Department of
Building and Housing
Te Tari Kaupapa Whare

National Building Consent Authority Competency Assessment System

June 2010

Disclaimer

This Guide is published by the Department of Building and Housing as guidance information only.

For clarity, parts of this Guide reference requirements in the Building Act 2004 and regulations made under this Act. While this is clearly referenced, readers should always use the source legislation.

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INTRODUCTION AND DEVELOPMENT

Introduction, purpose and objectives

INTRODUCTION

This document has been developed by the Department of Building and Housing to help building consent authorities (BCAs) meet the requirements of the Building (Accreditation of Building Consent Authorities) Regulations 2006, specifically Regulations 9, 10 and 11. The document is published as guidance only. While it is not mandatory, it will likely become a benchmark for good industry practice by BCAs and International Accreditation New Zealand (IANZ). In the interest of national consistency and improved building control performance and cost-efficiency, the Department encourages all BCAs to adopt this competency assessment system.

This guidance document explains the background to the national competency assessment system. It provides an overview of the requirements of competency assessment and includes some worked examples using the templates provided in Appendix 3.

PURPOSE

The Department has developed a national BCA competency assessment system to achieve the following objectives:

- encouraging national standardisation
- facilitating the greater use of shared resources and expertise regionally and nationally
- eliminating the duplication of effort and lack of cost-effectiveness in maintaining multiple systems across each BCA
- improving national consistency by having a national basis for measuring the competency of building officials
- improving risk management for BCAs
- improving alignment with other national programmes such as the Licensed Building Practitioner (LBP) Scheme and international models such as those used in Australia
- reducing operating and compliance costs for BCAs
- improving the competency of building officials.

There are considerable national and regional benefits in having a single national competency assessment system for BCA staff. A national system provides a common language for BCA staff and a platform to help BCAs use shared resources either at a regional shared services level or nationally during times of peak workload. The system also facilitates staff recruitment by providing standard descriptions for levels of building work and the competencies required to underpin these.

Considerable resources and costs have been and continue to be consumed in developing, operating and updating individual BCA competency assessment systems and training programmes. Some of these are of varying quality and effectiveness. A single national system can be maintained centrally, eliminating this duplication of effort and cost.

A major Government goal is achieving national consistency in administering the Building Act, Building Code and Regulations. Adopting a national competency assessment system contributes to this goal by identifying the competencies required to undertake work and providing a common national system of assessment. Over time, this should result in more consistent, efficient and better quality decision-making by building officials.

BCAs are able to better manage their risk by having objective competency standards for their staff. Staff are better able to manage the BCA's risk day to day, as they are better able to recognise the limits of their competence and work within these.

OBJECTIVES OF THE NATIONAL BCA COMPETENCY ASSESSMENT SYSTEM

The first objective was to develop a system building on existing work completed by the building sector. A number of different systems[1] were reviewed and the best elements from each have been incorporated into the new national system.

A second objective was to develop a streamlined approach. This has been achieved by reducing the number of levels. Competencies have been defined for each level, setting explicit performance indicators for each competency requirement and providing comprehensive guidance for assessors. This saves each assessor from having to develop their own competency model for each BCA or candidate.

A summary skills matrix template has been developed for recording results of assessments. It is a streamlined and simpler version to that used by many BCAs. It no longer records competency by individual Building Code clause, and so it is easier to use in a day-to-day operational sense. A skills matrix based around individual Code clauses and the division into alternative solutions and Acceptable Solutions has proven, for many BCAs, to be overly bureaucratic and unnecessarily complicated and cumbersome to operate, adding limited value for the effort spent.

In addition, flowcharts have been developed to aid allocation of work. The flowcharts offer a considerably streamlined way to achieve work allocation. Competency levels for processing and inspections are defined using the same descriptions, so there is no need to re-categorise work when allocating inspections.

The licensed building practitioner (LBP) licensing classes are designed to acknowledge several of the specialist areas of work within a building, such as roofing, blocklaying or plastering. Building officials, however, need to have a wide understanding of both the individual building components and also the building as a system. Building officials by the nature of their job are usually more generalist than specialists whereas many, but not all, LBPs are being assessed as competent in narrower fields such as roofing, foundations, carpentry etc. There are six competency levels for building officials, rather than the three established categories for the LBP Scheme. However, depending on the scope of work a BCA usually performs, some will not need to operate all six levels (ie, it is envisaged that a number of smaller rural BCAs may only need to operate three or four levels).

1 These included: North Shore City Council, Selwyn District Council, Dunedin City Council and Wellington City Council.

Development of a national system

PROJECT TO DEVELOP A NATIONAL SYSTEM

The Department of Building and Housing established a project to develop a national competency assessment system for BCAs in late October 2009. A project advisory group comprising Bob de Leur from Auckland City Council, Richard Toner from Wellington City Council and also representing BOINZ, Jeff Farrell from Whakatane District Council, Bevan Smith from Professional Building Consultants, Malcolm MacMillan from the Department and Geoff Hallam from International Accreditation New Zealand was established to provide sector input into the development of the system and to ensure the output was 'fit for purpose.'

A small project team comprising Steve Garner, Peter Sparrow and Paul Hobbs from the Department, Beryl Oldham from North Shore City Council, Rose McLaughlan from New Zealand Building Inspection and Training Ltd, Rosemary Hazlewood from Building Networks Ltd, and Keith Smith from Alpha Building Consultants was established to develop material for consideration and review by the advisory group. The project team considered a range of existing systems before developing the national system for field testing.

The system was piloted at the following BCAs: Auckland, North Shore, Rodney, Papakura, Waitakere, Manukau, Rotorua, Whakatane, Wellington, Nelson and Queenstown Lakes Councils, and feedback from the pilot has been incorporated into the final version.

LOCAL NEEDS AND SYSTEM FLEXIBILITY

The system has been designed to cater for mainstream building types and issues without taking into account local or regional conditions. For example, there is an expectation that building officials nationally will be aware of issues relating to corrosion zones and wind zones, but all officials are not required to have knowledge of local issues such as geothermal conditions, which may only occur locally or regionally.

Where local or regional conditions exist that require specific competencies, it is expected that these will be identified at the BCA or cluster level. For example, in Wellington building officials may be expected to have an understanding of compliance issues relating to cable cars which may be associated with residential building consents. However, this is best dealt with as an exception for other BCAs. This process is further discussed below.

The competency levels have been designed to capture most building activity. However, innovative and unusual building designs will also be produced and not fit the described levels. Rather than create new levels to accommodate these buildings, BCAs should determine the competencies required to undertake the work and allocate the work to an appropriate staff member or staff members with those competencies.

The decision made, reasons for the decision and the outcome should be recorded in these exceptional circumstances.[2] This can be in the form of a short note on the building consent file. Alterations to buildings may be considered the same way. For example, the underlying building may be within the commercial 2 competency level, but the alteration may be minor and can be assessed by a commercial 1 processor. To avoid overcomplicating things and undermining the national consistency trying to be achieved, **BCAs should not begin to develop additional levels or sub-levels of competencies to deal with such exceptions**. Again, they should just record the decision, reasons for the decision, and the outcome[2] that the assigned processing officer(s) and/or inspector(s) are competent to do the work.

2 See Regulation 6(b),(c) and (d) of the Building (Accreditation of Building Consent Authorities) Regulations 2006.

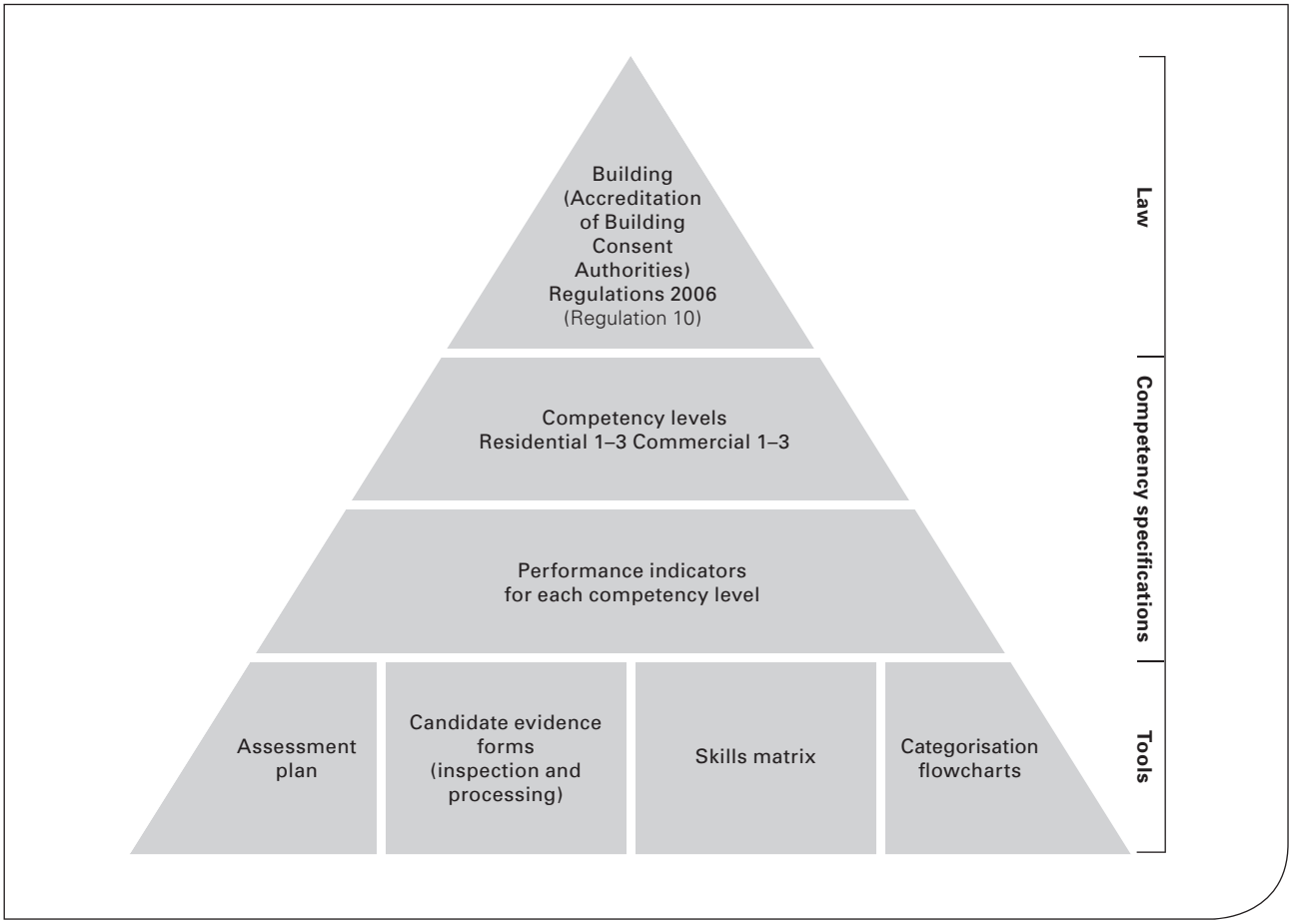
Because the system has been developed to cover the range of building activity in New Zealand, some BCAs will find they have no building activity at a described level. This means they will not have to operate and assess staff against those levels. However, their procedures will still need to note that if work outside their levels was submitted for consent, alternative arrangements would need to be made to have the work processed. This could be achieved through a contract arrangement with another accredited BCA or a contractor.

By way of example, XYZ BCA only usually receives work up to residential 2 and commercial 1 competency levels. Consequently, they need to assess staff only to these levels and have a procedure that requires work outside these levels to be processed by another BCA that has competencies at the required level. This allows them to operate a streamlined and simple competency assessment system of just three competency levels (residential 1, residential 2 and commercial 1), thus reducing their operating and compliance costs.

SYSTEM FRAMEWORK

System framework **7**

System framework



The national competency assessment system is made up of levels with performance indicators and assessor guidance on interpreting the indicators, and a suite of assessment tools including assessment plans, evidence-gathering templates, skills matrices for recording the summary outcome of all assessments, and categorisation flowcharts to help allocate work.

RELATIONSHIP WITH OTHER ACCREDITATION REGULATIONS

The Building (Accreditation of Building Consent Authorities) Regulations 2006 require a BCA to have systems to identify the capacity and capability requirements of the organisation, allocate work to competent staff or contractors, undertake competency assessment of staff and have a training system for staff.

The competency assessment system should be seen as a central component of these other systems. The competency levels describe the range of work which occurs nationally. A BCA can determine the level of work they normally undertake using these descriptions to meet the requirements of regulation 8. This competency assessment system, if effectively implemented, provides the tools needed to meet the requirements of Regulation 10, competency assessment.

The flowcharts can be used to categorise work, while the skills matrices can be used to help allocate work to meet the requirements of Regulations 7 and 9. Training needs (regulation 11) will also fall out of the competency assessment. Finally, the competency levels could also be used to describe a service specification for another BCA providing services to undertake processing of higher level work (Regulation 12). Please see appendix 3 for residential and commercial flowcharts.

RELATIONSHIP WITH THE NATIONAL DIPLOMAS IN BUILDING CONTROL SURVEYING

As suggested in the assessment process to this competency assessment system, the assessor may take into account qualifications held by the candidate – indeed they should if they are current and relevant qualifications such as the National Diplomas in Building Control Surveying. The National Diplomas in Building Control Surveying are qualifications that cover many of the competency requirements required by Regulation 10 of the *Building (Accreditation of Building Consent Authorities) Regulations 2006*. The table below helps illustrates this.

UNIT STANDARD NUMBER	NATIONAL DIPLOMA UNIT STANDARD TITLE	BUILDING (ACCREDITATION OF BUILDING CONSENT AUTHORITIES) REGULATIONS 2006 REFERENCE
1296	Interview in an informal one-to-one situation	10(3)(e) Employees' ability to communicate with internal and external persons
11283	Communicate with clients in a compliance context	10(3)(e) Employees' ability to communicate with internal and external persons
22698	Demonstrate knowledge of building control legislation and requirements	10(3)(c) Employees' knowledge and skill in applying the Act, the Building Code, and any other applicable regulations under the Act
24160	Peer review building consent authority quality management system process for compliance with quality standards	10(3)(f) Employees' ability to comply with the building consent authority's policies, procedures and systems
24161	Demonstrate knowledge of Building Act 2004 processes	10(3)(c) Employees' knowledge and skill in applying the Act, the Building Code, and any other applicable regulations under the Act
24162	Demonstrate knowledge of loads, forces and physical effects on structural components and materials	10(3)(a) Employees' understanding of the philosophy and principles of building design and construction
24172	Complete service inspections for small buildings	10(3)(d)(ii) Employees' ability to inspect building work
24173	Assess services in small building consent applications	10(3)(d)(i) Employees' ability to process applications for building consents
24175	Complete building inspections for small buildings	10(3)(d)(ii) Employees' ability to inspect building work
24176	Assess small building consent applications	10(3)(d)(i) Employees' ability to process applications for building consents
24177	Describe the processes of consenting and inspecting small buildings	10(3)(d)(i) Employees' ability to process applications for building consents
9669	Apply principles from published data to evaluate select materials and finishes for buildings	10(3)(b) Employees' understanding and knowledge of building products and methods
9617	Determine and describe the construction methods for small buildings	10(3)(a) Employees' understanding of the philosophy and principles of building design and construction
24163	Demonstrate knowledge of small building construction methods, materials and systems	10(3)(b) Employees' understanding and knowledge of building products and methods 10(3)(a) Employees' understanding of the philosophy and principles of building design and construction

In itself, however, these qualifications, while contributing to the evidence of competence during an assessment process, do not confirm competence by themselves. This is partly because the technical requirements are always – and at present rapidly – changing, course material for these diplomas does not currently exist, and a qualification is often primarily about confirming one has a body of knowledge at a certain point in time rather than the competency to successfully perform a role and practice that knowledge. Competence is defined in this guidance document as: 'an individual's ability to apply knowledge and skills at the required standard and in a defined context'. Competency in this context is about the application of knowledge, skills and ability on the job.

The National Diplomas in Building Control Surveying have not yet been imbedded and sufficiently tested within the sector for this competency assessment system to suggest that an individual with one or more of these qualifications is competent to a certain competency level. Further work and evaluation is still required before this system can provide categorical weighting in relation to these qualifications.

NATIONAL LEVELS AND COMPETENCY SPECIFICATIONS

National levels and competency specifications

NATIONAL LEVELS

The new national competency levels have been grouped into residential and commercial. There are three residential levels and three commercial levels. The levels have been further split into processing and inspections. Within each group, building and plumbing and drainage competencies have also been separated out. The system can therefore be used by BCAs with a variety of configurations, for example separate processing and inspection teams, multi-skilled teams, teams split along building, plumbing and drainage and so on.

Level 1 residential includes the least complex work. In a few BCAs some of this work is carried out by technical administration staff. Rather than create a separate category for this level of work, technical administration staff can be assessed against the applicable residential 1 specification that relates to the work that they do and not to the work they don't do. For example, staff processing solid fuel appliances can simply be assessed against the performance indicators and requirements relating to that type of work. This restriction on their competency (ie, that they only process solid fuel appliances) can be noted on the skills matrix and the individual staff member's competency assessment file. As another example, a front counter technical administration officer could be assessed as competent in residential 1 and 2, but only for solid fuel heater consent applications.

The six levels represent significant steps in technical knowledge and building type complexity. Decision-making goes from simple to more complex analysis with each level step. The levels also split residential and commercial areas of knowledge, for example, light timber frame construction usually used in residential construction and more complex specific design commercial construction systems. The levels also identify specific areas of Building Code knowledge as it relates to the type of construction.

The levels are all underpinned by technical considerations. To simplify this, a number of issues were considered including:

- building type (eg, garage, carport, retaining wall, dwelling, school, office etc)
- classified use taken from the 1992 Building Regulations (eg, commercial, industrial, outbuildings)
- activity or purpose group (single household (SH), single residential (SR), crowd large (CL), etc)
- E2/AS1 risk scores and evaluation matrix
- structural importance AS/NZS 1170
- complexity of design
- life safety (risk of injury to user)
- intended outcome.

Because the levels reflect risk, complexity and knowledge steps there is some cross-over between residential 3 and commercial 1. The defining knowledge steps between residential 3 and commercial 1 levels relate to knowledge of vertical and horizontal fire separations and the use of specified systems. Therefore, a three-storey apartment block with horizontal fire separation is defined as a commercial building for the purposes of this competency assessment system.

NEW LEVELS FOR THE NATIONAL COMPETENCY SYSTEM	
Residential 1	
Residential outbuildings and ancillary buildings – as defined by the Building Regulations 1992. Detached dwellings (SH) designed to a common standard (eg, NZS 3604, NZS 4229) that are single storey and have an E2/AS1 risk matrix score less than or equal to 6.	
Simple one storey residential dwelling with an E2/AS1 risk score of 3	
Simple one storey residential dwelling with an E2/AS1 risk score of 6	
Simple one storey residential dwelling with an E2/AS1 risk score of 4	

NEW LEVELS FOR THE NATIONAL COMPETENCY SYSTEM	
Residential 2	
Detached dwellings (SH) designed to a common standard (eg, NZS 3604, NZS 4229) that are less than or equal to two storeys and have an E2/AS1 risk matrix score less than or equal to 12.	
Two storey (SH) residential dwelling with an E2/AS1 risk score of 9	
Two storey (SH) residential dwelling with an E2/AS1 risk score of 12	
Two storey (SH) residential dwelling with an E2/AS1 risk score of 11 (deck not over living area)	

NEW LEVELS FOR THE NATIONAL COMPETENCY SYSTEM	
Residential 3	
Detached dwellings (SH) or other dwellings (SR) that are less than or equal to three storeys but limited to vertical plane fire separation and direct egress to the outside. E2/AS1 risk matrix score of 13–20.[3]	
Two storey (SR) residential dwelling with an E2/AS1 risk score of 17 (vertical plane fire separation only)	
Three storey (SH) residential dwelling with an E2/AS1 risk score of 19	
Three storey (SR) residential dwelling with an E2/AS1 risk score of 15 (vertical plane fire separation only)	

3 This level also includes specifically designed residential cladding systems, components, detailing and junctions and where a risk matrix score of greater than 20 has been calculated.

NEW LEVELS FOR THE NATIONAL COMPETENCY SYSTEM	
Commercial 1	
Commercial, industrial and communal non-residential buildings and their associated outbuildings and ancillary buildings equal to or less than two storeys and an occupancy load of equal to or less than 100 people or SR or SA residential buildings up to two storeys and with horizontal fire separation.	
One storey commercial building with less than 100 occupants	
One storey commercial building with less than 100 occupants	
Two storey motel with less than 100 occupants	

NEW LEVELS FOR THE NATIONAL COMPETENCY SYSTEM	
Commercial 2	
Commercial, industrial, communal residential and communal non-residential buildings equal to or less than four storey and an occupancy load of equal to or less than 500 people or SC or SD that are single storey.	
Two storey movie theatre with less than 500 occupants	
Four storey commercial building with less than 500 occupants	
Four storey commercial building with mixed-use (SR) and (CL)	

NEW LEVELS FOR THE NATIONAL COMPETENCY SYSTEM	
Commercial 3	
All uses of buildings that are over four storeys high, or contain over 500 occupants or SC or SD greater than single storey.	
High-rise building in excess of four storeys	
High-rise building in excess of four storeys and with more than 500 occupants	
Commercial/public building in excess of four storeys and with more than 500 occupants	

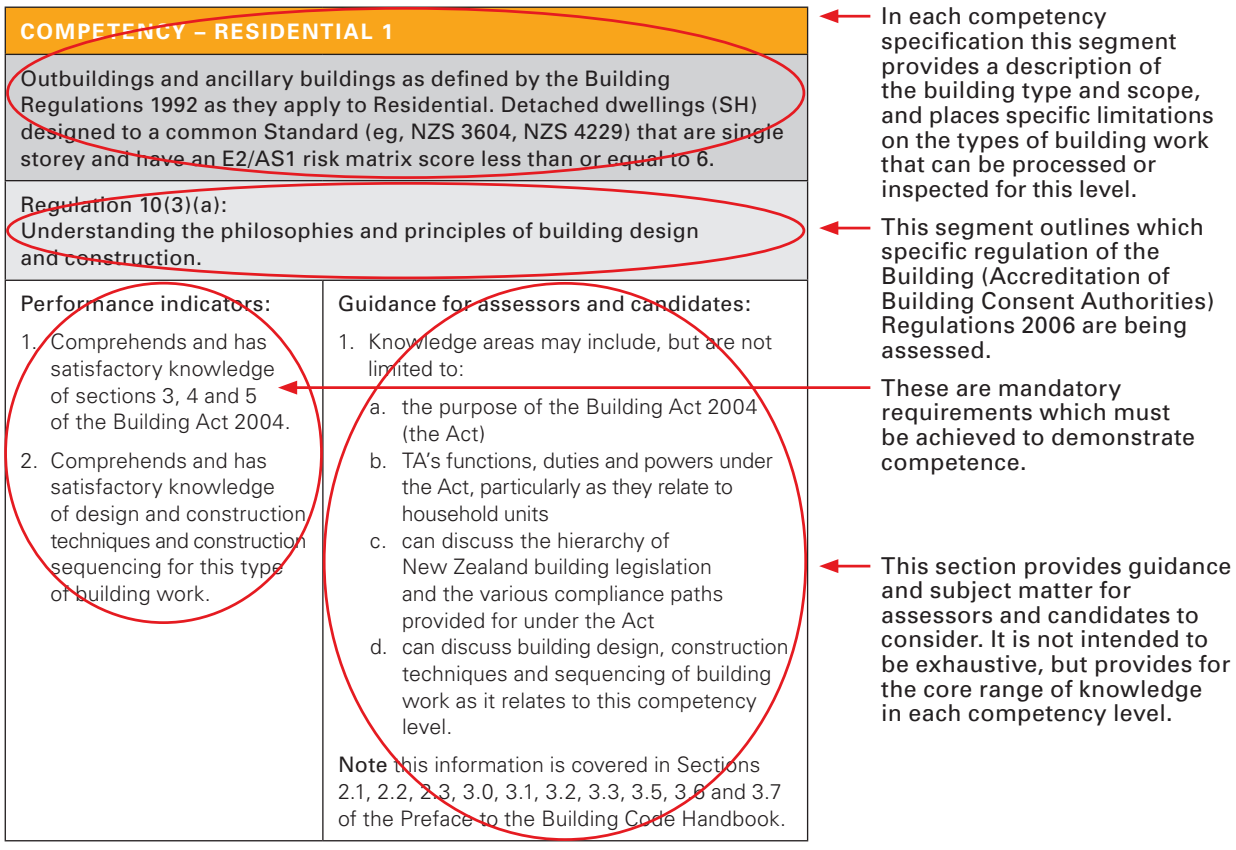
COMPETENCY SPECIFICATIONS

The competency specifications used in the National BCA Competency Assessment System have been developed to provide the assessor and candidate with a detailed specification of knowledge and skills that are required for a person to be competent at a particular level.

There are six competency specifications, one for each of the new national competency levels (Residential 1–3 and Commercial 1–3). Each competency specification contains:

- competencies required by Regulation 10(3) of the Building (Accreditation of Building Consent Authorities) Regulations 2006
- performance indicators to meet the competencies in Regulation 10(3)
- guidance for assessors and candidates for meeting the performance indicators.

As you can see a hierarchy is starting to appear, starting with the Regulations, then the requirements to meet the Regulations through performance indicators and ending with guidance on what demonstrates competence with the performance indicators. This is discussed in more detail further on in this section. The format of a competency specification is shown below.



COMPETENCY – RESIDENTIAL 1

Outbuildings and ancillary buildings as defined by the Building Regulations 1992 as they apply to Residential. Detached dwellings (SH) designed to a common Standard (eg, NZS 3604, NZS 4229) that are single storey and have an E2/AS1 risk matrix score less than or equal to 6.

Regulation 10(3)(a):
Understanding the philosophies and principles of building design and construction.

Performance indicators:	Guidance for assessors and candidates:
1. Comprehends and has satisfactory knowledge of sections 3, 4 and 5 of the Building Act 2004. 2. Comprehends and has satisfactory knowledge of design and construction techniques and construction sequencing for this type of building work.	1. Knowledge areas may include, but are not limited to: a. the purpose of the Building Act 2004 (the Act) b. TA's functions, duties and powers under the Act, particularly as they relate to household units c. can discuss the hierarchy of New Zealand building legislation and the various compliance paths provided for under the Act d. can discuss building design, construction techniques and sequencing of building work as it relates to this competency level. Note this information is covered in Sections 2.1, 2.2, 2.3, 3.0, 3.1, 3.2, 3.3, 3.5, 3.6 and 3.7 of the Preface to the Building Code Handbook.

In each competency specification this segment provides a description of the building type and scope, and places specific limitations on the types of building work that can be processed or inspected for this level.

This segment outlines which specific regulation of the Building (Accreditation of Building Consent Authorities) Regulations 2006 are being assessed.

These are mandatory requirements which must be achieved to demonstrate competence.

This section provides guidance and subject matter for assessors and candidates to consider. It is not intended to be exhaustive, but provides for the core range of knowledge in each competency level.

See appendix 1 for the full list of competency specifications, performance indicators and relevant guidance for assessors and candidates for each competency level.

REGULATION 10(3)

Regulation 10(3) of the Building (Accreditation of Building Consent Authorities) Regulations 2006 requires the following competencies to be assessed for each employee.

a) Understanding of the philosophy and principles of building design and construction
b) Knowledge of building products and methods
c) Knowledge and skill in applying the Act, the Building Code and any other applicable regulations under the Act
d) Ability to:
   (i) process applications for building consent
   (ii) inspect building work
   (iii) certify building work
e) Ability to communicate with internal and external people
f) Ability to comply with the BCA's policies, procedures and systems.

All competencies referred to in Regulation 10(3) are included in each competency specification.

PERFORMANCE INDICATORS

The competency specifications set out a series of performance indicators for meeting Regulation 10(3)(a)–(f) for each national competency level. To be deemed competent, a candidate under assessment must be able to achieve these performance indicators and there must be sufficient evidence substantiating this.

GUIDANCE FOR ASSESSORS AND CANDIDATES

This is the technical content of the competency specifications. It changes depending on the national competency level being assessed. The guidance for assessors and candidates has been developed to help determine if the performance indicators have been met. However, it is not expected that this guidance material act as a checklist because there is some overlap with the guidance between the national competency levels. For example, the guidance to meet the performance indicator for Regulation 10(3)(a) (understanding the philosophies and principles of building design and construction) is similar for residential 1, 2 and 3.

The assessor and candidate guidance for Regulation 10(3)(d)(i) (ability to process applications for building consent) generally follows the structure of the Building Code.

The assessor and candidate guidance for Regulation 10(3)(d)(ii) (ability to inspect building work) has been grouped around the generic inspection areas of foundation, preline and final. The terms 'foundation', 'preline' and 'final' have been used to group inspections that BCAs commonly undertake. The tables overpage shows this grouping.

BUILDING INSPECTION GROUPS			
Inspection groups	Foundation	Preline	Final
Actual inspections	• Excavation/fill • Siting • Piles (subfloor) • Concrete slab • Raft foundation • Masonry block/bondbeam • Tilt-slab • Strip footing • Retaining wall	• Structural framing • Weathertightness (cladding) • Insulation • Pre-wrap • Post-wrap • Cavity batten • Brick veneer	• Post-line (gib nail) • Waterproofing • Weathertightness (cladding) • Fire stopping • Accessible facilities • Means of escape
Note: The actual inspections are not exhaustive; many BCAs may have other inspection requirements and use other names for some inspections.			

PLUMBING AND DRAINAGE INSPECTION GROUPS			
Inspection groups	Foundation	Preline	Final
Actual inspections	• Drainage connections • Under-slab plumbing • Drainlaying	• Stack systems • Wastes • Pre-plumb (water supplies) • Weathertightness (pipe penetration) • Drainlaying	• Final plumbing • Weathertightness (pipe penetrations)
Note: The actual inspections are not exhaustive; many BCAs may have other inspection requirements and use other names for some inspections.			

By grouping inspections into three broad groups – foundation, preline and final – the assessor can choose actual inspections to review evidence of and substantiate the achievement (or not) of the performance indicators associated with inspections. The assessor should agree with the candidate the national competency level (eg, Residential 2) and relevant inspections to undertake and provide evidence to substantiate competence. More complex inspections should be chosen for competency assessment, as these would provide greater clarity on competence. What this process effectively does is reduce the amount of inspections that may need to be assessed and provides greater focus on more important inspections.

Transition

It is envisaged that the bulk of building officials who have already had their competency assessed can be transferred across to the new national levels relatively simply. This is reliant however on the BCA already having a technically robust and accurate competency assessment process and outcome.
To achieve an easy transition the following steps will need to be undertaken.

- **Step one** – compare your existing levels with the new national levels and identify areas of alignment.
- **Step two** – map the outcome of the comparison of your existing BCA building categories against the new national levels using the table below. This provides evidence to IANZ of the transition from your existing system to the new national levels.
- **Step three** – use your existing knowledge of team members to 'map' individuals across to the new national levels noting any endorsements, training requirements or areas of supervision required. Create a new skills matrix to record this outcome (see the templates in the 'Recording outcomes' section of this guidance document).
- **Step four** – during the review of annual competence, identify any changes since the last assessment. This may result in a lowering of the level achieved, no change or an assessment to provide evidence that a new level of competence has been achieved.

COMPLETED EXAMPLE

NATIONAL SYSTEM	BCA's EXISTING SYSTEM
Residential 1	Categories 1.1 and 1.2
Residential 2	Category 2.1
Residential 3	Category 2.2
Commercial 1	Categories 2.3 and 3.1
Commercial 2	Category 3.2
Commercial 3	Categories 3.3 and 3.4

ASSESSMENT PROCESS

Assessment Process

FIVE STEP PROCESS TO USING THE ASSESSMENT SYSTEM

Step 1 – Assessment planning and agreement: Identify the level or levels that are to be assessed (for example, Residential 1–3 inspections only). The assessor should be familiar with the competency specifications, performance indicators and assessor guidance corresponding with the level being assessed. The assessor completes part 1 of the assessment plan and records evidence known to them, such as qualifications, training completed, relevant known experience and so on. The assessor meets with the candidate to discuss the evidence recorded and gains agreement on what further evidence is to be supplied, such as candidate evidence forms completed for particular types of building or inspection work. The assessment plan and timings are agreed between assessor and candidate. The assessor and candidate can also agree to have certain work witnessed (for example, accompanying an inspector) if the candidate or assessor believes that this is the best way to provide evidence of competence.

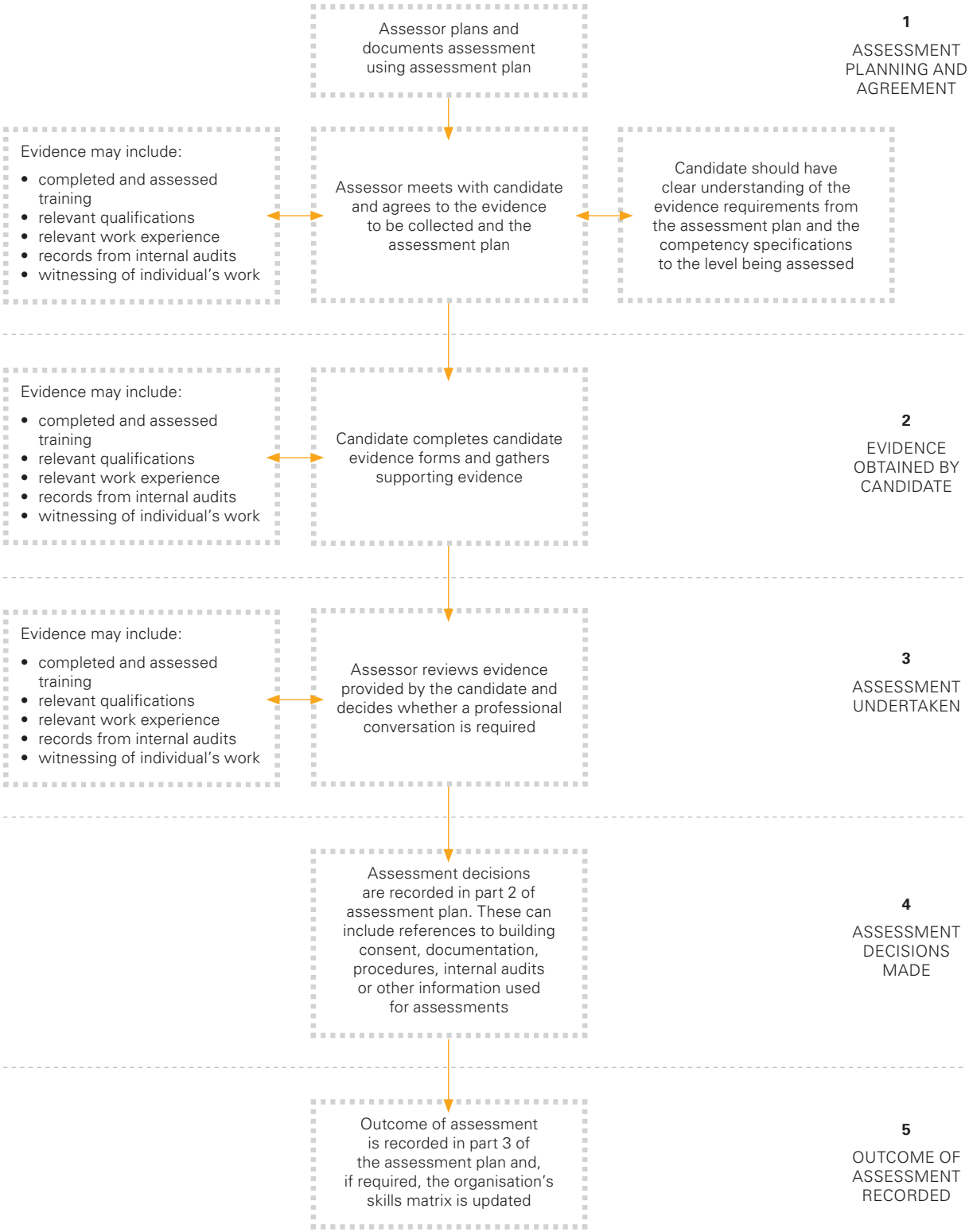
Step 2 – Evidence obtained by candidate: The candidate gathers supporting evidence that they feel demonstrates their competence and aligns with the evidence agreed to be provided in the assessment plan. The candidate prepares candidate evidence forms, if required by the assessment plan. If the candidate believes the best way they can show the assessor evidence of competence is through witnessing work (eg, accompanying an inspector), the candidate should bring this to the assessor's attention and have it recorded in the assessment plan so it can happen. This could simply be carried out while undertaking the BCA's technical audit procedures.

Step 3 – Assessment undertaken: The candidate provides evidence to the assessor. After assessing the evidence provided by the candidate and reviewing the candidate's experience, work history, training history and other internal evidence, a decision needs to be made on whether the competence of the candidate can be confirmed from the evidence provided (if it can, go to step 4). If it cannot, a professional conversation can be organised to further clarify or confirm competence or further evidence required.

Step 4 – Assessment decisions made: The assessor records the reasons for their decisions in part 2 of the assessment plan. Evidence for an assessor's reasons can be referenced here (for example, by referencing a particular form and building consent number). The assessor can also use professional judgement. The reasons for deciding whether a candidate is competent or not will be specific to the individual and the situation. An example of a completed assessment plan, including reasons for decisions, is contained within this guidance document beginning on pages 28, 55, and 59.

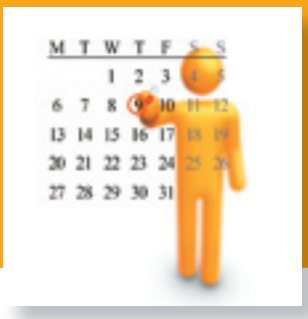
Step 5 – Assessor records outcomes: The assessor records the outcome of the assessment. This can include any limitations (for example, residential 2 inspection only, not including plumbing and drainage). Depending on how the BCA allocates its work, for example through a skills matrix, these systems should also be updated with the outcome of the assessment.

FIVE STEP ASSESSMENT PROCESS



ASSESSMENT PLANNING – STEP 1

Assessment planning – Step 1



ASSESSMENT PLANS

The purpose of this part of the document is to help the assessor identify what existing competencies the candidate has already achieved and what new evidence they need to give to demonstrate competence. The assessment plan also forms part of the competency record and is used to record the outcome of the assessment.

Planning an assessment in this way reduces the amount of new evidence which needs to be gathered, recognises competencies already achieved and ensures the right evidence is provided to demonstrate competency.

Copies of the assessment plan template can be found in appendix 1 and an example of a completed assessment plan for a residential 1 processor have been provided over the following pages.

ACCREDITATION AND MEETING EVIDENTIAL REQUIREMENTS

Regulation 6(b), (c) and (d) requires BCAs to record their decisions, reasons for decisions and the outcome of the decision. The system templates have been designed to meet these requirements and should be used. The evidence used to make a competency decision must be traceable. This can be achieved by cross-referencing the source of the information, for example 'see building consent number 3057 for details'. Alternatively, relevant evidence such as interviews, consent processing notes or inspection records can be copied and added to the competency assessment file.

A range of evidence can be used to demonstrate competency. The table below provides examples of evidence types which may be used.

SOURCE OF EVIDENCE	GUIDANCE NOTES – POSSIBLE EXAMPLES THAT COULD BE USED TO HELP ASSESS COMPETENCY
Self-assessment against competency specification	• Self-assessment by the employee against the competencies to be assessed • Employee recognises when work is outside their ability • Employee recognises when peer review is required • Employee identifies strengths, knowledge and skills gaps • Employee identifies training needs
Work experience and examples of completed work	• Overview of work history and relevant experience in the building industry • Building consent documentation the employee has processed and approved or rejected • Inspections undertaken by the employee, including their inspection records, letters or reports written, notices they have issued, follow-up actions taken • Compliance schedules – review of compliance schedule assessments and identification of inspection, maintenance and reporting procedures • Code compliance certificates issued – checklists completed and any other material supporting the decisions the employee has made (eg, photos) • Other written documentation or reports they have authored (including letters to stakeholders, internal memos, notices to fix, training or published articles)
Written statements or references from peers or technically skilled observers	• This could include statements from individuals with proven technical skills and expertise, such as managers, team leaders, engineers or other professional colleagues who are either internal or external to the organisation. These statements should confirm that they have observed the employee's work directly • Such references or statements should note the dates and time period in question, the capability and professional capacity of the observer, the context of the work in question, and any other relevant information

SOURCE OF EVIDENCE	GUIDANCE NOTES – POSSIBLE EXAMPLES THAT COULD BE USED TO HELP ASSESS COMPETENCY
Direct observation or shadowing of the employee on the job (witnessing)	• Casual daily or assessment-specific monitoring of individual's performance • How the employee performs during site visits, vetting applications, processing building consents, carrying out field inspections, issuing code compliance certificates or notices to fix and performing administrative tasks, etc • How the employee communicates with stakeholders (verbal and written) • How the employee handles any instances of deviations from the approved plans and follows up on outstanding issues • Internal audits and their results
Organisational records	• Previous competency assessments and performance reviews that consider the key competencies of the employee • Training and continuing professional development records • Any compliments or positive feedback received from the stakeholders • Records of any complaints made against the employee in question and the outcomes of any investigations arising from these
Evidence of successful completion of courses that include projects or competency-based assessment	• Technical courses (eg, fire, accessibility, weathertightness compliance) • Building controls courses (eg, BRANZ, BOINZ, DBH) • Induction training • Information technology training and courses • Training in quality assurance systems and auditing Short courses • DBH, BRANZ Ltd, Standards New Zealand or BOINZ seminars and courses • Building consent authority induction or in-house training courses • Manufacturers' or trade demonstrations • In-house training on specific areas such as building terminology, legislation, NZS 3604 • Training in use of the BCA's systems and processes and equipment (eg, computer training, training in use of moisture meter, digital camera, accreditation-related training)
Qualifications that may have relevance to building control	National Diplomas in Building Control Surveying. The following qualifications and courses may also be relevant in supporting a competency assessment. Bachelor Degrees • Architecture • Engineering (mechanical, civil, structural, fire, geotechnical, etc) • Environmental science/health • Building science/building technology • Construction management • Quantity surveying Diplomas and certificates • National Diploma in Building Control Surveying (medium & large buildings) • National Diploma in Building Control Surveying (small buildings) • National diplomas in architectural design, quantity surveying, etc • New Zealand Certificate in Building, New Zealand Certificate in Drafting, New Zealand Certificate in Engineering (these were replaced by the New Zealand Qualifications Authority and registered national diplomas described above) • Construction management (Unitec, WelTec, etc) • Trade, advanced trade in carpentry • National Certificate in Carpentry Factors to consider when assessing the relevance of qualifications and courses • When it was completed • What further training the individual has done to stay current in their area of expertise • Whether the industry and knowledge requirements have changed since the qualification was obtained and, if so, whether the qualification or training is relevant in today's environment • What type of course it was, ensuring that it involved an assessment or test (eg, exam, completion of a project or production of an output)

SOURCE OF EVIDENCE	GUIDANCE NOTES – POSSIBLE EXAMPLES THAT COULD BE USED TO HELP ASSESS COMPETENCY
Registration under Statute	Chartered Professional Engineers of New Zealand Act 2002 • Chartered Professional Engineer Registered Architects Act 2005 • Registered Architect Plumbers, Gasfitters and Drainlayers Act 2006 • Certifying Plumber • Certifying Gasfitter • Licensed Drainlayer Building Act 2004 • Licensed building practitioner
Other material they have produced	• Papers developed and presented at industry workshops, conferences or seminars • Papers developed for training purposes • Checklists or procedures developed • Articles written or published
Professional and industry affiliations	• Voluntary memberships (eg, BOINZ, Registered Master Builders, Certified Builders Association, New Zealand Institute of Registered Building Surveyors) • Industry participation (committee member, officeholder, attending conferences, etc) • Attending conferences or trade shows

NATIONAL COMPETENCY ASSESSMENT SYSTEM

Part 1: Assessment plan

Assessor completes this plan and agrees evidence requirements and dates with candidate.

Personal assessment plan for: *Bill Ding Permit*

Assessment type:
- New candidate ○
- Review of existing employee ○ (Note: If this is a competency review just note what has changed since the last assessment)
- Transition from another BCA system ✓
- Level change ○

Competency level assessed: Residential 2

Assessment includes (tick relevant area/s):

- ○ Plumbing and drainage
- ✓ Building
- ✓ Processing
- ✓ Inspections
- ○ Specialist:.....

Candidate's work experience:

Way Down South District Council
Multi Skilled Building Official, February 2005 – August 2010

Way Up North City Council
Multi Skilled Building Inspector, November 2000 – February 2005

Cowboy Builders Ltd
Leading Hand/Builder 1998 – November 2000

NZ Army
Carpenter, Royal New Zealand Engineers 1993–1998

Candidate's qualifications:

- *National Certificate Carpentry*
- *Trade Certificate Carpentry*
- *Sixth Form Certificate, School Certificate*

Relevant training completed

- *Senior Building Officials' Forum (February 2010)*
- *BOINZ conference 2010*
- *BOINZ residential weathertightness course (December 2009)*
- *G12 and G13 Acceptable Solution Seminar (January 2009)*
- *Weathertightness training BRANZ (June 2008)*
- *Project management course NZ quality College (November 2007)*
- *The Building Act 2004 by Department of Building and Housing (June 2006)*
- *BOINZ conference 2002*
- *BIA Claddings Forum (March 2002)*

NATIONAL COMPETENCY ASSESSMENT SYSTEM		
Evidence required	Comments	Date required
Completed processing sheets/plans/ specifications/internal audit/records etc.	Bill will need to supply two processing records, including completed candidate evidence guides of two residential 2 buildings he has processed. Internal audits of processing and inspection.	14/05/11
Quiz results	N/A	
Training course evaluation	Training evaluation on Middle District Council's policies and procedures.	14/05/11
Copy of qualifications	Already provided to council and contained in Bill's HR file.	N/A
Completed inspection records	Bill will need to supply three inspection records for residential 2, including completed candidate evidence guides for inspections (foundation, preline and final).	14/05/11
Witnessing of work	Witnessing of work will be required for foundation, preline and final inspections.	14/05/11
Other (please specify)	Professional conversation using the candidate evidence guides (completed)	By 14/05/11

Special requirements (list any competency scope limitations):

Bill is not applying for assessment in the plumbing and drainage aspects as Middle District Council BCA has several experts in plumbing and drainage and separate processes assuring compliance (plumbing and drainage experts in processing and inspection).....

.....

Agreement:

Assessor: Ann Gill Grinder..... Date: 14/04/11
Cluster Group Competency Assessment Manager

Candidate: Bill Ding Permit..... Date: 15/04/11
Building Official

CANDIDATE EVIDENCE – STEP 2

Candidate evidence – Step 2

CANDIDATE EVIDENCE FORM

The purpose of the candidate evidence form is to help the candidate record information in a way that is useful to the candidate and assessor. The form contains a series of prompts and questions that the candidate has to answer. For candidates who are less able to write answers, the prompts can help the candidate order their thinking for a professional conversation with the assessor.

The process described in the National BCA Competency Assessment System is a collaborative process between the candidate and the assessor. Previously, competency assessment tended to be a process that was 'done to' a candidate rather than the candidate working with the assessor to establish their competence.

The National BCA Competency Assessment System has provided more focus on the candidate than previous competency assessment systems. It requires them to adopt a more hands-on approach, which requires the candidate to:

- familiarise themselves with the competency specifications and how to meet the performance indicators for each level, applicable to them
- keep personal records of interesting projects, unusual situations, worked examples and their outcomes so that the candidate can use them to support their ongoing competency assessment
- make decisions and agreements with the assessor on what will be supplied for the candidate's assessment of competency
- physically obtain, record and present the evidence of competence to the assessor.

This puts greater responsibility for driving the competency assessment on the candidate, who can sometimes know best what relevant information, documentation and evidence they can use to establish their competence.

The National BCA Competency Assessment System also acknowledges that candidates have differing strengths and weaknesses when it comes to presenting evidence of competence; for example some processing staff tend to be more comfortable at providing written reports/case studies/portfolios of information whereas some inspection staff tend to be more practical and prefer to show and tell (for example, accompanying an inspector on site and having a discussion). By having the candidate driving this they get to make an agreement with the assessor on what will work for them.

These forms should ideally be filled out by the candidate and have attached relevant information that they believe helps them demonstrate competence. If the candidate feels that he or she cannot express themselves well in writing, as discussed above, they should be prepared to have a professional conversation about their agreed building projects on the aspects discussed in this form. To help the candidate have discussions, they can use photos of work undertaken, plans and specifications, or procedures and inspection records to talk to or, as discussed above, the assessor can also accompany a candidate while they undertake their work. Assessor observation is considered a very valuable method of helping establish a candidate's competency.

Evidence form templates have been developed for processing and inspections for residential and commercial work.

Simplified candidate guidance is provided in Appendix 6 for an assessor to give to the candidate. The candidate guidance includes information on how to compile and complete the candidate evidence forms.

NATIONAL COMPETENCY ASSESSMENT SYSTEM: CANDIDATE EVIDENCE FORM – PROCESSING
To be completed by the candidate.

Candidate name: Mr Richter Scale Date: 22.04.2010

Level of competency being assessed: Commercial 2

Agreed building consent number/address of building being used for assessment:

BC 123/2010

8 Seismic Close

Brief description of building project being used for assessment:

The Building

The building consists of a single storey portal-framed structure that is founded on a reinforced concrete foundation. Lower level external walls consist of pre-cast concrete panels to a height of 2.5 metres with long-run profiled metal sheet cladding fixed to steel framing above. Office areas are clad with fibre cement-based sheet on a drained cavity. The roof is clad with long-run metal sheet. The roof design incorporates a small building-plant area, which will house the building's air-conditioning system. Internally the building is divided into two large open retail spaces, a warehouse with goods stacked in proprietary racking systems (higher than 3 metres) and a drive-through timber yard area. Two small mezzanine areas are provided for staff offices, bathrooms, lunch and meeting rooms.

Building particulars

Building use: Commercial, crowd activity (CM) – crowd medium
Occupancy: 250 people
Highest fire hazard category (FHC): 4
Square metres: 950 M2

Specified systems

The applicant listed the following specified systems on the form 2 building consent application:

- Automatic sprinkler system
- Emergency warning system
- Emergency lighting system
- Mechanical ventilation (air-conditioning)
- Backflow prevention
- Means of escape (final exits, fire separations and signage)

Describe in your own words what you consider is important in relation to the following aspects of your building project.

1. Site/land that building is being built on:

The site includes the following special features.

a. GIS mapping indicates the site is located within a specific design wind zone. The design engineer confirmed this view by calculating the site's wind speed to be 56 m/sec (designated specific engineered design (SED)). Structural design, loading calculations and material selection have all taken the sites relative wind loading into consideration.
b. The geotechnical report has identified the site as generally having good ultimate soil bearing capacity; however a small portion of poor quality soil has been identified at the southeastern end of the site. This localised area of poor ground requires specific strengthening attention to ensure the building platform can support the load-path from the super structure; consequently a condition has been added to the building consent under section 90 of the Building Act 2004 for third party verification (PS4 monitoring) of this building work as we do not have the specific in-house competency to undertake such monitoring or soil testing. The design engineer responsible for observation work is well known to the BCA and is a practising CPEng.
c. The site is rural and is in zone 2 as defined in NZS 3604:1999, indicating building elements are unlikely to be affected by accelerated atmospheric corrosion from wind blown salt laden air and the like.
d. The site has no easements, encumbrances, consent notices etc listed on the certificate of title. So no specific limitations/design modifications are necessary in this regard. Council records also indicate that the site does not have any land related issues such as hazards, contamination or heritage status etc.
e. A surveyor has been involved in defining the allotment's boundaries, so boundary clearances etc should be relatively easy to establish on site.

NATIONAL COMPETENCY ASSESSMENT SYSTEM: CANDIDATE EVIDENCE FORM – PROCESSING
To be completed by the candidate.

2. Foundations:

Basis for design: AS/NZS 1170:2002, B1/VM1 and B1/VM4

The building's foundation is fully engineered and will be monitored at specified times during construction (some specific soil testing is required to confirm design assumptions made regarding poor soil quality at the southeastern end of the site).

The slab's DPM is well detailed on plan and within the specification and meets the E2 performance requirements.

Perimeter pre-cast concrete panels are to be welded to base plates that are to be tied into the slab.

Other aspects of the foundation design were considered standard for this type of building work eg concrete strength, ground clearances, shrinkage control joist, steel size, steel cover and lap, DPM etc.

Some services are to be run within the slab, but this is covered in item 6 below.

3. Structure of the building from foundation/slab up:

Basis for design: AS/NZS 1170:2002, B1/VM1

The building's structural frame/skeleton consists of steel portals and steel horizontal girts that are clad with long-run metal sheet cladding. Pre-cast panels extend 2.5 metres above floor level around the perimeter of the slab.

Plans and specifications for the project indicate the building structure (roof) is to support the weight of some large air-conditioning units. The air-conditioning units do not feature in any of the design engineer's sketches and it is unclear if she is aware of the additional super-imposed load associated with these units (a phone call was made to the engineer to confirm that the design had accounted for the additional loading imposed by these units). The engineer confirms these units were not included on the plan version she was provided with. As a result the roof loading is recalculated and the units are moved to a more suitable location (amended plans were requested and provided). Fixing details were also requested for securing the units through the roof cladding in order to satisfy clause E2.

4. Building envelope (claddings):

Basis for design: E2/VM1 and E2/AS1 modified and used as an alternative solution for Building Code compliance.

The building is outside the scope and limitations of E2/AS1; however the designer has chosen to use some design principles and figures within the Acceptable Solution to prove compliance with clause E2. Given that the site is located in an SED wind zone and the designer has provided junction details that were unconventional it was decided to get the design peer-reviewed by an independent expert. The design was peer-reviewed by a recognised weathertightness expert who confirms that the building meets clause E.2.3.2.
The designer also provides in-service history of a similar building design that is subject to the equivalent wind pressure.
A combination of in-service history and expert opinion confirms the design meets clause E2 of the NZBC on reasonable grounds.

5. Fire safety:

Basis for design: C/AS1

Active systems included:	Basis for compliance
Automatic sprinkler system	NZS 4541:2007
Emergency warning system	F7/AS1 NZS 4512:2003
Emergency lighting system	F6/AS1 AS/NZS 2293:1995
Passive systems included:	
Means of escape (final exits, fire separations and signage)	C/AS1

The building is located at least 20 metres away from any boundaries and no other buildings are in close proximity, so spread of fire beyond the building is unlikely.

The applicant provided a fire report that used the Compliance Documents Acceptable Solution C/AS1 to illustrate compliance with the NZBC. In line with our BCA's policies and procedures our lead technical person for the C-Docs (John de-blaze) peer-reviewed the fire report and associated plans. The internal review confirmed my findings and agreed the documents met the requirements of C/AS1 and the NZBC.

NATIONAL COMPETENCY ASSESSMENT SYSTEM: CANDIDATE EVIDENCE FORM – PROCESSING
To be completed by the candidate.

6. Services:

General
All services penetrations were checked to have adequate protection (eg, fire collars, structural support, not compromising sound rated walls etc).

P&D
Drainage and plumbing services for clauses (E1, G1, G2, G10, G12 and G13) were assessed by the BCA's technical person (S Bend).
A small issue was identified regarding pipe falls for sanitary services in the slab (pipe falls within the slab were not adequately detailed on plan). S Bend contacted the designer and the appropriate falls were entered on the relevant drawings.
Other P and D matters were found to comply with NZBC.

Prescribed gas and electrical work Covered by an energy work certificate (providing a copy of these certificates is a condition of the building consent).

Specified systems
In accordance with section 7 of the Building Act the designer provided a list of the specified systems to be installed in the building and the proposed procedures for inspection and maintenance of those systems. A schematic plan was also appended to this information to help with on site inspection and system identification purposes.

Third-party commissioning certificates are required for the installation of the alarm and sprinkler systems (providing this verification/certification were made on condition of the issued building consent).

7. Interior finishes:

Spread of fire
Fire resistance ratings and surface finishes were assessed and peer-reviewed as part of the fire safety assessment. These items were found to meet the NZBC.

Slip resistance
The designer elected to use materials that met the slip resistance requirements detailed in D1/AS1 (eg, friction coefficient of not less than 0.4).

Moisture
Wet area floor and wall services were well detailed within the design documents and generally used E3/AS1 as means of compliance, albeit with a few minor alternative solutions (the design of a level access accessible shower was deemed beyond the scope of the acceptable solution as it used a sheet membrane on floor and wall surfaces; however, the design was found to be well detailed and deemed to meet the requirements of E3).

Describe in your own words the areas of the building that you consider a risk:

- Foundation – the geotechnical report identified areas where poor soil quality was present.
- Structural – building plant located on roof (air-conditioning units)
- Building envelope – potential for water ingress and alternative solution offered as a means of compliance
- Services – penetrations through fire rated walls, specified systems – correct design standards and inspection and maintenance requirements. Pipe services in slab did identify falls/gradient.

Why?:

- Foundation – potential for localised building failure due to poor ground conditions.
- Structural – potential for building failure due to an unsupported point-load that was not addressed during the design phase.
- Building envelope alternative solution offered by applicant was viewed as potential area of weathertightness risk (peer-review requested to support proposed design).
- Services – penetrations through fire walls create the potential to compromise fire resistance.

NATIONAL COMPETENCY ASSESSMENT SYSTEM: CANDIDATE EVIDENCE FORM – PROCESSING
To be completed by the candidate.

Were there any alternative solutions used in this building? If so, please describe in your own words what they were and how you assessed them:

E2: Cladding system. Use of expert opinion and in-service history of a similar product or building method confirmed compliance with NZBC.

E3: Accessible shower. Design outside the scope of E3/AS1, but the designer included supporting evidence and testing of product/method used. The shower was assessed against E3's requirements and was deemed to meet the Building Code.

In your own words, please describe any legislative requirements you needed to consider when processing the building consent application:

- The Building Act 2004, in particular
  - Sections 17 – all work must comply with NZBC, 19 – different methods of meeting the NZBC (eg, Compliance Documents, product certs, determination etc), 46-51 – processing a building consent, statutory timeframes, NZFS requirements (is defined as relevant building in section 21A of Fire Services Act 1975). 100-105 – compliance schedule considerations as specified systems are being installed as part of the proposed building work. 118 – access and facilities for people with disabilities as the building falls within Schedule 2 of the Building Act 2004
- The Building Regulations, in particular
  - The Building Regulations 1992 (Schedule 1 the Building Code)
  - Building (Forms) Regulations 2004

List what further evidence you have either attached or referred to in this form.
Note: You do not need to duplicate documents that are stored elsewhere in the BCA's system, but these do need to be referenced. Documents that you do attach or reference need to be relevant.

Building Consent BC 123/2010

- Building consent BC 123/2010 plans and specifications, particularly:
  - Records of conversation with engineer about extra roof loading
  - Requests for further information
  - Fire report
  - Alternative solution cladding (details A04, A06,A020 and pages 57–68 of the specifications)
  - Accessible shower details (page A05 and specification pages 72–73)
- Alternative solution processing sheet (cladding and accessible shower)
- Producer statement acceptance records

NATIONAL COMPETENCY ASSESSMENT: CANDIDATE EVIDENCE FORM – INSPECTION
To be completed by the candidate.

Candidate name: Mr Richter Scale Date: 17.05.2010

Level of competency being assessed: Commercial 2

Agreed building consent number/address of building being assessed:

BC 123/2010
8 Seismic Close

What type of work is the inspection relating to (tick relevant work)?

- [x] Building
- [ ] Plumbing and drainage

What type of inspection is being assessed (tick relevant work)?

- [ ] Foundation
- [ ] Preline
- [x] Final

Brief description of building project being used for assessment:

The building consists of a single-storey, portal-framed structure that is founded on a reinforced concrete foundation. Lower level external walls consist of pre-cast concrete panels to a height of 2.5 metres with long-run profiled metal sheet cladding fixed to steel framing above. Office areas are clad with fibre cement-based sheet on a drained cavity. The roof is clad with long-run metal sheet. The roof design incorporates a small building-plant area, which will house the building's air-conditioning system. Internally the building is divided into two large open retail spaces, a warehouse with goods stacked in proprietary racking systems (higher than 3 metres) and a drive-through timber yard area. Two small mezzanine areas are provided for staff offices, bathrooms, lunch and meeting rooms.

Building particulars

Building use: Commercial, crowd activity (CM) – crowd medium
Occupancy: 250 people
Highest fire hazard category (FHC): 4
Square meterage: 950 m2

Brief description of inspection being undertaken for assessment:

Final inspection for commercial level 2 type building work.

Objective: ensuring the building work has been carried out in accordance with building consent – plans and specifications and any amendments, minor variations undertaken during the project and meets the NZBC requirements.

A review of the consent file was undertaken before visiting the site to familiarise myself with the status of the project and identify if there were any outstanding compliance matters.

The project manager responsible for managing the development asked that he be present during the inspection. This was agreed to as it was felt it would be beneficial should any queries arise about technical matters.

A separate final inspection covering P&D compliance is to be undertaken.

Describe in your own words what you consider is important in relation to the following relevant aspects of your building inspection:

1. Site/land that building is being built on in relation to the inspection:

- As the site is located in a specific design wind zone (subject to higher than normal wind pressures) and has some unconventional cladding design details have been used. I will place particular emphasis on inspecting these aspects as it is important to ensure the building's external envelope has been completed in accordance with plans and specifications.
- The site's geotechnical report identified specific requirements for certain areas of the site. As a consequence the project manager has agreed to provide copies of the engineer's inspection notes and a (PS4) to confirm the building work undertaken meets the Building Code (means of compliance: Verification Methods cited in the Compliance Document for B1).

NATIONAL COMPETENCY ASSESSMENT: CANDIDATE EVIDENCE FORM – INSPECTION
To be completed by the candidate.

2. Structure and durability in relation to the inspection:

- As noted above the engineer's inspection notes and (PS4) are to be provided during the inspection to confirm compliance in relation to structural matters conditioned on the building consent.
- A visual inspection of completed work was undertaken to ensure visible fixings, ties, bracing etc are in place and are compliant. This was not done to redress items already inspected during preline/postline inspections. It was simply undertaken as general observation of the building's overall structural compliance.
- I inspected the building for any evidence of structural movement, settlement, subsidence, warping, compression etc that would raise concern and may require additional investigation. No such issues were evident.
- A visual inspection of external/internal materials and coatings was undertaken to ensure these items met the plans and specifications and the Building Code, in particular clauses B1, E2 and B2.

3. Building envelope (claddings) in relation to the inspection:

- I ensured the external envelope had been completed in accordance with building consent (plans and specs). As the building work includes alternative solutions used as a means of compliance, more emphasis was placed on the inspection of unconventional details, such as junction flashings between different cladding types. As an additional precaution, internal moisture level readings were taken on internal lined wall surfaces to provide additional support for the end compliance decision.
- I visually checked exposed flashings, membranes, cavity vents and drainage and kept an eye out for any un-consented attachments to the building envelope.

4. Fire safety aspects of the building in relation to the inspection:

- A full walk-through inspection was undertaken to ensure the nominated means of escape was compliant and penetrations to fire walls were sealed and made good.
- Life-safety systems (specified systems) were confirmed to be operational. Third-party verification/certification and commissioning information was provided to confirm the fire alarm and sprinkler had been installed in accordance with specified NZ standards (eg, NZS 4512:2003 for the alarm system).

5. Services and associated systems in relation to the inspection:

- P&D inspection is to be undertaken by a BCO with the appropriate P&D competencies (not part of this inspection).
- The final inspection revealed that the following specified systems had not been identified during the processing stage of the building consent. The owner had failed to identify the following specified systems within their application for building consent – smoke control system for removing smoke and a CO detection device for early warning of gas leakage. Both specified systems were located within the car park area of the building (refer to attached photos 1 and 2 for details of these specified systems). Further information was requested regarding the installation, performance, inspection and procedural requirements of these specified systems. Note: The final inspection was failed as a result of this finding.
- The project manager was informed of the areas of non-compliance (non-consented building work) and was provided with an inspection report that outlined what was required to resolve these matters (amended plans and specifications, and performance, maintenance and reporting procedures for each specified system). The project manager acknowledged the importance of getting these matters resolved and forwarded the information required, which in turn was added to the compliance schedule.

6. Interior finishes in relation to the inspection:

- Inspection of these elements was undertaken during the inspection of means of escape (in item 4). This included a visual check of floor, wall and ceiling finishes and fixtures and fittings to ensure they comply with the plans and in particular the fire report.

NATIONAL COMPETENCY ASSESSMENT: CANDIDATE EVIDENCE FORM – INSPECTION
To be completed by the candidate.

Describe in your own words the areas of the building what you consider a risk area in relation to your inspection:

- Foundation – the geotechnical report identified areas where poor soil quality where present (potential risk of structural failure).
- Structural – building plant located on roof (air-condition units creating a superimposed/point-load.)
- Building envelope – potential for water ingress as an alternative solution had been offered as a means of compliance
- Services – penetrations through fire rated walls, specified systems – correct design standards and inspection and maintenance requirements. Pipe services in slab did identify fall/pipe gradients.
- Specified systems installed, but not identified within the consented documents. Amended plans and specifications required prior to issuing the CCC.

Why?:

- Foundation – potential for localised building failure due to poor ground conditions.
- Structural – super-imposed load to roof could create issues if not correctly designed and/or installed.
- Building envelope – the alternative solution offered by the applicant was viewed as potential area of weathertightness risk. Unconventional design means checking of building envelope is very thorough.
- Services – penetrations through fire walls create the potential to compromise fire resistance.
- Specified systems that are not picked up during a building consent will not end up on the buildings compliance schedule and will consequently not get inspected and maintained over the life of the building.

In your own words please describe any legislative requirements you needed to consider when inspecting this building work:

The Building Act 2004, in particular:

- Section 17 all building work must comply with the Building Code.
- Sections 100–105 – compliance schedule considerations as specified systems are being installed as part of the proposed building work
- In relation to BCA accreditation regulations the requirement to follow the inspections procedures of the BCA.
- The Building Regulations, in particular
- The Building Regulations 1992 (Schedule 1 the Building Code)
- Building (Forms) Regulations 2004
- Building (Accreditation of Building Consent Authorities) Regulations 2006.

List what further evidence you have either attached or referred to in this form.
Note: You do not need to duplicate documents that are stored elsewhere in the BCA's system, but these do need to be referenced. Documents that you do attach or reference need to be relevant.

Building Consent BC 123/2010

- Building consent BC 123/2010 plans and specifications, particularly:
  - Compliance schedule
  - Fire report
  - Completed final inspection checklist and inspection notes
- Attached photos and notes on missing specified systems

NATIONAL COMPETENCY ASSESSMENT SYSTEM:
Example of photographic evidence provided by candidate for discussion during assessment process.

1. Photo of smoke control system in the car park area. Not listed as a specified system on the building consent and/or picked up during processing of the building consent.	
2. Photo of CO (carbon monoxide gas detector) early warning device. Not listed as a specified system on the building consent and/or picked up during processing of the building consent.	

NATIONAL COMPETENCY ASSESSMENT SYSTEM: CANDIDATE EVIDENCE FORM – PROCESSING
To be completed by the candidate.

Candidate name: Bill Ding Permit Date: 03.02.2010

Level of competency being assessed: Residential 2

Agreed building consent number/address of building being used for assessment:

10 Smith St, BC 001010

Brief description of building project being used for assessment:

This building is a single storey, monopitched (flat roof less than 10 degrees), dwelling. The structure of the building is constructed generally in accordance with NZS 3604:1999. The risk matrix score for this building is 7. The cladding consists of weatherboard (Linea®) and flat sheet (Axon®) fixed over a cavity and is generally in accordance with E2/AS1 and longrun corrugate roofing. However, the Linea® weatherboards are technically an alternative solution to E2/AS1.

Describe in your own words what you consider is important in relation to the following aspects of your building project:

1. Site/land that building is being built on:

The site has been subdivided and had a geotechnical report and specific requirements for certain areas of the site. The geotechnical report requires the western foundation to be deeper due to it being located in close proximity to a sloping bank and the reduced compaction of the ground in this area.

The council's GIS register notes that this site is located in a very high wind zone however the designer has provided a wind zone assessment to NZS 3604: 1999. I have focused on this as it is a site constraint that may affect the structure. I agree that the site is in a high wind zone.

Another aspect is that councils GIS register notes that this site is within the sea spray zone, however, the designer has provided evidence that the most western side of the site is actually just outside the sea spray zone by a few metres. I agree that the site is outside the sea spray zone as stated in NZS 3604:1999.

2. Foundations:

As discussed above, due to one side of the building being located in close proximity to a sloping bank and the reduced compaction of the ground in this area a specific design aspect of the foundation was required. This specific design aspect is simply a deepening of the foundation using mass concrete as described in the engineer's design.

The non-specific design foundation is to NZS 3604:1999 and consists of 2x D12 with D10 starters at 600 mm c/s. The foundation requires 20 mpa concrete (note: not in a sea spray zone). Standard 200 series concrete blocks and header blocks are proposed, laid to the required floor level (no minimum floor level is required except the standard requirement of E1/AS1 to be above the crown in the road).

The floor slab is supported by compacted hardfill within the outer perimeter formed by the concrete blocks in max 150mm layers. A vapour barrier consisting of 0.25 polythene with taped joints. A perimeter bar (D12) is shown tied into the starters through the blocks bent over allowing 665 mesh to be placed over the starters.

3. Structure of the building from foundation/slab up:

The building structure is generally in accordance with NZS 3604: 1999 and includes some aspects of specific design, such as the garage lintel, trusses and lounge rafters. The timber frames consist of 100 mm x 50 mm MSG 8 at 600 mm c/s treated to H1.2 for the 2.4m high ceilings. Where the ceiling is more than 2.4m, 150 mm x 50 mm placed at spacings ranging from 400 mm to 600mm.

Particular review of the lounge rafters were assessed due to their length. These rafters were designed using the ganglam charts. A parallel girder truss supports the span over the lounge and the loads are transferred to the external foundation through double studs. A roof manufacture's buildable design is included in the plans and specifications (from Mitec).

4. Building envelope (claddings):

The cladding for this building is Linea® weatherboard and Axon® sheet. These products are fibre (cellulose) cement based claddings and are installed over a 20 mm drained cavity all round. The roof is considered a flat roof for the purposes of E2/AS1 as they fall below 10 degrees for both areas of roof.

NATIONAL COMPETENCY ASSESSMENT SYSTEM: CANDIDATE EVIDENCE FORM – PROCESSING
To be completed by the candidate.

4. Building envelope (claddings):

The Axon® cladding is vertically joined over a 50 mm inseal strip and the cladding itself has a rebated edge to provide approximately 10 mm coverage (lap). The Linea® weatherboards are tongue and grooved at the ends and are joined by placing a bead of silicone in the groove and inserting the tongue end from another length of weatherboard. The corners of the weatherboard are fitted with corner soakers and the internal corners are butt jointed into either a purpose-made internal corner flashing or butt jointed against the Axon® sheet. All internal and external corners are back-flashed.

All openings are flashed with a proprietary aluminium flashing and all openings in the building paper (air and moisture barrier) are taped and flashed with a flexible waterproof membrane.

Details of all cladding junctions, openings and flashing requirements have been provided and are deemed to meet the requirements of E2.

5. Passive fire protection systems:

No passive fire protection systems were involved with this building; however, an active system is included that consists of a hardwired smoke detection and alarm system (early warning device) and was deemed to comply with Clause F7.

6. Services:

Drainage is 100 mm PVC installed to AS/NZS 3500 to an existing connection to the council main sewer. Stormwater is disposed of on site as no public stormwater connection is provided. Plumbing is mains pressure polybute system installed to G12/AS1 and includes a mains pressure electric 180L HWC. Cooking is gas supplied via a 9kg bottle located outside and piped to cooker. Electricity, phone and gas (not yet supplied to the area) are supplied to the site.

7. Interior finishes:

The interior is lined with Gib® plaster board. Aqualine Gib® is detailed to wet areas. The floor is carpeted in the living areas and vinyl in the dinning room and kitchen and both bathrooms (wet areas). The vinyl in the wet areas is coved to comply with E3/AS1. Surfaces to the kitchen are easily cleanable and impervious.

Describe in your own words the areas of the building that you consider a risk:

1. Foundation located in the western side.
2. Cladding junctions between different types of cladding and flashings to openings.
3. Flashing detail between the negative eave and cladding.
4. Ensuring that enough fall is provided from the farthest fixture to the connection to the council sewer.

Why?:

1. I consider the foundation located in the western side of the site a risk because of the reduced stability of the ground due to the proximity of the slope to the foundation. If this is not correct severe settlement could occur and this would be a failure of B1 structure.
2. I consider the cladding junctions between different types of claddings and flashings to openings a risk area as in the past these areas have been known to leak.
3. I consider the flashing detail between the negative eave and cladding a risk as this is a commonly forgotten detail and the area is prone to leaking in high winds.
4. I consider that the fall provided from the farthest fixture to the connection to the council sewer is close to the minimum fall allowed (1:60) although it shows that it complies I would be noting this and asking the drainage inspector to pay particular attention on site.

Were there any alternative solutions used in this building? If so please describe in your own words what they were and how you assessed them:

Yes, as stated above the Linea® weatherboards were technically an alternative solution due to them being a fibre cement product rather than a timber weatherboard. I justified this by comparing them to the E2/AS1 solution for weatherboards that are similar in construction technique and dimension. I then justified the durability of the product (particularly the fibre cement aspect) through the product's technical literature and fibre cement's historic use.

The consent also specifies proprietary acrylic shower cubicles of a kind that are commonly installed in dwellings. These types of showers are alternative solutions as they do not strictly comply with E3/AS1. I have accepted these shower cubicles as they meet the relevant performance requirements of E3 Internal Moisture and also have appropriate historic performance.

NATIONAL COMPETENCY ASSESSMENT SYSTEM: CANDIDATE EVIDENCE FORM – PROCESSING
To be completed by the candidate.

In your own words please describe any legislative requirements you needed to consider when processing/inspecting this building consent/application:

The legislative requirements assessed with this building consent application include:

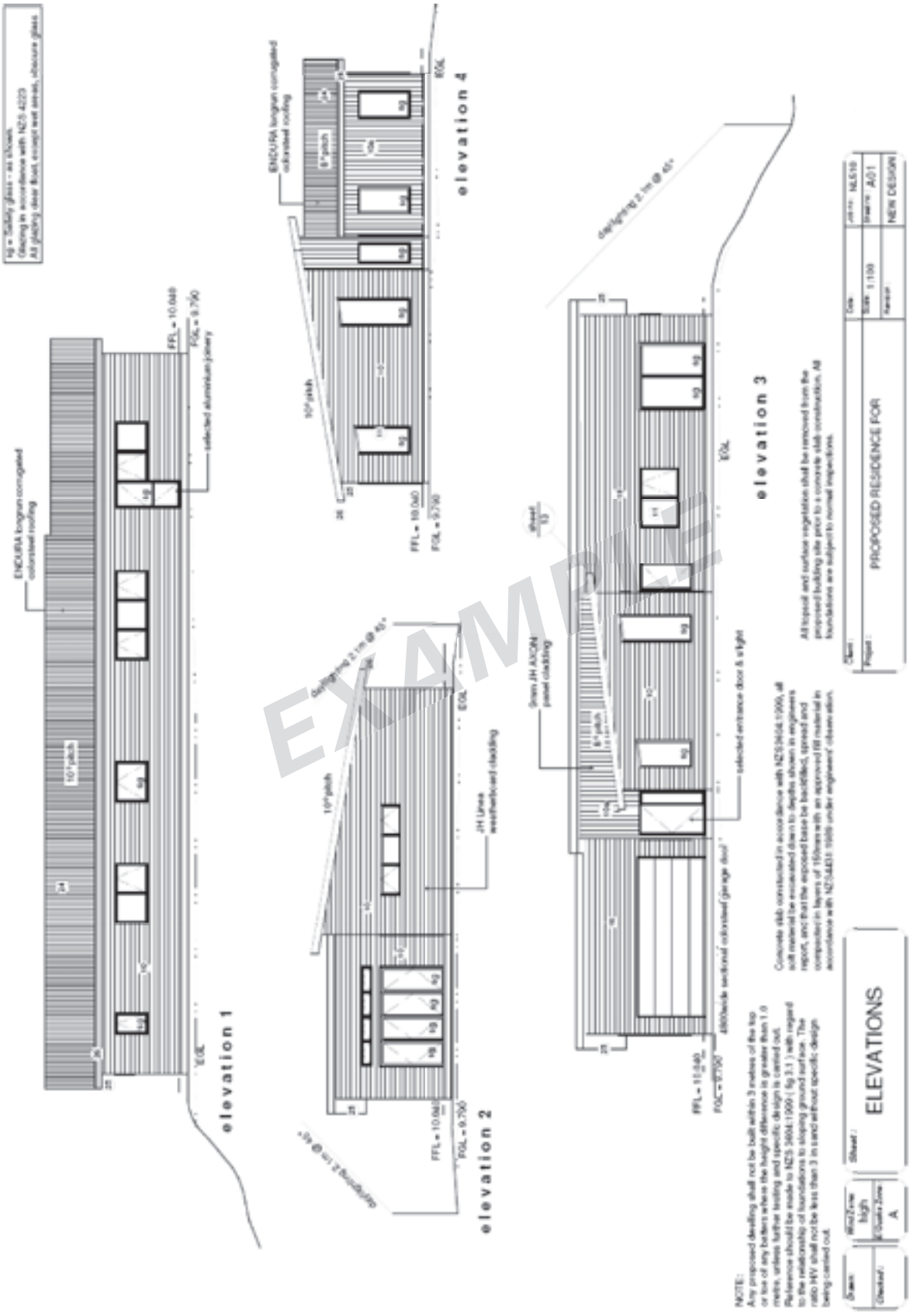
- *Section 17 all building work must comply with the Building Code*
- *Section 19 how compliance with the Building Code is established*
- *Requirement for building consents 40–43*
- *Section 45 how to apply for a building consent (for the purposes of vetting an application)*
- *Section 48 processing application for a building consent (20 day timeframe, suspending the 20 day timeframe)*
- *Section 49 grant of building consent (being satisfied on reasonable grounds that compliance with the Building Code will be achieved if built in accordance with the plans and specifications that were with the application)*
- *Section 51 issue of building consent*
- *Section 90 inspections by BCAs*
- *In relation to BCA accreditation regulations the requirement to follow the procedures of the BCA.*

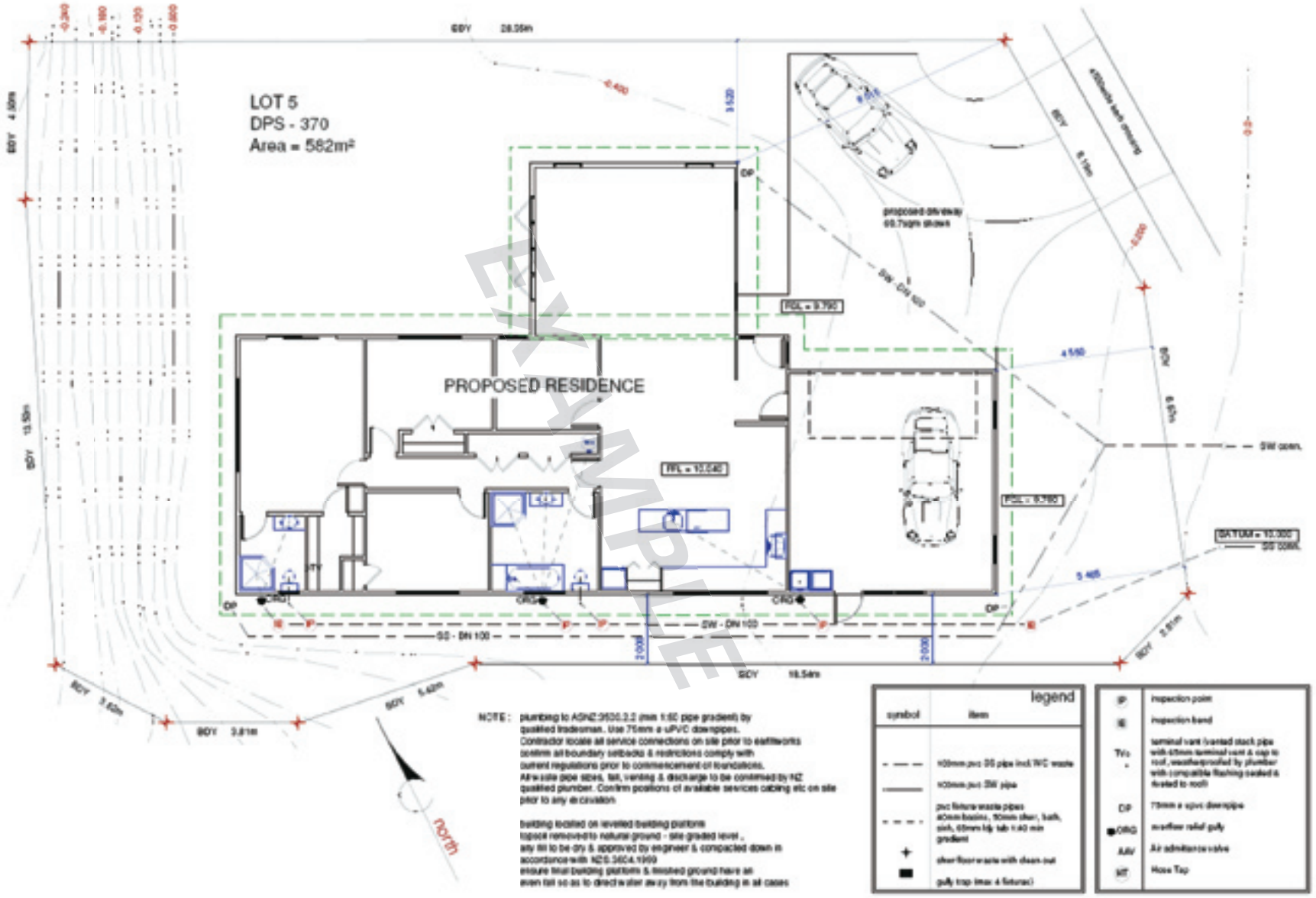
List what further evidence you have either attached or referred to in this form.
Note: You do not need to duplicate documents that are stored elsewhere in the BCAs system, but these do need to be referenced. Documents that you do attach or reference need to be relevant.

BC 001010

- *Elevations*
- *Site and Drainage*
- *Foundations*
- *Floor Plan*

During competency assessment discussions candidates can utilise examples of consent documents they have inspected to talk to the compliance issues in them.





Drawn:	Wind Zone: high	Sheet: SITE & DRAINAGE PLAN	
Checked:	Earthquake Zone: A		

Client:		Date:	Job no.: NL510
Project: PROPOSED RESIDENCE FOR		Scale: 1:100	Sheet no: A02
		Revision:	NEW DESIGN

NOTE:
ensure granular hardfill is evenly compacted down in max. 100mm layers to form a solid base with bearing capacity greater than 300kPa. Min. 5mm - 25mm max. sand blinding to cover hardfill to ensure the vapour barrier is protected from any granular protrusions. 450x450x300 deep conc. pads maybe required under glider point load areas - 300wide x200deep slab thickenings maybe required under load bearing walls - see final roof truss layout plan to confirm location conc. floor to comply with NZS.3109, surface tolerances, & NZS.3114, maximum deviations of 3mm

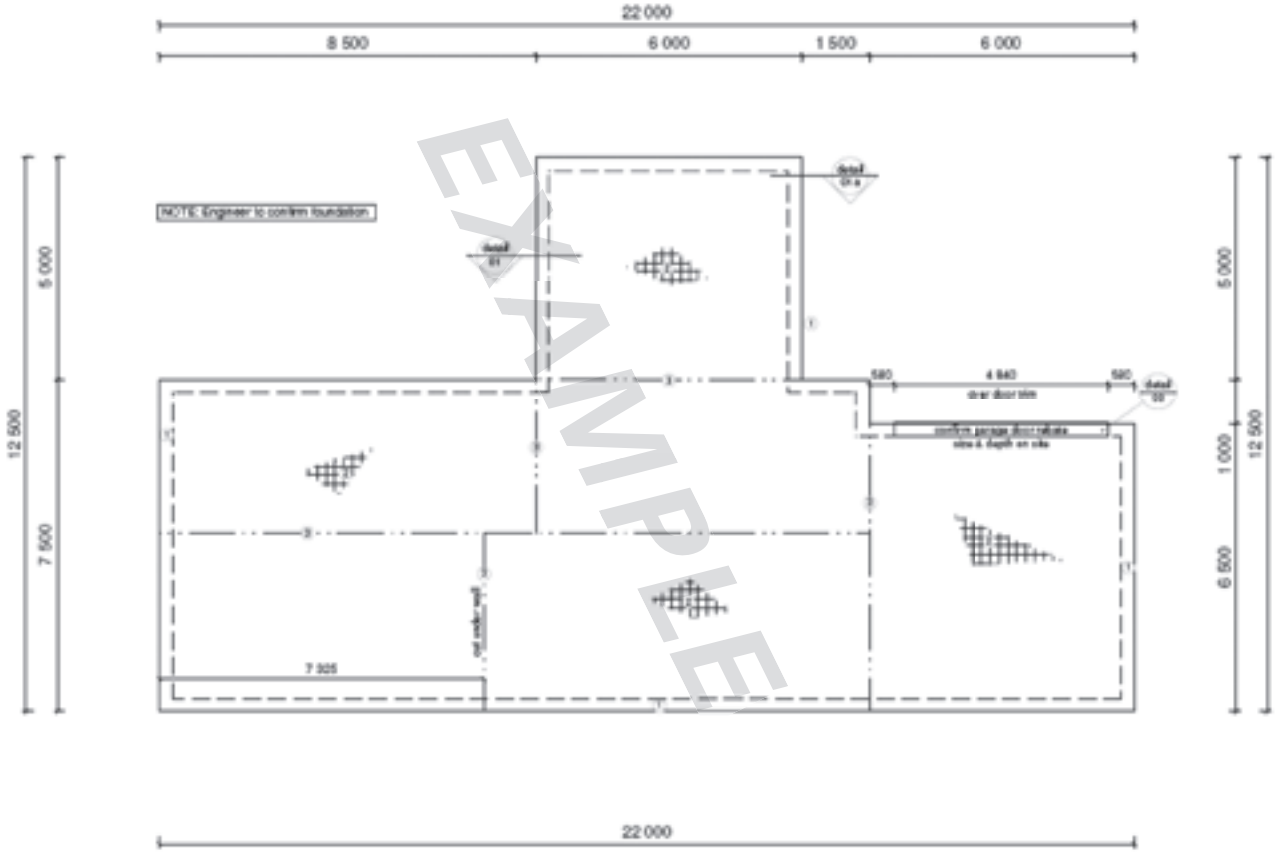
Any proposed dwelling shall not be built within 3 metres of the top or toe of any battiers where the height difference is greater than 1.0 metre, unless further testing and specific design is carried out. Reference should be made to NZS 3604:1999 (fig 3.1) with regard to the relationship of foundations to sloping ground surface. The ratio H:V shall not be less than 3 in sand without specific design being carried out.

Concrete slab constructed in accordance with NZS3604:1999, all soft material be excavated down to depths shown in engineers report, and that the exposed base be backfilled, spread and compacted in layers of 150mm with an approved fill material in accordance with NZS4431:1989 under engineers' observation.

All topsoil and surface vegetation shall be removed from the proposed building site prior to a concrete slab construction. All foundations are subject to normal inspections.

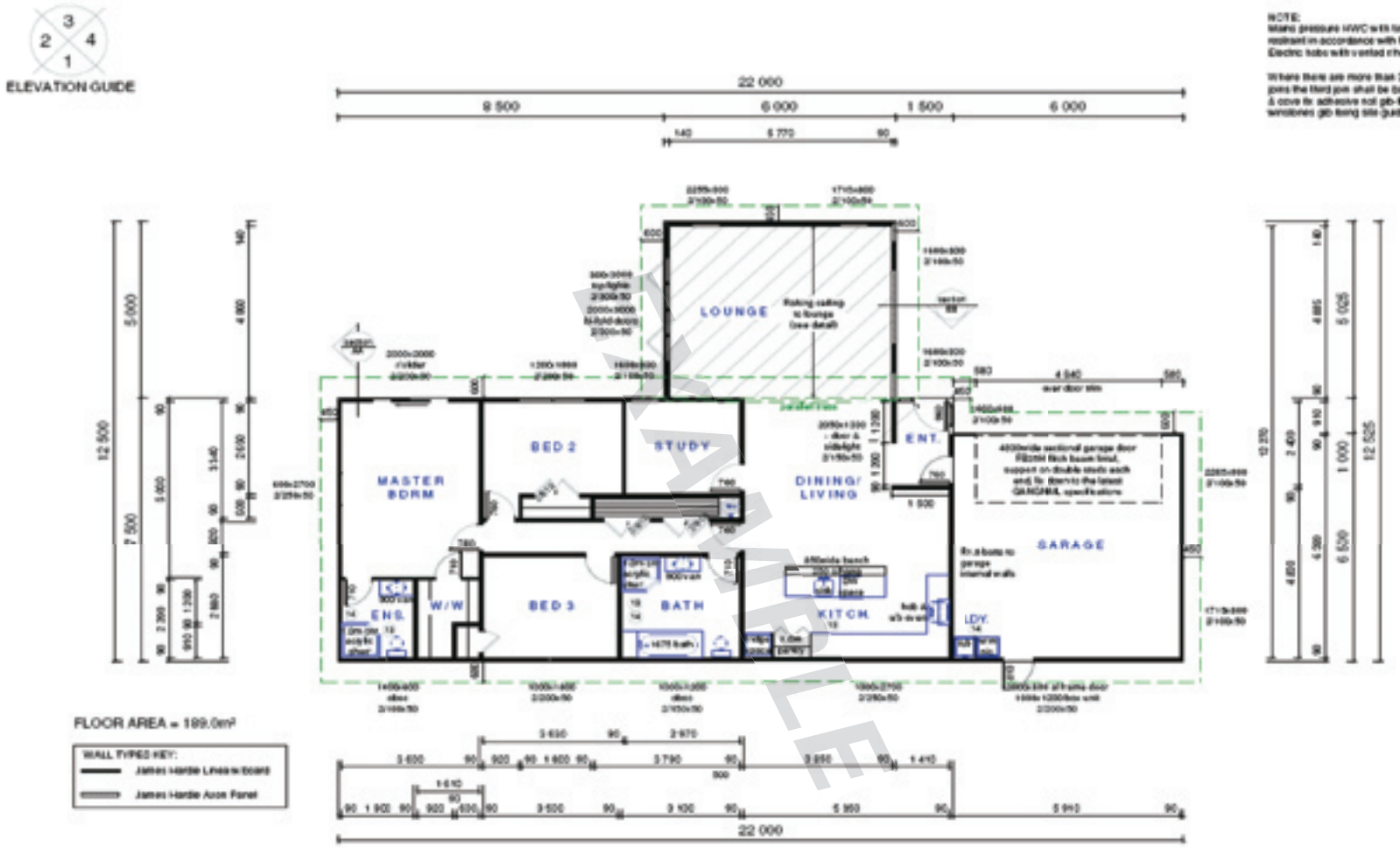
NZS3604:1999 -
Section 7: floors 7.5.0.6.4

The bay dimensions formed by either instruction or shrinkage control joints shall be limited to a maximum ratio of length:width of 2:1.



Drawn:	Wind Zone: high	Sheet: FOUNDATION
Checked:	E-Quake Zone: A	

Client:	Date:	Job no.: NL510
Project: PROPOSED RESIDENCE FOR	Scale: 1:100	Sheet no: A03
	Revision:	NEW DESIGN



Drawn:	Wind Zone: high	Sheet: FLOOR PLAN
Checked:	Earthquake Zone: A	

Client:	Date:	Job no: 38,510
Project: PROPOSED RESIDENCE FOR	Scale: 1:100	Sheet no: A04
	Revision:	NEW DESIGN

NATIONAL COMPETENCY ASSESSMENT: CANDIDATE EVIDENCE FORM – INSPECTION

To be completed by the candidate.

Candidate name: Bill Ding Permit Date: 08.05.2010

Level of competency being assessed: Residential 2

Agreed building consent number/address of building being assessed:

10 Smith St, BC 001010

What type of work is the inspection relating to (tick relevant work)?

- [x] Building
- [ ] Plumbing and drainage

What type of inspection is being assessed (tick relevant work)?

- [x] Foundation
- [ ] Preline
- [ ] Final

Brief description of building project being used for assessment:

This building is a single storey, monopitched (flat roof less than 10 degrees), dwelling. The structure of the building is constructed generally in accordance with NZS 3604:1999 including a standard foundation in most areas and concrete block work and header block with a 100mm concrete slab. The cladding consists of weatherboard (Linea®) and flat sheet (Axon®) fixed over a cavity and is generally in accordance with E2/AS1 and longrun corrugate roofing.

Brief description of inspection being undertaken for assessment:

This inspection is of the slab, prior to pouring concrete.

Describe in your own words what you consider is important in relation to the following relevant aspects of your building inspection:

1. Site/land that building is being built on in relation to the inspection:

   The site has a geotechnical report and specific requirements for certain areas of the site. The geotechnical report requires the western foundation to be deeper due to it being located in close proximity to a sloping bank and the reduced compaction of the ground in this area.

   The site is close to a beach (seaspray zone) however the designer has provided evidence that the most western side of the site is actually just out side the sea spray zone (approximately 512 m). Therefore the required strength of exposed concrete, containing reinforcing steel is 20 mpa.

2. Structure and durability in relation to the inspection:

   Header blocks appeared to have been laid to the required floor level (from datum on plans). The builder on site confirmed that he had set the level to the datum. I considered that no further floor level confirmation was required as there is not a minimum floor level requirement for this site (or in fact the entire area). The standard requirement of E1/AS1 to be above the crown in the road has easily been achieved.

   The floor slab is supported by compacted hardfill within the outer perimeter formed by the concrete blocks in max 150 mm layers. A vapour barrier consisting of 0.25 polythene with taped joints has been installed. A D12 perimeter bar has been tied into the starters around the perimeter of the slab. 665 mesh has been tied over the starters and packed up with plastic chairs. Laps for the D12 perimeter bar are a minimum of 32 x the diameter (most Laps 500-600 mm) and the mesh sheets have been lapped 1x square. Supplementary steel has been placed in internal corners where no shrinkage control joints have been placed.

   In relation to durability aspects of this inspection, the steel placement meets the cover requirements of NZS 3604:1999, the vapour barrier (0.25 polythene) has been placed on sand-blinding to prevent puncture. The concrete strength as discussed above will be 20 mpa.

NATIONAL COMPETENCY ASSESSMENT: CANDIDATE EVIDENCE FORM – INSPECTION
To be completed by the candidate.

3. Building envelope (claddings) in relation to the inspection:

Claddings are yet to be installed; however, in relation to E1 as discussed above the floor level is above the crown of the road. I also discussed with the builder the requirement to lower the ground level to the south-eastern corner of the building where the original ground is almost level with the floor. The builder informed me that this will be taken care of before installing the cladding.

4. Fire safety aspects of the building in relation to the inspection:

Not required to be assessed at this inspection.

5. Services and associated systems in relation to the inspection:

Plumbing services such as PVC waste pipes have been installed under the slab, the vapour barrier has either been taped to pipe extensions (for vanities or the like) or the slab has been boxed out to provide for an easy-clean waste (for showers). The waste pipes are sleeved through the concrete block foundation with denzo tape. In the north-eastern and south-eastern corners of the building two cells of the concrete blockwork (not containing reinforcing) have been filled up with sand to accommodate the installation of the main water supply and the main power and telephone supply.

6. Interior finishes in relation to the inspection:

Not required to be assessed during this inspection.

Describe in your own words the areas of the building you consider a risk in relation to your inspection:

1. *Ensuring the laps of steel are correct.*
2. *Checking levels of the slab, especially if floor level restrictions exist.*
3. *Making sure that the vapour barrier is installed correctly (as it's very difficult to fix after pouring).*

Why?:

1. *I consider that the laps in steel are important as it affects the structural integrity of the building and the significance and probability of structural failure could increase.*
2. *Checking the levels of slabs is important because there could be significant issues relating to flooding or HIRB (height in relation to boundary) issues that are affected if the floor level is not correct.*
3. *I consider the vapour barrier if not installed correctly could cause a major problem down the track (it would not become evident for a considerable time and would cause excessive moisture within the building) – a failure in this area would be very expensive to fix.*

In your own words please describe any legislative requirements you needed to consider when inspecting this building work:

The legislative requirements that were associated with this inspection include:

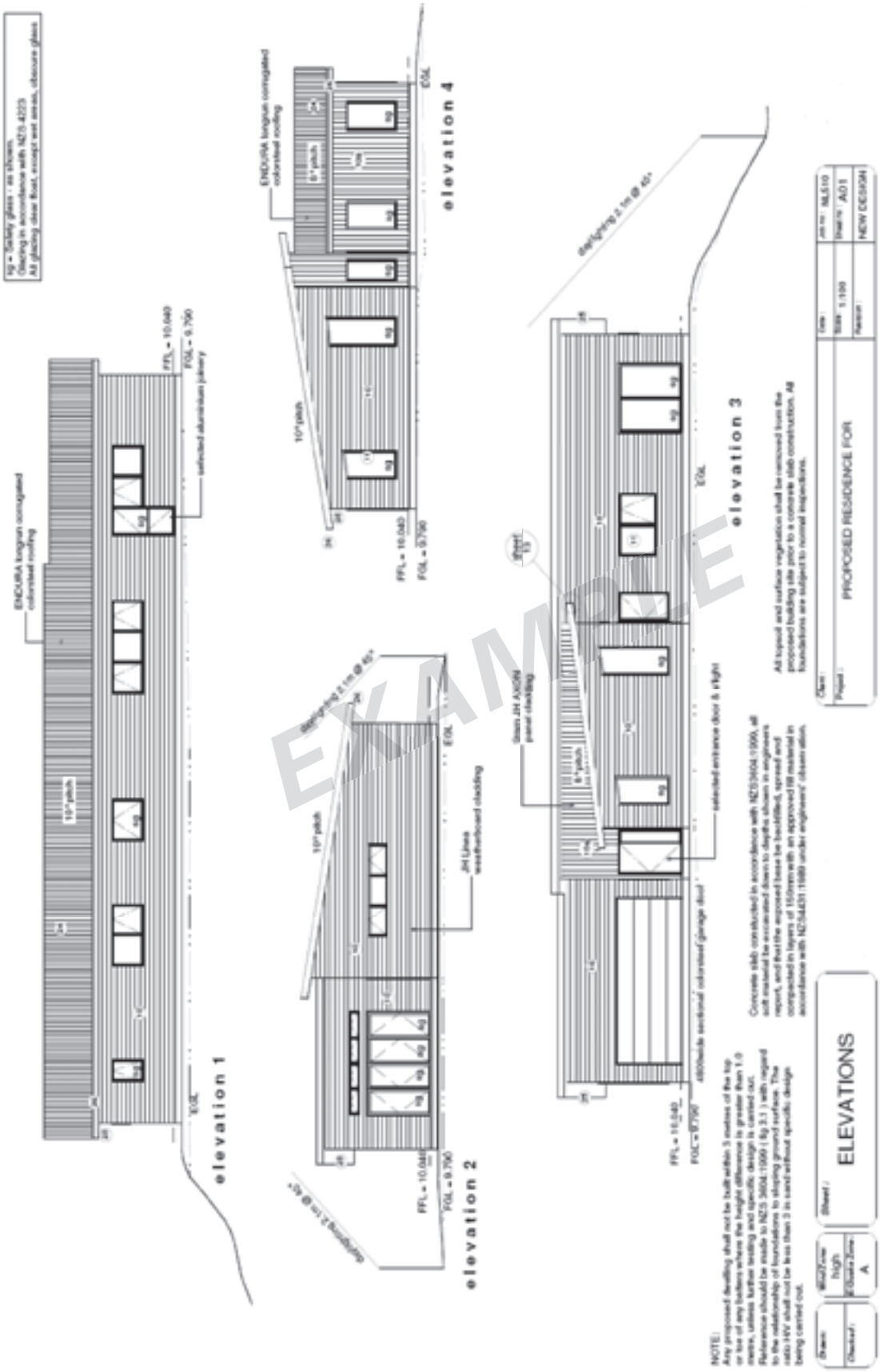
- *Section 17 all building work must comply with the Building Code.*
- *In relation to BCA accreditation regulations the requirement to follow the inspections procedures of the BCA.*
- *Section 94 matters for consideration for issuing a CCC, particularly confirming that building work complies with the building consent.*

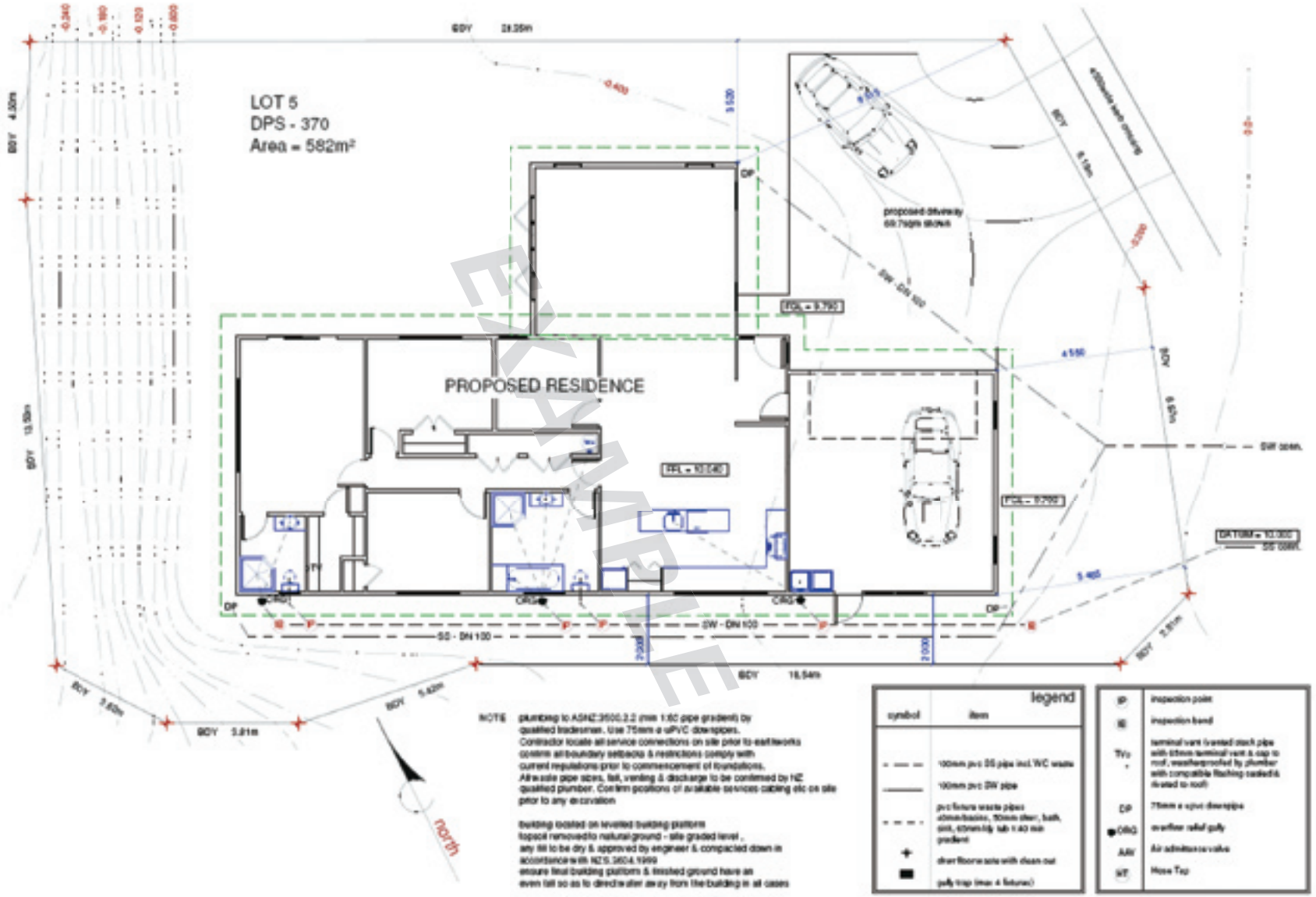
List what further evidence you have either attached or referred to in this form.
Note: You do not need to duplicate documents that are stored elsewhere in the BCA's system, but these do need to be referenced. Documents that you do attach or reference need to be relevant.

Building Consent BC 001010

- *Building consent BC 001010 plans and specifications, particularly:*
  - *Elevations and site plan*
  - *Foundation*
  - *Floor plan*
- *Attached photo and notes on inspection.*

During competency assessment discussions candidates can utilise examples of consent documents they have processed to talk to the compliance issues in them.





NOTE plumbing to AS/NZ 3500.2.2 (min 1:60 pipe gradient) by qualified tradesman. Use 75mm ø uPVC downpipes.
Contractor locate all service connections on site prior to earthworks
confirm all boundary setbacks & restrictions comply with current regulations prior to commencement of foundations.
All waste pipe sizes, fall, venting & discharge to be confirmed by NZ qualified plumber. Confirm positions of available services cabling etc on site prior to any excavation

building located on leveled building platform
topsoil removed to natural ground - site graded level ,
any fill to be dry & approved by engineer & compacted down in accordance with NZS 3604:1999
ensure final building platform & finished ground have an even fall so as to direct water away from the building in all cases

legend

symbol	item
- - -	100mm pvc DS pipe incl WC waste
———	100mm pvc SW pipe
- - -	pvc fixture waste pipes 40mm basins, 50mm shwr, bath, sink, 65mm tub 1:40 min gradient
+	drain floor waste with drain cut
■	gully trap (max 4 fixtures)

IP	inspection point
IB	inspection bend
TV	terminal vent (vented stack pipe with 50mm terminal vent & cap to roof, weatherproofed by plumber with compatible flashing sealed & riveted to roof)
DP	75mm ø upvc downpipe
ORG	overflow relief gully
AAV	Air admittance valve
HT	Hose Tap

Drawn:
Checked:
Wind Zone: high
Earthquake Zone: A
Sheet: SITE & DRAINAGE PLAN

Client:
Project: PROPOSED RESIDENCE FOR
Date:
Scale: 1:100
Revision:
Job No: NLS10
Sheet No: A02
NEW DESIGN

NOTE:
ensure granular hardfill is evenly compacted down in max. 100mm layers to form a solid base with bearing capacity greater than 300kPa. Min. 5mm - 25mm max. sand blinding to cover hardfill to ensure the vapour barrier is protected from any granular protrusions. 450x450x300 deep conc. pads maybe required under girder point load areas - 300wide x200deep slab thickenings maybe required under load bearing walls - see final roof truss layout plan to confirm location conc. floor to comply with NZS 3109, surface tolerances, & NZS 3114, maximum deviations of 3mm

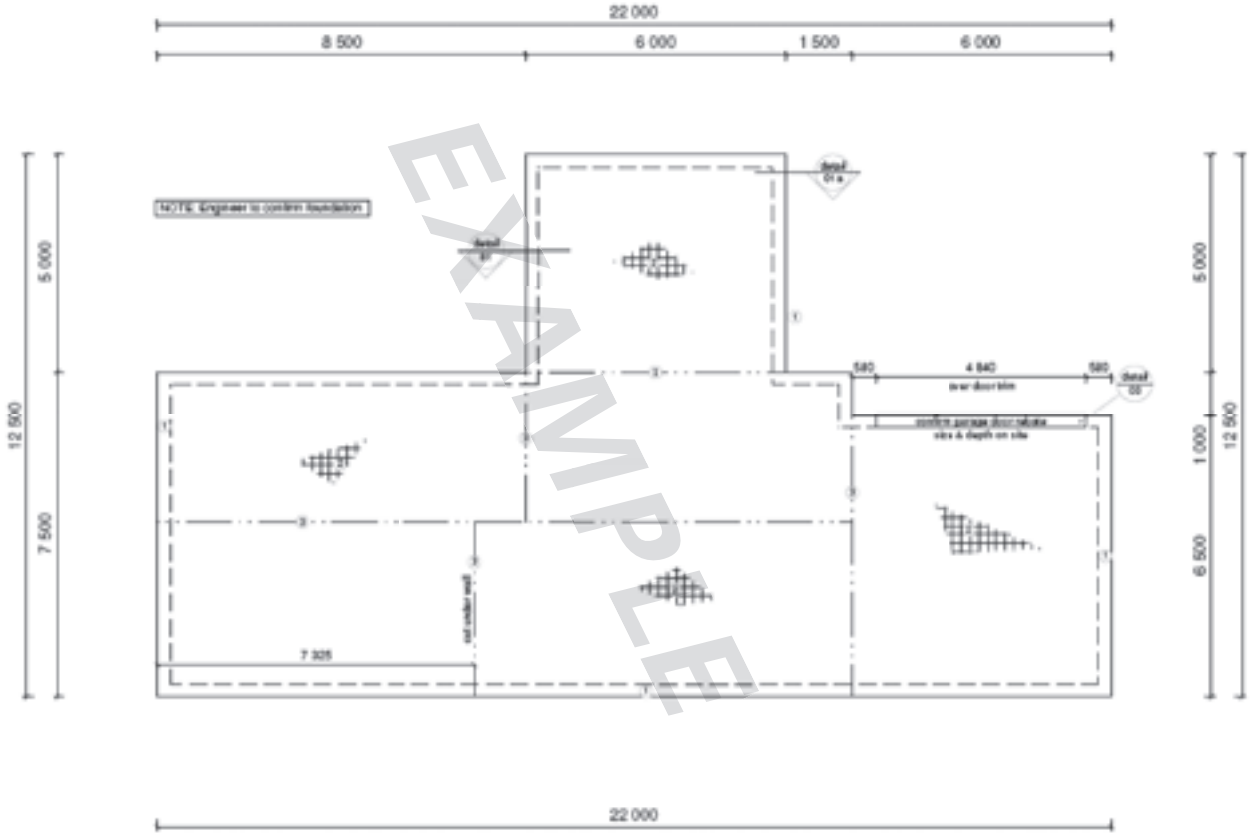
Any proposed dwelling shall not be built within 3 metres of the top or toe of any batters where the height difference is greater than 1.0 metre, unless further testing and specific design is carried out. Reference should be made to NZS 3604:1999 (fig 3.1) with regard to the relationship of foundations to sloping ground surface. The ratio H:V shall not be less than 3 in sand without specific design being carried out.

Concrete slab constructed in accordance with NZS3604:1999, all soft material be excavated down to depths shown in engineers report, and that the exposed base be backfilled, spread and compacted in layers of 150mm with an approved fill material in accordance with NZS4431:1989 under engineers' observation.

All topsoil and surface vegetation shall be removed from the proposed building site prior to a concrete slab construction. All foundations are subject to normal inspections.

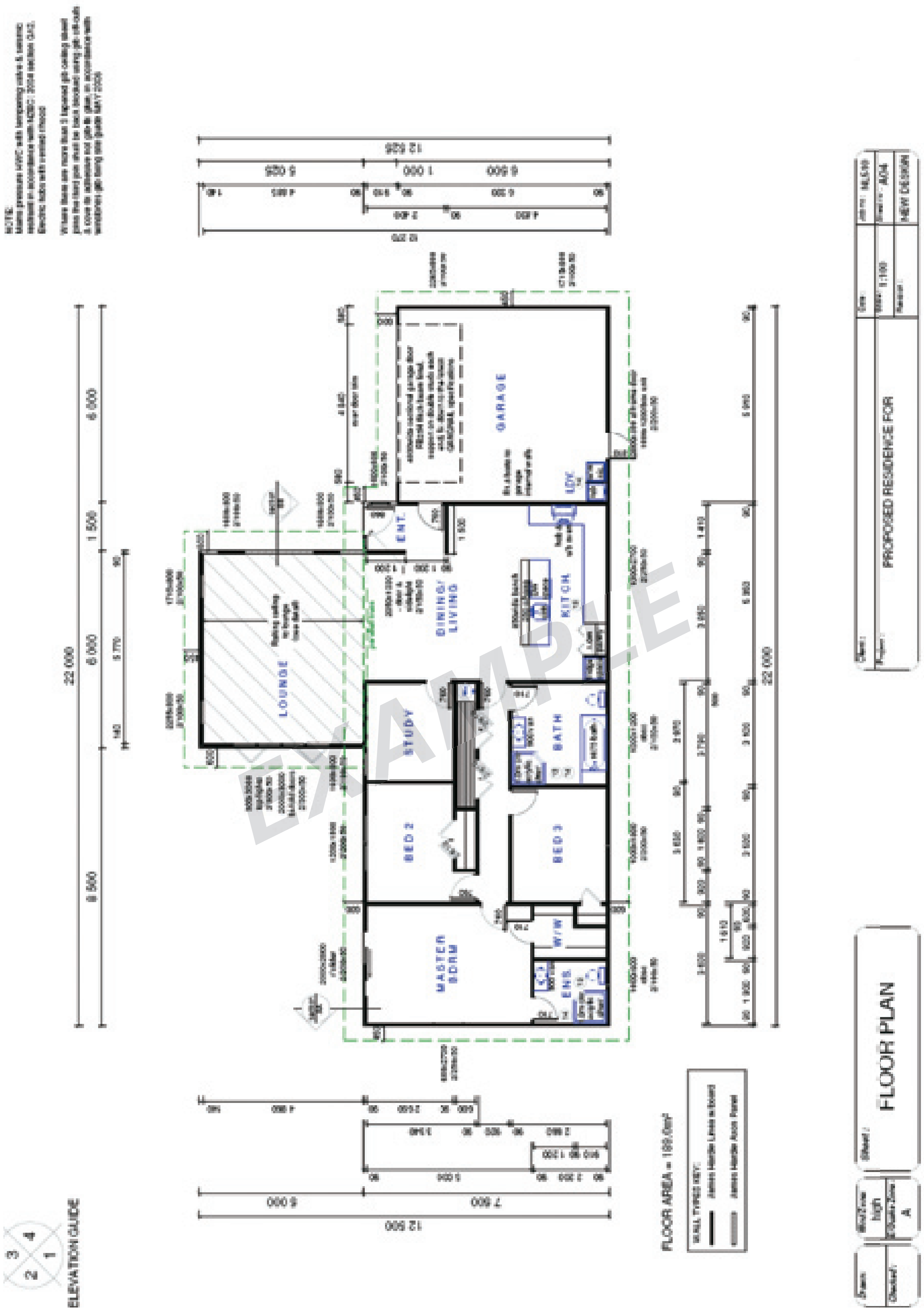
NZS3604:1999 -
Section 7: Items 7.5.2.6.4

The bay dimensions formed by either instruction or skimmage control joints shall be limited to a maximum ratio of length:width of 2:1.

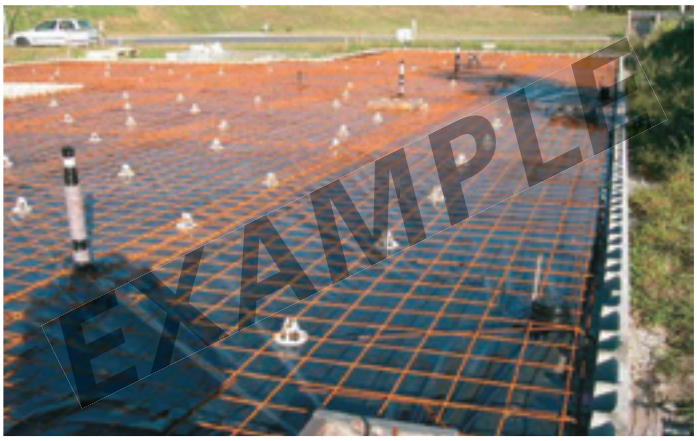


Drawn:	Wind Zone: high	Sheet: FOUNDATION
Checked:	EQuake Zone: A	

Client:	Date:	Job no: NL510
Project: PROPOSED RESIDENCE FOR	Scale: 1:100	Sheet no: A03
	Revision:	NEW DESIGN


EXAMPLE
FLOOR PLAN
PROPOSED RESIDENCE FOR
GARAGE
LOUNGE
DINING/ LIVING
KITCH
ENT
STUDY
BATH
BED 2
BED 3
MASTER BDRM
W/W
ENS
LDY
ELEVATION GUIDE
22 000
12 500
12 625
NEW DESIGN
A04

NATIONAL COMPETENCY ASSESSMENT SYSTEM:
Example of photographic evidence provided by candidate for discussion during assessment process

View of the slab looking to the north-east. Note the fully wrapped and taped pipe penetrations through the vapour barrier.	

ASSESSMENT AND DECISION – STEPS 3 AND 4

Assessment and decision – Steps 3 and 4

ASSESSMENT OF EVIDENCE – STEP 3

Once the candidate has provided the assessor with the agreed evidence, the assessor needs to carefully review the evidence provided.

After assessing the evidence provided by the candidate and reviewing the candidate's experience, work history, training history and other internal evidence, a decision needs to be made on whether the competence of the candidate can be confirmed from the evidence provided (if it can go to step 4). If it cannot, a professional conversation should be organised to further clarify or confirm competence or further evidence can be requested.

Evidence is simply information and examples that establish what the candidate knows or can do. Competency assessments need to be based on good evidence. Objective sources of information should be used, but invariably there will be some level of subjectivity (eg, references often contain personal opinions). The important things are that the competency decision is as objective as possible, that it can be justified, is fair and non-biased, and that it can be supported by sound evidence.

Where the assessor does not have the required level of technical expertise in a specialist area to assess a candidate's evidence the assessor should refer this to an expert in that particular area. For example an expert on commercial plumbing and drainage aspects may be called upon to examine a candidate's plumbing and drainage evidence and provide advice to the assessor.

The reasons for deciding whether a candidate is competent or not yet competent will be specific to each individual and the situation.

ASSESSMENT DECISIONS MADE – STEP 4

Once a decision on competence is made, the assessor records the reasons for their decisions in part 2 of the assessment plan. Evidence for an assessor's reasons can be referenced here (for example, by referencing a particular form and building consent number(s)). The assessor can also use professional judgement.

PART 2: REASONS FOR DECISIONS		
Regulation	Performance indicator	Performance indicators were met by:
Regulation 10(3)(a): Understanding the philosophies and principles of building design and construction.	1. Comprehends and has satisfactory knowledge of sections 3, 4 and 5 of the Building Act 2004. 2. Comprehends and has satisfactory knowledge of design and construction techniques and construction sequencing for this type of building work.	*Bill's completed candidate evidence forms for BC 001010 and BC 002219 along with interview discussions provided sufficient evidence that he has a good overall understanding of design and construction techniques as they relate to this type of construction. Bill has undertaken specific training in the Building Act 2004, which has further developed his understanding and knowledge in relation to Parts 1 and 2 of the Building Act 2004.* *For the reasons listed above I am satisfied that Bill understands the performance indicators.*

PART 2: REASONS FOR DECISIONS		
Regulation 10(3)(b): Understanding and knowledge of building products and methods.	3. Comprehends and has satisfactory knowledge of proprietary systems and building products for this type of building work. 4. Demonstrates the ability to research, analyse and assess building methods and products associated with this type of building work.	*Bill has worked for two councils and completed specific training on construction methodology. He has had extensive experience in the building sector and is a trade qualified carpenter. Bill is currently studying towards the National Diploma in Building Control Surveying (small Buildings) and has completed unit standards 24163 demonstrated knowledge of building construction methods, material and systems; as well as 9617 demonstrated knowledge of construction methods for small buildings.* *As Bill has substantial work experience actually doing the work (as a carpenter) and processing and inspecting work previously, I am satisfied that Bill meets these performance indicators required under this regulation.* *In his short time with Middle District Council Bill has demonstrated that he is capable of identifying, researching and making good technical compliance decisions on innovative building methods (refer to BC00987 and BC00114 for Bill's assessment alternative solutions and related processing notes).*
Regulation 10(3)(c): Knowledge and skill in applying the Act, the Building Code, and any other applicable regulations under the Act.	5. Comprehends and can apply knowledge of the application of the Act. 6. Comprehends and can apply knowledge of the roles and responsibilities of a BCA and TA. 7. Comprehends and can apply knowledge of the linkage and interface between the Resource Management Act 1991 and the Building Act 2004.	*Bill has undertaken specific training on this subject matter and was well versed during our discussions regarding the Building Act 2004, the Building Code and associated Building Regulations. Bill was able to identify the different roles that TAs and BCAs perform under the Building Act 2004.* *As Bill has substantial experience in processing and inspecting building work and has completed unit standards 22698 – Demonstrated knowledge of building control legislation and 24161 – Building Act Processes of the National Diploma in Building Control Surveying (small Buildings), I consider Bill to have more than adequate skill and knowledge in these areas of building control.* *Also refer to the completed candidate evidence forms for (processing and inspection) completed for 10 Smith St, BC 001010 where Bill has identified and accurately quoted relevant building control legislation applicable to this consent.* *I am satisfied that Bill meets and can apply these performance indicators in his everyday work as a building official.*

PART 2: REASONS FOR DECISIONS		
Regulation 10(3)(d)(i): Ability to process applications for building consent.	8. Process building consent applications (plans and specifications) to establish compliance with the New Zealand Building Code for this type of building work (building related processing only). 9. Process building consent applications (plans and specifications) to establish compliance with the New Zealand Building Code for this type of building work (plumbing and drainage related processing only).	The building consents sighted as part of this assessment were found to be processed in accordance with the provisions of the Building Act 2004. Please refer to candidate evidence form (processing) completed for 10 Smith St, BC 001010 and BC 02219 19 Browns Road and associated processing notes for further evidence. Bill was also able to accurately discuss the building consent process and the BCA's procedures in relation to processing, granting and issuing a building consent application. I am further satisfied that Bill understands these performance indicators and has the knowledge required to meet the performance indicators listed under this regulation. Note: Bill is not applying for the plumbing and drainage aspect of residential 2.
Regulation 10(3)(d)(ii) Ability to inspect building work.	10. Inspect building work relating to foundation type inspections to establish whether compliance with the New Zealand Building Code (building only) has been achieved for this level. 11. Inspect building work relating to preline type inspections to establish whether compliance with the New Zealand Building Code (building only) has been achieved for this level. 12. Inspect building work relating to final type inspections to establish whether compliance with the New Zealand Building Code (building only) has been achieved for this level. 13. Inspect building work to establish whether compliance with the New Zealand Building Code (plumbing and drainage related inspections only) has been established for this level. 14. Inspect building work to establish whether compliance with the New Zealand Building Code (Plumbing and drainage related inspections only) has been established for this level.	I am satisfied that Bill meets the performance indicators (for foundation, preline and final inspections) as he has previously completed various types of inspections at this level , which have been audited both on process and technical ability (refer to audit reports AR2354, AR1648, AR3889 and AR3906). Bill was also observed whilst undertaking a preline and final inspection for RES 2 type building work. Both inspections were undertaken competently and in accordance with BCA's policies and procedures. Bill's inspection records were found to be clear, legible and provided sound reasoning for his assessment of building compliance and the decisions made. Please refer to the candidate evidence form completed for BC 02219 19 Brown Road for additional inspection evidence. Note: Bill is not applying for the plumbing and drainage aspect of residential 2.
Regulation 10(3)(d)(iii): Ability to certify building work.	15. Can issue certification (building consent or a code compliance certificate).	Bill was able to verbally describe the process for granting and issuing building consents and outlined the BCA's process for issuing a CCC. Bill provided completed CCC documentation for 10 Smith St, BC 0010/10 and 23 Bush Drive BC 0234/10. Both examples were found to have been issued in accordance with Building Act's requirements. I have also witnessed Bill successfully reviewing a building consent application prior to issuing a building consent. As Bill has substantial documented work experience in certifying building work I am further satisfied that Bill meets the performance indicators.

PART 2: REASONS FOR DECISIONS		
Regulation 10(3)(e): Ability to communicate with internal and external people.	16. Communicates with internal and external people. 17. Can use phone, email, internet and fax. 18. Demonstrates good active listening, questioning and assertiveness skills in dealing with day-to-day tasks and responsibilities.	Bill was observed to communicate well with internal and external staff and other Council clients. Bill's letters, RFIs and written communication were found to be of a very high standard. He was able to articulate his views clearly during our discussions and when sending out RFIs to applicants, he was found to not only explain why information was required, but consistently tied the request for information back to the relevant Building Code clause. Bill's communication skills were particularly evident in his candidate evidence forms for (processing and inspection) and within the associated consent correspondence. I am satisfied that Bill meets the performance indicators required here.
Regulation 10(3)(f): Ability to comply with the building consent authority's policies, procedures and systems.	19. Observes the building consent authority's policies, procedures and systems for this type of building work.	I have reviewed Bill's training records on Middle District Council's policies, procedures and systems. He has successfully completed the BCA's initial training and the follow-up session, as is a requirement for all technical staff (refer to Bill's personal training file for details of this training). Bill has also been supervised when undertaking inspections and peer-reviewed on many occasions. The outcome of the audits undertaken has not identified any significant technical or procedural issues (refer to inspection audit and processing peer review on Bill's personal training file). Bill has utilised the Councils' continuous improvement system on two occasions this year where he has suggested process improvements. One of Bill's suggested changes was trialled and later implemented by the BCA. I am therefore satisfied Bill meets the performance indicators under this regulation.

RECORDING OUTCOMES – STEP 5

Recording outcomes – Step 5

The assessment plan and candidate evidence forms are part of the evidence or record of the assessment and form the reasons for the decision. The assessment summary is recorded in part 2 of the assessment plan. In addition, summary skills matrices have been developed to record processing and inspections competency decisions in a graphical form.

PART 3: OUTCOME OF ASSESSMENT

Outcome statement (and conditions if applicable):

I, Ann Gill Grinder, have assessed the competence of Bill Ding Permit and confirm that he is competent to undertake processing and inspection of buildings up to and including residential 2 with the exception of plumbing and drainage aspects (unless supervised).

Agreement:

Assessor: Ann Gill Grinder..... Date: 16/05/11
Cluster Group Competency Assessment Manager

Candidate: Bill Ding Permit..... Date: 16/05/11
Building Official

COMPETENCY LEVELS (PROCESSING)

		Residential 1	Residential 2	Residential 3	Commercial 1	Commercial 2	Commercial 3
Processing	Competent	Ms Ima Newy	Mr James Fanlight Mr Gas Hobs	Mr Roofus Sagging Ms Eave Overhang (Weather-tightness specialist E2 NZBC)	Mr Lee Tensile Mr Roofus Sagging	Mr Richter Scale Mr Singe Bonofire (Fire Safety specialist C1–C4 of the NZBC)	*
	Developing			Mr James Fanlight Mr Gas Hobs		Mr Lee Tensile	*
Certification	Competent		Mr James Fanlight Mr Gas Hobs	Mr Roofus Sagging	Mr Lee Tensile Mr Roofus Sagging	Mr Richter Scale	*
	Developing	Ms Ima Newy		Mr James Fanlight Mr Gas Hobs		Mr Lee Tensile	*

* Competency requirements for this inspection type are deemed to be the equivalent of Residential 2
** BCAs capability does not extend to undertaking inspections at this competency level. See BCA's policies and procedures manual for external contracting details

COMPETENCY LEVELS (INSPECTIONS)							
		Residential 1	Residential 2	Residential 3	Commercial 1	Commercial 2	Commercial 3
Foundations	Competent	Ms Ima Newy	Mr Bill Ding Permit Mr Larry Hollow-Core	Mr Bill Ding Permit* Mr Jim De-Roughly Mr Larry Hollow-Core* Mr Roofus Sagging	Mr Lee Tensile	Mr Maximum Half-Storey	**
	Developing					Mr Lee Tensile	**
Preline	Competent	Ms Ima Newy	Mr Bill Ding Permit Mr Larry Hollow-Core	Mr Jim De-Roughly Mr Roofus Sagging	Mr Lee Tensile	Mr Maximum Half-Storey	**
	Developing			Mr Bill Ding Permit Mr Larry Hollow-Core		Mr Lee Tensile	**
Final	Competent		Mr Bill Ding Permit Mr Larry Hollow-Core	Mr Jim De-Roughly Mr Roofus Sagging	Mr Lee Tensile	Mr Maximum Half-Storey Mr Singe Bonofire (Fire Safety specialist C1–C4 of the NZBC)	**
	Developing	Ms Ima Newy		Mr Bill Ding Permit Mr Larry Hollow-Core		Mr Lee Tensile	**
Certification	Competent		Mr Bill Ding Permit Mr Larry Hollow-Core	Mr Jim De-Roughly Mr Roofus Sagging	Mr Lee Tensile	Mr Maximum Half-Storey	**
	Developing	Ms Ima Newy		Mr Bill Ding Permit Mr Larry Hollow-Core		Mr Lee Tensile	**

APPENDIX 1: COMPETENCY SPECIFICATIONS

Appendix 1:
Competency specifications

COMPETENCY LEVEL – RESIDENTIAL 1

Competency level – residential 1

COMPETENCY – RESIDENTIAL 1	
Outbuildings and ancillary buildings as defined by the Building Regulations 1992 as they apply to Residential. Detached dwellings (SH) designed to a common Standard (eg, NZS 3604, NZS 4229) that are single storey and have an E2/AS1 risk matrix score less than or equal to 6.	
Regulation 10(3)(a):[4] Understanding the philosophies and principles of building design and construction.	
Performance indicators: 1. Comprehends and has satisfactory knowledge of sections 3, 4 and 5 of the Building Act 2004. 2. Comprehends and has satisfactory knowledge of design and construction techniques and construction sequencing for this type of building work.	Guidance for assessors and candidates: 1. Knowledge areas may include, but are not limited to: a. the purpose of the Building Act 2004 (the Act) b. TAs' functions, duties and powers under the Act, particularly as they relate to household units c. can discuss the hierarchy of New Zealand building legislation and the various compliance paths provided for under the Act d. can discuss building design, construction techniques and sequencing of building work as it relates to this competency level. Note this information is covered in Sections 2.1, 2.2, 2.3, 3.0, 3.1, 3.2, 3.3, 3.5, 3.6 and 3.7 of the Preface to the Building Code Handbook.[5]
Regulation 10(3)(b): Understanding and knowledge of building products and methods.	
Performance indicators: 3. Comprehends and has satisfactory knowledge of proprietary systems and building products for this type of building work. 4. Demonstrates the ability to research, analyse and assess building methods and products associated with this type of building work.	Guidance for assessors and candidates: 2. Knowledge areas may include, but are not limited to: a. commonly used building materials and systems (eg, pre-nailed truss and frames, conventional cladding and flashing systems) b. product literature, testing and Verification Methods, appraisals and producer statements.
Regulation 10(3)(c): Knowledge and skill in applying the Building Act, the Building Code, and any other applicable regulations under the Act.	
Performance indicators: 5. Comprehends and can apply knowledge of the application of the Act. 6. Comprehends and can apply knowledge of the roles and responsibilities of a BCA and TA. 7. Comprehends and can apply knowledge of the linkage and interface between the Resource Management Act 1991 and the Building Act 2004.	Guidance for assessors and candidates: 3. Demonstrates knowledge and skill in applying: a. the building control framework[6] b. the Building Act 2004 c. purpose d. principles e. application f. the New Zealand Building Code g. compliance paths h. producer statements i. the Department of Building and Housing j. territorial authorities k. building consent authorities l. project information memoranda m. building consents

4 Building (Accreditation of Building Consent Authorities) Regulations 2006.
5 A Compliance Document prepared by the Department of Building and Housing. Available at: http://www.dbh.govt.nz/UserFiles/File/Publications/Building/Compliance-documents/building-code-handbook.pdf
6 Guidance on items a.-q. is provided in the Building Code Handbook.

COMPETENCY – RESIDENTIAL 1	
	n. code compliance certificates o. certificates of acceptance p. notices to fix q. can define the term 'natural hazard' r. assessment criteria for alterations to existing buildings in accordance with section 112 of the Act s. demonstrates an understanding of type of national multiple use building approvals (MultiProof) that fall within the scope of this competency level t. if inspecting, understands the Minor Variations Regulations and understands the process for formal amendments to building consents u. understands building legislation, in particular sections 7–9 of the Act and Clause A2 Interpretation of the New Zealand Building Code v. section 37 requirements and how to identify RMA and district plan requirements w. the provision for inspections by a BCA as described in section 90 of the Act x. if inspecting, the provisions on inspecting and requirements for entering land in accordance with sections 222–228 of the Act.
Regulation 10(3)(d)(i): Ability to process applications for building consent.	
Performance indicators: 8. Process building consent applications (plans and specifications) to establish compliance with the New Zealand Building Code for this type of building work (building related processing only).	Guidance for assessors and candidates: 4. Knowledge areas may include, but are not limited to: a. NZS[7] 3604, NZS 3602 and NZS 3640 for single storey residential dwellings. Includes how to determine compliance requirements for corrosion zones, ground bearing, piles, footings, foundations, reinforcing, concrete strength, fill and compaction, bracing demand and design, sub-floor framing, wall framing, roof structures, timber treatment, load paths, fixings and connections, underlay and wraps, cladding systems, internal linings and durability b. B1, B1/VM1 – general understanding of how this Verification Method and referenced Standards are used for structural design, B1/VM4 – as it relates to foundation design, B1/AS1 – as they relate to the Standards and items raised in item 4.a above, B1/AS2 and B1/AS2 – as they relate to barrier construction, B1/AS3 c. durability requirements B2 and B2/AS1 as they relate to this type of building work (eg, 5, 15 and 50 year durability requirement of nominated building elements) d. compliance with C1 – including manufacturer requirements for installation of freestanding and in-built solid fuel heating appliances, clean air requirements, appliance clearances, hearth, insulation barrier, shielding, restraints, flue heights, flashings, finishes and furnishings, ventilation and associated prescribed electrical work (if applicable) e. identify issues relating to the Acceptable Solution for fire compliance for this type of building work by identifying the design sequence referred to in C/AS1 Part 1 f. C3 and C/AS1 fire separations from adjacent household units g. C4 and C/AS1 as they apply to structural fire rated elements for carports, garages and household units h. access to and from buildings for D1 and D1/AS1 (eg, steps, handrails and non-slip provisions) i. weathertightness and the external envelope of outbuildings and ancillary buildings as required by E2. Has a good technical knowledge of E2/AS1 (eg, understands the scope of E2/AS1 and can determine compliance with E2/AS1 up to a risk score of 6). Understands and is able to evaluate commonly used alternative solution cladding systems (such as fibre-cement bevel-back weatherboards) j. internal moisture management within buildings as required by E3 and E3/AS1 (eg, understands ventilation, temperature, thermal resistance, condensation, impervious surfaces for floor and wall linings) k. identifying hazardous agents or contaminants on site as required by F1 and F1/AS1 and knows how to read a PIM and/or check Council hazard files in the absence of a PIM l. human impact for glazing as required by F2 and F2/AS1 using NZS 4223: Part 3 m. site safety requirements in accordance with F5 and F5/AS1 n. requirements of F7, in particular the placement and installation of domestic smoke detectors as required by F7/AS1 o. G1 and G1/AS1 for location, sizing and number of sanitary fixtures p. G2 and G2/AS1 for spatial laundering requirements q. spatial, hygiene, storage and preparation requirements for cooking and food as required by G3 and G3/AS1 (eg, impervious surfaces, food storage, cooking and refrigeration) r. natural and mechanical ventilation requirements for domestic buildings as required by G4 and G4/AS1 (eg, 5% floor area/window ratio, sizing of natural venting for occupied spaces) s. requirements for natural light and visual awareness as required by G7 and G7/AS1 (eg, 10% floor area/ratio for visual awareness)

7 All references to Standards are to the current cited version of the quoted Standard (eg, NZS 3604:1999).

COMPETENCY – RESIDENTIAL 1	
	t. requirements for providing artificial lighting to enable safe movement as required by G8 and G8/AS1 (eg, access routes and minimum lux levels) u. requirements for certifying compliance with electricity provisions as required by G9, G9/AS1 and sections 19 and 94(3) of the Act v. requirements for certifying compliance with gas as an energy source as required by G11, G11/AS1 and sections 19 and 94(3) of the Act w. requirements for assessing energy efficiency for domestic dwellings as required by H1 and using the schedule method in H1/AS1 (ceilings, walls, windows/doors, hot water etc) x. identification of inspection requirements necessary to confirm compliance for this level of building work.
Performance indicators required for plumbing and drainage compliance: 9. Process building consent applications (plans and specifications) to establish compliance with the New Zealand Building Code for this type of building work (plumbing and drainage related processing only).	**Guidance for assessors and candidates:** 5. Areas of knowledge may include, but are not limited to: a. requirements for protecting people and other property from adverse effects of surface water as required by E1 and E1/AS1 (minimum floor heights, design, construction and conveyance of storm water catchments) b. laundering and spatial requirements to satisfy G2 and G2/AS1 c. requirements for specification and installation of domestic water supplies as required by G12, G12/AS1 and G12/VM1 (potable water requirements, hot water supply systems, venting/valving/restraint) d. requirements for provision of sanitary fixtures and appliances and for conveying foul water to drainage systems as required by G13, G13/AS1 and AS/NZS 3500 Part 2 (system design principles – avoid odour, design loading, falls, venting, materials, connections, access and maintenance, and imposed loads) e. identification of inspection requirements necessary to confirm compliance for this level of building work.
Regulation 10(3)(d)(ii): **Ability to inspect building work.**	
Performance indicators: 10. Inspect building work relating to foundation type inspections to establish whether compliance with the New Zealand Building Code (building only) has been achieved for residential 1 buildings.	**Guidance for assessors and candidates:** 6. Knowledge areas for inspections may include, but are not limited to: a. demonstrated ability to read and interpret plans and specifications b. use of technical equipment (eg, moisture meters, cameras, thermometers) and administrative resources (checklists, copies of technical information eg, NZS 3604) to establish compliance c. NZS[8] 3604, NZS 3602, NZS 3640, NZS 3622, NZS 4229 and the Compliance Documents as they relate to residential construction; and in particular: Foundations • requirements for corrosion zones – concrete strength requirements (different zones and different foundation types), fixing materials • ground bearing – determination methods, fill and compaction requirements • pile foundations – types (including bracing types), sizes and dimensions (ground clearance, max heights, foundation depths, etc), fixings for different pile types, treatment and identification, how bracing is calculated for subfloors, point load piles • concrete foundations (includes concrete masonry) – reinforcing (laps and size), reinforcing type (identification of deformed and round, high tensile or normal, mesh and mesh support), pipe penetrations, point load pads, bond beams, wash outs 'A', 'B' and 'C' grade masonry • concrete slabs – reinforcing (laps, size, supplementary reinforcing requirements, cover), control joint and slab size limitations, pipe penetrations, thickness and thickenings of slab, DPM • certificate requirements including producer statements, geotechnical reports, compaction certificates, concrete dockets

COMPETENCY – RESIDENTIAL 1	
11. Inspect building work relating to preline type inspections to establish whether compliance with the New Zealand Building Code (building only) has been achieved for residential 1 buildings.	Preline • timber floor systems • framing and truss requirements – size span and spacing, timber grade and treatment, load paths, moisture content, fixings and connections, truss design and layout information, penetrations, bracing systems and fixings • cladding requirements – underlays/wraps, wind barriers and rigid air barriers, fixings, penetrations and flashings, sill tapes, air seals, cavity systems, direct fix systems, penetrations, brick veneer requirements • membrane roof and deck requirements, including substrates, penetrations, fall and overflows • insulation installation – type, rating, installation requirements (refer to NZS 4246 Energy efficiency – Installing Insulation in Residential Dwellings
12. Inspect building work relating to final type inspections to establish whether compliance with the New Zealand Building Code (building only) has been achieved for residential 1 buildings.	Final • access to building – subfloor and ceiling, steps, stairs installation – tread, riser, handrails, barriers non-slip provisions • internal linings and surfaces, including impervious surface requirements, waterproof membranes, water splash areas • smoke detectors – placement and location • ventilation – mechanical and natural • fire rated boundary walls and other building components • glazing requirements, safety glass identification, locations • finished ground level and ground clearances to claddings and floor levels • third party verification eg, producer statements, energy work certificates d. can follow manufacturer requirements for installation of freestanding and in-built solid fuel heating appliances, requirements for: appliance clearances, hearth, insulation barrier, shielding, restraints, flue heights, flashings, finishes and furnishings, ventilation and associated prescribed electrical work (if applicable) e. identification and management of risk from hazardous agents or contaminants on site f. can identify when external technical assistance is required and can outsource work for technical review when required.
Performance indicators required for plumbing and drainage compliance: 13. Inspect building work to establish whether compliance with the New Zealand Building Code (plumbing and drainage related inspections only) has been achieved for residential 1 buildings.	Guidance for assessors and candidates: 7. A good working knowledge of AS/NZS 3500, G12/AS1 and AS2, G13/AS1 and AS2, E1/AS1, E2/AS1 (pipe penetrations, deck drainage etc), E3/AS1 and H1/AS1 as they relate to residential construction; and in particular: Foundations a. pipe material, gradients, size, bedding, backfill, protection, insulation, access points, jointing and sleeving, testing, supports, changes of direction, conveyance to approved outfalls, bridging b. HW relief drain and discharge outlet, drain access points, amendments to plans and specifications Preline c. pipe materials, thermal movement, sizing, compatibility, insulation, testing, penetrations through envelope, roof flashings, soil stacks (graded), elevated drainage principles, waste pipes, venting systems d. hot water and cold water expansion relief drain discharge outfall point e. hot water supply: • mains, low pressure, wet back, solar • tank supply – structural support/safe tray/overflow/seismic restraint • solar – structural support – penetrations • wetback – open venting of HWC exhaust • network utility cold water supply connections f. drainage: • maintenance of water trap seals – floor waste gullies/gully traps, sewer surcharge gully • venting (open or air admittance valves) • pipe inspection points, protection including pipe trench and foundations, materials, jointing, bedding, outfall, testing • septic tank/sewer (NUO)/other soakage system SW • rainwater tank supply (potable)/overflow within consented property/pump/gravity (air locks) • network utility cold water supply connections

COMPETENCY – RESIDENTIAL 1	
	Final g. HWC seismic restraint, hot and cold water valves, tempering device, cold water expansion relief, tundish, safe tray h. HWC water supply temperature checks (personal hygiene, legionella) i. wetback/HWC height above wood burner, flow and return pipe insulation, exhaust vent – pipe penetration flashing j. solar relief valve discharge position, structural support, position, pipe insulation, installation same as building consent, penetrations flashed k. test sanitary fixtures trap seal retention l. equipotential bonding m. gully dish/grating height, waste pipe connections to gully riser or gully dish, surface water ingress n. pipe penetrations watertight o. main drain vent p. drainage as-built plan, amendments to plans/specifications q. can identify boundary fire walls and determine compliance for pipe penetrations.
Performance indicators: 14. Can issue certification (building consent or code compliance certificate) for this residential 1 building work.	Guidance for assessors and candidates: 8. Knowledge areas may include, but are not limited to: a. candidate can compile and review information received during the processing of a building consent or information received during the inspections/construction process and determine and record the outcome to issue, suspend, request further information and/or refuse to issue a building consent or code compliance certificate (within their authority) for residential 1 building work.
Regulation 10(3)(e): Ability to communicate with internal and external persons.	
Performance indicators: 15. Communicates with internal and external customers. 16. Can use phone, email, internet and fax. 17. Demonstrates good active listening, questioning and assertiveness skills in dealing with day-to-day tasks and responsibilities.	Guidance for assessors and candidates: 9. Knowledge areas may include, but are not limited to: a. preparation of simple letters, memos and short reports under review of senior staff b. a good understanding of building related subject-matter when dealing with customers and colleagues c. effective communication with other team members, consent applicants and members of the public d. accurate inputting of written data on internal forms, checklists, field inspection records etc; completes prescribed forms in accordance with the Building Forms Regulations 2004.
Regulation 10(3)(f): Ability to comply with the building consent authority's policies, procedures and systems.	
Performance indicators: 18. Observes the building consent authority's policies, procedures and systems for this type of building work.	Guidance for assessors and candidates: 10. Knowledge areas may include, but are not limited to: a. an ability to accurately and carefully follow established procedures for completing work tasks.

8 All references to Standards are to the current cited version of the quoted Standard (eg, NZS 3604:1999).

COMPETENCY LEVEL – RESIDENTIAL 2

Competency level – residential 2

COMPETENCY – RESIDENTIAL 2	
Detached dwellings (SH) designed to a common Standard (eg, NZS 3604, NZS 4229) that are less than or equal to two storeys and have an E2/AS1 risk matrix score less than or equal to 12.	
Regulation 10(3)(a)[9]: Understanding the philosophies and principles of building design and construction.	
Performance indicators: 1. Comprehends and has satisfactory knowledge of sections 3, 4 and 5 of the Building Act 2004. 2. Comprehends and has satisfactory knowledge of design and construction techniques and construction sequencing for this type of building work.	Guidance for assessors and candidates: 1. Knowledge areas may include, but are not limited to: a. the purpose of the Building Act 2004 (the Act) b. TAs' functions, duties and powers under the Act, particularly as they relate to household units c. can discuss the hierarchy of New Zealand building legislation and the various compliance paths provided for under the Act d. can discuss building design, construction techniques and sequencing of building work as its relates to this competency level. Note this information is covered in Sections 2.1, 2.2, 2.3, 3.0, 3.1, 3.2, 3.3, 3.5, 3.6 and 3.7 of the Preface to the Building Code Handbook.[10]
Regulation 10(3)(b): Understanding and knowledge of building products and methods.	
Performance indicators: 3. Comprehends and has satisfactory knowledge of proprietary systems and building products for this type of building work. 4. Demonstrates the ability to research, analyse and assess building methods and products associated with this type of building work.	Guidance for assessors and candidates: 2. Knowledge areas may include, but are not limited to: a. commonly used building materials and systems (eg, pre-nailed truss and frames, conventional cladding and flashing and bracing systems) for this level of building work b. product literature, testing and Verification Methods, appraisals and producer statements.
Regulation 10(3)(c): Knowledge and skill in applying the Act, the Building Code, and any other applicable regulations under the Act.	
Performance indicators: 5. Comprehends and can apply knowledge of the application of the Act. 6. Comprehends and can apply knowledge of the roles and responsibilities of a BCA and TA. 7. Comprehends and can apply knowledge of the linkage and interface between the Resource Management Act 1991 and the Building Act 2004.	Guidance for assessors and candidates: 3. Demonstrates knowledge and skill in applying: a. the building control framework[11] b. the Building Act 2004 c. purpose d. principles e. application f. the New Zealand Building Code g. compliance paths h. producer statements i. the Department of Building and Housing j. territorial authorities k. building consent authorities l. project information memoranda m. building consents

9 Building (Accreditation of Building Consent Authorities) Regulations 2006.
10 A Compliance Document prepared by the Department of Building and Housing. Available at: http://www.dbh.govt.nz/UserFiles/File/Publications/Building/Compliance-documents/building-code-handbook.pdf
11 Guidance on items a.-q. is provided in the Building Code Handbook.

COMPETENCY – RESIDENTIAL 2	
	n. code compliance certificates o. certificates of acceptance p. notices to fix q. can define the term 'natural hazard' r. assessment criteria for alterations to existing buildings in accordance with section 112 of the Act s. demonstrates an understanding of type of national multiple use building approvals (MultiProof) that fall within the scope of this competency level t. if inspecting, understands the Minor Variations Regulations and understands the process for formal amendments to building consents u. understands building legislation in particular sections 7–9 of the Act and Clause A2 Interpretation of the New Zealand Building Code v. section 37 requirements and how to identify RMA and district plan requirements w. the provision for inspections by a BCA as described in section 90 of the Act x. if inspecting, the provisions on inspecting and requirements for entering land in accordance with sections 222–228 of the Act.
Regulation 10(3)(d)(i): Ability to process applications for building consent.	
Performance indicators: 8. Process building consent applications (plans and specifications) to establish compliance with the New Zealand Building Code for this type of building work (building related processing only).	Guidance for assessors and candidates: 4. Knowledge areas may include, but are not limited to: a. NZS[12] 3604, NZS 3602, NZS 3640 and NZS 4229 as they relate to two storey residential construction. Understands how to determine compliance requirements for corrosion zones, ground bearing, piles, footings, foundations, reinforcing, concrete strength, fill and compaction, bracing demand and design, subfloor framing, wall framing, roof structures, timber treatment, load paths, fixings and connections, underlay and wraps, cladding systems, internal linings and durability b. B1, B1/VM1 – general understanding of how this Verification Method and referenced Standards are used for structural design, B1/VM4 – as it relates to foundation design, B1/AS1 – as it relates to the Standards and items raised in item 4a above, B1/AS2 and B1/AS2 – as they relate to barrier construction c. B2 and B2/AS1 as they relate to this type of building work (eg, 5, 15 and 50 year durability requirement of nominated building elements) d. compliance with C1. Understands manufacturer requirements for installation of freestanding and in-built solid fuel heating appliances. Understands clean air requirements and can assess compliance requirements for: appliance clearances, hearth, insulation barrier, shielding, restraints, flue heights, flashings, finishes and furnishings, ventilation and associated prescribed electrical work (if applicable) e. identify issues relating to the Acceptable Solution for fire compliance for this type of building work by identifying the design sequence referred to in C/AS1 Part 1 f. can apply commonly used fire rating systems for walls built in close proximity of boundaries and achieving compliance with Clause C3 and C/AS1 Spread of Fire g. C4 and C/AS1 as they apply to structural fire rated elements for carports, garages and household units h. accessibility, to enable safe and easy movement of people as required by D1 and D1/AS1 (eg, steps, handrails, non-slip provisions, and understands safe stair construction and the definitions of private and secondary private stairs) i. E2 and E2/AS1 for complex junctions, flashing requirements for buildings equal to or less than two storeys and that have a risk matrix score less than or equal to 12. Illustrates a good technical knowledge in relation to the different types of cladding systems within this risk range. Can assess retaining walls and sub-soil drainage using the Acceptable Solution. Understands and is able to evaluate commonly used alternative solution cladding systems (such as fibre-cement bevel-back weatherboards) j. internal moisture management within buildings as required by E3 and E3/AS1 (eg, understands ventilation, temperature, thermal resistance, condensation, impervious surfaces for floor and wall linings) k. hazardous agents or contaminants on site as required by F1 and F1/AS1 and knows how to read a PIM and check hazard files in the absence of a PIM l. F2 and F2/AS1 using NZS 4223: Part 3, and is able to assess the compliance of glazed barriers and identify the required locations for safety glass

[12] All references to Standards are to the current cited version of the quoted Standard (eg, NZS 3604:1999).

COMPETENCY – RESIDENTIAL 2	
	m. requirements for safeguarding people from falling as required by F4 and F4/AS1 (eg, barrier construction, correlation between B1, B2 and F4, SED Barriers, B2 implications and swimming pool fencing requirements) n. site hazard identification and understands compliance requirements for managing these hazards in accordance with F5 and F5/AS1 o. F7, in particular the placement and installation of domestic smoke detectors as required by F7/AS1 p. G1 and G1/AS1 for location, sizing and number of sanitary fixtures q. G2 and G2/AS1 for spatial laundering requirements. r. spatial, hygiene, storage and preparation requirements for cooking and food as required by G3 and G3/AS1 (eg, impervious surfaces, food storage and refrigeration) s. natural and mechanical ventilation requirements for domestic buildings as required by G4 and G4/AS1 (eg, 5% floor area/window ratio, sizing of natural venting for occupied spaces) t. natural light and visual awareness as required by G7 and G7/AS1 (eg, 10% floor area/ratio for visual awareness) u. artificial lighting to enable safe movement as required by G8 and G8/AS1 (eg, access routes and minimum lux levels) v. requirements for certifying compliance with electricity provisions as required by G9, G9/AS1 and sections 19 and 94(3) of the Act w. requirements for certifying compliance with gas as an energy source as required by G11, G11/AS1 and sections 19 and 94(3) of the Act x. requirements for assessing energy efficiency for domestic dwellings as required by H1 and H1/AS1 (ceilings, walls, windows/doors, hot water etc) y. NZS 4229 concrete basement construction (eg, B grade and C grade masonry requirements and masonry retaining walls) z. can identify and plan inspection requirements necessary to confirm compliance for this level of building work aa. can mentor and/or provide technical oversight to others assessing Building Code compliance for residential (competency) 1 type building work
Performance indicators required for plumbing and drainage compliance: 9. Processes building consent applications (plans and specifications) to establish compliance with the New Zealand Building Code for this type of building work (plumbing and drainage related processing only).	Guidance for assessors and candidates: 5. Knowledge areas may include, but are not limited to: a. requirements for protecting people and other property from adverse effects of surface water as required by E1 and E1/AS1 – (minimum floor heights, design, construction and conveyance of storm water catchments) b. laundering and spatial requirements to satisfy G2 and G2/AS1 c. requirements for specification and installation of domestic water supplies as required by G12 and G12/AS1 (potable water requirements, hot water supply systems, venting/valving/restraint) d. requirements for provision of sanitary fixtures and appliances and for conveying foul water to drainage systems as required by G13, G13/AS1 and AS/NZS 3500 Part 2 as they relate to two storey construction (system design principles – avoid odour, design loading, falls, venting, materials, connections, access and maintenance, and imposed loads) e. identification of inspection requirements necessary to confirm compliance for this level of building work f. can mentor and/or provide technical oversight to others assessing Building Code compliance for residential (competency) 1 type building work.

COMPETENCY – RESIDENTIAL 2

Regulation 10(3)(d)(ii):
Ability to inspect building work.

Performance indicators:	Guidance for assessors and candidates:
10. Inspect building work relating to foundation type inspections to establish whether compliance with the New Zealand Building Code (building only) has been achieved for residential 2.	6. Knowledge areas for inspections may include, but are not limited to: a. demonstrated ability to read and interpret plans and specifications b. use of technical equipment (eg, moisture meters, cameras, thermometers) and administrative resources (checklists, copies of technical information eg, NZS 3604) to establish compliance c. NZS[13] 3604, NZS 3602, NZS 3640, NZS 3622, NZS 4229 and the Compliance Documents as they relate to residential construction; and in particular: **Foundations** • requirements for corrosion zones – concrete strength requirements (different zones and different foundation types), fixing materials • ground bearing – determination methods, fill and compaction requirements • pile foundations – types (including bracing types), sizes and dimensions (ground clearance, maximum heights, foundation depths etc), siting, fixings for different pile types, treatment and identification, how bracing is calculated for subfloors, point load piles • concrete foundations (includes concrete masonry) – reinforcing (laps and size), reinforcing type (identification of deformed and round, high tensile or normal, mesh and mesh support), pipe penetrations, point load pads, bond beams, wash outs 'A', 'B' and 'C' grade masonry • concrete slabs – reinforcing (laps, size, supplementary reinforcing requirements, cover), control joint and slab size limitations, pipe penetrations, thickness and thickenings of slab, DPM • certificate requirements including producer statements, geotechnical reports, compaction certificates, concrete dockets
11. Inspect building work relating to preline type inspections to establish whether compliance with the New Zealand Building Code (building only) has been achieved for residential 2 buildings.	**Preline** • timber floor systems • framing and truss requirements – size, span and spacing, timber grade and treatment, load paths, moisture content, fixings and connections, truss design and layout information, penetrations, bracing systems, including diaphragm ceilings and fixings • cladding requirements – underlays/wraps, wind barriers and rigid air barriers, fixings, penetrations and flashings, junctions, sill tapes, air seals, cavity systems, direct fix systems, penetrations, brick veneer requirements, mixed cladding systems • membrane roof and deck requirements including substrates, penetrations, fall and overflows • fire rated boundary walls and building components – installation requirements, including isolation, insulation, penetrations, fixings • insulation installation – type, rating, installation requirements (refer NZS 4246 Energy Efficiency – Installing Insulation in Residential Dwellings)
12. Inspect building work relating to final type inspections to establish whether compliance with the New Zealand Building Code (building only) has been achieved for residential 2 buildings.	**Final** • access to building – subfloor and ceiling, steps, stairs installation – tread, riser, handrails, barriers, non-slip provisions • internal linings and surfaces, including impervious surface requirements, waterproof membranes, water splash areas • smoke detectors – placement and location • ventilation – mechanical and natural • fire rated boundary walls and other building components • glazing requirements, safety glass identification, locations • finished ground level and ground clearances to claddings and floor levels • third party verification eg, producer statements, energy work certificates • swimming pool fencing installation, gates, fence heights, sizes, openings etc d. can follow manufacturer requirements for installation of freestanding and in-built solid fuel heating appliances, requirements for: appliance clearances, hearth, insulation barrier, shielding, restraints, flue heights, flashings, finishes and furnishings, ventilation and associated prescribed electrical work (if applicable) e. identification and management of risk from hazardous agents or contaminants on site f. is able to identify when external technical assistance is required and can outsource work for technical review when required.

[13] All references to Standards are to the current cited version of the quoted Standard (eg, NZS 3604:1999).

COMPETENCY – RESIDENTIAL 2

Performance indicators required for plumbing and drainage compliance:	Guidance for assessors and candidates:
13. Process building consent applications (plans and specifications) to establish compliance with the New Zealand Building Code for this type of building work (plumbing and drainage related processing only). 14. Inspect building work to establish whether compliance with the New Zealand Building Code (plumbing and drainage related inspections only) has been achieved for residential 2 buildings.	7. A good working knowledge of AS/NZS 3500, G12 /AS1 and AS2, G13/AS1 and AS2, E1/AS1, E2/AS1 (pipe penetrations, deck drainage etc), E3/AS1 and H1/AS1 as they relate to residential construction; and in particular: **Foundations** • pipe material, gradients, size, bedding, backfill, protection, insulation, access points, jointing and sleeving, testing, supports, changes of direction, conveyance to approved outfalls, bridging • HW relief drain and discharge outlet, drain access points, amendments to plans and specifications **Preline** • pipe materials, thermal movement, sizing, compatibility, insulation, testing, penetrations through envelope, roof flashings, soil stacks (graded), elevated drainage principles, waste pipes, venting systems • hot water/cold water expansion relief drain discharge outfall point • hot water supply: a. mains, low pressure, wet back, solar b. tank supply – structural support/safe tray/overflow/seismic restraint c. solar and its structural support and penetrations d. wetback, open venting of HWC exhaust e. network utility cold water supply connections f. floor waste • drainage g. maintenance of water trap seals – floor waste gullies/gully traps, sewer surcharge gully h. venting (open or air admittance valves) i. pipe inspection points, protection including pipe trench and foundations, materials, jointing, bedding, outfall, testing j. septic tank/sewer (NUO)/other soakage system SW k. rainwater tank supply (potable)/overflow within consented property/pump/gravity (air locks) **Final** a. HWC seismic restraint, hot and cold water – valves, tempering device, cold water expansion relief, tundish, safe tray b. HWC water supply temperature checks (personal hygiene, legionella) c. wetback/HWC height above wood burner, flow and return pipe insulation, exhaust vent – pipe penetration flashing d. solar relief valve discharge position – structural support – position – pipe insulation, installation same as building consent – penetrations flashed e. test sanitary fixtures' trap seal retention, f. equipotential bonding g. gully dish/grating height, waste pipe connections to gully riser or gully dish, surface water ingress h. pipe penetrations watertight i. main drain vent j. drainage as-built plan – amendments to plans/specifications k. swimming pool backflow prevention l. can identify boundary fire walls and determine compliance for pipe penetrations.
Regulation 10(3)(d)(iii): Ability to certify building work.	
Performance indicators:	**Guidance for assessors and candidates:**
15. Can issue certification (building consent or code compliance certificate) for this residential 2 building work.	8. Knowledge areas may include, but are not limited to: a. candidate can compile and review information received during the processing of a building consent or information received during the inspections/construction process and determine and record the outcome to issue, suspend, request further information and/or refuse to issue a building consent or code compliance certificate (within their authority) for residential 2 building work.

COMPETENCY – RESIDENTIAL 2	
Regulation 10(3)(e): Ability to communicate with internal and external persons.	
Performance indicators: 16. Communicates with internal and external customers. 17. Can use phone, email, internet and fax. 18. Demonstrates good active listening, questioning and assertiveness skills in dealing with day-to-day tasks and responsibilities.	Guidance for assessors and candidates: 9. Knowledge areas may include, but are not limited to: a. correctly prepares simple letters, memos and short reports under review of senior staff b. is confident and has a good understanding of building related subject-matter when dealing with customers and colleagues c. communicates effectively with other team members, consent applicants and members of the public d. accurately inputs written data on internal forms, checklists, field inspection records etc; and completes prescribed forms in accordance with the Building Forms Regulations 2004.
Regulation 10(3)(f): Ability to comply with the building consent authority's policies, procedures and systems	
Performance indicators: 19. Observes the building consent authority's policies, procedures and systems for this type of building work.	Guidance for assessors and candidates: 10. Knowledge areas may include, but are not limited to: a. accurately and carefully follows established procedures for completing work tasks.

COMPETENCY LEVEL – RESIDENTIAL 3

Competency level – residential 3

COMPETENCY – RESIDENTIAL 3	
Detached dwellings (SH) or other dwellings (SR) that are less than or equal to three storeys but limited to vertical plane fire separation and direct egress to the outside. E2/AS1 risk score of 13–20 (level also includes specifically designed residential cladding systems, components, detailing and junctions where a risk matrix score of greater than 20 has been calculated).	
Regulation 10(3)(a):[14] Understanding the philosophies and principles of building design and construction.	
Performance indicators: 1. Comprehends and has satisfactory knowledge of sections 3, 4 and 5 of the Building Act 2004. 2. Comprehends and has satisfactory knowledge of design and construction techniques and construction sequencing for this level of building work.	Guidance for assessors and candidates: 1. Knowledge areas may include, but are not limited to: a. the purpose of the Building Act 2004 (the Act) b. TAs' functions, duties and powers under the Act, particularly as they relate to household units c. can discuss the hierarchy of New Zealand building legislation and the various compliance paths provided for under the Act d. can discuss building design, construction techniques and sequencing of building work as it relates to this competency level. Note this information is covered in Sections 2.1, 2.2, 2.3, 3.0, 3.1, 3.2, 3.3, 3.5, 3.6 and 3.7 of the Preface to the Building Code Handbook.[15]
Regulation 10(3)(b): Understanding and knowledge of building products and methods.	
Performance indicators: 3. Comprehends and has satisfactory knowledge of proprietary systems and building products for this level of building work. 4. Demonstrates the ability to research, analyse and assess building methods and products associated with this level of building work.	Guidance for assessors and candidates: 2. Knowledge areas may include, but are not limited to: a. commonly used building materials and systems (eg, pre-nailed truss and frames, conventional cladding and flashing and bracing systems) for this level of building work b. product literature, testing and Verification Methods, appraisals and producer statements.
Regulation 10(3)(c): Knowledge and skill in applying the Act, the Building Code, and any other applicable regulations under the Act.	
Performance indicators: 5. Comprehends and can apply knowledge of the application of the Act. 6. Comprehends and can apply knowledge of the roles and responsibilities of a BCA and TA. 7. Comprehends and can apply knowledge of the linkage and interface between the Resource Management Act 1991 and the Building Act 2004.	Guidance for assessors and candidates: 3. Demonstrates knowledge and skill in applying: a. the building control framework[16] b. the Building Act 2004 c. purpose d. principles e. application f. the New Zealand Building Code g. compliance paths h. producer statements i. the Department of Building and Housing j. territorial authorities k. building consent authorities l. project information memoranda m. building consents

[14] Building (Accreditation of Building Consent Authorities) Regulations 2006.
[15] A Compliance Document prepared by the Department of Building and Housing. Available at: http://www.dbh.govt.nz/UserFiles/File/Publications/Building/Compliance-documents/building-code-handbook.pdf
[16] Guidance on items a.-q. is provided in the Building Code Handbook.

COMPETENCY – RESIDENTIAL 3	
	n. code compliance certificates o. certificates of acceptance p. notices to fix q. can define the term 'natural hazard' r. assessment criteria for alterations to existing buildings in accordance with section 112 of the Act s. demonstrates an understanding of type of national multiple use building approvals (MultiProof) that fall within the scope of this competency level t. if inspecting, understands the Minor Variations Regulations and understands the process for formal amendments to building consents u. understands building legislation in particular sections 7–9 of the Act and Clause A2 interpretation of the New Zealand Building Code v. section 37 requirements and how to identify RMA and district plan requirements w. the provision for inspections by a BCA as described in section 90 of the Act x. if inspecting, the provisions on inspecting and requirements for entering land in accordance with sections 222–228 of the Act.
Regulation 10(3)(d)(i): Ability to process applications for building consent.	
Performance indicators: 8. Process building consent applications (plans and specifications) to establish compliance with the New Zealand Building Code for this type of building work (building related processing only). 9. Demonstrates an understanding of type of national multiple use building approvals (Multiproof) that fall within the scope of this competency level.	Guidance for assessors and candidates: 4. Knowledge areas may include, but are not limited to: a. NZS[17] 3604, NZS 3602, NZS 3640 and NZS 4229 as they relate to three storey residential construction. Understands how to determine compliance requirements for corrosion zones, ground bearing, piles, footings, foundations, reinforcing, concrete strength, fill and compaction, bracing demand and design, subfloor framing, wall framing, roof structures, timber treatment, load paths, fixings and connections, underlay and wraps, cladding systems, internal linings and durability b. B1, B1/VM1 – higher level understanding of how this Verification Method and referenced Standards are used for structural design, B1/VM4 – as it relates to foundation design, B1/AS1 – as it relates to the Standards and items raised in item 4a above and B1/AS2 – as it relates to barrier construction c. B2, B2/VM1 and B2/AS1 as they relate to 5, 15 and 50 year durability requirements of nominated building elements d. NZS 4229 concrete basement construction (eg, B grade and C grade masonry requirements and masonry retaining walls) e. compliance with C1. Understands manufacturer requirements for installation of freestanding and in-built solid fuel heating appliances. Understands clean air requirements and can assess compliance requirements for: appliance clearances, hearth, insulation barrier, shielding, restraints, flue heights, flashings, finishes and furnishings, ventilation and associated prescribed electrical work (if applicable) f. can apply commonly used fire rating systems for walls built in close proximity to boundaries and separating residential household units achieving compliance with clauses C2 and C3; and C/AS1 Spread of Fire g. C4 and C/AS1 as they apply to structural fire rated elements for carports, garages and separation of residential household units h. accessibility to enable safe and easy movement of people as required by D1, D1/AS1 and D2/AS2 (eg, steps, handrails, non-slip provisions, and understands safe stair construction and the definitions of private and secondary private stairs, and lifts if relevant i. can apply weathertightness principles and knowledge to assess compliance with E2 External Moisture and demonstrates excellent working knowledge of E2/AS1 and E2/VM1 and can identify the differences between the Acceptable Solution and specific design (eg, complex junctions, flashing requirements, technical knowledge of cladding systems, vented cavity systems). Is able to assess specifically designed cladding systems (outside the scope and limitations of E2/AS1) j. internal moisture management within buildings as required by E3 and E3/AS1 (eg, understands ventilation, temperature, thermal resistance, condensation, impervious surfaces for floor and wall linings) k. hazardous agents or contaminants on site as required by F1 and F1/AS1 and knows how to read a PIM and check hazard files in the absence of a PIM

[17] All references to Standards are to the current cited version of the quoted Standard (eg, NZS 3604:1999).

COMPETENCY – RESIDENTIAL 3	
	l. F2 and F2/AS1 using NZS 4223: Part 3, and is able to assess the compliance of glazed barriers and identify the required locations for safety glass m. requirements for safeguarding people from falling as required by F4 and F4/AS1 (eg, barrier construction, correlation between B1, B2 and F4, SED Barriers, B2 implications and swimming pool fencing requirements) n. site hazards identification and understands compliance requirements for managing these in accordance with F5 and F5/AS1 o. F7, in particular the placement and installation of domestic smoke detectors as required by F7/AS1 p. G1 and G1/AS1 for location, sizing and number of sanitary fixtures q. G2 and G2/AS1 for spatial laundering requirements. r. spatial, hygiene, storage and preparation requirements for cooking and food as required by G3 and G3/AS1 (eg, impervious surfaces, food storage, cooking and refrigeration) s. natural and mechanical ventilation requirements for domestic buildings as required by G4 and G4/AS1 (eg, 5% floor area/window ratio, sizing of natural venting for occupied spaces) t. can define STC and IIC and assess commonly used solutions to determine compliance with G6 and G6/AS1 Airborne and Impact Sound between occupancies and exhibits an understanding of the interface between C3 and G6, particularly in relation to penetrations to fire and sound rated areas u. natural light and visual awareness as required by G7 and G7/AS1 (eg, 10% floor area/ratio for visual awareness) v. artificial lighting to enable safe movement as required by G8 and G8/AS1 (eg, access routes and minimum lux levels) w. requirements for certifying compliance with electricity provisions as required by G9, G9/AS1 and section 19 of the Act. x. requirements for certifying compliance with gas as an energy source as required by G11, G11/AS1 and section 19 of the Act y. requirements for assessing energy efficiency for domestic dwellings as required by H1, H1/AS1 and H1/VM1. Good working knowledge of NZS 4218, NZS 4305 and the BRANZ House Insulation Guide (ceilings, walls, windows/doors, hot water etc) z. can identify inspection requirements necessary to confirm compliance for this level of building work aa. has a strong comprehension of their individual limitations and the wider BCA's internal technical capability. Is able to identify when external technical assistance is required and can outsource work for technical review when required.
Performance indicators required for plumbing and drainage compliance: 10. Process building consent applications (plans and specifications) to establish compliance with the New Zealand Building Code for this type of building work (plumbing and drainage related processing only).	**Guidance for assessors and candidates:** 5. Knowledge areas may include, but are not limited to: a. requirements for protecting people and other property from adverse effects of surface water as required by E1, E1/VM1 and E1/AS1 (minimum floor heights, design, construction and conveyance of storm water catchment) b. spatial laundering requirements to satisfy G2 and G2/AS1 c. requirements for specification and installation of domestic water supplies as required by G12 and G12/AS1 (potable water requirements, hot water supply systems, venting/valving/restraint) d. requirements for provision of sanitary fixtures and appliances and for conveying foul water to drainage systems as required by G13, G13/AS1 and AS/NZS 3500 Part 2 as they relate to three storey construction (system design principles – avoid odour, design loading, falls, venting, materials, connections, access and maintenance and imposed loads) e. can identify fire walls and determine a compliance path for plumbing and drainage piping penetrating these walls f. can assess/explain soil stack systems in accordance with G13/AS1 and AS/NZS 3500.2 g. identification of inspection requirements necessary to confirm compliance for this level of building work h. can mentor and/or provide technical oversight to others assessing Building Code compliance for residential (competency) 1 and 2 type building work.

COMPETENCY – RESIDENTIAL 3

Regulation 10(3)(d)(ii):
Ability to inspect building work.

Performance indicators:	Guidance for assessors and candidates:
11. Inspect building work relating to foundation type inspections to establish whether compliance with the New Zealand Building Code (building only) has been achieved for residential 3 buildings.	6. Knowledge areas for inspections may include, but are not limited to: a. demonstrated ability to read and interpret plans and specifications b. use of technical equipment (eg, moisture meters, cameras, thermometers etc) and administrative resources (checklists, copies of technical information eg, NZS 3604) to establish compliance c. NZS[18] 3604, NZS 3602, NZS 3640, NZS 3622, NZS 4229 and the Compliance Documents as they relate to residential construction; and in particular: Foundations • requirements for corrosion zones – concrete strength requirements (different zones and different foundation types), fixing materials. • ground bearing – determination methods, fill and compaction requirements • pile foundations – types (including bracing types), sizes and dimensions (ground clearance, max heights, foundation depths etc), siting, fixings for different pile types, treatment and identification, how bracing is calculated for subfloors, point load piles • concrete foundations (includes concrete masonry) – reinforcing (laps and size), reinforcing type (identification of deformed and round, high tensile or normal, mesh and mesh support), pipe penetrations, point load pads, bond beams, wash outs 'A', 'B' and 'C' grade masonry • concrete slabs – reinforcing (laps, size, supplementary reinforcing requirements, cover), control joint and slab size limitations, pipe penetrations, thickness and thickenings of slab, DPM • certificate requirements including producer statements, geotechnical reports, compaction certificates, concrete dockets
12. Inspect building work relating to preline type inspections to establish whether compliance with the New Zealand Building Code (building only) has been achieved for residential 3 buildings.	Preline • timber floor systems • framing and truss requirements – size span and spacing, timber grade and treatment, load paths, moisture content, fixings and connections, truss design and layout information, penetrations, bracing systems, including diaphragm ceilings and fixings • cladding requirements – underlays/wraps, wind barriers and rigid air barriers, fixings, penetrations and flashings, complex junctions, sill tapes, air seals, cavity systems, direct fix systems, penetrations, brick veneer requirements, mixed cladding systems, compartmentalisation of cavity systems over two storeys • membrane roof and deck requirements including substrates, penetrations, fall and overflows • sound and fire rated walls and building components – installation requirements, including isolation, insulation, penetrations, fixings • insulation installation – type, rating, installation requirements (refer to NZS 4246 Energy Efficiency – Installing Insulation in Residential Dwellings)
13. Inspect building work relating to final type inspections to establish whether compliance with the New Zealand Building Code (building only) has been achieved for residential 3 buildings.	Final • access to building – subfloor and ceiling, steps, stairs installation – tread, riser, handrails, barriers non-slip provisions • internal linings and surfaces, including impervious surface requirements, waterproof membranes, water splash areas • smoke detectors placement and location • ventilation – mechanical and natural • fire rated walls and other building components • assessment of airborne sound (STC) • glazing requirements, safety glass identification, locations • finished ground level and ground clearances to claddings and floor levels • third party verification (eg, producer statements, energy work certificates) • swimming pool fencing installation, gates, fence heights, sizes, openings etc

[18] All references to Standards are to the current cited version of the quoted Standard (eg, NZS 3604:1999).

COMPETENCY – RESIDENTIAL 3	
	d. can follow manufacturer requirements for installation of freestanding and in-built solid fuel heating appliances, requirements for appliance clearances, hearth, insulation barrier, shielding, restraints, flue heights, flashings, finishes and furnishings, ventilation and associated prescribed electrical work (if applicable) e. identification and management of risk from hazardous agents or contaminants on site f. is able to identify when external technical assistance is required and can outsource work for technical review when required.
Performance indicators required for plumbing and drainage compliance: 14. Inspect building work to establish whether compliance with the New Zealand Building Code (plumbing and drainage related inspections only) has been achieved for residential 3 buildings.	**Guidance for assessors and candidates:** 7. A good working knowledge of AS/NZS 3500, G12/AS1 and AS2, G13/AS1 and AS2, E1/AS1, E2/AS1 (pipe penetrations, deck drainage etc) E3/AS1, G1/AS1 and H1/AS1 as they relate to residential construction; and in particular: Foundations • pipe material, gradients, size, bedding, backfill, protection, insulation, access points, jointing and sleeving, testing, supports, changes of direction, conveyance to approved outfalls, bridging • HW relief drain and discharge outlet, drain access points, amendments to plans and specifications Preline • pipe materials, thermal movement, sizing, compatibility, insulation, testing, penetrations through envelope, roof flashings, soil stacks (graded), elevated drainage principles, waste pipes, venting systems • hot water/cold water expansion relief drain discharge outfall point • hot water supply: – mains, low pressure, wet back, solar – tank supply – structural support/safe tray/overflow/seismic restraint – solar – structural support – penetrations – wetback – open venting of HWC exhaust – network utility cold water supply connections – floor waste • drainage – maintenance of water trap seals – floor waste gullies/gully traps, sewer surcharge gully – venting (open or air admittance valves) – pipe inspection points, protection including pipe trench and foundations, materials, jointing, bedding, outfall, testing – septic tank/sewer (NUO)/other soakage system SW • rainwater tank supply (potable)/overflow within consented property/pump/gravity (air locks) Final • HWC seismic restraint, hot and cold water – valves, tempering device, cold water expansion relief, tundish, safe tray • HWC water supply temperature checks (personal hygiene, legionella) • wetback/HWC height above wood burner, flow and return pipe insulation, exhaust vent – pipe penetration flashing • solar relief valve discharge position – structural support – position – pipe insulation, installation same as building consent – penetrations flashed • test sanitary fixtures trap seal retention • equipotential bonding • gully dish/grating height, waste pipe connections to gully riser or gully dish, surface water ingress • pipe penetrations watertight • main drain vent • drainage as-built plan – amendments to plans/specifications • swimming pool backflow prevention • can identify fire walls and determine a compliance path for plumbing and drainage piping penetrating walls.

COMPETENCY – RESIDENTIAL 3	
Regulation 10(3)(d)(iii): Ability to certify building work.	
Performance indicators: 15. Can issue certification (building consent or code compliance certificate) for this residential 3 building work.	Guidance for assessors and candidates: 8. Knowledge areas may include, but are not limited to: a. candidate can compile and review information received during the processing of a building consent or information received during the inspections/construction process and determine and record the outcome to issue, suspend, request further information and/or refuse to issue a building consent or code compliance certificate (within their authority) for residential 3 building work.
Regulation 10(3)(e): Ability to communicate with internal and external persons.	
Performance indicators: 16. Communicates with internal and external customers. 17. Can use phone, email, internet and fax. 18. Demonstrates good active listening, questioning and assertiveness skills in dealing with day-to-day tasks and responsibilities.	Guidance for assessors and candidates: 9. Knowledge areas may include, but are not limited to: a. correctly prepares letters, memos and short reports b. appears confident and has a good understanding of building related subject-matter when dealing with customers and colleagues c. communicates effectively with other team members, consent applicants and members of the public d. accurately inputs written data on internal forms, processing checklists and electronic databases, and completes prescribed forms in accordance with the Building Forms Regulations 2004.
Regulation 10(3)(f): Ability to comply with the building consent authority's policies, procedures and systems.	
Performance indicators: 19. Observes the building consent authority's policies, procedures and systems for this type of building work.	Guidance for assessors and candidates: 10. Knowledge areas may include, but are not limited to: a. accurately and carefully follows established procedures for completing work tasks.

COMPETENCY LEVEL – COMMERCIAL 1

Competency level – commercial 1 **81**

Competency level – commercial 1

COMPETENCY – COMMERCIAL 1	
Commercial, industrial and communal non-residential buildings and their associated outbuildings and ancillary buildings equal to or less than two storeys and an occupancy load of equal to or less than 100 people.	
Regulation 10(3)(a)[19]: Understanding the philosophies and principles of building design and construction.	
Performance indicators: 1. Comprehends and has satisfactory knowledge of sections 3, 4 and 5 of the Building Act 2004. 2. Comprehends and has satisfactory knowledge of design and construction techniques and construction sequencing for this type of building work.	Guidance for assessors and candidates: 1. Knowledge areas may include, but are not limited to: a. the purpose of the Building Act 2004 (the Act) b. TAs' functions, duties and powers under the Act, particularly as they relate to commercial, industrial and non-residential building work c. can discuss the hierarchy of New Zealand building legislation and the various compliance paths provided for under the Act d. can discuss building design, construction techniques and sequencing of building work as its relates to this competency level. Note this information is covered in Sections 2.1, 2.2, 2.3, 3.0, 3.1, 3.2, 3.3, 3.5, 3.6 and 3.7 of the Preface to the Building Code Handbook.[20]
Regulation 10(3)(b): Understanding and knowledge of building products and methods.	
Performance indicators: 3. Comprehends and has satisfactory knowledge of proprietary systems and building products for this type of building work. 4. Demonstrates the ability to research, analyse and assess building methods and products associated with this type of building work.	Guidance for assessors and candidates: 2. Knowledge areas may include, but are not limited to: a. commonly used building materials and systems (eg, pre-nailed truss and frames, conventional commercial cladding and flashing systems) b. product literature, testing and Verification Methods, appraisals and producer statements c. portal frame, tilt-slab, common bracing, fire rating, sound rating systems.

[19] Building (Accreditation of Building Consent Authorities) Regulations 2006.

[20] A Compliance Document prepared by the Department of Building and Housing. Available at: http://www.dbh.govt.nz/UserFiles/File/Publications/Building/Compliance-documents/building-code-handbook.pdf

COMPETENCY – COMMERCIAL 1

Regulation 10(3)(c):
Knowledge and skill in applying the Act, the Building Code, and any other applicable regulations under the Act.

Performance indicators:

5. Comprehends and can apply knowledge of the application of the Building Act 2004.
6. Comprehends and can apply knowledge of the roles and responsibilities of a BCA and TA.
7. Comprehends and can apply knowledge of the linkage and interface between the Resource Management Act 1991 and the Building Act 2004.

Guidance for assessors and candidates:

3. Demonstrates knowledge and skill in applying:

   a. the building control framework[21]
   b. the Building Act 2004
   c. purpose
   d. principles
   e. application
   f. the New Zealand Building Code
   g. compliance paths
   h. producer statements
   i. the Department of Building and Housing
   j. territorial authorities
   k. building consent authorities
   l. project information memoranda
   m. building consents
   n. code compliance certificates
   o. certificate of acceptance
   p. compliance schedules
   q. building warrant of fitness
   r. certificates for public use
   s. can define the term 'natural hazard' and can describe the requirements for granting or refusing to grant building consents on land that is subject to a natural hazard
   t. can describe the legislative process for building over two or more allotments (eg, sections 75 and 76 of the Act)
   u. can assess alterations to existing buildings in accordance with section 112 of the Act
   v. has a working knowledge of waivers and modifications and provides an overview of how a TA grants a waiver or modification of the Building Code
   w. can explain how the classified uses and the change the use provisions are used in the legislation
   x. can explain and interpret building legislation and demonstrates thorough understanding of sections 7–9 of the Act and Clause A2 Interpretation of the New Zealand Building Code
   y. NZS 4211 and the limits on the application of the Building Code for industrial and commercial buildings
   z. demonstrates a clear knowledge of the provision for access and facilities for people with disabilities in accordance with sections 117–120 and Schedule 2 of the Act
   aa. has knowledge of the Hazardous Substances and New Organisms Act and the processes to follow
   bb. demonstrates knowledge of the Fire Service Act 1975, sections 21A–21I, and the Fire Safety and Evacuation of Buildings Regulations 2006
   cc. can apply DRU requirements in accordance with the *Gazette* notice in section 26 of the Act
   dd. can apply knowledge of specified systems and compliance schedule requirements in accordance with sections 100–111 of the Building Act 2004
   ee. understands owners' requirements in relation to building warrants of fitness in accordance with sections 108–111of the Act
   ff. can demonstrate knowledge of change of use requirements in accordance with sections 114–115 of the Act and the Building (Specified Systems, Change the Use, and Earthquake-prone Buildings) Regulations 2005
   gg. understands requirements to issue a notice to fix in accordance with sections 163–168 of the Act and the BCA's policies and procedures (within their authority)
   hh. can demonstrate an understanding of the determinations process in accordance with section 176–190 of the Act
   ii. can demonstrate an understanding of certificates for public use and where they are required in accordance with sections 362A–363C of the Act
   jj. if inspecting, understands the Minor Variations Regulations and understands the process for formal amendments to building consents
   kk. the provision for inspections by a BCA as described in section 90 of the Act
   ll. if inspecting, the provisions on inspecting and requirements for entering land in accordance with sections 222–228 of the Act.

[21] Guidance on items a.-r is provided in the Building Code Handbook.

COMPETENCY – COMMERCIAL 1	
Regulation 10(3)(d)(i): Ability to process applications for building consent.	
Performance indicators:	Guidance for assessors and candidates:
8. Process building consent applications (plans and specifications) to establish compliance with the New Zealand Building Code for this type of building work (building related processing only).	4. Knowledge areas may include, but are not limited to: a. NZS[22] 3604, NZS 3602, NZS 3640, NZS 4229 and AS/NZS 1170 as they relate to two storey commercial construction. Understands how to determine compliance requirements for corrosion zones, ground bearing, piles, footings, Foundations, reinforcing, concrete strength, fill and compaction, bracing demand and design, subfloor framing, wall framing, roof structures, timber treatment, load paths, fixings and connections, underlay and wraps, cladding systems, internal linings and durability b. B1, B1/VM1 – excellent understanding of how this Verification Method and referenced Standards are used for structural design, B1/VM4 – as it relates to foundation design, B1/AS1 – as it relates to the standards and items raised in item 4.a above c. B2, B2/VM1 and B2/AS1 as they relate to 5, 15 and 50 year durability requirement of nominated building elements d. can assess building 'importance levels' in relation to different building types and the relevant risk analysis of these buildings as is identified in AS/NZS 1170 e. can identify issues relating to the Acceptable Solution for fire compliance for this type of building work by identifying the design sequence referred to in C/AS1 Part 1 f. can apply commonly used fire rating systems for walls built in close proximity to boundaries and separating residential household units and other tenancies achieving compliance with clauses C2 and C3; and C/AS1 Spread of Fire g. C4 and C/AS1 as they apply to structural elements of household units and other buildings within the scope of this competency h. can assess accessibility to enable safe and easy movement of people as required by D1, D1/VM1 and D1/AS1 (eg, steps, handrails, ramps, non-slip provisions, and understands safe stair geometry and construction) i. can assess mechanical installations for D2, D2/AS1, D2/AS2 and D2/AS3, NZS 4332, EN81 Part 1 and 2 (passenger and service lifts) j. can apply weathertightness principles and knowledge to assess compliance with E2 External Moisture and can identify the differences between the Acceptable Solution and specific design (eg, complex junctions, flashing requirements, technical knowledge of cladding systems, vented cavity systems). Is able to assess specifically designed cladding systems (outside the scope and limitations of E2/AS1) k. internal moisture management within buildings as required by E3 and E3/AS1 (eg, understands ventilation, temperature, thermal resistance, condensation, impervious surfaces for floor and wall linings) l. hazardous agents or contaminants on site as required by F1 and F1/AS1 and knows how to read a PIM and check hazard files in the absence of a PIM m. F2 and F2/AS1 using NZS 4223: Part 3, and is able to assess the compliance of glazed barriers and identify the required locations for safety glass, manifestation of glass etc for commercial buildings. Understands and is able to assess the health and safety requirements for asbestos and other hazardous building materials n. F3, F3/VM1 (interface with HSNO Act and storage of hazardous substances in buildings) and F3/AS1 (depot construction, buildings component-doors, windows venting of gas storage etc) and understands the interface between G4 (as specified systems) and F8 o. requirements for safeguarding people from falling as required by F4 and F4/AS1 (barrier construction, barrier height and the correlation between B1, B2 and F4, SED Barriers, B2 implications) p. site safety requirements – can determine site hazards and understands compliance requirements for managing these in accordance with F5 and F5/AS1 q. F6, F6/VM1 (acceptable luminance in buildings) and F6/AS1 (lighting for emergencies) and understands the interface with F8 (as specified systems) r. F7 and F7/AS1 and has a higher level of understanding of NZS 4512 (fire alarm systems in buildings) and NZS 4541 (automatic fire sprinkler systems) s. F8 and F8/AS1 (luminance, sign layout, size, proportions, colours, wording etc) and understands the interface with F6 (as specified systems) t. G1 and G1/AS1 for location, sizing and number of sanitary fixtures u. G2 and G2/AS1 for spatial laundering requirements v. G3 and G3/AS1 (eg, impervious surfaces, food storage, cooking and refrigeration)

[22] All references to Standards are to the current cited version of the quoted Standard (eg, NZS 3604:1999).

COMPETENCY – COMMERCIAL 1	
	w. natural and mechanical ventilation requirements for commercial buildings as required by G4 and G4/AS1. Can assess compliance pathways for mechanical installations for access for this type of building work (eg, producer statements, peer review in accordance with the BCA's policies and procedures) x. G5 and G5/AS1 requirements for accessibility heating, listening systems and temperature control for certain building types y. can define STC and IIC and assess commonly used solutions to determine compliance with G6 and G6/AS1 Airborne and Impact Sound between occupancies; and exhibits an understanding of the interface between C3 and G6, particularly in relation to penetrations to fire and sound rated areas z. can assess natural light and visual awareness as required by G7 and G7/AS1 aa. requirements for providing artificial lighting to enable safe movement as required by G8 and G8/AS1 (eg, access routes and minimum lux levels) bb. requirements for certifying compliance with electricity provisions as required by G9, G9/AS1 and sections 19 and 94(3) of the Act cc. understands requirements for protecting people from extreme temperatures or hazardous substances associated with building services in accordance with G10 Piped Services or provides a compliance pathway to determine compliance (eg, producer statement, peer review in accordance with the BCA's policies and procedures) dd. requirements for certifying compliance with gas as an energy source as required by G11, G11/AS1 and section 19 and 94(3) of the Act ee. understands the requirements to store solid waste for this type of building work in accordance with G15 Solid Waste ff. requirements for assessing energy efficiency for commercial buildings as required by H1, H1/AS1 and H1/VM1. Good working knowledge of NZS 4243 gg. can identify inspection requirements necessary to confirm compliance for this level of building work hh. can compile accurate compliance schedule information that meets the requirements of section 103 of the Act ii. has a strong comprehension of their individual limitations and the wider BCA's internal technical capability. Is able to identify when external technical assistance is required for alternative solutions and can outsource work for technical review when required.
Performance indicators required for plumbing and drainage compliance: 9. Process building consent applications (plans and specifications) to establish compliance with the New Zealand Building Code for this type of building work (plumbing and drainage related processing only).	**Guidance for assessors and candidates:** 5. Knowledge areas may include, but are not limited to: a. requirements for protecting people and other property from adverse effects of surface water as required by E1, E1/VM1 and E1/AS1 (minimum floor heights, design, construction and conveyance of storm water catchment) b. can assess compliance with G1 and G1/AS1 for location, sizing and number of sanitary fixtures c. laundering and spatial requirements to satisfy G2 and G2/AS1 d. understands requirements for protecting people from extreme temperatures or hazardous substances associated with building services in accordance with G10 Piped Services or provide a compliance pathway to determine compliance (eg, producer statement, peer review in accordance with the BCA's policies and procedures) e. understands requirements for specification and installation of commercial water supplies as required by G12, G12/VM1 and G12/AS1 for this type of construction (identifying non-potable water pipes and outlets, temperature requirements, cross connection hazards and backflow protection devices) f. requirements for provision of sanitary fixtures and appliances and for conveying foul water to drainage systems as required by G13, G13/AS, G13/AS2, G13/VM1 and AS/NZS 3500 Part 2 as they relate to two storey commercial construction (system design principles – avoid odour, design loading, falls, venting, materials, connections, access and maintenance and imposed loads) g. identification of inspection requirements necessary to confirm compliance for this level of building work h. can identify fire walls and determine a compliance path for plumbing and drainage piping penetrating these walls i. can explain and competently demonstrate inspection procedures for stack systems. Understands requirements for provision of grease traps in accordance with G13/AS2 f. can identify inspection requirements necessary to confirm compliance for this level of plumbing and drainage work.

COMPETENCY – COMMERCIAL 1

Regulation 10(3)(d)(ii):
Ability to inspect building work.

Performance indicators:	Guidance for assessors and candidates:
10. Inspect building work relating to foundation type inspections to establish whether compliance with the New Zealand Building Code (building only) has been achieved for commercial 1 buildings.	6. Knowledge areas for inspections may include, but are not limited to: a. demonstrated ability to read and interpret plans and specifications b. use of technical equipment (eg, moisture meters, cameras, thermometers) and administrative resources (checklists, copies of technical information eg, NZS 3604) to establish compliance. c. NZS[23] 3604, NZS 3602, NZS 3640, NZS 3622, NZS 4229 and the Compliance Documents as they relate to commercial construction; and in particular: **Foundations** • requirements for corrosion zones – concrete strength requirements (different zones and different foundation types), fixing materials • ground bearing – determination methods, fill and compaction requirements • pile foundations – types (including bracing types), sizes and dimensions (ground clearance, maximum heights, foundation depths etc), siting, fixings for different pile types, treatment and identification, how bracing is calculated for subfloors, point load piles • concrete foundations (includes concrete masonry) – reinforcing (laps and size), reinforcing type (identification of deformed and round, high tensile or normal, mesh and mesh support), pipe penetrations, point load pads, bond beams, wash outs 'A', 'B' and 'C' grade masonry • concrete slabs – reinforcing (laps, size, supplementary reinforcing requirements, cover), control joint and slab size limitations, pipe penetrations, thickness and thickenings of slab, DPM • certificate requirements including producer statements, geotechnical reports, compaction certificates, concrete dockets
11. Inspect building work relating to preline type inspections to establish whether compliance with the New Zealand Building Code (building only) has been achieved for commercial 1 buildings.	**Preline** • timber floor systems • framing and truss requirements – size span and spacing, timber grade and treatment, load paths, moisture content, fixings and connections, truss design and layout information, penetrations, bracing systems, including diaphragm ceilings and fixings • cladding requirements – underlays/wraps, wind barriers and rigid air barriers, fixings, penetrations and flashings, complex junctions, sill tapes, air seals, cavity systems, direct fix systems, penetrations, brick veneer requirements, mixed cladding systems, compartmentalisation of cavity systems over two storeys • membrane roof and deck requirements including substrates, penetrations, fall and overflows • access and facilities for people with disabilities including fixing requirements (handrails), sizes, dimensions and lengths and accessibility including gradients • sound and fire rated walls and building components – installation requirements, including isolation, insulation, penetrations, fixings • fire treatments (eg, intumescent coatings and seals) • insulation installation – type, rating, installation requirements (refer to NZS 4246 Energy Efficiency – Installing Insulation in Residential Dwellings)
12. Inspect building work relating to final type inspections to establish whether compliance with the New Zealand Building Code (building only) has been achieved for commercial 1 buildings.	**Final** • access to building – steps (and isolated steps), stairs, ladders and ramps – installation, tread, riser, handrails, non-slip provisions, accessible car parks and avoidance of conflict with vehicles and associated signage • accessible requirements including locations and dimensions of fixture, fittings and counters and spatial requirements of areas • internal linings and surfaces, including impervious surface requirements, waterproof membranes, water splash areas • smoke detectors – placement and location • ventilation – mechanical and natural • fire rated walls and other building components • assessment of airborne sound (STC) • glazing requirements, safety glass identification, locations, • finished ground level and ground clearances to claddings and floor levels • knowledge and Identification of specified systems including identification of installation, commissioning and certification requirements for specified systems • third party verification (eg, producer statements, energy work certificates)

[23] All references to Standards are to the current cited version of the quoted Standard (eg, NZS 3604:1999).

COMPETENCY – COMMERCIAL 1	
	d. can follow manufacturer requirements for installation of freestanding and in-built solid fuel heating appliances, requirements for: appliance clearances, hearth, insulation barrier, shielding, restraints, flue heights, flashings, finishes and furnishings, ventilation and associated prescribed electrical work (if applicable) e. identification and management of risk from hazardous agents or contaminants on site f. can identify when external technical assistance is required and can outsource work for technical review when required.
Performance indicators required for plumbing and drainage compliance: 13. Inspect building work to establish whether compliance with the New Zealand Building Code (plumbing and drainage related inspections only) has been achieved for this type of building work.	**Guidance for assessors and candidates:** 7. A good working knowledge of AS/NZS 3500, G12/AS1 and AS2, G13/AS1 and AS2, E1/AS1, E2/AS1 (pipe penetrations, deck drainage etc), E3/AS1, G1/AS1, H1/AS1 as they relate to residential construction; and in particular: Foundations • pipe material, gradients, size, bedding, backfill, protection, insulation, access points, jointing and sleeving, testing, supports, changes of direction, conveyance to approved outfalls, bridging • HW relief drain and discharge outlet, drain access points, amendments to plans and specifications Preline • pipe materials, thermal movement, sizing, compatibility, insulation, testing, penetrations through envelope, roof flashings, soil stacks (graded), elevated drainage principles, waste pipes, venting systems • hot water/cold water expansion relief drain discharge outfall point • hot water supply: – mains, low pressure, wet back, solar – tank supply – structural support/safe tray/overflow/seismic restraint – solar – structural support – penetrations – wetback – open venting of HWC exhaust – network utility cold water supply connections – floor waste • drainage: – maintenance of water trap seals – floor waste gullies/gully traps, sewer surcharge gully – venting (open or air admittance valves) – pipe inspection points, protection including pipe trench and foundations, materials, jointing, bedding, outfall, testing – septic tank/sewer (NUO)/other/soakage system SW – grease traps and separators Final • HWC seismic restraint, hot and cold water – valves, tempering device, cold water expansion relief, tundish, safe tray • HWC water supply temperature checks (personal hygiene, legionella) • wetback/HWC height above wood burner, flow and return pipe insulation, exhaust vent – pipe penetration flashing • solar relief valve discharge position – structural support – position – pipe insulation, installation same as building consent – penetrations flashed • test sanitary fixtures trap seal retention • equipotential bonding • gully dish/grating height, waste pipe connections to gully riser or gully dish, surface water ingress • pipe penetrations watertight • main drain vent • drainage as-built plan – amendments to plans/specifications • swimming pool backflow prevention • can identify fire walls and determine a compliance path for plumbing and drainage piping penetrating walls.

COMPETENCY – COMMERCIAL 1	
Regulation 10(3)(d)(iii): Ability to certify building work.	
Performance indicators: 14. Can issue certification (building consent or code compliance certificate) for this type of building work.	Guidance for assessors and candidates: 8. Knowledge areas may include, but are not limited to: a. candidate can compile and review information received during the processing of a building consent or information received during the inspections/construction process and determine and record the outcome to issue, suspend, request further information and/or refuse to issue a building consent or code compliance certificate (within their authority) for commercial 1 building work.
Regulation 10(3)(e): Ability to communicate with internal and external people.	
Performance indicators: 15. Communicates with internal and external customers. 16. Can use phone, email, internet and fax. 17. Demonstrates good active listening, questioning and assertiveness skills in dealing with day-to-day tasks and responsibilities.	Guidance for assessors and candidates: 9. Knowledge areas may include, but are not limited to: e. correctly prepares letters, memos and short reports under review of senior staff f. appears confident and has a good understanding of building-related subject matter when dealing with customers and colleagues g. communicates effectively with other team members, consent applicants and other members of the public h. accurately inputs written/electronic data on internal forms, checklists, databases etc; and completes prescribed forms in accordance with the Building Forms Regulations 2004.
Regulation 10(3)(f): Ability to comply with the building consent authority's policies, procedures and systems	
Performance indicators: 18. Observes the building consent authority's policies, procedures and systems for this type of building work.	Guidance for assessors and candidates: 10. Knowledge areas may include, but are not limited to: b. an ability to accurately and carefully follow established procedures for completing work tasks.

COMPETENCY LEVEL – COMMERCIAL 2

Competency level – commercial 2

COMPETENCY – COMMERCIAL 2	
Commercial, industrial, communal residential and communal non-residential buildings equal to or less than four storeys and an occupancy load of equal to or less than 500 people or purpose groups (SC) or (SD) single storey.	
Regulation 10(3)(a):[24] Understanding the philosophies and principles of building design and construction.	
Performance indicators: 1. Comprehends and has satisfactory can apply knowledge of sections 3, 4 and 5 of the Building Act 2004. 2. Comprehends and has satisfactory knowledge of design and construction techniques and construction sequencing for this type of building work.	Guidance for assessors and candidates: 1. Knowledge areas may include, but are not limited to: a. the purpose of the Building Act 2004 (the Act) b. TAs' functions, duties and powers under the Act, particularly as they relate to commercial, industrial and non-residential building work c. can discuss the hierarchy of New Zealand building legislation and the various compliance paths provided for under the Act d. can discuss building design, construction techniques and sequencing of building work as its relates to this competency level. Note this information is covered in Sections 2.1, 2.2, 2.3, 3.0, 3.1, 3.2, 3.3, 3.5, 3.6 and 3.7 of the Preface to the Building Code Handbook.[25]
Regulation 10(3)(b): Understanding and knowledge of building products and methods.	
Performance indicators: 3. Comprehends and has satisfactory knowledge of proprietary systems and building products for this type of building work. 4. Demonstrates the ability to research, analyse and assess building methods and products associated with this type of building work.	Guidance for assessors and candidates: 2. Knowledge areas may include, but are not limited to: a. commonly used building materials and systems (eg pre-nailed truss and frames, conventional and unconventional commercial cladding and flashing systems) b. product literature, testing and Verification Methods, appraisals and producer statements c. portal frame, pre-stressed and pre-cast concrete, tilt-slab, common bracing, fire rating, and sound rating systems.
Regulation 10(3)(c): Knowledge and skill in applying the Act, the Building Code, and any other applicable regulations under the Act.	
Performance indicators: 5. Comprehends and can apply knowledge of the application of the Act. 6. Comprehends and can apply knowledge of the roles and responsibilities of a BCA and TA. 7. Comprehends and can apply knowledge of the linkage and interface between the Resource Management Act 1991 and the Building Act 2004.	Guidance for assessors and candidates: 3. Demonstrates knowledge and skill in applying: a. the building control framework[26] b. the Building Act 2004 c. purpose d. principles e. application f. the New Zealand Building Code g. compliance paths h. producer statements i. the Department of Building and Housing j. territorial authorities k. building consent authorities l. project information memoranda m. building consents

[24] Building (Accreditation of Building Consent Authorities) Regulations 2006.
[25] A Compliance Document prepared by the Department of Building and Housing. Available at: http://www.dbh.govt.nz/UserFiles/File Publications/Building/Compliance-documents/building-code-handbook.pdf
[26] Guidance on items a.-r is provided in the Building Code Handbook.

COMPETENCY – COMMERCIAL 2	
	n. code compliance certificates o. certificate of acceptance p. compliance schedules q. building warrant of fitness r. certificates for public use s. can define the term 'natural hazard' and can describe the requirements for granting or refusing to grant building consents on land that is subject to a natural hazard t. can describe the legislative process for building over two or more allotments (eg, 75(1)(b) and section 76 of the Act) u. can assess alterations to existing buildings in accordance with section 112 of the Act v. has a working knowledge of waivers and modifications and provide an overview of how a TA grants a waiver or modification of the Building Code w. can explain how the classified uses and the change the use provisions are used in the legislation x. can explain and interpret building legislation and demonstrates thorough understanding of sections 7–9 of the Act and Clause A2 Interpretation of the New Zealand Building Code y. can discuss access and facilities for people with disabilities requirements of the Building Code and the limits on the application of the Building Code for industrial and commercial buildings. Has an excellent working knowledge of NZS 4211 z. demonstrates a clear knowledge of the provision for access and facilities for people with disabilities in accordance with sections 117–120 and Schedule 2 of the Act aa. has knowledge of the HSNO Act and the processes for compliance with F3, F3/VM1, F3/AS1 and G14/VM1 bb. demonstrates knowledge of the Fire Service Act 1975, sections 21A–21I, and the Fire Safety and Evacuation of Buildings Regulations 2006 cc. can apply DRU requirements in accordance with the *Gazette* notice in section 26 of the Act dd. can apply knowledge of specified systems and compliance schedule requirements in accordance with sections 100–111 of the Building Act 2004 ee. has higher level of understanding with regard to compliance schedule and specified systems technical considerations (as is discussed in the Compliance Schedule Handbook) ff. understands owner's requirements in relation to building warrants of fitness in accordance with sections 108–111 of the Act gg. can demonstrate knowledge of change of use requirements in accordance with sections 114–15 of the Act and the Building (Specified systems, Change the Use, and Earthquake-prone Buildings) Regulations 2005 hh. understands requirements to issue a notice to fix in accordance with sections 163–168 of the Act and the BCA's policies and procedures (within their authority) ii. can demonstrate an understanding of the determinations process in accordance with sections 176–190 of the Act jj. can demonstrate an understanding of certificates for public use and where they are required in accordance with sections 362A–363C of the Act kk. if inspecting, understands the Minor Variations Regulations and understands the process for formal amendments to building consents ll. the provision for inspections by a BCA as described in section 90 of the Act mm. if inspecting, the provisions on inspecting and requirements for entering land in accordance with sections 222–228 of the Act.

COMPETENCY – COMMERCIAL 2

Regulation 10(3)(d)(i):
Ability to process applications for building consent.

Performance indicators:	Guidance for assessors and candidates:
8. Process building consent applications (plans and specifications) to establish compliance with the New Zealand Building Code for this type of building work (building related processing only).	4. Knowledge areas may include, but are not limited to: a. NZS[27] 3604, NZS 3602, NZS 3640, NZS 4229 and AS/NZS 1170 as they relate to four storey commercial construction. Understands how to determine compliance requirements for corrosion zones, ground bearing, piles, footings, foundations, reinforcing, concrete strength, fill and compaction, bracing demand and design, subfloor framing, wall framing, roof structures, timber treatment, load paths, fixings and connections, underlay and wraps, cladding systems, internal linings and durability b. B1, B1/VM1 – excellent understanding of how this Verification Method and referenced Standards are used for structural design B1/VM4 – as it relates to foundation design, B1/AS1 – as it relates to the Standards and items raised in item 4.a above c. B2, B2/VM1 and B2/AS1 as they relate to this type of building work (eg, 5, 15 and 50 year durability requirement of nominated building elements) d. can assess building 'importance levels' in relation to different building types and the relevant risk analysis of these buildings as identified in AS/NZS 1170 e. can identify issues relating to the Acceptable Solution for fire compliance for this type of building work by identifying the design sequence referred to in C/AS1 Part 1 f. can apply commonly used fire rating systems for walls built in close proximity to boundaries and separating residential household units and other tenancies achieving compliance with clauses C2 and C3; and C/AS1 g. C4 and C/AS1 as they apply to structural elements for building work within the scope of this competency level h. can recognise and understands the implications of fire designs that do not use the Acceptable Solution as a means of compliance with the Building Code i. can assess accessibility to enable safe and easy movement of people as required by D1, D1/VM1 – slip resistance for walking surfaces and D1/AS1 (eg, steps, handrails, non-slip provisions, and understands safe stair construction and the definitions of private and secondary private stairs. Has thorough understanding of NZS 4121 (code of practice for design for access and use of buildings by persons with disabilities) j. can assess mechanical installations for D2, D2/AS1, D2/AS2 and D2/AS3 NZS 4332, EN81 Part 1 and 2, EN115 (passenger lifts, escalators and moving walks) k. can apply weathertightness principles and knowledge to assess compliance with E2 External Moisture. Understands the principles of specific design, E2/VM1; and has a higher level of understanding with regard to complex junctions, flashing detailing, wind action and loading on buildings, sound technical knowledge of structural cladding and cavity systems and rain screens. Is able to assess specifically designed cladding systems, curtain walls and building facades l. internal moisture management within buildings as required by E3 and E3/AS1 (eg, understands ventilation, temperature, thermal resistance, condensation, impervious surfaces for floor and wall linings) m. hazardous agents or contaminants on site as required by F1, F1/VM1 and F1/AS1 and knows how to read a PIM and check hazard files in the absence of a PIM n. F2 and F2/AS1 using NZS 4223: Part 3, and is able to assess the compliance of glazed barriers and identify the required locations for safety glass, manifestation of glass etc for commercial buildings. Understands and is able to assess the health and safety requirements for asbestos and other hazardous building materials o. F3, F3/VM1 (interface with HSNO Act and storage of hazardous substances in buildings) and F3/AS1 (depot construction, buildings component-doors, windows venting of gas storage etc) and understands the interface between G4 (as specified systems) and F8 p. requirements for safeguarding persons from falling as required by F4 and F4/AS1 (barrier construction, barrier height and the correlation between B1, B2 and F4, SED Barriers including B2 implications for structural fixings and other elements) q. site safety requirements can determine site hazards and understands compliance requirements for managing these in accordance with F5 and F5/AS1. Understands the interface between B1 and F5 for safe gantry construction as they relate to medium and large scale building projects r. F6, F6/VM1 (acceptable luminance in buildings) and F6/AS1 (lighting for emergencies) and understands the interface with F8 (as specified systems) s. F7 and F7/AS1 and has a higher level understanding of NZS 4512 (fire alarm systems in buildings) and NZS 4541 (automatic fire sprinkler systems)

[27] All references to Standards are to the current cited version of the quoted Standard (eg, NZS 3604:1999).

COMPETENCY – COMMERCIAL 2	
	t. F8 and F8/AS1 (luminance, sign layout, size, proportions, colours, wording etc) and understands the interface with F6 (as specified systems) u. G1 and G1/AS1 for location, sizing and number of sanitary fixtures v. can assess compliance with G2 and G2/AS1 for spatial laundering requirements w. spatial, hygiene, storage and preparation requirements for cooking and G3 and G3/AS1 (eg, impervious surfaces, food storage, spatial, hygiene, storage and preparation requirements for cooking and refrigeration) x. natural and mechanical ventilation requirements for commercial buildings as required by G4, G4/VM1 and G4/AS1. Can assess compliance pathways for mechanical installations for access for this type of building work (eg, producer statements, peer review in accordance with the BCA's policies and procedures) y. G5 and G5/AS1 requirements for accessibility heating, listening systems and temperature control for certain building types z. can define STC and IIC and assess commonly used and alternative solutions to determine compliance with G6, G6/VM1 and G6/AS1 Airborne and Impact Sound between occupancies. Exhibits an excellent understanding of the interface between C3 and G6, particularly in relation to penetrations to fire and sound rated areas aa. can assess natural light and visual awareness as required by G7, G7/VM1 and G7/AS1 bb. requirements for providing artificial lighting to enable safe movement as required by G8 and G8/AS1 (eg, access routes and minimum lux levels) cc. requirements for certifying compliance with electricity provisions as required by G9, G9/AS1 and sections 19 and 94(3) of the Act dd. requirements for certifying compliance with gas as an energy source as required by G11, G11/AS1 and sections 19 and 94(3) of the Act ee. understands the requirements for storage, access and temperature control of solid waste for this type of building work in accordance with G15 and G15/AS1 Solid Waste ff. requirements for assessing energy efficiency as required by H1, H1/AS1 and H1/VM1. Good working knowledge of NZS 4243 and modelling method used to achieve compliance gg. can identify inspection requirements necessary to confirm compliance for this level of building work hh. can compile accurate compliance schedule information that meets the requirements of section 103 of the Act ii. has a strong comprehension of their individual limitations and the wider BCA's internal technical capability. Is able to identify when external technical assistance is required for complex alternative solution assessment and can outsource work for technical review when required jj. can assess, engage, and manage the requirement to obtain expert opinion, advice, peer review and who should provide this for this type of construction. Understands the requirement for third-party verification, observation of building elements by experts such as chartered professional engineers and accredited inspection bodies etc kk. can mentor and/or provide technical oversight to others assessing Building Code compliance for commercial (competency) 1 type building work.
Performance indicators required for plumbing and drainage compliance: 9. Process building consent applications (plans and specifications) to establish compliance with the New Zealand Building Code for this type of building work (plumbing and drainage related processing only).	**Guidance for assessors and candidates:** 5. Knowledge areas may include, but are not limited to: a. requirements for protecting people and other property from adverse effects of surface water as required by E1, E1/VM1 and E1/AS1 – (minimum floor heights, design, construction and conveyance of storm water catchments) b. laundering and spatial requirements to satisfy G2 and G2/AS1 c. understands requirements for protecting people from extreme temperatures or hazardous substances associated with building services in accordance with G10, G10/VM1 and G10/AS1 Piped Services or provides a compliance pathway to determine compliance (eg, producer statement, peer review in accordance with the BCA's policies and procedures) d. understands requirements for specification and installation of commercial water supplies as required by G12, G12/VM1 and G12/AS1 for this type of construction (identifying non-potable water pipes and outlets, temperature requirements, cross connection hazards and backflow prevention devices) e. requirements for provision of sanitary fixtures and appliances and for conveying foul water to drainage systems as required by G13, G13/AS1, G13/AS2, G13/VM1 and AS/NZS 3500 Part 2 as they relate to commercial construction (system design principles – avoid odour, design loading, falls, venting, materials, connections, access and maintenance, and imposed loads)

COMPETENCY – COMMERCIAL 2	
	f. can explain and competently demonstrate inspection procedures for stack systems. Understands requirements for provision of grease traps in accordance with G13/AS2 g. collection, storage, treatment and disposal of industrial liquid waste in accordance with G14, G14/VM1 and G14/AS1. Understands the treatment and disposal methods illustrated in figure 1 of G14/VM1 h. identification of inspection requirements necessary to confirm compliance for this level of building work i. can identify fire walls and determine a compliance path for plumbing and drainage piping penetrating these walls j. can identify inspection requirements necessary to confirm compliance for this level of plumbing and drainage work k. can assess, engage, and manage the requirement to obtain expert opinion, advice and peer-review for specifically designed building elements for this level l. can mentor and/or provide technical oversight to others assessing Building Code compliance for commercial (competency) 1 type buildings
Regulation 10(3)(d)(ii): Ability to inspect building work.	
Performance indicators:	Guidance for assessors and candidates:
10. Inspect building work relating to foundation type inspections to establish whether compliance with the New Zealand Building Code (building only) has been achieved for commercial 2 buildings.	6. Knowledge areas for inspections may include, but are not limited to: a. demonstrated ability to read and interpret plans and specifications b. use of technical equipment (eg, moisture meters, cameras, thermometers etc) and administrative resources (checklists, copies of technical information eg, NZS 3604) to establish compliance. c. NZS[28] 3604, NZS 3602, NZS 3640, NZS 3622, NZS 4229 and the Compliance Documents as they relate to residential construction; and in particular: Foundations • requirements for corrosion zones – concrete strength requirements (different zones and different foundation types), fixing materials • ground bearing – determination methods, fill and compaction requirements • pile foundations – types (including bracing types), sizes and dimensions (ground clearance, max heights, foundation depths etc), siting, fixings for different pile types, treatment and identification, how bracing is calculated for subfloors, point load piles • concrete foundations (includes concrete masonry) – reinforcing (laps and size), reinforcing type (identification of deformed and round, high tensile or normal, mesh and mesh support), pipe penetrations, point load pads, bond beams, wash outs 'A', 'B' and 'C' grade masonry • concrete slabs – reinforcing (laps, size, supplementary reinforcing requirements, cover), control joint and slab size limitations, pipe penetrations, thickness and thickenings of slab, DPM • certificate requirements including producer statements, geotechnical reports, compaction certificates, concrete dockets.
11. Inspect building work relating to preline type inspections to establish whether compliance with the New Zealand Building Code (building only) has been achieved for commercial 2 buildings.	Preline • timber mid floor systems • framing and truss requirements size span and spacing, timber grade and treatment, load paths, moisture content, fixings and connections, truss design and layout information, penetrations, bracing systems, including diaphragm ceilings and fixings • cladding requirements – underlays/wraps, wind barriers and rigid air barriers, fixings, penetrations and flashings, complex junctions, sill tapes, air seals, cavity systems, direct fix systems, penetrations, brick veneer requirements, mixed cladding systems, compartmentalisation of cavity systems over two stories • membrane roof and deck requirements including substrates, penetrations, fall and overflows • access and facilities for people with disabilities including fixing requirements (handrails), sizes, dimensions and lengths and accessibility including gradients • sound and fire rated walls and building components – installation requirements, including isolation, insulation, penetrations, fixings • fire treatments (eg, intumescent coatings and seals) • insulation installation – type, rating, installation requirements (refer to NZS 4246 Energy Efficiency – Installing Insulation in Residential Dwellings).

[28] All references to Standards are to the current cited version of the quoted Standard (eg, NZS 3604:1999).

COMPETENCY – COMMERCIAL 2	
12. Inspect building work relating to final type inspections to establish whether compliance with the New Zealand Building Code (building only) has been achieved for commercial 2 buildings.	Final • access to building – steps (and isolated steps), stairs, ladders and ramps – installation, tread, riser, handrails, non-slip provisions, accessible car parks and avoidance of conflict with vehicles and associated signage • lift and escalator installation certification requirements and associated signage • accessible requirements including locations and dimensions of fixture, fittings and counters and spatial requirements of areas • internal linings and surfaces, including impervious surface requirements, waterproof membranes, water splash areas • smoke detectors placement and location • ventilation – mechanical and natural • rire rated walls and other building components • assessment of airborne sound (STC) • glazing requirements, safety glass identification, locations • finished ground level and ground clearances to claddings and floor levels • knowledge and identification of specified systems including identification of installation, commissioning and certification requirements for specified systems • third party verification (eg, producer statements, energy work certificates) d. can follow manufacturer requirements for installation of freestanding and in-built solid fuel heating appliances, requirements for: appliance clearances, hearth, insulation barrier, shielding, restraints, flue heights, flashings, finishes and furnishings, ventilation and associated prescribed electrical work (if applicable) e. identification and management of risk from hazardous agents or contaminants on site f. can identify when external technical assistance is required and can outsource work for technical review when required.
Performance indicators required for plumbing and drainage compliance: 13. Process building consent applications (plans and specifications) to establish compliance with the New Zealand Building Code for this type of building work (plumbing and drainage related processing only). 14. Inspect building work to establish if compliance with the New Zealand Building Code (plumbing and drainage related inspections only).	**Guidance for assessors and candidates:** 7. A good working knowledge of AS/NZS 3500, G12/AS1 and AS2, G13/AS1 and AS2, E1/AS1, E2/AS1 (pipe penetrations, deck drainage etc), E3/AS1, G1/AS1, H1/AS1 as they relate to residential construction; and in particular: Foundations • pipe material, gradients, size, bedding, backfill, protection, insulation, access points, jointing and sleeving, testing, supports, changes of direction, conveyance to approved outfalls, bridging • HW relief drain and discharge outlet, drain access points, amendments to plans and specifications. Preline • pipe materials, thermal movement, sizing, compatibility, insulation, testing, penetrations through envelope, roof flashings, soil stacks (graded), elevated drainage principles, waste pipes, venting systems • hot water/cold water expansion relief drain discharge outfall point • hot water supply: – mains, low pressure, wetback, solar – tank supply – structural support/safe tray/overflow/seismic restraint – solar – structural support – penetrations – wetback – open venting of HWC exhaust – network utility cold water supply connections – floorwaste • Drainage – maintenance of water trap seals – floor waste gullies/gully traps, sewer surcharge gully – venting (open or air admittance valves) – pipe inspection points, protection including pipe trench and foundations, materials, jointing, bedding, outfall, testing – septic tank/sewer (NUO)/other/soakage system SW – grease traps and separators

COMPETENCY – COMMERCIAL 2	
	Final • HWC seismic restraint, hot and cold water – valves, tempering device, cold water expansion relief, tundish, safe tray, • HWC water supply temperature checks (personal hygiene, legionella) • wetback/HWC height above wood burner, flow and return pipe insulation, exhaust vent – pipe penetration flashing • solar relief valve discharge position – structural support – position – pipe insulation, installation same as building consent – penetrations flashed • test sanitary fixtures trap seal retention • equipotential bonding • gully dish/grating height, waste pipe connections to gully riser or gully dish, surface water ingress • pipe penetrations watertight • main drain vent • drainage as-built plan – amendments to plans/specifications • swimming pool backflow prevention • can identify fire walls and determine a compliance path for plumbing and drainage piping penetrating walls.
Regulation 10(3)(d)(iii): Ability to certify building work.	
Performance indicators: 15. Can issue certification (building consent or code compliance certificate) for this commercial 2 building work.	Guidance for assessors and candidates: 8. Knowledge areas may include, but are not limited to: a. candidate can compile and review information received during the processing of a building consent or information received during the inspections/construction process and determine and record the outcome to issue, suspend, request further information and/or refuse to issue a building consent or code compliance certificate (within their authority) for commercial 2 building work.
Regulation 10(3)(e): Ability to communicate with internal and external people.	
Performance indicators: 16. Communicates with internal and external customers. 17. Can use phone, email, internet and fax. 18. Demonstrates good active listening, questioning and assertiveness skills in dealing with day-to-day tasks and responsibilities.	Guidance for assessors and candidates: 9. Knowledge areas may include, but are not limited to: a. correctly prepares letters, memos and reports for senior staff b. appears confident and has a good understanding of building related subject matter when dealing with customers and colleagues c. communicates effectively with other team members, consent applicants and other members of the public d. accurately input written/electronic data on internal forms, checklists, field inspection records etc; and completes prescribed forms in accordance with the Building Forms Regulations 2004 e. has the ability to administratively manage large amounts of information and resolve problems through clear and open lines of communication f. has the ability and necessary skill to communicate at a high level with building sector professionals and other technical areas within the BCA and TA g. can accurately interpret building consent correspondence and is able to compile accurate, clear and readable written responses such as requests for further information or notices to fix etc h. can clearly articulate findings and provide feedback to fellow staff members, the public and building sector professionals i. presents a convincing and rational argument in support of decisions made.
Regulation 10(3)(f): Ability to comply with the building consent authority's policies, procedures and systems	
Performance indicators: 19. Observes the building consent authority's policies, procedures and systems for this type of building work.	Guidance for assessors and candidates: 10. Knowledge areas may include, but are not limited to: a. accurately and carefully follows established procedures for completing work tasks.

COMPETENCY LEVEL – COMMERCIAL 3

Competency level – commercial 3

COMPETENCY – COMMERCIAL 3	
All uses of buildings that are over four storeys high, or contain over 500 occupants or purpose groups (SC) or (SD) greater than a single storey.	
Regulation 10(3)(a):[29] Understanding the philosophies and principles of building design and construction.	
Performance indicators: 1. Comprehends and has satisfactory knowledge of sections 3, 4 and 5 of the Building Act 2004. 2. Comprehends and has satisfactory knowledge of design and construction techniques and construction sequencing for this type of building work.	Guidance for assessors and candidates: 1. Knowledge areas may include, but are not limited to: a. the purpose of the Building Act 2004 (the Act) b. TAs' functions, duties and powers under the Act, particularly as they relate to commercial, industrial and non-residential building work c. can discuss the hierarchy of New Zealand building legislation and the various compliance paths provided for under the Act d. can discuss building design, construction techniques and sequencing of building work as its relates to this competency level. Note this information is covered in Sections 2.1, 2.2, 2.3, 3.0, 3.1, 3.2, 3.3, 3.5, 3.6 and 3.7 of the Preface to the Building Code Handbook.[30]
Regulation 10(3)(b): Understanding and knowledge of building products and methods.	
Performance indicators: 3. Comprehends and has satisfactory knowledge of proprietary systems and building products for this type of building work. 4. Demonstrates the ability to research, analyse and assess building methods and products associated with this type of building work.	Guidance for assessors and candidates: 2. Knowledge areas may include, but are not limited to: a. commonly used building materials and systems (eg, pre-nailed and truss frames, laminated structures, conventional and unconventional commercial cladding and flashing systems) b. product literature, testing and Verification Methods, appraisals and producer statements c. portal frame, pre-stressed and pre-cast concrete, tilt-slab, common bracing, fire rating and sound rating systems d. assessment of complex design methods including unconventional engineered solutions.
Regulation 10(3)(c): Knowledge and skill in applying the Act, the Building Code, and any other applicable regulations under the Act.	
Performance indicators: 5. Comprehends and can apply knowledge of the application of the Act. 6. Comprehends and can apply knowledge of the roles and responsibilities of a BCA and TA. 7. Comprehends and can apply knowledge of the linkage and interface between the Resource Management Act 1991 and the Building Act 2004.	Guidance for assessors and candidates: 3. Demonstrates knowledge and skill in applying: a. the building control framework[31] b. the Building Act 2004 c. purpose d. principles e. application f. the New Zealand Building Code g. compliance paths h. producer statements i. the Department of Building and Housing j. territorial authorities k. building consent authorities l. project information memoranda

29 Building (Accreditation of Building Consent Authorities) Regulations 2006.
30 A Compliance Document prepared by the Department of Building and Housing. Available at: http://www.dbh.govt.nz/UserFiles/File/Publications/Building/Compliance-documents/building-code-handbook.pdf
31 Guidance on items a.-r is provided in the Building Code Handbook.

COMPETENCY – COMMERCIAL 3	
	m. building consents n. code compliance certificates o. certificate of acceptance p. compliance schedules q. building warrant of fitness r. certificates for public use s. can define the term 'natural hazard' and can describe the requirements for granting or refusing to grant building consents on land that is subject to a natural hazard t. can describe the legislative process for building over two or more allotments (eg, sections 75(1)(b) and 76 of the Act) u. can assess alterations to existing buildings in accordance with section 112 of the Act v. has a working knowledge of waivers and modifications and provide an overview of how a TA grants a waiver or modification of the Building Code w. can explain how the classified uses and the change the use provisions are used in the legislation x. can explain and interpret building legislation and demonstrates thorough understanding of sections 7–9 of the Act and Clause A2 Interpretation of the New Zealand Building Code y. can discuss access and facilities for people with disabilities requirements of the Building Code and the limits on the application of the Building Code for industrial and commercial buildings. Has an excellent working knowledge of NZS 4211 z. demonstrates a clear knowledge of the provision for access and facilities in buildings for people with disabilities in accordance with sections 117–120 and Schedule 2 of the Act aa. has knowledge of the HSNO Act and the processes for compliance with F3, F3/VM1, F3/AS1 and G14/VM1 bb. demonstrates knowledge of the Fire Service Act 1975, sections 21A–21I, and the Fire Safety and Evacuation of Buildings Regulations 2006 cc. can apply DRU requirements in accordance with the *Gazette* notice in section 26 of the Act dd. can apply knowledge of specified systems and compliance schedule requirements in accordance with sections 100–111 of the Building Act 2004 ee. has higher level of understanding with regard to compliance schedule and specified systems technical considerations (as is discussed in the compliance schedule handbook) ff. understands owners' requirements in relation to building warrants of fitness in accordance with sections 108–111 of the Act gg. can demonstrate knowledge of change of use requirements in accordance with sections 114–115 of the Act and the Building (Specified Systems, Change the Use, and Earthquake-prone Buildings) Regulations 2005 hh. understands requirements to issue a notice to fix in accordance with sections 163–168 of the Act and the BCA's policies and procedures (within their authority) ii. can demonstrate an understanding of the determinations process in accordance with sections 176–190 of the Act jj. can demonstrate an understanding of certificates for public use and where they are required in accordance with sections 362A–363C of the Act kk. if inspecting, understands the Minor Variations Regulations and understands the process for formal amendments to building consents ll. the provision for inspections by a BCA as described in section 90 of the Act mm. if inspecting, the provisions on inspecting and requirements for entering land in accordance with sections 222–228 of the Act.

COMPETENCY – COMMERCIAL 3

Regulation 10(3)(d)(i):
Ability to process applications for building consent.

Performance indicators:	Guidance for assessors and candidates:
8. Process building consent applications (plans and specifications) to establish compliance with the New Zealand Building Code for this type of building work (building related processing only).	4. Knowledge areas may include, but are not limited to: a. NZS[32] 3604, NZS 3602, NZS 3640, NZS 4229 and AS/NZS 1170 as they relate to four storey (and over) commercial construction. Understands how to determine compliance requirements for corrosion zones, ground bearing, piles, footings, foundations, reinforcing, concrete strength, fill and compaction, bracing demand and design, subfloor framing, wall framing, roof structures, timber treatment, load paths, fixings and connections, underlay and wraps, rigid air barriers, cladding systems, internal linings and durability. b. B1, B1/VM1 – excellent understanding of how this Verification Method and referenced Standards are used for structural design, B1/VM4 – as it relates to foundation design, B1/AS1 – as it relates to the Standards and items raised in item 4a above. c. B2, B2/VM1 and B2/AS1 as they relate to this type of building work (eg, 5, 15 and 50 year durability requirement of nominated building elements) d. can assess building 'importance levels' in relation to different building types and the relevant risk analysis of these buildings as is identified in AS/NZS 1170 e. can identify issues relating to the Acceptable Solution for fire compliance for this type of building work by identifying the design sequence referred to in C/AS1 Part 1 f. can apply commonly used fire rating systems for walls built in close proximity to boundaries and separating residential household units and other tenancies achieving compliance with clauses C2 and C3; and C/AS1 g. C4 and C/AS1 as they apply to structural elements for building work within the scope of this competency level. h. can recognise and understands the implications of fire designs that do not use the Acceptable Solution as a means of compliance with the Building Code i. can assess accessibility to enable safe and easy movement of people as required by D1, D1/VM1 – slip resistance for walking surfaces and D1/AS1 (eg, steps, handrails, non-slip provisions, and understands safe stair construction and the definitions of private and secondary private stairs. Has thorough understanding of NZS 4121 (code of practice for design for access and use of buildings by persons with disabilities) j. can assess mechanical installations for D2, D2/AS1, D2/AS2 and D2/AS3, NZS 4332, EN81 parts 1 and 2, EN115 (passenger lifts, escalators and moving walks) k. can apply weathertightness principles and knowledge to assess compliance with E2 External Moisture. Understands the principles of specific design, E2/VM1; and has a higher level of understanding with regard to (complex junctions, flashing detailing, wind action and loading on buildings, sound technical knowledge of structural cladding and cavity systems and rain screens). Can assess specifically designed cladding systems, curtain walls and building facades l. internal moisture management within buildings as required by E3 and E3/AS1 (eg, understands ventilation, temperature, thermal resistance, condensation, impervious surfaces for floor and wall linings) m. hazardous agents or contaminants on site as required by F1, F1/VM1 and F1/AS1 and knows how to read a PIM and check hazard files in the absence of a PIM n. F2 and F2/AS1 using NZS 4223: Part 3, and can assess the compliance of glazed barriers and identify the required locations for safety glass, manifestation of glass etc for commercial buildings. Understands and can assess the health and safety requirements for asbestos and other hazardous building materials o. F3, F3/VM1 (interface with HSNO Act and storage of hazardous substances in buildings) and F3/AS1 (depot construction, buildings component-doors, windows venting of gas storage etc) and understands the interface between G4 (as specified systems) and F8 p. understands requirements for safeguarding people from falling as required by F4 and F4/AS1 (barrier construction, barrier height and the correlation between B1, B2 and F4, SED Barriers including B2 implications for structural fixings and other elements) q. can determine site hazards and understands compliance requirements for managing these in accordance with F5 and F5/AS1. Understands the interface between B1 and F5 for safe gantry construction r. F6, F6/VM1 (acceptable luminance in buildings) and F6/AS1 (lighting for emergencies) and understands the interface with F8 (as specified systems) s. F7 and F7/AS1 and has a higher level understanding of NZS 4512 (fire alarm systems in buildings) and NZS 4541 (automatic fire sprinkler systems). t. F8 and F8/AS1 (luminance, sign layout, size, proportions, colours, wording etc) and understands the interface with F6 (as specified systems)

[32] All references to Standards are to the current cited version of the quoted Standard (eg, NZS 3604:1999).

COMPETENCY – COMMERCIAL 3	
	u. can assess compliance with G2 and G2/AS1 for spatial laundering requirements v. spatial, hygiene, storage and preparation requirements for cooking and G3 and G3/AS1 (eg, impervious surfaces, food storage, spatial, hygiene, storage and preparation requirements for cooking and refrigeration) w. natural and mechanical ventilation requirements for domestic buildings as required by G4, G4/VM1 and G4/AS1. Can assess compliance pathways for mechanical installations for access for this type of building work (eg, producer statements, peer review in accordance with the BCA's policies and procedures) x. G5 and G5/AS1 requirements for accessibility heating, listening systems and temperature control for certain building types y. can define STC and IIC and assess commonly used and alternative solutions to determine compliance with G6, G6/VM1 and G6/AS1 Airborne and Impact Sound between occupancies; and exhibits an excellent understanding of the interface between C3 and G6, particularly in relation to penetrations to fire and sound rated areas z. can assess natural light and visual awareness as required by G7, G7/VM1 and G7/AS1 aa. requirements for providing artificial lighting to enable safe movement as required by G8 and G8/AS1 bb. requirements for certifying compliance with electricity provisions as required by G9, G9/AS1 and sections 19 and 94(3) of the Act cc. requirements for certifying compliance with gas as an energy source as required by G11, G11/AS1 and sections 19 and 94(3) of the Act dd. understands the requirements to store solid waste for this type of building work in accordance with G15 Solid Waste ee. requirements for assessing energy efficiency as required by H1, H1/AS1 and H1/VM1. Good working knowledge of NZS 4243 and modelling method used to achieve compliance ff. can identify inspection requirements necessary to confirm compliance for this level of building work gg. can compile accurate compliance schedule information that meets the requirements of section 103 of the Act hh. has a strong comprehension of their individual limitations and the wider BCA's internal technical capability. Is able to identify when external technical assistance is required for a complex alternative solution assessment and can outsource work for technical review when required ii. can assess, engage and manage the requirement to obtain expert opinion, advice, peer review and who should provide this for this type of construction. Understands the requirement for third-party verification, observation of building elements by experts such as chartered professional engineers and accredited inspection bodies etc jj. can mentor and/or provide technical oversight to others assessing Building Code compliance for commercial (competency) 1 and 2 type building work.
Performance indicators required for plumbing and drainage compliance: 9. Process building consent applications (plans and specifications) to establish compliance with the New Zealand Building Code for this type of building work (plumbing and drainage related processing only).	Guidance for assessors and candidates: 5. Knowledge areas may include, but are not limited to: a. requirements for protecting people and other property from adverse effects of surface water as required by E1 and E1/AS1 (minimum floor heights, design, construction and conveyance of storm water catchment) b. laundering and spatial requirements to satisfy G2 and G2/AS1 c. can assess compliance with G1 and G1/AS1 for location, sizing and number of sanitary fixtures d. understands requirements for protecting people from extreme temperatures or hazardous substances associated with building services in accordance with G10, G10/VM1 and G10/AS1 Piped Services or provides a compliance pathway to determine compliance (eg, producer statement, peer review in accordance with the BCA's policies and procedures) e. understands requirements for specification and installation of commercial water supplies as required by G12, G12/VM1 and G12/AS1 for this type of construction (identifying non-potable water pipes and outlets, temperature requirements, cross connection hazards and backflow protection devices) f. requirements for provision of sanitary fixtures and appliances and for conveying foul water to drainage systems as required by G13, G13/AS1, G13/AS2, G13/VM1 and AS/NZS 3500 Part 2 as they relate to commercial construction (system design principles – avoid odour, design loading, falls, venting, materials, connections, access and maintenance and imposed loads)

COMPETENCY – COMMERCIAL 3	
	g. collection, storage, treatment and disposal of industrial liquid waste in accordance with G14, G14/VM1 and G14/AS1. Understands the treatment and disposal methods illustrated in figure 1 of G14/VM1) h. can explain and competently demonstrate inspection procedures for stack systems. Understands requirements for provision of grease traps in accordance with G13/AS2 i. identification of inspection requirements necessary to confirm compliance for this level of building work j. can explain inspection procedures for each inspection type covered in this competency k. can identify fire walls and determine a compliance path for plumbing and drainage piping penetrating these walls l. can identify inspection requirements necessary to confirm compliance for this level of plumbing and drainage work m. can explain competently demonstrate inspection procedures for each plumbing and drainage inspection type n. can assess, engage, and manage the requirement to obtain expert opinion, advice and peer review for specifically designed building elements for this level of building work o. can mentor and/or provide technical oversight to others assessing Building Code compliance for commercial (competency) 1 and 2 type building work.
Regulation 10(3)(d)(ii): Ability to inspect building work.	
Performance indicators:	Guidance for assessors and candidates:
10. Inspect building work relating to foundation type inspections to establish whether compliance with the New Zealand Building Code (building only) has been achieved for commercial 3 buildings. 11. Inspect building work relating to preline type inspections to establish whether compliance with the New Zealand Building Code (building only) has been achieved for commercial 3 buildings.	6. Knowledge areas for inspections may include, but are not limited to: a. can read and interpret complex plans and specifications b. the use of Standards used in the design of commercial buildings such as AS/NZS 1170 and the Compliance Documents as they relate to commercial/industrial construction; and in particular: Foundations • requirements for corrosion zones – concrete strength requirements (different zones and different foundation types), fixing materials • ground bearing – determination methods, fill and compaction and geotechnical requirements • common foundation systems including raft, driven piles, bored piles shear walling, pointloads, load paths, reinforcing (laps and size), reinforcing type (identification of deformed and round, high tensile or normal, mesh and mesh support), pipe penetrations, bond beams, wash outs, tanking requirements, seismic design considerations • concrete slabs – reinforcing (laps, size, supplementary reinforcing requirements, cover), control joint and slab size limitations, pipe penetrations, thickness and thickenings of slab, DPM • certificate requirements including producer statements (PS4 Inspection requirements), geotechnical reports, compaction certificates, concrete dockets. Preline • timber and concrete mid floor systems • framing and truss requirements size span and spacing, timber grade and treatment, load paths, moisture content, fixings and connections, truss design and layout information, penetrations, bracing systems and fixings including fixing of panels • access and facilities for people with disabilities including fixing requirements (handrails), sizes, dimensions and lengths and accessibility including gradients • impervious surfaces, membrane areas, accidental overflow, wall and floor surfaces • ventilation ducting, penetrations, fire dampers • cladding requirements – underlays/wraps, wind barriers and rigid air barriers, fixings, penetrations and flashings, junctions, sill tapes, air seals etc, cavity systems, curtain walls, structural and fire rated cladding systems, rain screens, penetrations, masonry block work • membrane roof and deck requirements including substrates, penetrations, fall, overflow • sound and fire rated walls and building components – installation requirements including isolation, insulation, penetrations, fixings • insulation installation – type, rating, thermal and fire resistance, thermal bridging, installation requirements • fire treatments (eg, intumescent coatings and seals) • certification requirements including producer statements, PS4 inspection requirements, commissioning certificates, concrete dockets and other third party verifications.

COMPETENCY – COMMERCIAL 3	
12. Inspect building work relating to final type inspections to establish whether compliance with the New Zealand Building Code (building only) has been achieved for commercial 3 buildings.	Final • Fire safety: – surface finishes, smoke development and spread of flame requirements – means of escape – travel distances escape routes, final exits, visibility, signage – fire and smoke separations and penetrations, collars, sealants, dampers, doors and door hardware • Access to and within the building: – steps (and isolated steps), stairs, ladders and ramps – installation – tread, riser, handrails, non-slip provisions, – lifts and escalators – accessibility, commissioning requirements – accessible car parks and avoidance of conflict with vehicles – signage • Moisture: – finished ground level and ground clearances to claddings (if applicable) and floor levels – awareness of completion requirements for cladding systems (eg, protective coating systems) – flashing of penetrations (roof and cladding systems) – internal linings and surfaces including, impervious surface requirements, waterproof membranes, water splash areas – accidental overflow requirements to protect other property • Safety of users: – identification and management of risk from hazardous agents or contaminants on site – glazing requirements, safety glass identification, locations and manifestation requirements, – safety from falling – barriers, change of levels, roof access, barrier construction, compatibility of barriers with intended uses of areas, window restrictors • Services and facilities: – accessible requirements including locations and dimensions of fixtures, fittings and counters and spatial requirements of areas – internal linings and surfaces including, impervious surface requirements, waterproof membranes, water splash areas that relate to kitchens, laundries, bathrooms (or other spaces where sanitary fixture are located) and solid waste disposal areas – ventilation – mechanical and natural for odours, gasses or moisture – assessment of airborne sound (IIC and STC) – assessment of lighting in access routes and common spaces – knowledge of use of energy work certificates to demonstrate compliance with G9 Electricity and G11 Gas as an Energy Source – knowledge of certification requirements for piped services G10 • Specified systems: – knowledge and identification of specified systems – identification of installation, commissioning and certification requirements for specified systems – interconnectivity of specified systems such as requirement for activation of automatic doors on activation of an alarm c. can identify when external technical assistance is required and can outsource work for technical review when required.

COMPETENCY – COMMERCIAL 3

Performance indicators required for plumbing and drainage compliance:	Guidance for assessors and candidates:
13. Inspect building work to establish whether compliance with the New Zealand Building Code (plumbing and drainage related inspections only) has been achieved for commercial 3 buildings.	7. A good working knowledge of AS/NZS 3500, G12/AS1 and AS2, G13/AS1 and AS2, E1/AS1, E2/AS1 (pipe penetrations, deck drainage etc), E3/AS1, G1/AS1, H1/AS1 as they relate to commercial construction; and in particular: **Foundations** • pipe material, gradients, size, bedding, backfill, protection, insulation, access points, jointing and sleeving, testing, supports, changes of direction, conveyance to approved outfalls, bridging • HW relief drain and discharge outlet, drain access points, amendments to plans and specifications. **Preline** • pipe materials, thermal movement, sizing, compatibility, insulation, testing, penetrations through envelope, roof flashings, soil stacks (graded), elevated drainage principles, waste pipes, venting systems • hot water/cold water expansion relief drain discharge outfall point. • hot water supply: – mains, low pressure, wet back, solar – tank supply – structural support/safe tray/overflow/seismic restraint – solar and its structural support and penetrations – network utility cold water supply connections, backflow prevention systems – floor waste requirements **Drainage** • maintenance of water trap seals – floor waste gullies/gully traps, sewer surcharge gully • venting (open or air admittance valves) • pipe inspection points, protection including pipe trench and foundations, materials, jointing, bedding, outfall, testing • on site disposal systems/sewer (NUO)/soakage system stormwater • rainwater tank supply (potable)/overflow within consented property/pump/gravity (air locks) **Final** • HWC seismic restraint, hot and cold water – valves, tempering device, cold water expansion relief, tundish, safe tray • HWC water supply temperature checks (personal hygiene, legionella) • solar relief valve discharge position and its structural support, position, pipe insulation, and penetrations requirements • test sanitary fixtures trap seal retention • equipotential bonding • gully dish/grating height, waste pipe connections to gully riser or gully dish, surface water ingress • pipe penetrations watertight • main drain vent • drainage as-built plan – amendments to plans/specifications • backflow prevention requirements and testing • can identify fire walls and determine a compliance path for plumbing and drainage piping penetrating these walls.
Regulation 10(3)(d)(iii): Ability to certify building work.	
Performance indicators:	**Guidance for assessors and candidates:**
14. Can issue certification (building consent or code compliance certificate) for this commercial 3 building work.	8. Knowledge areas may include, but are not limited to: a. candidate can compile and review information received during the processing of a building consent or information received during the inspections/construction process and determine and record the outcome to issue, suspend, request further information and/or refuse to issue a building consent or code compliance certificate (within their authority) for commercial 3 building work.

COMPETENCY – COMMERCIAL 3	
Regulation 10(3)(e): Ability to communicate with internal and external people.	
Performance indicators: 15. Communicates with internal and external customers. 16. Can use phone, email, internet and fax. 17. Demonstrates good active listening, questioning and assertiveness skills in dealing with day-to-day tasks and responsibilities.	Guidance for assessors and candidates: 9. Knowledge areas may include, but are not limited to: a. correctly prepares sophisticated letters, memos and reports and checks the work of others b. is confident and has a good understanding of building related subject matter when dealing with customers and colleagues c. communicates effectively with other team members, consent applicants and other members of the public d. accurately input written/electronic data on internal forms, checklists, field inspection records etc and completes prescribed forms in accordance with the Building Forms Regulations 2004 e. has the ability to administratively manage large amounts of information and resolve problems through clear and open lines of communication f. has the ability and necessary skill to communicate at a high level with building sector professionals and other technical areas within the BCA and TA g. can accurately interpret building consent correspondence including peer review reports and other supporting evidence and is able to compile accurate, clear and readable written responses such as requests for further information or notices to fix etc h. is able to clearly articulate findings and provide feedback to fellow staff members, the public and building sector professionals i. presents a convincing and rational argument in support of decisions made.
Regulation 10(3)(f): Ability to comply with the building consent authority's policies, procedures and systems.	
Performance indicators: 18. Observes the building consent authority's policies, procedures and systems for this type of building work.	Guidance for assessors and candidates: 10. Knowledge areas may include, but are not limited to: a. accurately and carefully follows established procedures for completing work tasks.

APPENDIX 2: COMPETENCY ASSESSOR SPECIFICATIONS

Appendix 2: Competency Assessor Specifications

COMPETENCY ASSESSOR SPECIFICATION	
An assessor needs to be a person trained in assessment theory and practice and with appropriate technical building control skills, knowledge and expertise to undertake an assessment.	
An assessor must have appropriate experience in the building control sector.	
Assessor requirements: 1. Has appropriate experience in the building control sector.	**Guidance for assessor candidates:** 1. Examples include, but are not limited to: a. minimum of five years' experience in the building control sector b. is a team leader, manager or a senior specialist or senior consultant working in the building control sector c. has current experience of making regulatory building control decisions d. has participated in BCA accreditation activities and audits (within a BCA or for International Accreditation New Zealand as a technical expert) e. has intimate knowledge and understanding of the BCA's building control policies and procedures.
An assessor must have current and comprehensive technical and legislative knowledge and understanding.	
Assessor requirements: 2. Keeps up to date on legislative and regulatory changes. 3. Knows their technical limitations, and works within these. 4. Has comprehensive technical knowledge in relation to processing building consent applications and inspecting building work. 5. Has comprehensive technical knowledge in relation to issuing legislative approvals and notices (eg, CCCs, NTF). 6. Has undertaken assessor training on the National Competency Assessment System.	**Guidance for assessor candidates:** 2. Examples include, but are not limited to: a. is aware of relevant and current guidance provided by the Department of Building and Housing b. provides technical leadership within a BCA c. has undertaken both building consent processing and inspection of building work d. has issued legislative forms and notices such as notices to fix, building consents, code compliance certificates e. understands how the National BCA Competency Assessment System's competency specifications work and where they would fit f. seeks assistance when outside their limitations.
An assessor must have credibility and experience in undertaking assessment.	
Assessor requirements: 7. Has credibility with candidates, peers and management. 8. Has the skill, knowledge, and ability to assess a candidate's evidence in the workplace using assessment guides and standards.	**Guidance for assessor candidates:** 3. Examples include, but are not limited to: a. is aware of relevant and current guidance provided by the Department of Building and Housing b. has excellent working relationships with people within the organisation and is regarded as technically competent by peers c. has the ability to perform assessments without bias or conflict of interest d. has undertaken competency assessments in the past e. acknowledges their own technical limitations and recognizes when additional technical expertise is required f. can make a judgment whether the candidate is competent g. can keep records and make sure performance indicator requirements are fulfilled h. has genuine interest in training and assessment.

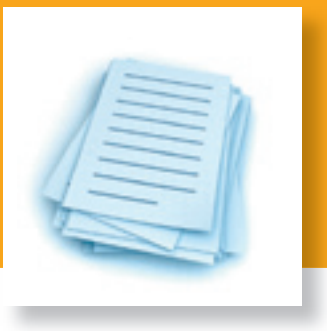
COMPETENCY ASSESSOR SPECIFICATION	
An assessor must have excellent communication skills.	
Assessor requirements: 9. Communicates well with internal and external people. 10. Demonstrates good active listening, questioning and assertiveness skills in dealing with day-to-day tasks and responsibilities.	Guidance for assessor candidates: 4. Examples include, but are not limited to: a. can communicate well with all involved in assessment b. appears confident and has a good understanding of building related subject matter when dealing with candidates and building sector professionals c. can clarify and present information in a succinct and meaningful manner d. is able to consistently produce accurate written reports in relation to candidate assessment e. has good analytical skills and is able to evaluate evidence f. is able to clearly articulate findings and provide feedback to candidates when required g. has experience undertaking interviews or assessments and recorded appropriate outcomes. h. presents a convincing and rational argument in support of decisions made i. is able to provide instruction to people on technical matters (teaching/mentoring).

Where the assessor does not have the required level of technical expertise in a specialist area to assess a candidate's evidence, the assessor should refer this to an expert in that particular area. For example, an expert on commercial plumbing and drainage aspects may be called upon to examine a candidate's plumbing and drainage evidence and provide advice to the assessor.

For the effectiveness of this system, competency assessors must meet the assessor requirements listed in items 1–10 above. For some BCAs this may require outsourcing assessment services/engaging external competency assessors.

APPENDIX 3: TEMPLATES

Appendix 3: Templates



NATIONAL COMPETENCY ASSESSMENT FRAMEWORK

Note: Electronic Word versions of these forms are available from the Department's Consent Authority Capability and Performance Group.

PART 1: ASSESSMENT PLAN
Assessor completes this plan and agrees evidence requirements and dates with candidate.

Personal assessment plan for:

Assessment type:
- ◯ New candidate
- ◯ Review of existing employee (Note: If this is a competency review just note what has changed since the last assessment)
- ◯ Transition from another BCA system
- ◯ Level change

Competency level assessed:

Assessment includes (tick relevant area/s):
- ◯ Plumbing and drainage
- ◯ Building
- ◯ Processing
- ◯ Inspections
- ◯ Specialist:.....

Candidate's work experience

Candidate's qualifications

Relevant training completed

PART 1: ASSESSMENT PLAN
Assessor completes this plan and agrees evidence requirements and dates with candidate.

Evidence required	Comments	Date required
Completed processing sheets/plans/ specifications/internal audit/records etc.		
Quiz results		
Training course evaluation		
Copy of qualifications		
Completed inspection records		
Witnessing of work		
Other (please specify)		

Special requirements (list any competency scope limitations):

.....

.....

.....

Agreement:

Assessor: ..... Date: .....
(signature)

Candidate: ..... Date: .....
(signature)

PART 2: REASONS FOR DECISIONS		
Regulation	Performance indicator	Performance indicators were met by:
Regulation 10(3)(a): Understanding the philosophies and principles of building design and construction.	1. Comprehends and has satisfactory knowledge of sections 3, 4 and 5 of the Building Act 2004. 2. Comprehends and has satisfactory knowledge of design and construction techniques and construction sequencing for this type of building work.	
Regulation 10(3)(b): Understanding and knowledge of building products and methods.	3. Comprehends and has satisfactory knowledge of proprietary systems and building products for this type of building work. 4. Demonstrates the ability to research, analyse and assess building methods and products associated with this type of building work.	
Regulation 10(3)(c): Knowledge and skill in applying the Act, the Building Code, and any other applicable regulations under the Act.	5. Comprehends and can apply knowledge of the application of the Act. 6. Comprehends and can apply knowledge of the roles and responsibilities of a BCA and TA. 7. Comprehends and can apply knowledge of the linkage and interface between the Resource Management Act 1991 and the Building Act 2004.	
Regulation 10(3)(d)(i): Ability to process applications for building consent.	8. Process building consent applications (plans and specifications) to establish compliance with the New Zealand Building Code for this type of building work (building related processing only). 9. Demonstrates an understanding of the type of national multiple use building approvals (MultiProof) that fall within the scope of this competency level. 10. Process building consent applications (plans and specifications) to establish compliance with the New Zealand Building Code for this type of building work (plumbing and drainage related processing only).	
Regulation 10(3)(d)(ii): Ability to inspect building work.	11. Inspect building work relating to foundation type inspections to establish whether compliance with the New Zealand Building Code (building only) has been achieved for this level. 12. Inspect building work relating to preline type inspections to establish whether compliance with the New Zealand Building Code (building only) has been achieved for this level. 13. Inspect building work relating to final type inspections to establish whether compliance with the New Zealand Building Code (building only) has been achieved for this level. 14. Inspect building work to establish whether compliance with the New Zealand Building Code (plumbing and drainage related inspections only) has been achieved for this level.	

PART 2: REASONS FOR DECISIONS		
Regulation 10(3)(d)(iii): **Ability to ability to certify building work.**	15. Issue a building consent for this type of building work. 16. Issue a code compliance certificate for this type of building work.	
Regulation 10(3)(e): **Ability to communicate with internal and external people.**	17. Communicates with internal and external people. 18. Can use phone, email, internet and fax. 19. Demonstrates good active listening, questioning and assertiveness skills in dealing with day-to-day tasks and responsibilities.	
Regulation 10(3)(f): **Ability to comply with the building consent authority's policies, procedures and systems.**	20. Observes the building consent authority's policies, procedures and systems for this type of building work.	

PART 3: OUTCOME OF ASSESSMENT
Outcome statement (and conditions if applicable):

Agreement:

Assessor: ..... Date: .....
(signature)

Candidate: ..... Date: .....
(signature)

NATIONAL COMPETENCY ASSESSMENT SYSTEM: CANDIDATE EVIDENCE FORM – PROCESSING
To be completed by the candidate.

Candidate name: Date:

Level of competency being assessed:

Agreed building consent number/address of building being used for assessment:

Brief description of building project being used for assessment:

Describe in your own words what you consider is important in relation to the following aspects of your building project.

2. Site/land that building is being built on:

3. Foundations:

4. Structure of the building from foundation/slab up:

5. Building envelope (claddings):

6. Fire safety:

7. Services:

8. Interior finishes:

NATIONAL COMPETENCY ASSESSMENT SYSTEM: CANDIDATE EVIDENCE FORM – PROCESSING **To be completed by the candidate.**
Describe in your own words the areas of the building that you consider a risk: Why?
Were there any alternative solutions used in this building? If so, please describe in your own words what they were and how you assessed them:
In your own words please describe any legislative requirements you needed to consider when processing the building consent application:
List what further evidence you have either attached or referred to in this form. Note: You do not need to duplicate documents that are stored elsewhere in the BCA's system, but these do need to be referenced. Documents that you do attach or reference need to be relevant.

NATIONAL COMPETENCY ASSESSMENT SYSTEM: CANDIDATE EVIDENCE FORM – INSPECTION

To be completed by the candidate.

Candidate name: Date:

Level of competency being assessed:

Agreed building consent number/address of building being assessed:

What type of work is the inspection relating to (tick relevant work)?

◯ Building

◯ Plumbing and drainage

What type of inspection is being assessed (tick relevant work)?

◯ Foundation

◯ Preline

◯ Final

Brief description of building project being used for assessment:

Brief description of inspection being undertaken for assessment:

Describe in your own words what you consider is important in relation to the following relevant aspects of your building inspection:

1. Site/land that building is being built on in relation to the inspection:

2. Structure and durability in relation to the inspection:

3. Building envelope (claddings) in relation to the inspection:

4. Fire safety aspects of the building in relation to the inspection:

5. Services and associated systems in relation to the inspection:

6. Interior finishes in relation to the inspection:

NATIONAL COMPETENCY ASSESSMENT SYSTEM: CANDIDATE EVIDENCE FORM – INSPECTION **To be completed by the candidate.**
Describe in your own words the areas of the building you consider a risk in relation to your inspection: Why?
In your own words please describe any legislative requirements you needed to consider when inspecting this building work:
List what further evidence you have either attached or referred to in this form. Note: You do not need to duplicate documents that are stored elsewhere in the BCA's system, but these do need to be referenced. Documents that you do attach or reference need to be relevant.

SKILLS MATRIX

COMPETENCY LEVELS (PROCESSING)							
		Residential 1	Residential 2	Residential 3	Commercial 1	Commercial 2	Commercial 3
Processing	Competent						
	Developing						
Certification	Competent						
	Developing						

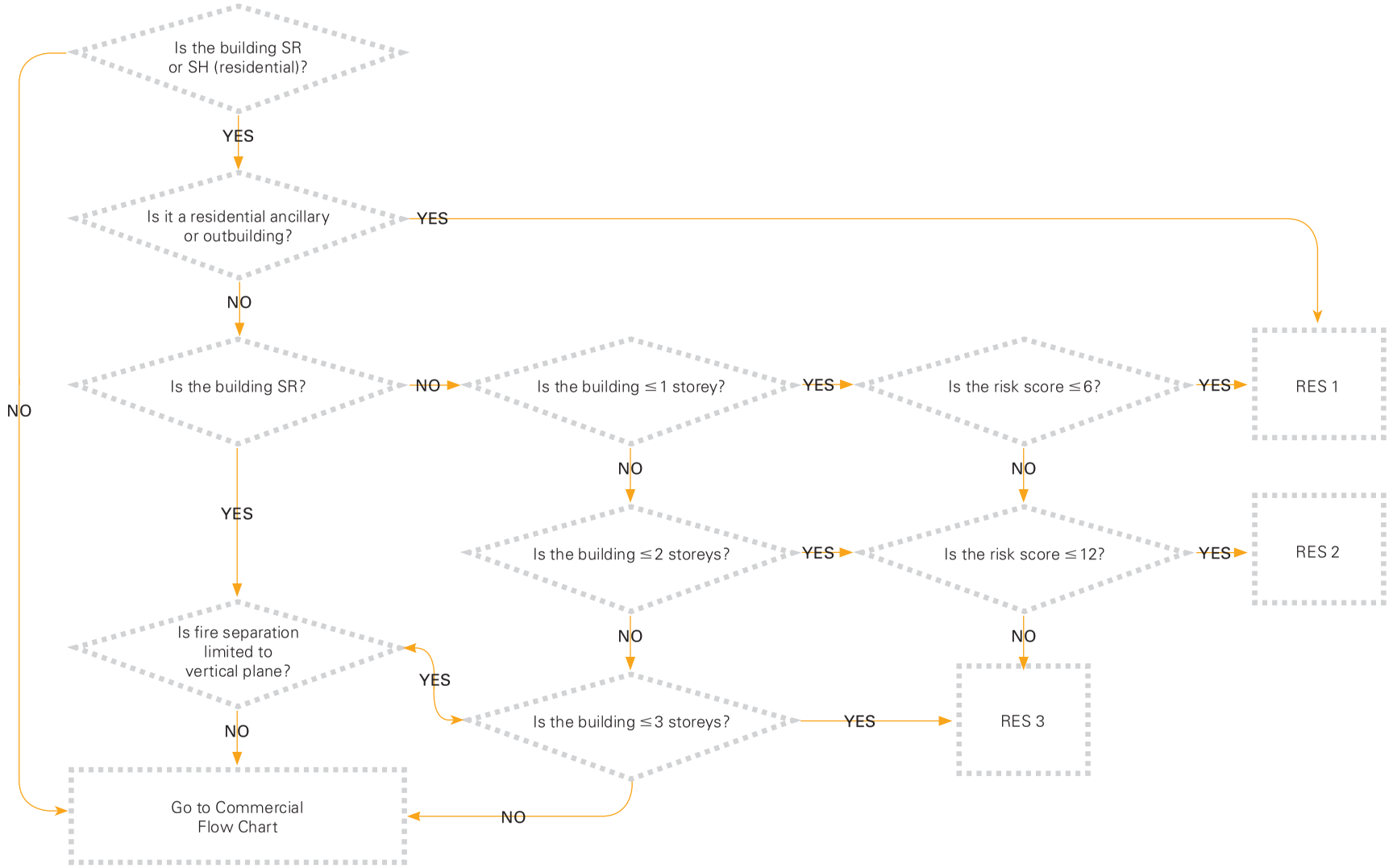
COMPETENCY LEVELS (INSPECTIONS)							
		Residential 1	Residential 2	Residential 3	Commercial 1	Commercial 2	Commercial 3
Foundations	Competent						
	Developing						
Preline	Competent						
	Developing						
Final	Competent						
	Developing						
Certification	Competent						
	Developing						

APPENDIX 4: WORK ALLOCATION FLOWCHARTS

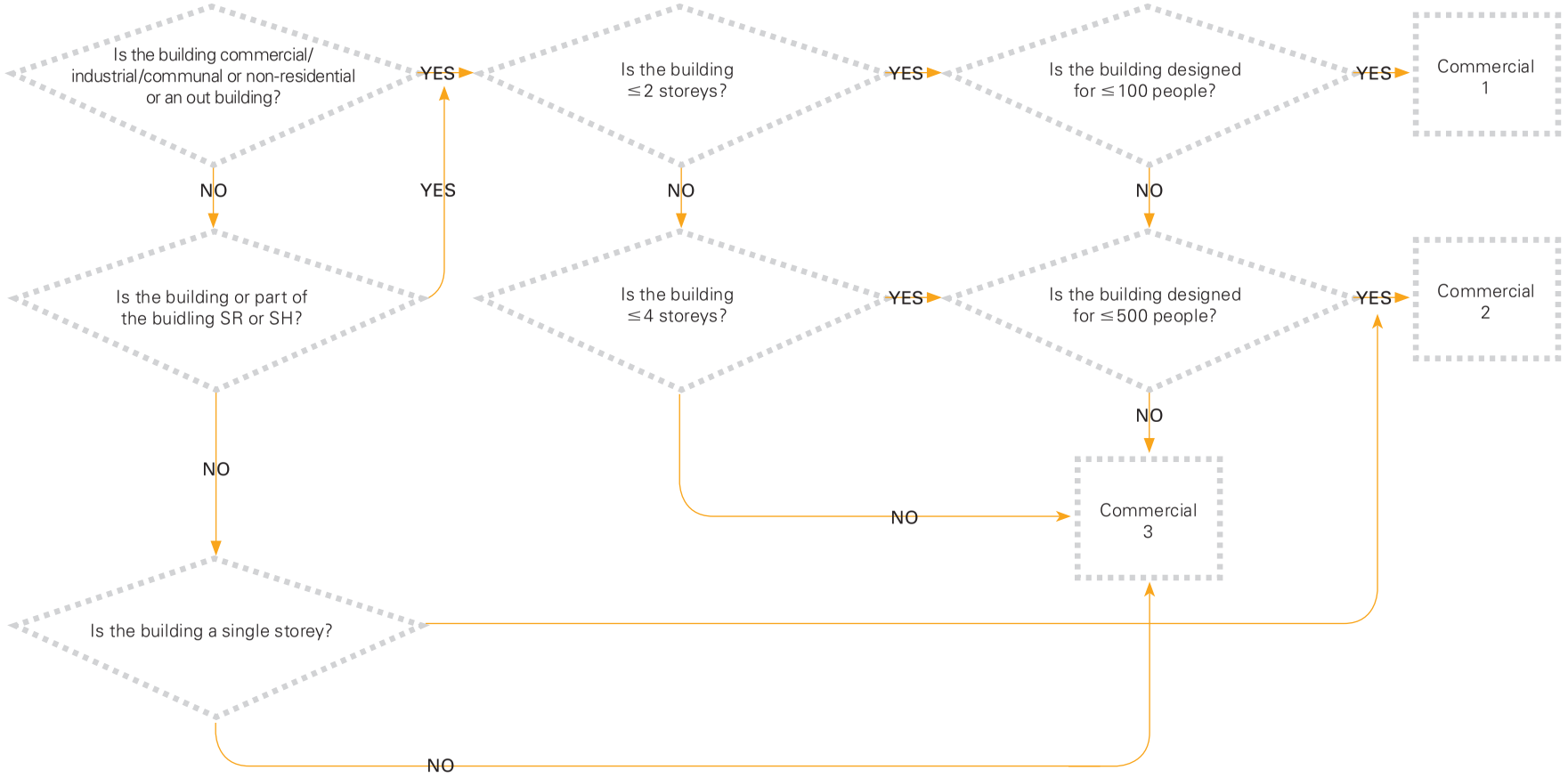
Appendix 4: Residential and commercial categorisation flowcharts

Residential and commercial flowcharts have been designed to help categorise work for allocation to staff. The flowcharts are self-explanatory and have been designed for use by technically competent administration staff. Where a job cannot be categorised using the flowchart, a decision needs to be made based on the sort of competencies required to undertake the work. The decision, reasons for the decision and the outcome of the decision need to be recorded. This could be as simple as a file note on the building consent processing check sheet. Copies of the flowcharts appear over the following pages.

RESIDENTIAL FLOWCHART



COMMERCIAL FLOWCHART



APPENDIX 5: BUILDING CONSENT AUTHORITY POLICY AND PROCEDURES

Appendix 5:
BCA policy and procedures

BCAs should cut and paste this policy and procedures (Word version available from the Department) into their documented system to replace their existing competency assessment procedure.

COMPETENCY ASSESSMENT OF TECHNICAL STAFF

Policy

It is the policy of (name of BCA) to assess the competency of staff using methods that ensure reliable decisions on competence for the purpose of ensuring that work is always carried out by individuals with appropriate knowledge, understanding and skills, as required by Regulation 10.

It is the policy of (name of BCA) to use the National BCA Competency Assessment System because, in addition to meeting the preceding policy statement, it provides national consistency, and portability of competency assessments between BCAs using the system.

Roles and responsibilities

1. Building Control Manager:
    - To ensure that the BCA's functions relating to processing applications for building consent, inspecting building work being undertaken and certifying building work is done by competent people.
2. Assessor/Technical Leader/Cluster Group Competency Assessment Manager:
    - To ensure that competency assessment of technical staff is undertaken in a robust and efficient manner in accordance with this policy and procedure.

Procedures

1. Plan competence assessment
2. Gather evidence
3. Assess evidence
4. Make decisions based on documented evidence
5. Record competency assessment outcomes

These procedures shall be undertaken in accordance with the assessment process outlined in the National BCA Competency assessment System.

References

NATIONAL BCA COMPETENCY ASSESSMENT SYSTEM:

- This is guidance provided by the Department of Building and Housing.

ASSESSOR TRAINING MATERIAL AND WORKSHOPS:

- Training provided to people wishing to become assessors under the National BCA Competency Assessment System.

APPENDIX 6: CANDIDATE INFORMATION PACK – PREPARATION FOR ASSESSMENT OF COMPETENCE

Candidate Information Pack **123**

Department of
Building and Housing
Te Tari Kaupapa Whare

Candidate Information Pack

Preparation for Assessment under the National BCA Competency Assessment System

June 2010

Contents

INTRODUCTION

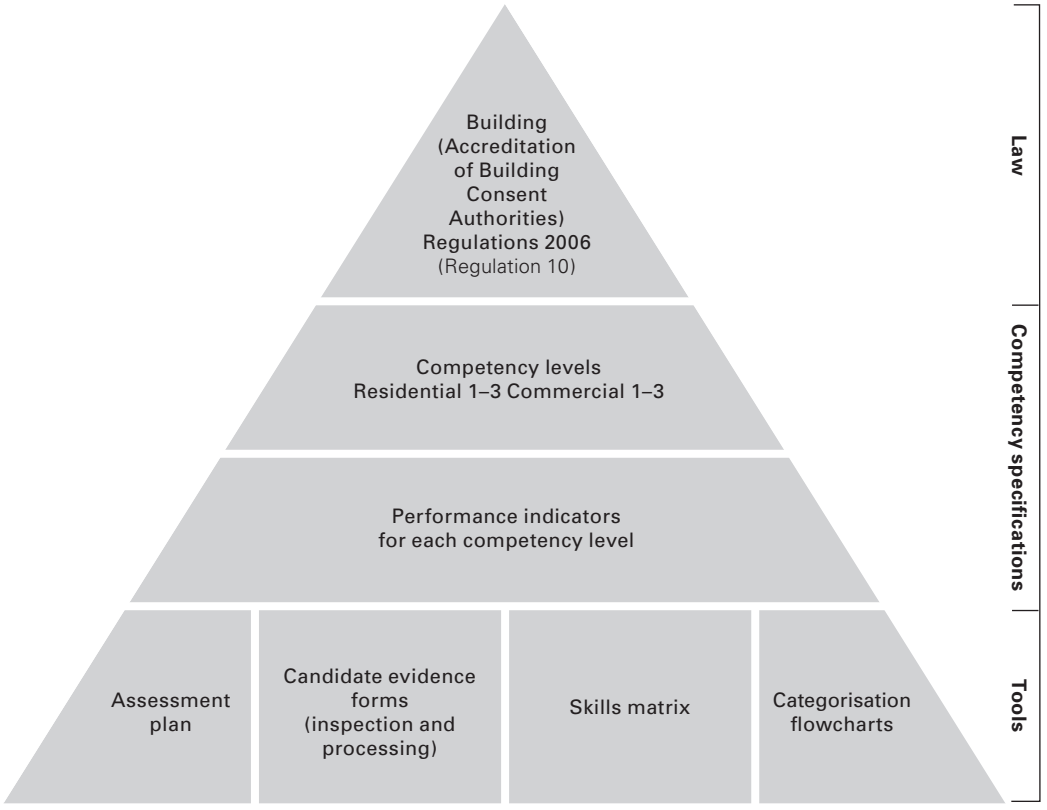
This document has been developed by the Department of Building and Housing to help building consent authorities (BCAs) in assessing their staff's competence to meet the legislative requirements for competency when performing building control functions, as required under the Building (Accreditation of Building Consent Authorities) Regulations 2006. This guidance is specifically provided for building officials and (administrative staff who perform technical building control functions) who are being assessed for competence under the National BCA Competency Assessment System.[33] For the purposes of the National System, a building official who is being assessed is referred to as a 'candidate'. Under this system, the 'assessor' is the person who is responsible for evaluating and confirming a candidate's competency. This document seeks to provide candidates with the appropriate level of information so they can prepare suitable evidence in support of their competence. Unlike historical BCA competency system models or assessment methods, the National System requires that the candidate actively participates and contributes throughout the competency assessment process.

[33] The National BCA Competency Assessment System has been developed to satisfy Regulations 9, 10 and 11 of the Building (Accreditation of Building Consent Authorities) Regulations 2006. This Candidate Information Pack is a supplement to the overall system guide. Candidates interested in a reviewing the National System in its entirety should refer to the follow this link: http://www.dbh.govt.nz/pub-bca-accreditation

System Framework

Figure 1 below illustrates the competency system's framework, starting with the legislative requirements through to the tools of assessment.

FIGURE 1



The national competency assessment system is made up of six competency levels with performance indicators and assessor guidance on interpreting the indicators, and a suite of assessment tools including assessment plans, evidence gathering templates, skills matrices for recording the outcome of assessments, and categorisation flowcharts to help allocate work.

NATIONAL LEVELS

The new national competency levels have been grouped into residential and commercial building work. There are three residential levels and three commercial levels. The header block in each of the tables over the following pages provides an outline of the general scope and limitations for the building work in each of the six levels. Photos are provided to further illustrate the typical types of buildings captured by each of the levels.

NEW NATIONAL COMPETENCY LEVELS

Residential 1

Residential outbuildings and ancillary buildings – as defined by the Building Regulations 1992. Detached dwellings (SH) designed to a common Standard (eg, NZS 3604, NZS 4229) that are single storey and have an E2/AS1 risk matrix score less than or equal to 6.

		
Simple one storey residential dwelling with an E2/AS1 risk score of 3	Simple one storey residential dwelling with an E2/AS1 risk score of 6	Simple one storey residential dwelling with an E2/AS1 risk score of 4

Residential 2

Detached dwellings (SH) designed to a common Standard (eg, NZS 3604, NZS 4229) that are less than or equal to two storeys and have an E2/AS1 risk matrix score less than or equal to 12.

		
Two storey (SH) residential dwelling with an E2/AS1 risk score of 9	Two storey (SH) residential dwelling with an E2/AS1 risk score of 12	Two storey (SH) residential dwelling with an E2/AS1 risk score of 11 (deck not over living area)

Residential 3

Detached dwellings (SH) or other dwellings (SR) that are less than or equal to three storeys but limited to vertical plane fire separation and direct egress to the outside. E2/AS1 risk matrix score of 13–20.[34]

		
Two storey (SR) residential dwelling with an E2/AS1 risk score of 17 (vertical plane fire separation only)	Three storey (SH) residential dwelling with an E2/AS1 risk score of 19	Three storey (SR) residential dwelling with an E2/AS1 risk score of 15 (vertical plane fire separation only)

[34] This level also includes specifically designed residential cladding systems, components, detailing and junctions and where a risk matrix score of greater than 20 has been calculated.

NEW NATIONAL COMPETENCY LEVELS

Commercial 1

Commercial, industrial and communal non-residential buildings and their associated outbuildings and ancillary buildings equal to or less than two storeys and an occupancy load of equal to or less than 100 people or SR or SA residential buildings up to two storeys and with horizontal fire separation.

		
One storey commercial building with less than 100 occupants	One storey commercial building with less than 100 occupants	Two storey motel with less than 100 occupants

Commercial 2

Commercial, industrial, communal residential and communal non-residential buildings equal to or less than four storey and an occupancy load of equal to or less than 500 people or SC or SD that are single storey.

		
Two storey movie theatre with less than 500 occupants	Four storey commercial building with less than 500 occupants	Four storey commercial building with mixed-use (SR) and (CL)

Commercial 3

All uses of buildings that are over four storeys high, or contain over 500 occupants or SC or SD greater than single storey.

		
High-rise building in excess of four storeys	High-rise building in excess of four storeys and with more than 500 occupants	Commercial/public building in excess of four storeys and with more than 500 occupants

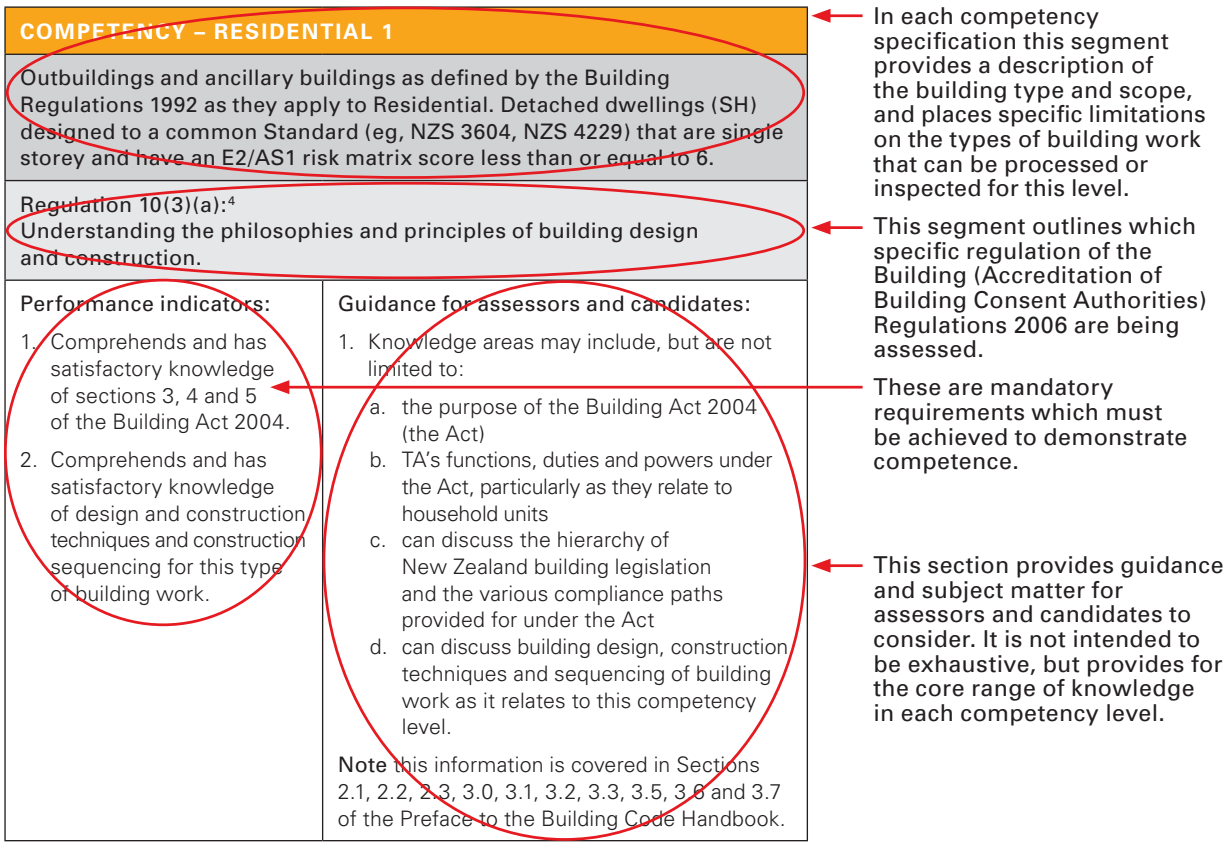
Competency specifications

The competency specifications used in the National BCA Competency Assessment System have been developed to provide the assessor and candidate with a detailed specification of knowledge and skills that are required for a person to be competent at a particular level.

There are six competency specifications, one for each of the new national competency levels (Residential 1–3 and Commercial 1–3).

Figure 2 below shows how competency specifications are structured and what areas of knowledge are considered mandatory.

FIGURE 2

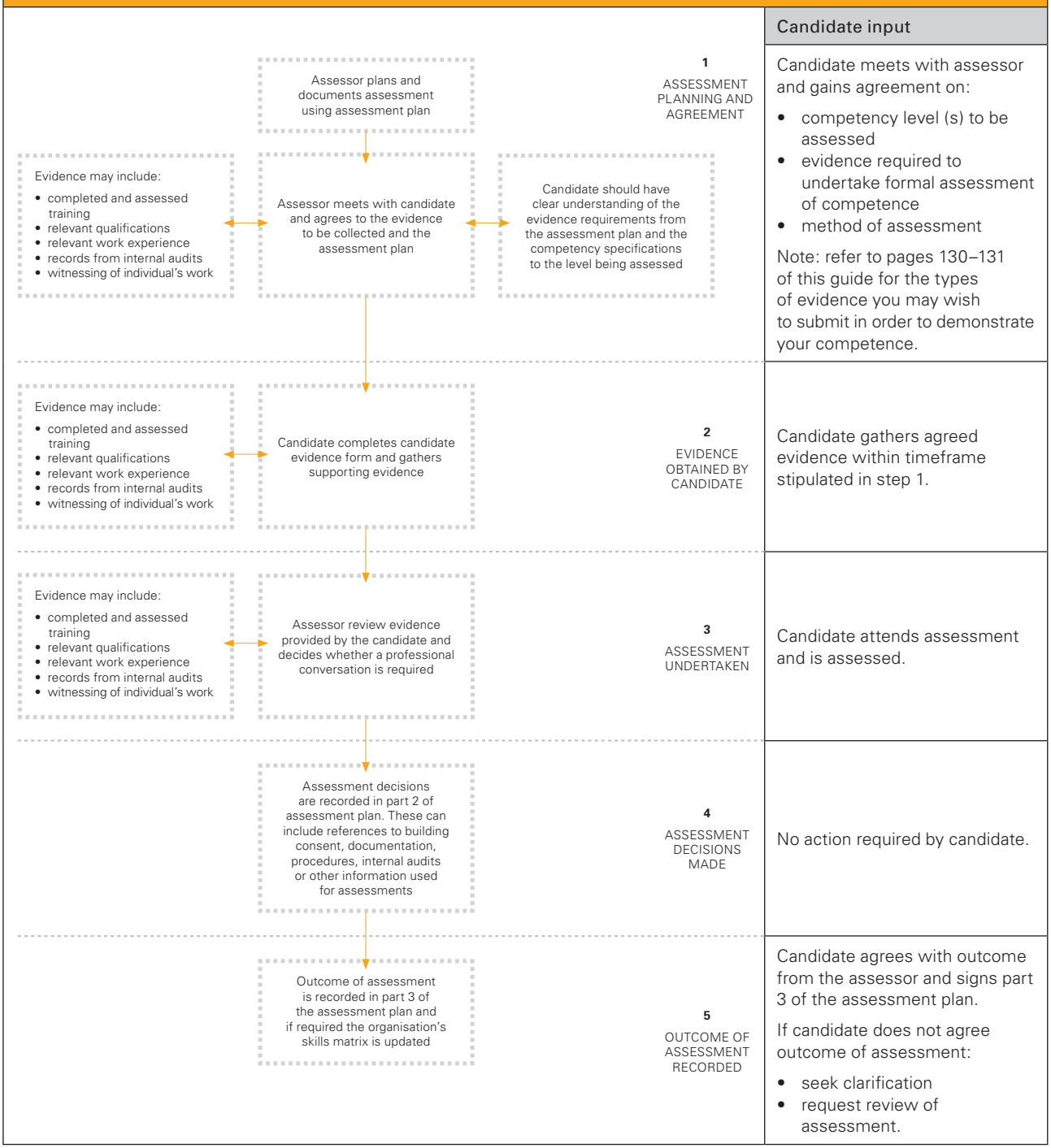


The candidate should familiarise themselves with the performance indicators and assessor guidance contained in their relevant competency specifications. Your assessor should provide you with the competency specifications that relate to the level(s) you are being assessed against with this information pack, alternatively you can view the applicable competency levels online on the Department's website at: **http://www.dbh.govt.nz/pub-bca-accreditation**

The performance indicators and assessor and candidate guidance for inspections have been grouped around the generic inspection areas of foundation, preline and final. The terms 'foundation', 'preline' and 'final' have been used to group inspections that BCAs commonly undertake. When providing evidence, candidates should choose more technical inspections that fall within the groups of 'foundations', 'preline' or 'final'. Tables that show your BCA's inspections should be available from your assessor.

Assessment process

FIVE STEP PROCESS TO USING THE ASSESSMENT SYSTEM



Candidate evidence

The purpose of this part of the document is to help you identify and provide evidence to demonstrate your competence. Your assessor should schedule a time with you to meet and discuss the assessment process (refer to step 1 on page 129).

A range of evidence can be used to demonstrate competency. The table below provides examples of evidence types which may be used.

SOURCE OF EVIDENCE	GUIDANCE NOTES – POSSIBLE EXAMPLES THAT COULD BE USED TO HELP ASSESS COMPETENCY
Self-assessment against competency specification	• Self-assessment by the employee against the competencies to be assessed • Employee recognises when work is outside their ability • Employee recognises when peer review is required • Employee identifies strengths, knowledge and skills gaps • Employee identifies training needs
Work experience and examples of completed work	• Overview of work history and relevant experience in the building industry • Building consent documentation the employee has processed and approved or rejected • Inspections undertaken by the employee, including their inspection records, letters or reports written, notices they have issued, follow-up actions taken • Compliance schedules – review of compliance schedule assessments and identification of inspection, maintenance and reporting procedures • Code compliance certificates issued – checklists completed and any other material supporting the decisions the employee has made (eg, photos) • Other written documentation or reports they have authored (including letters to stakeholders, internal memos, notices to fix, training or published articles)
Written statements or references from peers or technically skilled observers	• This could include statements from individuals with proven technical skills and expertise, such as managers, team leaders, engineers or other professional colleagues who are either internal or external to the organisation. These statements should confirm that they have observed the employee's work directly • Such references or statements should note the dates and time period in question, the capability and professional capacity of the observer, the context of the work in question, and any other relevant information
Direct observation or shadowing of the employee on the job	• Casual daily monitoring of employee's performance • How the employee performs during site visits, vetting applications, processing building consents, carrying out field inspections, issuing code compliance certificates or notices to fix and performing administrative tasks. • How the employee communicates with stakeholders (verbal and written) • How the employee handles any instances or deviations from the approved plans and follows up on outstanding issues • Internal audits and their results
Organisational records	• Previous competency assessments and performance reviews that consider the key competencies of the employee • Training and continuing professional development records • Any compliments or positive feedback received from the stakeholders • Records of any complaints made against the employee in question and the outcomes of any investigations arising from these
Evidence of successful completion of courses that include projects or competency-based assessment	• Technical courses (eg, fire, accessibility, weathertightness compliance) • Building controls courses (eg, BRANZ, BOINZ, DBH) • Induction training • Information technology training and courses • Training in quality assurance systems and auditing

SOURCE OF EVIDENCE	GUIDANCE NOTES – POSSIBLE EXAMPLES THAT COULD BE USED TO HELP ASSESS COMPETENCY
	Short courses • DBH, BRANZ Ltd, Standards New Zealand or BOINZ seminars and courses • Building consent authority induction or in-house training courses • Manufacturers' or trade demonstrations • In-house training on specific areas such as building terminology, legislation, NZS 3604 • Training in use of the BCA's systems and processes and equipment (eg, computer training, training in use of moisture meter, digital camera, accreditation-related training)
Qualifications that may have relevance to building control	The following qualifications and courses may also be relevant in supporting a competency assessment. Bachelor Degrees • Architecture • Engineering (mechanical, civil, structural, fire, geotechnical, etc) • Environmental Science/health • Building Science/building technology • Construction management • Quantity Surveying Diplomas and certificates • National diploma in building control surveying (medium and large buildings) • National diploma in building control surveying (small buildings) • National diplomas in architectural design, quantity surveying, etc • New Zealand Certificate in Building, New Zealand Certificate in Drafting, New Zealand Certificate in Engineering (these were replaced by the New Zealand Qualifications Authority and registered national diplomas described above) • Construction management (Unitec, WelTec, etc) • Trade, advanced trade in carpentry • National Certificate in Carpentry Factors to consider when assessing the relevance of qualifications and courses • When it was completed • What further training the individual has done to stay current in their area of expertise • Whether the industry and knowledge requirements have changed since the qualification was obtained and, if so, whether the qualification or training is relevant in today's environment What type of course it was, ensuring that it involved an assessment or test (eg, exam, completion of a project or production of an output)
Other material they have produced	• Papers developed and presented at industry workshops, conferences or seminars • Papers developed for training purposes • Checklists or procedures developed • Articles written or published
Professional and industry affiliations	• Voluntary memberships (eg, BOINZ, Registered Master Builders, Certified Builders Association, New Zealand Institute of Registered Building Surveyors) • Industry participation (committee member, officeholder, attending conferences, etc) • Attending conferences or trade shows

The assessment process described in the National BCA Competency Assessment System is a collaborative process between the candidate and the assessor. Previously, competency assessment tended to be a process that was 'done to' a candidate rather than the candidate working with the assessor to establish their competence.

The National BCA Competency Assessment System has provided more focus on the candidate than previous competency assessment systems, which requires the candidate to:

- familiarise themselves with the competency specifications and how to meet the performance indicators for each level applicable to them
- keep personal records of interesting projects, unusual situations, worked examples and their recorded outcomes so that the candidate can use them to support their competency assessment
- make decisions and agreements with the assessor on what will be supplied for the candidate's assessment of competency
- physically obtain, record and present the evidence of competence to the assessor
- take greater responsibility for driving and contributing to the competency assessment.

The National BCA Competency Assessment System also acknowledges that candidates have differing strengths and weaknesses when it comes to presenting evidence of competence; for example, some processing staff tend to be more comfortable at providing written reports/case studies/portfolios of work whereas some inspection staff tend to be more practical and prefer to show and tell (for example, accompanying an inspector on site and having a discussion while he/she undertakes inspections).

The purpose of the candidate evidence form is to help the candidate record information in a way that is useful to them and the assessor. The form contains a series of prompts and questions to assist the candidate. The candidate evidence forms are to be filled out by the candidate and should include relevant supporting information/evidence that they believe helps them demonstrate competence. If the candidate feels that he or she cannot express themselves well in writing they should be prepared to have a professional conversation about their agreed building projects on the aspects highlighted in this form. Candidates should also supply relevant plans, specifications, photos inspection records etc. and talk to these. The assessor may also wish to accompany and observe a candidate while they undertake their work. This is called witnessing or observation and is a powerful way of establishing competence.

Evidence form templates have been developed for processing and inspections for residential and commercial work. **It is important to note** that the candidate evidence forms are designed to extract the 'big ticket' or major compliance decisions[35] a candidate considers during their processing of plans and specifications and/or the candidates key inspection decisions. It is not intended to be an exhaustive list that itemises how building compliance has been achieved for everything; rather it is intended to extract the most significant building compliance considerations of a particular project. For this reason it is important to identify and agree on projects that will best demonstrate your competence at its upper level.

It is envisaged a candidate will keep a record of interesting/technically complex projects that they have worked on, projects which can be used later to demonstrate their competence. Candidates may choose to complete a candidate evidence form while they are actively processing or inspecting building work. This is viewed as an optimum time to record such evidence as it is when technical evaluation is being undertaken and it is fresh in the candidate's mind.

Worked examples of completed inspection and processing candidate evidence forms for commercial 2 type building work are provided on the following pages to help illustrate how this part of the process should work. (Note: templates of the candidate evidence forms are available at: **http://www.dbh.govt.nz/pub-bca-accreditation**) Additional worked examples are also available in the National BCA Competency Assessment System Guide, and can also be accessed on this website.

[35] Inspection records and processing checklists can be appended to the candidate evidence form to demonstrate the BCO's assessment of those compliance matters not covered specifically in the candidate evidence form (eg, Code clauses like F4, F5, G7, G8, H1 etc) where these aspects are not considered to be some of the major compliance considerations.

NATIONAL COMPETENCY ASSESSMENT SYSTEM: CANDIDATE EVIDENCE FORM – PROCESSING
To be completed by the candidate.

Candidate name: Mr Richter Scale Date: 22.04.2010

Level of competency being assessed: Commercial 2

Agreed building consent number/address of building being used for assessment:

BC 123/2010
8 Seismic Close

Brief description of building project being used for assessment:

The Building

The building consists of a single storey portal-framed structure that is founded on a reinforced concrete foundation. Lower level external walls consist of pre-cast concrete panels to a height of 2.5 metres with long-run profiled metal sheet cladding fixed to steel framing above. Office areas are clad with fibre cement-based sheet on a drained cavity. The roof is clad with long-run metal sheet. The roof design incorporates a small building-plant area, which will house the building's air-conditioning system. Internally the building is divided into two large open retail spaces, a warehouse with goods stacked in proprietary racking systems (higher than 3 metres) and a drive-through timber yard area. Two small mezzanine areas are provided for staff offices, bathrooms, lunch and meeting rooms.

Building particulars

Building use: Commercial, crowd activity (CM)- crowd medium
Occupancy: 250 people
Highest fire hazard category (FHC): 4
Square metres: 950m^2

Specified systems

The applicant listed the following specified systems on the form 2 building consent application:

- Automatic sprinkler system
- Emergency warning system
- Emergency lighting system
- Mechanical ventilation (air-conditioning)
- Backflow prevention
- Means of escape (final exits, fire separations and signage)

Describe in your own words what you consider is important in relation to the following aspects of your building project.

8. Site/land that building is being built on:

The site includes the following special features.

a. GIS mapping indicates the site is located within a specific design wind zone. The design engineer confirmed this view by calculating the site's wind speed to be 56 m/sec (designated specific engineered design (SED)). Structural design, loading calculations and material selection have all taken the sites relative wind loading into consideration.
b. The geotechnical report has identified the site as generally having good ultimate soil bearing capacity; however a small portion of poor quality soil has been identified at the southeastern end of the site. This localised area of poor ground requires specific strengthening attention to ensure the building platform can support the load-path from the super structure; consequently a condition has been added to the building consent under section 90 of the Building Act 2004 for third party verification (PS4 monitoring) of this building work as we do not have the specific in-house competency to undertake such monitoring or soil testing. The design engineer responsible for observation work is well known to the BCA and is a practising CPEng.
c. The site is rural and is in zone 2 as defined in NZS 3604:1999, indicating building elements are unlikely to be affected by accelerated atmospheric corrosion from wind blown salt laden air and the like.
d. The site has no easements, encumbrances, consent notices etc listed on the certificate of title. So no specific limitations/design modifications are necessary in this regard. Council records also indicate that the site does not have any land related issues such as hazards, contamination or heritage status etc.
e. A surveyor has been involved in defining the allotment's boundaries, so boundary clearances etc should be relatively easy to establish on site.

NATIONAL COMPETENCY ASSESSMENT SYSTEM: CANDIDATE EVIDENCE FORM – PROCESSING
To be completed by the candidate.

9. Foundations:

Basis for design: AS/NZS 1170:2002, B1/VM1 and B1/VM4

The building's foundation is fully engineered and will be monitored at specified times during construction (some specific soil testing is required to confirm design assumptions made regarding poor soil quality at the southeastern end of the site).

The slabs' DPM is well detailed on plan and within the specification and meets the E2 performance requirements.

Perimeter pre-cast concrete panels are to be welded to base plates that are to be tied into the slab.

Other aspects of the foundation design were considered standard for this type of building work eg concrete strength, ground clearances, shrinkage control joist, steel size, steel cover and lap, DPM etc.

Some services are to be run within the slab, but this is covered in item 6 below.

10.Structure of the building from foundation/slab up:

Basis for design: AS/NZS 1170:2002, B1/VM1

The building's structural frame/skeleton consists of steel portals and steel horizontal girts that are clad with long-run metal sheet cladding. Pre-cast panels extend 2.5 metres above floor level around the perimeter of the slab.

Plans and specifications for the project indicate the building structure (roof) is to support the weight of some large air-conditioning units. The air-conditioning units do not feature in any of the design engineer's sketches and it is unclear if she is aware of the additional super-imposed load associated with these units (a phone call was made to the engineer to confirm that the design had accounted for the additional loading imposed by these units). The engineer confirms these units were not included on the plan version she was provided with. As a result the roof loading is recalculated and the units are moved to a more suitable location (amended plans were requested and provided). Fixing details were also requested for securing the units through the roof cladding in order to satisfy clause E2.

11.Building envelope (claddings):

Basis for design: E2/VM1 and E2/AS1 modified and used as an alternative solution for Building Code compliance.

The building is outside the scope and limitations of E2/AS1; however the designer has chosen to use some design principles and figures within the Acceptable Solution to prove compliance with clause E2. Given that the site is located in an SED wind zone and the designer has provided junction details that were unconventional it was decided to get the design peer-reviewed by an independent expert.
The design was peer-reviewed by a recognised weathertightness expert who confirms that the building meets clause E.2.3.2.
The designer also provides in-service history of a similar building design that is subject to the equivalent wind pressure.
A combination of in-service history and expert opinion confirms the design meets clause E2 of the NZBC on reasonable grounds.

12.Fire safety:

Basis for design: C/AS1

Active systems included:	Basis for compliance
Automatic sprinkler system	NZS 4541:2007
Emergency warning system	F7/AS1 NZS 4512:2003
Emergency lighting system	F6/AS1 AS/NZS 2293:1995
Passive systems included:	
Means of escape (final exits, fire separations and signage)	C/AS1

The building is located at least 20 metres away from any boundaries and no other buildings are in close proximity, so spread of fire beyond the building is unlikely.

The applicant provided a fire report that used the Compliance Documents Acceptable Solution C/AS1 to illustrate compliance with the NZBC. In line with our BCA's policies and procedures our lead technical person for the C-Docs (John de-blaze) peer-reviewed the fire report and associated plans. The internal review confirmed my findings and agreed the documents met the requirements of C/AS1 and the NZBC.

NATIONAL COMPETENCY ASSESSMENT SYSTEM: CANDIDATE EVIDENCE FORM – PROCESSING
To be completed by the candidate.

13.Services:

General
All services penetrations were checked to have adequate protection (eg fire collars, structural support, not compromising sound rated walls etc).

P&D
Drainage and plumbing services for clauses (E1, G1, G2, G10, G12 and G13) were assessed by the BCA's technical person (S Bend). A small issue was identified regarding pipe falls for sanitary services in the slab (pipe falls within the slab were not adequately detailed on plan). S Bend contacted the designer and the appropriate falls were entered on the relevant drawings. Other P and D matters were found to comply with NZBC.

Prescribed gas and electrical work
Covered by an energy work certificate (providing a copy of these certificates is a condition of the building consent).

Specified systems
In accordance with section 7 of the Building Act the designer provided a list of the specified systems to be installed in the building and the proposed procedures for inspection and maintenance of those systems. A schematic plan was also appended to this information to help with on site inspection and system identification purposes.

Third-party commissioning certificates are required for the installation of the alarm and sprinkler systems (providing this verification/certification were made on condition of the issued building consent).

14.Interior finishes:

Spread of fire
Fire resistance ratings and surface finishes were assessed and peer-reviewed as part of the fire safety assessment. These items were found to meet the NZBC.

Slip resistance
The designer elected to use materials that met the slip resistance requirements detailed in D1/AS1 (eg, friction coefficient of not less than 0.4).

Moisture
Wet area floor and wall services were well detailed within the design documents and generally used E3/AS1 as means of compliance, albeit with a few minor alternative solutions (the design of a level access accessible shower was deemed beyond the scope of the acceptable solution as it used a sheet membrane on floor and wall surfaces; however, the design was found to be well detailed and deemed to meet the requirements of E3).

Describe in your own words the areas of the building that you consider a risk:

- Foundation – the geotechnical report identified areas where poor soil quality was present.
- Structural – building plant located on roof (air-conditioning units)
- Building envelope – potential for water ingress and alternative solution offered as a means of compliance
- Services – penetrations through fire rated walls, specified systems – correct design standards and inspection and maintenance requirements. Pipe services in slab did identify falls/gradient.

Why?:

- Foundation – potential for localised building failure due to poor ground conditions.
- Structural – potential for building failure due to an unsupported point-load that was not addressed during the design phase.
- Building envelope alternative solution offered by applicant was viewed as potential area of weathertightness risk (peer-review requested to support proposed design).
- Services – penetrations through fire walls create the potential to compromise fire resistance.

NATIONAL COMPETENCY ASSESSMENT SYSTEM: CANDIDATE EVIDENCE FORM – PROCESSING
To be completed by the candidate.

Were there any alternative solutions used in this building? If so, please describe in your own words what they were and how you assessed them:

E2: Cladding system. Use of expert opinion and in-service history of a similar product or building method confirmed compliance with NZBC.

E3: Accessible shower. Design outside the scope of E3/AS1, but the designer included supporting evidence and testing of product/method used. The shower was assessed against E3's requirements and was deemed to meet the Building Code.

In your own words, please describe any legislative requirements you needed to consider when processing the building consent application:

- The Building Act 2004, in particular
  - Sections 17 – all work must comply with NZBC, 19 – different methods of meeting the NZBC (eg, Compliance Documents, product certs, determination etc), 46-51 – processing a building consent, statutory timeframes, NZFS requirements (is defined as relevant building in section 21A of Fire Services Act 1975). 100-105 – compliance schedule considerations as specified systems are being installed as part of the proposed building work. 118 – access and facilities for people with disabilities as the building falls within schedule 2 of the Building Act 2004
- The Building Regulations, in particular
  - The Building Regulations 1992 (Schedule 1 the Building Code)
  - Building (Forms) Regulations 2004

List what further evidence you have either attached or referred to in this form.
Note: You do not need to duplicate documents that are stored elsewhere in the BCA's system, but these do need to be referenced. Documents that you do attach or reference need to be relevant.

Building Consent BC 123/2010

- Building consent BC 123/2010 plans and specifications, particularly:
  - Records of conversation with engineer about extra roof loading
  - Requests for further information
  - Fire report
  - Alternative solution cladding (details A04, A06, A020 and pages 57–68 of the specifications)
  - Accessible shower details (page A05 and specification pages 72–73)
- Alternative solution processing sheet (cladding and accessible shower)
- Producer statement acceptance records

NATIONAL COMPETENCY ASSESSMENT: CANDIDATE EVIDENCE FORM – INSPECTION
To be completed by the candidate.

Candidate name: Mr Richter Scale Date: 17.05.2010

Level of competency being assessed: Commercial 2

Agreed building consent number/address of building being assessed:

BC 123/2010
8 Seismic Close

What type of work is the inspection relating to (tick relevant work)?

- [x] Building
- [ ] Plumbing and drainage

What type of inspection is being assessed (tick relevant work)?

- [ ] Foundation
- [ ] Preline
- [x] Final

Brief description of building project being used for assessment:

The building consists of a single-storey, portal-framed structure that is founded on a reinforced concrete foundation. Lower level external walls consist of pre-cast concrete panels to a height of 2.5 metres with long-run profiled metal sheet cladding fixed to steel framing above. Office areas are clad with fibre cement-based sheet on a drained cavity. The roof is clad with long-run metal sheet. The roof design incorporates a small building-plant area, which will house the building's air-conditioning system. Internally the building is divided into two large open retail spaces, a warehouse with goods stacked in proprietary racking systems (higher than 3 metres) and a drive-through timber yard area. Two small mezzanine areas are provided for staff offices, bathrooms, lunch and meeting rooms.

Building particulars

Building use: Commercial, crowd activity (CM) – crowd medium
Occupancy: 250 people
Highest fire hazard category (FHC): 4
Square meterage: 950m^2

Brief description of inspection being undertaken for assessment:

Final inspection for commercial level 2 type building work.

Objective: ensuring the building work has been carried out in accordance with building consent – plans and specifications and any amendments, minor variations undertaken during the project and meets the NZBC requirements.

A review of the consent file was undertaken before visiting the site to familiarise myself with the status of the project and identify if there were any outstanding compliance matters.

The project manager responsible for managing the development asked that he be present during the inspection. This was agreed to as it was felt it would be beneficial should any queries arise about technical matters.

A separate final inspection covering P&D compliance is to be undertaken.

Describe in your own words what you consider is important in relation to the following relevant aspects of your building inspection:

7. Site/land that building is being built on in relation to the inspection:

- As the site is located in a specific design wind zone (subject to higher than normal wind pressures) and has some unconventional cladding design details have been used. I will place particular emphasis on inspecting these aspects as it is important to ensure the building's external envelope has been completed in accordance with plans and specifications.
- The site's geotechnical report identified specific requirements for certain areas of the site. As a consequence the project manager has agreed to provide copies of the engineer's inspection notes and a (PS4) to confirm the building work undertaken meets the Building Code (means of compliance: Verification Methods cited in the Compliance Document for B1).

NATIONAL COMPETENCY ASSESSMENT: CANDIDATE EVIDENCE FORM – INSPECTION
To be completed by the candidate.

8. Structure and durability in relation to the inspection:

- As noted above the engineer's inspection notes and (PS4) are to be provided during the inspection to confirm compliance in relation to structural matters conditioned on the building consent.
- A visual inspection of completed work was undertaken to ensure visible fixings, ties, bracing etc are in place and are compliant. This was not done to redress items already inspected during preline/postline inspections. It was simply undertaken as general observation of the building's overall structural compliance.
- I inspected the building for any evidence of structural movement, settlement, subsidence, warping, compression etc that would raise concern and may require additional investigation. No such issues were evident.
- A visual inspection of external/internal materials and coatings was undertaken to ensure these items met the plans and specifications and the Building Code, in particular clauses B1, E2 and B2.

9. Building envelope (claddings) in relation to the inspection:

- I ensured the external envelope had been completed in accordance with building consent (plans and specs). As the building work includes alternative solutions used as a means of compliance, more emphasis was placed on the inspection of unconventional details, such as junction flashings between different cladding types. As an additional precaution, internal moisture level readings were taken on internal lined wall surfaces to provide additional support for the end compliance decision.
- I visually checked exposed flashings, membranes, cavity vents and drainage and kept an eye out for any un-consented attachments to the building envelope.

10. Fire safety aspects of the building in relation to the inspection:

- A full walk-through inspection was undertaken to ensure the nominated means of escape was compliant and penetrations to fire walls were sealed and made good.
- Life-safety systems (specified systems) were confirmed to be operational. Third-party verification/certification and commissioning information was provided to confirm the fire alarm and sprinkler had been installed in accordance with specified NZ standards (eg, NZS 4512:2003 for the alarm system).

11. Services and associated systems in relation to the inspection:

- P&D inspection is to be undertaken by a BCO with the appropriate P&D competencies (not part of this inspection).
- The final inspection revealed that the following specified systems had not been identified during the processing stage of the building consent. The owner had failed to identify the following specified systems within their application for building consent – smoke control system for removing smoke and a CO detection device for early warning of gas leakage. Both specified systems were located within the car park area of the building (refer to attached photos 1 and 2 for details of these specified systems). Further information was requested regarding the installation, performance, inspection and procedural requirements of these specified systems.
  Note: The final inspection was failed as a result of this finding.
- The project manager was informed of the areas of non-compliance (non-consented building work) and was provided with an inspection report that outlined what was required to resolve these matters (amended plans and specifications, and performance, maintenance and reporting procedures for each specified system). The project manager acknowledged the importance of getting these matters resolved and forwarded the information required, which in turn was added to the compliance schedule.

12. Interior finishes in relation to the inspection:

- Inspection of these elements was undertaken during the inspection of means of escape (in item 4). This included a visual check of floor, wall and ceiling finishes and fixtures and fittings to ensure they comply with the plans and in particular the fire report.

NATIONAL COMPETENCY ASSESSMENT: CANDIDATE EVIDENCE FORM – INSPECTION
To be completed by the candidate.

Describe in your own words the areas of the building what you consider a risk area in relation to your inspection:

- Foundation – the geotechnical report identified areas where poor soil quality where present (potential risk of structural failure).
- Structural – building plant located on roof (air-condition units creating a superimposed /point-load.)
- Building envelope – potential for water ingress as an alternative solution had been offered as a means of compliance
- Services – penetrations through fire rated walls, specified systems- correct design standards and inspection and maintenance requirements. Pipe services in slab did identify fall/pipe gradients.
- Specified systems installed, but not identified within the consented documents. Amended plans and specifications required prior to issuing the CCC.

Why?:

- Foundation – potential for localised building failure due to poor ground conditions.
- Structural – super-imposed load to roof could create issues if not correctly designed and/or installed.
- Building envelope – the alternative solution offered by the applicant was viewed as potential area of weathertightness risk. Unconventional design means checking of building envelope is very thorough.
- Services – penetrations through fire walls create the potential to compromise fire resistance.
- Specified systems that are not picked up during a building consent will not end up on the buildings compliance schedule and will consequently not get inspected and maintained over the life of the building.

In your own words please describe any legislative requirements you needed to consider when inspecting this building work:

The Building Act 2004, in particular:

- Section 17 all building work must comply with the Building Code.
- Sections 100–105 – compliance schedule considerations as specified systems are being installed as part of the proposed building work
- In relation to BCA accreditation regulations the requirement to follow the inspections procedures of the BCA.
- The Building Regulations, in particular
- The Building Regulations 1992 (Schedule 1 the Building Code)
- Building (Forms) Regulations 2004
- Building (Accreditation of Building Consent Authorities) Regulations 2006.

List what further evidence you have either attached or referred to in this form.
Note: You do not need to duplicate documents that are stored elsewhere in the BCA's system, but these do need to be referenced. Documents that you do attach or reference need to be relevant.

Building Consent BC 123/2010

- Building consent BC 123/2010 plans and specifications, particularly:
  - Compliance schedule
  - Fire report
  - Completed final inspection checklist and inspection notes
- Attached photos and notes on missing specified systems

NATIONAL COMPETENCY ASSESSMENT SYSTEM:
Example of photographic evidence provided by candidate for discussion during assessment process

1. Photo of smoke control system in the car park area. Not listed as a specified system on the building consent and/or picked up during processing of the building consent.	
2. Photo of CO (carbon monoxide gas detector) early warning device. Not listed as a specified system on the building consent and/or picked up during processing of the building consent.	

Candidate checklist

PREPARING FOR YOUR FIRST MEETING WITH THE COMPETENCY ASSESSOR	Tick box once completed
1. I have read through the candidate guidance pack.	◯
2. I have read the competency specification/s that relates to the work that I do and understand the performance indicators that I need to meet.	◯
3. I have reviewed records of my work over the past year that I have kept relating to interesting projects or unusual situations that might help demonstrate my competence.	◯

MAKING SURE YOU PROVIDE THE RIGHT EVIDENCE FOR COMPETENCY ASSESSMENT.	
4. Evidence has been collected in accordance with the agreement with my assessor and my assessment plan.	◯
5. My candidate evidence forms have been completed in full.	◯
6. I have been specific and attached or referenced in my candidate evidence forms only relevant information to support my competence.	◯
7. I have provided or specifically referred to existing records to support my competency assessment (eg, internal audits/reviews or training records etc, also refer to suggested evidence on pages 130–131 of this document).	◯

APPENDIX 7: GLOSSARY OF TERMS

Appendix 7: Glossary of terms

These definitions are a summary only. For full definitions please refer to the Building Act 2004 and associated regulations.

NATIONAL COMPETENCY ASSESSMENT GLOSSARY OF TERMS	
Source key:	
BA04	Building Act 2004
BCHB	Building Code handbook
CD (VM/AS)	Compliance Document and relevant Verification Method or acceptable solution
Br	Applicable Building Regulations
DBH	Department of Building and Housing

Definition	Source
Acceptable Solution: A solution that must be accepted as complying with the Building Code.	BA04
Alternative solutions: A solution that complies with the Building Code but is not part of a Compliance Document.	BCHB
Ancillary: Applies to a building or use not for human habitation and which may be exempted from some amenity provisions, but which is required to comply with structural and safety-related aspects of the building code. Examples: a bridge, derrick, fence, free-standing outdoor fireplace, jetty, mast, path, platform, pylon, retaining wall, tank, tunnel or dam.	Br
Assessment: Determining the extent to which an individual reaches the desired level of competence in skill, knowledge, and ability to apply knowledge.	DBH
Assessment plan: A plan drawn up by the assessor and agreed with the candidate and which identifies the evidence required to be provided by the candidate for assessment.	DBH
Assessor: A person trained in assessment theory and practice and with appropriate technical skills to undertake an assessment.	DBH
BCA (Building Consent Authority): Accredited organisation performing building control services whose name is entered in the register referred to in section 273(1)(a) of the Building Act 2004.	BA04
Building warrants of fitness: The warrant of fitness an owner of a building must supply to a territorial authority under section 108 of the Building Act 2004.	BCHB
Building work: (a)means work— (i) for, or in connection with, the construction, alteration, demolition, or removal of a building; and (ii) on an allotment that is likely to affect the extent to which an existing building on that allotment complies with the Building Code; and (b)includes sitework; and (c) includes design work (relating to building work) that is design work of a kind declared by the Governor-General by Order in Council to be restricted building work for the purposes of this Act; and (d)in Part 4, of the Building Act 2004, and the definition in this section of 'supervise,' also includes design work (relating to building work) of a kind declared by the Governor-General by Order in Council to be building work for the purposes of Part 4 of the Building Act 2004.	BA04
Candidate: The person being assessed, normally a building official (consent processor or inspector) or administrators where they undertake a technical building control function (eg, vet consent applications).	DBH
Change of use: For the purposes of sections 114 and 115 of the Building Act 2004, change the use, in relation to a building, means to change the use (determined in accordance with regulation 6) of all or a part of the building from one use (the old use) to another (the new use) and with the result that the requirements for compliance with the Building Code in relation to the new use are additional to, or more onerous than, the requirements for compliance with the Building Code in relation to the old use.	Br
Classified use: For the purposes of the Building Code buildings are classified according to type, under seven categories. A building with a given classified use may have one or more intended uses as defined in the Act.	Br
Commercial: Applies to a building or use in which any natural resources, goods, services or money are either developed, sold, exchanged or stored. Examples: an amusement park, auction room, bank, car park, catering facility, coffee bar, computer centre, fire station, funeral parlour, hairdresser, library, office (commercial or government), police station, post office, public laundry, radio station, restaurant, service station, shop, showroom, storage facility, television station or transport terminal.	Br

NATIONAL COMPETENCY ASSESSMENT GLOSSARY OF TERMS	
Communal non-residential: Applies to a building or use being a meeting place for people where care and service is provided by people other than the principal users. There are two types: **Assembly Service** applies to a building or use where limited care and service is provided. Examples: a church, cinema, clubroom, hall, museum, public swimming pool, stadium, theatre, or whare runanga (the assembly house). **Assembly Care** applies to a building or use where a large degree of care and service is provided. Examples: an early childhood centre, college, day care institution.	Br
Competence/Competency: Ability to apply knowledge and skills at the required standard and in defined context.	DBH
Compliance schedule: A compliance schedule required under section 100 of the Building Act 2004.	BA04
Compliance Schedule Handbook: A Compliance Document produced by the Department of Building and Housing.	DBH
Detached dwellings: Applies to a building or use where a group of people live as a single household or family. Examples: a holiday cottage, boarding house accommodating fewer than 6 people, dwelling or hut.	Br
Determination: A determination made by the Chief Executive under subpart 1 of Part 3 of the Building Act 2004.	BA04
DRU (Design Review Unit): The DRU's role is to provide advice on the means of escape and the needs of persons who are authorised by law to enter the building to undertake firefighting. This is outlined in section 47 of the Building Act 2004.	DBH
Earthquake-prone building: For the purposes of section 122 of the Act (meaning of earthquake-prone building), moderate earthquake means, in relation to a building, an earthquake that would generate shaking at the site of the building that is of the same duration as, but that is one-third as strong as, the earthquake shaking (determined by normal measures of acceleration, velocity, and displacement) that would be used to design a new building at that site.	Br
Evidence form: A template used to help candidates document evidence in a way which is useful for the assessor and which provides documentary evidence of competence.	DBH
Household unit: (a) means a building or group of buildings, or part of a building or group of buildings, that is – (i) used, or intended to be used, only or mainly for residential purposes; and (ii) occupied, or intended to be occupied, exclusively as the home or residence of not more than 1 household; but (b) does not include a hostel, boarding house, or other specialised accommodation.	BA04
HSNO/Hazardous substance: (a) Any hazardous substance as defined in section 2 of the Hazardous substances and New Organisms Act 1996; and (b) Any infectious or radioactive substance that may impair human, animal, or plant health: Section 2 of the Hazardous substances and New Organisms Act 1996 states: 'Hazardous substance' means, unless expressly provided otherwise by regulations, any substance— (a) With one or more of the following intrinsic properties: (i) Explosiveness: (ii) Flammability: (iii) A capacity to oxidise (iv) Corrosiveness: (v) Toxicity (including chronic toxicity (vi) Ecotoxicity, with or without bioaccumulation; or (b) Which on contact with air or water (other than air or water where the temperature or pressure has been artificially increased or decreased) generates a substance with any one or more of the properties specified in paragraph (a) of this definition.	Fire Service Act 1975 and HSNO Act 1996
International Accreditation New Zealand (IANZ): Accreditation body of the testing laboratory registering council, an autonomous Crown entity established by the testing Laboratory Registration Council Act 1972, responsible for accrediting BCAs to the Building (Accreditation of BCAs) Regulations 2006.	DBH
IIC (Impact insulation class): A single number rating derived from measured Code values of normalized impact sound pressure levels in accordance with Method ASTM E 492, Annex A1, Laboratory Measurement of Impact Sound Transmission Through Floor-Ceiling Assemblies Using the Tapping Machine. It provides an estimate of the impact sound insulating performance of a floor-ceiling assembly.	BCHB
Importance levels: The 'importance level' of a structure is related to the consequences of failure and is reflected in the acceptance (explicit or implicit) of the probability of exceeding a limit state.	AS/NZS 1170
Industrial: Applies to a building or use where people use material and physical effort to: (a) extract or convert natural resources, (b) produce goods or energy from natural or converted resources, (c) repair goods, or (d) store goods (ensuing from the industrial process). Examples: an agricultural building, agricultural processing facility, aircraft hanger, factory, power station, sewage treatment works, warehouse or utility.	Br
Licensed building practitioner (LBP): A building practitioner whose name is, for the time being, entered in the register established and maintained under section 298 (1).	DBH
MultiProof: A statement by the Department of Building and Housing that a specific set of building plans and specifications complies with the New Zealand Building Code.	DBH

NATIONAL COMPETENCY ASSESSMENT GLOSSARY OF TERMS	
Natural hazard: Has the meaning given to it by section 71 of the Building Act 2004. Section 71(3) states: '(3) In this section and sections 72 to 74, natural hazard means any of the following: (a) erosion (including coastal erosion, bank erosion, and sheet erosion): (b) falling debris (including soil, rock, snow, and ice): (c) subsidence: (d) inundation (including flooding, overland flow, storm surge, tidal effects, and ponding): (e) slippage'	BA04
Occupant/occupancy load: The greatest number of people likely to occupy a particular space within a building. It is determined by: (a) Multiplying the number of people per m² (occupant density) for the activity being undertaken, by the total floor area, or (b) For sleeping areas, counting the number of beds, or (c) For fixed seating areas, counting the number of seats.	BCHB
Outbuildings: Applies to a building or use which may be included within each classified use but are not intended for human habitation, and are accessory to the principal use of associated buildings. Examples: a carport, farm building, garage, greenhouse, machinery room, private swimming pool, public toilet, or shed.	BA04
Performance indicators: Mandatory requirements which must be achieved to demonstrate competence at a given level.	DBH
Prescribed electrical work: Has the meaning given to it by section 2(1) of the Electricity Act 1992.	BA04
PIM (Project information memorandum): Refer to sections 31–39 of the Building Act.	BA04
Professional conversation: A type of structured interview with the aim of clarifying or confirming levels of knowledge.	DBH
Purpose group: The classification of spaces within a building according to the activity for which the spaces are used.	Br
Risk matrix: A table that allows the calculation of a risk score by the allocation and summing of scores for a range of design and location factors applying to a specific building design.	E2/AS1
SC (Sleeping care): Spaces in which people are provided with special care or treatment required because of age, or mental or physical limitations. For example, hospitals, or care institutions for the aged, children, or people with disabilities.	Br
SD (Sleeping detention): Spaces in which people are detained or physically restrained. For example, care institutions for the aged or children and with physical restraint or detention, hospitals with physical restraint or with detention quarters, detention quarters in police stations, prisons.	Br
SH (Sleeping single home): Detached dwellings where people live as a single household or family, including attached self-contained spaces such as granny flats when occupied by a member of the same family, and garages (whether detached or part of the same building) if primarily for storage of the occupants' vehicles, tools, and garden implements	Br
Specified systems: (a) A system or feature that— (i) is contained in a building; and (ii) contributes to the proper functioning of the building (for example, an automatic sprinkler system); And (iii) is declared by the Governor-General, by Order in Council, to be a specified system for the purposes of this Act; and (b) includes a cable car.	BA04
STC (Sound transmission class): A single number rating derived from measured values of transmission loss in accordance with classification ASTM E 413, Determination of Sound transmission class. It provides an estimate of the performance of a partition in certain common sound insulation situations.	CD/G6/ VM1/AS1
Storey: The portion of the building included between the upper surface of any floor and the upper surface of the floor next above, except that the topmost storey shall be that portion of a building included between the upper surface of the topmost floor, and the ceiling or roof above.	NZS 3604
SR (Sleeping residential): Attached and multi-unit residential dwellings, including household units attached to spaces or dwellings with the same or other uses, such as caretakers' flats, and residential accommodation above a shop.	Br
TA (Territorial authority): A city council or district council named in Part 2 of Schedule 2 of the Local Government Act 2002; and— (a) in relation to land within the district of a territorial authority, or a building on or proposed to be built on any such land, means that territorial authority; and (b)in relation to any part of a coastal marine area (within the meaning of the Resource Management Act 1991) that is not within the district of a territorial authority, or a building on or proposed to be built on any such part, means the territorial authority whose district is adjacent to that part.	BA04
Verification Method: A method by which compliance with the Building Code may be verified.	BA04
Weathertightness/Weathertight: Terms used to describe the resistance of a building to the weather. Weathertightness is a state where water is prevented from entering and accumulating behind the cladding in amounts that can cause undue dampness or damage to the building elements.	DBH

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