PIANOS RECYCLED

CREATING PIANO FUTURES

To:

Joanne Chong
Presiding Commissioner

Alison Roberts
Commissioner

From:

Peter Humphreys
Director & co-Owner

Date:

11 April, 2025

A Unit 10/13-17 Crawford St., Braeside VIC 3195

Dear Presiding Commissioner and Commissioner,

We'd like to thank the Productivity Commission for this interim report into the Circular Economy. We hope that its final conclusions and subsequent action will lead to Australia embarking on innovation-driven and creativity-led productivity outcomes that will benefit government, businesses and community and result in a strong and vibrant society, economy and environment.

While timber and organics have not been considered a "priority circular economy opportunity", Pianos Recycled nonetheless welcomes the opportunity to review your Interim Report and provide additional input for the final report based on our own insights and direct experiences as a pre-scaleup circular economy business.

We believe our experiences, observations and achievements will usefully augment your investigation into opportunities to progress the circular economy in Australia. We also believe our globally unique "grave-to-cradle" business model could have broader applicability in the transition to the Circular Economy.

Our submission takes two parts. Firstly, we provide some background about Pianos Recycled, a 9-year-old circular economy social enterprise. Secondly, we provide some observation and comments of your Interim Report based on our experiences and insights.

Peter Humphreys
Director and co-Owner

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1. Pianos Recycled: A circular economy social enterprise

Pianos Recycled was founded in 2016 with a mission to divert unwanted pianos from landfill and create new futures for them. Landfill is not only bad for the environment; it is an ignoble and unnecessary end for a product that has been coveted here in such numbers that at one time Australia had the most pianos per capita in the world.

At the time of writing (April 2025), Pianos Recycled has processed more than 570 unwanted pianos.

Australia has a growing piano problem which our small enterprise on its own initiative – having been unsuccessful in receiving any government support to date - is endeavouring to help solve. Through our modelling, we conservatively estimate that there are, at this very moment, 4,629 unwanted pianos in Australia that will end in landfill, denying opportunities to create new value from the materials they are made from. These pianos store about 305 tonnes of CO2 which will potentially be released into the atmosphere unless alternatives are developed.

Our circular business model is globally unique and we receive more than 50 requests a month – every month - from Australian and international piano owners that want a better outcome for their heirloom piece. The first piano was invented in Florence, Italy, at the beginning of the 18th Century and while many innovations have improved the instrument in the time since, the piano was designed to be remain a musical instrument through regular maintenance until its 12,000 components failed to the point where it was uneconomic to restore it to playing condition. The piano was never designed to last forever or to have an “after-life”.

But the piano has always been considered to be a fine piece of furniture as well as a musical instrument. Piano makers employed as many cabinet makers as instrument makers. Piano makers were also expert timber experts and even the cheaper pianos were constructed using high-quality timbers and veneers. All a pianos 12,000 parts can potentially be harvested and used in the creation of new products.

Sustainable Development Goals (SDG’s) and R-Hierarchy

Circular economy practices are most closely linked to SDG 12 (Responsible Consumption and Production), SDG 9 (Industry, Innovation, and Infrastructure), and SDG 7 (Affordable and Clean Energy).[1]

[1] Circular economy, bioeconomy, and sustainable development goals: a systematic literature review | Environmental Science and Pollution Research

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The structure of Pianos Recycled's business model and specific initiatives means that our enterprise contributes to SDG8 (Good Jobs and Economic Growth), SDG 9 (Innovation and Infrastructure), SDG 11 (Sustainable Cities and Communities), SDG 12 (Responsible Consumption), SDG 13 (Protect the Planet), and SDG 17 (Partnerships for the Goals).

Studies have highlighted that while many companies incorporate SDGs into their communications and sustainability reports, concrete actions to achieve these goals often fall short. (Source) This phenomenon, sometimes referred to as "SDG-washing," involves businesses using the SDGs as a marketing tool to enhance their reputation without making substantial progress toward the goals. (Source) One study has emphasized the transformative potential of the circular economy in supporting all 17 SDGs, suggesting that embedding circular economy principles could accelerate SDG delivery.

Alignment to SDG's demonstrates a commitment to circularity but how do you prove it? Can each recipient of government funds granted in relation to progressing the circular economy provide evidence or proof they are contributing to the goal? Does their grant or funding body mandate that proof? Should reporting for publicly listed companies be introduced?

In aligning with the SDG goals, Pianos Recycled activities follow three streams which also align with most of the circular economy R-Hierarchy principles:

REPAIR/RESTORE/REUSE: If a piano owner doesn't want to retain their piano and the instrument can be economically and viably restored to playing condition, Pianos Recycled restores and/or refurbishes it so that it can be rehomed. The piano may be sold to an individual, or rehomed in a school through Pianos Recycled's subsidised school program PREPS (Programme for Recycled Educational Pianos in Schools).

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- ✓ Pianos Recycled rehomed193 pianos between April 2016 and June 2024
- ✓ Pianos Recycled has now rehomed pianos in 100 Victorian schools

RECOVER/REMANUFACTURE/RECYCLE/REPAIR/REUSE: If a piano owner doesn't want to retain their piano and just wants their piano "problem" solved, Pianos Recycled collects the piano, and deconstructs it. Timber and veneer materials are stored for sale to craftspeople, and hobbyists. Most metal parts are scrapped. Some piano parts are reused in the repair of other instruments.

- ✓ Pianos Recycled recycled 175 pianos between April 2016 and June 2024
- ✓ Pianos Recycled labels each recovered part with a label identifying the details (age, name & location of piano maker)
- ✓ Pianos Recycled has nurtured ecosystem collaborations with some Mens Sheds as an outlet for piano materials.
- ✓ In 2025 Pianos Recycled began a pilot collaboration with Holmesglen TAFE's Furniture Design and Making school where students deconstruct pianos and then use the reclaimed materials in their projects. The objective is to influence students' sustainability and circular thinking and future professional behaviours.

REDESIGN/REMAKE/REPURPOSE/REDUCE: A piano owner may find themselves with a piano that they have a sentimental attachment for them but they can't keep as a piano for some reason. Pianos Recycled meets with the piano owner to design a new object or objects from their piano. Pianos Recycled then picks up their piano, deconstructs it, and commissions a local artisan to make the new objects.

- ✓ Pianos Recycled repurposed 113 pianos between April 2016 and June 2024
- ✓ Pianos Recycled has commissioned more than 500 individual transformation projects to 30 local craftspeople.
- ✓ Pianos Recycled provides a Certificate of Heritage to the piano owner which guarantees the heritage and provenance of their new items.

Jobs creation: 56x

According to industry convention, for 10,000 tonnes of waste 3.3 recycling jobs are created for every 1 job in landfill.

Pianos Recycled has modelled its transformation (Redesign/Remake/Repurpose) projects and found that if 10,000 tonnes of pianos were diverted from landfill, 56 jobs for every 1 recycling job would be created, demonstrating the value opportunity.

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As 10,000 tonnes of pianos represents about 50,000 pianos which would be close to 10% of the pianos that exist in Australia, and we have confidence in the 56x job multiplier model, it is unrealistic to believe that unwanted pianos are going to be a fillip for the transition to the circular economy.

However, we do believe our model is transferrable, and demonstrates that much greater and richer value can be created by looking beyond recycling.

2. Comments: Australia's circular economy: Unlocking the opportunities. (Interim Report)

Innovation starts with a problem

"Despite some uptake, Australia's circular economy progress has been slow"

"There are opportunities for governments to address barriers to circularity"

Australia's circular economy: Unlocking the opportunities – Interim Report
(Australian Government Productivity Commission March 2025)

The Interim Report refers many times to "challenge-based innovation".[2] The importance of innovation in transitioning to a CE was also recognised by the DCCEEW in its report, The Circular Advantage (2024) in which it recommended the establishment of National Circular Economy Policy Framework.

Strong government policies on innovation often involve funding for research and development, incentives for innovation, and regulatory frameworks that encourage sustainable practices.

It is in the governments resources and decision-making power to create an environment where businesses are more likely to adopt circular practices, leading to increased circularity rates.

Australia, unfortunately, has an average if not unremarkable record in innovation. From ranking #17 globally in 2007 in the Global Innovation Index (GII), we ranked #19 in 2013, #22 in 2019 but have fallen back to #23 in 2024[3].

[2] 'Challenge-based innovation' uses design principles to solve business challenges and create new products.(Source)
[3] Global Innovation Index 2024

Doubling the circularity rate of 4.6% by 2035 is not a particularly ambitious target but will be a challenge without the *right* government support. Australia should be targeting 20% or 25% circularity. Transitioning at something more than a pedestrian rate will require new ideas, creativity and agility.

A diffusion/maturity curve schematic submitted by Helen Millicer (One Planet Consulting) for the Interim Report reinforces our contention that government funding has a role to help move from innovation to early adoption. [4]

Despite having a globally unique "grave-to-cradle" business model, a good problem/solution fit, success in developing and nurturing a collaborative circular ecosystem and generating the equivalent of 56 times more jobs than recycling through its transformation (Redesign/Remaking/Repurposing) projects, Pianos Recycled is spinning its wheels at start-up/innovation stage, not because of lack of sales prospects, but in part due to lack of strategic government support and government policy.

Government support

Pianos Recycled has a positive brand awareness and strong cash flow but capacity constraints mean we are having to manage the growth of our business. We will need funding or investment to expand and scale-up to not only realise our full CE potential, but also to ensure we can navigate the "valley of death".

Startups struggle to transition from idea to scale-up due to funding gaps, market barriers, or operational challenges. Circular economy startups often face unique hurdles, such as high initial costs for limited consumer awareness, regulatory complexities and securing investment. Bridging this gap requires innovative financing models, strong partnerships, and supportive policies to ensure these startups can thrive.

We are aware of the statistics:

- The failure rate for new startups 90%.[5]
- 10% of new businesses don't survive the first year.
- First-time startup founders have a success rate of 18%.

[4] https://www.pc.gov.au/__data/assets/pdf_file/0006/387456/sub082-circular-economy.pdf
[5] Startup Failure Rate Statistics (2025)

Fortunately, Pianos Recycled has a good product-market fit and after 9 years of operation, we have passed the thresholds for Australian small business failure.[6] [7] Also, to date, Pianos Recycled has a healthy good balance sheet and cash flow assisted by co-owner bootstrapping and because its three owner-Directors contribute unpaid labour.

Despite Pianos Recycled having a globally unique "grave-to-cradle" business model and a good problem/solution fit it has never received government support funding. This is due to a number of reasons, namely:

- Grants usually require co-contributions which Pianos Recycled with its small margins and operating surplus cannot afford; and/or
- Grants are so specific as to preclude Pianos Recycled's area of business; and
- Pianos Recycled is considered "too small" by government.

This last factor in particular is limiting Pianos Recycled's strategic opportunity to increase its CE model and business 10-fold by expanding into regional Victoria and across Australia, in addition to franchising its model globally.

The other issue we see in the sustainability grants allocated to successful applicants is what we don't see. While there will be information pertaining to the purpose of the grant, we have never seen, in terms of either accountability or transparency:

- the targets and/or measurable outcomes that the applicant puts forward to the government to secure its grant; and
- end of project report outlining achievement against stated (measurable) objectives

The importance of reporting cannot be understated. This information becomes knowledge to help industry and government develop better strategies and business models. Data and knowledge sharing are critical for collaboration.

For instance, if Pianos Recycled applied for a grant to divert Victoria's 1,214 unwanted pianos from landfill, we should be obliged to provide data and targets in our submission which would form the basis of grant evaluation reports. A scope summary of the type of opportunities that the grant would help capture might look something like the opportunity analysis below that we have developed to frame the piano problem in Victoria. It identifies costs, opportunities and potential stakeholders:

[6] Almost half of new businesses failing within their first four years - Inside Small Business
[7] Top Reasons Why Australian Small Businesses Fail in the Early Stages

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Our Silent Piano Problem

VICTORIA

PIANOS	
Number of pianos in Victoria (estimated)	216,583
Number of silent/idle pianos (2023)	1,214
Pianos destined for landfill over the next 5 years (minimum)	2,846
LGA REVENUE FROM DUMPED PIANOS	
Waste centre charges from dumped pianos over next 5 years	$377,751
AVOIDABLE COSTS (Next 5 years)	
CO_2 emissions (tonnes)	241
EPA Waste Levy liability	$94,878
Garbage trucks needed	243

OPPORTUNITY COSTS*		
Education (2024) Schools Students IQ points increase per student	 **2,294** **1,049,890** **7**	The world's greatest innovators are passionately curious and seek out answers to problems in childlike manner. Studies show pianos players' IQ increases up to 10%. At Pianos Recycled we are locating playable pianos at schools. We have also piloted some work with KIOSC (Swinburne University) providing piano materials for their STEM education program.
Circular Economy skills TAFEs and dual sector universities with relevant design courses	**18**	Who will design our future? Who is leading reclaimed materials innovation? TAFEs conduct design courses which could be cross-pollinating creative ideas. TAFE's also have students that should be learning to implement circular economy thinking & practices. Unwanted pianos could be a good starting point for their future practices learning.
5–year environmental impact Reclaimed timbers (tonnes) Metals recycling (tonnes)	 **906** **375**	Pianos are a carbon store. Half their weight and 70% of their volume is timber. Landfilling or burning them releases 193kg of CO2 equivalent into the atmosphere, the same as burning 80kg of dirty coal. Wood releases not only CO2, but also NO (300x more powerful greenhouse gas than CO2, and which lasts 120 years) and CH4 (25x more powerful greenhouse gas). Metals take 50-500 years to decompose.
Community engagement Community wood crafting clubs Increase in timber prices: 2016-25	**381** **129%**	The well-being and mental health benefits of involvement in Men's Sheds and community clubs are well known. Sheds offer an environment conducive to learning, and also offer positive effects for partners, families and communities. Mens Sheds and woodworkers' clubs consume large quantities of timber. The Victorian industry has experienced a timber shortage for around two years. Timber prices surged during COVID-19, with increases of up to 380% in 2021. Half a piano's body weight is high quality timber and veneers which are ideal for artisan projects. At the moment our piano timbers are valued at 2016 prices.
Jobs/Industry Landfill jobs vs creative industry jobs	**1:13**	10,000 tonnes of landfilled pianos will generate 5.1 direct and indirect jobs. 68 jobs will be created by reusing or repurposing those same pianos rather than dumping them.

*** OPPORTUNITY COST: The potential foregone value from a missed opportunity—the result of choosing one alternative and foregoing another.**

PIANOS RECYCLED **Creating piano futures** www.pianosrecycled.eco

Pianos Recycled believes that most of the environmental, social and economic benefits and/or impacts which the grant applicant will achieve should be monitored and reported.

Size matters (Government funding)

In informal discussions with senior Victorian Government Finance and Sustainability executives Pianos Recycled was given advice that our social enterprise should not expect state government funding because it is "too small" to consider grant funding to help scale-up operations.

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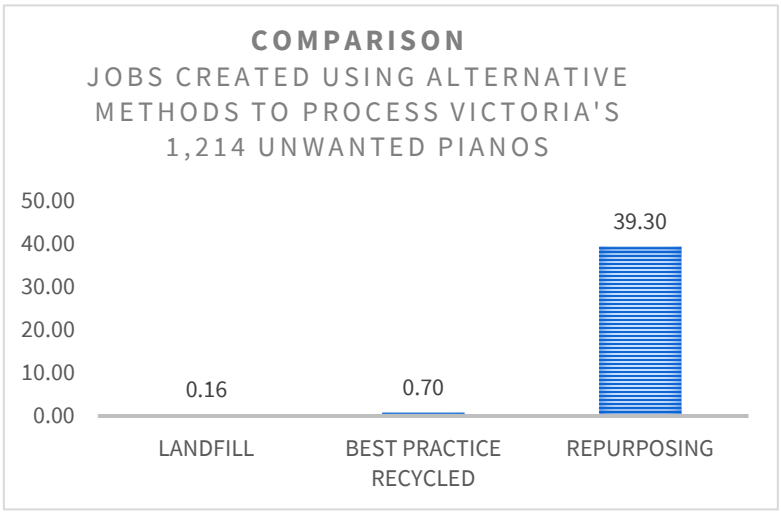
While recycling activities generate 3.3 jobs for every job in landfill (per 10,000 tonnes waste), modelling of Pianos Recycled's transformation projects over the last 8 years shows that Redesign, Repurposing and Remaking can generate 56 more jobs than each recycling job for every 10,000 tonnes of waste.

If this modelling is applied to the 1,214 unwanted pianos that currently exist in Victoria, the jobs created can be seen in the table (right).:



Large companies won't get Australia to a circular economy on their own and doubling the current circularity rate to just under 10% by 2035 won't be enough.

In sociology, a tipping point is a point in time when a group—or many group members—rapidly and dramatically changes its behavior by widely adopting a previously rare practice.

Research has shown that tipping points often occur when around 10-25% of a population adopts a new behaviour, technology, or practice. This is known as the "critical mass" needed to drive widespread change. Once this threshold is crossed, the momentum becomes self-sustaining, and the change spreads rapidly through the system.

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In social movements, other research suggests that when 25% of a population adopts a new belief or behaviour, it can create a tipping point where the rest of the population quickly follows suit. This phenomenon is evident in the rapid spread of cultural and social changes, such as the adoption of environmental practices like recycling.[8] [9]

The shift to a circular economy, where products are designed for reuse and recycling, is a tipping point that could revolutionize industries. However, the transition requires managing complex supply chains, consumer behaviour, and regulatory frameworks, all of which are interdependent and can either support or hinder progress.[10]

Innovation, on its own, however, does not necessarily result in better circularity. For instance, Israel, who ranked #15 of the 133 economies in the 2024 GII and that has the fourth highest rate of entrepreneurship – and the highest rate among women and among people over 55 – continues to landfill 80% of its municipal waste and recycles less than 7% of municipal waste (Although about 25% of Israel's collectible plastic packaging is efficiently sorted for further recycling.[11] Israel's circularity rate isn't reported but is probably about 0.5%.

Importantly, countries with the most effective government policies on innovation also have the best performing circularity rates.

There is evidence that a strong correlation exists between strong government innovation policy and a country's circularity rate. Countries that prioritize innovation, as reflected in their GII score, tend to have higher circularity rates. This is because innovation is a key driver for developing and implementing circular economy practices, and government policies play a crucial role in fostering such innovation.

[8] The Science Based Targets initiative (SBTi) is a corporate climate action organization that enables companies and financial institutions worldwide to play their part in combating the climate crisis and have . SBTi have developed a theory of change based on the 'diffusion of innovations' theory and takes the threshold of 20% as a critical mass, or potential 'tipping point', for setting science-based targets within a given sector or geography https://sciencebasedtargets.org/reports/sbti-progress-report-2021/reaching-a-critical-mass?siteToken=f4aafa1343fdf1605f5bb5dae23878e274759efde558a7ed15b92036378477241

[9] Science Based Targets Initiative, v1.2, June 2022

[10] The Dynamics of Tipping Points: How to Navigate Change in Complex Systems - Effective Mind

[11] European Union SwitchMed initiative

European countries and Japan are examples where countries are leading the way in the circular transformation. These nations have implemented policies that encourage innovation and support the development of circular economy practices.[12] [13]

There is also evidence suggesting that smaller businesses and startups often drive more innovation compared to larger firms. Startups and small businesses tend to be more agile, less constrained by bureaucracy, and more willing to take risks, which can foster disruptive innovation.[14] [15] They often focus on niche markets or unmet needs, allowing them to develop unique solutions that larger corporations might overlook.

However, it's worth noting that larger firms do have resources to scale innovations and invest in research and development. The dynamic between small and large businesses often leads to a complementary ecosystem where startups innovate and larger firms adopt or acquire these innovations.

Government support is more important for smaller enterprises.

Materials provenance

There is no heritage or materials provenance guidance from government. The National Framework for Recycled Content Traceability allows businesses to choose the best way to trace recycled materials for their needs is currently a voluntary process.

We believe that for Australians to trust circular economy actors, there must be traceability evidence and records for the materials involved.

Pianos Recycled researches and provides assurance to its customers regarding the provenance of materials we reclaim from pianos. For transformation projects we provide a Certificate of Heritage which guarantees the provenance of the materials that were used in their new item.

Product provenance and material source data are crucial for the circular economy because they provide transparency about the origins, composition, and lifecycle of products. This information helps businesses and consumers make

[12] https://doi.org/10.1002/bse.3768
[13] https://doi.org/10.1080/09537325.2018.1493450
[14] The Gap Between Large and Small Companies Is Growing. Why?
[15] 11 Advantages Small Businesses Have Over Large Corporations (And How To Use Them)

informed decisions, ensuring that materials are reused, recycled, or disposed of responsibly. It also supports sustainable practices, reduces waste, and minimizes environmental impact.

Industries and governments in other countries are increasingly adopting these principles. In Australia, reports highlight opportunities to transition to a circular economy by improving material flow analysis and adopting circular economy principles in sectors like housing, mobility, and energy.[16] [17]

Government procurement and social value

"If we cannot define what we mean by value, we cannot be sure to produce it, nor to share it fairly, nor to sustain economic growth".[18]

Pianos Recycled supports the discussion on government procurement in the Interim Report but believes the "rules" governing government procurement need to be more focused on and accountable to circularity outcomes.

Government procurement should provide another channel for facilitating coordination between businesses and with government, particularly where the government is a purchaser of a product or service, such as furniture. It should also be an instrument for social value.

'Social value' is an ill-defined term often used to explore how limited resources can be put to best use, by examining the collective benefit, beyond cost savings, that allocation of public money can have. Government organisations are supposed to make planning and spending decisions with regard to environmental, social and economic values, the triple bottom line of sustainability. (In the UK they form the foundation of the Treasury Green Book).[19] However, lack of consensus on how to measure social and environmental value means decisions typically focus on economic value. Without sufficient methods to discuss and promote alternate forms of value in the built environment, the current market driven approach will simply continue.

[16] Material flow analysis to progress to a circular economy – Circular Economy
[17] Australia's comparative and competitive advantages in transitioning to a circular economy
[18] Mazzucato, *The Value of Everything: Making and Taking in the Global Economy.* Allen Lane, London, 2018, p. xix
[19] The Green Book, issued by HM Treasury, **provides vital guidance for appraising and evaluating policies, programmes, and projects in central government**. At its heart is the principle of delivering value for money (VfM), ensuring public resources are used effectively to achieve policy objectives.

Social value outcomes are increasingly being considered necessary benefits in public and private procurement through quality scores of bids and tenders. To provide evidence that meets these key performance targets and metrics, practices need to demonstrate value quantitatively.

Pianos Recycled is frustrated with government procurement processes and practices in Victoria.

The Victorian Governmen's Social Procurement Framework[20] sets out the Government's "objectives for leveraging maximum value from the Victorian Government's significant buying power, bolstered by our ongoing investment in infrastructure and future industries, " and purports to achieve this by "increasing job opportunities for under-represented groups and providing greater support for businesses that prioritise social impact alongside the delivery of competitively priced, high-quality … goods and services". Included in the support is "increasing market access for social enterprises." [21]

Good? No. The policies under Social Procurement do not support small local businesses and the Standing Directions guiding the Social Procurement Framework do not compel government departments or agencies to purchase sustainable goods and services.

Take the *Local Jobs First* policy which is "focused on promoting employment and business growth by expanding market opportunities for local industry and providing for industry development". The financial threshold applies to procurement activities valued at $1 million or more (regional) and $3 million or more (metro or state-wide),[22] largely precluding small business.

In the Compliance Requirements Self Assessment Checklist a Government buyer is only obliged to "consider recycling or transferring a redundant asset to another agency or not-for-profit agency" when diposing of assets. There are no checklist items for buyers to check the sustianability credentials of the good and services or the vendor. Similarly thre is no requirement to determine the product source and its ethicacy. [23]

The Australian Government's Sustainable Procurement Guide[24] claimed the Government is committed to transforming Australia's waste into a resource, including the "reuse" and "reprocessing" of goods – a well as recycled - as part of a

[20] Victoria Government Social Procurement Framework
[21] Social Procurement Framework – Messages from the Ministers,
[22] Local Jobs First
[23] Alignment Self-Assessment Checklist
[24] Australian Government Sustainable Procurement Guide 2021

circular economy. Despite this broader position however, the main target for procurement in their National Waste Action Plan is to "Significantly increase the use of ***recycled*** content by governments and industry".[25] The focus however is to explore more use of recycled content in buildings and infrastructure with priority given to plastics, glass and rubber.[26]

Standards

70% of the volume of a piano, and half its weight is timber and veneers but there are no standards to guide the reuse of these materials in Australia.

PN06.1039 FWPA Interim Industry Standard 2008 is the most current standard for recycled timber providing requirements for visually grading recycled hardwood timber intended for use in decorative or structural applications. These interim standards were developed under a project supported by Forest and Wood Products Australia and the Department of Tourism, Regional Development and Infrastructure - Queensland. They were intended to be reviewed and amended after a period of application and use, and then submitted to Standards Australia for consideration for development as a formal Australian Standard for recycled timber, which has not happened.

In the mean time, if anyone was interested, there are some Interim Industry Standards that provide guidelines for grading and using recycled timber in various applications. These standards are published by the Forest and Wood Products Australia (FWPA) and are available at WoodSolutions and FWPA websites [27]

Education

Pianos Recycled has recently embarked on a collaboration with the Furniture Design and Making students and staff at the Holmesglen TAFE in Melbourne.

We had been trying for 6 years to get at least one of Victoria's 17 furniture making schools interested in using reclaimed materials in their instruction, particularly in relation to teaching students about sustainability practices.

[25] National Waste Action Plan op. cit. p.3
[26] National Waste Plan Annexure 2022, p.10
[27] 1 2 3.

Pianos Recycled researched and compared the curriculum of two of Melbourne's leading design schools – one tertiary and one TAFE vocational - in terms of their teaching direcrion of "sustainability" and initiative in incorporating and promoting recycled materials.

Both institutions provide instruction on sustainable practice but neither one guides or encourages students to explore using, or even considering recycled materials in their design projects.

There also doesn't appear to be any opportunity for collaboration – a powerful innovation tool - across parallel courses or units which have some commonality, for instance interior design with architecture or furniture makers. And there definitely isn't any collaboration between design faculties of tertiary and vocational trades institutions where commonality of study and the potential to generate new ideas might be exploited, for instance, cabinet making with architecture.

Given Australia's average global innovation rank, our education institutions should bear some responsibility in stimulating curiosity in the pursuit of creativity.

The good news is that while Australia has been slipping in the GII rankings, it still has a lot of potential for growth and improvement in its innovation ecosystem, particularly where our educators are involved.

The 70:20:10 model[28] tells us that 70% of learning comes from on-the-job experience, 20% comes from social interactions and 10% comes from formal training. One way to hone that 20% is by implementing a Learning Management System that doesn't function in silos but nurtures curiosity and collaboration across the ecosystem.

Collaboration and cross-pollination of ideas are crucial for innovation success. Fostering an open and collaborative environment fuels cross-pollination, which in turn can improve decision making, increase experimentation, and result in tangible innovation and business outcomes.[29] Collaboration allows organizations to bring their best thinking to bear on a problem, and it's the wellspring of invention. In fact, 71% of business leaders are expecting they'll have to develop and accelerate new offerings just to maintain their market position, according to one study.[30]

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[28] Training in the Classic 70-20-10 Framework

[29] https://www.forbes.com/sites/forbestechcouncil/2022/10/14/getting-cross-pollination-right-for-ai-and-innovation/

[30] https://www.washingtonpost.com/brand-studio/wp/2021/05/24/feature/how-better-collaboration-can-boost-innovation-and-success-in-the-new-normal/

At a time when we need to solve the problems of climate change and sustainability, collaboration would enhance the implementation of innovative ideas and solutions by creating joint ownership, and spreading the risks – and solutions benefits - to a larger group of community actors. The dissemination of innovative practices is propelled by collaboration and knowledge sharing across social and professional networks.[31]

The evolution of design has seen it become a discipline no longer limited to the concerns of a singular, specific domain and develop to become a pathway for solving complex, nonlinear problems. Design is becoming a capability-enhancing skill, equipping people with the ability to deal with uncertainty, complexity and failure.

A collaborative approach would use design as a way of thinking to provide strategic and innovative advantage that would help create greater value from waste.

Our education institutions should be accomodating anyone who is curious about design and translating the processes and tools of design thinking into innovative opportunities, and to apply and practice the design process: think, make, break and repeat.

Design myopia

The government should also consider recalibrating design education.

London-based internationally acclaimed designer Marc Newson was recently quoted as saying that sustainability "… is really more about designing intelligently. You can't avoid using certain materials, like plastics – albeit recycled or natural materials like wood … But what you can do is use those materials in a more responsible way and design products that people want to keep and that are repairable." [32]

In 2022 and 2023 Pianos Recycled held well-received exhibitions as part of the NGV's annual program Melbourne Design Week (MDW) to promote the potential of repurposing.

The MDW theme has been "Design the World You Want". Given the world wants action on climate change, sustainability, environmental protection and jobs, Pianos Recycled's mission to save unwanted pianos from landill and to create new value aligns perectly with this theme .

[31] https://www.nesta.org.uk/blog/why-and-how-does-collaboration-drive-innovation-public-sector/
[32] Sunday Age, September 10, 2023, p.12

The title of Pianos Recycled's exhibitions are *The Transformation Challenge* with their principle credo being that creative possibilities are only limited by imagination. So far the exhibitions have attracted 29 makers and artisans from both metro and regional Victoria in providing a platform to design and create new objects from materials of unwanted pianos.

In the 9 years Pianos Recycled has been operating it has not generated enough surplus to reward its three owners yet they have been prepared to invest in the MDW platform because they consider design can be used as a force for good in an increasingly complex and precarious world.

While support for the enterprise's mission has grown and been embraced by exhibition attendees and our social media followers, attendance has not converted into enormous transformation (Redesign/Repurpose/Remake) project sales but has certainly increased the number of enquiries we receive from piano owners wanting us to help them with theirunwanted piano problem.

The disappointing aspect is the cool response from furniture design schools and professional designers and architects who have been invited to collaborate appear not to be open to the concept of redesign and repurposing.

But there are often problems so big that it becomes difficult—if not impossible—to create solutions for them. Issues like climate change, environmental sustainability and waste aren't things you can simply sit down and design solutions for are they?

Or can you if you had the proper education grounding?

Studies and discussions highlight a risk aversion among makers, architects, and designers, which can lead to constrained creativity and incremental innovation rather than radical breakthroughs. For example:

1. **Façade Tectonics Institute (FTI) Research**[33]: This study found that risk aversion is a significant barrier to adopting high-performance façade systems. Designers and construction teams often default to familiar practices due to perceived risks associated with new or different solutions.

[33] Risk Aversion: The Unintended Consequences for High-Performance Façades - Insights and Inspirations

2. **Risk-Based Design and Utility Theory**[34]: Research published by Cambridge University Press explores how risk attitudes influence design decisions. It highlights that certain industries thrive on risk-taking, while others, including architectural design, often lean toward risk aversion, impacting innovation.

3. **Risk Management in Architectural Design**[35]: A book by Claudio Martani discusses how risk management processes in building design can lead to conservative choices. It emphasizes the relationship between design decisions and long-term performance, showing how uncertainty can constrain creativity.

These studies suggest that cultural inertia, fear of litigation, and lack of trained labour contribute to risk-averse behaviour, which can limit the scope of imagination and innovation in design fields.

Pianos Recycled believes speculative rather than traditional design mindsets should be nurtured in educational institutions.

Speculative design is a design method addressing big societal problems with design processes and system, and looking towards the future—and creating products and services for those scenarios. But, like all things design, the concept is a little more complex than it sounds.

Where typical design takes a look at small issues, speculative design broadens the scope and tries to tackle the biggest issues in society. Speculative dsign has the potential to align design and consumerism with social values that could have a regenerative impact on our communitie, eonomy and environment.

The term was coined by Anthony Dunne, professor and head of the design interactions programme at the Royal College of Art, and Fiona Raby, professor of industrial design at the University of Applied Arts in Vienna.[36] According to Dunne and Raby, designers shouldn't just address today's issues but also take a look at future challenges and ask "How can we address these problems with design?"

[34] Risk attitudes in risk-based design: Considering risk attitude using utility theory in risk-based design | AI EDAM | Cambridge Core
[35] Risk Management in Architectural Design: Control of Uncertainty over Building Use and Maintenance | SpringerLink
[36] Anthony Dunne and Fiona Raby, Speculative Everything: Design, Dreaming and Social Dreaming

PIANOS RECYCLED

CREATING PIANO FUTURES

Speculative design thrives on imagination and aims to open up new perspectives on what are sometimes called wicked problems, to create spaces for discussion and debate about alternative ways of being, and to inspire and encourage people's imaginations to flow freely.

Speculative designers seek to answer questions like:

- How should design impact the entire world?
- How can we design for a healthier ecosystem?
- What can we do to influence future cultures?
- How can future technologies impact our products and services—and vice versa?
- What don't we want to see from the future?

Speculative design tries to imagine what it would be like to design without the current limitations of technology, culture, politics or mindsets.

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