



BEHAVIOUR CHANGE FOR SUSTAINABILITY

MAKING WASTE MORE SUSTAINABLE IN THE C&D SECTOR

A photograph of two men wearing hard hats (one white, one blue) and plaid shirts, leaning over a table and looking at architectural blueprints. The scene is set in a construction or office environment with a brick wall in the background.

BACKGROUND

With just over 20 years left to achieve the target of zero waste to landfill by 2040, Auckland Council need to ensure that they are **tackling waste management and minimisation** from all angles across the Auckland region.

To date, goals and initiatives for reducing the amount of waste being sent to landfill, as outlined in the Waste Management and Minimisation Plan, have focussed on the council (reducing inhouse waste by 30% by 2018) and private sector (reducing waste to landfill by 30% by 2027). Conversely, there are currently no specific waste reduction targets in place for Construction and Demolition (C&D) waste. Given that this sector represents half of all waste being sent to New Zealand's landfill, Auckland Council feel that it is vital that C&D waste becomes a key target area for waste management and minimisation.

As it stands, waste from residential development and building is the biggest contributor to overall C&D waste going to landfill. Given Auckland's current building boom, this flow of C&D waste is unlikely to cease any time soon, and is in fact currently on the increase – tracking two years ahead of projections made in 2017. Therefore, the need for the C&D industry to have a sustainable focus is greater than ever.

With this in mind, Auckland Council are now looking to achieve a meaningful reduction of C&D waste across Auckland through waste minimisation, diversion from landfill, as well as optimising resources, equipment and staff. In order to identify which levers, initiatives and communications will be most effective in encouraging C&D industry leaders to take action and incorporate sustainable approaches and practices into their plans, Auckland Council first need to understand the key barriers and motivations to behaviour change in industry.

OBJECTIVES

1

To understand how to leverage drivers and overcome barriers to behaviour change among different stakeholders in the C&D industry

2

Identify how best to bridge the gap between different project stakeholders to ensure that they are aligned in achieving C&D waste goals

3

To test, streamline and optimise potential Auckland Council led initiatives for relevancy and efficacy in influencing behaviour change

4

To evaluate the effectiveness of potential communications messaging and concepts for cut-through, impact and ability to initiate the desired behaviour change

5

To identify other areas of opportunity and innovation to effectively influence positive behaviour change for C&D waste



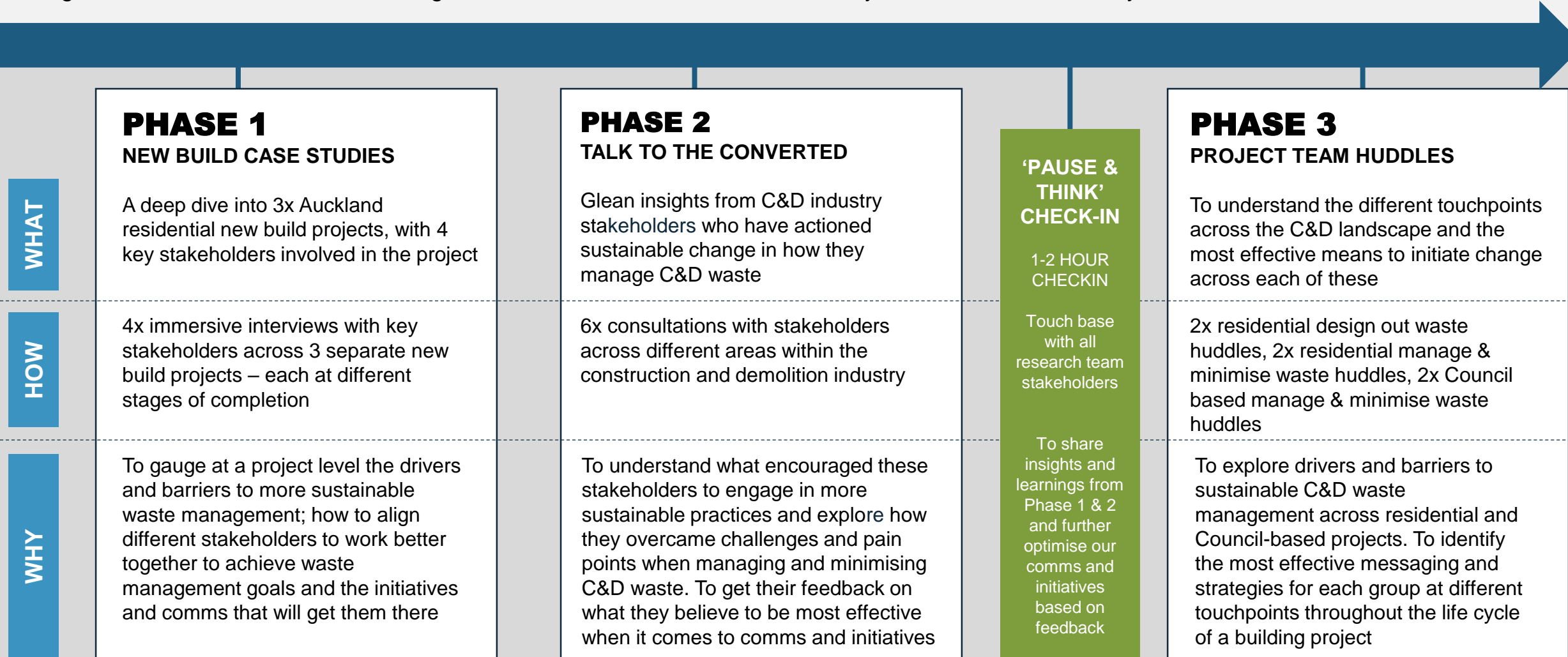
THE GOAL

To develop a behaviour change plan that will drive **actionable** and **sustained** behaviour change and result in the **reduction of waste** within the C&D industry



What we did...

In order to effectively achieve the objectives, we conducted a three phase qualitative research project. This iterative approach enabled us to uncover insights, while at the same time refining and streamlining our initiatives and communications as we gained feedback from multiple industry players and sustainability action leaders across different build types and project stages. This multi-pronged approach ensured that our behaviour change initiatives would be both meaningful and effective for stakeholders at every level across the industry.





AGENDA

1

Setting the scene

2

The good news

3

**Behaviour change levers in
the context of the C&D industry**

4

Concept feedback

5

Closing remarks



SETTING THE SCENE



The need to become more sustainable is unquestioned

People in the industry are **willing**... There's an **emotional connection**... It's something that they're **implementing in their home lives**... And it's **driving day to day choices**



“Packaging is the biggest cause of waste onsite, we need to start dealing with it like we do at home with recycling bins”

Director, Custom Built Homes Company

“It just takes one person to contaminate a whole skip... it's high time we had more discipline onsite around waste”

Electrician, Contractor, Group Home Build

“It's hard to change people in this industry, we need to tackle waste like Health & Safety – there needs to be compliance”

Architect / Home Owner, Custom Built Homes

“I see bins full to the brim of reusable materials going to landfill, it's ruthless, something has to change”

Builder, Sub-Contractor Custom Built Homes



Almost everyone we spoke to in the industry accepts that sustainability is a problem that isn't going away and needs to be addressed



And this is nothing they haven't done before...

Everyday, in their personal and home life, New Zealanders are implementing behaviours that align with their sustainability values...

COMMITTED

UNCOMMITTED

Advocates	The strongest commitment (consciously and unconsciously). They are most likely to role-model the right behaviours, and seek to influence change among those around them.
Attainers	Strongly committed to the correct behaviour, however, they are unlikely to actively seek to influence others – unless inspired to do so.
Followers	A desire to do the 'right' behaviour, but strongly influenced by those around them – the 'loudest voice' and their perceptions of 'social norm'.
Flustered	Strongly conflicted in their behaviour. While they may not 'actively' want to exhibit wrong behaviours and go against the 'social norm', their unconscious attitudes serve as barriers.
Difficult	The most negative in their behaviours and attitudes. They are knowingly exhibiting the undesirable behaviour and are actively resistant to change.
Denial	Refusing to acknowledge the behaviour, value, issue is something that should be taken seriously. They are the most likely to be exhibiting the undesirable behaviour.

PERSONAL LIFE
Most people sit here

However when we look at the C&D industry it's a completely different story...

On the face of it, it looks as though people in the C&D industry are not committed to sustainability or they just don't care...

But in reality they're trapped, not by their attitudes, but by a **lack of infrastructure and know-how**

COMMITTED

Advocates

The strongest commitment (consciously and unconsciously). They are most likely to role-model the right behaviours, and seek to influence change among those around them.

Attainers

Strongly committed to the correct behaviour, however, they are unlikely to actively see to influence others – unless inspired to do so.

Followers

A desire to do the 'right' behaviour, but strongly influenced by those around them – the 'loudest voice' and their perceptions of 'social norm'.

Flustered

Strongly conflicted in their behaviour. While they may not 'actively' want to exhibit wrong behaviours and go against the 'social norm', their unconscious attitudes serve as barriers.

Difficult

The most negative in their behaviours and attitudes. They are knowingly exhibiting the undesirable behaviour and are actively resistant to change.

Denial

Refusing to acknowledge the behaviour, value, issue is something that should be taken seriously. They are the most likely to be exhibiting the undesirable behaviour.

UNCOMMITTED

PERSONAL LIFE

Most people sit here

C&D INDUSTRY

Most people sit here

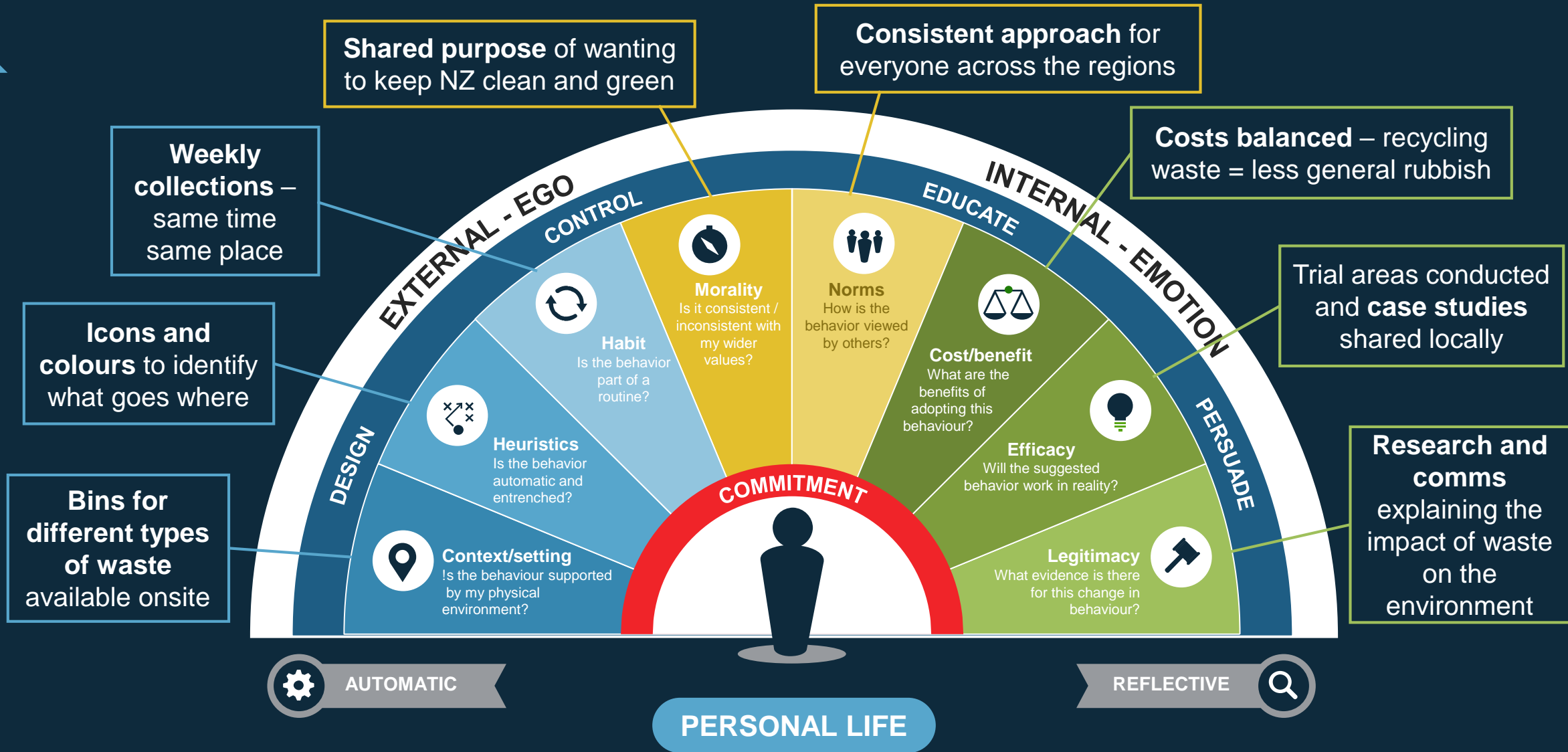
WHAT'S CAUSING THIS DISCONNECT?





People behave sustainably at home because the resources they need work in tandem to create an easy pathway to acting sustainably

COMMITTED



Shared purpose of wanting to keep NZ clean and green

Consistent approach for everyone across the regions

Costs balanced – recycling waste = less general rubbish

Weekly collections – same time same place

Trial areas conducted and case studies shared locally

Icons and colours to identify what goes where

Bins for different types of waste available onsite

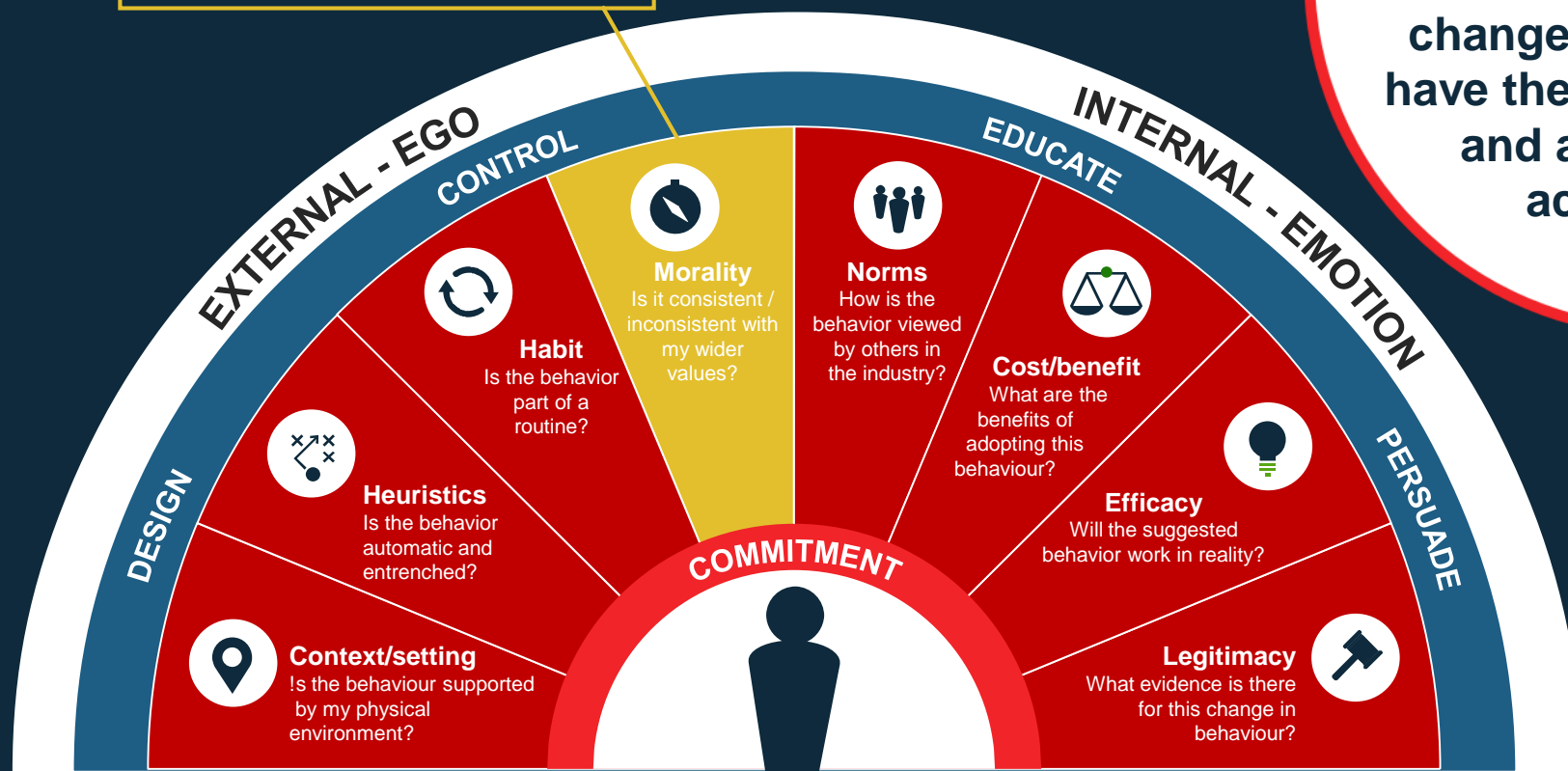
Research and comms explaining the impact of waste on the environment



Although the ground work is there (morality),
**the C&D environment doesn't support
 sustainable behaviour change...**

Morality alone is
 not enough to drive
 behaviour change at an
 industry level. We need
 to identify the behaviour
 change levers that will
 have the greatest impact
 and activate them
 accordingly

Shared purpose of wanting
 to keep NZ clean and green



UNCOMMITTED



The C&D
environment
doesn't enable
people to live
by their values
like they can at
home...

As a result, people in the sector **feel guilty**
about their own unsustainable behaviour

...but at the same time they feel like their
hands are tied and that there are **no**
viable alternatives

This has **created a social**
norm of behaviour within
the industry... which
justifies inaction

The narrative that **'sustainable change = catastrophe'** is common place

Catastrophise

[kə'tastrəfɪz]

Jumping to the conclusion that if the negative outcome did in fact happen, it would lead to the worst possible outcome



Rumination

Overthinking. Cementing ideas

"It's too expensive. If people aren't already doing it then it can't be done"



Magnification

Making the problem bigger

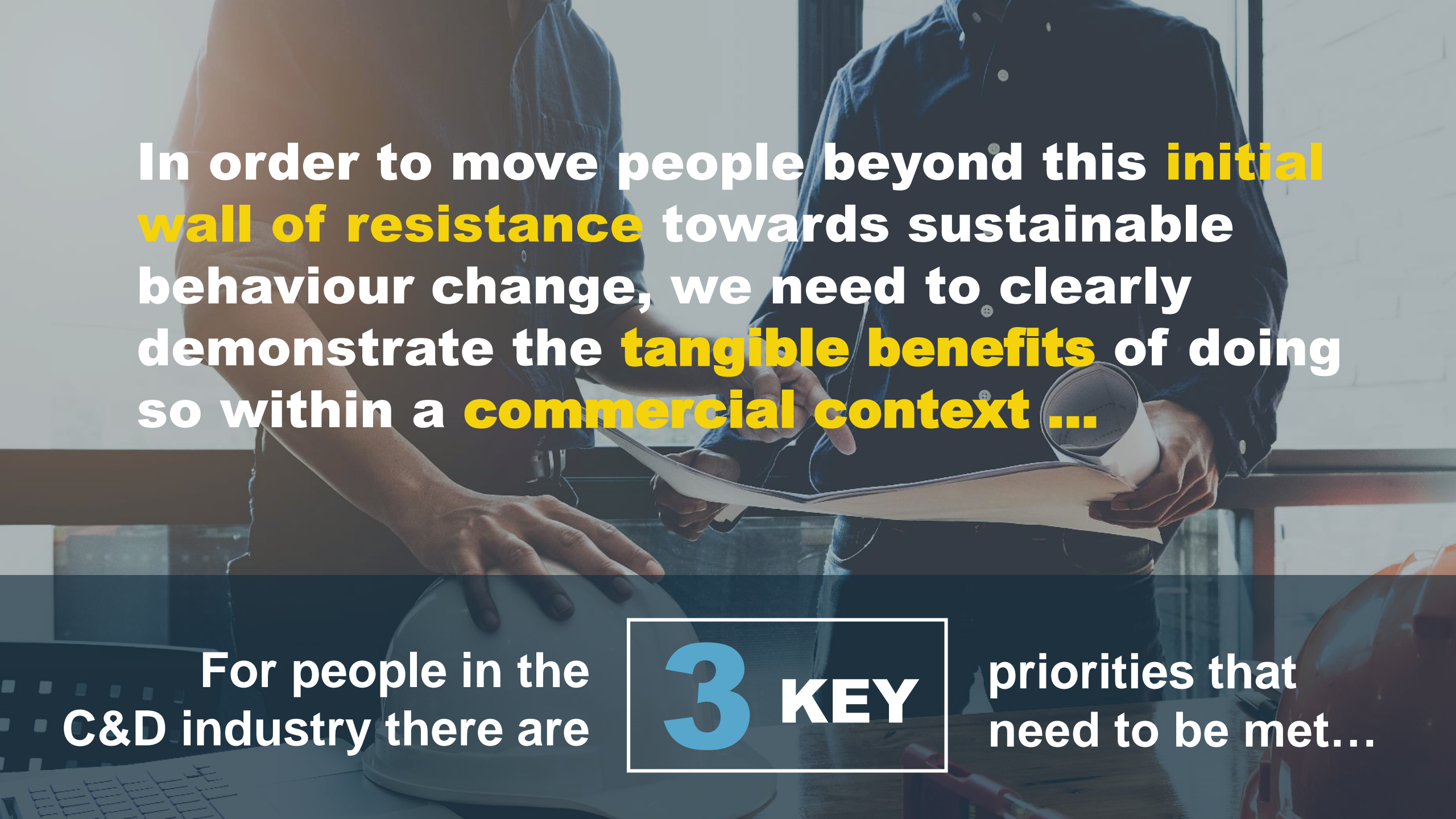
"I won't be able to compete, and I'll go out of business"



Helplessness

Having no agency

"It's just another hoop I have to jump through that makes my job more difficult"



In order to move people beyond this **initial wall of resistance** towards sustainable behaviour change, we need to clearly demonstrate the **tangible benefits** of doing so within a **commercial context ...**

For people in the C&D industry there are

3 **KEY**

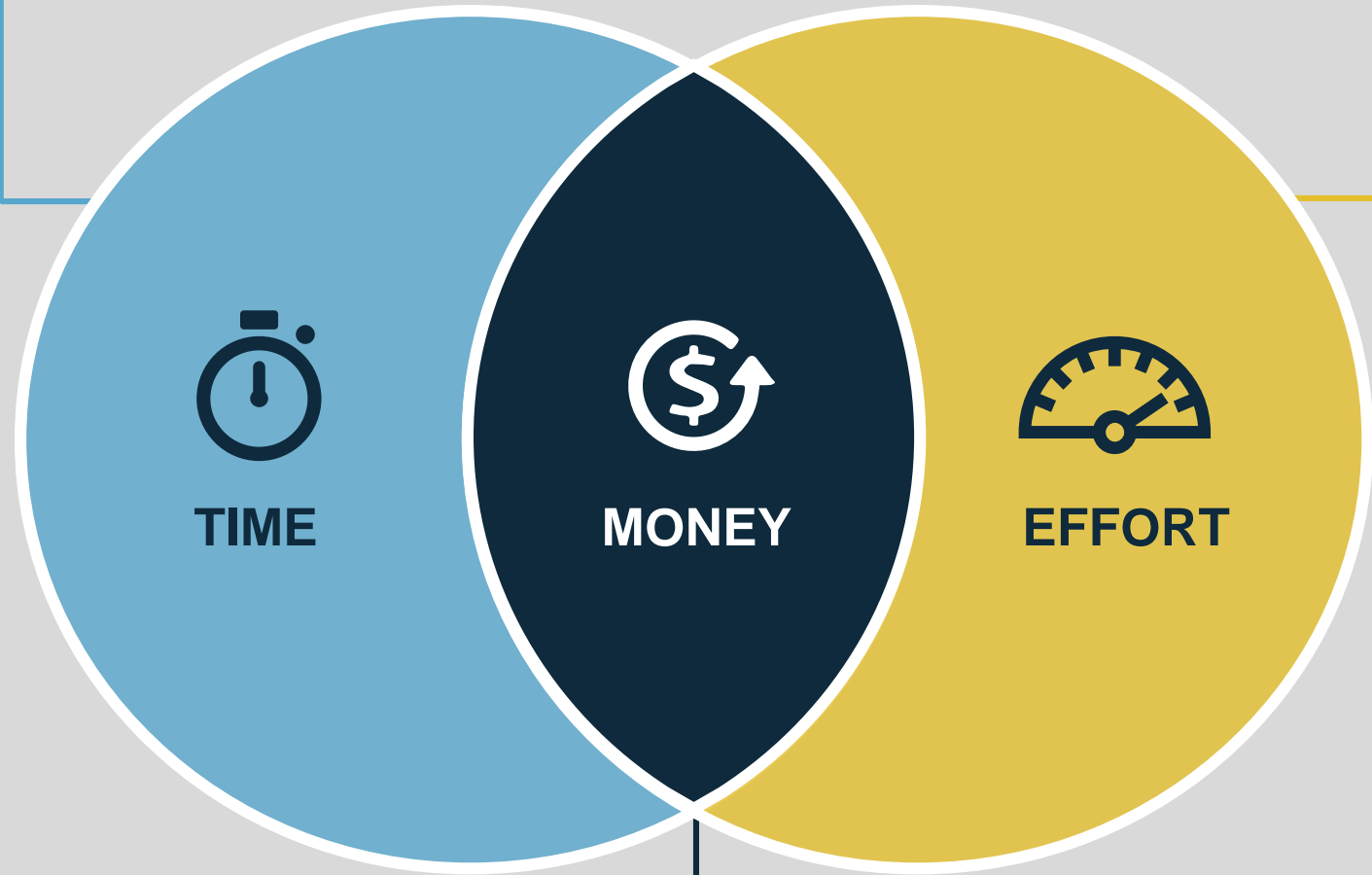
priorities that need to be met...

It all comes down to **time, effort and money**... we heard this time and time again.

Any proposed changes will be ultimately dismissed unless justified against one or more of these three proof points

Time is where money can be won or lost – any new initiative needs to show a tangible financial benefit against the time invested

There needs to be external support for people to change their ways – the alternate solution needs to be EASY to implement and financially viable



Money trumps all – it's the first consideration when any change is presented - the dollars need to stack up!

These **three priorities** and sustainable waste practices are seen as being at odds with one another, which is a major deterrent to change



The practicalities of managing waste sustainably takes more time, costs more money and requires more effort

And this is further exacerbated by a **fear of the unknown...**

and feeling that they're being burdened with the responsibility and cost of implementing change

“Why should it all be on my shoulders? There’s only so much more we can do before we end up out of pocket and out of business”

With this in mind, whatever behaviour change lever we use to communicate and implement a behaviour change strategy, it always needs to deliver against our three key proof points...



TIME.



MONEY.



EFFORT.

THE INDUSTRY CONTEXT

Scepticism and mistrust are rife in the industry, particularly when it comes to Council. There's an immediate assumption that any change initiative driven by Council is for their benefit and not the industry



Any change needs to **clearly articulate the industry benefits just as much as the council benefits**. With this in mind, when presenting facts, figures and case studies, **specificity is key**. Any missing information on our part risks being perceived as pulling the wool over their eyes



“If they want to convince me that it’ll be worth my while they need to present hard figures that are in line with the builds I work on”

**Project Manager,
Group Home Build**

“Council don’t have the best reputation, they’ll need to partner with credible organizations to get cut through”

**Engineer, Contractor
Custom Built Homes**

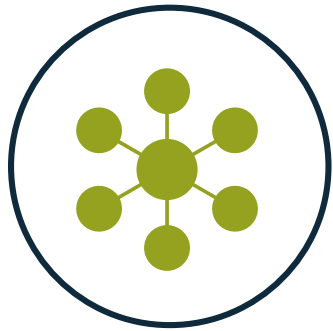
“New rules about what waste goes where is just another way for Council to clip the ticket and make money off the back of our work”

**Specialist Trade - Joiner,
Council Projects**

“See the example they use might work on a bigger build, but I work on smaller builds. They don’t tell you what kind of build it was, or where it was”

**Builder, Sub-Contractor
Custom Built Homes**

The industry is fragmented. On any one project there are a number of different stakeholders coming and going at all times



If we want to have traction we need to go big and broad to reach all industry people to ensure behaviour change is long term and sustained



“The contractor pool is small. They know that and push back on Council initiatives – if we want change, we need to enforce”

**Project Manager,
Council Projects**

“We need everyone on the same page if we want action. There’s two ways to do that, either incentivise or punish”

**Architect / Home Owner,
Custom Built Homes**

“It’s so much bigger than me carrying materials to my next job... in the grand scheme of things that’s nothing – we need everyone on board”

**Electrician, contractor
Group Home Build**

“This needs to be tackled from multiple angles, lots of different strategies and initiatives. A poster on a wall won’t cut it”

**Quantity Surveyor, Council
Projects/ Custom Built Homes**

We are working with **busy, time poor** people.
We can't expect them to invest resource into something where the benefit/payoff is not clear



Everyone is under pressure, both time and money wise, so any change needs to **benefit them not us** – if it's not **tangible and substantial** they're not interested



“The only way to stop people throwing all their rubbish into one skip is to make it more expensive to do so. Money drives change”

**Project Manager / Cladding,
Custom / Group Home Builds**

“There's no benefit to going out of your way to separate & recycle aside from a feel good factor - I can't afford that privilege”

**Developer,
Group Home Build**

“To pay someone to separate stuff, and manage it when isn't separated 'cos of subbies putting it in the wrong bin... the enforcement of that is cost.”

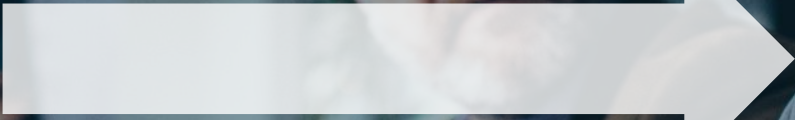
**Builder
Custom Built Homes**

“There's so much else going on, I might put it in the plan, but at site meetings I never bring it up or enforce. There's just so much else to talk about, waste management is way down the list.”

**Architect
Custom Built Homes**

There's a heightened sense of risk when it comes to sustainability... but no sense of reward

The most effective way to diminish risk is to counter it with a reward

RISK  **REWARD**

1

Make the uncertain certain – cost benefit justifications

2

Clear pathways – clear process with support along the way, risk mitigation

3

Reward for effort – financial and commercial benefits

HOW TO MITIGATE THE FEELING OF RISK 

It's easy to justify not taking ownership of C&D waste and it's not something people want to take ownership of either – it's always someone else's' problem

When nobody feels fully responsible for the situation, blame becomes spread out and diluted, making the situation easier to shrug off. “What you gonna do” becomes more of a statement than a question



HOMEOWNERS

Its something the builder takes care of

Paying for the responsibility of the project to be taken off their hands



DESIGN TEAM

My job is to make the house look good

The perception is it's not part of their role to think about waste – the responsibility is with the project manager



PROJECT MANAGER

If they want something different they need to ask and pay for it

Additional time, effort & admin is not accounted for in the project budget – anything over & above needs to be stipulated



PROJECT TEAM

I didn't pay for it, it's not my waste

Additional time, effort & admin is not accounted for in the project budget

If we want people to step up and take interest in managing waste effectively, we need to provide strong financial incentives to do so



And at it's core C&D waste just isn't top of mind when considering sustainability in the industry

When homeowners are thinking about sustainability on a new build they're thinking about aesthetics and efficiency – waste usually isn't on the radar



MATERIALS

Aesthetics. A tangible reminder of sustainability – feel good factor



HOUSE EFFICACY

Easily identified benefits – warmer home, lower prices. An ongoing cost saving



WASTE

Doesn't affect the functioning of the house and not seen, particularly in the planning stages

This is a matter of education. Once homeowners are made aware of the connection they get it. But they need to be told.

There's no silver bullet for changing behaviour around C&D waste



IT NEEDS TO BE...

Incremental

We need to prime, educate and build so that when the time comes to roll out initiatives people are on board and ready

Layered

Given the complexity and resistance to change, multiple behaviour change levers will need to be utilised to ensure cut through and buy in

Supported

External market structures will need to be in place / available to support and drive behaviour change... this is bigger than Council

Top down

People don't have the time, resources or inclination to do this themselves. It has to come from the top, and may need to be backed with legislation e.g. H&S



**THERE'S ALSO
GOOD NEWS**

A man with glasses and a beard, wearing a patterned shirt, and a woman with short brown hair, wearing a white top and a dark blazer, are looking at architectural plans on a table. The man is pointing at a drawing with a black pen. On the table, there is a yellow hard hat, a calculator, a red level, and a ruler. The background is a brick wall.


People do care and they're willing

There is intrinsic, value based motivation in regards to sustainability, meaning that once behaviour change comes it is much more likely to be sustained over the long-term

And where possible there is a willingness to opt for services / suppliers who incentivise sustainable practices

...as long as there is price parity and the understanding that the homeowner pays



A photograph of construction workers on a wooden roof structure. The workers are seen from behind and in profile, working on the wooden beams. The sky is clear and blue. The image is used as a background for the text on the left side of the slide.

**They've
created some
of their own
workarounds
too...**

Stock piling
additional
materials at
home for reuse

Selling
deconstructed
items deemed
to be 'worth the
time and effort'

**But they often
don't have the
tools or time
to invest...**

- **The systems**
Often they are making it up as they go along
- **The processes**
No set process in place
- **Market doesn't support**
Price for scrap is too low
- **The norm**
It's easier if it just goes 'away'



Let's take a look at each of the **behaviour change levers** in the context of the C&D industry to understand what's happening and what can be done



Context / setting:

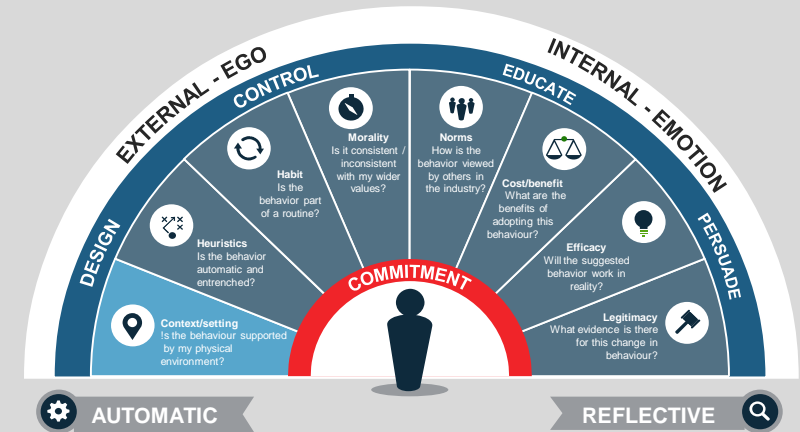
How does the physical environment enable sustainable behaviour?

THE CHALLENGE:

- The site itself is one of the greatest barriers to implementing changes to waste management / practicalities of the site
- There's only enough space on site for one bin – limiting self sorting opportunities
- No storage facilities available for off-cuts/additional materials. It's easier to throw away and buy later than store onsite
- The sheer number of stakeholders involved and onsite, makes it difficult to implement and coordinate a system
- Nobody knows what happens waste once it leaves the site – ignorance is bliss

THE OPPORTUNITY:

- Education around the minimisation of materials in the planning stages. Design around standard material sizes to reduce wastage.
- Working with suppliers to reduce waste in packaging of products – without putting the material at risk of weather damage



“

“There’s barely enough room to park a car onsite let alone to fit an extra skip”

Builder

“

“Packaging is the biggest culprit. Every time we get a new delivery we’re up to our eyeballs in it, everything has wrap on it, then a box, then more wrap, it’s ridiculous! If you want to cut back waste talk to the suppliers”

Electrician

Heuristics:

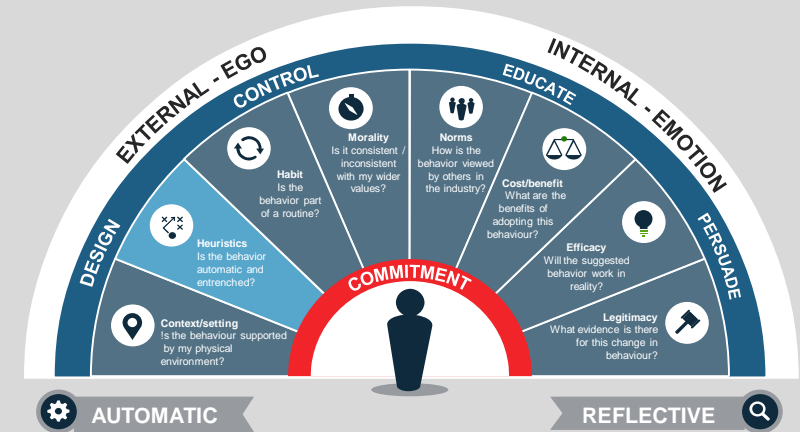
Is the behaviour made easy with mental shortcuts?

THE CHALLENGE:

- On construction sites the skip is the mental short-cut for all waste
- When people think waste they think 'one big skip for everything'
- This conditioned response (waste->skip) is out of line with peoples' conscious position (wanting to manage waste more sustainably) – lack of self awareness
- And a lack of transparency about what happens beyond the skip further drives this behaviour – not being confronted by the issue

THE OPPORTUNITY:

- A waste management mental shortcut system to drive and engrain positive behaviours easily e.g. a colour code system for bins which builds and expands on those for domestic waste
- Skips constructed in a way that you can see what's inside – seeing is believing
- We need to help people to trip over the truth - stop them in their tracks and confront them with their own behaviour i.e. hard hitting comms about the impact of C&D waste on NZ



“You need to make it easy or people will just chuck everything in one skip as usual, do like they do with residential bins, a different colour for different types of waste... easy”

Plumber, sub-contractor



“People don't have time to think about what they're doing, we don't have time to stop and think about it on site, yes I see the state of the skip and I cringe and then I move on, it's too

busy”
Builder

Habit:

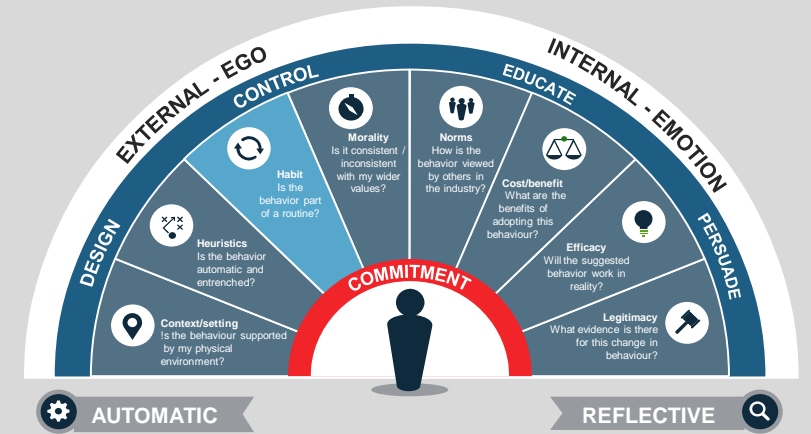
Is the behaviour part of an existing routine?

THE CHALLENGE:

- Waste management habits on site are driven by the available infrastructure and waste management system – there's only one bin available
- There is no incentive to actively think about waste – both in the planning and implementation stages

THE OPPORTUNITY:

- Positive reinforcement: Incentivise the desired behaviours in a way that encourages team work and breaks bad habits i.e. points system, construction site rewards
- Negative reinforcement: Rule enforced across every site with regular onsite checks and monitoring and penalties for behaviours not in line with sustainability protocols
- Highlighting that 'someone pays' - creating a sense of responsibility by highlighting the financial impact of waste on a house build



“

“The main contractor and subbies have toolbox meetings. They call them and talk about things like health and safety. And they have inductions, sustainable waste management needs to be part of that process”

Architect

“

The only way you're going to stop people throwing shit in the wrong bin is to fine them or the site every time they do it. Anything else and you're wasting your time”

Builder, Sub-contractor

Morality:

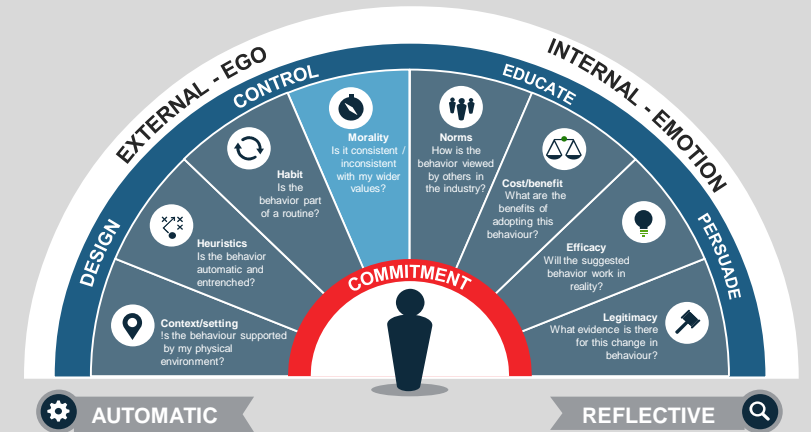
Is the behaviour the ‘right thing to do’?

THE CHALLENGE:

- Sustainable behaviours in waste is ultimately seen as the ‘right’ thing to do – people have initiated sustainable practices in their personal lives and agree that ‘something needs to change’ in the C&D industry too

THE OPPORTUNITY:

- The ‘why’ is implicit and doesn’t need to be rehashed, the real opportunity is to enable people to make the change by showing them how to do it



“I would like to do more in my job but it’s out of my hands, I can recommend more sustainable materials and I do but you get push back from the builders over price or they don’t want to work with that product and nothing changes”

Engineer



“My wife comes on site with me sometimes, she flattens all the boxes and puts them to the side for me to bring home but there’s only so much I can fit in my car”

Builder, Sub-contractor

Social / Cultural Norms:

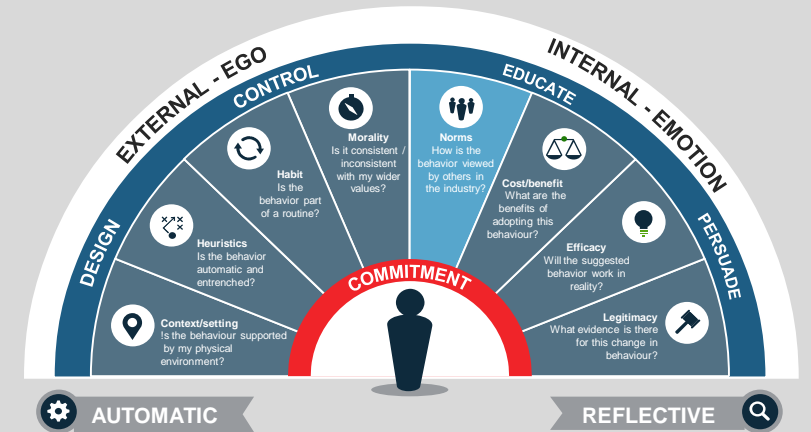
What will people I respect think if I perform or don't perform the behaviour?

THE CHALLENGE:

- Being a zero waste company / organisation / tradie is not sexy!
 - Doesn't have the crisis factor like plastic e.g. straws and coffee cups
 - Lack of media spotlight and conversations
 - Lack of awareness of the overall accumulative extent of the situation

THE OPPORTUNITY:

- Use the wider halo of sustainability to include C&D waste. We need to create the same emotional intensity toward waste that people feel toward sustainability in general
- Clearly communicate the impact C&D waste has on climate change, NZ streams and what making a change can do for the environment



“

“It’s hard enough for me as woman in a site meeting with 5-10 other guys to hold my place besides bringing up waste management... I’d be laughed at”
Architect

“

“Nobody is doing anything different and there’s nobody watching so there’s no repercussions for just doing what you want, you can get away with anything”
Builder

Cost / Benefit:

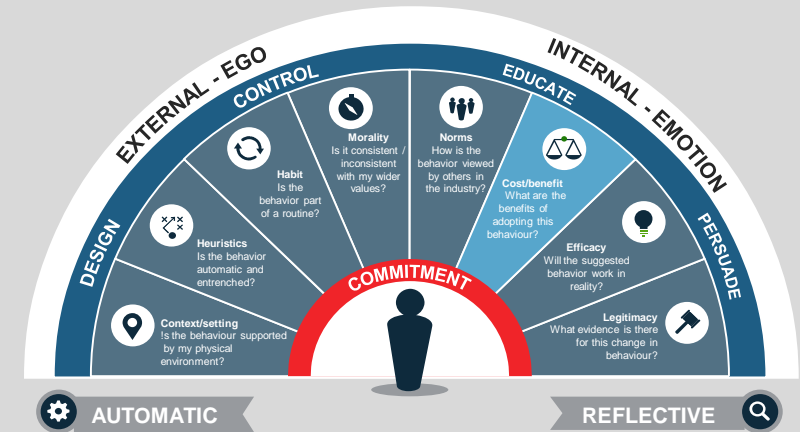
Perceived benefits and losses to performing the desired behaviour

THE CHALLENGE:

- The jury is out on whether there is money to be made by managing waste effectively
- Cost of numerous bins = high
- May cost less over time, high returns questionable (maybe for deconstruction)
- Quantities of different waste materials need to be substantial to justify separating / diverting
- The single build challenge – 1 skip works best
- Assumption that group home builds are doing better because they have more space (they're not!)

THE OPPORTUNITY:

- Financial inducements to incentivise behaviour. This should be about rewarding good behaviour rather than penalising non-compliance. There is a tendency to view Auckland Council in an adversarial relationship and we should avoid being seen as 'big brother'.
- There is high appeal for making sustainable practices part of training compliance



“There wouldn't be any financial benefit. You're paying for more bins, to sort the rubbish that goes into them, along with multiple suppliers and collections... all on top of the big costs of a construction site”

Developer



“The cost of deconstructing, de-nailing and everything else that goes with salvaging materials is just not worth the time... we'd come out minus”

Builder

Efficacy:

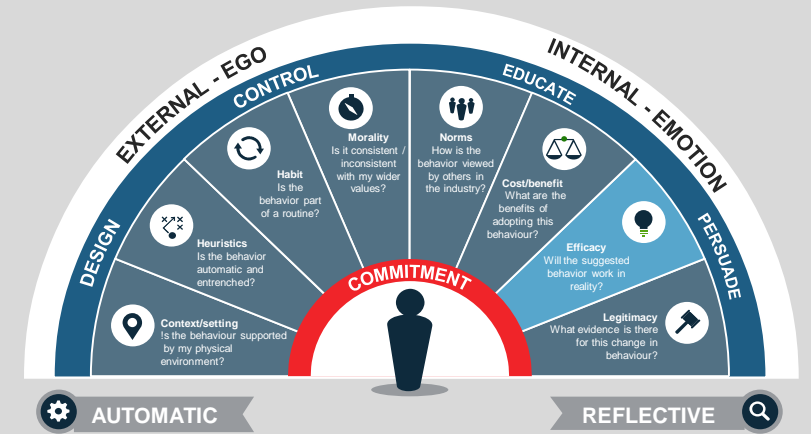
Will managing, minimising and diverting waste sustainably actually work?

THE CHALLENGE:

- New initiatives / materials need to solve a genuine project problem to be considered – waste is not perceived to be a problem
- External market structures needed to support change don't exist or are in their infancy
- Time already stretched and margins slim
- There's no established reporting system to show efficacy of waste management
- No feedback loop for reinforcement
- Case studies required
- Who's job will this be – one more thing to do & time consuming

THE OPPORTUNITY:

- Support the growth of external market structures – entrepreneurialism in the C&D Waste space i.e. sorting and repurposing centres
- Growing the skills needed – e.g. expert deconstruction in a quick time frame



“There’s no services out there that I know of that pick up soil, if I want stuff taken off my hands I have to get on the phone it’s one more job”

Landscaper



“The amount of material that gets thrown out is unbelievable, we can’t return open product and there’s no place to store them... if somebody was willing to take it off our hands they could have it. There used to be a depot in Hamilton but I think its gone... we need one in Auckland”

Project Manager

Legitimacy:

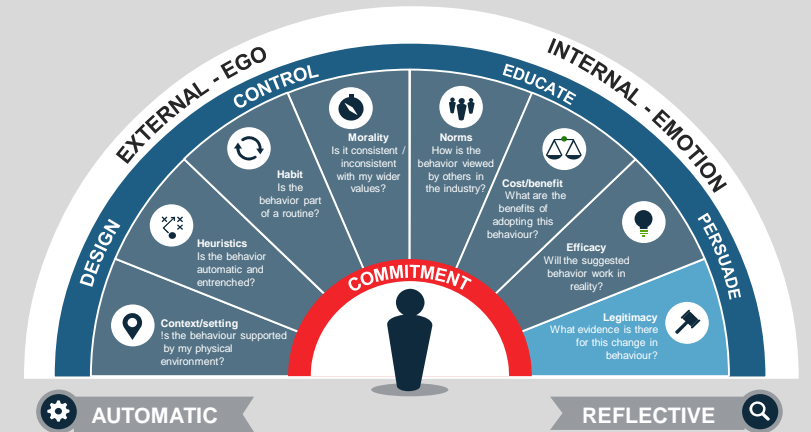
Who makes the rules for this change in behaviour and under what authority?

THE CHALLENGE:

- Auckland Council's authority and motivation for bringing in change is questioned – at it's worst it's seen to be shifting responsibility for waste onto the industry
- Just because it's in the contract doesn't mean it will be enforced
- Contracts being skim read by contractors then doing it their way
- Lack of cross department communication = low awareness of new clauses in contracts and need to check paperwork for REBRI plans for tender
- C&D waste is a regulation free zone... nobody is looking
- No regulation beyond separating concrete, brick and soil
- Working sustainably is a personal preference (e.g. adding to Council contract and enforcing)

THE OPPORTUNITY:

- Use moderate financial lever to encourage change.
- Provide the tools to make the change and do the ground work



“

“Council have made our lives difficult for so long they really need to earn our respect before putting another pile of paperwork in front of us”

Designer/Architect

“

“People in the industry are always going to push the boundaries, it's up to people at the very top to ensure that people are held to account”

Engineer



STIMULUS

A REMINDER OF WHAT WE TESTED...

Waste Avoidance and Resource Recovery Plan (WARR)

Resources and information to support project managers, building contractors, and sub-contractors to implement a Waste Avoidance and Resource Recovery Plan on site with the goal of maximising diversion of waste from landfill.

A toolkit to support a building site to sort and separate waste, efficiently and effectively.



Building Out Waste – education and professional development



Learning opportunities for all sectors of the construction and demolition industry to understand why “building out waste” is the right and the smart thing to do. Education modules are accredited and support professional development outcomes for management and staff.



Building Out Waste guide for homeowners



An online guide and resource kit for homeowners to help them understand the cost of waste as a component of the overall cost of building a new home or doing a home renovation or DIY project. The guide would provide support to the homeowner to have the conversation if they want to build a 'zero waste to landfill' home or complete a zero waste to landfill home renovation/DIY project.



Deconstruction vs Demolition – the business case

0.97 and 2.9
CBR* on waste minimisation

70%-90%
Waste reduction is achievable

\$4k-\$20k
Return on salvage materials

Cost-Benefit Analysis clearly shows the business case for adopting deconstruction practices, instead of demolition. Understand the business case and benefits and make the switch to deconstruction as a company practice.



'Envirotick' – C&D waste specification for waste management companies

Funded via an Auckland Council Waste Minimisation Innovation Fund (WMIF) grant, the New Zealand Ecolabelling Trust has begun developing an ecolabel specification for construction and demolition (C&D) waste management to help reduce the amount of waste going to landfills.

The Trust administers the Environmental Choice New Zealand (ECNZ) ecolabel on behalf of the Government, and the specification will form the basis of an ECNZ licence that waste management organisations can apply for, to prove their C&D waste disposal processes are environmentally preferable.



Waste Avoidance and Resource Recovery Plan (WARR) specification for construction contracts

Include a Waste Avoidance and Resource Recovery Plan (WARR) as a contractual requirement in your construction projects contracts. Draw on resources provided by Auckland Council and Rebrri (BRANZ) to develop the contract details.

Priority materials

	CONCRETE	RECYCLE	BRICK	ROOF
Asphalt/Concrete	✓	✓	✓	✓
Wood	✓	✓	✓	✓
Steel	✓	✓	✓	✓
Aluminium	✓	✓	✓	✓
Plastic	✓	✓	✓	✓
Other	✓	✓	✓	✓

The CivilShare App

CivilShare is a marketplace for people in the construction industry to buy, sell, trade, and share resources. It allows users to optimise waste generated from projects – something that was much more difficult to do in the past.

CivilShare received a WMIF grant in September 2018 to add additional functionalities to their CivilShare app. This helped them to increase the amount of construction and demolition waste being diverted from landfill.



The 600mm Rule

No piece of timber longer than 600 ml should be thrown away in a skip bin.

Industry-wide campaign to keep useful timber resources out of landfill.

Education and training materials for staff available to support the campaign. Campaign collateral available so you can promote your involvement to customers.

Sign your company up to be part of the campaign and train staff, contractors and sub-contractors to adopt the practice.

Buying and using deconstructed timber

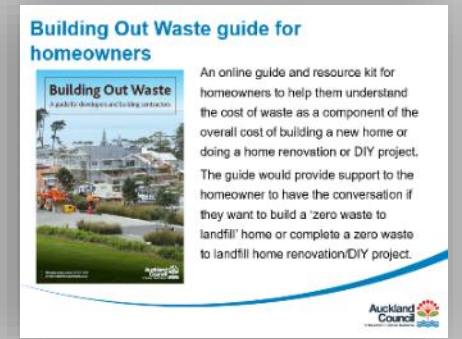
Deconstructed timber is de-nailed, re-strapped and packaged, and was stamped/marked as deconstructed timber with authorised uses clearly outlined.

It is for sale, available from your local building materials supplier, and the cost is cheaper than the cost of new timber.



CONCEPT: Building Out Waste – A guide for Developers and Building Contractors

Partnerships with education / industry leaders is a **MUST** for credibility, quality control and reach e.g. MBIE, Unitec, BECA



Working well

- Simple and straightforward presentation of information
- Across the board there is appetite to learn more about how to improve waste management
- There is a strong need for education around waste in the industry
- Highlights time and money saving – key
- Could reduce accidents on site – tidy site is a safer site
- Good brand fit for Auckland Council... perceived as having a responsibility to lead in this space



Working less well

- Self led rather than team led – not promoting working together
- No incentive to complete module other than to self learn
- Time taken out of personal time to complete
- Needs to be discussed onsite - not just a resource online



Optimisation

- SAS credits for completion - increased rewards for % company attending
- Accreditation for courses
- Needs to be enforced / promoted by managers / project leaders
- Booklets on counters at trade shops, handed out onsite at toolbox meetings
- Officially counting towards self learning hours e.g. engineering NZ

IMPACT ON BEHAVIOUR CHANGE:



MEDIUM – HIGH IMPACT

Provides a forum in which to raise awareness and educate on time and money savings. Is the first step in converting from a 'risk' mindset to a 'reward' one

HOW THIS ALIGNS WITH KEY PROJECT CONSIDERATIONS



TIME



COST

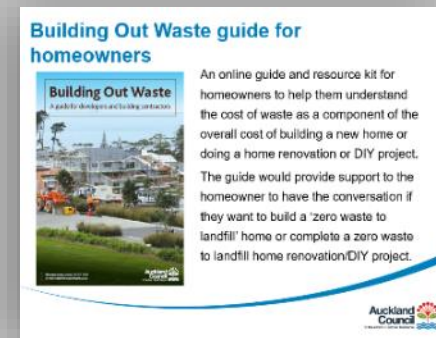


EFFORT



CONCEPT: Building Out Waste – A guide for Homeowners

Partnerships, comms and engagement are required to drive awareness. Getting under the noses of homeowners EARLY ON is key – once the project is underway it's too late to make changes



Working well

- Awareness raising for homeowners – gives new information and informs
- **Good brand fit** – AC seen as a reliable source of independent info



Working less well

- Of less appeal to onsite construction teams – not the homeowner's area of expertise, hassle, slow down work
- Difficult for homeowners to know what to do with this info



Optimisation

- Will need to present irrefutable talking points that will stack up against resistance from builders – again facts and figures and specificity is key.

IMPACT ON BEHAVIOUR CHANGE:



MEDIUM IMPACT

Dependant on the homeowners level of involvement in the early stages

If benefits are clearly stated and all hurdles accounted for (time, cost, effort) homeowners are open to this

But it needs to come to them / they wont come looking for it

HOW THIS ALIGNS WITH KEY PROJECT CONSIDERATIONS



TIME



COST



EFFORT



CONCEPT: Deconstruction vs Demolition – The Business Case

Without specifics around build types and returns, most tend to dismiss the business case as not relevant or applicable to their builds

Deconstruction vs Demolition – the business case

0.97 and 2.9
CBR* on waste minimisation

70%-90%
Waste reduction is achievable

\$4k-\$20k
Return on salvage materials

Cost-Benefit Analysis clearly shows the business case for adopting deconstruction practices, instead of demolition. Understand the business case and benefits and make the switch to deconstruction as a company practice.

Auckland Council



Working well

- Any cost saving (if backed up by specifics and proof) is something that will cut through



Working less well

- Not convinced by cost-benefit analysis of return on salvaged materials
- Big difference between \$4k and \$20k return – need to see specifics
- No information provided on the process, time taken
- Wait times for financial returns – staggered sales, no guarantee



Optimisation

- Provide project specific case studies that detail exact financial return
- Explain the deconstruction process – provide details on timing, labour requirements
- Return on materials needs to be off-set against costs of labour / time

IMPACT ON BEHAVIOUR CHANGE:



LOW IMPACT

It will need to talk more about specifics of the project to be believed. The premise of saving money is good but without specifics it is too easy to dismiss as not relevant

HOW THIS ALIGNS WITH KEY PROJECT CONSIDERATIONS



TIME



COST



EFFORT



CONCEPT: Waste Avoidance and Resource Recovery Plan (WARR)

No incentive for implementing aside from feel good factor and no time for sorting and separating on the job means that the plan is met with some resistance

Waste Avoidance and Resource Recovery Plan (WARR)

Resources and information to support project managers, building contractors, and sub-contractors to implement a Waste Avoidance and Resource Recovery Plan on site with the goal of maximising diversion of waste from landfill. A toolkit to support a building site to sort and separate waste, efficiently and effectively.

Auckland Council
Auckland Council logo



Working well

- Making WARR a contractual requirement enforces compliance



Working less well

- Perception that segregating waste / materials would cost more
- Structures not in place to support this – who will take ownership?
- Feels like onus of responsibility is back on the builder and ‘just another hoop’ that AC make builders jump through



Optimisation

- Will need to be part of a compulsory learning module – perception is that builders are too short on time to learn how this might work

IMPACT ON BEHAVIOUR CHANGE:



LOW IMPACT

Most are dismissing as putting too much responsibility on builders, and without structures in place there is a lot of scepticism that it can't be done

HOW THIS ALIGNS WITH KEY PROJECT CONSIDERATIONS



TIME



COST

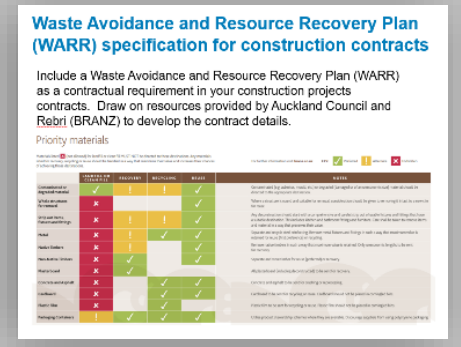


EFFORT



CONCEPT: Waste Avoidance and Resource Recovery Plan (WARR) specification for construction contracts

A culture of ignoring contracts and avoiding the repercussions due to time constraints makes WARR for construction contracts a difficult proposition without policing and enforcement



Working well

- Could reduce quantity of timber going to landfill
- Good for use on renovation projects
- Cheaper alternative to new timber

Working less well

- No guarantee that it will be enforced – ignoring contract clauses is common
- Difficult to implement on small projects – smaller quantities, hard to justify sperate bins

Optimisation


- Needs to be policed to ensure contracts are being complied with – project inspections
- Incentivise to motivate – discount on council charges / building permit costs
- Incorporate WARR into all site inductions to ensure compliance
- Tag WARR plan on to H&S planning / auditing
- Introduce a grading system for WARR management onsite e.g. grade A, B



LOW to MEDIUM IMPACT

Most are dismissing as putting too much responsibility on builders, and without structures in place there is a lot of scepticism that it can't be done

HOW THIS ALIGNS WITH KEY PROJECT CONSIDERATIONS

 
TIME

 
COST

 
EFFORT

CONCEPT: Buying and using deconstructed timber

Has appeal for niche projects however there is concern about quality control and not being able to use on new builds limits its application

Buying and using deconstructed timber

Deconstructed timber is de-nailed, re-strapped and packaged, and was stamped/marked as deconstructed timber with authorised uses clearly outlined.

It is for sale, available from your local building materials supplier, and the cost is cheaper than the cost of new timber.



Working well

- Could reduce quantity of timber going to landfill
- Good for use on renovation projects
- Cheaper alternative to new timber



Working less well

- Quality control could be an issue
- New builds require new timber – limits usage
- Niche market – DIYers / small projects
- Who will do the deconstructing?
- Cost for time spent deconstructing unlikely to be covered by on sale price
- Cheaper timber varieties not worth de-nailing e.g. pine



Optimisation

- Product to have council approval for project-specific usage
- Rating system for different quality timbers
- Focus on quality native timber only e.g. Rimu
- Onsite collection and de-nailing service for unwanted timber

IMPACT ON BEHAVIOUR CHANGE:



LOW IMPACT

Would need to be readily available – however concerns over quality would limit its use

HOW THIS ALIGNS WITH KEY PROJECT CONSIDERATIONS



TIME



COST



EFFORT



CONCEPT:

'Envirotick' – C&D waste specification for waste management companies

Time constraints mean that this would need to be a service conducted and managed by an external source

'Envirotick' – C&D waste specification for waste management companies

Funded via an Auckland Council Waste Minimisation Innovation Fund (WMIF) grant, the New Zealand Ecolabelling Trust has begun developing an ecolabel specification for construction and demolition (C&D) waste management to help reduce the amount of waste going to landfills.

The Trust administers the Environmental Choice New Zealand (ECNZ) ecolabel on behalf of the Government, and the specification will form the basis of an ECNZ licence that waste management organisations can apply for, to prove their C&D waste disposal processes are environmentally preferable.



Working well

- Gives reassurance that waste is being managed sustainably – currently an unknown
- Appealing point of difference to other service providers



Working less well

- Scepticism over sorting actually taking place off site – need proof
- Feels like a marketing ploy
- Cost remains a key driver for service provider selection – the tick is nice to have
- Sense that separating needs to start onsite to have impact and assurance



Optimisation

- Provide in-depth information on how waste is separated upon exiting the site
- Show where the different materials are diverted to – their end point
- Could work in combination with an onsite Envirotick – assigned to contractors / companies

IMPACT ON BEHAVIOUR CHANGE:



LOW IMPACT

Project teams unlikely to self initiate unless a clear benefit is outlined

HOW THIS ALIGNS WITH KEY PROJECT CONSIDERATIONS



TIME



COST

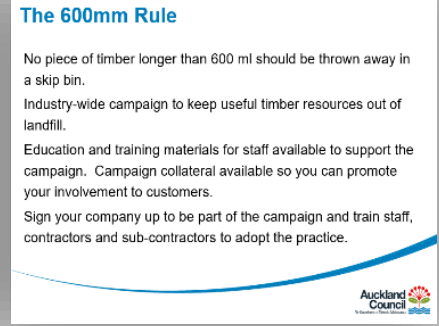


EFFORT



CONCEPT: The 600mm Rule Campaign

Something that is easy to ignore – those who see value in this are generally already doing it.



Working well

- Agreement that timber waste requires attention – biggest culprits



Working less well

- Already reusing what they feasibly can – stud walls
- No space / place to store on or offsite
- H&S concerns – reluctance to cut a piece of timber this size due to safety hazard



Optimisation

- On it's own it is unlikely to inspire change

IMPACT ON BEHAVIOUR CHANGE:



LOW IMPACT

The effort and space involved in storing outweighs the benefits of saving money and materials and the 'feel good' factor.

HOW THIS ALIGNS WITH KEY PROJECT CONSIDERATIONS



TIME



COST

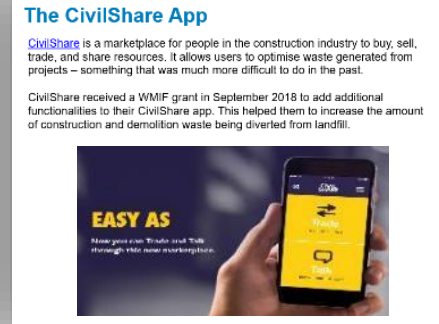


EFFORT



CONCEPT: The Civilshare App

Younger trade workforce... the opportunity to earn additional cash seen as an incentive



Working well

- Good way to offload unwanted materials
- Encourages reusing & recycling
- Mobile and web apps available
- It's construction-specific, unlike other trading sites
- Has potential to create new jobs / additional income for some workers



Working less well

- Don't have product/material guarantees like buying from supplier
- No product history available
- Some products have very small pick up window e.g. concrete
- No place to store materials while awaiting pick-up
- Waiting around / time wasters
- Self led and making a profit could lead to theft issues
- No/low awareness of CivilShare App



Optimisation

- Ability to pre-advertise for concrete – name a time and place
- Ability to create profiles and provide feedback on sellers / traders
- Advertising to create awareness – radio, wholesalers, Facebook, trade breakfasts

IMPACT ON BEHAVIOUR CHANGE:



HIGH IMPACT

There was high appeal, despite initial concerns around quality of materials.

Biggest current hurdle is that there is currently no awareness across all project huddle groups and immersion discussion

Would greatly benefit from leveraging relationship with Auckland Council to increase awareness - aligns well with council values and goals

HOW THIS ALIGNS WITH KEY PROJECT CONSIDERATIONS



TIME



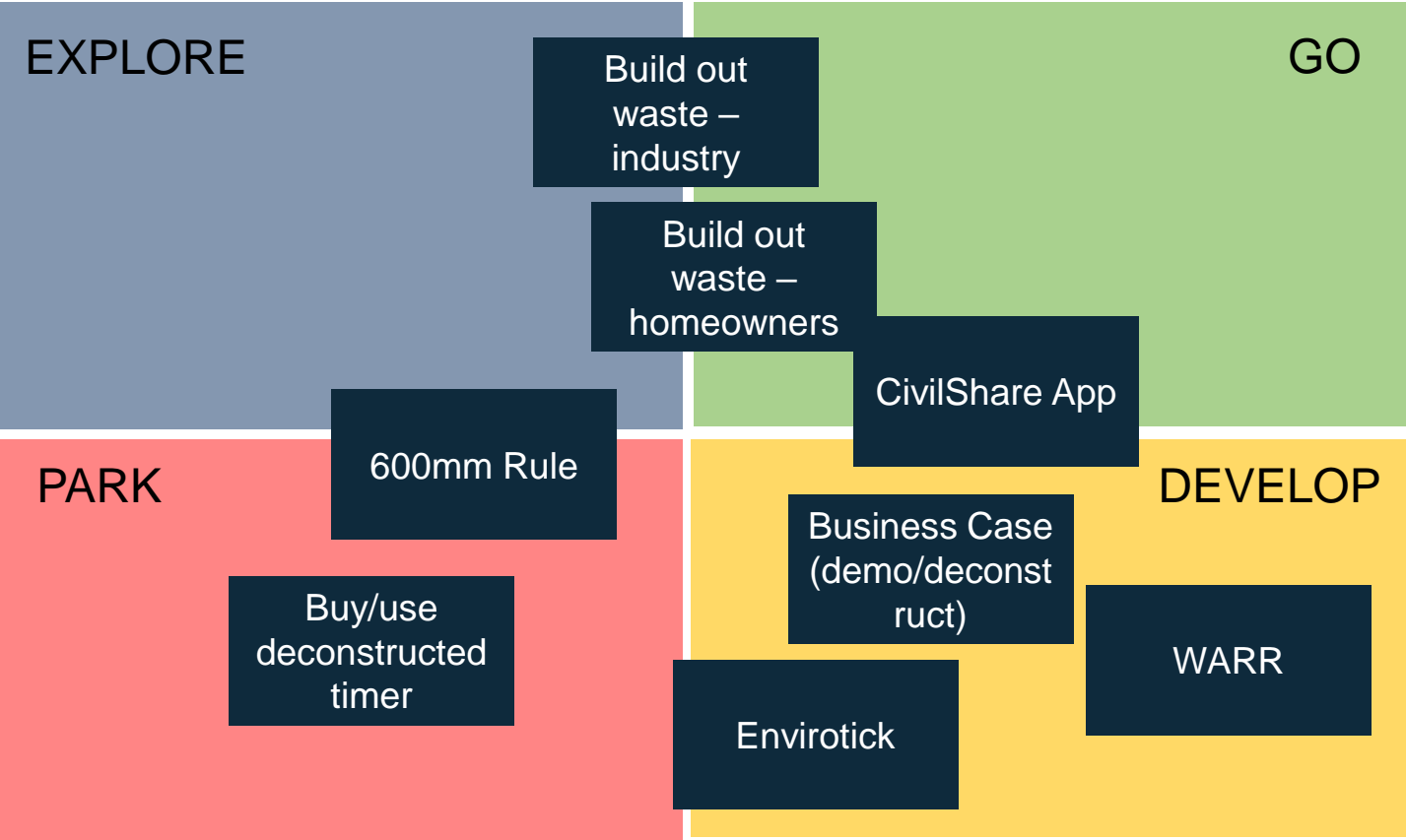
COST



EFFORT



Overall, externally led, low cost initiatives, that educate and empower and are relatively low effort had greatest appeal



GO: People can see themselves using this in their lives, it's relevant and easy

DEVELOP: Makes life easier for some, needs work to feel relevant to all, feels niche

EXPLORE: Relevant to some but involves more effort that desired

PARK: Low buy in from consumers, will take a lot to get them over the line, likely to fuel churn



SUMMARY & RECOMMENDATIONS

We need to be mindful that intention isn't necessarily a good indicator of behaviour change

We're reaching out to a broad range of people, all at different stages of commitment to sustainable practices, so we need to ensure that we are tailoring our messaging and strategies accordingly to activate the desired change

COMMITTED ↑ UNCOMMITTED ↓	Advocates	The strongest commitment (consciously and unconsciously). They are most likely to role-model the right behaviours, and seek to influence change among those around them.
	Attainers	Strongly committed to the correct behaviour, however, they are unlikely to actively seek to influence others – unless inspired to do so.
	Followers	A desire to do the 'right' behaviour, but strongly influenced by those around them – the 'loudest voice' and their perceptions of 'social norm'.
	Flustered	Strongly conflicted in their behaviour. While they may not 'actively' want to exhibit wrong behaviours and go against the 'social norm', their unconscious attitudes serve as barriers.
	Difficult	The most negative in their behaviours and attitudes. They are knowingly exhibiting the undesirable behaviour and are actively resistant to change.
	Denial	Refusing to acknowledge the behaviour / value / issue is something that should be taken seriously. They are the most likely to be exhibiting the undesirable behaviour.

The more strongly someone is committed to a stated action or value (or the more we can strengthen their commitment through communications or interventions), the more likely they will be to behave in this way.

We use research techniques to explore and measure commitment through a better understanding of the 'intention-action gap' (what we say we'll do versus what we do) and the 'value-action gap' (what we say is important to us versus what we do).



Nobody knows what happens to waste after it leaves the site... its too easy to avoid the reality of the situation

“

You need to shock us to wake us up! Show us what is happening! Show us what we're contributing to.

”

- Nobody knows what happens to waste once it leaves the site – ignorance is bliss
- It goes AWAY
- Similar to previous residential findings
- For homeowners in particular they've handed over the responsibility to someone else



WE NEED TO RAISE THE ALARM BELLS...



lets make real what people have conveniently chosen to ignore

**Home owners
need to be armed
with the right
information...**



**...and be
empowered
to have waste
discussions with
their builders**

**CULTURAL
CHANGE**



**MARKET
FORCES**

Empowering change and making it easy to do so, through making sure change saves people money and requires little time and effort

Waste Broker – a intermediary between the C&D industry and finding the right markets (whether community or commercial).

**Social norm
changes are
often incremental**

"For example, the environmental impact of carrier bag charging is in many ways debatable. However, the change pushes reuse and environmental impact to front of mind, raises awareness and reminds at every checkout. This wider impact and the creation of a new social norm have yet to be quantified but achievable change in incremental steps is crucial."

WHERE TO FROM HERE

1

Revisit and optimise the behaviour change initiatives evaluated in this research looking through the lens of time, money and effort

2

Internal evaluation of behaviour change levers and feasibility of implementation versus impact – create a road map for behaviour change

3

Creating links, market structures, partnerships and encouraging entrepreneurialism to support sustained behaviour change



Thank You