REDAS

DfS and WSH Good Practice Guide

September 2025

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PREFACE

Since the 1st edition of the *REDAS DfS & WSH Good Practice Guide* was released in 2019, it has proven to be an invaluable resource for Developers and industry professionals alike. This is evidenced not just by the widespread use of the *Proforma* when Developers are seeking to engage a Design for Safety Professional (DfSP), but even the frequent inclusion of the entire *Good Practice Guide* in tender packages as a reference document.

Over the years, the industry has grown more familiar with the practice of the Design for Safety process. The WSH Council has since updated the *WSH Guidelines for Design for Safety in 2022* to keep abreast of global best practices. Further initiatives in Workplace Safety and Health legislation such as the *Code of Practice on Chief Executives' and Board of Directors' WSH Duties 2022* and the *Enhancement to WSH Requirements in Public Sector Construction-Related Projects* have also cemented the importance of WSH in the stable of Developers' considerations and placed Safety at the front and centre of project undertakings.

It is timely as such that the *REDAS DfS & WSH Good Practice Guide* received an update to stay relevant to latest changes not just in WSH, but also in industry developments such as the implementation of CorenetX, the widespread use of BIM, VDC, PPVC, DfMA, and related considerations in Design for Maintainability and GM2021.

The sampling of DfS examples in the earlier *Good Practice Guide* has also been expanded and partitioned into a companion *DfS Library* to provide a larger array of reference situations and solutions where DfS can be applied.

It is hoped that this *Good Practice Guide* continues to serve as a relevant reference for the industry and plays a useful role in steering our industry towards our Vision Zero goal of workplaces free from injury and ill-health.

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1. INTRODUCTION

The *Workplace Safety and Health (Design for Safety) Regulations 2015* (hereinafter referred to as "WSH (DfS) Regulations") came into operation on 1st August 2016 (with minor amendments gazetted in parliament in 2024). The Regulations require stakeholders such as Developers, Designers and Contractors to work together through the DfS review process to address risks at source and plan for safe work in regard to a building or structure as a workplace. By working together, they can identify and eliminate or reduce, as far as reasonably practicable, all foreseeable design risk(s) to any person's safety or health.

The Workplace Safety and Health Council, in collaboration with the Ministry of Manpower, also published the *Workplace Safety and Health Guidelines (Design for Safety) 2022* (hereinafter referred to as "WSH Guidelines (DfS)") to provide additional details and examples on how the Regulations can be implemented in projects to meet the legal requirements of the Regulations.

The Real Estate Developers' Association of Singapore separately publishes this *REDAS DfS and WSH Good Practice Guide* which you are currently reading, with the intention of providing Developers with guiding principles and knowledge of the DfS processes, and guidance on good WSH practices. The purpose of this guide is to share knowledge and best practices across the industry, with the aim of avoiding the common deficiencies in DfS application, and making it a genuinely value-added process. The guidance aims to address common issues experienced by the industry, to enhance the awareness and implementation of DfS amongst the Developers, and endeavour to improve the application of the DfS process on their projects to deliver projects that are:

- Safer to Build
- Safer to Operate / Occupy
- Safer to Maintain
- Safer to Demolish / Dispose of

Mandatory regulatory requirements are demarcated from *recommended* practices. Developers and Designers must apply judgment regarding the extent to which recommended practices will be applied, based on individual project circumstances, risk levels, and the value-add to be gained.

For the avoidance of doubt, this document is not intended for use by a DfS Professional, as it does not provide complete information required for practising Design for Safety by DfS Professionals. This guide is also not meant to be an exhaustive one and should not be read as regulatory or binding -- it is meant to serve as an industry guidebook to developers for clarifying DfS and WSH concepts. Readers should still refer to the *WSH(DfS) Regulations* and the *WSH Guidelines (DfS)* for regulatory requirements.

PART I.
Design for Safety

2. Understanding Design for Safety

2.1. What is Design for Safety

Design for Safety (DfS) is the set of activities that includes the integration of hazard identification and risk assessment methods early in the design stage in order to allow Designers and Contractors to eliminate or minimise asset lifecycle risks through their design efforts and ultimately deliver safer design solutions. Designers' and Contractors' DfS activities need to consider and cater for the following:

- Use and foreseeable misuse of designed asset (building, structure, plant, etc.)
- Human error and ergonomic principles
- Prevention of major accident events and emergency response planning
- Minimal and justifiable residual risks across asset lifecycle

DfS should go beyond prevailing regulations and compliances already embedded in various statutes and codes. Common situations not covered by existing codes are where DfS can play a big part in checking that sufficient safety considerations are taken, e.g. internal carpark/traffic safety measures (speed humps, signages, convex mirrors, road markings etc.) or provisions for safe maintenance.

Areas covered by existing codes but not actively enforced through the submission/approval process or authority inspections (and therefore not common knowledge in the industry) are also key areas where DfS can provide additional reinforcement of safety requirements.

2.2. Guiding Principles

The guiding principles for Design for Safety (DfS) are as follows:

a) **Commitment** – Demonstrated commitment by the Developer to continuous improvements in Workplace Safety and Health (WSH) to provide inherently safer design solutions over an asset's lifecycle.

b) **Alignment with Designers and Contractors** – Project WSH aspirations and safe design goals are made clear to the Designers and Contractors at the onset of the project. Requirements and responsibilities are defined and incorporated into planning.

c) **Early Opportunity, Hazard Identification and Risk Assessment** – Designers and Contractors are aware of the hazards and risks early. Safe design solutions are implemented early in the project. Promote hazard awareness and risk management within the DfS Review Team (DRT). Reduce design risks at their source and adopt collective protective measures instead of individual ones.

d) **Promotion of Asset Lifecycle 'Thinking'** – Promote to the Designers and Contractors the need to consider the entire asset lifecycle when preparing the design. Risks are considered across the whole of the asset's lifecycle, not just the design phase. Designers and Contractors should have adequate consultation with people involved in the lifecycle of the asset, e.g. construction, operations and maintenance.

e) **Informed Decision Making** – Design decisions are transparent, soundly based, and appropriate for the context. Decisions are made with suitable consideration of implications on safety initiatives. Decisions are documented to understand the basis for the decision.

f) **Timely Implementation** – Asset lifecycle risk reduction measures are implemented at the appropriate time and do not miss the opportunity to create a safer design.

g) **Design Knowledge, Capability and Communication** – Competent Designers and Contractors with good knowledge of safety in design work with effective cross discipline coordination.

2.3. Key Success Factors

The following are Key Success Factors that Developers should undertake to achieve a project's DfS objectives effectively:

a) **Attend the DfS Review Meetings** – It is highly recommended that the Developer attend the DfS Review Meetings, even if a DfS Professional has been appointed, to lead by example and demonstrate their WSH commitment. The Developer also tends to be best informed about future occupant requirements and such inputs during the meetings will aid the Designers and Contractors in better identifying possible design risks.

b) **Appoint the DfS Professional early** – Fundamental to safe design is the identification of hazards and associated risks early on at the planning and design stages of the project where Designers and Contractors have the greatest opportunity to influence and steer the design. The DfS Professional should be appointed at the inception of the project for the DfS process to have greatest effect.

c) **Consider the asset's lifecycle** – Consultation with individuals or groups involved in the asset's lifecycle is essential, i.e. from design to procurement,

construction, operations and maintenance, until its demolition. This may entail, for example, involving asset/facility managers or operators in the DfS review process.

d) **Active participation of the Designers and Contractors** – While the DfS Professional is responsible for facilitating the DfS Review Meetings, the active participation by Designers and Contractors is critical. This is because they have intimate knowledge of the design details and are responsible for recommending to the Developer the mitigations to be taken to reduce design risks that have been identified. Developers should thus work closely with the Designers and Contractors on their proposals to ensure that their recommendations are well considered in the DfS review process.

3. Implementing Design for Safety

3.1. Legislative Obligations

The Workplace Safety and Health (Design for Safety) Regulations apply to any construction project undertaken by a Developer that has a contract sum of $10 million or more and involves "development" as defined in Section 3(1) of the Planning Act (Cap. 232). The Regulations also apply to Addition & Alteration (A&A) projects that fall within the referenced definitions of "development".

When the Regulations apply, the Developer is the key stakeholder and is responsible for the following:

3.1.1 General duties:

- Ensure that all foreseeable design risks are eliminated if reasonably practicable.
- Where not reasonably practicable to eliminate foreseeable design risks, the Developer shall ensure that the design risks are reduced to as low as reasonably practicable.
- When reducing risks, design risks shall be reduced at its source and collective protective measures shall be used instead of individual protective ones.
- Ensure that all Designers, Contractors and delegated DfS Professionals (DfSP) are competent to perform their duties.
- Plan and manage the project such that all appointed Designers and Contractors have sufficient time and resources to perform their duties.
- Provide relevant information to all appointed Designers and Contractors.

The $10mil contract criteria is the benchmark set by MOM as one of many possible options to defining the scale and complexity of a project.

This suggests that any development project of a reasonably large scale should reach a level of complexity that warrants a more deliberate and comprehensive review of safety in design.

Some projects could be expensive by virtue of the materials or equipment procured but are actually straightforward in design and implementation. However, if the project meets the criteria set forth by Regulation 3 of the WSH(DfS) Regulations, they will still have to implement the DfS process.

Conversely, some projects that are smaller in contract value could still be complicated or have design elements with higher risks. Although the Regulations do not require it, Developers are encouraged to still implement the DfS process if they feel there is clear benefit to reviewing the design for any areas of potential risk.

There is no tested definition to whether the $10mil contract sum criteria only refers to the main contract, or whether pre-construction works (soil investigation, demolition), direct contracts (equipment procurement, post-TOP fit-out), etc. all contribute towards the overall $10mil project cost and are also subject to DfS review. It is only regulated that GST forms part of the $10mil sum, while the WSH(DfS) Guidelines mention the exclusion of variation orders from the contract sum.

In theory, a Developer could sometimes opt to break a contract up into various smaller packages to avoid a clear $10mil contract package. Or a contract that is very close to $10mil in sum could be awarded just below the threshold to avoid the DfS process. In practice though, the spirit of the DfS requirements is intended to review the safety in design of projects of a reasonable scale or complexity and should simply be treated in that light. For Developers, it should also be read in the larger context of building up a culture of safety in its development undertakings.

3.1.2 DfS Review Meeting:

• Convene DfS Review Meetings to identify all foreseeable design risks and discuss how each foreseeable design risk can be eliminated or reduced when it is not reasonably practicable to eliminate.

• Ensure that the DfS Review Meetings are attended by all relevant Designers and Contractors.

3.1.3 Maintaining a DfS Register:

• Keep a DfS Register containing information and records on all DfS Review Meetings and every residual design risk for the project.

• Ensure that the DfS Register is up to date.

• Ensure that all appointed Designers and Contractors for the project have access to the DfS Register.

• Ensure that the DfS Register is available for inspection by registered workplace inspectors.

3.1.4 Delegation of Developer's Duties to DfS Professional (WSH(DfS) Regulations 6 and 7(1) and 7(2)):

The Developer may appoint his or her employees or engage a DfSP to undertake the duties of the Developer.

• Developer may delegate **only** the following duties to a DfSP:

- convening DfS Review Meetings (i.e. item 3.1.2 above); and
- maintaining a DfS Register (i.e. item 3.1.3 above).

• The Developer must provide the DfSP with information necessary for him or her to perform his or her duties.

3.1.5 Handing over the DfS Register:

• If the Developer disposes his or her interests in the structure, ensure that the DfS Register is given to the person who acquires his or her interests in the project. The Developer is then responsible for informing him/her of the nature and purpose of the DfS Register.

• For sub-divided buildings, ensure that the DfS Register is given to the subsidiary management corporation of the subdivided building. The Developer must inform them of the nature and purpose of the DfS Register.

3.2. Convening the DfS Review Meetings

The Developer has the option of appointing a DfS Professional (DfSP) and delegating those specific responsibilities to him/her (refer to section 4). This sub-section is written on the basis that a DfSP is appointed by the Developer.

The purpose of DfS Review Meetings is to identify all foreseeable design risks to people who may be affected downstream and discuss how each foreseeable design risk can be eliminated or reduced. The DfS review process should thus span from

as early as possible in the project cycle all the way through construction until completion.

DfS reviews were previously recommended to be implemented in stages in accordance with the GUIDE Process (GUIDE-1, 2 and 3), which broadly coincided with the project stages of Concept Design, Detailed Design and Pre-construction. Since 2022, the updated *WSH Guidelines (DfS)* now recommend other available DfS tools such as *"DfS considerations based on life cycle stages of a building/construction project"*, *"Designer's Red Amber Green (RAG) List"*, and *"DfS checklist based on hazards"*. DfS Review Teams are free to choose or adapt one of these or other frameworks that best suits their project conditions. The *"Life cycle stages"* framework most closely matches the previous GUIDE Process and remains the most widely used.

In order to have effective and productive DfS Review Meetings, the following practices are recommended:

a) The lead consultant, usually the architect, should brief the DfSP prior to the formal DfS Review Meeting, providing the necessary data to the DfSP to understand the project context, scope and potential issues.

b) The lead consultant, usually the architect, should also coordinate with the DfSP on the DfS Review Meetings as part of their design management scope as they have intimate knowledge of the design development and progress.

c) The DfS Review Meetings are facilitated only by the designated DfSP for the project, and this duty cannot be delegated to other personnel unless redelegated by the Developer.

d) Developers should attend the DfS Review Meetings, even when a DfSP has been appointed. This is not only to demonstrate the Developer's commitment to WSH improvements but also to facilitate the decision-making process for the design.

e) Briefings should be conducted by the DfSP at the beginning of each relevant stage of DfS Reviews, such as the purpose and basic process of DfS, and the roles and responsibilities of the DfS Review Team (DRT) which involves main stakeholders such as the Developer, Designer (engineer and architect), and Contractor once they have been appointed.

f) The DfS Review Meetings are attended by all the relevant Designers and Contractor, and Subcontractor(s) if there is any specialist item. The Developer may also empower the DfSP to gather all the relevant stakeholders to attend the DfS Review Meetings.

In particular, the Designers need to know that they have a pivotal role in determining the appropriate control measures to mitigate the risks created by their design. Their active participation is critical to achieving a safe design. The DfSP's responsibilities are to guide them through the process, step-in/re-direct ineffective discussions and build consensus amongst the team to efficiently come up with control measures.

g) Newer construction methods like DfMA and PPVC require consultants and contractors alike to familiarise themselves with these emerging technologies and methods, as it is only then that they will be able to comprehensively understand the processes, constraints, and challenges with implementing them. Through this knowledge, they will then be able to begin identifying foreseeable risks in relation to the use of these technologies and methods and make recommendations with the team on how best to mitigate them. Specialist sub-contractors and suppliers can also be invited to take part early in the DfS review process to assist in raising issues through their extensive experience in their respective trades.

h) The DfS Review Meetings should also be attended at appropriate junctures by the maintenance and operations personnel who typically have hands-on experience and are able to provide useful inputs.

i) During the DfS Review Meetings, the DRT should actively participate in thinking about the hazards and relevant discussions. This is appropriate even for items which are not directly related to their own disciplines, for the fact that it is not uncommon that Designers cannot identify hazards arising from their own design.

j) The timing and frequency of the DfS Review Meetings can vary between projects, and need to be commensurate with the project phase, project size and complexity. However, it should be noted that DfS Review Meetings should not be conducted too late, or it would be downgraded to a design verification exercise rather than an opportunity to proactively influence the design early on.

k) The DfS Review Meetings should be timed such that the design is sufficiently defined enough to allow a meaningful review, while still offering sufficient time and opportunity to make design changes to mitigate any risks identified. As a general guide, the timing and frequency of a typical residential project may be as follows:

Stage	**DfS Review Meetings Timing & Frequency (approx.)**
Project Inception	When massing / orientation is available for review
Concept/Schematic Design	Varies according to pace of design development, on average every 1 to 3 months
Detailed Design	Prior to commencement of tender preparation. Prior to tender calling.
Pre-construction planning	Upon main construction contract award and prior to significant work commencement.
Construction	Initially, every 1 to 4 months, depending on the stage, progress, complexity, etc., then tapering down according to residual risks and items still open for review.

Note:

i) Apart from the above, additional follow-up reviews are usually required to close out actions, to not miss the opportunities to create a safer design. These additional reviews can be embedded into the regular project meetings for efficiency reasons, or corresponded through email and captured as updates in the DfS Register.

ii) The DfSP shall advise on the timing of DfS Review Meetings based on project requirements, and additional DfS Review Meetings should be conducted if there are significant changes in the design.

l) DfS Review Meetings have no direct relationship to a project's submission timeline, as DfS does not require any submissions to any authority (records of the DfS Register just need to be kept and made available whenever MOM's registered workplace inspectors request for them). The implementation of CorenetX also has no direct impact on DfS. Broadly speaking, the DfS review process may take reference from the Gateway milestones in CorenetX to determine appropriate times for review.

m) There is some benefit to conducting the DfS Review Meetings separately from regular Progress or Site Meetings, as it creates a different setting where only relevant personnel convene specifically to address the issues of DfS. This sets the stage for parties to "wear a safety hat" to the table and to look at issues through a different lens. The DfSP should preferably also not be regularly present at Progress or Site meetings, where they may become entangled in the conflicting interests of various parties, which inevitably affects their ability to facilitate open and fruitful discussions during the DfS Review Meetings.

n) The DfS Review Meetings should be a forum where participants are free to raise legitimate concerns with regards to safety, without fear of blame, reprisal, or implications related to time and cost, which are typical considerations during regular meetings.

o) In the post-COVID context, online meetings have taken permanent place in the vast array of options for communications and coordination. There is no specific definition of DfS Review Meetings in Regulation 6 of the WSH(DfS) Regulations that rules out the use of online or hybrid meetings, so long as the stipulated objectives of such meetings can still be met, and the relevant personnel are in attendance in person or virtually.

p) BIM and VDC are now established means of coordinating design issues prior to actual construction. In the same way they would be used to support technical coordination, they would also be useful tools to aid in DfS review meetings where visualisation of identified risks can be made in real time in the coordinated environment, and discussions on resolutions and mitigations can be tested in a three-dimensional environment. This is especially useful for stakeholders (e.g. users) who are not so fluent with understanding two-dimensional drawings. The BIM model should, however, not be relied upon as the primary means of hazard identification through unplanned walkthroughs as this is unlikely to be systematic and comprehensive, and the models may not contain complete information. Reference should still be made to established DfS review frameworks to ensure that a review of foreseeable design risks is conducted in a structured and comprehensive manner.

3.3. Conducting Risk Assessment

3.3.1 Hazard Identification

Hazard identification is arguably the most important part of DfS. If hazards are not identified, then they are not assessed and controlled, and will remain undiscovered for the remainder of the project and throughout the asset lifecycle until a safety incident occurs. It is a higher-level study covering a broader scope and attempts to identify all foreseeable hazards. It is normally conducted as early as possible, and could also be the precursor to other risk studies such as fire engineering studies, soil investigation, etc.

It is also important for the DRT to recognise that compliance to statutory codes of practice and standards typically only provides a minimum acceptable level of safety. Safe design should also incorporate human factors and consider human error and ergonomic principles, and enhanced measures beyond compliance should be considered to ensure safe and comfortable human use.

It is therefore essential for the DfSP to facilitate the DfS Review Meetings effectively, especially when it involves a large number of disciplines. A range of techniques can be adopted to identify hazards, e.g. checklists, brainstorming, guidewords, review of lessons learnt, etc. Each technique has its own strengths and weaknesses.

For large projects, it may be necessary to divide the DfS Review scope into manageable parts. Division can be based on location, hazard type, process, activities, etc. The intent is to make the division small enough so all hazards are identified, but large enough so that the scope can be covered efficiently.

Following hazard identification, the DRT will determine the consequences or risks and then assess them. For each identified hazard, there are one or more potential consequences, but trying to determine the full range of consequences will slow the process down. Hence, a more practical approach is to identify the worst-case consequence that can reasonably occur. The intention is that sufficient consequences are considered to correctly assess the risk and ensure that the correct controls are applied later.

What is the function of DfS during the construction stage, if DfS is not fundamentally about site safety (which remains under the purview of the contractor)? A useful way to frame the review is to consider the question “What can the designers change or adjust in the design of the building to make it safer for workers to construct?”. This could be major decisions like removing scenarios where work-at-height is required but where risks are difficult to mitigate. Or more moderate decisions such as using smaller modules to assemble the façade so as to reduce the need for hoisting of heavy loads.

When looking at temporary works, we should be particularly concerned with those that are out of the norm (perhaps because of limited working space or unique design elements). The DfS process would seek to reduce any temporary higher-risk situations or unfamiliarity on site, by adjusting either the temporary or permanent design elements to improve the risk scenarios.

3.3.2 Risk Evaluation

The DRT will assess each hazard to determine if there are adequate controls in place. Control measures are determined to prevent the initiating event from occurring, or to mitigate the consequences. The performance of existing controls must also be considered. Where existing controls are assessed to be inadequate, additional controls should be recommended until the risk criteria are met.

The risk matrix and criteria must be selected early in the planning process. The commonly used risk matrix and criteria shown below can be found in the *Code of Practice on WSH Risk Management*. However, it is important that they are aligned with the risk tolerance of the Developer, e.g. low-, medium- and high-risk results (and corresponding criteria) must occur at consequences and frequencies that are in line with the Developer's expectations.

Level	Severity	Description
5	Catastrophic	Death, fatal occupational disease or exposure, or multiple major injuries
4	Major	Serious injuries, serious occupational diseases or exposure (includes amputations, major fractures, multiple injuries, occupational cancers, diagnosed mental illnesses, acute poisoning, disabilities, and noise-induced hearing loss)
3	Moderate	Injury or ill-health (including mental well-being) requiring medical treatment (includes lacerations, burns, sprains, minor fractures, psychosocial stress, dermatitis, and work-related musculoskeletal disorders)
2	Minor	Injury or ill-health (including mental well-being) requiring first-aid only (includes minor cuts and bruises, irritation, ill-health with temporary discomfort, fatigue)
1	Negligible	Negligible injury

Table 3.3a Determining Severity

Level	Likelihood	Description
1	Rare	Not expected to occur but still possible.
2	Remote	Not likely to occur under normal circumstances.
3	Occasional	Possible or known to occur.
4	Frequent	Common occurrence.
5	Almost Certain	Continual or repeating experience.

Table 3.3b Determining Likelihood

Likelihood / Severity	Rare (1)	Remote (2)	Occasional (3)	Frequent (4)	Almost Certain (5)
Catastrophic (5)	5	10	15	20	25
Major (4)	4	8	12	16	20
Moderate (3)	3	6	9	12	15
Minor (2)	2	4	6	8	10
Negligible (1)	1	2	3	4	5

Table 3.3c Risk Matrix with Risk Prioritisation Number

Typically, risks must be reduced to As Low As Reasonably Practicable (ALARP). There is a continuum to the level of safety that can be engineered into projects, with each successive additional safety measure having an associated incremental cost. The concept of ALARP contains the ideas of practicality (*Can something be done?*) as well as the costs and benefits of action or inaction (*Is it worth doing something in the given circumstances?*). It allows the two aspects to be balanced carefully. As a rule of thumb:

Some measures cannot be assessed without operational observations, so these should be noted for post-completion follow-up by the relevant stakeholders.

"High" risks are considered intolerable. The expectation is that they need to be reduced or mitigated unless the cost of reducing the risk is grossly disproportionate to the benefits gained.

"Medium" risks are where control measures are applied with costs and benefits considered, and opportunities balanced against potential adverse consequences, i.e. ALARP.

"Low" risks are negligible, or so small, that further risk mitigation measures are no longer necessary.

3.3.3 Risk Control

The actual approach to managing the hazards and risks will vary from situation to situation. In general, attempts should be made to eliminate or minimise the source of hazards rather than place too high a reliance on control and mitigating measures.

When making recommendations, the team should apply the Hierarchy of Controls approach, which is a well-established risk assessment process (refer to the *Code of Practice on WSH Risk Management*), and recommend controls further up the hierarchy where practicable. Control measures can and should be used in combination to provide for more robust mitigation.

The DRT should be encouraged to implement the control measures in a timely fashion. Often, the earlier we are in the design phase, the higher the likelihood that we can exercise a control higher up the hierarchy, i.e. elimination. As time passes, the project definition firms, and design changes become harder to accommodate. By delaying the implementation of control measures, they may become harder to implement and ultimately become impractical. This results in missed opportunities to reduce risks to ALARP.

Other considerations such as practicality, feasibility, industry norms, cost, and time also weigh on the level of control to implement. The decision on which option to apply should be rigorously discussed by the project team and ultimately decided upon by the Developer. With every choice to apply a lower-level control, there will be some compromise to the level of safety, so "how safe is safe enough" needs to be deliberated carefully by the project team.

As an example, many developments will encounter overhead services that need to be maintained (e.g. sanitary pipes). The frequency of maintenance required has large bearing on the level of control necessary to mitigate the risk of working-at-height during this maintenance. To illustrate possible control measures:

Elimination – adding a double slab for safe access removes the risk of working-at-height during maintenance. This may not be possible in all scenarios or may not be practical if it involves small areas or low frequencies of maintenance.

Substitution – different systems could be implemented, e.g. using wall-hung P-trap WCs instead of S-trap floor mounted WCs to reduce the number of slab penetrations and under-floor piping.

Engineering Control – a maintenance catwalk with railings can be installed below the areas that require maintenance. While there is still some risk of falling, it is mitigated by the controlled environment introduced.

Administrative Control – maintenance could be via boom lifts, with strict instructions and SOPs on how maintenance workers should go about executing the work.

PPE – maintenance whether via boom lift or temporary scaffolding will involve the use of safety harnesses and lifelines.

When residual risks from design stage DfS Reviews are identified before the construction contract is awarded, these risk items should be highlighted in the construction Tender Documents (see Section 6.2), to enable bidders to understand the residual design risks and help them determine if they are able to undertake the project safely and account for these risks in their pricing.

3.4. Maintaining a Design for Safety Register

As required by the *WSH (DfS) Regulations* and *WSH Guidelines (DfS)*, a DfS Register must be set up and kept by the DfSP to contain the following:

- Information and records on every DfS Review Meeting (such as minutes and attendance). These serve as key evidence that the DfS Review process has been undertaken for the project and that key stakeholders have been involved in the discussions.
- Design Risk Assessment Forms, containing all the identified hazards and risks and mitigation measures that were generated during the DfS Review Meetings. These should critically include Residual Risks and information that needs to be communicated to relevant stakeholders so they can implement the necessary control measures discussed and agreed upon.

- Supporting and reference documents, where appropriate, including relevant drawings, advisory notes, method statements etc. The Design Risk Assessment Form may also be supplemented with accompanying diagrams, drawings, and photographs to aid its use as a structured discussion tool during the DfS Review Meetings, and to illustrate resolution and closure of issues raised.

Appropriate Documentation

Project teams often interpret the DfS Guidelines as requiring extensive records and drawings/documents to be included in the DfS Register. The impression that the DfS process is primarily a "paperwork" exercise then leads to reams of duplicate documents that serve as "record" rather than as actionable advisories.

Project teams need to remember that DfS is fundamentally a facilitation exercise to review and resolve safety issues, and any residual risks need to be recorded and communicated to relevant stakeholders. The Design Risk Assessment Form is the primary record of this information, and any supplementary information should be included only to enhance the understanding of this information.

Too much documentation can lead to information overload, and the key messages being lost in the mix. Emphasis should be placed on keeping information succinct so that only the relevant and important gets communicated quickly and clearly to those who need to know it.

The DfS Register should be set up as soon as the DfS Review process commences. The DfSP is responsible for updating the information in the DfS Register from time to time to ensure its relevance, and decides if irrelevant or outdated information should be discarded to avoid unnecessary piling up of information. The updated DfS Register shall be disseminated to the Developer, Designers and Contractor(s) when deemed appropriate, usually after each review meeting.

The updated DfS Register shall be kept available by the DfSP at the pre-construction stage, and by the Contractor at the site office during construction stage, for inspection by MOM's registered workplace inspectors upon request. To supplement the large volume of records, electronic modes of information sharing and storage can be used, e.g. cloud-based systems with structured filing.

3.5. Handing over the DfS Register

At project completion, the DfSP shall update the DfS Register to a state that reflects the latest project conditions and residual risks, then hand it over to the Developer for their further use or dissemination. Where there are residual risks related to operations and maintenance, it is recommended that the Developer communicates them to the Operations and Maintenance team who can then incorporate any information not already captured by the Contractor into the Operations and Maintenance Manual for ease of reference.

If the Developer disposes of the asset, he/she shall pass the DfS Register to the person who acquires the asset, such as the Registered Proprietors or Subsidiary

Management Corporations (refer to WSH (DfS) Regulations 7(3) and 11). The Developer must also inform them of the nature and purpose of the DfS Register and make them aware of the maintenance and other residual risks associated with the structure. The new owner should continue to make the DfS Register available for inspection by MOM's registered workplace inspectors upon request.

The DfS Register is an up-to-date document that needs to stay with the structure for its entire life span, from design conceptual phase till its demolition. Hence, this document must be handed over from one Registered Proprietor to the next for their future reference and updating. Importantly, and in accordance with WSH (DfS) Regulation 3(1)(b), any subsequent Addition & Alteration (A&A) work to the building will also require the DfS process to be applied during the works **regardless of the contract sum**, so long as there is already a DfS Register in existence for the asset.

Design for Safety vs. Design for Maintainability

DfS is regulated by MOM. DfS covers a wide range of issues, of which maintenance considerations are but one aspect. DfS seeks to make maintenance procedures safer for the maintenance personnel. A DfSP must be appointed to facilitate this process.

Design for Maintainability (DfM) is a recommended framework by BCA, and not currently mandatory unless required for example as a GLS tender condition. It can also be required if DfM is considered under scoring for GreenMark under the GM2021 framework. DfM seeks to improve the maintainability of building elements that require maintenance (which may or may not involve areas where safety is a concern). Consultants must take the lead in reviewing their design for maintainability using the framework. There is no DfM Professional or equivalent.

Generally, a project that properly implements DfM would necessarily cover many of the maintenance safety concerns arising from the concurrent DfS process. The outcome of a DfM review is a Maintenance Strategy Report (MSR), which is prepared by the Designers/Contractors, to describe in detail how maintenance of various elements could be executed by the end-user. The MSR should be handed over to the end-user, and as such can also be included into the DfS Register to form a more comprehensive document package.

While there are some overlapping considerations between DfS and DfM, they should be treated as distinct processes and managed as such.

4. Appointing a Design for Safety Professional

4.1. When to appoint a DfSP

The roles of the DfSP can be undertaken by the Developer (i.e. the DfSP can be an employee of the Developer) or delegated to a third party DfSP.

Although there is no regulation on when a DfSP should be appointed, the WSH(DfS) Guidelines suggest that the DfS review process should commence as early as *Project Inception*. This is because the earlier this process takes place, the more effective it can be at influencing options for eliminating many design risks at source. Conversely, the later the process takes place, the higher the likelihood that risks can only be reduced through less effective mitigation measures or otherwise involve higher costs, so it is recommended that the DfSP should be onboard no later than completion of planning and design stage.

For projects with Early Contractor Involvement (ECI), it is likewise recommended that the DfSP also be brought in at the early stage to be able to facilitate the DfS meetings together with the Contractor's inputs.

4.2. How to appoint a DfSP

The Regulations state that a developer may delegate only the Developer's duties ("delegable duties") allowed by the Regulations (i.e. Regulations 6 and 7(1) and 7(2)) to a qualified DfSP to perform those duties for a project, as highlighted in Section 3.1.4 above. The WSH Guidelines (DfS) 2022 also require that the Developer "*delegates its delegable duties directly to the DfSP*" in order for the delegation to take effect. This delegation could be formalised by issuing a letter from the Developer to the DfSP with reference to Regulation 8 of the WSH (DfS) Regulations 2015.

However, there are otherwise no explicit constraints that the DfSP needs to be under direct employment of the Developer, or be a sub-consultant to a lead consultant (e.g. in a Multi-Disciplinary Team arrangement) or to a lead contractor (e.g. in a design-and-build contract).

Strictly speaking there should be no conflicts of interest when considering the role of the DfSP as purely the convenor of the DfS review meetings and maintainer of the DfS Register. However, the WSH(DfS) Guidelines stipulates that a DfSP must have reasonable exposure and experience in safety and health matters in the construction industry, which suggests that the DfSP plays a key role in facilitating successful DfS reviews. This is best not hindered by any consideration that the DfSP's direct paymaster is responsible for any unresolved design risks, or that any mitigations may result in additional costs to be borne by the contractor. As such, it is recommended that the Developer engage the DfSP directly to better represent the interests and fulfil the duties of the Developer.

It is also important that the selection of DfSP should not be based merely on fees. The Developer is required by the WSH Guidelines (DfS) 2022 to assess that the DfSP has the requisite experience and training to perform the delegated tasks, and the proposed approach to conducting the DfS process is sound. The DfS process should genuinely add value and contribute to a safer design and not be undertaken just to conform to the regulatory requirements.

Regardless of how the DfSP is engaged, the Developer is required to communicate directly with the DfSP during the DfS review process in order for the delegation of duties to take effect.

4.3. Scope of Services

When appointing a DfS Professional, it is recommended that the scope of work specifications be in line with the regulatory requirements.

A proforma for *Scope of Consultancy Services for Engagement of Design for Safety Professional by Developers* (see Appendix I) had previously been developed for the 1st edition of this Good Practice Guide and has seen much success in being used across many project tenders. This proforma was developed based on the WSH (DfS) Regulations and WSH Guidelines (DfS) and has now been updated to prevailing references. It provides detailed information on the roles and responsibilities of the DfSP when engaged by Developers.

The proforma is aimed at making the Developer's procurement process more efficient by precluding the common errors in scope of work specifications which could result in deviations from the Regulations or Guidelines, confusion among bidders trying to interpret the scope of work, and potentially not fully fulfilling their statutory duties.

The proforma can be used as it is. Should the Developer require the DfSP to perform additional duties on top of the regulatory requirements, although not recommended, such duties can be stipulated in an Annex section if necessary. These additional duties would be contractually binding but may not stand as statutorily binding.

Project Teams sometimes misunderstand the role of the DfSP, often assuming that the DfSP is engaged to "take care of safety and is fully responsible for all safety-related matters.

Safety can never be the responsibility of a single individual. Safety is a team effort that requires the concerted inputs and oversight of multiple stakeholders led by the Developer. The DfSP is responsible for only a subset of safety-related processes that is clearly spelt out in the WSH (DfS) Regulations.

A DfSP is not responsible for identifying foreseeable risks in the design, eliminating these risks, or reducing the risks to as low as reasonably practicable where they cannot be eliminated. These remain the responsibility of the project team as stipulated under Regulations 4, 9(1)&(2), and 10(1).

A DfSP is therefore also not empowered to approve designs, method statements, risk assessments or the like, which remain under the purview of the project team. A DfSP should also not be expected to attend site safety meetings/inspections or take responsibility for site safety management, which remains under the purview of the Contractor.

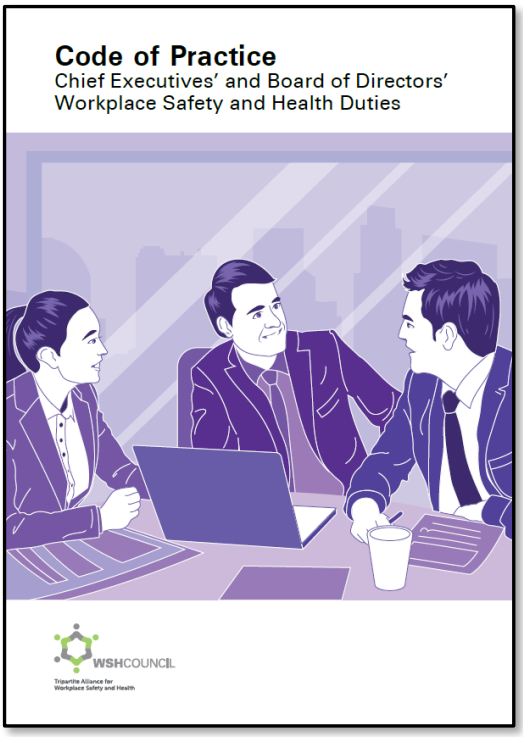
PART II.
Workplace Safety and Health

5. Workplace Safety and Health Leadership

5.1. Code of Practice on Chief Executives' and Board of Directors' WSH Duties

With the implementation of the "Code of Practice on Chief Executives' and Board of Directors' WSH Duties" (commonly referred to as "ACOP"), the message is clear that executives at the very highest levels of organisations are expected not just to take the lead in WSH, but can also be held accountable for any lapses.

a) ACOP recommends high-level Principles that can be adopted and adapted to demonstrate their execution of due diligence towards preventing WSH lapses in their organisations.



b) Beyond the required duties towards their direct employees engaged mostly in knowledge-based desk-bound jobs, Developers also have duties that extend towards the contractors and subcontractors that they engage to construct their development projects.

c) For Developers that also have asset and facility management arms, their duties towards operations and maintenance personnel and members of the public would also continue under the requirements of the WSH Act.

d) The DfS process forms a subset of the measures that can be taken towards fulfilling a companies' WSH obligations. Specifically:

i. DfS Review Meetings are a forum for discussing design risks. The forum would involve relevant stakeholders in the process of improving WSH outcomes (ACOP Measure 17). Through these discussions, new hazards may also be identified to allow for timely risk assessment to be carried out (ACOP Measure 11).

ii. The DfS Register serves as a channel for conveying important safety information to the relevant stakeholders, with the potential to create a direct reporting line of WSH issues to key decision makers (ACOP Measure 6). The WSH Guidelines (DfS) also require Developers through the DfSP to convey information on Residual Risks to the relevant stakeholders to ensure that workers are kept informed of these WSH risks (ACOP Measure 14).

iii. As part of the requirements under the WSH(DfS) Regulations Cl.5(2), Developers are expected to provide designers and contractors with sufficient time and resources to perform their duties. This would entail setting reasonable timeframes for project completion to prevent rushing (ACOP Measure 5).

iv. Through the DfS process, Developers will also be able to set and demand effective WSH standards and performance from their respective vendors and partners (ACOP Measure 9).

e) Developers are a key stakeholder in the DfS process, as they are most aware of a development's ultimate needs and future operating environment, and are therefore a key decision-maker in determining the best provisions for improving the safety of the building. The participation of the Developer in this process is therefore a strong undertaking towards fulfilling some of the Principles and Measures recommended in ACOP.

5.2. WSH Culture

Occupational safety and health of personnel should be the common denominators in all the activities of the Developer organisation, irrespective of the project. Visible leadership, teamwork, accountability and the active involvement of all personnel is essential to deliver WSH excellence. It is imperative that senior management accords safety a high status in the business' objectives, and safety should be prioritised in all situations, i.e. there is no task so important that it overrides the need to work safely.

There is also a need to create and maintain a culture of WSH leadership that genuinely values zero harm, and the culture should be such that it encourages WSH leadership to be exhibited by everyone who works for the Developer organisation, not just their WSH personnel. All personnel should be aware of and demonstrate WSH leadership behaviours appropriate to their role and task.

Here are some recommended WSH culture and leadership practices:

a) WSH Policy - Stating the Developer organisation's commitment to achieving zero harm to people, assets, outlining the core values and the control framework.

b) WSH Management System – Defining WSH responsibilities, goals, objectives, expected behaviours and performance measures for all levels of the organisation. They should be communicated and regularly assessed, e.g. internal and external audits, at all levels of the organisation.

c) Visible Management Commitment – Senior management regularly (e.g. monthly) conducting safety site walks and reviews with the senior management team of the Designers and Contractors together with the project managers and WSH personnel. The objectives are to:

- Review construction safety standards.
- Meet workers to view working conditions – Cordial conversations to get workers thinking about how their work may affect the safety of themselves and others. Hand out rewards to those workers who demonstrate good behaviours or understanding of WSH requirements, e.g. supermarket shopping vouchers.
- Discuss key areas in safety / security.
- Ensure adequate safety standard is achieved at the construction sites.

d) Quarterly Senior Management Safety Meetings – Monitoring and reviewing safety performance and setting directions for improvement.

e) Senior Management Safety Charter –for each senior manager to pledge their personal commitments to improve safety performance of themselves or for others.

f) Incident Reporting and Investigation – Processes are in place for the timely reporting, classifying, root cause investigation, recording and closing out of incidents, near misses and 'at risk' behaviour. While safety incidents are undesirable, it is important to learn the lessons which should be captured and shared across the team to improve future performance.

g) Accountability – A process in place which recognises and rewards positive behaviours and WSH performance, e.g. safety innovations. Equally, it holds people accountable for negative behaviour that compromises their WSH standards.

6. Workplace Safety and Health Services Procurement

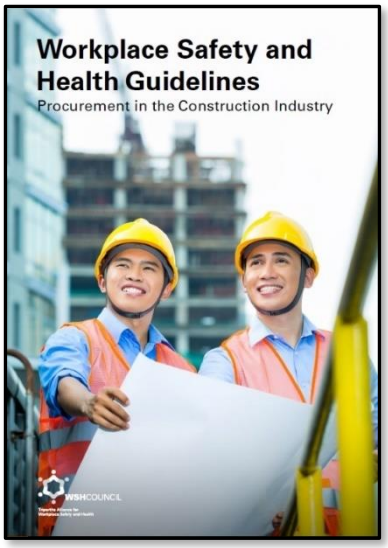
a) Developers take on a variety of risks in construction projects, therefore safety and health management is critical for the following reasons:

i) Welfare of employees, workers and the general public
ii) Providing a safe work environment
iii) Managing construction cost, time and quality, safety & health thereby project success

b) Developers should employ Designers (i.e. architects, engineers, surveyors, specialist engineers, etc.) with good safety knowledge and Contractors with a good safety record and framework. Poor safety performance increases the Developers' risks and will inflate the final development cost.

c) The introduction of the "Enhancement to WSH Requirements in Public Sector Construction-Related Projects" (effective 1 Apr 2024) and the "WSH Guidelines for Procurement in the Construction Industry" (*Procurement Guidelines*) includes recommendations on:

i) Tender Evaluation Criteria
ii) Incentivising Good WSH Standards
iii) Standardised Safety Requirements in Tender Documentation
iv) Safety Disqualification Framework



d) These procurement requirements are for Public Sector projects with encouragement for Private Sector projects to adopt or adapt some of the recommendations.

e) The recommendations lean heavily towards the past safety records of contractors performed on site. This does not have direct bearing on DfS, as there is no measure of performance in DfS during construction.

f) Notwithstanding, the *Procurement Guidelines* highlight the importance of adopting DfS early in the process during Project Inception stage in order to "identify WSH issues early and eliminate or minimise them by making safer design choices".

g) The *Procurement Guidelines* also highlight that "Any hazards that cannot be eliminated through design should be recorded into the DfS Register as residual risks and presented as tender documentation during procurement. Tenderers should then be assessed on their responses when they tender for the project."

6.1. Procurement of Designers

When appointing Designers, evaluation could consider their WSH skills, knowledge and experience or prior training in safety-related matters to ensure that they are reasonably capable of managing significant and foreseeable risks to create a safer design. They should be proportionate to the complexity of the project, and the range and nature of the risks involved.

As the importance of Designers' roles in DfS is often understated or overlooked, it may be appropriate to include a section dedicated to DfS in the Tender Document to outline the required competencies, for example, for the lead architect and lead discipline engineers:

1) Technical knowledge, expertise or experience relevant to the project
   – No, basic, good, or in-depth knowledge?
2) Proactive approach to managing and designing out risks
   – How do they intend to work with the DfS Review Team to achieve a safer design? Their level of safety and risk management capabilities?
3) Ability to understand, manage and coordinate the pre-construction phase
   – Previously involved in DfS for other projects from project inception through construction?
4) Equipped with relevant knowledge on design for safety
   – Any records of DfS related training?

As part of selecting design consultants during Project Inception, the *Procurement Guidelines* also suggest requesting for "written proposals or concept design proposals for consultants to illustrate their proposed DfS approach and design intent", and selecting consultants based on their commitment to WSH considerations.

6.2. Procurement of Contractors

To ensure that the Contractor engaged has good safety standards and is capable of carrying out the work safely, the following may be considered as part of the bid evaluation process and contracting strategy:

1. **Contractor capability evaluation** – Selection and evaluation criteria should include an assessment of their WSH values, commitment and performance, as well as processes used for incident reporting, risk management, and assessment and improvement. These should be included in the Tender Document so that bidders can address these requirements in their tender submissions.

The evaluation should focus on the practices utilised by the Contractor and seek an overview of their strengths and weaknesses, WSH preparedness and their approach to WSH. This evaluation will also identify the opportunities for alignment and improvement where the Contractor can be set up for successful performance. The following criteria may be used for evaluation:

a. Track Records – Relevant track records and experienced personnel engaged by the Contractor to adequately fulfil the competency requirements expected.
b. Safety Policy – And arrangements for putting it into effect
c. Safety Management Plan – WSH responsibilities are clearly defined for all project personnel.
d. Safety Records – Safety demerit points, stop-work orders, bizSAFE level.
e. Accident Prevention – Objective evidence of trend analyses, lessons learnt or the likes to demonstrate continual improvement process.
f. Training – Training records to demonstrate commitment to WSH training to ensure their personnel's safety competency and awareness.
g. Planning – Pre-mobilisation activities and job hazard analysis (JHA) are part of their WSH management system.
h. Incident Management – Injury management, rehabilitation policy, emergency response, incident reporting & investigation procedures are clearly defined in their WSH management system.
i. Workplace Monitoring – Objective evidence of safety auditing, regular safety inspections and safety statistics.
j. Innovation – Proactive and innovative to come up with safer construction methods.
k. Planned Supervision Ratios – Degree of supervision and training should be reflective of the project risks, contract conditions and experience of teams on site.
l. Safety Awards – Any outstanding safety performance in the past.
m. DfS Focal Point – To have a focal point for DfS for the project who has attended DfS Appreciation Course equivalent or higher level, to address residual design risks and participate in pre-construction DfS Review.

The *Procurement Guidelines* recommend including the List of Residual Risks (from the DfS Register) into tender specifications to establish good WSH standards for the project. Developers should look out for contractors that demonstrate good knowledge in the type and complexity of work to be carried out and an understanding of the WSH risks of the project.

2. **Contracting strategy** – Contract to include penalty/bonus clauses based on lead performance measures, quality of deliverables, and outcome of readiness review. Leading indicators are safety culture metrics that are associated with or precede an undesirable consequence such as near miss or safety incident.

They can be implemented by the Contractor organisation to improve safety awareness, ownership and develop a positive safety culture. The following are examples of measurable leading indicators:

a. Minimum number of safety observations
b. Minimum number of safety inspections
c. Number of Contractor's management site visits
d. Carrying out JHA as required
e. Reporting near-misses and their lessons learnt sharing
f. Personal WSH Charter for key managers outlining their personal commitments
g. WSH training budget
h. WSH promotion and recognition

The *Procurement Guidelines* also recommend considering Early Contractor Involvement (ECI) in projects, as contractors may be able to provide insights on addressing residual risks earlier in the design cycle before they become harder to mitigate.

3. **Post-award** – Following award of contract, the strategy should be aimed at aligning and engaging the Contractor, managing risk and supporting them. WSH planning and implementation should be initiated sufficiently early such that the necessary arrangements are in place and effective before any site activities need to commence. The following practices may be considered:

    a. Allocating an experienced WSH personnel to support the Contractor on planning and other preparatory work.
    b. Contractor executive management leadership activities, e.g. personal KPI, site visits, response to incidents and celebrating success.
    c. Submitting qualifications/certificates of competency
    d. WSH passports with trade specific requirements and training
    e. Completing all pre-mobilisation deliverables before commencement of work, for example:
        i. DfS Pre-construction Review as well as reviewing residual risks from Project Inception and Schematic/Detailed Design stages (mandatory)
        ii. WSH risk workshop/register, with project specific plans to address high risk activities, frequent incidents, emergency action and response, special training requirements, etc.
        iii. WSH Management Plan
        iv. WSH training strategy
        v. Developing site orientation and induction programme that is visually engaging and easily understood by workers:
            1. Present project WSH objectives
            2. Induction of staff on site WSH matters

3. Set expectations, explain the rules and highlight hazards/risks
4. Outline reporting/notification procedures

vi. Identifying / developing guideline to ensure the Contractor's equipment are well-maintained, their works are adequately trained to operate them and to adhere to the safe work procedures.

vii. Risk-based WSH audit schedule

Construction safety is but one aspect of DfS, the aim being to optimise the design of the building and its elements so that it is safer to construct.

Consultants should aim to use their knowledge of construction methods to pre-empt scenarios where construction may be difficult or risky because of the design, then try to adjust the design to simplify the construction methods.

When onboard, Contractors should be asked to review the list of residual risks from the Design Stage, then identify the high-risk hazards (e.g. work at height, excavation, confined space) and proposed control measures to address them.

Appendix I. Proforma for Scope of Services for Design for Safety Professional

Eligibility

The proposed Design for Safety (DfS) Professional shall have successfully completed the *Perform Design for Safety Professionals Duties Course* (previously known as *Design for Safety Professionals Course* or *DfS Coordinator Course*). He/she must be able to fulfil all their duties under the WSH (DfS) Regulations with due diligence.

General

The Design for Safety (DfS) Professional shall provide comprehensive service and perform the duties stipulated and implied in the following documents:

WSH (Design for Safety) Regulations 2015
WSH Council's Workplace Safety and Health Guidelines – Design for Safety

Scope of Work

1. Providing briefing to the project team on DfS-related information, such as its principles, methodology, roles and responsibilities of project personnel, and timing of DfS Review Meetings and follow-up reviews.
2. Convening DfS Review Meetings at relevant stages of the design for the project team to identify foreseeable design risks to the safety and health of any person affected by the project and discuss how each foreseeable risk can be eliminated or reduced, as far as reasonably practicable. The DfS Professional shall organise these meetings and involve the Developer, Designers and Contractor(s).
3. Facilitating the DfS review process during the DfS Review Meetings with the Developer, Designers (permanent, specialist and/or temporary works where necessary) and Contractor (and Subcontractors where necessary) to address risks at source.
4. Conducting the DfS Review Meetings at relevant stages of the project using the recommended processes in the WSH Guidelines (DfS) or other agreed review processes. Identified hazards shall then be transferred to a Design Risk Assessment Form. The DfS Professional shall determine when additional DfS Review Meetings are required.
5. Facilitating the process for Developer, Designers and Contractor(s) to systematically identify and eliminate foreseeable design risks during the DfS Review Meetings.
6. Maintaining a DfS Register containing documents generated through the DfS Review process. It shall contain information and records arising from every DfS Review Meeting such as minutes of meeting, and Design Risk Assessment Form with design residual risks indicated.

7. Issuing the DfS Register to the Developer, Designers and Contractor(s) for their effective communication of the DfS-related risk information to individuals facing the risks, so that the individuals are aware of any identified risks that they ought to address, and the control measures, if available, to implement.
8. Updating the Developer on matters arising from DfS Review Meetings, where appropriate.
9. Monitoring the status of the action items in the Design Risk Assessment Form and ensuring that the DfS Register is up to date. Follow-up meetings should be conducted to address the identified hazards.
10. Making the DfS Register available for inspection when requested by MOM's registered workplace inspectors during the course of the project.
11. Handing over the up-to-date DfS Register to the Developer at project completion, i.e. upon granting of Temporary Occupation Permit (TOP) by the Building and Construction Authority and completion of contractor's outstanding work relating to residual risks.
12. Providing advice to the Developer, Designers and Contractor(s) on matters relating to DfS.
13. For the avoidance of doubt, the DfS Professional shall not be responsible for, or directly involved in, the safety and health at the construction site, nor shall the DfS Professional take over responsibilities of the Designers or Contractor(s).

References

Workplace Safety and Health (Design for Safety) Regulations 2015
Workplace Safety and Health Guidelines – Design for Safety
Code of Practice on Workplace Safety and Health (WSH) Risk Management
Code of Practice – Chief Executives' and Board of Directors' Workplace Safety and Health Duties
Workplace Safety and Health Guidelines – Procurement in the Construction Industry

Workplace Safety and Health Act 2006
Workplace Safety and Health (Risk Management) Regulations
Workplace Safety and Health (General Provisions) Regulations
Workplace Safety and Health (Scaffold) Regulations 2011
Workplace Safety and Health (Work at Heights) Regulations 2013
Workplace Safety and Health (Confined Spaces) Regulations 2009
Code of Practice for Working Safely at Heights
Workplace Safety and Health Guidelines – Anchorage, Lifelines and Temporary Edge Protection Systems
Workplace Safety and Health Guidelines – Personal Protective Equipment for Work At Heights
Workplace Safety and Health Guidelines – Working safely on roofs

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About REDAS

The Real Estate Developers' Association of Singapore (REDAS), established in 1959, is Singapore's premier business association in the real estate and development industry.

Representing some 300 members comprising developers, builders, consultancies and professionals, bankers, REITs and fund managers, REDAS plays a relevant role in the real estate industry.

REDAS actively engages regulators, policy makers and stakeholders to promote best practices and to support the growth of a vibrant and progressive real estate industry in Singapore. The Association also organises seminars and courses to strengthen capabilities and competencies of members as well as events and study and business trips to facilitate connection and explore opportunities.

The Association is led by a committed team of Management Committee Members who are business leaders of reputable and established property organisations.

REDAS members are committed to enhancing Singapore's position amongst the top ranks of one of the world's most attractive and liveable cities which is environmentally and economically sustainable for present and future generations.

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