

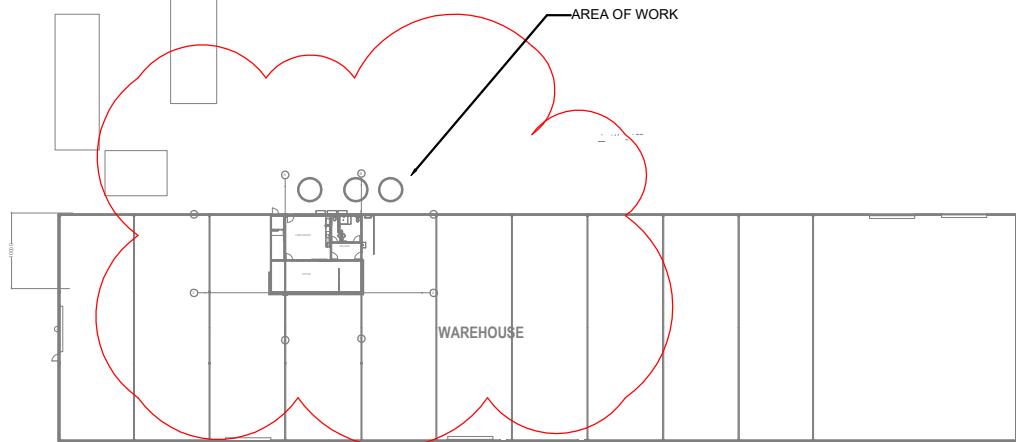
Diagram illustrating the sequence of operations for the first iteration of the algorithm:

- esd
- PSD
- PW
- TW

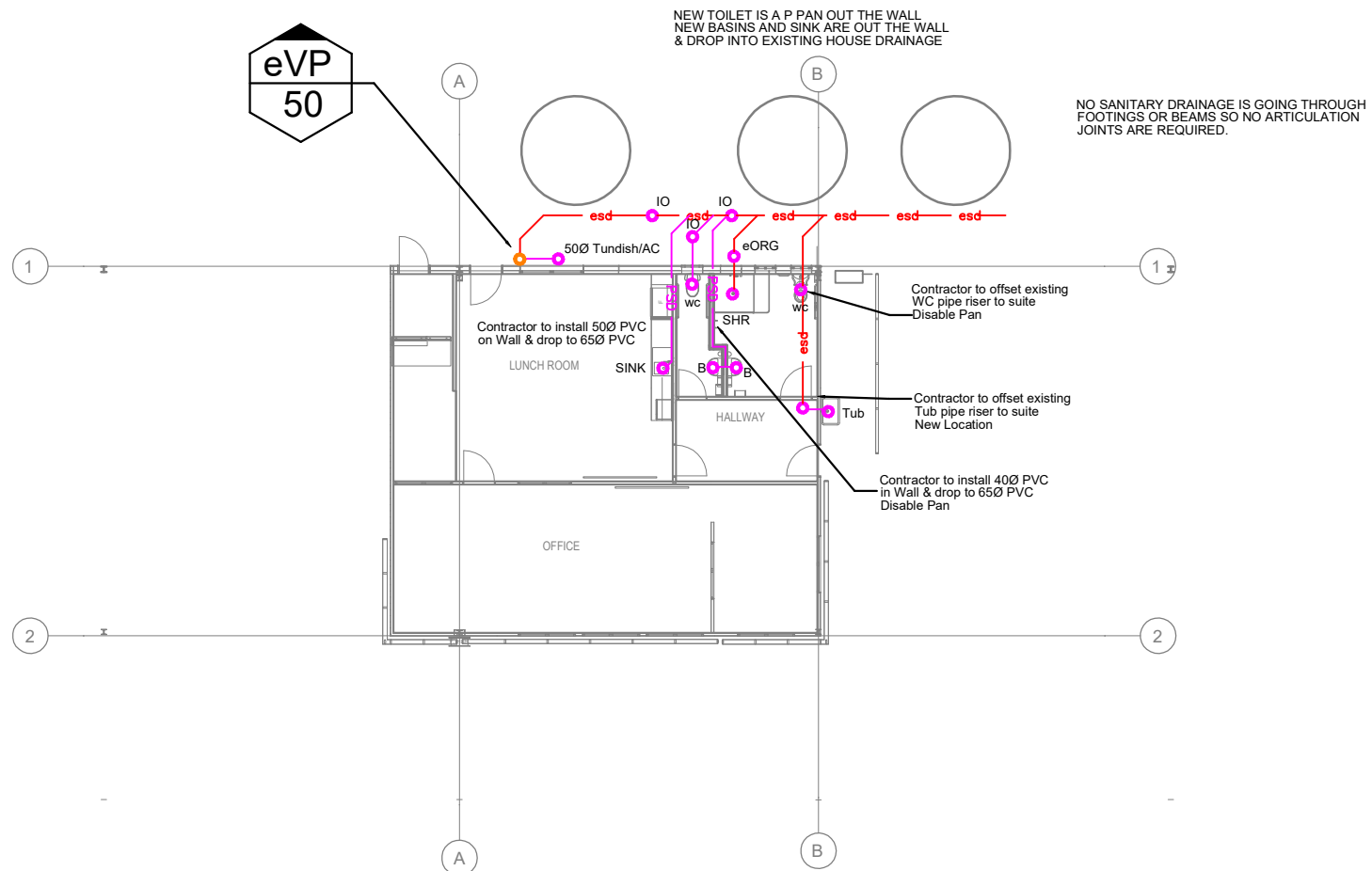
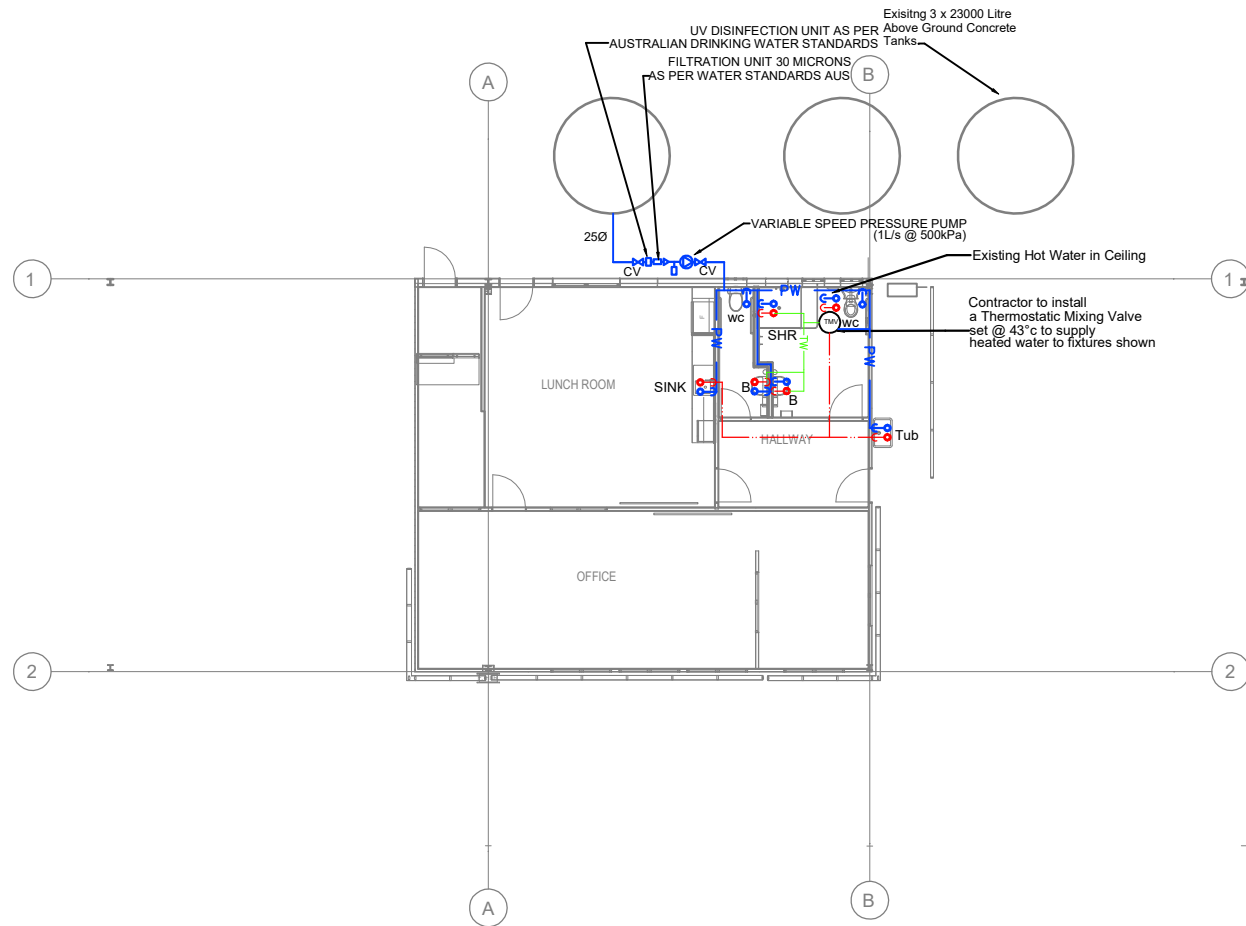
The sequence is repeated six times, as indicated by the six groups of arrows and labels.

WATER

- AREA OF WORK



—AREA OF WORK



NOTE : SYMBOLS ARE DRAWN IN THE CORRECT POSITION BUT ARE NOT SHOWN TO SCALE

[illegible]

| COORDINATED REFERENCE DRAWINGS | | | |
|--------------------------------|----------------|-------|------|
| SERVICE | DRAWING NUMBER | ISSUE | DATE |
| ARCH | | | |
| ARCH | | | |

LOT AND RP No:

THIS DRAWING IS CONFIDENTIAL AND IS NOT TO BE REPRODUCED IN ANY FORM AS A WHOLE OR IN PART WITHOUT THE EXPRESS WRITTEN AUTHORITY OF WATER WISE DESIGN PTY LIMITED. THIS DRAWING IS NOT TO BE USED PREJUDICIAL TO THE INTEREST OF WATER WISE DESIGN PTY LIMITED.

© COPYRIGHT. ALL RIGHTS RESERVED



WATERWISE
DESIGN
Hydraulic & Fire Services

Chris Searle 0414 953 963
Hydraulic Consultant BSA Lic. No: 886793

49 Hunter Street
Hervey Bay QLD 4655
PO Box 5485 Torquay QLD 4655

chris@waterwisedesign.com.au
waterwisedesign.com.au
(07) 4125 3510


Title:
25-31 DUNN ST BILOELA

Owner:
BANANA SHIRE COUNCIL

Drawing Title:

HYDRAULIC SERVICES

**SANITARY PLUMBING &
DRAINAGE PLAN.**

| | | | |
|---|---------------------------------|-------------------------|----------------|
| North Point: | | QBCC License No. 886793 | |
|  | | Design: CHRIS SEARLE | |
| | | Design Validated: | |
| | | Drawn: CHRIS SEARLE | |
| Date: DEC 2022 | Scale: (A1) 1:100 (A3) 1:200 | Sheet: 1 OF 2 | |
| Job No: 221213 | Disc: H - 001 | Dwg No: PR - A | Stage: Issue: |
| 0 10 20 30 40 50 | | | ORIGINAL SIZE: |

The diagram shows a 6x6 grid of operations. The operations are arranged in a repeating pattern across the grid. The operations are: esd, PSD, PW, TW, and SW. The operations are arranged in a repeating pattern across the grid.

1. ALL STORMWATER DRAINAGE SHALL COMPLY WITH AS3500 "NATIONAL PLUMBING AND DRAINAGE CODE" AND IPWEA STANDARDS.
2. TRENCH EXCAVATIONS FOR DRAINAGE SHALL COMPLY WITH WORKPLACE HEALTH AND SAFETY REQUIREMENTS.
3. MAINTAIN AND PROTECT EXISTING SERVICES TO BE RETAINED.
4. WHERE AN ALTERNATE CONSTRUCTION METHODOLOGY AND/OR PIPE CLASS IS PROPOSED BY THE CONTRACTOR, DOCUMENTATION OF SAME IS TO BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION.
5. STORMWATER STRUCTURES AND CONNECTIONS ARE TO BE AS INDICATED ON THE PLAN. ADJUSTMENTS TO THE DESIGN LAYOUT AS REQUIRED TO SUIT ACTUAL AS-CONSTRUCTED GEOMETRY SHALL REQUIRE THE ENGINEER'S APPROVAL.
6. uPVC PIPES SHALL BE RUBBER RING JOINTED, CLASS 58 UNLESS NOTED OTHERWISE.
7. SRCP SHALL BE RUBBER RING JOINTED, CLASS 3 UNLESS NOTED OTHERWISE.
8. CONNECTIONS OF DOWNPIPS TO BOTH DRAINAGE STRUCTURES AND PIPELINES SHALL BE IN ACCORDANCE WITH THE HYDRAULICS CONSULTANTS DRAWINGS.
9. THE MAJORITY OF MATERIAL WON FROM PROPOSED TRENCH EXCAVATIONS SHOULD BE SUITABLE FOR REUSE AS TRENCH BACKFILL MATERIAL, APART FROM ANY OVERSIZE MATERIAL. SUITABLE MATERIALS FOR BACKFILLING SHOULD GENERALLY HAVE A MAXIMUM PARTICLE SIZE NOT EXCEEDING 150mm. OVERSIZE MATERIAL IS TO BE CRUSHED TO A PARTICLE SIZE \leq 150mm PRIOR TO REUSE AS BACKFILL MATERIAL OR DISPOSED OFF SITE.
10. COMPACTION TESTING IS TO BE CARRIED OUT AT THE SPECIFIED FREQUENCY BY A N.A.T.A. REGISTERED GEOTECHNICAL TESTING AUTHORITY AT THE CONTRACTORS COST. THE CONTRACTOR SHALL PROVIDE DETAILS OF ALL TESTING TO THE ENGINEER PROGRESSIVELY THROUGHOUT THE WORKS AND NOTIFY THE ENGINEER OF ANY NON-COMFORMANCES. ALL NON CONFORMING WORK IS TO BE RECTIFIED AS DIRECTED BY THE ENGINEER.
11. OVERLAND FLOW CHANNELS / SWALE DRAINS ARE TO BE GRADED EVENLY BETWEEN INVERT LEVELS PROVIDED.
12. RAINWATER TANK OVERFLOW IS TO BE PIPED INTO ONE OF THE PROPOSED PITS WITH A MINIMUM GRADE OF 0.5%. SPECIFIC DETAILS TO BE DETERMINED BY THE HYDRAULIC ENGINEER.

THE ENGINEER

11. OVERLAND FLOW CHANNELS / SWALE DRAINS ARE TO BE GRADED EVENLY BETWEEN INVERT LEVELS PROVIDED.
12. RAINWATER TANK OVERFLOW IS TO BE PIPED INTO ONE OF THE PROPOSED PITS WITH A MINIMUM GRADE OF 0.5%. SPECIFIC DETAILS TO BE DETERMINED BY THE HYDRAULIC ENGINEER.

CULVERT OR TO OVERLAND BUBBLER

STORMWATER PIPE in GROUND

EXISTING RAINWATER TANKS TO BE UPGRADED OR TO HAVE NEW 225Ø OUTLETS INSTALLED.

STORMWATER PIPE AT HIGH LEVEL

STORMWATER PIPE AT HIGH LEVEL

EAVES GUTTER TO BE UPGRADED TO STRATCO OG BIG ONE 600

WAREHOUSE

Summary

This catchment requires :- number of DPs = 9

Downpipe size = 150 mm

minimum eaves gutter cross sectional Area = 22426 sq.mm

GUTTER SELECTED: Stratco OG Big One 600 girth Slotted; Area = 26345 sq.mm

Notes: Catchment area of each DP to be roughly similar size.
Length of any gutter draining to a downpipe to be not longer than 12m.(NCC vol2).

Diagram illustrating the stormwater drainage system layout for a Warehouse. The layout shows the building footprint, internal rooms (LUNCH ROOM, OFFICE, HALLWAY), and the proposed stormwater pipe network. Key components include:

- Stormwater Pipes:** Labeled as "STORMWATER PIPE in GROUND" and "STORMWATER PIPE AT HIGH LEVEL".
- Downpipes (DP):** Multiple downpipes are shown, labeled "DP 150".
- Rainwater Tanks:** Existing rainwater tanks are identified, with a note stating they need to be upgraded or have new 225Ø outlets installed.
- Eaves Gutters:** A note specifies "EAVES GUTTER TO BE UPGRADED TO STRATCO OG BIG ONE 600".
- Technical Specifications:**
 - Minimum eaves gutter cross-sectional area: 22426 sq.mm.
 - Gutter selected: Stratco OG Big One 600 girth Slotted; Area = 26345 sq.mm.
 - Notes: Catchment area of each DP to be roughly similar size. Length of any gutter draining to a downpipe to be not longer than 12m (NCC vol2).

| | | | |
|--|------|------------|------------|
| Horizontal catchment area | Ah | = 899 | sq.m |
| Roof Average slope | S | = 5 | degrees |
| Intensity ARI 20 (AEP 5%)(5 min) | I | = 204 | mm/hr |
| Is Gutter slope steeper than 1:500 ? | | No | |
| Down pipe size selected | dia | = 150 | mm |
| Cross referencing From Table 3.5.2 and Fig 3.5.4(A)or(B) | | | |
| Theoretical number of DPs required | Tnum | = 8.04 | |
| Selected Number of Down pipes | n | = 9 | |
| from AS3500 Table 3.4.3.2, C'ment Area Multiplier | f | = 1.04 | |
| Roof Area allowing for slope | Ac | = Ah*f | |
| | | = 935 | sq.m |
| Catchment Area per DP | A | = Ac/n | sq.m |
| | | = 103.9 | sq.m |
| Flow/DP | q | = I*A/3600 | litres/sec |
| | | = 5.89 | litres/sec |
| from AS/NZS 3500 fig 3.5.4(B), Gutter Area | | = 22426 | sq.mm |
| Gutter Area rounded to nearest 100sq.mm | | = 22400 | sq.mm |
| From AS/NZS 3500 Table 3.5.2, Down Pipe size | | = 150 | mm |
| Down Pipe size selected | | = 150 | mm |
| Summary | | | |
| This catchment requires :- number of DPs | | = 9 | |
| Downpipe size | | = 150 | mm |
| minimum eaves gutter cross sectional Area | | = 22426 | sq.mm |

A diagram showing a stepped profile. The left vertical edge has a height dimension of 140. The bottom horizontal edge has a width dimension of 210. The right vertical edge has a height dimension of 200. The top-right corner features a complex, irregular shape.

[illegible]

| SERVICE | DRAWING NUMBER | ISSUE | DATE |
|---------|----------------|-------|------|
| ARCH | | | |
| ARCH | | | |

© COPYRIGHT. ALL RIGHTS RESERVED



WATERWISE
DESIGN
Hydraulic & Fire Services


Chris Searle 0414 953 963
Hydraulic Consultant BSA Lic. No: 886793

 49 Hunter Street
Hervey Bay QLD 4655
PO Box 5485 Torquay QLD 4655

 chris@waterwisedesign.com.au

 waterwisedesign.com.au

 (07) 4125 3510

| | | | | | |
|----------------|----------|---|-----------------------|-------------------------|--------|
| North Point: | |  | | QBCC License No. 886793 | |
| | | Design: CHRIS SEARLE | | | |
| | | Design Validated: | | | |
| | | Drawn: CHRIS SEARLE | | | |
| Date: | DEC 2022 | Scale: | (A1) 1:200 (A3) 1:400 | Sheet: | 2 OF 2 |
| Job No: | 221213 | Disc: | H - 002 | Stage: | PR - A |
| ORIGINAL SIZE: | | | | | |

This form is to be used by an appointed competent person for the purposes of section 10 of the *Building Act 1975* and sections 73 and 77 of the Building Regulation 2021 (Design-specification certificate) stating that an aspect of building work or specification will, if installed or carried out as stated in this form, comply with the building assessment provisions.

Additional explanatory information is included in the Appendix at the end of this form.

1. Property description

This section need only be completed if details of street address and property description are applicable.

E.g. in the case of (standard/generic) pool design/shell manufacture and/or patio and carport systems this section may not be applicable.

The description must identify all land the subject of the application.

The lot and plan details (e.g. SP/RP) are shown on title documents or a rates notice.

If the plan is not registered by title, provide previous lot and plan details.

| | | | |
|----------------|-----------------|----------|--|
| Street address | 25 – 31 Dunn St | | |
| | Suburb/locality | Biloela | |
| State | QLD | Postcode | |

Lot and plan details (*attach list if necessary*)

| |
|--|
| |
|--|

Local government area the land is situated in

| |
|--------------|
| Banana Shire |
|--------------|

2. Description of aspect/s certified

Clearly describe the extent of work covered by this certificate, e.g. all structural aspects of the steel roof beams.

| |
|---|
| Sanitary Drainage Roof Water Water Layout |
|---|

3. Basis of certification

Detail the basis for giving the certificate and the extent to which tests, specifications, rules, standards, codes of practice and other publications were relied upon.

AS 3500.2018
AS 2870 2011

4. Reference documentation

Clearly identify any relevant documentation, e.g. numbered structural engineering plans.

Job 221213 H-001-A,H-002-A

5. Building certifier reference number and building development approval number

| | | | |
|-------------------------------------|--|--|--|
| Building certifier reference number | | Building development application number (if available) | |
|-------------------------------------|--|--|--|

6. Appointed competent person details

Under Part 6 of the Building Regulation a person must be assessed as a competent for the type of work (design-specification) by the relevant building certifier.

| | | | |
|--|---|-----------------|------------|
| Name (in full) | Christopher Harold Searle | | |
| Company name (if applicable) | Water Wise Design Hydraulic & Fire Service Consulting Pty Ltd | | |
| Contact person | | | |
| Business phone number | | Mobile | 0414953963 |
| Email address | chris@waterwisedesign.com.au | | |
| Postal address | Po Box 5485 Torquay | | |
| | | Suburb/locality | |
| State | QLD | Postcode | 4655 |
| Licence class or registration type (if applicable) | Fire Protection - Water-Based Fire System Stream Occupational – Certify & Hydraulic Services Design | | |

| | |
|---|--------|
| Licence or registration number (if applicable) | 886793 |
|---|--------|

9. Signature of appointed competent person

This certificate must be signed by the individual assessed and appointed by the building certifier as competent to give design-specification help.

| | | | |
|-----------|---|------|------------|
| Signature |  | Date | 13/12/2022 |
|-----------|---|------|------------|

LOCAL GOVERNMENT USE ONLY

| | | | |
|---------------|-------------------------------|--------------------|--|
| Date received | Click or tap to enter a date. | Reference number/s | |
|---------------|-------------------------------|--------------------|--|

Appendix – explanatory information

IMPORTANT NOTE: it is an offence for a competent person to give a building certifier a document, including this form, that the person knows or reasonably suspects, is false or misleading.

Who can complete this certificate? (sections 10 of the *Building Act 1975* (Building Act) and 73 of Building Regulation 2021 (BR 2021))

A building certifier can accept from a competent person (design – specifications) a certificate stating that the competent person has assessed the building design or specification for the aspect of building work, and it will, if installed or carried out under the certificate, comply with the building assessment provisions, including any relevant standards and codes.

Schedule 10 of the BR 2021 defines *building design or specification* as any material, system, method of building or other thing related to the design of or specifications for building work.

For a competent person to meet the regulation requirements (section 77 of the BR 2021) they must substantially complete all sections of this form, including information, such as the design of a particular material, system, method of building or that a building element complies with the Building Code of Australia or a provision of the Queensland Development Code. It is also important that the details of the relevant reference documents are included, for example, the applicable Australian Standards or other technical provisions that may be applicable to the subject work.

What is the purpose of this form? (section 10 of the *Building Act 1975*)

The information in this form informs the building certifier's decision making when they are assessing a building development application and issuing the building development approval for the building work the subject of the certificate (form).

When is this form not required?

The assessment of some building applications will be entirely within the expertise of the relevant building certifier and therefore they may not seek the help of a competent person. In these instances, this form is not required.

Is a manufacturer or supplier required under the BR 2021 to complete and sign this Form 15, if requested?

No. A manufacturer or supplier of building materials is not required to complete and give this form or any aspect and inspection certificates if requested by a construction contractor, builder, appointed competent person, or a building certifier.

However, a manufacturer or supplier may give the construction contractor, builder, competent person or the building certifier evidence of suitability such as a manufacturers statement for an aspect or material that it is compliant with the relevant reference documents in the BCA i.e. the applicable Australian Standard/s.

What if there is not enough space for all the supporting material/documents?

Items 2, 3 and 4 requires the competent person to clearly identify the extent of the assessment that was undertaken for aspect/s of work identified in this form.

For instance, there is provision for material such as specifications, standards, codes or other relevant publications to be referenced in the form. However, if the space in the form is not sufficient to accommodate all of this material, you can create and refer to additional material in an addendum or attachment to the form.

The form is also available in a Microsoft Word version, that you can download and edit to include additional material in the relevant parts of the form. **Note:** that editing the form in the Microsoft Word version may cause the relevant boxes to expand and

increase the length of the document. This is acceptable and does not change the approved form, provided the section text (description on the left-hand side of the page) is not altered.

Appointed competent person (design or specification) – (sections 34 and 36 of the BR 2021)

A building certifier must assess and decide to appoint an individual as a competent person before they can, as a competent person, give design-specification help. The building certifier is required to keep detailed records about what was considered when appointing a competent person.

A building certifier must be satisfied that an individual is competent to give the type of inspection help having regard to the individual's experience, qualifications and skills and if required by law to hold a licence or registration, that the individual is appropriately registered or licensed.

An individual is appointed as competent to give design-specification help on or from a particular day. The building certifier can also decide an individual is a competent person (design-specification) and a competent person (inspection) at the same time or for the same systems or components of the work.

For further information about assessment of someone as a competent person refer to the **Guideline for the assessment of competent persons**.

PRIVACY NOTICE

The Department of Energy and Public Works is collecting personal information as required under the *Building Act 1975*. This information may be stored by the Department, and will be used for administration, compliance, statistical research and evaluation of building laws. Your personal information will be disclosed to other government agencies, local government authorities and third parties for purposes relating to administering and monitoring compliance with the *Building Act 1975*. Personal information will otherwise only be disclosed to third parties with your consent or unless authorised or required by law.