

Tomorrow's Technology

High Tech Advancements Changing the Face of Landscape Construction

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Last month, LC/DBM reported on the developments in 3D printing to build masonry objects like walls and benches, and wearable technology that can help protect workers' safety and health. Here are other examples of cutting-edge developments.

More sophisticated energy recovery technology aims to further reduce fuel costs and decrease machine work requirements without a degradation of performance over time like battery powered systems experience. For example, Ricardo, an engineering and environmental consultancy, has developed a high efficiency excavator flywheel system that recovers energy as the machine's boom is lowered, stores it in the flywheel in kinetic form and then releases it back into the hydraulic system to help raise the boom.



During construction, sensors installed around the worksite and on machine components (the Internet of Things or IoT) could transmit data to an equipment operator's smart glasses with a "head-up display" to provide an abundance of project information such as project parameters, machine performance specs, operation instructions and continuing updates of work completed and remaining.

Once augmented reality (or virtual reality) headsets are readily available, contractors will be able to take the wearable computers into the field and, combined with building information models, generate three-dimensional mock-ups of a project set against the backdrop of the real worksite to observe all the stages of the construction. With these headsets, a transparent screen will show hologram images that match the scale and perspective of the natural surroundings from where the user, who is looking out through the screen, is standing at the worksite. Viewing the progression of the build will allow potential problems to be discovered and changed.

As unsettling as it might be to report on, robotic technology continues to make inroads in the industry. Last year, Construction Robotics introduced SAM, short for Semi-Automated Mason, an automated brick wall building system. At World of Concrete 2015, it built a wall of 2,640 bricks in 16 hours. Workers are still needed to set up the tracks apparatus, take detailed measurements to determine the variations between the theoretical plans and actual jobsite conditions, line the system up, monitor its operations, continuously load the bricks and mortar and do finish masonry work.

[EarthCam](#), which provides live streaming video, time-lapse construction cameras for documenting, monitoring and archiving construction progress, developed the world's first outdoor gigapixel panorama camera system with patent-pending technology that delivers billion-pixel clarity. The company also recently introduced its new Mobile StreamCam 4K solution, capable of capturing a 109-degree wide angle of view.