



European Construction Sector Observatory

Policy fact sheet

Denmark

Holistic Construction Site
Inspection Scheme

Thematic objective 2

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In a nutshell

Implementing body	The Danish Working Environment Authority (<i>Arbejdstilsynet</i>) ¹
Key features & objectives	The Holistic Construction Site Inspection Scheme applies a four-stage supervision method to identify and inspect OSH problems on construction sites and companies; to motivate and support OSH improvements; and to verify implementation and compliance.
Implementation date	2017 – ongoing
Targeted beneficiaries	Construction sector employers and employees
Targeted sub-sectors	All sub-sectors
Budget (EUR)	Not published
Good practice	★ ★ ★ ★ ★
Transferability	★ ★ ★ ★ ★

According to a study² conducted by the Danish Working Environment Authority (*Arbejdstilsynet*), in collaboration with the Danish Construction Association (*Dansk Byggeri*), one third of accidents on construction sites are linked to a lack of consideration given to working environment rules, risk assessments and OSH practices³.

In 2014, the Danish Working Environment Authority introduced a series of procedures for the supervision of construction sites with the aim of reducing the number of accidents at work. Risk-based supervision (*Risikobaserede tilsyn - RBS*) is one example. They did not however succeed in reversing the trend. In fact, between 2012 and 2017, the number of accidents reported in the construction sector remained largely unchanged year on year, as shown in Figure 1.

Figure 1: Number of accidents reported per 10,000 employees



Source: Danish Working Environment Authority⁴

To help reduce the number of accidents in the construction sector, the Danish Working Environment Authority launched the Holistic Construction Site Inspection Scheme (*Helhedsorienteret bygge-og anlægstilsyn - HOS*) in 2017. The scheme aims to identify OSH problems on construction sites, incentivise improvements and verify implementation and compliance.

Using a new four-stage Holistic-Orientated Supervision (HOS) method, the Danish Working Environment Authority uses local knowledge to target sites and companies that do not comply with OSH rules and practices. More specifically, it carries out unannounced site and company inspection visits; incentivises remedial action; and performs follow-up inspections to verify implementation and compliance.

Qualitative and quantitative studies demonstrate that the HOS method is much more effective than the RBS method. Participant feedback indicates that the new scheme is valued by participants, not least because it has enabled 71% of participating companies to solve OSH problems in their working environments. In addition, data published by the Danish Work Environment Authority in 2019 also shows that a total of 148 accidents at work were reported per 10,000 employees in 2019⁵, the lowest number recorded since 1983. Consideration should now be given to scaling up the scheme.

1.

General description

The Holistic Construction Site Inspection Scheme (*Helhedsorienteret bygge-og anlægstilsyn* – HOS) – was launched by the Danish Working Environment Authority (*Arbejdstilsynet*) in 2017.

HOS is a new supervision method designed to help create a safe and healthy working environment on construction sites and in companies.

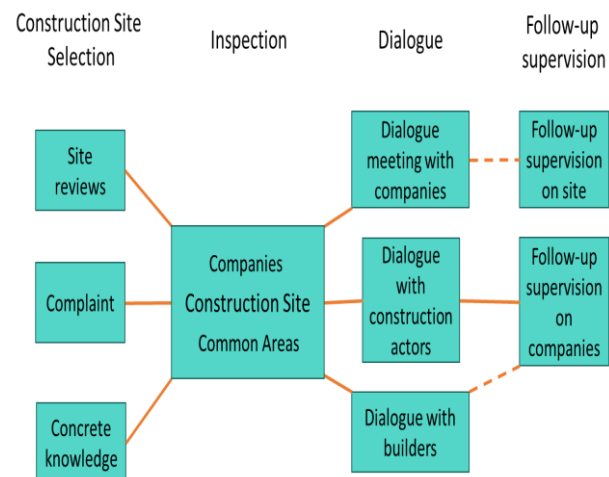
The HOS supervision method, shown in Figure 2, consists of four main steps⁶:

1. **Selection of construction sites** based on site reviews, complaints and local knowledge;
2. **Unannounced construction site inspections.** The purpose is to review the entire construction site and identify the working environment for all of the companies working onsite, including company interaction, project management responsibilities, and inspection of the common areas of work;
3. **Dialogue (meetings)** that are organised:
 - At construction company's premises; or
 - At the construction site;
 Dialogue meetings must be held within four weeks following the site inspection. The purpose of these meetings is to motivate and enable the company to prevent and solve common working environment problems. The Danish Working Environment Authority holds safety strategy meetings with construction site actors, including builders and other figures, and collaboration dialogue meetings with the designer or the developer;
4. **Follow-up supervision** which consists of two types of follow-up supervision meetings:
 - At company premises to perform follow up inspections of company working environments. All work places such as offices, workshops, laboratories, warehouses are subject to inspections;

- On construction sites to verify implementation and maintenance of preventive measures on site following the completion of dialogue meetings.

The fourth step (follow-up supervision) is only required in specific cases such as those with significant work environment problems.

Figure 2: Holistic Construction Site Inspection Scheme (HOS) methodology



Source: *Holistic Construction Site Inspection Scheme*⁷

Once an inspection visit has been completed, supervisors deliver an evaluation report that brings together the main findings of their assessment of the working environment. Based on the report's findings, the Danish Working Environment Authority can take one of the following actions:

- **Prohibition:** A company may be prohibited from continuing work if there is clear evidence that the working environment is dangerous for employees. Prohibition means that work must stop immediately;
- **Sharpened supervision:** A company may be the subject of strict and continuous audits. This applies particularly to companies that have previously received a prohibition notification;

- **Procedure for injunction:** A company is required to take immediate actions to address problems related to their working environment;
- **Order with a deadline:** A company can continue work but must find a permanent solution to the problem before the deadline expires;
- **Counselling:** An authorised occupational safety and health (OSH) consultancy must assist the company to solve and prevent OSH problems;
- **Decision without obligation to act:** Although the company has violated working environment legislation, it does not receive any sanctions. This action is enacted when the company rectifies the problem before the Danish Working Environment Authority requires them to act⁸;
- **Administrative fines:** A company can receive a fine if there is clear evidence that they have violated their health and safety obligations;
- **Police report:** In the event that there is a serious violation of the Working Environment Act, the police can be notified. In this case, the police will carry out inspections and decide whether to initiate a lawsuit against the company⁹.

Assessments are also supported by the use of 'smiley face' performance indicators. These indicators allow the public to monitor the working environment of a company, in terms of occupational safety and health (OSH) performance.

A **green smiley face** is awarded to companies that meet all of the requirements of the working environment legislation. The green smiley face is valid for three years and shows that the company has no outstanding account with the Danish Working Environment Authority (WEA). Upon award, it will appear on the WEA website and can be downloaded by the company for display on their own website.

A **yellow smiley face** is awarded to companies that have received a procedure for injunction, i.e. an order with a deadline or a decision without obligation to act. A yellow smiley face will appear on the WEA website for three to six months, until the owner demonstrates that the issues have been resolved.

A **red smiley face** is awarded to companies that have received a ban or a consultancy order. A red smiley face will appear on the WEA website for 6 months or more, i.e. until the owner demonstrates that the issues have been resolved¹⁰.

In some cases, a company may be awarded a **crowned smiley face** for having made an extraordinary effort to ensure high working environment standards. This award certifies that the company has demonstrated that OSH procedures are practised intentionally and systematically in their working environment¹¹.

2.

Achieved or expected results

A ‘Quantitative Evaluation of Supervision in the Construction Industry’ was carried out by the Danish Working Environment Authority in 2018¹². The evaluation compares the results achieved using the Holistic-Orientated Supervision (HOS) method with those achieved using the previous method (Risk-Based Supervision, RBS). Results are based on a comparison of the first eight months using the HOS method with an eight-month period in 2017 using the RBS method. Key indicators assessed include:

- The number of companies visited;
- The number of decisions taken to address workplace injuries;
- Effective time spent on supervision.

The results in Table 1 show a 39% increase in the number of companies visited using the HOS method, compared to the RBS method. The HOS method also proved to be 3.5 times more effective in identifying problems in the working environment, compared to the RBS method.

One of the advantages of HOS is the company screening process. By selecting companies for inspection based on company reviews, complaints and the local knowledge of supervisors, HOS makes it easier to identify companies that do not comply with the Work Environment Act, which have problems and which need assistance and solutions.

Table 1: Number of companies visited and percentage of problems identified (HOS and RBS)

Supervision method	N° of firms visited	Work environment problems identified (%)
Holistic-Orientated Supervision (HOS)	1,829	45.4%
Risk-Based Supervision (RBS)	1,318	13%

Source: Danish Working Environment Authority reports¹³

The results in Table 2 show that the percentage of decisions taken to prevent Musculoskeletal Disorders (MSD) was more than double using HOS than was achieved using the RBS method. In the case of accidents at work, however, the percentage of decisions taken using HOS was more than four times higher than with RBS.

Key features of the HOS method that may help explain the differences in the results achieved are that:

- Auditing visits were conducted on construction sites and on company premises;
- Unannounced construction site inspections do not allow companies to hide problems.

Table 2: Percentage of actionable decisions taken to prevent MSD and accidents at work

Supervision method	% of decisions taken to prevent:	
	MSD	Accidents at work
Holistic-Orientated Supervision (HOS)	5.8%	36.7%
Risk-Based Supervision (RBS)	2.7%	8.9%

Source: Danish Working Environment Authority reports¹⁴

The results in Table 3 show that the use of the HOS method resulted in three times the number of actionable decisions taken to prevent MSD in the workplace than was achieved using the RBS method. However, the difference in the number of actionable decisions taken to prevent accidents at work using both methods was even greater. Use of HOS resulted in over seven times more decisions to take action than was achieved using RBS.

The multiple inspection visits permitted by the HOS method played a part in the higher numbers of decisions taken requiring companies to take action.

Table 3: Number of decisions taken to prevent MSD and accidents at work

Supervision method	N° of decisions taken to prevent:	
	MSD	Accidents at work
Holistic-Orientated Supervision (HOS)	131	1124
Risk-Based Supervision (RBS)	43	154

Source: Danish Working Environment Authority reports¹⁵

Table 4 compares data on inspection effort required and inspection failure rates using both the HOS and RBS methods. The data shows that the HOS method has increased the number of working hours by about 55% compared to the RBS method. This is explained by the fact that HOS inspection visits are unannounced and conducted on both construction sites and company premises. Thus, the increased effort required by the HOS method helped achieve a fivefold (500%) reduction in the inspection failure rate, compared to the rate achieved using the RBS method.

Table 4: Comparison of inspection effort and failure rates using the RBS and HOS methods

Supervision method	N° of working hours	Inspection failure rate
Holistic-Orientated Supervision (HOS)	4.8	5.6%
Risk-Based Supervision (RBS)	3.1	28%

Source: Danish Working Environment Authority reports¹⁶

The success of the Holistic Construction Site Inspection Scheme and the HOS method it applies, has resulted in a key government-led action being taken in 2019 that should help sustain this scheme in the coming years:

- The Minister for Employment proposed and passed an amendment to the Working Environment Act to provide legal provision for the continued promotion of the HOS method¹⁷.

3.

Perspectives and lessons learned

A 'Qualitative Evaluation of Supervision in the Construction Industry' was conducted in 2018 by PwC and Oxford Research¹⁸ on behalf of the Danish Working Environment Authority. The evaluation was tasked with assessing the effectiveness and impact of the HOS method of supervision, with a particular focus on the impact of dialogue meetings. 14 different cases were assessed covering a total of 18 meetings. Interviews were conducted with both construction contractors and supervisors.

The HOS method applied by the Holistic Construction Site Inspection Scheme is more effective than its predecessor (Risk-Based Supervision, RBS).

The HOS procedure for selecting companies to inspect is more targeted and efficient, making it easier to identify those that do not comply with health and safety regulations. This enables inspections to: i) be conducted on construction sites and in companies that are most in need of preventive measures; and ii) carry out inspections at greater scale, including multiple visits to the same location. As a result, the number of issues identified and actions taken increased significantly compared to the achievements of the previous scheme¹⁹.

Dialogue meetings with all parties on a construction site, or involved in a construction project, help gain stakeholder buy-in to implement and follow health and safety practices.

The use of dialogue meetings on construction sites, with companies and with clients are considered to be a particularly practical and valued supplement to the inspection scheme, as they bring all parties together to discuss the working environment issues that affect them all on a specific site or project.

Participant feedback indicates that, with the support of supervisors, these meetings provide an

opportunity for collaborating partners to discuss OSH issues more freely and more openly, compared to the type of meetings that might ordinarily take place during a construction project. The inclusive approach enables a consensus to be reached on recommended solutions, which can then be put into practice 'in-situ'²⁰.

Dialogue meetings help motivate employers and employees to implement and comply with workplace regulation.

By providing supervision on construction sites, as well as on company premises, construction employers and employees gain a much clearer and a more practical view and understanding of the working conditions in which they are currently operating, in terms of the risks to health and safety.

By basing dialogue on current, real life construction sites and projects, the HOS method helps motivate all involved parties to improve their OSH practices, not least because those participants gain a clearer understanding of their roles and the division of responsibilities. In addition, dialogues help ensure that employers comply with all aspects of health and safety laws and that the workplaces are not the cause of ill health, injury or death²¹.

Supervisors play a key role in conducting dialogue meetings, because the more interactive they are, the greater their value is to the participants.

Participants are more likely to lose interest and be more passive in dialogue meetings if they feel they are being lectured. In contrast, dialogue meetings that are more interactive, in which supervisors ask questions to participants, tend to produce constructive responses and interaction. The way in which supervisors conduct dialogue meetings has an important influence on their outcome and their value to participants²².

4.

Conclusion and recommendations

Compared to the results achieved by the previous Risk-Based Supervision (RBS) method, the Holistic Construction Site Inspection Scheme and the Holistic-Orientated Supervision (HOS) method proved to be very successful.

The implementation of the HOS method has delivered significant improvements, in terms of identifying higher numbers of work environment problems and instigating remedial action. In particular, the Danish Working Environment Authority improved its capacity and ability to spot more easily work environment problems, and provide solutions to address accident risks.

These conclusions are supported by the positive feedback elicited in stakeholder interviews and the fact that a large percentage of companies (71%) that have participated in the new scheme have managed to solve the OSH problems in their work environments.

The Holistic Construction Site Inspection Scheme has gained credibility in the Danish construction sector thanks to the positive results it has achieved in a relatively short period of time. The HOS method is recognised across the country as a supervision method that is easy to implement and well accepted by all actors operating on construction sites. Workers particularly value the fact that the procedure offers dialogue meetings that are open to all stakeholders and provide practical OSH solutions to problems onsite.

In spite of its success, there is room to improve the impact of the Holistic Construction Site Inspection Scheme. One main recommendation is suggested:

- The scheme should be scaled up to increase the number of supervisors with a view to cover the whole country. Scaling up would particularly help smaller businesses across the country to benefit from the scheme. A larger team would

also make it easier to conduct follow-up meetings. According to the results achieved to date, only 61% of the companies inspected received follow up supervision. Follow-up meetings are essential, because they help ensure that preventive OSH procedures have been properly established and implemented²³.

Overall, the Holistic Construction Site Inspection Scheme is rated as a '5-star good practice measure' on a scale of 1 (low) to 5 (high).

There are a number of reasons that support this score. The HOS method has proven to be significantly more successful than its predecessor in identifying and rectifying OSH issues in the workplace. HOS has led to significant increases in the number of decisions taken to initiate remedial action, by up to 600-700% in some cases, as well as a fivefold reduction in the inspection failure rate.

Unannounced inspection and auditing visits at both construction sites and company premises are a powerful incentive to ensure the provision and maintenance of a safe and healthy working environment, not least because there are consequences (sanctions) for non-compliance. Sites are selected for visits based on important criteria (complaints, reviews and local knowledge). Remedial action is then structured, inclusive (e.g. involving all stakeholders in open dialogue meetings) and supervised/followed up to ensure compliance.

The Holistic Construction Site Inspection Scheme is rated as a '5-star transferable measure' on a scale of 1 (low) to 5 (high).

There are a number of reasons that support this score. One of the main advantages of the scheme and the HOS method is that it is relatively straightforward to implement. The key is to ensure that there is an effective and adequately resourced team and organisation in place to deliver the required level of service. That service will include

supervising and helping construction companies to effect change within their organisations and on construction sites.

The scheme also features component services that are readily transferable in their own right. A targeted approach to identifying companies for inspection, based on local knowledge, is a more efficient way to focus assistance on those that need it most. Unannounced site and company inspection visits are a useful tool and incentive to motivate companies to implement and comply

with OSH practices. Penalties and follow up visits help to reinforce compliance. Supervised OSH dialogue meetings on construction sites and in companies encourage open and constructive dialogue, consensus and action, providing that they are inclusive of all parties involved onsite and in projects. The key to all of these components, as with the scheme as a whole, is to ensure that there is an appropriately resourced team and organisation in place to deliver those services.

Endnotes

- 1 The Danish Working Environment Authority (Arbejdstilsynets – WEA) is an agency under the control of the Ministry of Employment. Its purpose is to help create safe and healthy working conditions in the workplace.
- 2 Danish Work Environment Authority, Supervision in the construction industry (Arbejdstilsynets tilsyn inden for bygge- og anlægsbranchen), 2019: <https://docplayer.dk/146088955-Arbejdstilsynets-tilsyn-inden-for-bygge-og-anlaegsbranchen-dansk-byggeris-arbejdsmiljoekonference-15-marts-2019.html>
- 3 Danish Work Environment Authority, Supervision in the construction industry (Arbejdstilsynets tilsyn inden for bygge- og anlægsbranchen), 2019: <https://docplayer.dk/146088955-Arbejdstilsynets-tilsyn-inden-for-bygge-og-anlaegsbranchen-dansk-byggeris-arbejdsmiljoekonference-15-marts-2019.html>
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- 8 Arbejdsmiljø i Danmark, Decision without obligation to act (Afgørelse uden handlepligt): <https://at.dk/tilsyn/arbejdstilsynets-reaktioner-ved-et-tilsyn/afgoerelse-uden-handlepligt/>
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- 10 Arbejdsmiljø i Danmark, After the oversight visit (Efter tilsynsbesøget): <https://at.dk/tilsyn/efter-tilsynsbesoebet/>
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- 12 Arbejdstilsynet, Quantitative evaluation of supervision in the construction section (Kvantitativ evaluering af tilsyn i bygge- og anlægsbranchen), 2018: <https://at.dk/media/5025/kvantitativ-evaluering.pdf>
<https://at.dk/nyheder/2019/02/evaluering-af-forsoeg-med-ny-helhedsorienteret-tilsynsmetode-i-bygge-og-anlaegsbranchen/>
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