



Quality Construction Engineers the Quality of the Players' Experience

In the poem *Mending Wall*, Robert Frost quotes a neighbor's father's favorite saying: "Good fences make good neighbors." Like good fences, good residential tennis court design and construction help balance the tension between lot lines and the pursuit of recreational excellence.

This tension can take many forms including worry, stress, suspense, fear of the unknown, and general apprehension. But these natural anxieties are balanced against the embraceable grace and beauty of the game, and can be mitigated through communication, experience, site analysis, planning, engineering, technology, design, construction management, and craftsmanship.

The resulting constructed facility empowers homeowners to execute world-class serves, perform dream volleys and kill shots, stage dramatic comebacks, and play memorable matches with friends, family members, and rivals – and to be good neighbors.

Needs, Wants, and Site Options

The project started in September of 2009 during an initial interview with the homeowners. Owner expectations, priorities, lifestyle, budget, preferences, and desired court playing characteristics were discussed with court designer Fred Kolkmann, Certified Tennis Court Builder, with the goal of balancing wants and needs to ensure the homeowners would receive the best value for their tennis court investment. Priorities included saving as many of the mature trees on the property as possible and ensuring no surface water would run onto the neighbor's property. Needs and wants included Class II court lighting for night play (suitable



for college and semi-professional competition); an adjacent patio area for spectators, entertaining, and providing shade and a place for players to relax between sets; and electrical service for powering ball machines and supporting various patio electrical requirements.

While touring the property with the owners, it was determined the only suitable court location would be near the south property line, resulting in an east/west court orientation. Factors influencing this orientation included the location of the house, existing trees and planting areas, and entrance drive, and future property expansion plans.

Temporary stakes were laid out to help the owners experience visually the size and location of their dream court. Existing site elevations were taken, which determined the property sloped toward the west an average of four feet over the distance of the proposed court. Following the good-tennis-court-design-and-construction-make-good-neighbors dictum, it was decided to make the court be as unobtrusive as

possible for the neighbors. Plans to achieve this included using low (8-foot) fencing and recessing the court into an existing bank on the east side of the proposed site, sloping it one percent (1%) to the west. Recessing the court into the eastside bank also supported the owners' priority requirement for ensuring all surface water stayed on their property.

Engineering/Design Considerations

With a suitable location identified, court engineering and design considerations and challenges were engaged, with the goal of finalizing the project's scope of work. Existing site elevations dictated retaining walls would be required on almost seventy percent (70%) of the court. Retaining walls raise many design, engineering, maintenance, and aesthetic questions and can affect other elements of court construction, including fencing, lighting, and electrical service. For example, to avoid trapping leaves and other debris between court fencing and the retaining wall, it makes sense to set court fencing on

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the outside of the wall.

But accommodating this maintenance concern complicates fencing layout, construction, and installation, as varying site elevations require varying fence heights (between 64-inches and 96-inches on this project) to maintain a uniform, 96-inch height above the playing surface for the fencing top rails. Options for providing electrical power to the court for accessories and amenities were also detailed, and the impact of court construction on existing trees and other landscape elements were reviewed (unfortunately, several mature trees had to be removed).

After a second property tour with the homeowners to finalize the project scope, it was determined to move the proposed court as close to the property line as codes allowed to provide better protection for the root structures of a mature and much-loved tree. The final court elevation was also re-calculated, to accommodate for patio construction at the existing site elevation.

Court & Track

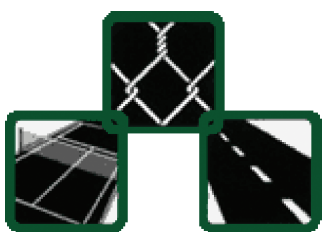
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The slight movement in court location and recalculation of the court elevation required a 32-inch high retaining wall for the east end of the court and a retaining wall of varying heights on the north side of the court, terminating with an eight-inch high wall at the northwest court corner. Site elevations allowed for the termination of the south side court retaining wall about one-third of the way from the court's east end. Several meetings were held to determine the type of retaining wall and patio materials to use on the project. The homeowners selected Olde Quarry® concrete segmental retaining wall system units for building the retaining walls. The durable, tumbled product adds character and beauty to the tennis facility while performing structurally to meet all project soil retaining conditions.

The homeowners selected Brussels Block® paving stone for construction the 20-foot by 10-foot patio and patio steps. These tumbled paving stones sport a quarried-look and complement well the Olde Quarry® segmental retaining wall units.

Fencing layout included fencing at both ends of the court and 30-foot down the court sides to create 60-foot-center openings on both sides of the court.

Excavation and Construction Begins

Upon approval of the project by the homeowners, Diggers Hotline was contacted to locate utilities and the property line location was determined. Cable, telephone, and electrical lines ran under the construction area and across various parts of the court. Hand digging revealed the lines were located about 10-inches below the existing grade. Upon conferring with the homeowners, the utilities were contacted to move all the lines to new locations around the court perimeter. Temporary utility lines were run so excavation could start while waiting for placement of the permanent lines.

Court excavation started on November 9, with anticipation of being able to install the binder layer of asphalt before winter weather stopped work on the court. Excavated soils were left on site for final court landscaping and used on another portions of the property for fill material.

Upon completion of the excavation, the landscape contractor installed a stone base for the retaining walls and began building the walls. After the first course of retaining wall block was laid, the excavator returned and installed an 8-ounce, non-woven geotextile fabric over the subgrade, followed by a 6-inch layer of clear stone, followed by a 3-inch lift of 0.75-inch traffic bond.

At the same time as the walls and steps were being installed, the six light-pole bases were dug

and set. These light pole footings are 24-inches in diameter and dug 5-foot deep into the ground, with a minimum of 3-inches of the base above grade for easy pole maintenance. To minimize energy consumption and light pollution and to protect neighbors from excessive light trespass, the homeowner selected a cut-off (also known as shoe-box) lighting system, in which the light sources are contained within rectangular, box-like lighting fixtures. These cut-off-type light fixtures dramatically reduce glare and light over-spill, while delivering required illumination in a concentrated and tightly confined distribution pattern (see project picture on the cover page).

The electrician laid all electrical lines at the subbase level in back of the retaining wall, since the grade at subbase level was deep enough to meet electrical codes, and in a trench from the retaining wall to the house, where final electrical connections would be made.

Once the electrical work was finished, a 4-inch perforated pipe perimeter drain was installed in back of the retaining wall and patio steps and led to air at the southwest corner of the court. Final stone base was placed and laser graded and 1.5-inches of compacted-binder asphalt was paved in late November.

Upon completion of the binder surface, equipment was allowed on the court asphalt to set the light poles. Because the light pole bases were set behind the retaining walls and at different elevations, three of the light poles had to be cut off at various lengths to maintain the same height of the lights above the court surface.

Fence posts were set in the back of the walls and driven 5-foot into the ground. Fencing-fabric was attached to the fence posts before backfilling of the retaining wall with clear stone was allowed. Wall backfilling was completed before snow stopped work on the project.

Work Resumes

In the spring of 2010, the patio was final-graded, stone base added, and the Brussels Block® paving stones installed. Net posts were set in sleeves before paving of the final court surface was done in April. Once the surface course was paved, a control joint was cut along the net line, remaining fence posts were set (by driving them), and fencing-fabric attached to the fence posts.

Landscaping around the perimeter was installed and a four-coat, acrylic color system (ITF Class II) was applied to the final court surface. Numerous conversations took place between the owners and the color manufacturer before a final color scheme was chosen: Dark green interior

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QA

Spring-like weather has arrived and our pre-season players are ready to hit the courts. How can I make sure our hardcourts are ready for them?

The American Sports Builders Association, working with the United States Tennis Association, created court maintenance planner charts, which were published in Racquet Sports Industry magazine (RSI). The maintenance checklists below were developed, with permission from RSI, from information contained in said charts.

Outdoor Hardcourt Pre-Season Maintenance Checklist

- ___ Court Surface: Power wash, clean & fill cracks. Check for birdbaths, repair as required.
- ___ Nets: Install nets, adjust for correct height and tension.
- ___ Net Posts: Clean out sleeves if removed. Paint as required. Install posts and lubricate mechanisms and sleeves.
- ___ Fencing: Check that frame and fabric are secure and free from hazards.
- ___ Windscreens: Install windscreens.
- ___ Lights: Clean lenses and check wiring/conduit. Check and record light level readings. Check light poles for nicks or scratches, paint as required to prevent rusting.
- ___ Maintenance Equipment: Clean, lubricate, tune-up, and test.
- ___ Drainage: Check systems, clear debris from drains, drainage structures, tile, and pipes.
- ___ Landscaping: Prune back both overgrowth and roots under courts, fertilize, prepare beds for installing seasonal plantings, replace mulch, if needed, in planting beds.

Outdoor Hardcourt In-Season Maintenance Checklist (Perform as Required)

- ___ Court Surface: Clean off spills and other contaminants as required. Check for surface cracking. Sweep or blow clean as needed, especially after a heavy rain.
- ___ Nets: Clean headband, net, and center strap. Check net tension and height at least weekly, adjusting as needed.
- ___ Fencing: Periodically inspect frame, hardware, and footings. Repair as required or replace damaged elements. Check gate swings, and lubricate as needed.
- ___ Windscreens: Check daily that windscreens remain securely fastened to fence framework. Hose down or wash wind screens as required.
- ___ Lights: Periodically check light poles for nicks or scratches, paint as required to prevent rusting.
- ___ Maintenance Equipment: Clean and keep lubricated. Check for nicks or scratches; paint to prevent rusting.
- ___ Drainage: Keep drains, drainage structures, tile, and pipes free of debris. Repair damaged structures or pipes.
- ___ Landscaping: Install/change seasonal plantings. Water, fertilize, or prune plants as required. Cut grass, sweep walks, and weed planting areas, as needed, and check plants weekly for invasive insects or diseases.

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with a lighter green on the outside. Lines were striped, net installed, and final landscaping was completed in time for the court to open in June of 2010.

A Lesson for Developers of Public and Private (non-residential) Tennis Courts

One of the most gratifying elements of residential tennis court construction and renovation is the opportunity to work closely with homeowners to engineer the quality of their tennis experiences, designing and constructing unique tennis courts meeting the homeowners' needs,

lifestyles, and competitive playing levels. Munson, Inc. works just as closely with athletic directors, coaches, park and recreation directors, club owners and tennis pros, country club boards, and others with decision-making authority for tennis facilities to engineer the quality of the experiences of those who use their courts.

Whether you are about to construct new courts or renovate existing ones, contact the Tennis & Track Division of Munson, Inc. to help you design and bring the full resources of your tennis facility to bear during your players' matches and practice sessions. Quality design and construction

really does engineer the quality of the playing experience. Together, we can help players to fall in love with your new tennis facility – at first sight – or for renovation projects ... fall in love all over again.



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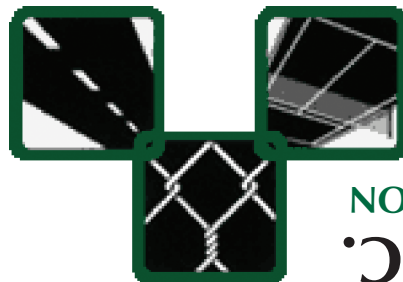


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