

VECTORWORKS CASE STUDY



GRAHAM LANDSCAPE ARCHITECTURE
USES VECTORWORKS LANDMARK TO
SEE BOTH THE FOREST AND THE TREES

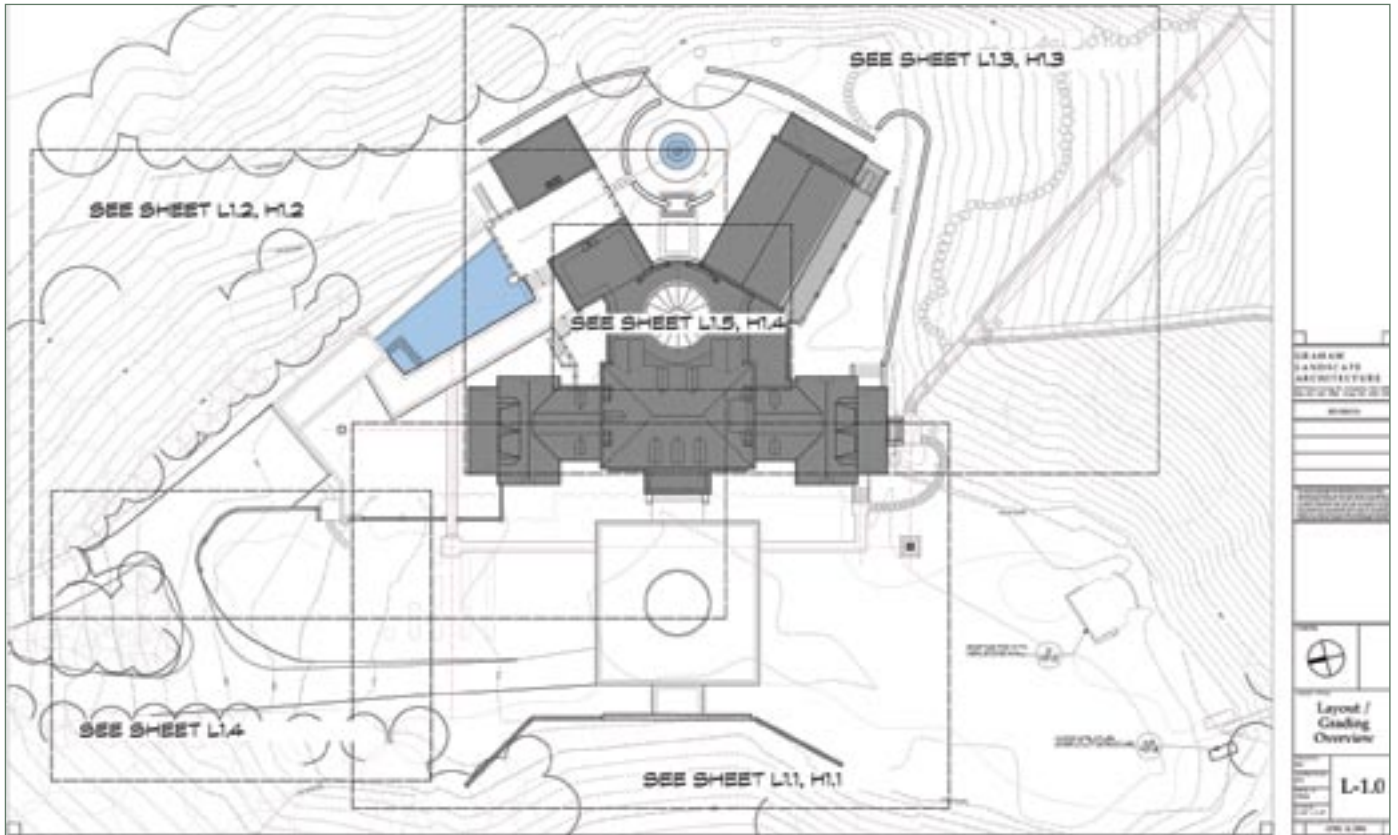
PRESTIGIOUS, AWARD-WINNING EAST COAST LANDSCAPE ARCHITECTURE FIRM USES VECTORWORKS LANDMARK ON A HISTORIC WATERFRONT ESTATE. FROM COMMUNICATING WITH CLIENTS AND COLLABORATING WITH OTHER PROFESSIONALS TO DESIGNING THE SMALLEST HARDSCAPE DETAILS AND CREATING MULTI-SCALED, MULTI-LAYERED SITE PLANS, VECTORWORKS LANDMARK ROSE TO THE CHALLENGE.

CONQUERING A COMPLEX PROJECT

When faced with the challenges of steep slopes, eroding shorelines, invasive flora, critical area buffer restrictions, structural demolitions and reconstruction, storm water management, reforestation, and complex site programming on a recent project, Graham Landscape Architecture relied on VectorWorks LANDMARK to consolidate all pertinent information electronically and manage the layers of information required for each aspect of the project, for each member of the team.

"We find VectorWorks LANDMARK to be a versatile CAD system that works extremely well for us," says firm principal Jay Graham. "We find it easy to use and a big time saver. Yet it has a level of complexity and sophistication that enable us to create all the details we need, as well as assemble a vast amount of data from different sources. This, in turn, enables us to communicate with other professionals we work with throughout a project, such as engineers, architects, and contractors, not to mention our clients."





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The project involved a 15,000 square foot residence situated on 22 acres of waterfront property on Maryland's Severn River. Initially built as a private residence in the 1920s, the property changed hands several times, undergoing a brief stint as a priory, at which time dormitory and chapel wings were added, as well as a serving as private school.

Before the recent owner purchased it, the property was vacated and had been deteriorating for several years, leaving both house and grounds in a serious state of disrepair.

CATERING TO CRITICAL AREAS

Since the estate is on the water, it is restricted by critical area requirements. These included steep slope setbacks and 100 foot buffer regulations, within which the footprint of the house resided. Due to these restrictions, the landscape architects had to work within the constraints of the existing impervious areas.

The newly designed south garden resolves the challenge of some fairly complex angular geometry resulting from the way the dormitory and chapel wings were added to the original structure. In addition to addressing garden layout, views, and a retaining wall, grading precision was crucial to comply with critical area requirements.

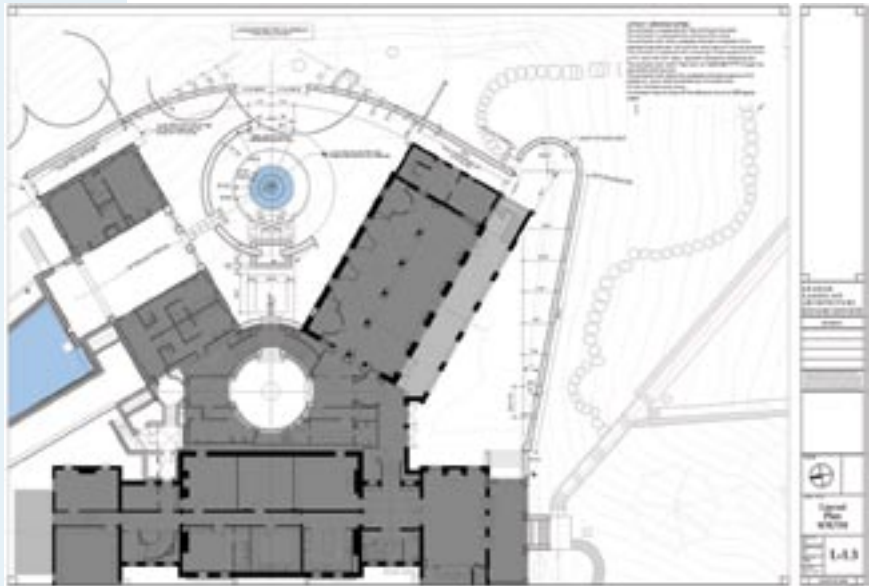
GRAHAM LANDSCAPE ARCHITECTURE COMBINES CLASSIC DESIGNS WITH CONTEMPORARY LIFESTYLES

Graham Landscape Architecture crafts classic landscapes for urban, country, and waterfront estates, and historic properties, blending house and gardens with distinctive designs that connect landform and architecture. Based in Annapolis, Maryland, the award-winning firm has designed landscapes for clients from as far north as Mount Desert Island in Maine to Savannah, Georgia, in the South and Kansas City, Missouri, in the West to the Atlantic Coast in the East.

Firm principal Jay Graham founded Graham Landscape Architecture in 1984 to provide specialized design services to property owners, architects, planners, and developers. As a full-service firm, its expertise spanned historic properties; urban, country and waterfront estates; college campuses; life care facilities; office and retail complexes; and recreational areas. Throughout the years, Graham Landscape Architecture won many competitions, garnered awards, and earned a reputation for delivering distinctive, impressively executed projects. Their portfolio includes notable projects such as the Maryland governor's mansion, the Baltimore-Washington International Airport, Baltimore's Druid Hill Park competition, The US Naval Academy, the University of Virginia, the University of Rochester, St. Mary's College, the University of Maryland's Law School, a Papal Altar, and many private residences. Over the years, the firm's primary focus has evolved to high-end residences, historic properties, and special projects.

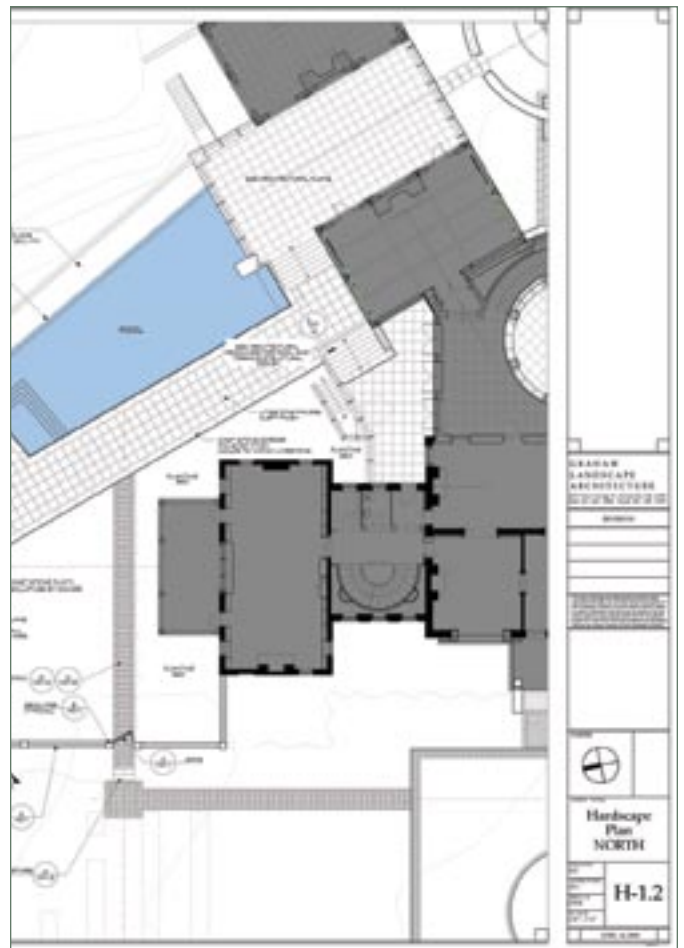
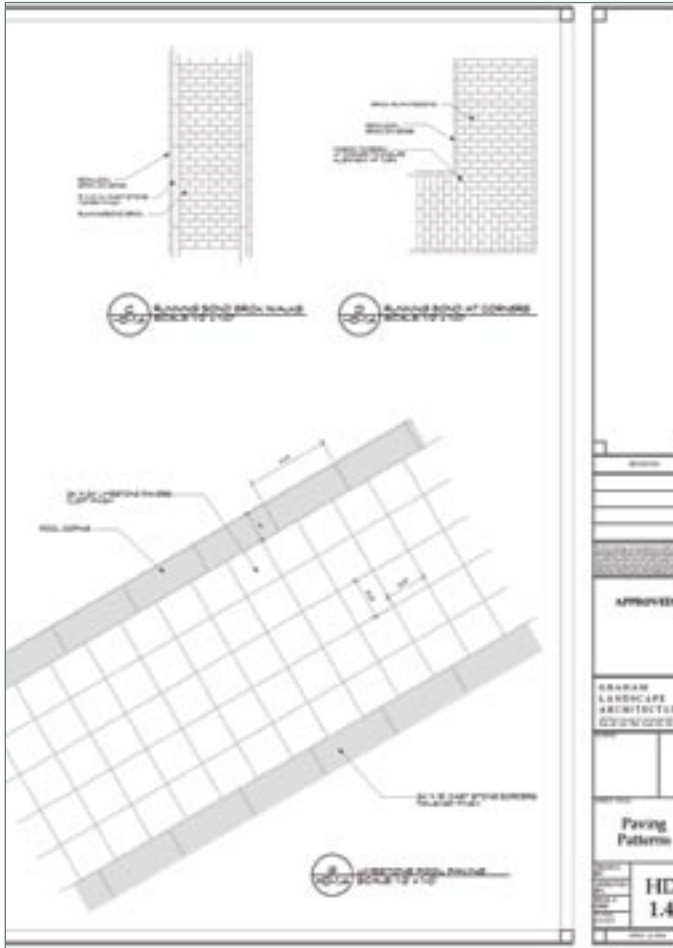
Graham Landscape Architecture has won several awards from the MDASLA, the Landscape Contractors Association, Horticulture Magazine, inform Magazine, and Builder Magazine, to name a few.

Several of the firm's projects have been featured in popular national print publications, including Coastal Living, Traditional Homes, Architecture DC, Washingtonian, Baltimore Magazine, Freehand, inform Magazine, and Period Homes.



"Taking our lessons from history, we resolved the awkward geometry by introducing the circle. We created a circular fountain and lawn area in between the two wings," explains Graham. "VectorWorks LANDMARK helped us refine our initial concepts, and explore the spatial relationships and orientation of the garden elements, within the context of the site constraints. We created all of the exterior architectural and landscape components—including the fountain, lawn, and a low sitting/retaining wall."

"One method of communicating how designs will work is through layout plans. In general, they can be difficult to create and read, as there can be so much information to include," adds Marc Anderson, one of the firm's designers. "But VectorWorks LANDMARK has exceptional tools for making it easier to create and modify these plans, so we are able to clearly document and articulate critical specifications."

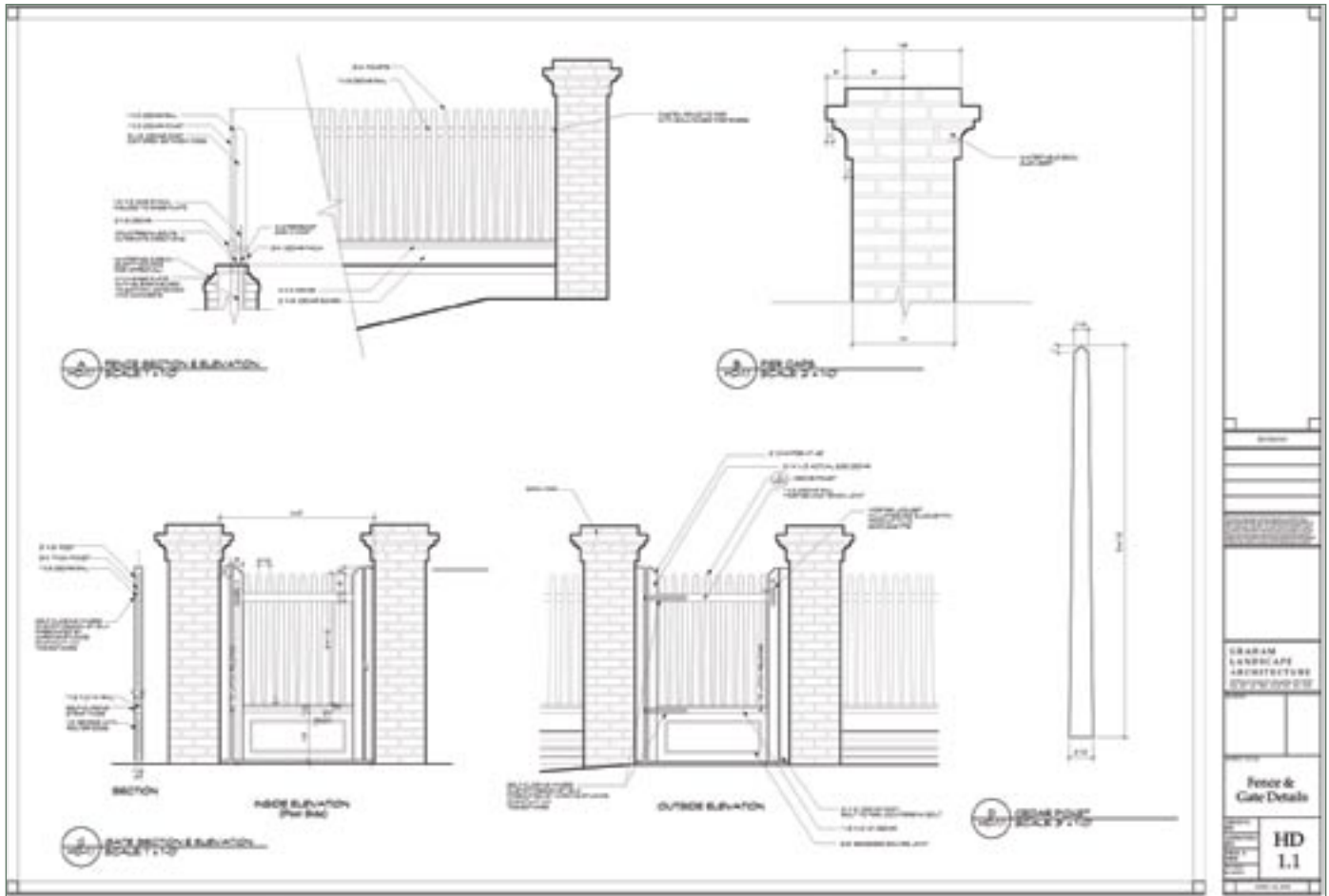


JUMPING IN WITH BOTH FEET

Incorporating a vanishing edge pool without increasing impervious surface area required additional creative thinking. Kevin Campion, the project's lead landscape architect, took advantage of reclaiming a paved parking area. Due to the odd shape of the area and the steep slopes bordering it, the space was fairly complicated to work with. Using VectorWorks LANDMARK, Campion was able to effectively and efficiently resolve broader issues such as impervious surface space and topography, as well as the detailed issues of paving patterns and planting areas.

"Being able to manipulate details using VectorWorks LANDMARK allows us to solve problems quickly," says Anderson. "For instance, we can test various options within awkward spaces, or explore stairs at different widths to see what's going to work best, or adjust the size of a fountain to explore different spatial proportions."

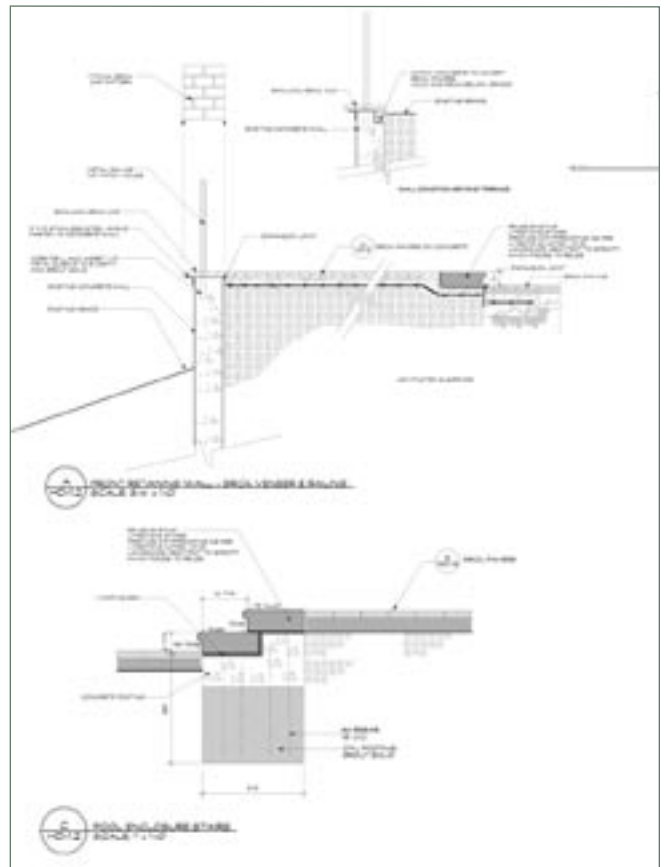
"When it comes to hardscape, the hardscape tool within VectorWorks LANDMARK can be a tremendous timesaver," adds Quinn Craughwell, another of the firm's designers. "Generally, the paving patterns save us a lot of time when we're working with regular geometry. During the concept phase, we worked with several different patterns,



which would have been time consuming to create by hand. We also like that you can create your own paving patterns with VectorWorks, especially when we're working with a variety of different spaces."

As a communication mechanism, the team also finds the hierarchy of line weights in VectorWorks LANDMARK helpful in creating details and differentiating among them.

"In VectorWorks, you can actually change the line weight and see it on the screen," notes Anderson. "This is valuable when we're doing details such as bricks or pavers, which would be very distracting if they were all full strength. It came in handy with some stair, gate, and pier details, to distinguish between them. Line weights are a huge bonus we tend to take for granted."



KEEPING TRACK OF COSTS AND MATERIALS

In addition to the newly designed outdoor recreational areas, gardens, and terraces, the acreage surrounding the house encompasses several program elements that have budgetary implications, such as the sections of forests and woods that have been taken over by exotic invasive plants, eroding shorelines, and areas surrounding the property's outbuildings, including a barn, tenant house, and a mechanical facility.

According to Arthur Balter, another designer, VectorWorks helps from a budgeting and estimating perspective. Simple tools, such as area calculations, provide the most current information from which material quantities can be derived. As designs are modified, the information is there to determine the budgetary impacts.

"We can very easily calculate, from a budget perspective, what is needed to realize the design or maintenance objectives, area by area," says Balter. "Whether we are looking at the quantity of plant or hardscape materials we need for a given space, or we are calculating areas for remediation efforts, VectorWorks gives us the

baseline information we need to translate area into costs. This also helps us work with clients to prioritize efforts and phase implementations."

Anderson adds that the Coordinate Geometry tool was also very useful for "being able to input engineering or property line coordinates and have them come out exactly right. It's a big help, especially on a project like this where many teams are involved in many aspects of the project. With the stringent critical area requirements, there isn't room for error, and VectorWorks helps us ensure that everyone is working within the same set of constraints."

VECTORWORKS LANDMARK EDGES OUT AUTOCAD

Graham Landscape Architecture has been using VectorWorks LANDMARK since 1997, back when the product was called MiniCAD. None of the current team had used VectorWorks before they joined the firm, but all attest to its short learning curve and ease of use.

In fact, all had been trained in AutoCAD.

"VectorWorks is extremely user friendly," notes Quinn Craughwell. "I like that I don't have to remember codes, which can get frustrating and confusing. You have all your toolbars set out for you, so it's really straightforward and easy to read and move around in."

"Personally, I wouldn't want to use anything but VectorWorks," confirms Marc Anderson.

USING PERENNIAL FAVORITES TO SAVE TIME

While team member Quinn Craughwell finds it time consuming to enter a lot of information up front into VectorWorks LANDMARK to use the place plant tool, she realizes the benefit when it comes time to create a plant list at the end.

"With the place plant tool in VectorWorks LANDMARK, you have your list already created for you when you're finished, which saves a lot of time in the long run, especially when we are working with designs that can include hundreds or thousands of plants," explains Craughwell.

She has also found some innovative ways to use the program to count plants.

"When we don't use the plant count tool, we do take advantage of the polylines having vertices that are counted for you in VectorWorks LANDMARK," Craughwell adds. "Because we tend to connect groups of the same plants with polylines, sometimes I count the plants using polygons. All you have to do is look up the number of points in a line, and it tells how many shrubs you have for that group."

Graham remembers when he used to draw everything by hand, "A plant list like the one we generated for this project would have taken a day to draw, so creating them in VectorWorks saves us countless hours. In fact, I think we do a more thorough job now that we don't have to draw manually."

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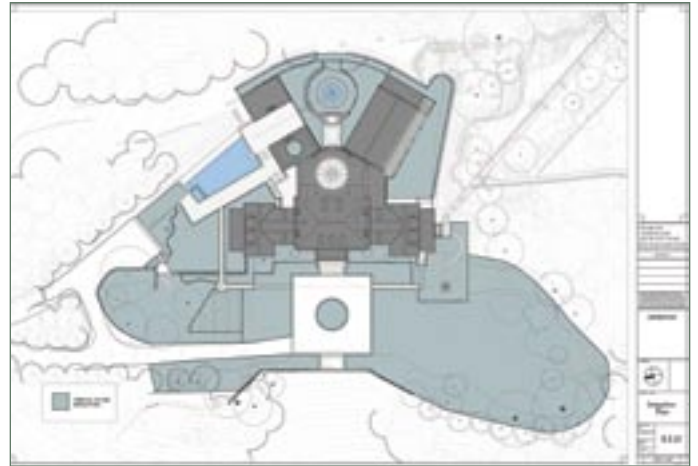


STACKING LAYERS WITH VECTORWORKS LANDMARK

Graham Landscape Architecture found the many layers comprising the firm's projects to work very nicely with the layering within VectorWorks LANDMARK.

"In projects such as these older and historic properties, we have archaeological layers, historical layers, and critical areas to consider," Balter explains. "We work with topographic layers, utilities, planting layers, hardscape layers, lighting and irrigation plans, and new structural layers that introduce contemporary elements into the landscape, such as a pool or sports complex. We identify areas for conservation, storm water management, reforestation, or wildlife habitats. The list goes on. We are able to take advantage of establishing, maintaining, and viewing the layers within VectorWorks LANDMARK in a way that lets us communicate with our clients and other professionals working on the project at the appropriate levels in the appropriate phases."

In addition to facilitating communications, the firm finds that being able to stack the various project layers within VectorWorks makes coordination among the different disciplines involved a lot easier.



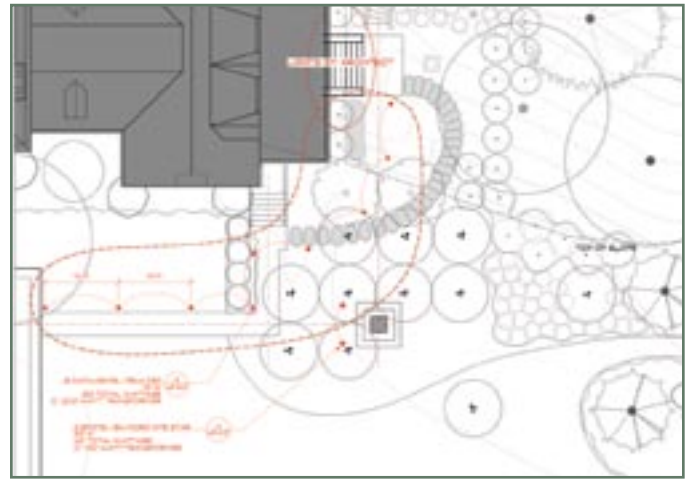
Graham cites that landscape architects encounter similar challenges architects face. It used to be that the electrical, mechanical, and structural engineers all worked on different sheets, and the only way they could be related was to put them on a light table. Now, thanks to a CAD application like VectorWorks, all layers can be stacked on top of each other in one file.

"We use VectorWorks to build from the bottom up," explains Graham. "As we move through the design process, we continue to add layers and enrich the project information. The underlying layers serve as guides to what we put on top of them. For example, we place the civil engineers' work underneath our work, to make sure that we're not putting a tree on top of a septic field. Information to build the utility infrastructure tends to come from several different engineers, so there is usually not a single location to go to for the information. Using VectorWorks, however, allows us to put the layers on top of each other. Having the work of several different pieces of the project all in one plan makes coordination so much easier."

SEEING BOTH THE FOREST AND THE TREES WITH SCALE

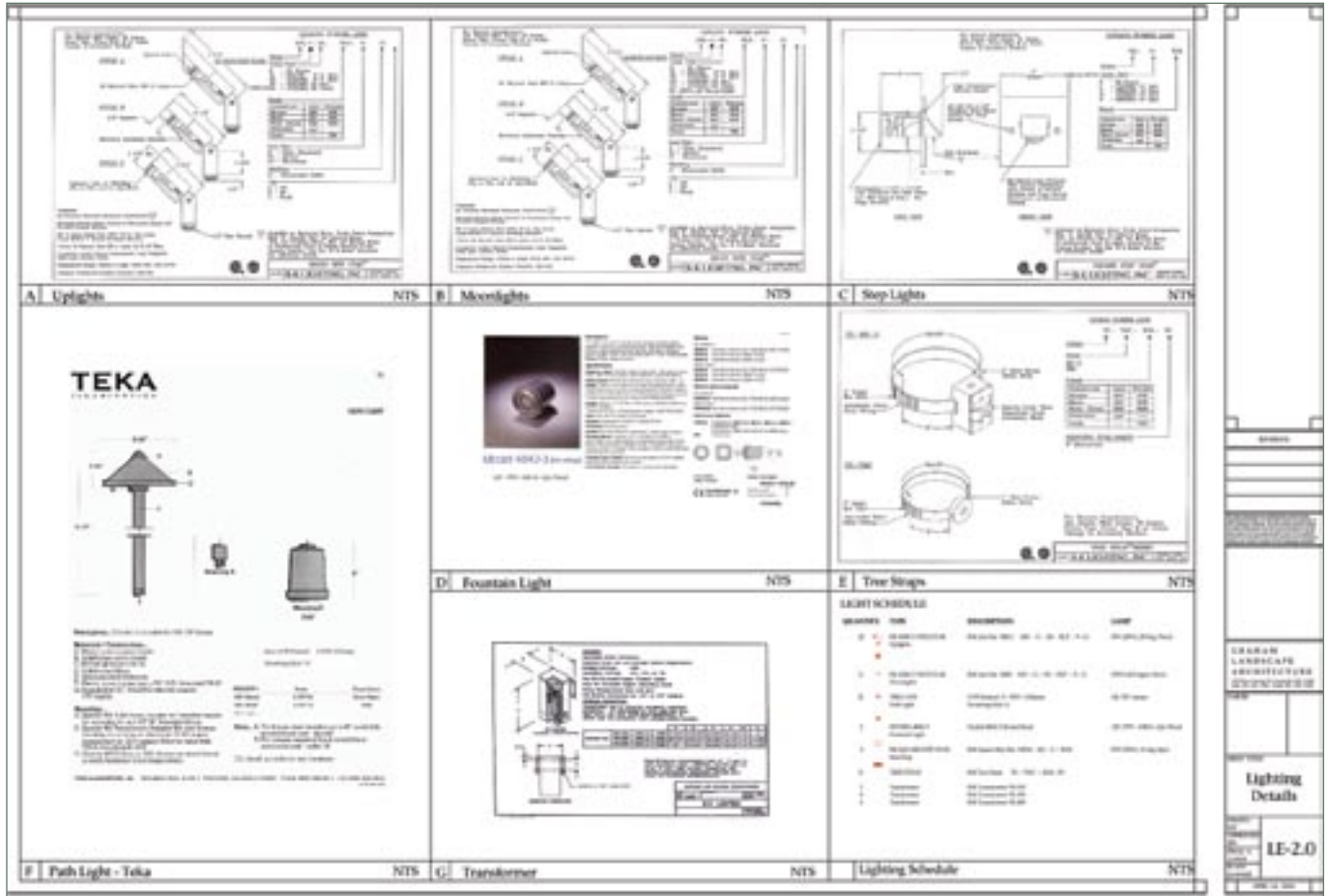
VectorWorks allows users to input any scale that's needed. As the firm gets into more details on a project, scale capabilities in VectorWorks give the firm the ability to increase them to larger proportions to work with finer details more easily, as well as secure client approvals.

"When we're working through our initial schematic designs, we work at a larger scale. This gives our clients a big picture view of how their programs will work, such as how entrance sequences work, or where terraces, gardens, and recreational areas will be, and how they will interact with each other and the house," says Balter. "When we get to a point where we're detailing elements such as planting plans, or paving patterns, pools or walls, or fences, we adjust the scale so we can communicate with the client in a way that they can see exactly what the designs will look like. VectorWorks really automates and facilitates these communications."



Using scale can also help to see the big picture. When it comes to assembling data from different sources, the firm can apply different scales to put all drawings together to create a composite of the entire project.

"We can compile several different drawings together in VectorWorks LANDMARK, even though they might all be tiled differently in different scales," elaborates Craughwell. "For example, we might have an outline of a property as one drawing, a reforestation drawing, GPS points, a lighting plan and architectural drawings. But I can bring each layer in, rescale each one and have an accurate drawing that represents the whole site. What could have taken several days if I'd had to redraw everything, took just a few hours using VectorWorks LANDMARK."



PLANTING SEEDS FOR FURTHER GROWTH

Long pleased with the results VectorWorks LANDMARK produces for the firm, Graham Landscape Architecture is looking forward to taking advantage of new features and functionality as it is introduced.

"We're thinking the new sketch mode within VectorWorks LANDMARK 11.5 will help us immensely," says Graham. "There's always the

question of when we should go to more finished looking drawings. When there is too much of a finished look early in the project, some clients seem a bit more reluctant to discuss some of the programmatic adjustments they would like to continue to explore, which is why we tend to move through early concept phases using hand drawings. We're confident that sketchy looking drawings will help us in the earlier stages of our design process—both by pleasing our clients and saving us the time it would take to hand draw materials in the initial planning phases."

VECTORWORKS LANDMARK AND THE DESIGN PROCESS

GRAHAM LANDSCAPE ARCHITECTS USES VECTORWORKS LANDMARK THROUGHOUT EVERY STEP OF ITS DESIGN PROCESS, AS THE FIRM'S TEAM AFFIRMS.

PRE-DESIGN

"When we start a project, we use VectorWorks to set up our project library. This lets us make sure that our VectorWorks-based graphic standards are applied to each drawing and that our internal naming conventions are followed. We also import or scan the information we get from our clients, the architects, engineers and other people on the team so we can set it up in the system at consistent scale." - Quinn Craughwell

SITE ANALYSIS AND PROGRAMMING

"From a tool perspective, VectorWorks LANDMARK enables us to build and coordinate the layers throughout the design process and use the files as communication tools. As we move through incremental phases that add more details and levels of specification, we can take them and put them directly into the system, so we have all the information we need. This helps us in communicating with our clients and contractors throughout the project, from a conceptual level through construction. For example, we might start with a site plan, an architectural footprint and an aerial photograph. As we add information, such as existing vegetation conditions and proposed program elements, we add layers and make modifications directly in the system, so everyone is working from the same set of information as we move forward." - Arthur Balter

SCHEMATIC DESIGN

"We find VectorWorks LANDMARK helpful in being able to create various programming options working on top of the base layers. We often add color, which helps when we present to clients because color is always easier to read from a client's perspective. It also helps us highlight specific areas and associate preliminary cost estimates with them." - Marc Anderson

DESIGN DEVELOPMENT

"Being able to manipulate scale in VectorWorks LANDMARK gives us the ability to resize objects, as well as play around with proportion and angles until we get everything just right. It provides for a level of refinement that enables us to carry designs a step further, a bit faster. These are types of things you can do much more easily with a CAD system than you can on paper." - Arthur Balter

CONSTRUCTION DOCUMENTS

"We save days and days' worth of time by creating our construction drawings with VectorWorks. Using VectorWorks saves us time initially. When there are the inevitable revisions, we don't have to start over. It's easy to take a section and blow it up or change the scale." - Jay Graham

BIDDING AND NEGOTIATION

"VectorWorks gives us the ability to quickly and easily share drawings with other professionals involved in a project. Because it's automated, VectorWorks facilitates communication and keeps the project moving along." - Jay Graham.

CONSTRUCTION OBSERVATION

"The construction drawings we develop in VectorWorks are the specifications used by contractors. Prior to any installation, we review them with the contractor. During installation, they serve as the basis for how the work is done, from grading to plant placement to hardscape construction." - Marc Anderson

For more information, contact Nemetschek North America, makers of VectorWorks, at 888-646-4223. Or, visit us on the web at www.vectorworks.net