
Green Section Record

October 01, 2023

Volume 61, Issue 18

FEATURED

The Fundamentals of a Modern Maintenance Facility

October 06, 2023

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An organized and efficient maintenance facility is a critical part of a successful golf course maintenance operation.

Key Takeaways

- The golf boom of the past several years has made it possible for more courses to invest in long-overdue improvements to their maintenance facility.
- If your current facility isn't meeting your needs, make sure to clearly communicate the issues and the impact they have on the maintenance operation.
- Not having enough space is the top concern from superintendents. Whatever size building you think you need, chances are it should be even bigger.
- Access is key. Your team should be able to find, move and replace tools and equipment easily.
- Considering current prices, proper storage areas that protect equipment, tools, and materials from the weather and contamination are essential.
- Providing a safe, organized and desirable workplace helps attract and retain good employees and sets a tone of pride and professionalism for the work out on the golf course.

The success of any golf course maintenance department depends on having the staff, tools, equipment and materials required to meet expectations at the course. You also need an efficient and well-organized maintenance facility to take care of these resources and optimize productivity. Many courses have been dealing with outdated maintenance facilities for decades because investing in them is expensive and often isn't viewed as a priority among golfers and decision-makers. However, increasing awareness about the importance of a well-functioning maintenance facility and an influx of cash from the recent golf boom has allowed many courses to make upgrades or begin actively planning and budgeting for them.

Whether you're planning an entirely new maintenance facility or looking to upgrade the one you have, doing your homework will ensure the investment meets your needs for years to come. This article covers the key features of a modern maintenance facility and shares insights from superintendents who have gone through recent renovations. Our focus will be on new maintenance facilities, but many of these concepts and design principles apply to renovations of any scale.

Developing a Plan

If you're fortunate enough to be planning a new maintenance facility or renovations to the existing one, there is a lot to consider and you'll feel the pressure to get things right because of the large financial investment. Let's explore the key parts of the planning process to make sure your project gets off on the right foot.

Starting the Conversation

In a recent Golf Course Superintendents Association of America (GCSAA) survey, approximately 30% of all respondents said building a new maintenance facility is a “high” or “very high” priority (GCSAA, 2022). But keeping golfers happy is obviously the focus at most courses, so it’s common to see expenditures on the clubhouse, dining facilities or golf course placed ahead of the maintenance facility. Golfers can see and experience these improvements so they can seem like a better investment. Golf facilities have also become comfortable with the idea that superintendents are good at getting the job done no matter what, even if that means dealing with an inadequate maintenance shop. Unless you’re advocating for the needs of your department, the perception among golfers and stakeholders will probably be that there’s nothing wrong with the maintenance facility – or anything that is wrong isn’t as important as various other projects.

Talking with superintendents, a few common themes emerged about how to get a new or improved maintenance facility on everyone’s radar:

- Educate golfers and stakeholders on the condition of your maintenance facility and how it negatively affects things they care about like course conditions, operational efficiency and the course’s reputation. Getting stakeholders to tour an outdated maintenance facility or holding meetings there can be an effective and eye-opening strategy.
- Ease into the conversation. No matter the resources at your course, a new building or renovations will be a big financial commitment that requires years of planning and budgeting. Don’t surprise decision-makers or expect an unrealistic timeline.
- Do your homework. Know exactly how much space and what features you need. Researching current construction costs as well as local zoning, environmental and other restrictions will help you know what’s possible and allow you to come up with a realistic cost estimate.
- Talk to superintendents who have gone through the process and consult with construction experts for guidance on the initial design to help refine cost estimates and develop a project timeline.



Grabbing a spare bunker rake might take a while – and watch your step! Giving decision-makers a tour of a cramped, antiquated maintenance building can be an eye-opening experience and a good way to start talking about upgrades.

Location, Location, Location

Most superintendents can easily identify the ideal location for a maintenance shop on a property. However, once you factor in concerns about noise, visibility from the golf course or clubhouse, access to utilities, zoning restrictions, environmental considerations and countless other things, it will usually restrict your options to just a few possible areas. Although compromises are often made, there are some things to prioritize if relocating the maintenance facility is an option:

- Ease of access and parking for deliveries and staff with minimal disruption to golf or clubhouse activities.
- Ease of access to the course itself. Incredible amounts of time can be wasted in transit if the maintenance facility isn't well located. It may be impossible to put the facility in the middle of the golf course, but at least try to find a location with easy access to the front and back nine.
- Enough room for efficient traffic flow into and around the building.
- Minimize the impact on neighboring properties, especially with early morning noise concerns.
- Select an area that isn't susceptible to flooding or wayward golf balls and that can be easily secured to prevent trespassing.

Don't be afraid to consider all options, even if they don't seem like an obvious choice at first. For example, at Winged Foot Golf Club in Mamaroneck, New York, the location of the maintenance facility gave rise to noise and aesthetic concerns with neighbors. Director of golf courses, Stephen Rabideau, CGCS, led planning for the new maintenance facility and came up with the idea to move less-frequently-used buildings closer to the neighboring properties to create a noise and visual barrier from the main activity areas. Repositioning the buildings also allowed him to create a central "courtyard" which acts as a hub for maintenance activities and further reduces potential noise impacts. Rabideau's outside-the-box idea worked perfectly and has been a win-win for the neighbors and the maintenance team.

Another successful strategy used by courses with difficult terrain, streets bisecting the property, or severely limited space is to build satellite maintenance buildings. Whether these buildings are used for long-term material and equipment storage or are part of the daily maintenance routine, I have seen this approach work well at several courses.

Go Big or Go Home

One thing I have yet to see is a maintenance building that has too much space. Once you have identified an ideal size for the needs of your maintenance operation, do yourself a favor and add some extra square footage to that. You will always find a use for the space whether it be temporary storage or room for future growth. Again, with the cost of maintenance equipment and materials, everything should have a place that is protected from the elements.

As far as size, a minimum starting point for a typical 18-hole golf course should be somewhere around 7,500 to 10,000 square feet of storage, shop and office space. However, it's not uncommon to observe multi-course facilities with 20,000 square feet or more of total indoor space. The Olympic Club in San Francisco recently completed a two-story, state-of-the-art maintenance complex totaling just under 30,000 square feet for the 45-hole facility.



The new 29,000 square foot maintenance facility at The Olympic Club makes the most of the land available and provides easy access for staff and deliveries.

During a recent tour of the new shop with Ocean Course superintendent Jared Kief, he summed up how it's been a game-changer for the maintenance operation: "Everything has its own place now. The old shop made it hard to get things done, the maintenance building no longer stands in the way of our work."

Outdoor space at the maintenance facility is equally important for efficiency and coordination. Obviously bigger is better, but a good rule of thumb is to have land area around the facility that's at least three times the size of the buildings. At The Olympic Club, the new 30,000 square foot facility is situated on about 100,000 square feet of land – giving the maintenance team plenty of room to work.

Smooth Transition

Construction can take a while and delays are common, so have a plan to continue normal maintenance while working around contractors. At minimum, you will likely need temporary trailers for meeting and locker room space and you may need some form of temporary shelter for equipment storage and a mechanic's work area. To illustrate the sad state of some golf course maintenance facilities, one superintendent I spoke with said the temporary trailers they used to operate out of during construction of the new facility were already a huge improvement over the old shop.

Taking Care of Your Equipment

Equipment like GPS sprayers and rough mowers can easily cost over \$100,000 each. Even a walk-behind greens mower comes with a hefty price tag these days, so it's more important than ever to protect your investment and give those entrusted with maintaining it the space and tools they need.

Equipment and Tool Storage

A well-organized, efficient golf course maintenance building is kind of like an aircraft carrier – things you may need at a moment's notice are on deck, any piece of equipment is accessible within minutes, there is lots of vertical storage and all spaces are highly organized. Being able to find and access necessary equipment and tools is essential for productivity. Most of us have seen or worked at a maintenance facility where loads of time was spent moving stuff around to get what you need for a given task. This is obviously frustrating for the staff and extremely wasteful. Here are some design features that can improve equipment and tool storage:

- Having overhead doors on both sides of a building makes accessing equipment much easier. This arrangement allows you to develop a flow for removing and replacing equipment and minimizes the time spent shifting things around to access what is required.
- Lofts are a great use of otherwise wasted space, but they must be easily accessible. No one wants to lug a bunch of squeegees down narrow, makeshift stairs or a ladder. Wide stairs and a built-in lift or access point for a forklift can expand the possibilities for what you keep up in the loft and make it much safer for staff to access those items.
- Give everything its own home. You don't want to move a fertilizer pallet to get a sod cutter. Whether it's course setup equipment, backpack blowers, hand tools or fertilizer, the staff should know exactly where to find something and not have to move another thing to get it.
- Go vertical. A ubiquitous sight at efficient and organized maintenance facilities are heavy-duty shelving systems and thoughtful use of space along the walls.



Having overhead doors on both sides of a well-organized equipment storage building makes it a lot easier to get the utility vehicle you need.

Keep Your Equipment Tech Happy!

Equipment technicians are responsible for maintaining large fleets of increasingly complex machinery. Their time is valuable, so providing a functional workspace that allows them to focus on the job at hand is worth the investment. In conversations with equipment techs, a few things stood out as valuable elements of their workspace:

- The benefits of a separate room for reel grinding cannot be overstated. Noise, dust and safety issues make this a must-have for any new maintenance facility.
- A lift or multiple lifts are a must as well. Maintenance and repairs are more difficult and far more time consuming when there isn't an easy way to access all parts of a machine. There's also no better way to turn off applicants for an equipment tech position than telling them there's no lift.
- A dedicated parts room that's quickly accessible and well organized is a massive timesaver. This makes it easy for the equipment techs to find what they need and replenish inventory before they run out of something.
- Have plenty of air hose connections and place the compressor outside the work area to minimize noise.
- Including a TV to display a job board keeps everyone up to speed on repairs and equipment status.

- Some newer facilities include an overhead vacuum system for removing engine oil and transporting it to a remote storage tank that's easily accessible for disposal.
- Radiant heating in the floors of an equipment maintenance area reduces energy costs and focuses the heat where it's needed most, instead of high up in the rafters.



Most equipment techs would agree that a dedicated room for reel grinding is a must-have in a modern maintenance facility.

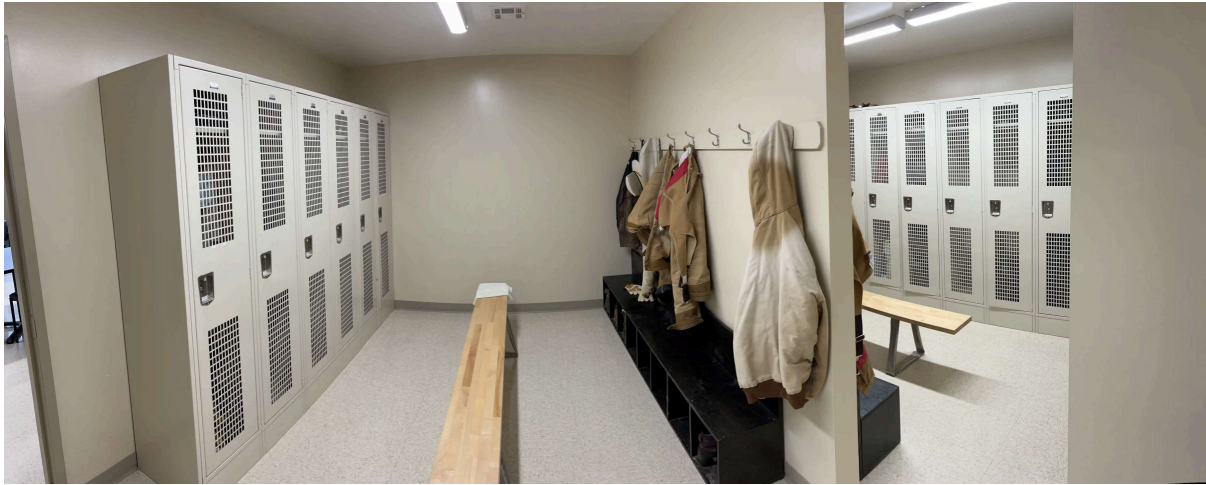
Taking Care of Your People

Labor challenges are one of the most pressing issues facing the industry today – if not the biggest. Providing staff with a safe, efficient and desirable workspace can go a long way toward attracting and retaining good employees and establishing the kind of culture you want to see carried into the work on the course.

Courses in competitive labor markets have prioritized upgrading staff areas during maintenance facility renovations. Spacious breakrooms with full kitchens, laundry and locker rooms are just a few of the modern amenities to help staff prepare for and clean up after a hard day's work out on the course. These areas are also a great opportunity to hang up photos of the course, images from projects, and any other items that help to build pride in the team's efforts.

Taking care of your staff and keeping morale high is more important than ever and there are many ways to do it. Here are some popular amenities courses are providing and a few unique ones too:

- Clean, secure locker rooms with showers and laundry are a great resource for the staff. Repurposing lockers from a clubhouse renovation is a popular way to upgrade your locker area without much additional expense.
- Mudrooms are a big hit with employees and superintendents alike. Adding a few shoe and boot dryers is a nice touch. This is especially valuable at courses that experience lots of rainfall during the year.
- More and more women are entering the industry and it's important, and usually required, to provide female-only restrooms and other personal areas.
- Offer outdoor areas for breaks with proper seating and tables.
- On-site housing accommodations are a popular amenity and can help attract interns or assistants, especially in high-rent areas. However, it's common for local ordinances to forbid on-site housing so you'll have to do your homework first.
- Provide places for staff to charge personal electronics and work items like headlamps. Cell phones have become the primary method of communication at many courses, so the staff should be able to charge their devices as needed.



The new staff locker room at The Suburban Club in Pikesville, Maryland, immediately boosted employee morale and is a much-needed amenity after a hard day's work out on the course.

Office Space

Office areas are where important planning sessions and meetings occur and they are also the area most frequented by golfers, members, fellow department managers, owners, visitors and others who will form an opinion of your maintenance operation based in part on what they see here. You don't get a second chance to make a first impression, so let's look at some ways to put your best foot forward.

- A feature seen at most new facilities is a dedicated conference room for hosting meetings. A proper meeting room can bring a real sense of professionalism to meetings with staff, green committees or other groups.
- Centrally locate the office so management can quickly get to all areas of the maintenance facility and it's easy for visitors to find.
- Provide computers, office space and collaborative areas for the superintendent, assistants and other members of the management team.
- Many modern maintenance facilities have dedicated space for an administrative assistant depending on the organizational structure.
- Include the infrastructure necessary to add new technology tools in the future.
- Provide a dedicated area for the central irrigation control system. It often makes sense to house other sensitive hardware in these hard-wired rooms as well.
- Consider strategically placing interesting reading material, artifacts, historic course photos or turfgrass management books around the office for staff and visitors.

Building in Sustainability

Sustainability is an increasingly important part of golf course management and some courses are making a purposeful effort to incorporate renewable energy and other environmentally friendly technologies into their maintenance facility.

Case in point: Breckenridge Golf Club, in Colorado, installed two sets of photovoltaic solar panels at the 27-hole facility's maintenance building. One set of panels offsets the electricity consumed by the pump station and maintenance facility while a second solar array helps charge a fleet of 12 electric utility vehicles and two electric triplex mowers. Golf course superintendent Grant Johnson estimates the solar arrays save around \$13,000 on electricity annually and reduce the carbon footprint of the golf course by 167 tons of carbon emissions per year. As Johnson put it: "It's a win-win for the golf course and for the environment."

From motion-detecting lights throughout the shop to refillable water bottle stations, there are many ways to make your maintenance facility more environmentally responsible.



Two solar arrays provide a renewable energy source that helps meet the energy needs of Breckenridge Golf Club's maintenance facility.

Final Thoughts

The fundamentals of a modern maintenance facility don't just apply to courses that host championships and have loads of resources. At The Suburban Club in Pikesville, Maryland, superintendent Blake Murphy methodically added buildings and renovated the maintenance facility over a six-year period. "It's been an ongoing, piece-by-piece effort to continually improve our facilities," said Murphy. "Moving out of two office trailers and into our new staff building in 2018 had a dramatic and immediate improvement on morale and efficiency."

I've seen superintendents working out of old horse stables and numerous other repurposed structures and wondered how in the world they get the job done. These situations certainly don't make it easier to manage and retain staff since they can clearly see that their uncomfortable, cramped workspace has been provided as an afterthought.

Given the rising cost of staff time, maintenance equipment, tools, computer systems, plant protectants and just about everything else involved in modern golf course maintenance, there is a very clear return on investment for making sure that your maintenance facility operates efficiently and provides an appropriate space to house all the elements of a modern maintenance operation. If your facility isn't reaching that standard, start raising awareness at your course and begin thinking about solutions that will meet your needs today and into the future.

References