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| ELLISIAN

WHITEPAPER

SAFETY BY DESIGN

THE CRITICAL ROLE OF PROJECT SCHEDULING IN PROTECTING WORKERS



EXECUTIVE SUMMARY

Effective scheduling is a cornerstone of construction safety. A well-structured schedule ensures that safety protocols, training, and downtime are seamlessly integrated into project timelines, promoting better worker mental health and reducing accidents. Foresight's AI-driven project management platform excels in this area, transforming how construction projects are planned and executed. By providing real-time updates, automated reminders, and comprehensive visibility, Foresight ensures that safety is an inherent part of every project stage. This integration not only mitigates risks but also fosters a proactive safety culture, ensuring that construction sites are safer and more efficient.

Introduction

In construction, the safety and the well-being of all workers must be core values for stakeholders—after all, it is the key to ensuring the success of capital projects across the globe. Yet too often, safety and worker well-being are relegated from core values to mere priorities, making it challenging for leaders and workers to balance meeting deadlines and costs without compromising the essential need to maintain a safe work environment. This becomes even more difficult as projects grow increasingly complex, and timelines become more compressed. The statistics are sobering; with rising rates of workplace injuries and fatalities, there is a clear and urgent need to ensure worker safety and health remains a non-negotiable commitment, integral to every decision and action taken on-site.

The intersection of project management and worker safety and well-being presents a unique opportunity to address this issue. Effective scheduling, often overlooked, is not just a tool for meeting project deadlines but a critical factor in enhancing safety. A well-planned schedule can significantly alleviate the pressures workers face daily, reducing the risk of injuries and incidents and promoting a healthier workplace.

This whitepaper explores how the construction project schedule, assisted by sophisticated project management tools, can form the basis of robust safety mechanisms. By embedding safety and risk management considerations directly into project timelines and execution strategies, you can ensure that safety and efficiency are not mutually exclusive but are integrated goals that protect your most valuable asset—your people.

The Problem: Safety and Well-being in Construction

The construction industry, known for its rigorous demands and high-risk environments, continues to report alarming statistics that highlight the urgent need for improved safety measures. According to recent data, **the sector accounted for a staggering 20% of all job-related fatalities** in the United States—making it one of the most perilous fields of work. Further compounding the issue, the rate of fatal work injuries in construction has not just persisted but increased, from 3.4 per 100,000 full-time equivalent (FTE) workers in 2020 to 3.6 in 2021 according to the National Safety Council (NSC), despite advances in safety technology and practices.

The NSC's records on non-fatal injuries also paint a grim picture, with hundreds of thousands of workers suffering from injuries each year, many of which lead to significant time away from work, debilitating physical pain, emotional distress, and mental health issues.

Mental health issues and substance abuse are also critical concerns within the industry. The construction sector has the highest suicide rate among the top six industries, with 49.4 suicides per 100,000 workers, nearly twice the rate of all industries combined (27.4). This stark statistic underscores the severe mental health crisis facing construction workers. Additionally, opioid-related overdose deaths are alarmingly high, with the Massachusetts Department of Public Health reporting that 26% of such fatalities are from the construction industry.

These statistics are not merely numbers; they represent real people facing genuine risks every day. The impact extends beyond the individual, affecting families, teams, and the organizations involved.

Potential Contributing Factors to Safety Risk in Construction

The many challenges contributing to safety risks in construction are multi-faceted, stemming from both systemic industry pressures and day-to-day operational realities. These are some of the most significant factors that compromise worker safety and well-being, according to the Centers for Disease Control and Prevention (CDC):

- **Extended Work Hours Due to Labor Shortages:** With the construction industry facing persistent labor shortages, workers often endure longer shifts under exhausting conditions, increasing the likelihood of fatigue-related accidents.
- **Extended Time Away from Home, Family, and Friends:** Lengthy periods away from personal support systems can exacerbate stress and affect mental health, reducing workers' overall resilience and alertness.
- **High Work Pressure and Related Stress:** The drive to meet deadlines can lead workers to cut corners on safety protocols, elevating the risk of accidents and injuries.
- **Lack of Supervision and Colleague Support:** Insufficient oversight and a lack of supportive workplace relationships can leave safety concerns unaddressed, and workers feel isolated.
- **Lack of Supervisor Training to Assess Well-being:** Without proper training, supervisors may be ill-equipped to recognize signs of stress or fatigue in their teams, missing early opportunities for intervention.
- **Lack of Engagement in the Field Due to Manager Stretch:** Overextended managers may struggle to maintain effective engagement with their teams, leading to gaps in communication and oversight.
- **Peer Pressure:** A culture that stigmatizes admitting vulnerability can discourage workers from reporting injuries or mental health struggles, compounding risks.
- **Mental Illness Social Stigma:** Stigma surrounding mental health can prevent workers from seeking help or disclosing issues, which can impact their performance and safety.
- **Job Insecurity and Stability:** Uncertainty about job security can lead to anxiety and distraction, which are detrimental to focusing on safety-critical tasks.

These challenges underscore a critical need: to re-evaluate and enhance the way safety is integrated into every phase of construction projects. Next, we will examine how effective schedule management can serve as a pivotal tool for improving safety outcomes, illustrating how strategic planning and execution phases, facilitated by advanced project management tools, are essential to turning the tide on this construction safety crisis.

Enhancing Safety Through Strategic Schedule Management

Effective schedule management can go a long way towards enhancing safety in construction projects. By carefully integrating comprehensive planning with meticulous execution, optimized schedules not only reduce workplace stress but also increase safety standards. Here's how these strategies are implemented across different project phases.

Planning Phase

Effective planning is the cornerstone of every successful construction project. In this phase, meticulous attention to project planning, risk management and milestone schedules not only sets the timeline but also enables the implementation of essential safety and well-being measures. This proactive approach ensures that risks are managed from the outset, laying a solid foundation for a safer work environment. These are some best practices, enhanced by Foresight, that can encourage strategic planning for safety:

- **Integrated Team Approach:** Utilizing Foresight's collaborative platform ensures a well-coordinated, integrated team approach to planning that includes all relevant stakeholders, from C-suite to supply chain members, leading to a more realistic and comprehensive schedule.
- **Identification of High-Risk Areas:** Foresight's advanced analytics help incorporate safety into the planning process by identifying high-risk areas (HRAs) early, allowing for targeted risk mitigation strategies.
- **Safety Risk Mitigation Activities:** Integrate specific safety measures into the project schedule, such as requiring additional days for safety training, engaging key experts in risk identification and mitigation actions when accelerating certain activities.
- **Well-being Activities:** Schedule slack periods to conduct well-being activities and education, which contribute to stress reduction and promote a healthier work environment.
- **Quality of Schedule:** Develop a high-quality, well-thought-out schedule from the outset to minimize unpredictability and reduce stress from last-minute changes. Ensure schedules are reality tested with key subject matter experts and validated to stakeholder expectations.
- **Role-Based Access and Collaboration:** With role-based access on a platform like Foresight, everyone knows their responsibilities and the importance of their tasks. This clarity reduces confusion and ensures that safety protocols are followed meticulously.

If all of the above practices are integrated into a realistic schedule, the execution of the project will have minimal levels of mayhem and stress on the workforce throughout the supply chain. Furthermore, an accurate schedule enhanced with Foresight has the added benefit of minimizing change requests, thus is more likely to be on-budget.

Execution Phase

As the project transitions from planning to execution, the established schedule becomes a critical tool for managing day-to-day operations safely. This phase focuses on adhering to the plan with precision while adapting to any unforeseen challenges. Effective execution maintains safety standards, supports worker well-being, and ensures project objectives are met efficiently. The following best practices, enhanced by Foresight, highlight how robust execution strategies can enhance safety on the construction site:

- **Adherence to a Well-Planned Schedule:** Following a detailed and realistic plan reduces stress and distractions that can lead to accidents and health issues, including mental health problems.
- **Visibility and Communication:** Foresight's platform maintains transparency by giving the full team regular access to the schedule to reduce anxiety and foster a sense of inclusion and awareness. Furthermore, real-time updates keep everyone in the loop, ensuring that any changes in the schedule are promptly communicated to all stakeholders. This transparency allows for immediate adjustments, maintaining a safe and efficient workflow.
- **Celebration of Milestones:** Actively celebrating achievements and learning from missed targets to boost morale and reinforce safety as a value. Recognizing both successes and challenges helps cultivate a culture of continuous improvement.
- **A Culture Driven by Schedule Management:** Using the schedule as a tool to shape and drive organizational culture, including hosting discussions and feedback sessions around scheduling impacts.
- **Leadership Engagement:** Ensuring that senior leaders participate actively in site visits (Gemba walks) to demonstrate their commitment to the schedule's realities and gather firsthand feedback before making decisions. Foresight's real-time updates also facilitate senior leaders' involvement and a deep understanding of the project.
- **Promoting a No-blame Culture:** Encouraging an environment where there is no fear of reporting delays—focusing instead on learning from every situation, thereby alleviating stress and reducing the potential for mistakes.
- **Strategic Stress Management:** Directing stress towards solving specific, manageable problems within key activities to prevent overwhelming challenges.
- **AI-Enhanced Schedule Monitoring:** Leveraging AI tools early in the project process, like Foresight to spotlight and manage potential risks and bottlenecks within the schedule proactively.
- **Automated Reminders and Alerts:** Foresight's automated reminders ensure that safety checks and training sessions are never missed. Regular alerts help keep the team informed about upcoming safety protocols and deadlines.

Through these detailed strategies, the project schedule becomes a dynamic tool that not only guides the construction process but also actively enhances safety and well-being at every stage.

Scheduling for Safety: A Call to Action

Effective schedule management is not merely a tool for ensuring projects are completed on time and within budget—it is crucial for safeguarding the well-being and safety of construction workers. From the planning stages to daily execution, every aspect of project scheduling plays a vital role in preventing accidents and promoting a healthier work environment.

The construction industry faces many challenges, but with the right approaches and technologies, we can overcome these obstacles to create safer and more efficient work environments where workers not only survive but thrive—and continue to choose construction as a career path. It is time for industry leaders to embrace advanced AI-enabled scheduling solutions like Foresight. By integrating them into their construction project management practices, it helps ensure the values of safety and well-being are not comprised while other key business and stakeholder expectations are successfully delivered by an energized, safe, and healthy team.

Let's commit together to making safety a fundamental component of our scheduling practices, ensuring that every construction site is a testament to the industry's dedication to its workers' health and well-being.

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