# New Health and Safety by Design workshop capture record

# Purpose of Health and Safety by Design

1. Understand the operations, activities, and situations
2. Consider the hazards that arise from those operations, activities, and situations
3. Modify the design to eliminate or minimise the hazards
4. Communicate remaining risks downstream
5. Document any decisions for assurance purposes

|  |  |
| --- | --- |
| Workshop Details  | Detail |
| Project name |  |
| Date |  |
| Design phase[[1]](#footnote-1) |  |
| Workshop lead |  |
| Client/Owner |  |
| Attendance  | 1.
 |

# Notes

* Check all assumptions on the following pages before beginning
* Avoid repeating the assumptions in the table below
* If there is nothing to put into a cell, then enter ‘not assessed’

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| # | Operation, activity, or situation | Hazard | Who is at risk? | Lifecycle phase | How does the design already mitigate this risk? | Potential severity[[2]](#footnote-2)  | Estimated likelihood2 | What changes can be made to the design to eliminate or minimise the hazard?[[3]](#footnote-3) | Are these changes available and suitable? | If not, why not?[[4]](#footnote-4)  | Communication | Action |
| *eg*  | *Cyclists using bridge* | *Cyclist collides with pedestrian or another cyclist on bridge* | *Users* | *Operations* | *n/a* | *Minor harm* | *Probable* | *Dismount barriers (E) & signage (A), or* *Cycle only lanes (A), or**Direction lanes (A),*  | *All are available and suitable, though A controls are weak.* | *Cost of any / all not grossly disproportionate to the risk.* | *Designer to incorporate ‘dismount’ barrier (E) & sign (A)* | *By end of preliminary design* |
| 1 |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 |  |  |  |  |  |  |  |  |  |  |  |  |
| 3 |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 |  |  |  |  |  |  |  |  |  |  |  |  |
| 5 |  |  |  |  |  |  |  |  |  |  |  |  |
| 6 |  |  |  |  |  |  |  |  |  |  |  |  |
| 7 |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |

# EXAMPLE: Assumptions, standard hazards and risks, and normal controls

Avoid populating the above risk register with any of the following that are already assumed to be true:

| Operation, activity, or situation | Hazard | Who is at risk? | Lifecycle phase | Severity[[5]](#footnote-5)  | Likelihood1 | What is the assumption being made? | Assuring output | Further action or monitoring required? |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| NZBC Provisions | A. General Provisions* Importance Level

B. Stability * Structure
* Durability

C. Fire* Fire safety to people
* Fire prevention
* Fire affecting beyond source
* Movement to place of safety
* Access for firefighting
* Fire structural stability

D. Access* Access routes
* Access for mechanical installation

E. Moisture* Surface water
* External moisture
* Internal moisture

F. Safety to users* Hazardous agents
* Hazardous materials
* Hazardous substances
* Safety from falling
* Construction and demolition Hazards
* Visibility in escape routes
* Warning systems
* Signs

G. Services and FacilitiesH. Energy Efficiency  | Users, operators, construction workers, public  | Construction, Operations | Fatality, chronic illness | Low | * All building structures are built to New Zealand Building Codes
 | * Signed Producer Statements
* Signed Completion Certificate
* Verification Methods outlined in Acceptable Solutions
 | N |
| NZTA Bridge Manual provisions | * Design loading
* Earthquake resistance
* Site stability, foundations, earthworks and retaining walls,
* Bridges and culverts
* Structural strengthening
 | Users, operators, construction workers, public | Construction, operations | Fatality  | Low | * Bridges are built to NZTA bridge manual
* Compliance with NZTA structures guidance for pedestrian and cycleways.
 | * Design and Design Review certificates
 | N |
| Design  | Human error during design | Users, workers | Operations  | Minor harm | Low | * Designers follow Producer Statement (PS) Process
* Competent registered designers
* Peer review IAW building code
 | * Signed Producer Statements
 | N |
| Construction  | General human error during construction | Construction workers, public | Construction  | Major harm, chronic illness | Low | * Works contract appointed to a competent contractor with a good safety record and suitable safety management system.
* Construction safety assurance by engineer to the contract, or owner H&S rep
* Safe Work Method Statements (SWMS) (or similar) created by Contractor
* Contractor follows their safety processes.
* Contractors wear appropriate PPE for materials and situation including
 | * Tender documents include assessment of safety
* Contract includes provision of SWMS to owner and engineer’s rep
* Inspection of SWMS by engineer to the contract
 | Y – Engineer to contract (or H&S rep) to monitor SWMS |
| Operations | General human error during operations | Workers, users, and public | Operations  | Major harm  | Low | * Operators considered by owner organisation to be competent
 | * Operator manual
 | Y – periodic checking by owner that operators maintain competency |
| Maintenance  | Incorrect maintenance:* under maintained
* over maintained
* maintenance error
* human error during maintenance
 | Workers, users, public | Operations  | Major harm | Med | * That maintenance activities are carried out in accordance with the defined maintenance procedures
 | * Maintenance Manual
* Maintenance schedule
 | Y – Periodic checking by owner that maintenance is conducted in accordance with the maintenance schedule and procedures |
| Disposal  | Disposal hazards | Workers, public | Disposal  | Major harm, chronic illness | Med | * Disposal contract appointed to a competent contractor with a good safety record, and suitable safety management system.
* Safe Work Method Statements (or similar) created by Contractor
* Contractor follows their safety processes
* Contractors wear appropriate PPE for materials and situation
 | * Tender documentsand award of contract
* Inspection of SWMS by owner H&S rep
 | N |

1. NZ CIC refer to Design Stages as: establishment, concept design, preliminary design, developed design, detailed design, procurement, construction administration and observation, and post completion. [↑](#footnote-ref-1)
2. Estimated severity and likelihood given the current design and assumptions in place. Use your own risk rating, or use**: Severity:** Multiple fatalities, Fatality, Major harm, Minor harm; **Likelihood:** Certain, Probable, Possible, Remote, Improbable, Impossible [↑](#footnote-ref-2)
3. Hierarchy of Controls: E = Engineering Control A = Administrative Control [↑](#footnote-ref-3)
4. If cost is grossly disproportionate to the risk, then an explanation is required. [↑](#footnote-ref-4)
5. Estimated severity (consequence) and likelihood given the current design and assumptions in place. [↑](#footnote-ref-5)