

SUPPLY CHAIN GOVERNANCE IN CONSTRUCTION: CLIENT LED OSH REGULATION IN COMPLEX CONSTRUCTION PROJECTS

Background

In this policy brief, we summarise selected empirical findings from the project 'Leverage Instruments for Occupational Safety and Health – Lift-OSH', which is commissioned by the European Agency for Safety and Health at Work (EU-OSHA).

Introduction

This policy brief highlights the key experiences and challenges of adopting a stronger client role to inspire policy-makers and managers in the construction sector to promote client-initiated occupational safety and health (OSH) activities.

The construction industry is one of the most accident-prone sectors in the entire European Union, being among the sectors with the highest occurrence of fatal and non-fatal accidents, according to Eurostat data.¹ Furthermore, the sector is one of the three sectors in which workers are most likely to report musculoskeletal disorders (MSDs),² and the construction sector scores above the EU-28 average in exposure to dangerous substances³.

Construction work involves a wide variety of tasks associated with different types of hazards and risks: using machinery and harmful materials; working at heights; instability; slips, trips and falls; working with electricity and gas; moving objects and vehicles (including traffic-related); and others.⁴ Importantly, construction workers are exposed to these hazards and risks not only directly but also indirectly through the actions of co-workers on the construction site (for example, a worker working at a height may drop a hammer on another worker) (Pinto et al., 2011). Another characteristic of construction work relates to its temporality: the physical structure changes every day, with a constant need for new OSH measures that may be superfluous the next day, leaving a risk of hazardous shortcuts.

These challenges are further magnified by the cost pressures of an industry where work is often tendered to the lowest bidder. In longer supply chains, OSH responsibility is often delegated – along with the work – to small subcontractors experiencing considerable economic pressures that are magnified through the chain. Research has consistently shown that differences in terms of safety and health exist between 'native' and migrant construction workers (Shepherd et al., 2021).

The coordination problem in the construction sector

The buyer-supplier relationships in the construction sector differ from those in most other sectors. The traditional linear logic of 'raw materials-production-sale' does not apply in this sector. Instead, any construction site, big or small, may have companies from different tiers of a supply network doing simultaneous work at the same geographical location.

¹ Eurostat data on accidents at work can be consulted here: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Accidents_at_work_statistics#:~:text=2010%20to%202018-.Number%20of%20accidents,accidents%20for%20every%20fatal%20accident

² Data on MSDs from the 2015 European Working Conditions Survey (EWCS), a European-wide survey administered by Eurofound, shows that 54 % of the sampled employees reported pain in the upper limbs within the last 12 months, while 52 % and 41 %, respectively, reported backaches and pain in the lower limbs.

³ Data from ESENER (2019) https://visualisation.osha.europa.eu/esener/en/survey/detailpage-national-bar-chart/2019/osh-management/en_1/E3Q200_9/activity-sector/EU27_2020

⁴ The OSHwiki provides a detailed description of these hazards and risks: https://oshwiki.eu/wiki/Construction_safety_risks_and_prevention#cite_note-25

Furthermore, main contractors in large-scale complex projects always employ an array of subcontractors providing specialist knowledge, labour and various technological solutions. Combined, these factors can lead to 'dis-integrated organisational structures' (Ahlstrand, 2022) and amplify the challenge of aligning the different actors that participate in the construction value chain.

Often, in large-scale complex projects, there are multiple phases of a given project happening simultaneously, increasing the chances of miscommunication and unforeseen incidents that could impact all parts of the construction project. There is also a high degree of complexity in the fact that the main contractor employees and the subcontractor employees often carry out simultaneous interdependent tasks.

A central characteristic of the construction sector is that tasks and projects are limited in time and space, and even many main contractor consortiums in large- and mega-scale construction projects have a relatively short lifespan. Consequently, standards, local rules and control systems, worksite culture and so on exist embedded primarily in a given project and must be developed again in the next project. Due to these conditions, supply chains in construction are typically conceived to exist, and do so, for a limited time – although some relationships may span multiple contracts, and main contractors may have preferred suppliers and subcontractors, depending on the specific project. The configuration of the supply chain for a new construction project will most often differ from previous projects (with a varying number of new partners joining) and the involved companies may take on new and different roles.

Finally, main contractors often find themselves in an ambivalent position. While often interested in improving OSH and working conditions, they nevertheless have to maintain a certain pressure on subcontractors to manage time and resources, keep prices low and stay within the agreed timeframe – which again, are sources of problematic OSH performances in many construction-supply chains.

Together, these factors lead to a higher risk of disorganisation and dis-integration, which in turn can have grave consequences for safety and health. As firms downstream the supply chain seek to appropriate a maximum of the value created, fierce competition for building contracts can lead to reduced attention to safety and health. The division of roles in terms of OSH management can be unclear, and subcontracted workers are often less informed about important policies and procedures (Choe et al., 2020).

The client as a new actor

The building clients can influence and somewhat mitigate OSH challenges, but to do so, more involvement is required in OSH practice at the construction sites. The key is a high degree of safety commitment, and specific people and resources dedicated to aiding, influencing and controlling the main contractor's OSH efforts. We know from multiple examples that when clients raise OSH requirements in the supply chain, as seen at the London Olympics and in the construction of the bridge between Copenhagen and Malmo, for instance (Hasle et al., 2017; Spangenberg et al., 2002), it can positively impact the overall OSH efforts in the construction sector.

In the Lift-OSH project, we found two illuminating examples of this type of 'client-led regulation'.

Example 1: A large transportation company as building client

The first example concerns a large infrastructural transport project. The client company has a reputation for being committed to safety and health in its projects, and has in recent years undergone a significant change in its management process to evolve into a 'professionally competent construction client' (as described by the OSH director). This means, for instance, that it employs professional construction experts in different specialist functions related to the various phases and parts of the construction process. Furthermore, the client company set up a board of OSH experts from universities and other institutions to counsel it independently, and to inspire the professionals in the company's OSH department.

It prioritises the relationship with the main contractors in the project far beyond the signing of the contract and the contractually mandated quarterly reports with OSH key performance indicators (KPIs) on accidents, near misses, and visits from authorities. In fact, the client company has employed full-time site managers on all construction sites with both the knowledge and discretion to supervise and aid the main contractors' OSH activities. The site manager also participates in weekly safety walks with OSH managers and employee representatives. Furthermore, there is a weekly safety walk with participation from the project directors of both the client company and the main contractor. On these walks, they point out mistakes or omissions relating to mandatory personal protective equipment (PPE), railings, scaffolding and other safety concerns they come across. In this way, the client company seeks to demonstrate managerial commitment to safety, going beyond the safety 'silo' in the companies, and extending to the functions and managers of the construction project itself. This sends the signal to subcontractors that they are evaluated on this parameter on the same stringent terms as others.

The client company has also initiated a 'safety academy', which takes the form of several educational courses in safety, all mandatory for different groups on the construction site. Every worker starting on one of their sites, even subcontractors on a short assignment, must attend a mandatory class (between 4 and 5 hours) of safety training. The training is paid for by the client and is thus free for the main contractor and subcontractors. However, it requires that they allow personnel to attend within working hours, thus costing hourly wages for contractors and subcontractors. All those in management positions in contracting companies wishing to work on one of the company's projects must also attend a workshop. This spans the crews' team leaders as well as project managers of high seniority levels in multinational construction companies.

Finally, the professionalisation of the OSH staff function at the company's headquarters (HQ) ensures that the client company has the professional capacity to investigate accidents at the sites. All OSH managers are trained in the tripod methodology of accident analysis.⁵ All main contractors and subcontractors are contractually bound to inform HQ of any accident within a short time span. Then the client company's professionals must decide whether to step in themselves directly and form an investigation group with OSH coordinators and managers from the contractors, or if the root cause analysis is simple and does not call for their direct participation, in which case they will closely monitor the investigative work.

The efforts are rather successful across all levels of the supply chain, at least according to the actors interviewed and to the internal documents. Both main contractors and subcontractors take the efforts very seriously, and furthermore, know the client company's policies in detail.

Example 2: A multinational IT hardware manufacturer as building client

A multinational IT hardware manufacturer has developed its own in-house professional construction function to aid in the building of projects where it is the client. This entity liaises between the parent company (the end client) and the general contractor. It does not manage day-to-day construction; building subcontractors have contracts with the general contractor, not the client company.

However, it does take on a number of tasks not typically associated with a client. First, it prequalifies not just the general contractor with whom it has a direct contract, but also subcontractors whose contracts will be with the general contractor. Subcontractors who are then selected have to agree to contractual requirements specifying levels of training, a set number of safety personnel based on the contractors' workforce size, and to comply with the client's minimum performance requirements – even though their contract is with the general contractor rather than the client. The client's construction function delivers the induction training to new subcontractors; this training focuses on accident and fatality prevention. Once work begins, it delivers toolbox and whiteboard talks on-site on a regular basis

⁵ For more on Tripod Beta, see: <https://www.wolterskluwer.com/en/solutions/enablon/bowtie/expert-insights/barrier-based-risk-management-knowledge-base/tripod-beta#:~:text=The%20Tripod%20method%20is%20based,Neglecting%20to%20wear%20PPE>

and carries out daily site walks. It also develops and delivers safety training materials for workers (on-site) and managers (on- and off-site) at contractors and subcontractors, to help them understand how work is to be carried out, ensure they follow regulations and the client's own minimum performance requirements, as well as to share learning across their global projects. Finally, it audits the site itself and pays third parties to carry out additional audits of the site.

This high level of OSH requirements comes at a cost for the general contractor and subcontractors; the client pays extra to the contractors as well as for the maintenance of this in-house HQ. Relative to the costs of their construction projects, these costs are not huge, and the client considers it beneficial to cover these additional expenses. But for clients in lower-margin businesses or with smaller or less specialised construction projects, such a high-level client-led approach would be harder to justify. Finally, when pushed for details on what the current regulation lacked that would make their competitors also take on such activities (and costs), they noted that the current regulation is fine – rather, the problem is 'enforcing what we have'.

Practical implications

There is great potential for improving OSH and working conditions in the European construction sector, if, among other challenges, public policy-makers can encourage client organisations to actively partake in regulation and management of OSH activities in major construction projects. Our research shows that active client involvement in day-to-day activities has the potential to improve the effectiveness of OSH activities across the board. There are several examples of such activities: safety walks and assessments of concrete risks, activities related to serious incidents such as accidents and near misses, and activities raising awareness and boosting cooperation around OSH issues on construction sites.

The two examples above represent client companies that voluntarily go beyond the mandates of European and national legislation. It is vital to understand the mechanisms that have led them to adopt this position, and find out if and how these mechanisms are transferable to other client companies in other contexts. We are also well aware of the limitations of a 'best case practice' approach like the one presented in this policy brief. There are, of course, various contextual elements at play in the two cases that makes them unique and in some ways inimitable for other client organisations. Therefore, studies of the regulatory mechanisms that have pushed or pulled the two client organisations to act will have to be thorough and detailed.

Nevertheless, with 'best case practices' like the ones referenced in this policy brief, we can at least map the path for other client companies who may be interested in following their example. More than 40 case studies are described and analysed in more detail in the upcoming final report of the Lift-OSH project⁶.

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⁶ <https://osha.europa.eu/en/themes/good-osh-is-good-for-business/improving-compliance-osh-regulations>

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