



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 124

SYSTEM FRAMEWORK 125

National Levels **125**

Residential 1, 2 and 3 **126**

Commercial 1, 2 and 3 **127**

COMPETENCY SPECIFICATIONS 128

ASSESSMENT PROCESS 129

CANDIDATE EVIDENCE 130

Candidate evidence form: processing **133**

Candidate evidence form: inspection **137**

CANDIDATE CHECKLIST 141

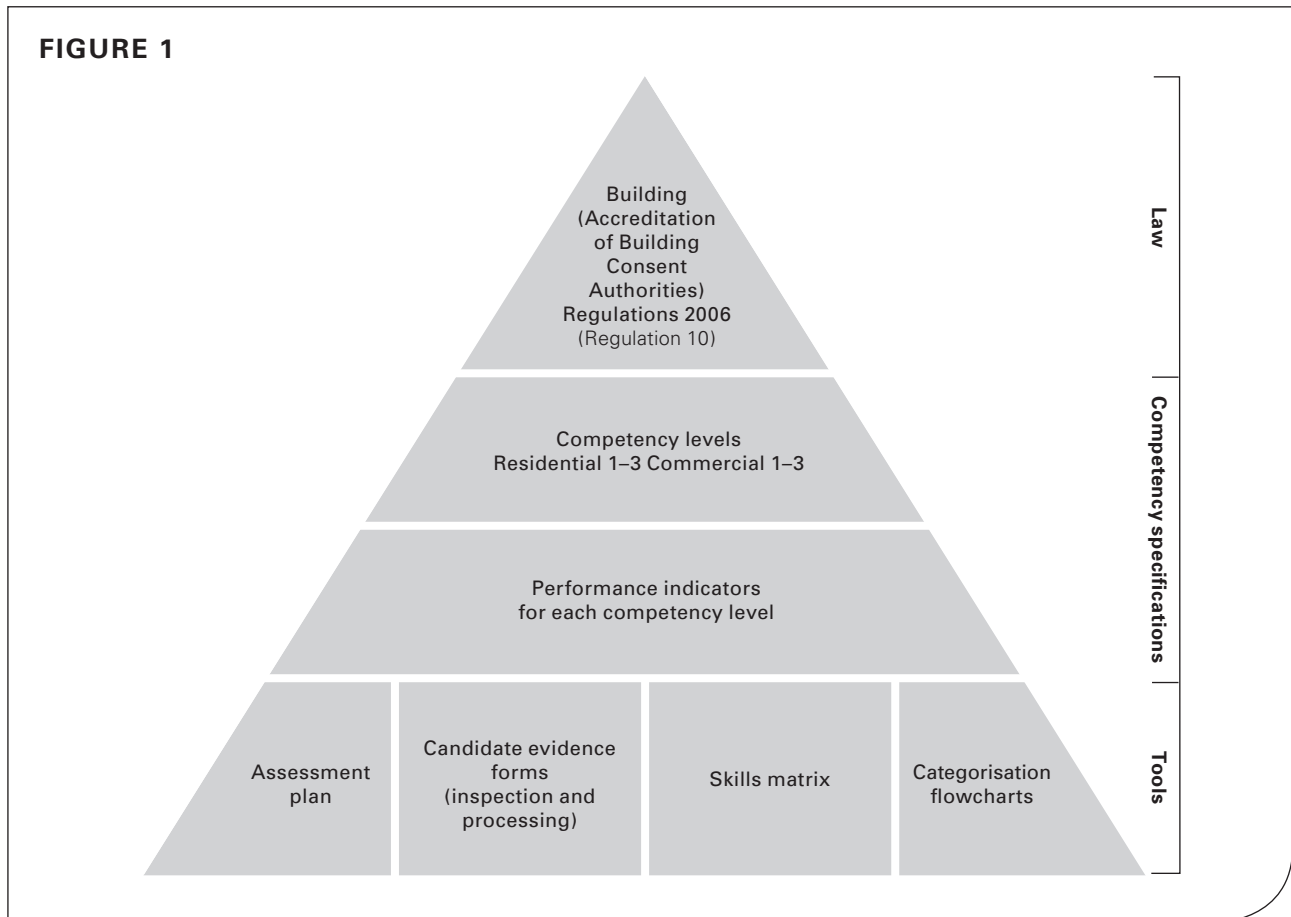
INTRODUCTION

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.

³³The 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 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.



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)

³⁴This 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



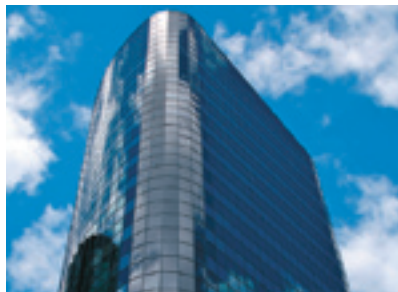
Four storey commercial building with mixed-use (SR) and (CL)

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



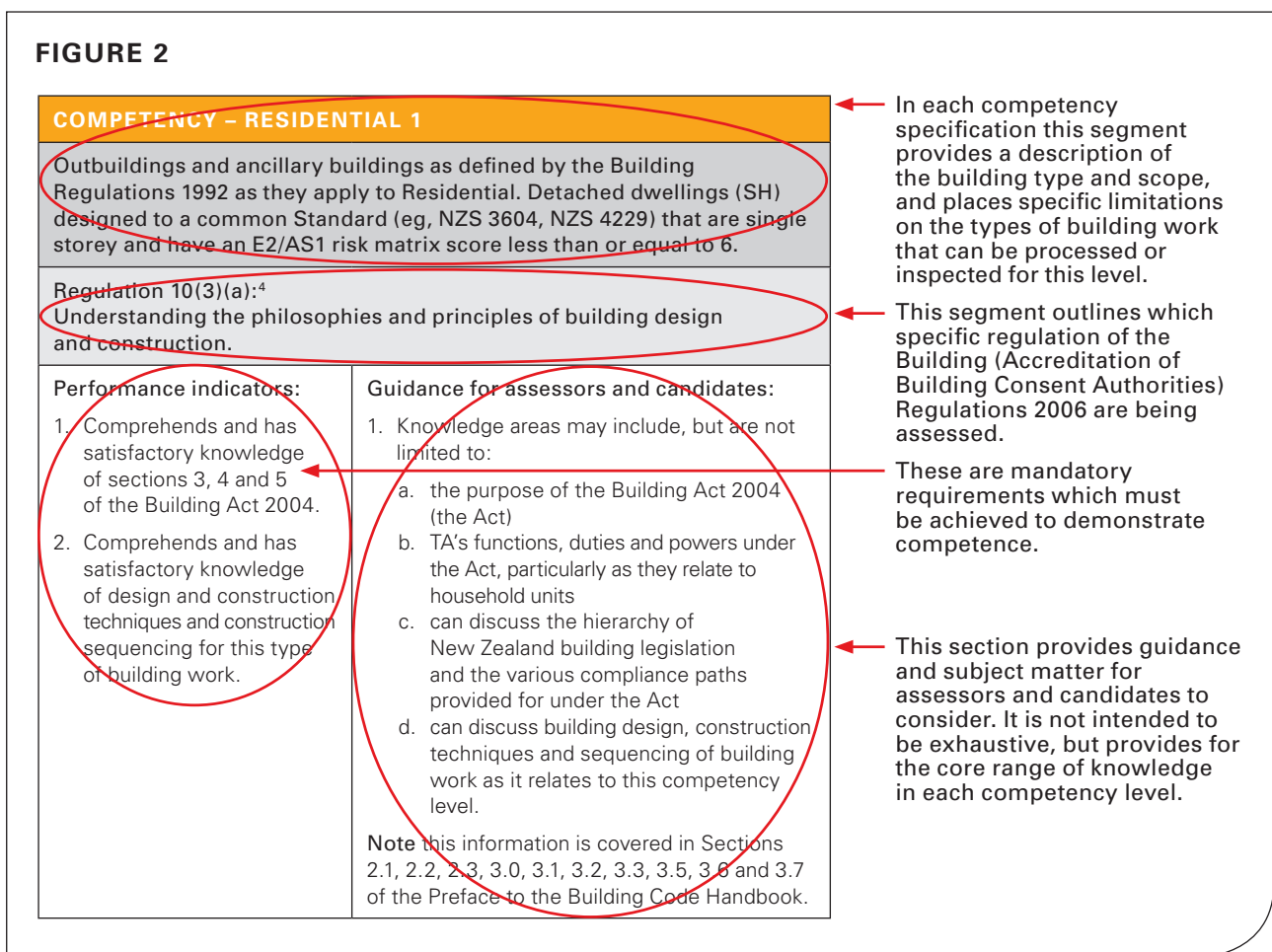
Commercial/public building in excess of four storeys and with more than 500 occupants

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).

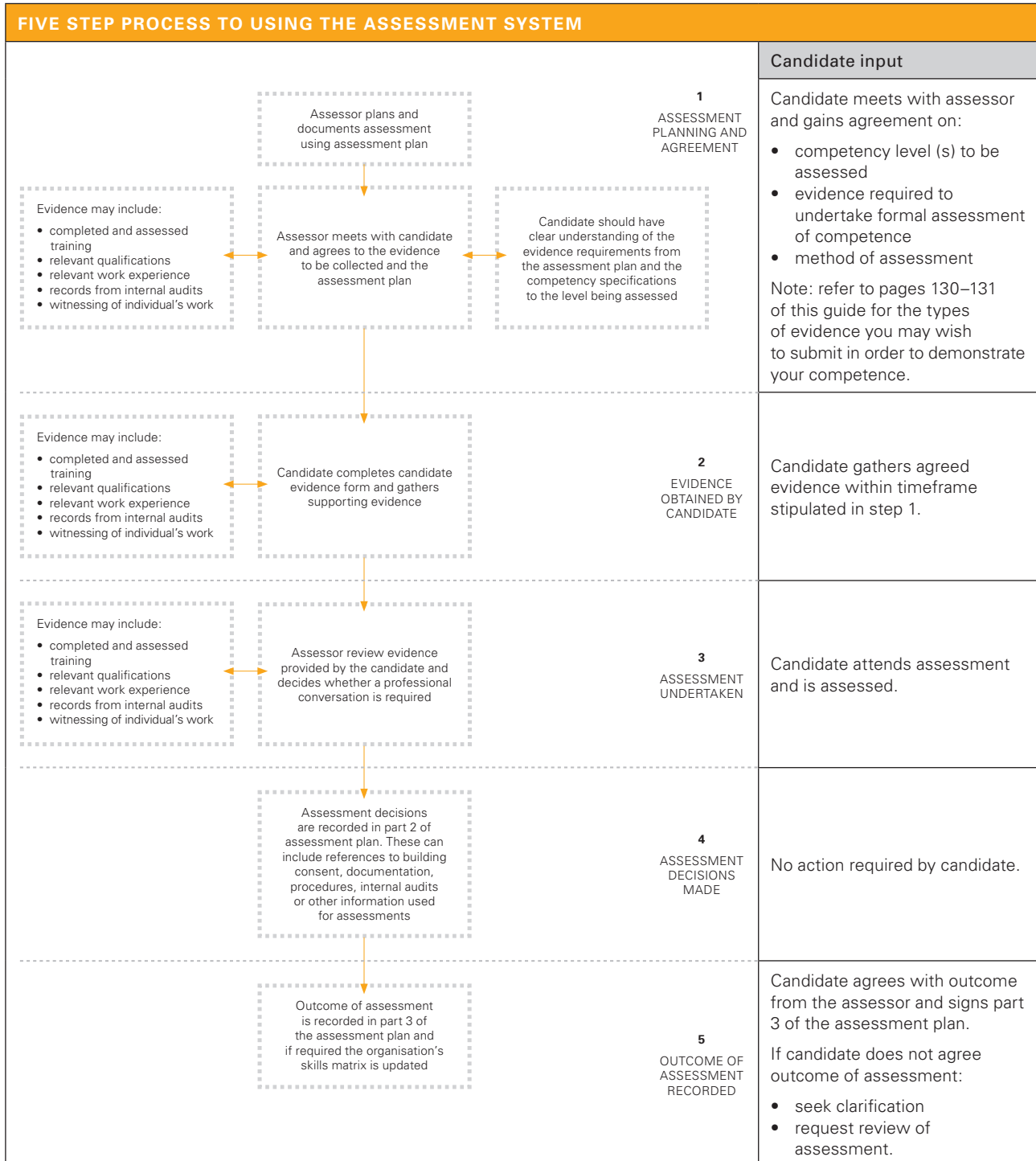
Figure 2 below shows how competency specifications are structured and what areas of knowledge are considered mandatory.



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



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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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
	<p>Short courses</p> <ul style="list-style-type: none"> • 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	<p>The following qualifications and courses may also be relevant in supporting a competency assessment.</p> <p>Bachelor Degrees</p> <ul style="list-style-type: none"> • Architecture • Engineering (mechanical, civil, structural, fire, geotechnical, etc) • Environmental Science/health • Building Science/building technology • Construction management • Quantity Surveying <p>Diplomas and certificates</p> <ul style="list-style-type: none"> • 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 <p>Factors to consider when assessing the relevance of qualifications and courses</p> <ul style="list-style-type: none"> • 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 <p>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)</p>
Other material they have produced	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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 decisions³⁵ 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.

³⁵Inspection 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: 950m²

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 joint, 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)?

- 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:

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: 950m²

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 were 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.

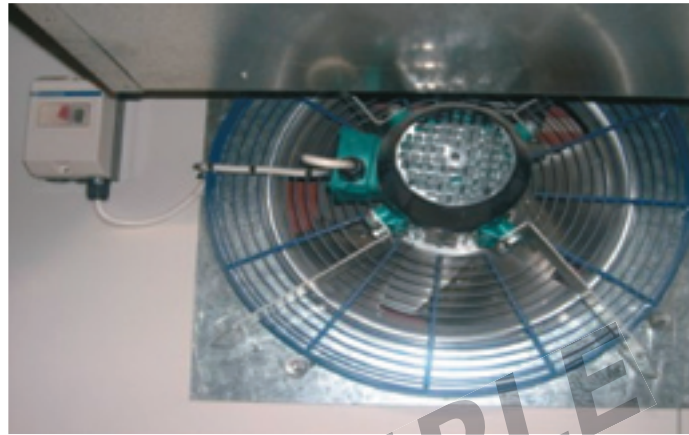
Building Consent BC 123/2010

- 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).