

Engineers update Inspections-

April 2018



BE THE HOW.
WHAKAMAUA KIA TINAI!





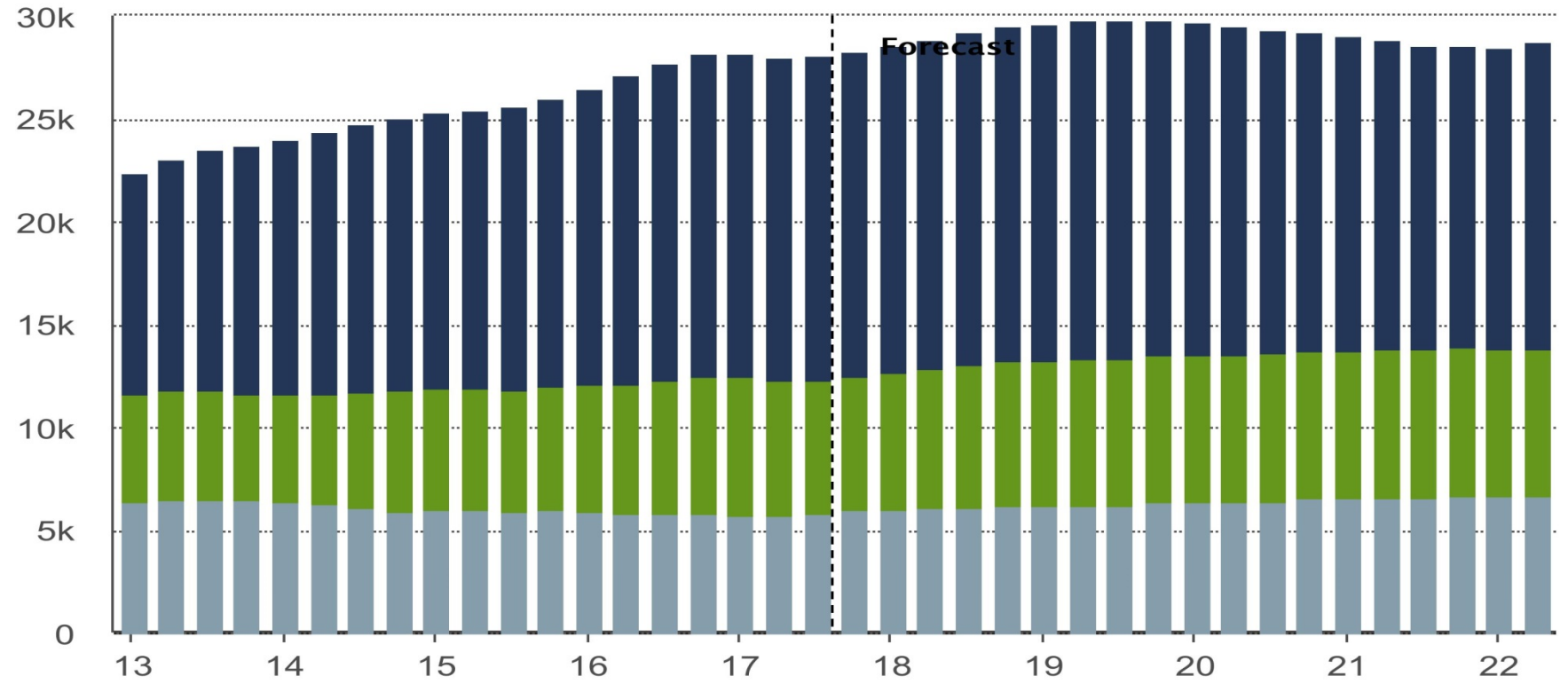
STATE OF PLAY

- Over 800 new residents each week
- 350 new homes built every week
- 700 new streets created last year
- 22,000 building consents
 - 97% require more information and are put on hold
 - Bigger and more complex houses
 - Value of work is increasing
- 160,000 inspections
 - **25% fail**



Auckland's building boom

● Residential ● Non-residential ● Other construction



Source: BRANZ / Pacifecon



**Before and
after**





**Before and
after**



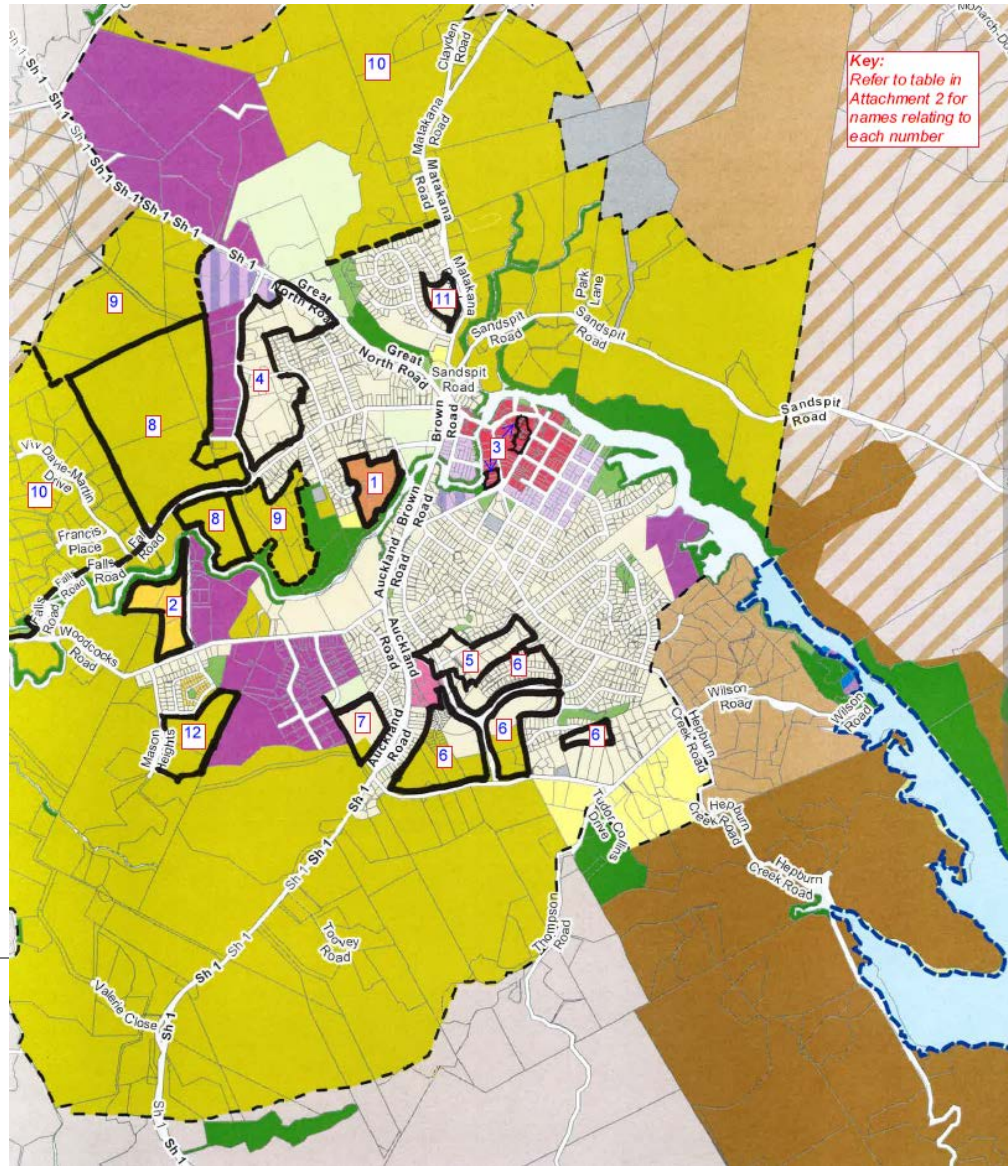


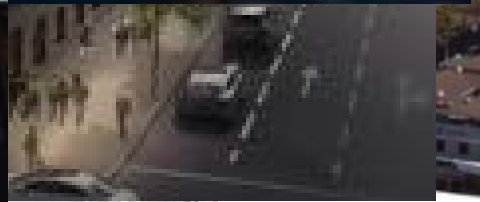
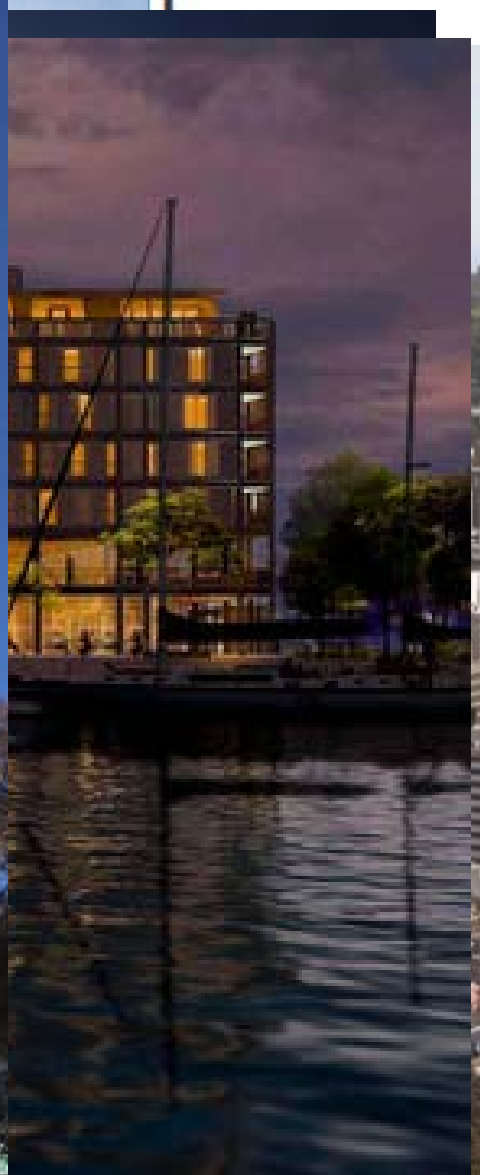
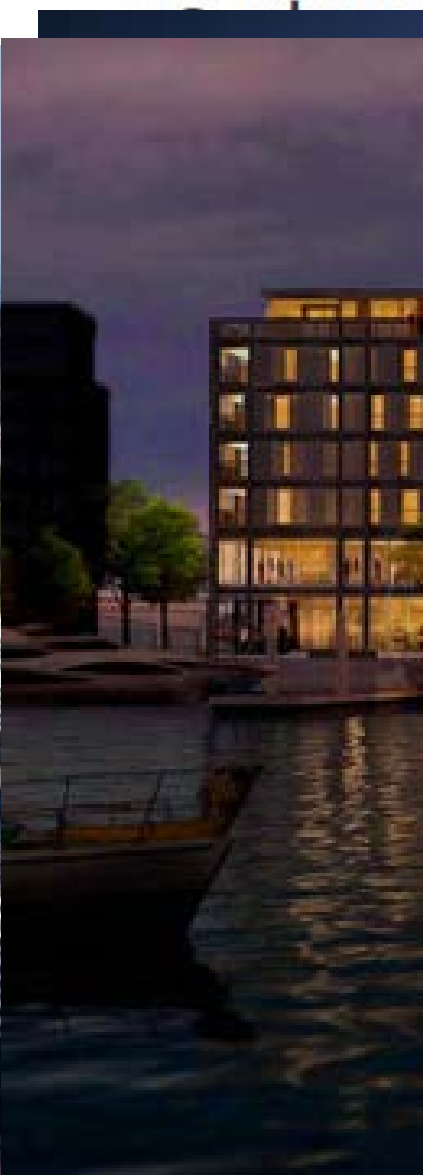
Fulton Hogan's Milldale masterplan

33,000 New Homes Planned for Wainui East, Silverdale

Published on September 7, 2017

Warkworth





2018



2021



Auckland under-building drastic: barely half demand being met

15 May, 2017 5:00am

4 minutes to read



Barely half the number of new houses is being built annually in Auckland. Photo/Nick Reed.

"The industry is safer than it was 100 years ago but it's certainly not more productive," he

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BUSINESS

Paul Lochore: Council delays, skill shortages and China's exit are killing new housing

15 May, 2018 5:00am

4 minutes to read



New Zealand has gone to sleep in the housing market. Photo / Doug Sherring

NZ Herald
By: Paul Lochore



SEFLASH

Cook
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Read





Lack of supervision and



Quality Assurance

“The maintenance of a desired level of quality in a service or product, especially by means of attention to every stage of the process of delivery or production”

Building Amendment Act 2012

52Q Approved quality assurance system

(1) A quality assurance system must comply with the requirements for a quality assurance system for commercial building work that are specified by regulations made under this Act (the **specified requirements**).

(2) A building consent authority must approve a quality assurance system if the building consent authority is satisfied that the quality assurance system—

(a) complies with the specified requirements; and

(b) provides for appropriate supervisory observation, testing, inspection, and third-party review for ensuring that the building work will comply with the building code.

(3) The owner and the building consent authority may amend an approved quality assurance system by agreement, but the building consent authority must not agree to an amendment unless it is satisfied that the quality assurance system after amendment complies with the matters set out in subsection (2).

Note: This clause is not in force yet

Passive fire challenges



Steel work: Traceability and compliance confirmation



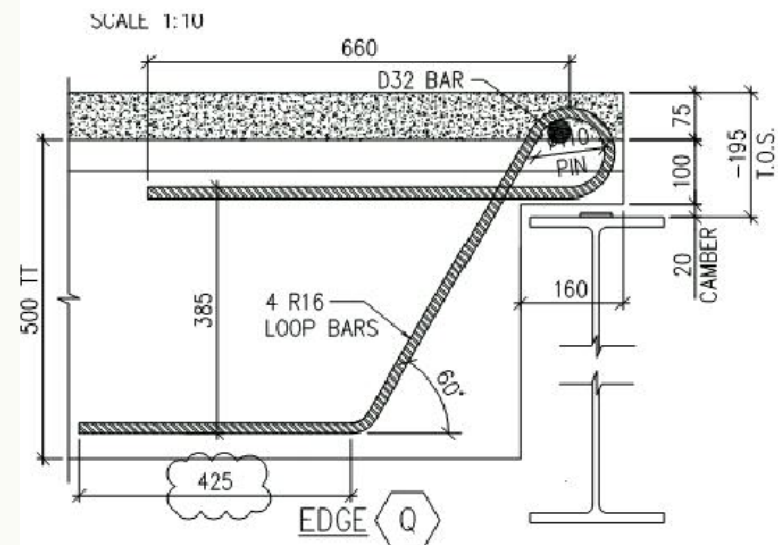
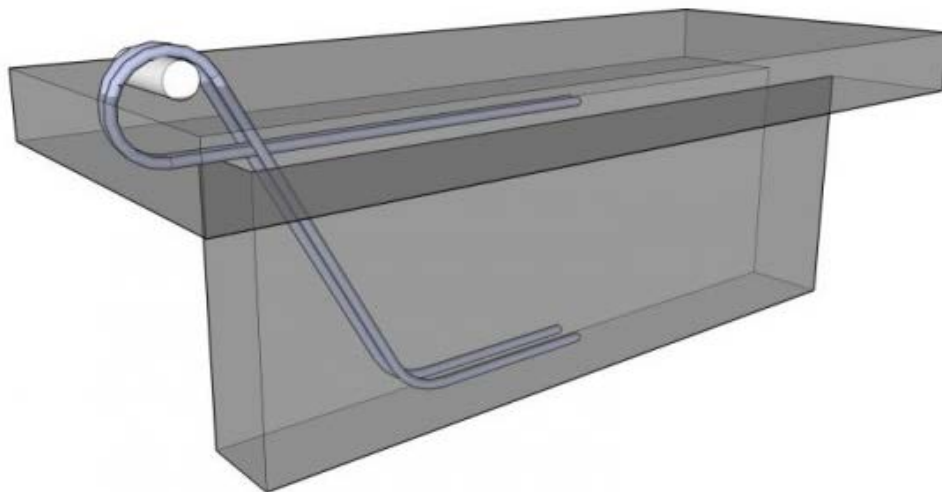
Onsite checks and balances





Warning 2018/001

Warning against the use of loop bar details in flange-hung double-tee precast concrete floor units that do not comply with NZS 3101



Proposed process

1. Pre-application meeting

- Propose possible construction monitoring strategies
- Provide guidance on CM levels and onsite QA systems
- Show some examples and learnings from past jobs

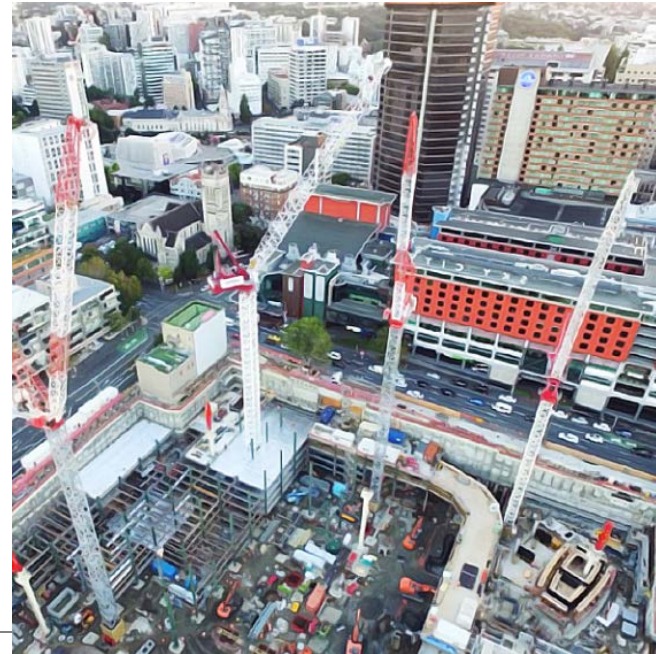
2. QA processes are added to the consent documents when applying

3. Arrange pre-construction meeting

4. Both Council audit and contractors QA system agreed

5. Contractor QA and Council site audit process carried out

6. Dedicated CCC assessor (pre-ccc findings meeting if required)



QA process agreed

- Council will dedicate an inspector to work through the proposed QA plan and reach agreement on the process.
- Council assesses the contractors and engineers based on historical experience to determine the frequency and scope of Council site visits.
 - Constructors history in the type of construction relevant to the job
 - Level of engagement and construction monitoring levels of consultants
 - The project managers & supervisors' overview & understanding of the project
 - Assessment of the Quality Assurance strategy being proposed
 - Monitoring level of sub-trades by project managers
 - The loop closing methodology by consultants when issues are identified
 - Documentation strategy for capturing all the above on site

Application for Quality Assurance Audit (QAA) Process Approval - Foundations



Consent number:					
Address:					
Owners name:					
Inspection type: <input checked="" type="checkbox"/>	<input type="checkbox"/> <i>Soldier Piles</i>	<input type="checkbox"/> <i>Piles</i>	<input type="checkbox"/> <i>Driven Piles</i>	<input type="checkbox"/> <i>Strip Foundation</i>	<input type="checkbox"/> <i>Grade/Grd. Beams</i>
	<input type="checkbox"/> <i>Sheet Piles</i>	<input type="checkbox"/> <i>Pile Caps</i>	<input type="checkbox"/> <i>Screw Piles</i>	<input type="checkbox"/> <i>Ground anchors</i>	<input type="checkbox"/> <i>Other:</i>
Applicants name:					
Contact details:					
Engineer:					
CPEng registration #		Council Registration #		CM Level	
Contact details:					

Upon application/review of work described on this form, work **may** be carried out without Council inspections subject to the conditions described below:

Documentation

- Ensure CM level is understood and carried out appropriately. Create an onsite file to record site visits and leave copy of any observation reports (for PS4 cert)
- Provide easy record of showing issues previously identified have been addressed and ok
- Marked up drawings to track progress/dates
- Concrete deliver dockets showing mPa level and date.
- Reinforcing delivery dockets with steel details. Batch heat numbers may be required from supplier
- Contractor site observation records (for PS3 certs), weld certs, DPM installer records etc

Waived inspections

Where inspection demand exceeds inspector capacity and the work is considered “low-risk”, an inspection waiver may be approved. These waivers have some risk mitigated by having third party reviews such as an engineer inspecting the job and the qualification of the constructor checked including their inspection track record.

Inspection team leaders assess the risk before offering an inspection waiver. They will look at previous inspection track record of contractor, engineer being on register, type of work being carried out etc.

It's important to remember that Council inspectors will not be inspecting and there must be site observation notes left on-site

Question from Manu Withers

...with specific regard to residential structural projects, our team is struggling to understand when council regards something as an acceptable change via engineers site instruction versus a council minor variation versus a full minor amendment.

Assuming all 3 options would eventually be wrapped up in the final PS4. Can you please provide the following:

- 5 examples of when change via a simple engineers site observation form is acceptable
- 5 examples of when a minor variation is the correct process and
- 5 examples of when a full amendment is required

We were also recently advised by one council inspector that council has no policy on this item. Is this the case?

Minor Variations

Good guidance- ***MBIE Guide to definition, assessment and granting of minor variations to building consents.***

All proposed MVs need to be communicated with Council before the work is undertaken

Specific engineer designs can be assessed if the change can be considered minor and the engineer is on the AC producer statement (PS) author register. A PS1 design cert and amended details must be provided along with any applicable design calculations and an agreement to provide a PS4 construction review certificate for the completed work. It's important to remember this must only be used for minor changes as described in examples below:

- Change a structural connection method. Engineer would need to confirm this still meets the design intent eg; flexible vs rigid joint
- Change timber beam with steel beam or vice versa
- Change standard slab on grade to a waffle pod system or vice-versa. Note, in addition to the structural design, this may also require geotechnical engineer input.

Document type: Practice Note
Title: Amendments and minor variations
Document number: AC2224
Version: 9

1. Purpose

This practice note provides guidance on how Auckland Council manages design changes to the consented plans after the consent has been granted and issued. Design changes prior to consent issue are treated as revisions and not subject to this practice note.

There are two options for managing design changes after consent issue they are:

1. An amendment; or
2. A minor variation

Amendments and minor variations must be applied for and approved before the work can proceed; a minor variation can be approved on site by the Building Inspector at the time of the inspection. In both instances adequate documentation must be supplied to enable an assessment to take place (refer sections 4 and 5 respectively for further clarification).

Use AC2131 MV form to document the minor variation

<https://www.building.govt.nz/projects-and-consents/build-to-the-consent/making-changes-to-your-plans/minor-variations-guidance/examples-minor-variation-or-amended-building-consent/>

Earthquake Prone Buildings

Q&A

Patrick Cummuskey