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Delta Engineers, Architects, & Land Surveyors PC

March 2015 Newsletter



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Creating Value in Healthcare Facilities

by Gregory Knoop, AIA, LEED-AP, *Director of Architecture*

Healthcare design, programming, and planning services... Our specialized skills in these disciplines have allowed the Chevy Chase office of Delta (OKKS Studios) to expand our consulting relationships in new and exciting ways that include value engineering (VE) and post-occupancy evaluation (POE) services. With more than 500 healthcare projects in our portfolio, we have the project-tested experience to help our clients uncover new opportunities that offer sustainable value and cost savings...

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Delta is Preserving our Historic Treasures with 3D High Definition Laser Scanning

Preserving our rich architectural history is critically important to handing off a world to future generations that respects history while looking forward. As we take note of the many beautiful structures in our own backyards that cry out for love and attention from their caretakers, we understand that today's tools and technologies can be tremendously useful in preserving our heritage.

In a recent meeting with the Montgomery County Department of General Services, Delta encountered a familiar story of an iconic structure, the Strathmore Mansion, which was being restored to its former glory. As the County team s... [Read more...](#)

Expansion of Delta's Services



Joseph J. Mieczkowski, PE,
Director of Transportation

Delta is delighted to announce the expansion of our current services for the precast manufacturing industry to include engineering support for prestressed concrete bridge beams. Similar to the services that we have provided to over one hundred clients throughout the United States in the utility structures and short span bridge and culvert market for the last eighteen years, Delta is now committing the bridge design expertise of our Transportation Group to meet your project submittal needs by providing the following new services for the prestressed bridge beam market:

- **Bridge Beam Design** – Delta is experienced with the current state-of-the-art software such as LEAP CONSPAN and PennDOT PSLRFD used for the design of prestressed concrete beams. We are also experienced with both the AASHTO Standard Specification and LRFD design methodologies used for prestressed beam design, as well as applicable ACI and PCI design manuals. Our bridge beam design experience includes single and multi-span design for voided slabs, adjacent box beams, spread box beams, AASHTO I-beams, Bulb Tee beams, and channel beams.

- **Project Shop Drawings** – Our shop drawings can be prepared in either AutoCAD or MicroStation format and customized to your project requirements. Our shop drawings include: production information, handling and transport methods, camber data, prestressing data, reinforcing steel details, reinforcing list, bar bending details, horizontal and vertical dimensioning, embedded items required for construction, as well as any additional miscellaneous information required by the contract documents.

- **Erection Plans** – We can provide erection plans showing the plan of the work area, erection sequencing, temporary support/falsework requirements, crane capacity and placement requirements, lifting devices, and blocking details. We can also provide analysis of the proposed substructures for erection loadings if required.

We know that obtaining approvals for product submittals is always a critical need of every project. Based on our extensive experience in both the precast and transportation markets, we are confident that we can provide your company with responsive and cost-effective services to meet your needs.



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Creating Value in Healthcare Facilities



Gregory Knoop, AIA,
LEED-AP, Director of
Architecture

Healthcare design, programming, and planning services... Our specialized skills in these disciplines have allowed the Chevy Chase office of Delta (OKKS Studios) to expand our consulting relationships in new and exciting ways that include value engineering (VE) and post-occupancy evaluation (POE) services. In this article, we highlight the value engineering work that has been produced by our Chevy Chase office. With more than 500 healthcare projects in our portfolio, we have the project-tested experience to help our clients uncover new opportunities that offer sustainable value and cost savings.

Senior staff members in the Chevy Chase office have provided value engineering services for federal and institutional clients for the past decade and have engaged in more than 100 VE studies with a variety of institutional clients. Approximately 10% of those studies have been for healthcare clients. Most recently, the Veteran's Administration (the VA is largest healthcare system in the world) has conducted value studies for their major projects and the Delta (OKKS) Chevy Chase office was a leader in these early studies.

A value engineering team evaluates not just the work of a designer, but also the priorities of the owner, the trends of the industry, and the behavioral patterns of the building occupants. The proper value process extends beyond mere cost cutting and focuses on increasing the function and quality related to the dollar spent. So, the common methodology is to have a third-party team of relevant experts perform a study in a sequestered process that frees the VE team of project owner and designer bias as well as project history to date.

What are the goals of these studies? A great VE study will provide specific consulting expertise that will put a project on a trajectory to be an effective asset to the owner/user. SAVE summarizes that Value =

Function/Expenditure. In addition, the key points below summarize other key goals that are important in creating a value oriented design:

- Decreasing costs
- Increasing profits
- Improving quality
- Saving time
- Using resources more effectively
- Solving problems

A standard VE service spans several weeks. The process commonly used for VE has many variations and can range in magnitude and scope, but usually involves the following elements:

- Document exchange and review
- Designer's presentation to in-brief the team
- Information gathering
- Function analysis
- Creative brainstorming
- Evaluation
- Recommendation
- VE presentation
- VE report
- Implementation

Healthcare buildings are not simple boxes filled with doctors, nurses, and patients. Hospitals have evolved rapidly over the course of the last century. Hospital buildings are truly enormous machines in service of patient health. The undertaking of funding, design, construction, commissioning, and licensing of large healthcare projects is complex and involves many persons, often for many years. For such undertakings, value engineering can be an important peer review process that can provide transformative guidance to projects and the process. The Delta team is part of the vanguard that has been working with industry leaders on VE to create better and smarter healthcare facility design into the future.



Value Engineering is typically performed by expert teams not involved in the original design process. Delta/OKKS completed an abbreviated VE process on our own project for Kaiser Permanente Manassas.



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Montgomery County Libraries Improvements are Underway



Eric J. Lorenz, AIA, Project Manager

In the near future, Montgomery County intends to renovate several existing public libraries. The Kensington Park and Twinbrook Public Libraries are two current projects that the Delta offices in Chevy Chase, Maryland and Endwell, New York are collaborating to renovate and enhance. Delta is providing comprehensive services in support of the Kensington and Twinbrook Library Refresh Projects, which include architectural, structural, mechanical, electrical and plumbing design services to provide the County with complete drawings, specifications, and technical documents for Building Permit approval and construction.

These renovations will improve interior and exterior accessibility to the buildings and will modernize the libraries to enable the staff and management to expand, improve, and evolve their services. In addition, these community treasures will be completely refreshed with appealing new finishes and millwork.

Site renovations at both locations will include repairs to existing accessible ramps and sidewalks and design for new accessible parking that is adjacent to the entrance.

The interior improvements include new circulation/information desks, renovation of the staff lounges with new finishes, renovation of the staff and public toilet rooms, new quiet study rooms, and new carpet, paint and furniture throughout the public areas of the libraries. A new elevator is being designed at Kensington to replace the existing "Lift", and elevator controls improvements are being specified for the existing Twinbrook elevator. The Delta team is also coordinating with the Montgomery County Libraries to facilitate the reorganization of shelving and specification of new furniture for both libraries.

Twinbrook Pubic Library, Existing Circulation Desk Rockville, Maryland



Kensington Park Pubic Library, Existing Circulation Desk, Kensington, Maryland



Twinbrook Pubic Library, Rockville, Maryland



Kensington Park Pubic Library, Kensington, Maryland



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Delta is Preserving our Historic Treasures with 3D High Definition Laser Scanning



Aaron P. Falkenmeyer,
PE, Director of Civil
Engineering

Preserving our rich architectural history is critically important to handing off a world to future generations that respects history while looking forward. As we take note of the many beautiful structures in our own backyards that cry out for love and attention from their caretakers, we understand that today's tools and technologies can be tremendously useful in preserving our heritage.

In a recent meeting with the Montgomery County Department of General Services, Delta encountered a familiar story of an iconic structure, the Strathmore Mansion, which was being restored to its former glory. As the County team shared their challenges on this project, it became clear that they needed to record the existing facility conditions rapidly and accurately to enable future design work to create an equally detailed result; Delta has the perfect tool and the resident experts for this challenging task. Our 3D High Definition

Laser Scanning (HDS) Group has provided HDS Services since 2010 in service to building and transportation facility owners. During this time, we have honed our craft and tailored our service portfolio to match the needs of our varied clientele. HD scanning is an incredibly flexible and valuable data

collection tool that makes possible a wide range of design and verification tasks while saving time, greatly enhancing precision, and increasing worker safety.

High definition scanners make it possible for us to exponentially increase the number and types of data points collected through the use of harmless laser light pulses that capture data at an astounding rate of 50,000 points per second to a range of 300 feet with 1/4" accuracy. The end result of our data collection

effort is a virtual model of the environment in which the scanner is placed. The data set is the equivalent of creating a seamless virtual reality scene consisting of high definition photographs of the 360 degree

scene with each pixel containing an accurate X, Y & Z coordinate.



Strathmore Mansion 3D High Definition Laser Scan Data Set

Beyond the benefits of shortened survey schedules, our scanner operates without interfering with day-to-day facility operations which, in turn, results in no down time for our clients. Our scanner also permits the capture of most data from the ground, forgoing the need for us to expose our staff to costly and dangerous locations and environments. Our scanner data sets can be used to produce 360 degree color photography and fly through videos for use in conveying the captured data in a compelling presentation.

For Montgomery County, the Strathmore Mansion renovation project was an ideal project application for our laser scanner. A single surveyor working alone traversed the property, virtually unnoticed and causing no impact to the gallery operation, and captured a full 3D model of the facility for use by designers who were tasked with replicating highly detailed features as part of the renovation. Many of the ornate details constructed by craftsman of bygone eras can be re-created using data collected from the scanning procedures. As 3D printing technology evolves, we expect to be able to produce accurate replications that are nearly identical to the original works of art that in many cases are simply no longer possible to produce.

As we progress in this rapidly changing environment, the technology and expertise bars have been set extremely high. Consider utilizing our state-of-the-art technology and deeply experienced team on your next renovation or historic preservation project. We offer expedited field data recovery time frames and will produce exponentially more accurate design data that will enable you to produce the results that your clients and review agencies demand.



Strathmore Rendering
from Laser Scan



Strathmore Elevation



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