system that automatically activates when moisture is detected in the sub-floor. The system minimizes floor deterioration and warp.



- The fourth basketball court is rubberized, allowing additional use for tennis. It features drop-down hitting/pitching cages.
- All courts can be used for volleyball and include electronically-operated backboards, as well as electronic drop-down nets to either separate or combine the court activities.
- Both the perimeter running/walking track and the rubberized basketball court incorporate a floating padded floor. The patented Padenpour™ cushioned construction allows joint-friendly activities and adds versatility.
- For safety, the enclosed children's play area incorporates a state-of-the-art GT IMPAX™ cushioned rubber tile surface upon which rests a 25-foot tall Little Tikes™ play structure. The cushioned floor allows the rough-and-tumble activities typically experienced when children play and minimizes injuries that might otherwise occur.

As well as innovative floor surfaces, the Recreation Center incorporates numerous other construction features.

- The center's unique indirect lighting system is ideal for sporting activities, since the light source is not directly seen during play. The lighting provides a soft overall illumination of all areas as compared to most other facilities that use direct lighting systems that can be visually impairing.
- Air-conditioned comfort is maintained via massive air rotation units, which provide the main ventilation for the facility. A chilled make-up air unit provides the main outside fresh air and air conditioning requirements. This mechanical system eliminated the majority of ductwork typically seen in similar facilities and also was a tremendous help in controlling costs.

- The unique fire alarm system is voice activated, giving verbal instructions to occupants to leave the building in addition to the usual horn/strobes.
- All emergency control systems are automatically overridden by a diesel generator in the event of a power failure or other such event when the facility might need to be evacuated.
- Along with the interior of the building, the exterior parking area and site are under constant electronic surveillance, all tied into the building security systems. This enables members to arrive, enter, and exit the facilities in complete confidence and safety.
- The facility is fully ADA accessible including an elevator to access the mezzanine levels to allow viewing of all activities for people with disabilities.

Excellence in Project Management

As general contractor, Carmen Construction Co.'s responsibility was to accomplish a major project under unusually difficult weather conditions. Imperative was the coordination with the architect, city officials, building inspectors and subcontractors. Weekly meetings generated the valued input of all those associated with the project. The many unique features of the Tallmadge Recreation Center demanded particular flexibility and attention to scheduling, obtaining materials, and the sequential coordination of the many trade disciplines involved.

The wettest season on record caused a delay in project startup. Because of the need to introduce the completed recreation center during the cold-weather season, the opening date was, by necessity, fixed as February 1. Carmen Construction Co. suggested and managed changes in construction techniques (such as the floating floor) and, by tightly controlling subcontractors' schedules, allowed on-time introduction of the Recreation Center to the public. A favorable reception under cold weather conditions led to attracting the 2000 sustaining members required for on-going financial stability.

An indication of the need and acceptance of the Tallmadge Recreation Center can be to a great extent summarized by the generosity of the more than 25 local companies each of which contributed \$10,000 or more and whose names are included in the panels of the soccer field dasher-board surround and on the basketball floors. The upfront dollar commitments of individual citizens is demonstrated by inclusion of their many names on the main donor wall of the lobby and on paver bricks on the building exterior. The indication of community acceptance of the new completed facility is the fact that soon after its introduction, the recreation center had well over the required 2000 members, and, today, a year and a half later, it boasts over 3600 members.

The Tallmadge Recreation Center was designed as a flexible sport, fitness and community facility serving a wide range from toddler to senior citizens. The fully ADA accessible building with its elevator to the mezzanine levels and its electronically-surveilled interior and exterior parking area enable members to arrive, enter, utilize and

exit the facility safely and with confidence. The center includes a game room, aerobic/dance rooms, two private party rooms, locker rooms, food prep and a large café area. By utilizing the soccer field or combining the basketball court areas, community assemblies may be conveniently held.

The facility is centered within a 1/5-mile long, four-lane cushioned running/walking track, which serves as the circulation spine of the center, tying all activities and functions in the center into one cohesive whole. Netting separates court and field playing areas from the walking surfaces to protect walkers and runners from balls. This spine promotes and encourages interaction of people from seniors to teens to toddlers. While walking or exercising, seniors can experience toddlers playing, watch the sporting activities of older children, youth, and younger adults. This mixture of seniors, young adults, children and toddlers enhance both athletic and social interactions, promoting a strong sense of community.

In summary, Carmen Construction Co. , along with its associates, has completed a long needed, highly accepted, cost-effective, community enhancing recreation center for the city and citizens of Tallmadge, Ohio. The project was completed within budget and on schedule under difficult weather conditions. The fact that it quickly began operating at a profit is a tribute to the excellence of construction, the versatility of the venue, and the timely introduction to the community.