Mapping of IS (Credit headings) to LSF Domains & Capitals and UN SDGs

Credit Ref.	Credit Name	Civic Engagement and Governance	Cultural Identity	Environment	Health	Housing	Income & Consumption	Jobs & Earnings	Knowledge & Skills	Safety & Security	Social Connections	Subjective Wellbeing	Time Use	Financial and Physical Capital	Human Capital	Natural Capital	Social Capital	1 No Poverty	2 Zero Hunger	3 Good Health & Wellbeing	4 Quality Education	5 Gender Equality	6 Clean Water & Sanitation	7 Affordable & Clean Energy	8 Decent Work & Economic Growth	9 Industry, Innovation & Infrastructure	10 Reduced Inequalities	11 Sustainable Cities & Communities	12 Responsible Consumption & Production	13 Climate Action	14 Life Below Water	15 Life on Land	16 Peace, Justice & Strong Institutions	17 Partnerships for the Goals
Governance																																		
Con	Context			√		√					√		√	√		√	√									√		√						
Lea	Leadership & Management		√	√					√					√		√	√												√	√	√	√	√	√
Spr	Sustainable Procurement		√			√					√			√	√	√						√			√	√	√		√			√	√	√
Res	Resilience			√		√					√			√	√	√										√		√		√				√
Inn	Innovation								√					√	√										√	√								
Economic																																		
Ecn	Options Assessment & Business Case	√					√				√	√		√	√		√								√	√	√	√						
Ecn	Benefits	√					√				√	√		√	√		√								√	√	√	√						
Environment																																		
Ene	Energy & Carbon			√			√								√											√	√	√	√					
Gre	Green Infrastructure			√	√						√			√	√	√			√								√	√	√	√	√	√		
Env	Environmental Impacts			√		√									√							√					√			√	√			
Rso	Resource Efficiency			√			√								√												√	√						√
Wat	Water			√			√								√							√									√			
Eco	Ecology			√											√																√	√		
Social																																		
Sta	Stakeholder Participation	√									√				√	√												√					√	√

IS Design & As Built v2.0 Credit Headings		LSF Domains (Current Quality of Life)												LSF Capitals (Sustainable & Intergenerational Wellbeing)				UN Sustainable Development Goals (SDGs)															
Credit Ref.	Credit Name	Civic Engagement and Governance	Cultural Identity	Environment	Health	Housing	Income & Consumption	Jobs & Earnings	Knowledge & Skills	Safety & Security	Social Connections	Subjective Wellbeing	Time Use	Financial and Physical Capital	Human Capital	Natural Capital	Social Capital	1 No Poverty	2 Zero Hunger	3 Good Health & Wellbeing	4 Quality Education	5 Gender Equality	6 Clean Water & Sanitation	7 Affordable & Clean Energy	8 Decent Work & Economic Growth	9 Industry, Innovation & Infrastructure	10 Reduced Inequalities	11 Sustainable Cities & Communities	12 Responsible Consumption & Production	13 Climate Action	14 Life Below Water	15 Life on Land	16 Peace, Justice & Strong Institutions	17 Partnerships for the Goals
Leg	Legacy		v				v				v				v		v								v								v
Her	Heritage		v								v	v			v		v								v			v					
Wfs	Workforce Sustainability				v			v	v		v	v			v		v			v	v	v			v		v						

Sustainz Business Solutions

Prepared by: [redacted]

November 2020

Submission of Infrastructure Sustainability Council on New Zealand Infrastructure Commission's consultation document: He Tūāpapa ki te Ora - Infrastructure for a Better Future

July 2021

Infrastructure Sustainability Council

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Introduction

The Infrastructure Sustainability Council of Australia (ISCoA) is a member-based, not-for-profit peak body operating in Australia and Aotearoa New Zealand with the purpose of enabling sustainability outcomes from the construction and operation of infrastructure. It welcomes the opportunity to provide feedback on *He Tūāpapa ki te Ore: Infrastructure for a Better Future* that will in turn shape the 30 year Aotearoa New Zealand Infrastructure Strategy 2050, that the Infrastructure Commission will submit to the Minister for Infrastructure in draft in September 2021 and in final form by March 2022.

Background on the Infrastructure Sustainability Council

We work only in the Infrastructure sector and within that, are specialists on sustainability.

When we refer to sustainability we usually check that phrase is properly understood. For us, it's not just about environmental matters. While sustainability does include environmental aspects (such as ecology, energy use, waste and circular economy), it also includes social aspects (such as heritage and stakeholder engagement) and economic aspects such as procurement and decision making. Good governance also important, as is inclusion. The best synonym is viability which also encompasses social licence.

At the Council we:

- own and operate an Infrastructure Sustainability (IS) rating scheme that has tools that speak to every stage in the life cycle of an asset - planning, design, construction and operation of infrastructure assets:
- deliver education, training and undertake capacity building that builds sustainability bench strength;
- run events that enable our community of practice to connect, share and collaborate - these help facilitate knowledge sharing, and provide an opportunity to share insights and develop solutions to sustainability challenges facing the sector;
- connect suppliers of sustainable products and services with projects through our ISupply online directory and our Materials Calculator:
- are at the heart of a community of committed sustainability practitioners that are experts in their fields and who volunteer on working and technical groups and get involved in thought leadership work that lifts the broader community of practice;
- curate, recognise and reward best practice through case studies and an awards series; and
- undertake thought leadership, and some advocacy work, around issue of importance to sustainability in infrastructure.

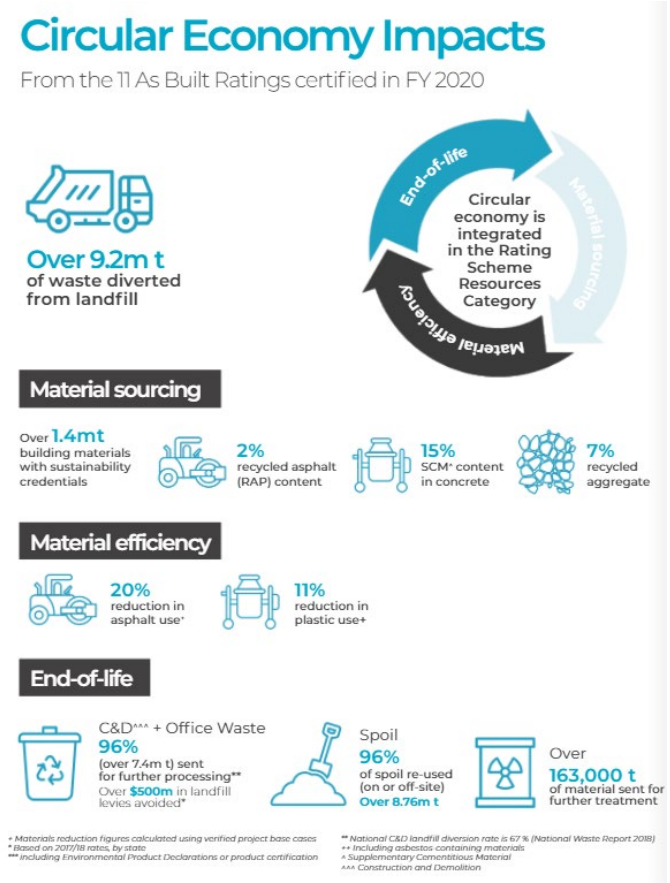
The Infrastructure sustainability rating schemes owned and administered by the Council are world leading and have been assessed as being some of the most comprehensive and rigorous in the world. They assess the wider outcomes achieved by a given infrastructure project or asset,

providing a richer picture of their true value to the public. Our view is that we need to take quite a different approach to ensure projects and assets are viable. We need to design them and assess them applying much longer term horizons and considering much wider impacts across the life cycle of the asset, impacts that fall both into both the public and private spheres.

Infrastructure providers worldwide are increasingly using infrastructure sustainability rating schemes to provide a consistent method of assessing, achieving, and communicating the positive environmental and social outcomes associated with infrastructure projects.

The benefits of using rating schemes and tools include:

- Verification of performance (by an independent third party);
- Ability to benchmark projects and asset classes across geographies in an objective and consistent manner;
- Embedding best practice project governance;
- Motivating diversity, equity and inclusion and reducing group think;
- Appropriate recognition for Project teams around their achieved outcomes;
- Consistent communication of benefits (highlighting environmental, social, cultural and economic outcomes);
- Raising the sustainability profile of projects and project partners;
- Facilitating and enabling the sharing of ideas at a project and industry level;
- Enhancing collaboration;
- Providing a common language so as to reduce misunderstandings; and
- Advancing and incentivising the achievement of broader sustainability outcomes.



We at the Council recognise that the purchasing power of projects undergoing rating can be very meaningful indeed and can be utilised to encourage good practices right through the supply chain - whether in beneficial use and reuse of materials or in other ways. The scheme also adds value to organisations and project teams by encouraging communication and innovation and by achieving social and environmental benefits, whilst also reducing costs.

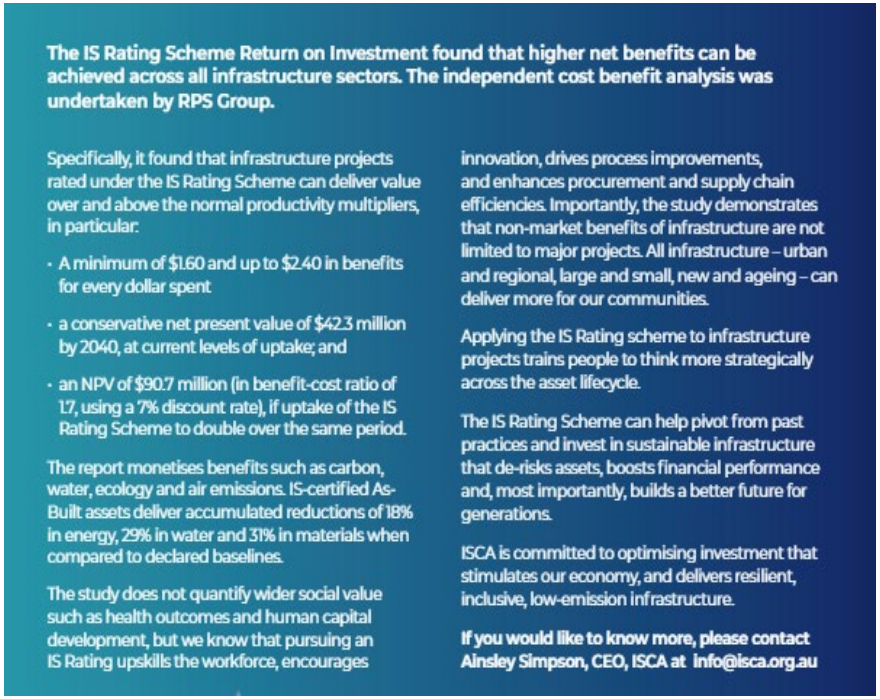
Our rating tool was developed by industry for industry and the individual sustainability professionals that worked on it included sustainability professionals within engineering and other firms here in Aotearoa New Zealand. At the time of this submission, we have four NZ-resident employees and one NZ-resident director; a significant membership with operations in Aotearoa New Zealand and a number of NZ-based suppliers and service providers and that footprint is growing by the day.

As a “for purpose” organisation, our focus is on the quadruple bottom line impacts projects and infrastructural assets can deliver for the communities that the infrastructure serves, not the generation of profits. Our purpose is achieving those impacts and the fees we charge support our organisation in delivering and improving the rating and other tools we offer and in developing new tools and services, rather than going to shareholders or investors.

It is a common misconception that sustainability objectives or event having projects undertake a rating will cost more or take longer. Our economic analysis confirms that the ROI for rated projects is between $1.60- $2:40.

The cost of undertaking a rating is insignificant compared to the costs incurred in the capital project or operation of an Infrastructural asset. Rating fees paid vary based on the project Capex. The relationship between fees and cost of project is more favourable with larger projects.

Fees range between 1.28% for small projects to 0.01% for projects over $1 billion (that is applying the Version 1.2 scheme currently being used in NZ, although we will commencing a progressive transition to a new improved Version 2.1 of the IS rating tool here in Aotearoa New Zealand in the latter part of 2021).



The IS Rating Scheme Return on Investment found that higher net benefits can be achieved across all infrastructure sectors. The independent cost benefit analysis was undertaken by RPS Group.

Specifically, it found that infrastructure projects rated under the IS Rating Scheme can deliver value over and above the normal productivity multipliers, in particular:

- A minimum of $1.60 and up to $2.40 in benefits for every dollar spent
- a conservative net present value of $42.3 million by 2040, at current levels of uptake; and
- an NPV of $90.7 million (in benefit-cost ratio of 1.7, using a 7% discount rate), if uptake of the IS Rating Scheme to double over the same period.

The report monetises benefits such as carbon, water, ecology and air emissions. IS-certified As-Built assets deliver accumulated reductions of 18% in energy, 29% in water and 31% in materials when compared to declared baselines.

The study does not quantify wider social value such as health outcomes and human capital development, but we know that pursuing an IS Rating upskills the workforce, encourages innovation, drives process improvements, and enhances procurement and supply chain efficiencies. Importantly, the study demonstrates that non-market benefits of infrastructure are not limited to major projects. All infrastructure – urban and regional, large and small, new and ageing – can deliver more for our communities.

Applying the IS Rating scheme to infrastructure projects trains people to think more strategically across the asset lifecycle.

The IS Rating Scheme can help pivot from past practices and invest in sustainable infrastructure that de-risks assets, boosts financial performance and, most importantly, builds a better future for generations.

ISCA is committed to optimising investment that stimulates our economy, and delivers resilient, inclusive, low-emission infrastructure.

If you would like to know more, please contact Ainsley Simpson, CEO, ISCA at info@isca.org.au

Comments on the strategy

Whole of life return on investment:

There are references in the Strategy to the need to consider not just cost, but a return across the life of an asset. This concept is not however fully developed or expanded upon and where returns are considered, a predominantly economic lense is adopted. There would be merit in considering how outcomes (including averted public spend) that fall well beyond the sphere of a particular project or programme (whether in a public or private sphere) will be captured and valued.

Advantages of wider outcomes of Living Standards Framework

Our observation is that, although there is talk about Treasury's Living Standards Framework and a wellbeing approach being adopted, there has been a default to assessing options using predominantly an economic lense. We recommend investment decisions and project assessment need to be expanded to accommodate non-financial criteria. The alternative outcomes also need to be valued for their inherent merit, rather than them needing to always be converted into an economic outcome or return. We consider there is real merit in a quantitative approach to outcomes. To assist in understanding how the IS rating tool could assist in furthering implementation of the Living Standards frame work we have included in *Appendix A* an Excel spreadsheet showing the alignment between the Living Standards Framework and the IS Rating Tool and between the IS Rating Tool and the United Nations Sustainable Development Goals. This work was conducted for us by Lisa Martin at external consultants SustaiNZ as a commissioned work. We are happy for you to use and refer to it but all copyright and other intellectual property rights in it are expressly retained by us.

Advantage of common data sets, reporting and benchmarking and impact on capability*:*

One of the issues plaguing the wider outcomes landscape is the preponderance of frameworks and tools in existence, with increasing numbers of alternatives being developed and reinvented created in part by a individual and organisational aspirations to demonstrate leadership. While the well meaning and and there is no harm in making money for services delivered, it would be preferable for, particularly public sector procurers, to instead endorse a common framework that all can use so that projects can be benchmarked against each other and a common approach can be taken. This would also mean practitioners, executives and decisionmakers could all be trained up and build sector bench strength in the skills and expertise required, rather than multiple systems being operated in tandem, and valuable bandwidth absorbed by seeking to understand the subtle differences between schemes and approaches. The focus needs to be on action, not the reinvention of multiple alternative frameworks. Leadership comes from taking action on sustainability, not just talking about it. We can help in bringing policy positions to life.

With Waka Kotahi (the New Zealand Transport Agency) having mandated the use of the IS Rating Tools and other significant procurers such as Watercare, Auckland Council and Kiwirail within its membership also utilising the tool on specific projects, there may be value in considering whether the IS Rating Tool should be more widely endorsed by the Infrastructure Commission.

Importance of Diversity Equity & Inclusion issues for the sector:

In the context of capacity constraints and future workforce, there is a need to consider the impact that work on diversity, equity and inclusion could have on sector bandwidth and the quality of decision making. The issue is not just an issue of enhancing capacity and addressing labour force shortages (although it would assist with that). It also goes to the quality of optioneering, design processes and governance and project decision making. The absence of diversity also does not create the best environment for innovative approaches to flourish. Non diverse groups represented by the incumbents are unlikely to challenge the status quo and are inherently invested in the existing ways of doing things. They are also susceptible to group think because of their homogenous nature.

Governance

There continue to be non-transparent approaches taken to selection of leaders in the sector and an apparent practice at leadership level of shoulder tapping existing and known players, without consideration of alternative talent pools. There is real risk, particularly when we operate at speed and without transparent criteria for appointment, for the default to be made to existing governance structures where perhaps there are less women and "other" represented. This results in the same small pool of people being stretched thin across multiple governance and advisory boards in the sector, again not assisting with decision making. In operating in this manner we can also inadvertently perpetuate the biases of the past in terms of who is involved in decision making, and more importantly what is considered relevant to decision making. Why is that bad? because to design really impactful, valuable and resilient assets you want decision makers that are diverse, that mirror the population demographics of the users of infrastructure. Real people within the communities that infrastructure serves. Such groups are less susceptible to group think and more likely to generate innovation because they are not the incumbents wedded to how it's "always been done".

Future focus and adaptability not evident

While there is reference to demographic change the role of infrastructure in responding to societal and cultural change is not fully explored. Demographic changes are not the same as social changes. Infrastructure needs to be able to respond to both. Its not clear that the current strategy has addressed this difference. Post Covid trends in working and travelling patterns are one significant example that means we perhaps need to rethink a CBD centric and rush hour type traffic and congestion analysis. Similarly Urban form may need to respond to this change.

Green infrastructure also has a role to play

Green infrastructure assets – such as parks, waterways and road verges – have a role to play in our response to climate change, offsetting and sequestering emissions from other infrastructure assets, and increasing our resilience to the physical impacts of climate change. They also deliver significant wellbeing outcomes.

Need for express sustainability or “green strings” for future investment

There has been criticism across the sector of the failure of the so called “shovel ready” projects to expressly require delivery of, or reporting on, sustainable outcomes. It is recommended that what have been called “green strings” are attached to and made an express requirement of future investment whether part of Covid recovery or other investments.

Transformative, rather than incremental change required

As a general rule our view is that there is a high level of public will for the strategy to be bolder and more transformative in nature. Rather than seeking to consider alternative types of urban form, ways of living and working, the assumption seems to have been made that existing systems will remain albeit in a decarbonised/ electrified form. We suggest there is room to move on a bolder, more transformative, urban form.

Growth mentality perpetuated

The concept that growth and development can continue indefinitely unconstrained by spend or environmental considerations still seems quite prevalent. Should consideration be given instead to more adaptive, resilient infrastructure that respects these economic and environmental guard rails. Could the substitute objective instead be prosperity, wellbeings - an embodiment of the Living Standards Framework?

A pipeline “with teeth” will assist the sector

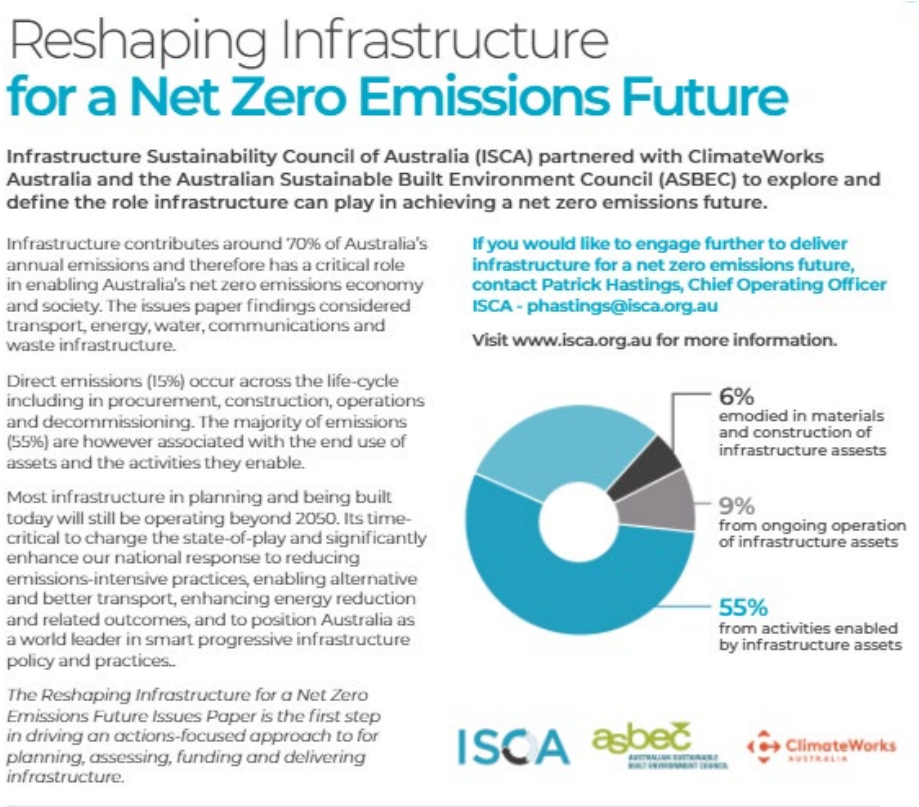
While an infrastructure pipeline able to be viewed through multiple lenses delivers some amount of transparency around what is ultimately likely to be built, there needs to be far greater openness around the likely timing and status of projects and a smoothing of demand regionally so as to reduce the lumpiness that has prevailed for the sector to date. Capacity, continuity and constancy are all required better enable investment in people and capability and plant and materials. Ideally the pipeline would enable smaller projects in a region, that are being delivered by multiple procurers, to be aggregated into programs of work that provide reassurance to deliverers and their workers about pipeline in that locale. There are also currently no sanctions for timing mismatches, but there is a very real cost incurred both at a personal level in job losses and at a sector level in terms of talent pool, where work flows fail to be delivered within the timeframes signalled. How might the right levers be deployed to address this?

Opex currently a wasted opportunity

Operational expenditure and maintenance costs should form part of the upfront assessment of the viability of a project and any asset. It also represents a currently unrealised opportunity for doing things differently, especially when trialling product and methodology innovations.

Climate change, resilience and adaptation

We accept and agree that climate change is fundamentally linked to human activity and that the challenge we face as a society and race is critical and imminent. We support an effective and progressive response to the urgent threat of climate change using the best available scientific knowledge and quantitative measurement. We recognise that in the move to a low-carbon, climate-resilient future for us all, infrastructure too has a role to play.



Infrastructure assets built today will still be operating in 2050 when signatories to the Paris Climate Agreement are expected to reach net zero emissions. Despite this, emissions reductions in line with a net zero emissions future are not effectively prioritised in infrastructure planning, design, procurement and operations across sectors. Emissions reduction strategies need to be coordinated with parallel efforts to build infrastructure that is resilient to the impacts of forecast climate change.

Infrastructure needs to be resilient and adaptive in the face of that climate change and we are supportive of action taken towards tangible and measurable scientifically based outcomes. These extend to the related issues of resilience, biodiversity, energy, water, and materials and resource efficiency.

Part of our role is in showcasing best practise practical solutions implemented on projects and assets which can add significant economic value to infrastructure and in helping to build professional and institutional capability in our industry regarding climate risk. We are also leveraging opportunities for innovation adoption and productivity gains through use of our rating tools.

Infrastructure bodies, governments, professional and industry associations, investors, designers, builders and operators all have a shared responsibility to support the transition to net zero emissions within their own scope of influence and collaborate with the broader sector to deliver solutions.

Infrastructure unprepared for a net zero emissions future risks becoming ‘stranded’ due to significant and unanticipated losses of value and faces restricted pools of financing. On the other hand, there are growth opportunities available for infrastructure assets that are prepared for, and enable, the transition to a net zero emissions future.

Decarbonising structures and buildings

To date, the sector has been largely focused on reducing emissions related to the operational phase of buildings and infrastructure, driven by climate change policies for emission reduction strategies. Several factors such as the decarbonisation of electricity grids and incremental improvements in building efficiency are expected to further lower the share of operational carbon emissions compared to embodied carbon. Looking to the future, embodied carbon will account for almost half of total emissions from new construction between 2019 and 2050 and presents a significant opportunity for the sector to decarbonise.

The replacement of Portland cement with lower embodied carbon materials such as mid-range levels of fly-ash (or alternative Supplementary Cementitious Materials (SCM)) can often provided at little or no additional cost, dependent on the project scale and requirements. While higher rates of SCM provide increased carbon abatement, they may incur a small cost uplift (dependant on myriad factors such as curing times, durability and early strength requirements, project location, and scale).

Several lower embodied carbon materials come with a price tag slightly higher than their conventional counterparts. Alternative solutions such as geopolymer concrete, concrete ad-mixtures, recycled materials, and high strength steels are emerging with the potential to mitigate substantial embodied carbon emissions when appropriately implemented on projects, though they may come at a cost premium of up to approximately $175 per tonne of CO2eq abated (based on specific industry data we have obtained).

From a procurers perspective, better embodied carbon outcomes can be demanded without adding cost to the project overall but recognising that this involves some carbon mitigation strategies that may otherwise not be undertaken if the project is only looking for cost optimisation. Ambitious embodied carbon targets can be met at lower cost price point by balancing cost negative and cost positive strategies.

With increased uptake and further research, these alternative and innovate materials and mitigation strategies will likely see a drop in cost, making them accessible to more projects and more financially feasible across the construction industry. Should projects invest money saved through use of cost negative strategies into implementing and improving these materials and technologies, larger embodied carbon savings are achievable.

Willingness to engage further

We welcome the chance to discuss this submission further and provide the following contact details:

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