

Among the new products released in 2017 is one of the world's largest cranes, the SGC-140.

PHOTO: COURTESY OF SARENS

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Year in Products

Improving the Construction Process

Advances in equipment and technology make the difference

By Kate Gawlik

As we enter a season of making lists and checking them twice, consider what can be on a work wish list. From the largest cranes to the smallest gadgets, technology in 2017 has made jobs easier and the built environment safer.

3D Technology

Building information management (BIM) is often associated with design, but the 3D technology became more ingrained in the entire construction process this year.

Architects have perfected BIM in design studios, and contractors and engineers can be found working smarter at jobsites with BIM. Management companies and building owners are now maintaining and managing structures more efficiently because of the technology. Brad Wucherpennig, president of Baker Concrete, reports that using advanced BIM technologies in 2017 has helped alleviate conflicts early in the construction process. With BIM, Baker can create virtual plans to share with every member of the project team.



Designed by and for construction professionals, Construction Viz has all the features needed to manage projects.

The 3D world has come to the concrete market with 3D concrete printing, where digital and material technologies combine to create free-form construction. Jonathan Oppenheim, president and chief underwriting officer of HIIG Construction, believes 3D printing will provide the freedom to produce a structural component independent of the shape. “In 3D printing, the construction is through layer-by-layer addition of material,

offering the ability to build components that are otherwise impossible or impractical to build,” he says.

Machines and Equipment

Intelligent control systems is another area with evolving technology that is impacting machine maneuverability by reducing setup time, improving diagnostics, heightening productivity and creating precision in paving. An example is Wirtgen America’s ECO mode, which matches the output of the machine’s engine to the demands of the job at the time.

“If we are in ECO mode on the SP 15i or SP 25i and we need to turn on the trimmer, the machine will automatically increase the RPMs to provide the power to run the trimmer. The same goes for the concrete vibrator circuits and other features; the machine will rev up or down accordingly,” says Tim Nash, director of concrete products for Wirtgen America. “The benefit is

that ECO mode cuts fuel consumption considerably. Operators typically run a machine’s engine at or near full throttle so it can handle all requirements. Also, during idle periods, operators will often leave machines running at high RPM. In our case, our machine will idle itself down, saving fuel, cutting noise and stack emissions, and lowering wear and tear on the engine.”

Even one of the largest cranes in the world, the new SGC-140 from Sarens, adds efficiency to projects. The crane has a 45% stronger capacity than the previous largest crane, the SGC-120. With a lifting capacity of 2,820 tons at a radius of 50 meters, the SGC-140 has three boom configurations of 89, 118 and 130 m. It has a maximum ground pressure of 25 tons/sq m and has in-service and out-of-service wind speeds of 22.4 m/s and 56 m/s, respectively.

Those in the construction industry are eagerly awaiting what 2018 will bring. ♦

PHOTO: COURTESY OF LYDON SOLUTIONS

Driving Holistic Fleet Maintenance And Management

Equipment-related processes and costs can make or break the success of a heavy construction project. Fortunately, unified software now gives contractors a chance to manage their fleets in a more holistic and effective manner.

Specialized maintenance management software is an essential starting point. A strong software solution centralizes information about equipment and assists the maintenance team in planning, scheduling and executing work with maximum efficiency. Software also drives automated preventive maintenance, a key to minimizing the unplanned work that increases costs and decreases uptime.

Maintenance, however, is only part of the equipment equation. Scheduling, dispatching and field management workflows also impact utilization and overall costs.

With a unified software platform, managers using a field-tracking solution can see the schedule and make requests directly to the scheduling and maintenance systems. Similarly, schedulers and dispatchers can monitor the changing status of assets and requirements.

Integrating telematics and GPS capabilities completes the picture, allowing contractors to deliver vital data about equipment location and performance directly and automatically to their software platform. ♦



A unified software platform allows for a more holistic approach to equipment maintenance and management.

Your Needs Are Unique—Your PMIS Solution Should Be Too

Meeting the unique needs of construction organizations was the inspiration behind Construction Viz, the subscription-based construction project management solution from Lydon Solutions. The platform is powered by Microsoft SharePoint 2016, a leading enterprise content management system, ensuring flexibility, customizability and extensive integration options.

Construction Viz includes everything you need to manage your construction projects—document management, dashboards, reports, forms, workflows, robust mobile support and more—in one place. It is powerful, extensible, easy to use, and offers second-to-none security and compliance.

For a free consultation, visit constructionviz.com/enr. ♦

Hubbell

Screw-Displacement Piles: A Deep Foundation Solution

When working on projects requiring high-capacity piles, engineers and contractors were in need of a better screw-displacement pile. They now have it with Drivecast Screw Displacement Pile, which is installed with smaller equipment than comparative traditional piling.

Created by Hubbell Power Systems under the CHANCE brand, the product provides a deep foundation solution that is cost effective and eliminates spoils and vibration during installation.

ASTM axial, tensile and lateral testing has proven that Drivecast piles produce consistent high lateral, axial and tensile capacities. The innovative, patented displacement modules placed every 5 ft create a large grout column in a wide range of soil profiles. This makes the pile the new solution for contractors

needing a fully grouted pile that offers high capacity, particularly when working in areas where spoils, vibration and overhead clearance are a challenge.

With Drivecast pile:

- Innovative design means lower manufacturing cost because less steel and welding is required.
- Modular design allows for installation with limited overhead clearance.
- Standard equipment is needed for installation. There is no need for the heavy equipment of other piling methods.

At the end of the day, this innovative game changer provides a displacement pile that yields a large grout column and high lateral, axial and tensile capacities not realized with even the most robust antiquated pile technology.



Drivecast pile provides a deep foundation solution that is cost effective and eliminates spoils and vibration during installation.

Contact Hubbell today to see how the new innovative Drivecast Screw Displacement Pile can make your next project efficient and hassle free. ♦

PHOTO: COURTESY OF HUBBELL

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