Improving the well-being of construction workers is a key component of successful major projects and an ethical imperative. Tideway’s chief technical officer, Roger Bailey, shares his perspective.
When accountants, postal workers, and bus drivers leave their homes for work each morning, they fully expect to come home in the same physical shape as when they left. Why can’t it be the same for construction workers?

When it comes to health and safety in construction, today’s best practices may not be good enough. Consider the historically “good” standards of health and safety performance on major infrastructure projects in the United Kingdom, for example. Based on these standards, a project involving 10,000 person years of input may require around 1,500 people to need first aid, either on-site or at a hospital. Of those, more than 105 may suffer significant occupational health impacts (such as hearing, vision, respiratory, or musculoskeletal impairment); 80 people may suffer a serious, life-changing injury; and one person may suffer fatal injuries.

The leaders of the Thames Tideway Tunnel Project, also known as the Super Sewer—a 25-kilometer tunnel under London’s Thames River—wanted to do better than good. But creating better outcomes for workers is often less straightforward than it seems. Intense pressure to stay on schedule and on budget can lead to a culture that deters workers from reporting health- and safety-related issues. Poor communication between site workers who speak different languages may further hamper safety. And, demographically speaking, construction workers are at higher risk of poor health and well-being, which is often due to the need to or commute long distances or their relatively low income.

To address these problems and help keep our workers safer and healthier, Tideway focused on four elements: better onboarding; a hands-on approach to health, safety, and well-being; easy access to health services; and a risk-based approach to design. We believe that our model can serve as a guide for how major infrastructure projects can pioneer change to better protect the construction workforce of the future.

Protecting the workforce of the future

London’s sewer system was designed in the 1850s to accommodate around 4 million people. But as the population moves towards 9 million, just a few millimeters of rainfall can strain the system. Such overflows are becoming more frequent, in part because of greater rainfall due to climate change. This means that nearly 40 million metric tons of raw sewage spills into the River Thames in a typical year. The Super Sewer will intercept and divert those spills away from the river. To manage the project and operate the completed tunnel, a consortium of investors created Bazalgette Tunnel Limited, known as Tideway. Construction started in 2016 and will be completed in 2022—the system will be fully operational in 2024.

At the project’s peak, up to 4,000 people will be working on it. When construction is complete, Tideway—together with its program manager and contractors—will have expended around 19,000 person years of direct employment through the combined effort of about 30,000 individuals. That’s a lot of opportunities to shape the infrastructure workforce experience.

Better onboarding

Poor communication between site workers with different first languages was defined early in the project as an unacceptable health and safety risk. English was set as the project language—and as part of onboarding, every prospective worker must complete a health and safety communications test to confirm their understanding of spoken and written English. The standard required is basic, but anyone who fails it would not be certified to work on site without additional language training and retesting.

Onboarding also includes a full day of interactive learning for the entire workforce, with no exceptions. Whether working on-site for a few days or a few years, everyone attends a purpose-built multimedia facility; here, with the help of actors and facilitators, the participants work through a hypothetical fatality of a colleague on site. The
exercise is designed to give people who have not experienced a serious accident or the fatality of a colleague a real understanding of the terrible consequences of these events—discussion of the impact on the worker’s family, workmates, supervisor, and senior managers are particularly emphasized. Further, additional training improves workers’ confidence to intervene themselves to enhance safety.

Two annual surveys of around 1,400 site workers have shown that the training has changed people’s attitudes, beliefs, and behaviors. In addition, perceptions of fairness and equality of opportunity have improved, and attitudes and approval of safety management have moved in a positive direction.

A hands-on approach to health, safety, and well-being
All Super Sewer workers are encouraged to report and engage with matters of health and safety with their colleagues, supervisors, and bosses in an open and timely manner. This encouragement starts with a face-to-face interaction with one of Tideway’s most senior leaders during onboarding, and continues at a person-to-person level throughout their tenure. This means that each member of the executive team will each have met and shaken the hands of possibly 2,500 people by the time the project is complete. Workers who feel inhibited from raising issues openly can call a 24-hour, 7-day a week confidential help line. Since 2016, more than 150 calls have been received by this number, of which around 40 have been found to be relevant and material and were investigated, then acted upon at CEO and board level.

Easy access to health services
Super Sewer site workers have easy access to health services, with the goal of not just staying safe but also leaving healthier than when they arrived on the project. To start, workers are given access to occupational health providers, including occupational health nurses and technicians, physiotherapists, general practitioners, dentists, and occupational hygienists. Workers are also offered the opportunity to improve their general well-being, through voluntary health checks during onboarding and every two years thereafter. Most accept the offer. In a few cases, these screenings identified life-threatening conditions for which the worker could then seek treatment.

The health program also addresses aspects distinct to the construction industry workforce. These including the higher proportion of individuals who may be living away from home or commuting long distances, and those with higher risk of poor health—including mental health—due to low income. Sadly, the suicide rate among men working in construction is three times higher than the national average of men. 1 To improve and promote mental health, the Super Sewer project became a pilot site for the Mates in Mind mental health program, which offers access to mental health professionals as well as interventions, such as training on how to recognize potential issues and provide support to colleagues, on main work sites.

Risk-proof design
The focus on workforce health and safety must begin in the planning and feasibility phase of a project—well ahead of the construction phase—and then continue into detailed design and construction. For the past 25 years, this early focus has been enshrined in UK construction, design, and management (CDM) regulations—but these practices are not widespread.

Super Sewer designers receive training in CDM to boost skills and encourage them to identify and design out health and safety risks. A “Healthy by Design” guide gives designers and preconstruction planners specific examples of highly hazardous activities and how to design them out. Typical results have included, for example, the elimination of
potentially hazardous activities by using mechanical connections, rather than welded ones for completing stainless-steel fabrication work in a drop shaft. For above-ground structures, design leaders have used a safer composite alternative in place of red-cedar cladding, since red-cedar dust is a known carcinogen.

Enabling the workforce of the future necessarily starts with ensuring individuals’ safety and well-being. In every industry, including dangerous ones, workers have a right to expect to start and end their workday in the same shape; all stakeholders, from owners and operators to contractors, need to set higher standards. A culture in which people feel safe—physically, emotionally, and mentally—enables the workforce to flourish.

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