

Proactive Inspections Program

Activity report

October – December 2020

Contents

1.	About	1
1.1.	Benefits	1
1.2.	How we conduct proactive inspections	1
1.3.	Performance year to date	2
2.	Q2 in focus	2
2.1.	What we found	3
2.2.	Action taken by the VBA	3
2.3.	Enforcement activity	4
3.	Overview of compliance risks found	4
3.1.	Detailed overview of compliance risks	6
3.2.	Prevalence of compliance risks in single-and-dual occupancy dwellings	10
3.3.	Prevalence of compliance risks by class	11
3.4.	Prevalence of specific elements - trends	12
4.	Case studies	16
6.	Appendices	18
	PIP risk-rating scale	18
	PIP electronic checklist	19
	Detailed view of Q2 proactive inspections	21

1. About

The VBA's Proactive Inspections Program (PIP) is an early-intervention regulatory initiative that identifies and reduces noncompliant building and plumbing work in Victoria. PIP involves teams of inspectors inspecting building and plumbing works under construction. Our PIP team includes experienced building inspectors, building surveyors and licensed plumbers. Typically, they inspect more than 900 domestic and commercial sites each month. Inspections focus on either building or plumbing work.

In line with the Minister's Statement of Expectations, our goal is to inspect 10 per cent of all building permits issued each year in Victoria. When selecting inspection sites, we analyse building permit data and consider a range of risk factors. We sometimes target certain types of construction to manage risk and ensure intervention at the earliest possible stage.

When our inspectors identify compliance risks (that is, potentially noncompliant building and plumbing work), they write to the practitioner or plumber, notifying them that issues need to be addressed. Once notified, the practitioner responsible (whether the builder, plumber or building surveyor) must respond to the VBA within three days for serious issues and within 14 days for those of moderate or lesser risk. Critical life-safety issues must be addressed immediately and, in these cases, the VBA will telephone the practitioner and relevant building surveyor and notify co-regulatory agencies such as WorkSafe.

In some circumstances, the VBA will issue a Direction to Fix to resolve the most critical issues. For example, where noncompliant wall cladding is identified, The VBA will issue a Direction to Fix, requiring the cladding's removal before an occupancy permit is granted.

The VBA uses a risk-rating scale (Appendix 1) to determine the level of scrutiny applied to a potential issue. The scale considers the potential adverse effects on the future safety of building occupants and people nearby and on the amenity of the building itself.

1.1. Benefits

PIP improves safety and compliance outcomes for building and plumbing work in Victoria through early identification and rectification and, in some cases, by taking other enforcement action. By inspecting work under construction, the VBA can address significant failures earlier, resulting in better outcomes for all involved. At the same time, rectification is often easier and less costly (and covered by practitioners, not the owner) and avoids impacts on the safety, health and amenity of future occupants if the compliance risk had remained undetected or unresolved.

Information and intelligence gathered through PIP enables the VBA to provide advice on building and plumbing standards and education and training in the industry.

1.2. How we conduct proactive inspections

Building and plumbing inspectors are provided with comprehensive electronic inspection checklists. The checklists have more than 500 elements grouped into three parts that address:

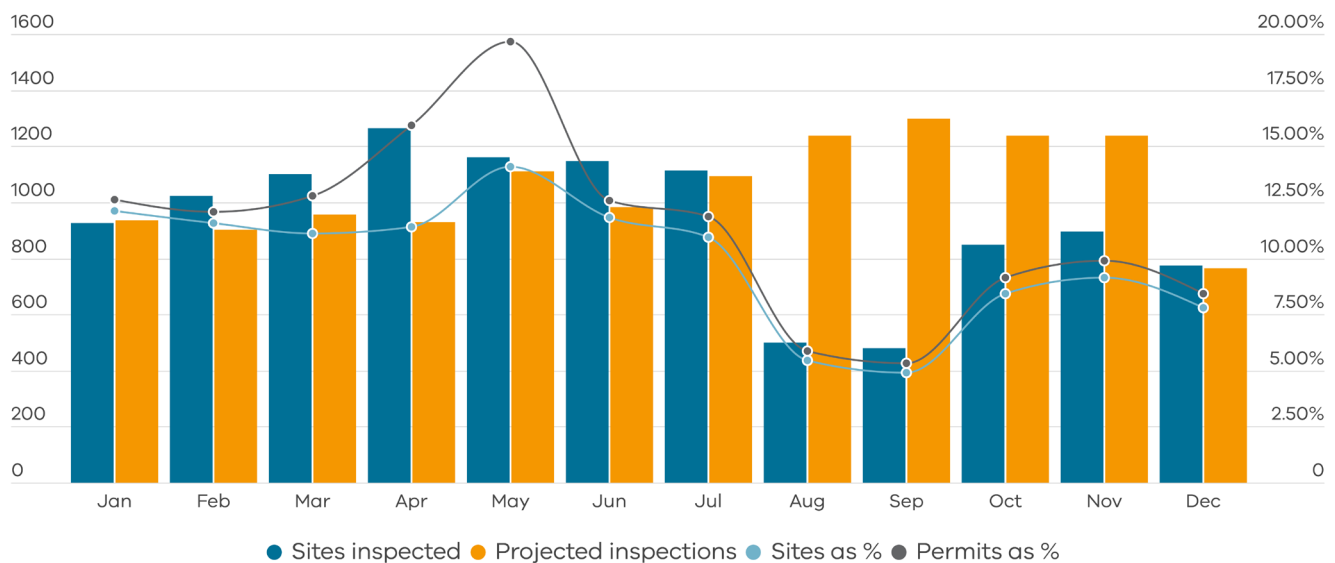
- building and plumbing work broken down into different building stages under the National Construction Code – Volumes 1 and 2 (Building Code of Australia)
- mandatory requirements under the *Building Act 1993*, Building Regulations 2018 and Plumbing Regulations 2018
- the display of permit information
- occupational health and safety (OHS) elements such as working at heights, temporary fencing, adequacy of propping and bracing and working in trenches. If any OHS items present an unacceptable risk, the relevant co-regulators (Environment Protection Authority, WorkSafe or Energy Safe Victoria) are contacted immediately by the building or plumbing inspector.

The VBA is working with stakeholders to develop guidance summarising key inspection components for particular classes of buildings.

A comprehensive outline of the electronic inspection checklists is detailed in Appendix 2.

1.3. Performance year to date

The graph below illustrates the number of sites inspected each month and shows how the VBA is tracking against the Minister's Statement of Expectations to inspect 10 per cent of new building permits every year.

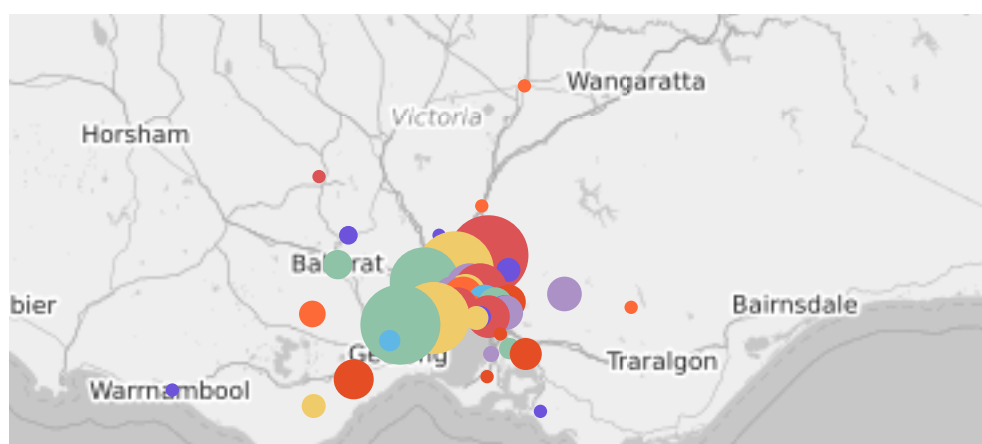


Goal: Inspect 10% of new building permits each year.

2. Q2 in focus

A total of 2520 inspections (comprising 1439 building and 1081 plumbing inspections) were conducted across 50 municipalities in Victoria, covering 1052 builders and 203 building surveyors across the state. During Q2, as stage 4 coronavirus restrictions eased, the VBA's field work limitations were lifted and resulted in an overall increase of 480 inspections compared to the previous quarter.

Sites are typically inspected based on defined risk factors which assign a higher risk rating to building permits that relate to buildings intended for human occupation and to practitioners who conduct higher volumes of work. However, this quarter the VBA modified its site selection to focus on practitioners of interest and on Class 1 domestic sites and suburbs where compliance with COVIDsafe requirements had been shown to be low.



2.1. What we found

Twenty-seven per cent of inspections conducted during the quarter identified compliance risk which, if not appropriately considered or addressed, had the potential to cause:

- an adverse effect on the safety or amenity of future building occupants, and the public
- financial loss for future occupants or loss of structural integrity.

This was almost the same rate of compliance risk observed between April and Sept 2020 (26%), but a lower rate than that observed in January to March 2020 (31%).

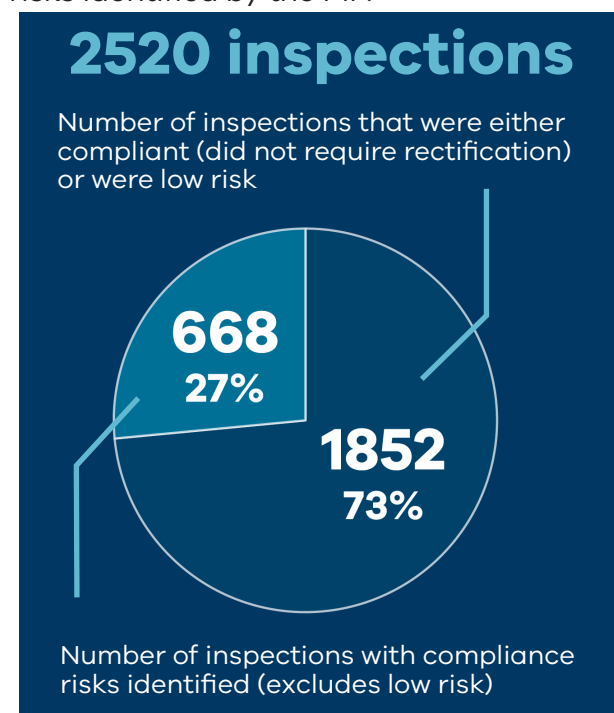
Data on low-risk elements are not included in this report because they are considered unlikely to cause any adverse effects if left untreated. Examples of low-risk items include site signage not being visible, uncontrolled rubbish on site or no on-site toilet.

Critical issues

One per cent of inspections identified noncompliant issues of a severity that could result in adverse effects on safety or amenity, financial loss for future occupants or loss of structural integrity if left untreated. This rate is consistent with PIP findings during the previous three reported quarters (January 2020 to Sep 2020). Sites with OHS risks are reported in this category, with breaches referred to the relevant regulator.

2.2. Action taken by the VBA

The VBA sent 668 notifications to practitioners requiring them to respond to the compliance risks identified by the PIP.



Who receives the notifications?

The builder and relevant building surveyor (RBS) are notified when compliance risks are identified. However, the builder is the primary addressee for potentially noncompliant building work if the elements have not been subject to a mandatory inspection stage. Where elements have been subject to mandatory inspection, the RBS is the primary addressee because they are the party who attests that the building work is compliant.

The RBS will also be the primary addressee when permit documentation lacks information (such as a performance solution) or in situations where the RBS has not considered mandatory items (such as fire separation in dual-occupancy buildings).

The builder is also the primary addressee for potentially noncompliant plumbing work because the plumber is not named in the building permit documents. The VBA relies on the builder to provide the plumber's details. If provided, the VBA will also notify the plumber of any potential issues.

Typically, these notifications require practitioners to:

- provide all relevant documentation (such as an approved performance solution, engineering drawings or certificate of compliance from a registered practitioner) showing how the work meets the requirements of the relevant building legislation – this is because practitioners are not currently required to lodge this documentation with the VBA
- demonstrate that the work is incomplete rather than noncompliant and will be resolved as the build progresses, or provide the RBS or the VBA with proof the work has been brought into compliance (for example, by forwarding photographs of rectified work).

While some issues can be resolved once the builder demonstrates the work is underway or built under a performance solution, a large proportion of noncompliant work identified by PIP requires rectification. Of the closed inspections in Q2, 73% of the sites required at least one item to be rectified and only 1% of the sites had work still in progress. The balance (26%) of sites inspected, with non-compliant items, were able to provide performance solutions/engineering documents to confirm compliance.

2.3. Enforcement activity

The VBA expects the RBS to manage any required rectification using their enforcement powers. Typically, a verbal Direction to Fix is issued to the builder. However, depending on the severity and risk of the issue, the RBS may choose to issue a written Direction to Fix or a Building Notice to the builder or owner and notify the VBA.

The VBA monitors all sites needing rectification to ensure the appropriate work is carried out. In exceptional circumstances, the VBA will issue a written Direction to Fix to the builder instead of the RBS. This may occur when the RBS appears to have contributed to the noncompliance or where the issuance of an occupancy permit is imminent and the VBA wants to ensure the noncompliance is addressed before the property is handed over to the owner. In Q2 2020–21, the VBA issued no written Directions to Fix.

3. Overview of compliance risks found

The most prevalent issues (excluding low risk non-compliance risks), fall into the following categories of building and plumbing work:

Domestic

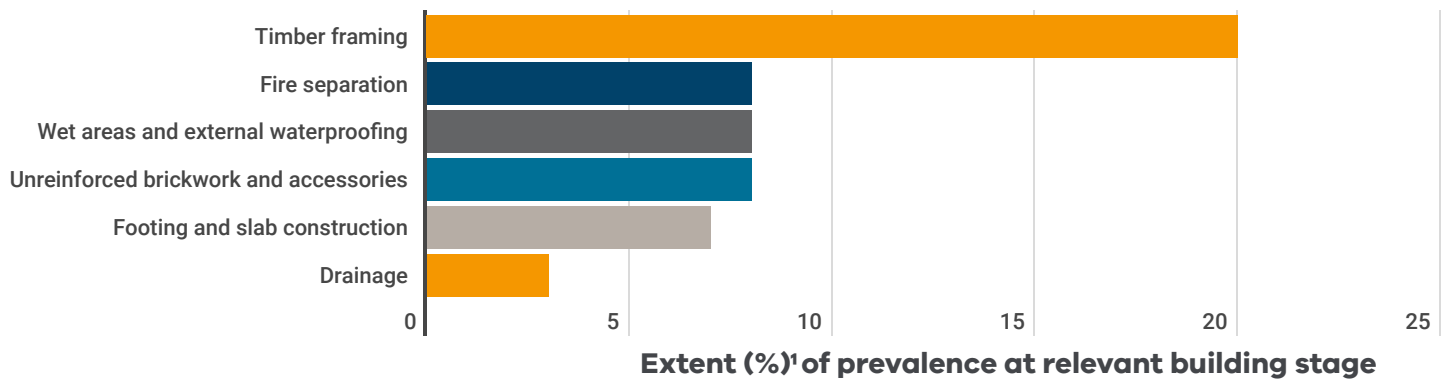
Timber framing items are regularly the top non-compliant issues found by the VBA in domestic building work and remain the same this quarter. However, the prevalence of timber framing issues (20%) significantly reduced this quarter, down 7% from 27% in the previous two quarters (April to September 2020) and down 13% from 33% in January to March 2020 quarter. This decrease in timber framing non-compliances is backed up by feedback from the PIP building inspectors and further by trends analysis on key timber framing items, (outlined in Section 3.4 of this document).

In addition to timber frames being a focus of the VBA's proactive site selection, a key contributor to the high rate of non-compliance in timber framing is the large number of building elements inspected at timber framing stage. The remainder of the top six building issues have generally remained consistent across the past four quarters, typically contributing between five and ten per cent of all non-compliance identified through the PIP.

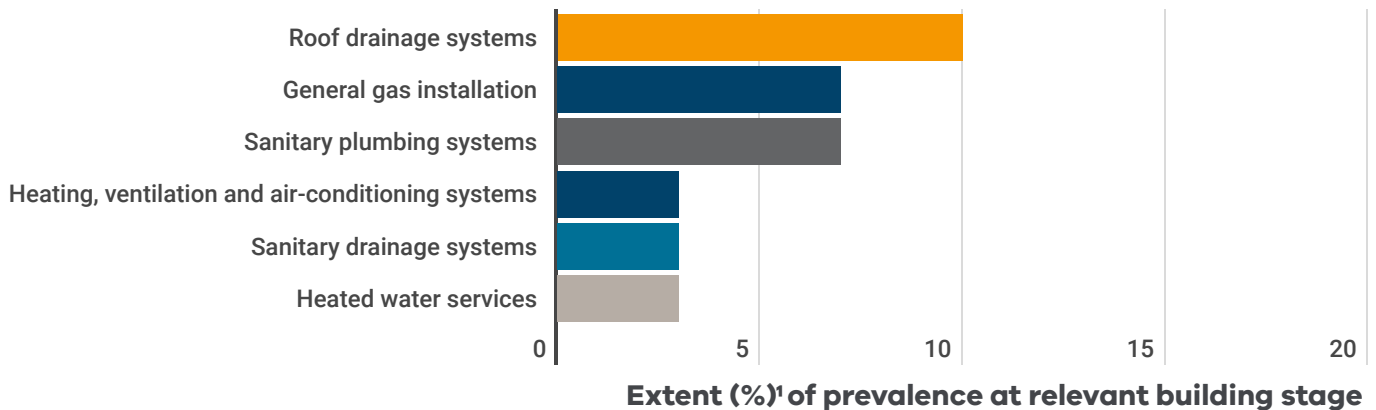
The top 6 issues in plumbing also remain consistent in each quarter and include:

- Sanitary drainage system issues – particularly the use of 88-degree junction installed on the aboveground sewer pipework, in two storey dwellings.
- Roof drainage systems – undersized sumps and box gutters with no overflow provisions, box gutters reducing in size, missing expansion joints on stormwater drainage systems.
- General gas installations – proximity issues: below- ground gas fittings too close to other services and the fittings not lagged for corrosion.
- Heating, Ventilation and Air-Conditioning Systems - Tundish drain not discharging over down pipe, causing corrosion to roof sheets and eaves gutters.

Building



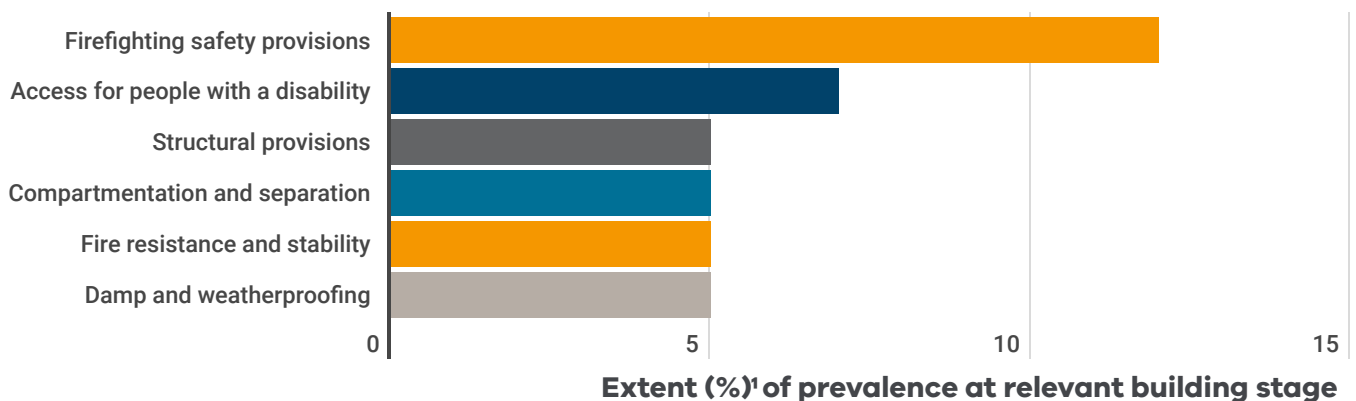
Plumbing



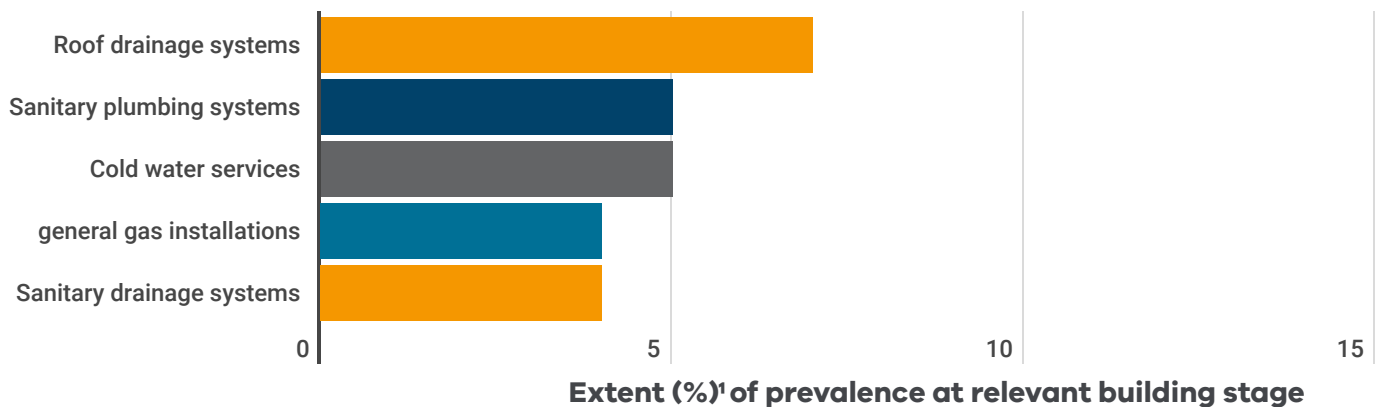
Commercial

Non-compliant issues in commercial building and plumbing work have also remained consistent over the last four quarters, with the six most common categories of non-compliance identified this quarter the same as last quarter.

Building



Plumbing



Appendix 3 provides more detailed reporting of the proactive inspections undertaken during the quarter, including information on prevalent compliance risk elements and details of how critical items were rectified.

3.1. Detailed overview of compliance risks

Building

Domestic (Class 1)

Approximately 35,000 elements were assessed across 1245 domestic building sites in Q2 (an average of 28 elements per inspection), of which 905 elements were identified as a compliance risk and required rectification or justification. Of these elements, 36 were critical (across 24 sites) and required immediate attention. Examples of these issues included:

Fire separation and wall cladding

- Construction of two, dual occupancy townhouses, in the City of Greater Dandenong and Glen Eira, that had used expanded polystyrene (EPS) cladding on external walls (located less than 900mm from one another) and therefore did not meet the required Fire Resistance Level of (FRL) 60/60/60. As a result of the inspection the EPS panels were removed from these areas and substituted with Hebel panels that do satisfy the performance requirements.
- Construction of two townhouses, in the City of Glen Eira, that had fire separating aerated masonry panel material installed to the party wall but did not extend to the external north face of the building. The RBS had confirmed this non-compliance and is overseeing the rectification.

¹ These are approximate percentages only, which are calculated using the building stage most applicable to the area of compliance risk (i.e. the stage at which the item can be most easily viewed for inspection). For example, the percentage figure for timber framing was calculated by dividing the number of inspections with compliance risks identified at the 'frame' stage by the total number of inspections conducted at the 'frame' stage.

Earthworks

- Construction of a two storey dwelling, in the City of Melton, that had a deep site cut along the boundary of the adjoining properties (exposing the neighbours stormwater pipes), with no protection works in place. The work had also been carried out over the easement.

Swimming pool access

- Temporary barriers missing around a swimming pool at three sites.
- Construction of single storey dwelling, in the City of Melton, that had openable windows along the rear of dwelling with direct access into the pool area.

Smoke alarms

- Construction of three, two storey dwellings that had smoke detectors located within 300mm of internal corners.

OHS (reported to WorkSafe on same day)

- Inadequate OHS provisions were identified at seven sites during the quarter. The sites had:
- No fall protection to pool area
- No fall protection openings in platforms/stair voids at five sites
- No fall protection to balcony window openings to the upper storey on four units
- These serious matters are referred to WorkSafe on the same day and/or rectified immediately.

Commercial (Classes 2–9)

Approximately 3100 elements were assessed across 194 sites (an average of 16 elements per inspection), of which 112 elements were identified as a compliance risk requiring rectification or justification. Of these elements 4 were critical (across 4 sites) and required immediate attention. The issues were:

Fire separation

- Construction of apartments, in the City of Boroondara, that had no fire resisting mineral wool installed at the ends of the wall junctions as required by the shaft liners installation manual. This matter was considered a particular high risk to avoid further external wall cladding being installed.

Emergency Lighting, Exit Signs and Warning Systems

- A construction of a new two storey extension to a primary school in the City of Wyndham, that had emergency lighting to first floor landing obstructed by architectural features.

Smoke Hazard Management

- Structural works, external cladding, and internal works, undertaken at an occupied dwelling in the Shire of Yarra Ranges, that had isolations set to the fire indicator panel disabling the Alarm Signalling Equipment. This matter was referred to the Municipal Building Surveyor (MBS) on the same day.

Openings in platforms/stair voids

- A construction of a new class 2 apartment, in the City of Boroondara, with openings in two stair void/areas had no fall protection or adequate handrails which posed an imminent threat to the health and safety of the workers on site. These serious matters are referred to WorkSafe on the same day and/or rectified immediately.

Plumbing

Domestic (Class 1)

Approximately 11,000 elements were inspected across 1010 sites (an average of 11 elements per inspection) and 396 elements (across 250 sites) were identified as a compliance risk requiring rectification or justification. No critical issues were found. The most serious compliance risks were in the following categories:

Roof drainage systems

- Box gutters undersized and/or reduced in size at multiple sites and/or change direction, causing incorrect discharge of roof water and potential blockages at several sites.
- Sumps undersized and/or discharge through non-compliant side chutes at several sites.
- No overflow provisions in eaves gutters/ box gutters/rainheads at several sites several sites.
- Insufficient fixing (not at the required intervals) of apron flashings, cappings and parapets at several sites.
- Valley gutters not discharging directly into eaves gutter.
- Construction of a new single storey dwelling, in the City of Wyndham, that had unsecured valley gutters (to flashing) and a large open area for vermin to enter, blocked gutter (from flashings) and flashings that discharge into gutters.
- Construction of a new 3 storey dual occupancy dwelling in the City of Whittlesea, that had box gutters (alongside the parapet walls dividing the dwellings) terminating into eaves gutters and not installed to an approved method (via either a sump or a rain-head). Additionally, the minimum required length and depth for the sump throughout the construction had not been met.
- Construction of a new single-storey dwelling, in the City of Wyndham, that had insufficient roof slope and pitch causing roof ponding, pressure flashings not fixed at 100 mm spacings and box gutter reducing in size.

Sanitary drainage systems

- Construction of three Dual Occupancy dwellings, in the City of Monash, that had 88 degree junction installed on an above ground sewer, (not permitted on graded suspended sewers) and expansion assemblies not securely clamped to prevent movement.
- Construction of a single storey dwelling, in the City of Maribyrnong, that had a sewer drain installed without the appropriate grade and two fixture points served by one unvented discharge pipe; each individual discharge pipe needs to terminate to a drain, or alternatively be vented in accordance with AS/NZS 3500.2:2018 clause 9.5.2.

- Construction of a single storey dwelling, in the City of Wyndham, that had expansion joints without fixed supports, 88 degree junction installed on an above ground sewer, a discharge pipe without the appropriate grade and a level invert taper (LIT) installed upside down in suspended sanitary drainage pipes.

Heating, Ventilation and Air-Conditioning Systems

- Construction of a single storey dwelling, in the City of Whittlesea, had an evaporative air conditioner installed with a poorly constructed bleed down drain, (it was not discharging directly over the downpipe) and had not been adequately supported. A gas cock had also been installed on the cold-water feed to the evaporative cooler that was not watermarked.
- Construction of a single storey dwelling, in the City of Hobsons Bay, had ductwork stripped with 25 mm strapping, an air conditioning drain with no fall and installed too close to other services (gas and electrical).

Commercial (Classes 2–9)

Approximately 350 elements were inspected across 71 sites and 16 elements (across 12 sites) were identified as a compliance risk requiring rectification or justification. No critical issues were found. The most serious compliance risks were in the following categories:

Unlicensed/unregistered trade

- A redevelopment of a school, in the City of Hobsons Bay, that had an unregistered/unlicensed plumber installing guttering on the site, who was also not a plumbing apprentice. The matter was referred to complaints and is currently being investigated by the VBA.

Roof drainage systems

- Demolition of an existing sports pavilion and construction of new pavilions, in the City of Wyndham, that had box gutters installed without the appropriate provision for expansion; the box gutters had been fixed to the structure which restricts the expansion and contraction of the gutter. The sumps installed were also not appropriately sized in accordance with AS3500.3.
- A construction of a warehouse, in the City of Wyndham, had no provision for expansion in the downpipes and no openings for maintenance and the box gutter system had no overflow provisions.

Sanitary plumbing systems

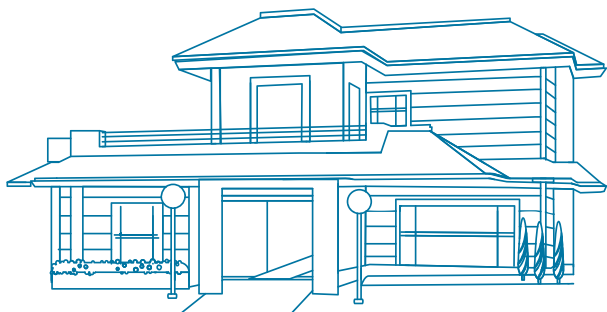
- Construction of warehouse & office, in the City of Wyndham, that had branches from the vertical sections of the sewer stacks installed within 600mm below the bend to the graded section of drain and expansion joints without fixed supports.
- Construction of a new warehouse construction, in the City of Greater Geelong, that had a sanitary drain installed without an upstream vent to the atmosphere and the branch drains (exceeding 10 meters) installed with no vents.

Sanitary drainage systems

- A pavilion extension, in the City of Hume, had no provision to ensure the water pressure throughout the development would not exceed 500kPa and had no backflow prevention on the flexi shower outlet (which touches floor).

3.2. Prevalence of compliance risks in single-and dual-occupancy dwellings

Single occupancy



Prevalence of compliance risks

Building 31%

Plumbing 22%

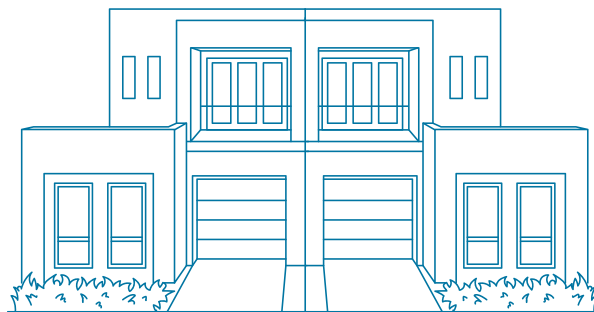
Common building issues

- Timber framing
- Unreinforced masonry
- Fire separation
- Wet Areas & External Weatherproofing of Masonry

Common plumbing issues

- General gas installation
- Sanitary plumbing systems (above ground)
- Roof drainage systems
- Cold water services
- Heating, ventilation and air-conditioning systems

Dual occupancy



Common building issues

- Timber framing
- Fire separation
- Unreinforced masonry and accessories
- Openings in platforms/stair voids
- Wet Areas and external waterproofing

Common plumbing issues

- Roof draining systems
- OHS items
- Sanitary plumbing systems (above ground)
- Sanitary drainage systems
- General gas installation

Prevalence of compliance risks

47% Building

30% Plumbing

3.3. Prevalence of compliance risks by class

			Areas of serious compliance risk	
Class	No. of sites inspected	% of compliance risks across class	Building	Plumbing
Domestic (Class 1 and 10)	2250	27%	- Timber framing - Fire separation - Wet areas and external waterproofing - Unreinforced brickwork and accessories - Footing and slab construction	- Roof drainage systems - General gas installation - Sanitary plumbing systems - Heating, ventilation and air-conditioning systems - Sanitary drainage systems - Roof drainage systems
Apartments ≥2 sole occupancy (Class 2 + mixed-use) and group dwellings and hospitals (Classes 3, 4, 9)	79	18%	- Fire Resistance and Stability - Access for people with a disability - Fire separation - Fire fighting equipment	General gas Installation
Assembly building with no dwellings (Class 9b)	76	20%	- Access for people with a disability - Structural Provisions - Construction of exits and provision of escape - Compartmentation and Separation - Emergency lighting, exit signs and warning systems	- Roof drainage systems - Unlicensed/unregistered plumber - Sanitary plumbing systems - Cold water eervices - Sanitary drainage systems
Office buildings and cafes, shops and markets with no dwellings (Classes 5, 6 + mixed use)	44	14%	- Structural provisions - Room heights - Protection of openings - Emergency lighting, exit signs and warning Systems - sanitary and other facilities - Fire fighting equipment	Cold Water Services
Warehouse and factories and carpark – no dwellings (Classes 7a, 7b, 8)	71	20%	- Construction of exits - Access for people with a disability - Fire fighting equipment - Provision of escape - Damp and weatherproofing	- Sanitary plumbing systems - Roof drainage systems - General gas installation - Cold water services - Sanitary drainage systems

3.4. Prevalence of specific elements - trends

Given the PIP is in its fifth year, the volume of data accumulated has provided an opportunity to analyse the data for trends and discover if common non-compliant building work has improved. The specific common building issues chosen to track were selected by consulting building inspectors who have been working in the PIP since its inception. They were asked about what improvements they have noticed on construction sites over the past three years. This is what they have observed:

- **Greater acceptance of the program** – builders are more aware of, and more accepting of the program since its inception. Inspectors report that builders are using them as a source of knowledge and are much more eager to ask them questions on site.
- **Quality of certain work onsite has improved** – they report a range of improvements and their top line observations are:

Timber framing elements have improved and include observing less issues with:

- Verandah posts to beams connections not bolted (as required by BCA)
- Roof truss installation - connection / tie downs / girder locations
- Fixing and placement of bracing to walls and roof

Construction of masonry elements have improved and include observing less issues with:

- Expansion ties installed upside down in masonry walls
- Issues with articulation joints not running continuous (no gaps adjacent to windows)
- Flashing installed to window openings

Less surface water drainage issues.

Less issues with self-closing gates and non-climbable zones to swimming pools.

Less issues with missing water stoppage / flashing to wet areas installations (in Class 1 buildings).

Installation of temporary down pipes to stop water ponding against footings to eliminate slab heave – previously this practice was not prevalent at all.

Inspectors were also asked about issues that still require improvement:

- WorkSafe and Occupational Health and Safety issues still exist on site.
- No plans on site.
- Pools under construction without temporary fencing or permit information displayed.
- Damp proof coursing not applied correctly.
- Noticing an increase in non-complaint performance solutions.
- Fire rated wall systems/shaftliners not installed as per manufactures requirements.

What does the data say?

The prevalence of items (where improvements have been observed) were analysed from January 2018 to December 2020, to discover if the inspectors' observations could be supported by any data trends.

Some items significantly decreased in their prevalence while others stayed the same or even increased. The prevalence was calculated by dividing the number of inspections with a specific non-compliance risk by the number of building inspections conducted in the same period.

Elements that had a significant decline in prevalence - 2018 to 2020

1. Timber framing - Veranda post/beam connection not bolted per AS1684.



Year	(n) Non-compliant sites	Prevalence
2018	50	1.0%
2019	72	1.0%
2020	37	0.5%
Sept - Dec 2020	4	0.3%

2. Unreinforced Masonry - Brickwork Articulation joints beside all windows & doors do not have the required 10mm gap.



Year	(n) Non-compliant sites	Prevalence
2018	97	2.0%
2019	216	3.1%
2020	89	1.2%
Sept - Dec 2020	4	0.3%

3. Swimming pool - Self-closing gates



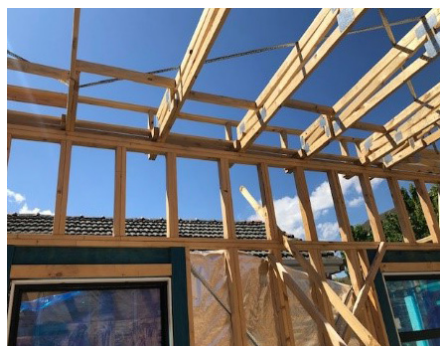
Year	(n) Non-compliant sites	Prevalence
2018	35	0.7%
2019	5	0.1%
2020	7	0.1%
Sept - Dec 2020	1	0.07%

4. Swimming pool - Non-climbable zones



Year	(n) Non-compliant sites	Prevalence
2018	69	1.4%
2019	24	0.4%
2020	21	0.3%
Sept - Dec 2020	7	0.5%

5. Timber framing - Insufficient or no fixing and placement of bracing to walls and roof



Year	(n) Non-compliant sites	Prevalence
2018	60	1.2%
2019	195	2.8%
2020	162	2.2%
Sept - Dec 2020	27	1.9%

Elements that had mixed result - 2018 - 2020

6. Timber framing - Roof truss installation connection/ tie downs/ girder locations



Year	(n) Non-compliant sites	Prevalence
2018	36	0.7%
2019	135	2.0%
2020	159	2.1%
Sept - Dec 2020	24	1.7%

7. Weatherproofing of masonry - Flashings to window openings not installed



Year	(n) Non-compliant sites	Prevalence
2018	39	0.8%
2019	84	1.2%
2020	65	0.9%
Sept - Dec 2020	17	1.1%

8. Water stoppage/flashing to wet areas (in Class 1 buildings) not installed



Year	(n) Non-compliant sites	Prevalence
2018	72	1.5%
2019	117	1.7%
2020	79	1.1%
Sept - Dec 2020	27	1.9%

9. Surface water drainage



Year	(n) Non-compliant sites	Prevalence
2018	47	1.0%
2019	63	0.9%
2020	84	1.1%
Sept - Dec 2020	14	1.0%

10. Expansion ties installed upside down in masonry walls



Year	(n) Non-compliant sites	Prevalence
2018	1	0.02%
2019	1	0.01%
2020	24	0.32%
Sept - Dec 2020	14	0.76%

4. Case studies

Plumbing in a Class 1 dwelling

Sanitary drainage systems issues

A proactive inspection of a new single storey dwelling found multiple issues with the roof drainage plumbing work. Spreaders were terminating over flashings/cappings and discharging water onto roof sheets. Soaker gutter upstands were undersized (must be 100 mm minimum in height) and gaps in valley gutters were not sealed to the sheet metal. A VBA notification of medium-risk building activity sent to the builder prompted the rectification of the roof plumbing issues. The VBA closed the matter after receiving comprehensive photographic evidence of the rectified work.



Construction of a new class 1 dwelling

Serious fire separation issue

The proactive inspection carried out after the mandatory frame stage inspection revealed among other non-compliances that the external walls of two townhouses (located less than 900mm from one another) did not have the required Fire Resistance Level of (FRL) 60/60/60 and therefore did not comply with clause 3.7.2.4 of Volume 2 of the BCA. As a result of the significant risk letter sent to the builder, the combustible expanded polystyrene (EPS) sheeting was replaced with fire rated plaster and cement sheet cladding, thus achieving the required FRL of 60/60/60. This was a significant find as the relevant building surveyor (RBS) had already approved the frame inspection and was not aware EPS had been installed on the external walls required to have an FRL.



Construction of two new Class 7b warehouses

Over 20 non-compliant matters

The proactive inspection of a new two storey warehouse development observed more than 20 non-compliances ranging from, reduced egress widths, non-compliant handrails and stair risers, door furniture installed at incorrect heights and inaccessible toilet fixtures. Additionally, there were fittings inappropriately installed or not installed at all, inadequate door circulation and insufficient application of water-resisting elements to wet areas. Due to the high number of non-compliances detected, the VBA is continuing to work with the RBS and builder to ensure the non-compliant work is rectified before building work is completed.

The stairs across multiple warehouses were not achieving the required 1m clear as required by the NCC 2016 Part D1.6. Provide evidence of how compliance is achieved.



The door handles to the exit door have been installed above 1.1m in height contrary to the NCC 2019 Volume 1 Part D2.21.



The doors leading to the factory do not provide the required door circulation space as per AS1428.1 – 2009 Part 13.3.1 and Figure 31.



A folding seat has not been provided within the accessible shower as required by AS1428.1 Part 15.5.9.



The works on site across both warehouses show the proposed installation of a sink within kitchenettes and wet areas without providing a water-resistant substrate as required by the NCC 2016 Volume 1 Part F1.7 and AS3740



Structural and internal building works on a Class 9b Assembly building

Serious fire management hazard

A proactive inspection of a Class 9b Assembly building undergoing structural and internal building works observed the Fire Indicator Panel (FIP) was isolated from the entire building. By isolating the FIP, (in the event of an emergency), the alarm will not be triggered and enable fire services and equipment to operate to safeguard the occupants. The building was being occupied (with no occupancy permit). As such, the matter was immediately referred to the MBS, to issue appropriate enforcement.

6. Appendices

Appendix 1: Proactive Inspections Program - risk rating scale

Risk rating matrix - The following table shows the PIP risk rating matrix. The level of risk observed during inspection determines the VBA's response and any actions required of the relevant building practitioners.

Low risk (Pass)	Non-compliance is not identified at inspection, or any non-compliance is consistent with work in progress and is reasonably expected to be resolved as work progresses.
Low risk (Low-impact)	It is unlikely that the compliance risk, if left untreated, would cause an adverse effect on the safety and/or amenity of the occupants. Financial loss for future occupants or loss of structural integrity is unlikely.
Medium risk	It is possible that the compliance risk, if left untreated, would cause an adverse effect on safety and/or amenity of the occupants/public. Financial loss for future occupants or loss of structural integrity is possible.
High risk	It is almost certain that the compliance risk, if left untreated, would cause an adverse effect on the safety and/or amenity of the occupants/public. Structural integrity would be significantly compromised and/or total loss of project value would be incurred.

Appendix 2: Proactive Inspections Program - electronic checklist

SECTION ONE

Guidance on mandatory requirements under the *Building Act 1993* and Building Regulations 2018

Provision and display of permit information

Part 12 - Building Administration - Building Permit Levy

Building Permits (16(1) works without a Building Permit, not as per Building Permit, 24A - Appropriate Class, OB certification, DBI if work >\$16,000, RBP where >\$5000

Occupancy Permit

Part 5 Siting - Building Regulations - (All sections ,73 to 97)

Part 6 Protection Works - Building Regulations,

Part 8 Building work in Special Area - Building Regulations - (All Sections 132, 150, 152, 153,154, 155)

SECTION TWO

Guidance on building work relevant to residential inspections and is broken down into different building stages under the National Construction Code of Australia BCA Vol 2 (class 1 and 10)

Site preparation - Earthworks and Site cuts, site surface drainage and termite risk management

Footings and Slabs Preparation - Concrete and Reinforcing, site classification, and footings and Slab construction

Masonry - Unreinforced and reinforced, Accessories, weatherproofing and earth wall construction

Framing - Sub-floor ventilation, Timber/Steel Framing, Structural Steel members

Roof and Wall Cladding - Roof cladding, Gutters and Down-pipes, Wall Cladding

Glazing

Fire Safety - Separation, Smoke Alarms, Heating appliances, bushfire areas, Alpine Area

Health and Amenity - Wet Area and External water

Safe movement and Access - Stair Construction, Balustrading and Handrails, Swimming pool Safety Barriers, Swimming pool Water recirculation

Additional Construction - High Wind, Earthquake and Flood Hazard

Structural Design

Energy Efficiency - Building fabric, external glazing, Building Sealing, Air Movement

SECTION THREE

Guidance on building work relevant to commercial inspections and is broken down into different building stages under the National Construction Code of Australia BCA Vol 1 (class 2 to 9)

Section B: Structure

Section C: Fire Resistance - Fire Resistance and Stability, Compartment and Separation, Protection of Openings

Section D: Access and Egress - Provision of Escape, Construction of Exits, Access for People with Disability

Section E: Services and Equipment - Fire Fighting Equipment, Smoke Hazard Management, Lift Installations, Emergency Lighting, Exit Signs and Warning Systems.

Section F: Services and Equipment - Damp and Weatherproofing, Sanitary and Other Facilities, Room Heights, Light and Ventilation, Sound Transmission and Insulation

Section G: Ancillary Provisions - Minor Structure and Components, Heating Appliances, Fireplaces, Chimneys and Flues, Atrium Construction, Construction in Alpine Areas and Bush-Fire Prone Areas

Section H: Special Use Buildings - Theatres, Stages and Public Halls, Public Transport Buildings

Section J: Energy Efficient - Energy Efficient, Building Fabric, Glazing, Building Sealing, Air-Condition and Ventilation Systems, Artificial Lighting and Power, Heated Water Supply and Swimming Pool and Spa Plant, Access for Maintenance and Facilities Monitoring.

SECTION FOUR

Guidance on requirements under the plumbing regulations that apply to residential and commercial properties.

Section B: Water Services - Cold Water Services, Heated Water Services, Non-Drinking Water Services, Firefighting Water Services

Section C: Sanitary Plumbing and Drainage - Sanitary Plumbing Systems and Sanitary Drainage Systems

Section D - Stormwater Drainage Systems - Roof Drainage Systems, Surface and Subsurface Drainage Systems

Section E: Heating, Ventilation and Air-Conditioning

Section F: On-Site Wastewater Systems - On-Site Wastewater Management Systems; On-Site Liquid Trade Waste Systems

Reg C: Gas Installations - General Gas Installation, Type A Servicing Work, Type A Conversion Work

Reg A: Unlicensed Plumber in Relevant Field - Unlicensed in: Drainage, Fire Protection, Gas fitting, Irrigation, mechanical, Roofing -Sanitary Water Supply

Reg B: Poor Standards

SECTION FIVE – OHS elements

Guidance on elements concerning immediate life-safety issues to ensure these items are inspected first.

OHS - practices at the site and hazards etc.

Scaffolding - makeshift working platforms, Guard Rails & Kick boards

Electrical Risk - Exposed Live Electrical, Power leads & Power boards

Excavation - working in trenches over 1.5 m Deep, site cut over 1.5 m

Asbestos - Debris or removal

COVIDSafe requirements - A separate checklist is used during COVID restrictions and covers adherence to mandatory COVIDsafe requirements; physical-distancing, mask wearing, worker limits and evidence of a COVIDSafe plans.

Temporary Fencing - site entry is restricted or affecting public

Amenity and housekeeping at the site - rubbish control, materials storage and site toilets

Fall risks - working over 2m in height (Opening in platforms/stair voids, Secured access ladders

Structure stability - Adequate temporary propping & bracing

If these items present an unacceptable risk, the relevant co-regulators are contacted immediately by the building inspector.

Appendix 3 - Detailed view of Q2 proactive inspections

		No Sites Inspected	% of Inspections per STAGE	No. Inspections with Compliance Risk (excludes low risks)	Top categories of non-compliances	Extent of prevalence (%3 or n)	No. of inspections with Critical issues (OHS items not included)	Categories of Critical issues	Frequency (n)	Outcomes of Critical issues	
BUILDING	Domestic	1245	Demolition	0.4%	369 (30%)	Timber framing - Penetrations (plumbing)>25mm through top plates and sheet bracing. Shear blocks missing overload-bearing walls. TGT not directly supported. Missing or inadequate bracing. Mechanical anchor on bottom plate not fitted, bottom plate of stud wall supporting beam not adequately supported. Durability of timber frame - inappropriate for its use. Fire separation - Fire separation and shaftliner walls damaged, or not installed as per manufactures guidelines. EPS crossing fire separation. Combustible PVC storm water down pipe is located to the external side of the fire rated wall on boundary. Timber weatherboards installed to external wall within 900mm of the allotment boundary. Fire wool has not been placed under roof capping between fire separation of units. Plumbing and electrical services run in the shaftliner cavity. Wet areas and external water proofing - Waterstop to wet area doorways not installed. Open gap in waterproofing at end of water stop. Non-water-resistant plaster used in shower area. Water stop is not installed at ensuite cavity slider doorway for prevention of water ingress beneath tiles. Unreinforced brickwork and accessories - Brick articulation joints are obstructed by window frames and mortar. Brick ties not fixed to timber frame. No lintels above electrical box beside control joint. The weep holes to the front entry reside directly on the level of the front slab (50 mm distance is required between the top of the slab and the underside of the weepholes). Footings and slab construction - Exposed steel. Bricks overhanging edge rebate of concrete slab. Slab cut through by plumber. Cracks in concrete slab showing defects in the footing beam construction. Drainage - fall away from dwelling inadequate, water ponding against footings, Ponding beneath subfloor, No overflow on balcony. Water ponding against the slab. Subfloor sloping ground surface has no agricultural drainage to prevent ground water seepage from affecting the garage wall structure. Entire dwelling slab below ground level.	20%	24 (2%)	Fire separation and roof cladding	N11	All issue rectified except one requiring RBS to commit monitor rectification.
			Foundations	2%			OHS items		N7	All related to inadequate fall protection, that were referred to the relevant authority the same day and /or made safe	
			Footings	6%			8%		Wall cladding	N3	EPS was replaced by Hebel at two sites and the builder rectified
			Frame	27%			8%		Window opening no more than 100mm	N2	Builder rectified issues.
			Lock-up	19%			8%		Temporary pool fencing not erected	N2	Builder rectified issues
			Fixing	33%			7%		Earthworks (deep site cuts affecting adjoining properties)	N1	Builder rectified issues
			Final	13%			3%		Wet areas and external waterproofing	N1	Builder rectified issues
									Gutters and downpipes	N1	Builder rectified issues
	Commercial		Not commenced	3%	37 (19%)	Fire Safety Provisions (Fire Fighting Equipment, Construction of Exits and Provisions of Escape) - Hose reel more than 4m from exit. No extinguisher on site. Carpet and timber installed in fire isolated stair. Width of paths of travel/doorways less than 1000 mm. Exit sign has an obstructed view. Exit sign too high exceeds 2.7m. Missing sprinklers in cupboard where floor area exceed 2.5m. Access for people with a disability- Turning space at hallway termination, Ramp without handrails and tactile. Glazing decals required. Light switch obstructing handrail Structural provisions - Hoop iron not fixed to underside of truss cord. Expansion ties upside down and filled with mortar. Compartmentation and Separation - Penetrations in shaftliners not sealed. Non fire-rated doors within 3000 mm of different fire compartments. Timber noggins used throughout FRL walls. Fire Resistance and Stability - Metal sheet sleeve within penetration of walls No smoke detection throughout and none in electrical switch cupboard despite being incorporated in FER. combustible product has been used for type B construction under C1.9. Damp and Weatherproofing-Water stop and screws penetrating waterproof membrane. Water-resistant substrate not installed in shower. Tilt up panels do not comply with FP1.4.	12%	4 (1.5%)	Smoke alarms	N1	Builder rectified issues
			Foundations	4%			OHS items (Openings in platforms/stair voids)		N1	Builder rectified issues on same day	
							7%		Smoke Hazard Management	N1	Builder rectified issues
			Footings	4%			5%		Emergency Lighting, Exit Signs and Warning Systems	N1	Builder provided documents
			Frame	36%			5%		Fire Separation	N1	Builder rectified issues
			Lock-up	16%							
			Fixing	18%							
			Final	16%							
			Completed	3%							

Appendix 3 - Detailed view of Q2 proactive inspections

		No of sites inspected	% of inspections per STAGE	No of inspections with compliance risks	Top categories of compliance risks	Extent of prevalence (% or n)	
PLUMBING	Domestic		Demolition	0%	250 (25%)	Roof drainage systems - Omission of expansion joints. Spreaders discharging over flashings and into valley gutter. Pressure flashings on non-square brickwork and hanging flashing omitted over garage. Several 'box gutter' issues (change of direction, incorrectly terminated, reduced in size and / or overflow provision. Sumps undersized and/or discharge through non-compliant side chutes at several sites.	10%
			Foundations	2%		General gas installation - Insufficient separation of gas piping with other services (electrical and water). Exposed multi-layer pipe to UV. Gas piping not labelled at gas meter. Reversion fittings have not been installed on the accessible multilayer gas line.	7%
			Footings	2%		Sanitary plumbing systems - 88-degree junctions installed on a graded sewer. Zinc coated screws have been installed in the sewer system. No backflow prevention at several site. Incorrect fall on drain. A sewer branch has been used in the vertical section of a sewer stack within the 600mm exclusion zone. Flat reducer on grade. Clip spacing on suspended drain exceed standards. Expansion joints not clipped.	3%
			Frame	36%		Heating, Ventilation and Air-Conditioning Systems - Accordion drain not discharging over down pipe. Refrigeration pipe incorrectly laid and clipped. Crushed ductwork and tight bends. Ductwork not supported appropriately. Gas flue pipe does not meet Australian standards.	3%
			Lock-up	19%		Sanitary drainage systems - Sweep junction used on drainage, branches in stack exclusion zones, 50 mm used without vent, LIT fittings used incorrectly. Overflow relief gully does not have at least 150mm separation below all fixture outlets. Underground drainage partially back filled without being offered for inspection. No concrete support under drainage bends and drainage trap. ORG not installed with 75mm clearance to the surrounding surface.	3%
			Fixing	29%		Heated water services - Solar hot water pipes did not have the required clearance from other services. (at several sites) Hot water and electrical separation issues. Pipework not protected through slab.	3%
			Final	11%			
	Commercial		Demolition	0%	12 (17%)	Roof drainage systems - no overflow provisions for eaves gutter, Sumps undersize, box gutter fixed to side of building, no allowance for expansion overflows in box gutters. No inspection openings or expansion joints on the downpipes	7%
			Foundations	1%		Sanitary plumbing Systems - Connection within the vertical restriction zone. LITs off centre, incorrect location of expansion joints on both stacks	5%
			Footings	1%		Cold water services - Shower arm can reach inside the toilet and backflow prevention is required. Absence of water pressure limiter. Flexi shower reaches floor level. Water meter is not supported, and the RPZD drain is less than 300mm above the finished ground.	5%
			Frame	45%		General gas installation - The multilayer gas pipe was not protected from UV exposure. Connection (a flexible gas hose) of an upright gas cooker to the gas fitting line has not been constructed appropriately.	4%
			Lock-up	16%		Sanitary drainage Systems - No floor waste gully located with the urinal to enable replenishment of the water seal. No I.O on sewer stacks, no support on expansion joints, branches in sewer stack exclusion zones, sweep junction used on drainage, no drainage support on sewer stack	4%
			Fixing	28%			
			Final	9%			



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