



Pave the Way to Better Profits

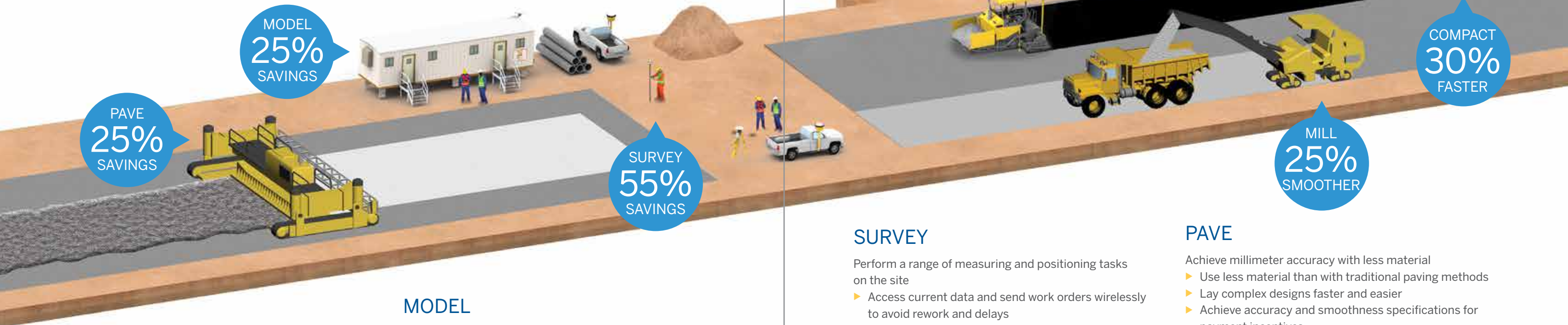
Trimble Paving Solutions

TRANSFORMING THE WAY THE WORLD WORKS



Solutions for the Complete Paving Job Site

Productive, integrated and innovative solutions to keep you on track throughout the project lifecycle.



PAVE
25%
SAVINGS

MODEL
25%
SAVINGS

SURVEY
55%
SAVINGS

PLAN
50%
FASTER

MILL
25%
SMOOTHER

COMPACT
30%
FASTER

PLAN

Optimize road surfaces, plan operational schedules and create accurate bids

- ▶ Plan and easily visualize the order of tasks
- ▶ Manage work teams and adjust forecasts against changing tasks and schedules
- ▶ Analyze material quantities faster and more precisely

Manage, track and report progress

- ▶ Update current progress dynamically on the operational schedule
- ▶ Create accurate material orders to reduce waste and optimize fleet management
- ▶ Give project stakeholders visibility into the alignment planning process

MODEL

Create accurate, integrated 3D constructible models quickly and easily

- ▶ Create 3D design models with uncompacted surface designs to eliminate longitudinal waves
- ▶ Use the same 3D model to pave to finished grade and elevation
- ▶ Calculate a theoretical International Roughness Index (IRI) for optimized rideability of finished surfaces

Manage, track and report progress

- ▶ Manage design changes efficiently
- ▶ Update in-field designs for changes in job conditions easily and quickly
- ▶ Report as-built construction for concrete paving and compaction

SURVEY

Perform a range of measuring and positioning tasks on the site

- ▶ Access current data and send work orders wirelessly to avoid rework and delays
- ▶ Eliminate stringlines/stakes to decrease cost and reduce errors
- ▶ Create detailed in-field 3D designs

Manage, track and report progress

- ▶ Empower non-surveyors with real-time site status and visualizations
- ▶ Identify issues before placing expensive material to avoid costly mistakes
- ▶ Perform final as-built checks for accurate documentation and reporting

MILL

Mill out the waves to yield the smoothest surfaces

- ▶ Mill at variable depth and slope to remove undulations
- ▶ Mill off the minimum depth to use less asphalt for the final surface
- ▶ Run trucks more efficiently without stringline and with shorter lane shutdowns
- ▶ Transition between total stations seamlessly

PAVE

Achieve millimeter accuracy with less material

- ▶ Use less material than with traditional paving methods
- ▶ Lay complex designs faster and easier
- ▶ Achieve accuracy and smoothness specifications for payment incentives
- ▶ Transition between total stations seamlessly
- ▶ Control the screed or pan automatically

COMPACT

Compact intelligently for a quality surface

- ▶ Share compaction map data wirelessly between compactors to maximize efficiency
- ▶ Detect material temperature and over- or under-compacted areas in real-time for optimum compaction
- ▶ Improve compaction efficiency and coverage by achieving target pass count more accurately

Manage, track and report progress

- ▶ Create compaction production data for reporting purposes
- ▶ Verify design grade has been maintained post-compaction
- ▶ Analyze compaction data post-process and create reports

Optimize the Paving Site for More Profit

Improve efficiency and productivity while minimizing waste and expense throughout the life of the project. Create a 3D constructible model, use it to plan the most cost-effective schedule and smoothest final surface, and then use the same model to track project progress.

SURVEY THE SITE

Collect survey, grade check, and as-built data from the field and send it to the office in real-time to build an accurate 3D constructible model for takeoff estimating, data preparation and reporting. Or take advantage of fast and safe aerial data collection with Trimble Unmanned Aircraft Systems (UAS) to replace ground surveys and provide more data at shorter intervals for lower overall cost. Job site delays and rework are significantly reduced with field software designed specifically for construction workflows. Easy-to-use and learn field software means you spend less time training and preparing data, and more time getting the job done. And, the workflows seamlessly integrate with other Trimble software solutions.

SURVEY THE SITE

MANAGE DATA

SURVEY THE SITE

BUILD A MODEL

ANALYZE DATA

BUILD A 3D CONSTRUCTIBLE MODEL

The Trimble 3D constructible model is a powerful tool to plan, manage and construct projects. The foundation of the model begins with combining current field conditions from multiple sources with design information. Validate and improve the site operations plan with the 3D constructible model, so you know what to build and where to build it before costly construction begins. Adding intelligence to the model, such as how dirt will be moved, and updating the model with up-to-date field information provides the ultimate insight to planning and managing projects. Carry the design forward to complete the entire job workflow from earthworks to final paving and compaction.

MANAGE DATA

Data preparation and management for asphalt and concrete paving projects is critical. Easily analyze the design so that tight tolerances are met and planned before you pave. Know what your surface will look like before the paving begins to avoid costly re-work, extra labor and fuel costs, and improve machine utilization across your entire fleet.

ANALYZE DATA

Continuously monitor pass counts and compaction meter values to improve testing success, reduce rework and lower ongoing maintenance costs. Over-compaction can be reduced to optimize fuel use and machine wear and tear. Temperature map monitoring helps ensure compaction per the target temperature range.

Proven Productivity All Over the World



"If it wasn't for the Trimble Paving Control System and going stringless, this job would likely have needed 12 full-time stringline setters just to set up for trimming. Now, many of those guys can do other high-value things."

Jeff Robinson, *Automation Manager*
Ajax Paving, United States



"The irregular surfaces that we faced made it all but impossible to manage and control the appropriate elevation with traditional milling practices. With the Trimble 3D milling method you always have the accurate model as the background, which gives you a lot smoother surface a lot more quickly."

Mika Jaakola, *Development Manager*
Destia, Finland



"We paved this surface of approximately 34,500 square meters in exactly 14 days. We would certainly have needed one week longer using the traditional method."

Walter Weinberger, *Project Manager*
Streicher-Berger, Germany



"If we can have 5 to 10 millimeters more accuracy in our materials purchasing and utilization, that's thousands of dollars saved per road; it can take a project from breaking even to making a profit."

Mark Surtees, *Manager of Survey and Technology*
Thiess, Indonesia



"With 3D mill and 3D paving controls from Trimble, we were able to lay 5,000 tons of asphalt to grade and slope per night, in a 12-hour shift compared to 2,000 or 2,500 tons per shift, on other jobs."

Gregg Nathaniel, *Construction Superintendent*
Jas. W. Glover, Ltd., United States



"The final averaged IRI value for the project was 1.16 versus a target value of 1.26. This made us eligible for a rideability bonus. After such results the use of the system on other projects such as the East London Airport runway become obvious."

Gary Hirst, *Technical Executive*
Power Construction, South Africa



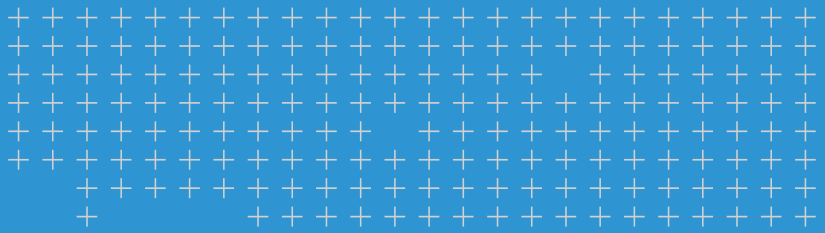
"We were able to achieve an average standard deviation of 4 millimeters across the entire 92,000 square meters on the surface lift. We were very satisfied with this performance over such a large area."

Andrew de Villiers, *Project Manager*
Boral, Australia



"The Trimble system helped us cut the construction period in half when compared to using traditional methods. We also saw a reduction of direct cost to the client, and minimized disturbance to stakeholders."

Tim Clark, *Canterbury Surfacing Manager*
Fulton Hogan, New Zealand



Trimble: Transforming the Way the World Works

Trimble provides the tools and support to let you integrate planning, design, site positioning, machine control and asset management information throughout the construction life cycle for more efficient operations and higher profits. Contact Trimble or your local dealer today to learn how easy it is to utilize technology that makes significant improvements in project workflow, dramatically increases your production, improves your accuracy and lowers your operating costs.

YOUR SITECH® CIVIL CONSTRUCTION TECHNOLOGY PROVIDER

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