



STATEMENT OF JIM LYNCH
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SOLUTIONS

BEFORE THE
U.S. HOUSE COMMITTEE ON SMALL BUSINESS SUBCOMMITTEE ON
CONTRACTING AND INFRASTRUCTURE

HEARING ON “SMART CONSTRUCTION: INCREASING OPPORTUNITIES FOR
SMALL BUSINESSES IN INFRASTRUCTURE”

NOVEMBER 19, 2019

Chairman Golden and Ranking Member Stauber,

Thank you for the opportunity to provide this statement to the Subcommittee in conjunction with the hearing you are holding on “Smart Construction: Increasing Opportunities for Small Business in Infrastructure.” This is an important topic and I commend the Subcommittee for holding this hearing.

Our global population is expected to climb to 10 billion people by 2050, resulting in the need to build an average of 13,000 buildings per day around the world to accommodate the expected growth.¹ We will need more housing, more schools, more hospitals – more of everything. To meet this challenge, the construction industry must – and indeed is – undergoing a radical shift from analog to digital processes, from rolls of paper plans to multi-dimensional digital designs, and from construction trailers blanketed by Post-It Notes to manage the chaos of construction to cloud-based software connecting entire teams from design through construction through operations.

I am proud that Autodesk is helping to drive this transformation of the construction industry with digital design and construction management software that helps improve quality and safety and reduce time and costs on the jobsite. These digital construction tools are accessible to architecture, engineering and construction firms of all sizes.

¹ <https://www.autodesk.com/redshift/building-the-future/>

When construction firms start with a digital model-based process for the project like Building Information Modeling (BIM) they can more easily integrate construction management technology to manage all project-related documents like change orders, requests for information (RFIs), submittals and issue reports. And they can apply machine-learning tools to analyze historical project data to reduce the chances of missing important risk exposures and the opportunity to avoid them.

Safety is one the biggest challenges facing the construction industry. According to OSHA, 20% of all work-related deaths in this country come from construction, amounting to nearly 1,000 deaths each year.² For each death, there are hundreds or thousands of near-misses and small incidents that never get reported. Anything a general contractor can do to reduce risk, to make sure workers leave the jobsite safely every day, will have a huge impact on its bottom line. Tools like Autodesk's Construction IQ, which uses algorithms to sort through hundreds or thousands of project issues and categorizes and prioritizes the highest risk projects and issues that need attention each day, can help make the construction process safer for construction firms of all sizes.

Windover Construction, an employee-owned Beverly, Massachusetts-based construction management firm, with projects throughout New England, is an example of a company using many different digital construction tools. Recently recognized by Autodesk's global AEC Excellence Awards program, Windover won the small project of the year award for the company's use of a cutting-edge combination of modular construction techniques and Virtual Design and Construction (VDC) applications on a mixed-use, transit-oriented apartment community covering 153,000 square feet in their hometown of Beverly.³

This method of modular construction requires the project to run like clockwork – and to ensure it did, Windover took an advanced, tech-first approach using drone mapping, laser scanning (with an accuracy of $\pm 3\text{mm}$), 4D sequence planning and mixed reality. These tools and methods allowed Windover to reduce risk and improve quality. However, these aren't hypothetical outcomes. In fact, the project is currently on budget and

² <https://www.osha.gov/oshstats/commonstats.html>

³ <https://excellenceawards.autodesk.com/#canvas/>

scheduled to be completed three months earlier than would be expected using conventional construction methods.

Similarly, Factory_OS, a Vallejo, California-based start-up is building multi-family modular buildings more efficiently and at lower cost in a factory on a repurposed military base.⁴ By combining digital technology with manufacturing methods at an off-site facility, they can develop housing with higher quality controls that is 20% less expensive and 40% faster to complete. In addition, precision-cutting and indoor material storage reduces construction waste by more than a third, and reduced transportation requirements lower carbon emissions, making this one of the greenest building methods available today.

These advances in construction technologies are benefiting the design and construction of public infrastructure too. An increasing number of construction firms that develop civil infrastructure are using digital construction technologies.⁵ The same is true of state Departments of Transportation, who understand that these technologies will help develop better infrastructure in ways that maximize taxpayer dollars.⁶

These are just some of the technological advances that we see in the construction sector. Autodesk works with construction firms of all sizes to utilize these affordable and easily accessible tools. They are not just for large multi-national companies with experienced IT departments.

I thank the Subcommittee for allowing Autodesk to contribute to this discussion and invite you to visit our Boston Technology Center where we are collaborating with our customers, researchers, and entrepreneurs on innovative technologies for the construction industry. Also, I would be pleased to introduce you to construction firms deploying the technology I have mentioned so you can hear directly from them on how they are being used. Autodesk stands ready to support this Committee as it explores ways to help small businesses benefit from the use of these technologies in the construction sector.

⁴ <https://factoryos.com/>

⁵ https://www.prnewswire.com/news-releases/plangrid-fuels-heavy-civil-global-infrastructure-growth-300668302.html?tc=eml_cleartime

⁶ <https://www.plangrid.com/press/tdot/>