



Delivering together while apart

Making progress across COVID-19 alert levels

Beca Connect | CLIENT WEBINARS 2020

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better.

Today's speakers



Rupert Hodson (MC)
Northern Region Manager

Rupert has over 20 years of experience in statutory, environmental and urban planning, and environmental monitoring. He has an extensive track record in leading large consenting and consultation strategies for major urban infrastructure projects.



Stuart Tucker
Business Director, Major Projects & Partners (Speaker)

Stuart has been involved in the delivery of significant transport and infrastructure projects for nearly 30 years and has an outstanding track record as one of New Zealand's leading large project design managers.



Sue Bradley
GM, Industrial Digital (Speaker)

A leader in Beca's Digital team, Sue has over twenty years of experience in operations management, project management and consulting roles, with extensive experience in major multidiscipline projects.



Clive Rundle
Group Director, Utilities (Virtual panel member)

Clive leads Beca's Water and Power teams and is one of New Zealand's most knowledgeable water supply engineers, leading in the introduction of innovative approaches to water treatment and supply.



Chloe Stewart-Tyson
Group Manager, H&S (Virtual panel member)

Chloe has nearly 20 years of experience in health and safety, specialising in organisational culture change. She is responsible for Health and Safety throughout the Beca Group, looking after the safety and wellbeing of Beca employees and clients.



New Zealand COVID-19 Construction Protocols

These protocols and attachments are to be read in conjunction with the COVID-19 – Standard for New Zealand Construction Operations and reflect how the requirements in the standard may be achieved. Individual businesses and operations may need to adapt the protocols to their specific circumstances but the overall intent of the standard should still be applied in all cases. These protocols are expected to develop and evolve as requirements change from government and industry experience and are to be treated as working documents.

The Five Step Guide for returning to work - Alert Level 3

Before arriving on site



- Each contractor must have a plan detailing the steps they will take to mitigate risks, including those presented by COVID-19. The details of the plan must be communicated to workers before they start work.
- Where possible, conduct a remote induction before arrival on site, this can be done via video conferencing or by phone. If an in-person induction is required, the [Physical distancing and hygiene protocol](#) must be followed.
- All workers should follow the [Personal health flowchart](#) to confirm they are safe to be on site.
- Employers must have an understanding of how workers will travel to and from site and will communicate the [Site transportation protocol](#) to all.
- Ensure all workers understand when additional PPE may be required due to COVID-19 and that workers have access to the correct PPE as per the [Ministry of Health PPE Guide](#) and Worksafe guidelines. When required to use [face masks](#) or [gloves](#) please follow these processes.

Site entry



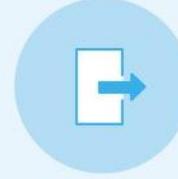
- Only relevant personnel to the workplace are to access the site. All office employees supporting a project will work remotely, where possible.
- A daily register of workers entering and leaving site must be completed along with a health declaration. If electronic sign in machines are used, these must be cleaned and sanitised after each use. Use your existing sign in register or the example [Sign-in register](#).
- [Signage](#) reminding workers of the COVID-19 physical distancing and hygiene protocol will be posted at the site entrance and in common areas where appropriate.

Site operations



- All work is to be undertaken in such a way as to reduce any possible contact between workers and to promote physical distancing wherever possible, as per the [Physical distancing and hygiene protocol](#).
- All visitors to the site, such as necessary delivery workers, will be restricted to one person wherever possible. These workers must follow the [Site transportation protocol](#).
- All offices and jobsites must implement cleaning measures as per the [Cleaning guide](#).
- All tools, equipment, plant and vehicles must be used in alignment with the [Cleaning guide](#).
- Toolbox talks should be held with physical distancing in place as per the [Physical distancing and hygiene protocol](#). A [COVID-19 level 3 Toolbox Talk](#) is available for use to assist with your Toolbox Talks.
- Additional sanitary measures are to be implemented on site to prevent the spread of COVID-19 e.g. hand washing stations, provision of additional hand sanitizer, provision of disinfectant wiping products, as per the [Physical distancing and hygiene protocol](#).
- Smokers must follow the [Physical distancing and hygiene protocol](#).
- A COVID-19 [Response plan](#) must be available and accessible on site.

Leaving site



- Workers must use the [Sign-in register](#) to sign out.
- When [Returning home](#), workers will need to follow the necessary hygiene measures.
- Each site must be cleaned and sanitised at the end of the working day or end of each shift, as per the [Cleaning guide](#).
- All waste and disposable PPE must be removed from site and securely disposed of as per the [Cleaning guide](#).
- Workers must follow the [Site transportation protocol](#).

Management Protocols



- Follow the COVID-19 [Manager's Checklist](#).
- Communicate the site expectations and prevention measures to all workers and contractors.
- You must have a COVID-19 [Response plan](#) in place to identify processes for dealing with suspected and confirmed COVID-19 cases.
- Stay in contact with all workers including those who may be in isolation or working remotely. Conduct Toolbox Talks regularly and keep track where and when workers are on site for contract tracing purposes and ensure they have the correct PPE.
- Don't forget your normal health and safety obligations still apply. These Protocols are in addition to your usual health and safety controls.

More information

Healthline
call 0800 3585453
www.health.govt.nz

Unite Against COVID-19
www.covid19.govt.nz

National Telehealth Service
1737.org.nz

Mental Health Foundation
www.mentalhealth.org.nz



Delivering across all COVID-19 alert levels

Sue Bradley, GM Industrial Digital

Beca Connect | CLIENT WEBINARS 2020

INTRO

1. **Develop a framework**
2. **Plan for Alert Levels**
3. **Drive best practice**
4. **Cultural/people, process and technology**

Issues mapped to project stage

Cumulative issues (lower level issues apply)

	Design & Engineering	Procurement	Construction	Comission & Handover
L1 PREPARE				
L2 REDUCE				
L3 RESTRICT				
L4 ELIMINATE Essential businesses only				

Issues mapped to project stage

Cumulative issues (lower level issues apply)

Design & Engineering

Procurement

Construction

Comission & Handover

L1 PREPARE

1. Cost estimate contingencies may now need to be revised to account for additional risks of this and higher levels.
2. Meetings need to be at 2m spacing.

L2 REDUCE

1. Restricted face-to-face comms including; Meetings, Design reviews etc.
2. Site inspections restricted (2m spacing).

L3 RESTRICT

1. Site access only possible for essential small groups (<3 people).
2. The health and movements of site personal must be tracked and recorded.

L4 ELIMINATE

Essential businesses only

1. Site inspection not possible.
2. All work must be done from home.

1. Contracts modified for Covid19 effects (eg. force majeure)
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1. Contractor site walks are deferred, unless for operationally critical projects.

1. Assess cost implications and hold contingencies for (all) alert levels (eg. lower productivity, restricted

1. Meal breaks, shift changeovers etc.

1. Non-essential capital works suspended, unless risk is very low.
2. Site workers to be arranged into small working 'bubbles' who work together for the duration of lockdown.
3. How to perform site supervision?

1. Site workers to be arranged into small working 'bubbles' who work together for the duration of lockdown period.
2. Handover meetings will now need to be done remotely.

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Issues mapped to project stage

Cumulative issues (lower level issues apply)

L1 PREPARE

L2 REDUCE

L3 RESTRICT

L4 ELIMINATE

Essential businesses only

	Design & Engineering	Procurement	Construction	Comission & Handover
L1 PREPARE	<ol style="list-style-type: none"> Cost estimate contingencies may now need to be revised to account for additional risks of this and higher levels. Meetings need to be at 2m spacing. 	<ol style="list-style-type: none"> Contracts modified for Covid19 effects (eg. force majeure, extension of time and cost, payment terms etc.) Alternative contracting methodologies to be considered. 	<ol style="list-style-type: none"> Assess cost implications and hold contingencies for (all) alert levels (eg. lower productivity, restricted material availability, delays, mob / demob costs) 	<ol style="list-style-type: none"> International specialists traveling will be required to self-isolate when
L2 REDUCE	<ol style="list-style-type: none"> Restricted face-to-face comms including: Meetings, Design reviews etc. Site inspections restricted (2m spacing). 	<ol style="list-style-type: none"> Restricted face-to-face comms including: Meetings, Scope reviews etc. Scope definition site visits restricted (2m spacing). Borders closed - import suppliers may be restricted. 	<ol style="list-style-type: none"> 	
L3 RESTRICT	<ol style="list-style-type: none"> Site access only possible for essential small groups (<3 people). The health and movements of site personal must be tracked and recorded. 	<ol style="list-style-type: none"> Contractor site walks done at 2m spacing and in small groups (<3 people). The health and movements of site personal must be tracked and recorded. 	<ol style="list-style-type: none"> Physical separation and contact register at all stages including: Meal breaks, shift changeovers etc. 	<ol style="list-style-type: none"> commissioning to be deferred. The health and movements of site personal must be tracked and recorded.
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Issues mapped to project stage

Cumulative issues (lower level issues apply)

L1 PREPARE

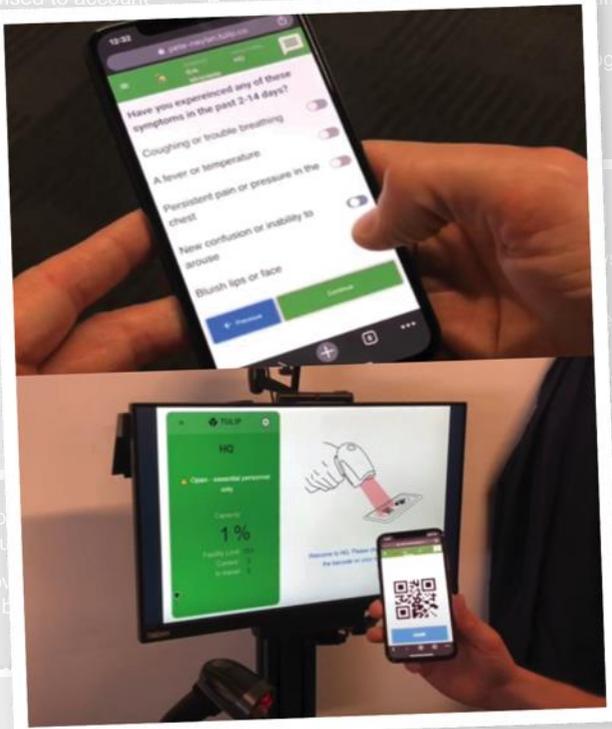
L2 REDUCE

L3 RESTRICT

L4 ELIMINATE

Essential businesses only

	Design & Engineering	Procurement	Construction	Comission & Handover
L1 PREPARE	<ol style="list-style-type: none"> 1. Cost estimate contingencies may now need to be revised to account for additional risks at different levels. 2. Meetings need to be held... 	<ol style="list-style-type: none"> 1. Contracts modified for Covid19 effects (eg. force majeure clauses, time... 	<ol style="list-style-type: none"> 1. Assess cost implications and hold contingencies for (all) alert levels (eg. lower productivity, restricted material availability, delays, mob / demob costs) 2. Additional hygiene requirements. 3. JSAs to communicate new risks and controls. 	<ol style="list-style-type: none"> 1. International specialists traveling will be required to self-isolate when entering the country (time and cost effect).
L2 REDUCE	<ol style="list-style-type: none"> 1. Restricted face-to-face comms including: Meetings, safety briefings etc. 2. Site inspections reduced (2m spacing). 	<ol style="list-style-type: none"> 1. Restricted face-to-face comms including: Construction planning meetings, Site inductions, safety briefings etc. 2. Challenges for works that require close physical contact. E.g. confined space work. 	<ol style="list-style-type: none"> 1. Restricted face-to-face comms including: Construction planning meetings, Site inductions, safety briefings etc. 2. Challenges for works that require close physical contact. E.g. confined space work. 3. Very challenging / impossible for international vendors / specialists to visit site. 	<ol style="list-style-type: none"> 1. Restricted face-to-face comms including: Commissioning planning, safety briefings. 2. Challenges for works that require close physical contact. E.g. Operations & Maintenance training. 3. Very challenging / impossible for international vendors / specialists to visit site.
L3 RESTRICT	<ol style="list-style-type: none"> 1. Site access only possible for essential small groups. 2. The health and movements of site personal must be tracked and recorded. 	<ol style="list-style-type: none"> 1. Challenges for non-essential multiday works (may be halted with one days' notice). 2. Physical separation and contact register at all stages including: Meal breaks, shift changeovers etc. 	<ol style="list-style-type: none"> 1. Challenges for non-essential multiday works (may be halted with one days' notice). 2. Physical separation and contact register at all stages including: Meal breaks, shift changeovers etc. 	<ol style="list-style-type: none"> 1. Non-operationally critical commissioning to be deferred. 2. The health and movements of site personal must be tracked and recorded.
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Issues mapped to project stage

Cumulative issues (lower level issues apply)

L1 PREPARE

L2 REDUCE

L3 RESTRICT

L4 ELIMINATE

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SUMMARY

1. **Consider using a framework** similar to this to methodically consider additional measures needed at each phase/activity in your project lifecycle.
2. **Expect to cycle through Alert Levels** (planning drives success).
3. **Bring in specialist expertise** to drive best practice (eg risk process, procurement strategy, scheduling construction sequences).
4. **Use ALL the tools in your arsenal** – cultural, process and technology



Additional framework – in detail



Issues mapped to project stage

Cumulative issues (lower level issues apply)

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Solution Mapping



Cultural



Process



Technology

Design & Engineering

Procurement

Construction

Comission & Handover

L1

- 1. Cost estimate contingencies may now need to be revised to account for additional risks of this and higher levels.
- 2. Meetings need to be at 2m spacing.

Engineers and project managers need to adopt a pragmatic approach to cost estimates, with comprehensive risk sessions to evaluate.



2

L2

- 1. Restricted face-to-face comms including; Meetings, Design reviews etc.
- 2. Site inspections restricted (2m spacing).

Video conferencing between project stakeholders.



Social distancing and additional hygiene practiced during all site interactions.



Survey / scan site and make this accessible for remotely located project stakeholders to collaborate around (when / if site access becomes difficult or impossible).



1

L3

- 1. Site access only possible for essential small groups (<3 people).
- 2. The health and movements of site personal must be tracked and recorded.

Scans to be done pragmatically here, in preparation for moving to L4.



Site access systems assess worker health on entry and reduce risk through workforce compartmentalisation.



L4

- 1. Site inspection not possible.
- 2. All work must be done from home.

Site access systems assess worker health on entry and reduce risk through workforce compartmentalisation.



Solution Mapping



Cultural



Process



Technology



L1

- 1. Contracts modified for Covid19 effects (eg. force majeure, extension of time and cost, payment terms etc.)
- 2. Alternative contracting methodologies to be considered.

Engage QS and Legal teams to update contracts for COVID issues during contract works.

1

L2

- 1. Restricted face-to-face comms including; Meetings, Scope reviews etc.
- 2. Scope definition site visits restricted (2m spacing).
- 3. Borders closed - import suppliers may be restricted.

Make 3D data (site scans and / or design models) remotely accessible for tenderers allowing estimations to continue when / if site access becomes difficult or impossible. Hold 'virtual' site walks to resolve tender queries.

Video conferencing between project stakeholders.

Social distancing practiced during all site interactions.

L3

- 1. Contractor site walks done at 2m spacing and in small groups (<3 people).
- 2. The health and movements of site personal must be tracked and recorded.

Engage with material suppliers to assess supply risks / mitigations for all alert levels.

2

Site access systems assess worker health on entry and reduce risk through workforce compartmentalisation.

L4

- 1. Contractor site walks are deferred, unless for operationally critical projects.

Survey / scan / photograph site and make this accessible for (remotely located) project stakeholders. Encourage all stakeholders to collaborate utilising the site scan whenever possible (even when site can be accessed as it prepares the team for when it cannot be).

3

Solution Mapping



Cultural



Process



Technology



L1

- 1. Additional hygiene requirements
- 2. JSA's to note risks and controls communicated

Social distancing and additional hygiene practiced during all site interactions. 

Work owners are to be well aware of the requirements set out by the government and put measures in place to reduce risk. 

L2

- 1. Restricted face-to-face comms including; Construction planning meetings, Site inductions, safety briefings etc.
- 2. Challenges for works that require close physical contact. eg. confined space work
- 3. Very challenging / impossible for international vendors / specialists to visit site

Video conferencing between project stakeholders.  

Utilise spatial models and common data tools / processes (BIM) so remote teams can collaborate on issue identification, progress reporting, construction planning.   **3**

Utilise remote support and / or augmented reality (eg HoloLens) technologies to provide specialist input to construction. 

L3

- 1. Challenges for non-essential multiday works (may be halted with one days' notice).
- 2. Physical separation and contact register at all stages including: Meal breaks, shift changeovers etc.

Site access systems assess worker health on entry and reduce risk through workforce compartmentalisation.   **1**

Work in isolation or in very small teams (bubbles) to compartmentalise workforce. 

L4

- 1. Non-essential capital works to be suspended, unless risk is very low
- 2. Works personnel must work in a 'bubble'
- 3. How to perform site supervision?

CCTV camera set ups for contractor supervision. 

Utilise remote support and / or augmented reality (eg HoloLens) technologies to provide remote site supervision and engineering support.  **2**

Solution Mapping



Cultural



Process



Technology



L1

1. International specialists traveling will be required to self-isolate when entering the country

L2

1. Restricted face-to-face comms including; commissioning planning meetings, safety briefings,
2. Challenges for works that require close physical contact. eg. Operator and maintenance training.
3. Very challenging / impossible for international vendors / specialists to visit site

L3

1. Non-operationally critical commissioning to be deferred.
2. The health and movements of site personal must be tracked and recorded.

L4

1. Work groups of two people, to work together and form a bubble for the duration of lockdown
2. Handover meetings will now need to be done remotely.

Social distancing and additional hygiene practiced during all site interactions

Use of remote assistance technologies (eg. HoloLens) for specialist input, handover meetings and training during commissioning.

2

Site access systems assess worker health on entry and reduce risk through workforce compartmentalisation.

Utilise spatial models and common data tools / processes (BIM) so remote teams can collaborate and assist with commissioning etc.

Site access systems assess worker health on entry and reduce risk through workforce compartmentalisation.

1

Cultural shift required particularly important in reducing the risk of virus. People will need to be trained to maintain the 2m spacing.



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