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Greg Alvin Howell: Teaching Through Simulation

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I heard about Greg Howell when I started to study Lean Construction at Berkeley as a graduate student. In 2010, I finally had an opportunity to meet him at a conference at Virginia Tech. When he saw that I was waiting for him before the conference started, he quoted one of Oscar Wilde's witticisms: "Punctuality is the thief of time." Initially, I was confused when I heard this line. Greg then explained to me that it means that people spend extra time to be on time and that this extra time is often wasted.

Greg's unique presentation of punctuality piqued my curiosity about the value of time buffers, and it was heartwarming to me that after I returned to NC State, Greg called me and encouraged us to further consider how time buffers play a role in planning. Greg inspired me to consider the human perspective of engineering, and I realized that engineers are prone to waste time as much as anyone else is, despite how much we strive for precision and accuracy. To ensure projects end on time, project managers allot time buffers to tasks, and this extra time buffer is usually wasted because people tend to delay work and extend time on tasks just because there is extra time to spend. We started our investigation by finding out why people want to add time buffers. After all, those are the things planners worry about. Do those things actually and eventually cause more trouble than benefit in execution? Are time buffers really utilized to minimize delay? To what extent are time buffers useful as a cushion for crisis and not the cause of waste? One question led to another, and a few years later, we published three journal papers on this topic.

Greg was always full of thought-provoking questions. One day, during our phone conference, he asked my graduate students and me: What is planning? Why do people plan? How much planning is enough planning? The questions seemed so simple, and yet, if we could find a way to measure the costs and benefits of planning, perhaps project managers could use the data to more effectively delegate work. Greg introduced us to the OOPS simulation game, which precisely shows the answers to those questions, but we didn't stop there. Greg said that it was always very important to talk with site managers in person and to learn their way of doing things and why. So I interviewed five foremen and used their experiences to better inform our research. Based on the interviews, we built a computer simulation for the OOPS game, discussed its real world implementation, and

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wrote the journal paper, "'Oops' Simulation: Cost–Benefits Trade-Off Analysis of Reliable Planning for Construction Activities."

Greg is among the pioneers of Lean Construction, and his passing is a huge loss to us all. I for one will miss my mentor, role model, and dear friend, but Greg's passion, wisdom, and generosity can always be found in the world of research and in our hearts.

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Gregory Alvin Howell (Greg Howell) passed away peacefully on June 15, 2020 at home in Ketchum, Idaho. He was born February 3, 1943 in Springfield, Missouri to Alvin Hinshaw Howell and Joyce Howell, née Gregory. He lived in Independence, Missouri before moving to Scottsdale, Arizona when he was in high school. Greg studied construction engineering at Stanford, was a member of the ATO fraternity, and played on the university rugby team. After he graduated in 1965, Greg joined the Navy as a Lieutenant Commander in the Civil Engineering Corps and commanded Mobile Construction Battalion 11, better known as the Seabees. He served in Vietnam in Dong Ha and then led a group of 12 Navy men in a kind of Peace Corp role in northern Thailand for one year. After returning to the U.S. he served as Aide to Admiral Robert Wooding. Among his duties was recruiting on university campuses in full dress uniform amidst the rising protests against the war in Viet Nam.

In 1972, after leaving the Navy, Greg worked with Paolo Soleri at Arcosanti for a while, then returned to Stanford for a Master's in Construction Engineering. Two of his instructors, Henry Parker and Clark Oglesby, had just authored a book on construction productivity improvement. Their teaching inspired Greg to explore more fully how to improve construction work methods, and in 1989, Greg joined his mentors as author of Construction Productivity Improvement. After graduating in 1973, he started working at Timelapse, Inc. in Mountain View, CA. Greg eventually took over the company and hired his future wife, Dana Langhorne, as office manager.

In 1986, Greg moved from California to Albuquerque, where he held the position of Visiting Professor, funded by the New Mexico AGC, in the construction program at the University of New Mexico. In 1997 he left the University and moved to Ketchum, Idaho. He founded the Lean Construction Institute with Glenn Ballard to work with construction industry companies to develop and deploy Lean thinking and practice. In 2001, he founded Lean Project Consulting with Hal Macomber.