NATIONAL DESIGN CENTRE

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Innovative homegrown solutions tackling local challenges on display in first showcase by Good Design Research

National Design Centre will present a line-up of 17-projects by Singapore designers over 11 months via hybrid exhibition

Above: (Clockwise) Claudia Poh, Gin Lee and Tamir Niv (GINLEE Studio), Pan Yi Cheng (Produce Workshop), Morgan Yeo (Roger&Sons), Jackson Tan (ART-ZOO), Esli Ee and Edmund Zhang, Kuik Shiao-Yin (Common Ground and The Thought Collective), and Wendy Chua and Gustavo Maggio (Forest & Whale)

15 October 2021 – Whether it's the sheer amount of plastic generated by our "dabao" culture, the state of felled Angsana trees and raintrees piling up in the sawmills of Sungei Kadut or the future of brick-and-mortar retail, design firms in Singapore have been exploring solutions to these issues and more as part of the Good Design Research (GDR) initiative, launched by DesignSingapore Council (Dsg) in 2020.

The initiative, aimed at deepening the role of research-based design in solving the challenges faced by societies and cities, provides homegrown designers with sponsorship, mentorship and industry support to empower them to design impactful solutions.

A total of 17 projects cutting across three impact areas – Environment; Communities and Culture; and People and Organisations – were selected and supported under GDR's first two open calls. The designers will present their research findings, solutions and prototypes via an 11-month rotating physical showcase as well as a series of online workshops and webinars hosted by the National Design Centre.

"The projects under Good Design Research not only demonstrate great diversity, they understand the role and the potential for research to crystalise better, human-centred solutions for the many challenges we face today. In these VUCA (volatile, uncertain, complex, and ambiguous) times, there's a greater urgency to design more thoughtfully for positive impact and reveal new possibilities for a better world by design," says Mark Wee, Executive Director of Dsg.

Above: (Clockwise) KopiCup (Reuse Lab by Forest & Whale), Sandwiched Variable Eggcrate Structure (Produce Workshop) and Make in Shop (GINLEE Studio)

Kicking off the GDR exhibition this month is Reuse Lab by multidisciplinary design studio Forest & Whale. The project, spurred by the environmental damage caused by disposable food packaging, saw the design studio undertake a series of interviews with hawkers to create more sustainable, reusable and user-friendly takeaway options as an alternative to single-use plastic.

Reuse Lab has created three concepts for the exhibition: KopiCup (its local version of a reusable coffee cup) inspired by the iconic kopitiam milk tin; a Borrow and Return reusable container; and a Hybrid takeaway model comprising a compostable brown paper liner and a reusable container. In addition, podcasts and video interviews with food critic KF Seetoh, design and sustainability experts and hawkers will be shared as part of its exhibition. This pop-up laboratory will run for three weeks from Oct 15 to Nov 10, 2021.

"Reuse Lab is our way to ignite conversations on sustainable reusable models for hawker centres, where single-use plastic is widely used. Through the exhibition and our prototypes, we hope to discuss topics such as how we can nudge behaviours and redesign the relationship between hawkers and consumers from simply a transactional one back to something more relational. We believe bringing reusable models into hawker centres where most people eat daily can help to scale up the collective impact of using reusables instead of disposables," says Gustavo Maggio, co-founder of Forest & Whale.

This will be followed by Make in Shop, by fashion label GINLEE Studio, that will explore the twin issues of over-production in fashion and the revitalisation of brick-and-mortar retail from Nov 15. The third pop-up will be helmed by design studio, Produce Workshop, and will showcase its new sustainable material for the construction industry.

The exhibition space will be updated monthly to present a line-up of GDR projects that delve into other issues such as assistive ageing; inclusive fashion for the mobility-challenged; reusing stone and wood offcuts from factories; and hybrid music performances for the neo-pandemic age. Online offerings of GDR projects will commence next year.

For more information about the first GDR showcase, Reuse Lab, visit https://www.designsingapore.org/event/good-design-research-reuse-lab-by-forest--whale.html. Please see Annex A to learn more about the 17 GDR projects and Annex B for details of the GDR initiative.

ANNEX A: Good Design Research projects from first two open calls

1. We can redesign "dabao" culture by eliminating single-use plastic

Project: Reuse Lab by Forest & Whale

Research: With Reuse Lab, Forest & Whale aims to reduce the use of single-use plastic packaging for food delivery and takeaway by experimenting with new compostable materials and designing better, user-centric reusable food containers with local resonance. Through life cycle assessment of the carbon footprint in the takeaway container, a more sustainable shared circular system of reusable containers to deliver food is proposed.

Impact Areas: Environment

Wendy Chua: "Our goal is to find consensus and gather feedback on how reusable models can present an alternative solution to single use disposable packaging."

Gustavo Maggio: "Single use plastic waste is a global problem that we, in Singapore, can't ignore. Even with our efficient waste management system, landfill space is running out, and there are other considerations like carbon emissions of incineration or waste collection that need to be discussed holistically."

2. We can design away over-production in the fashion industry

Project: Make in Shop by GINLEE Studio

Research: The fashion industry faces two key challenges: excess stock / over manufacturing and the decline in popularity of brick-and-mortar retail. GINLEE Studio proposes the creation of a new on-demand and on-the-spot manufacturing solution that is both sustainable and engaging for consumers.

Impact Areas: Environment

Tamir Niv: "Locally designed and locally made are more sustainable, and by modernising craft we are able to localise the production."

Gin Lee: "We envision the future of Make in Shop as a series of concept stores spread around the city. Each concept store will host different smartly crafted products and have its own unique experience to come with it."

3. We can redesign timber construction to be more sustainable

Project: Sandwiched Variable Eggcrate Structure by Produce Workshop

Research: The use of reinforced concrete and structural steel in construction is time-consuming and generates a lot of material wastage and pollution. Mass Engineered Timber (MET) has a significantly smaller carbon footprint, but its cost and the need to import it into Singapore inhibit its use. Produce Workshop conceptualised a type of MET known as the Sandwiched Variable Eggcrate Structure (SVES) to reduce material used, shorten production lead time, and minimise labour time on site.

Impact Areas: Environment

Pan Yi Cheng: "We believe timber is the future of construction. We need to develop the use of timber from around the region to be less reliant on shipping modules halfway around the globe."

4. We can design new uses for unwanted stone and ceramic offcuts

Project: Offcut Factory by Esli Ee and Edmund Zhang

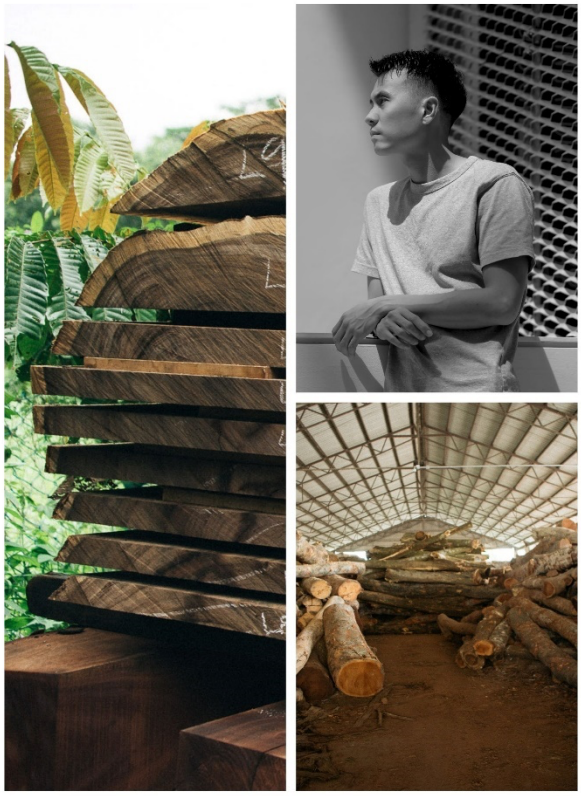
Research: Material waste is a prevalent issue in the manufacturing industry, and the material offcuts that are produced during manufacturing processes are often discarded. Yet material by-products can grow into a circular industry if used efficiently. Offcut Factory fosters a spirit of sustainability by envisioning a model and community where factories and businesses can find alternative solutions to material waste management. Through the purposeful transformation of waste offcuts, we showcase the local manufacturing industry and revitalise it for the contemporary market.

Impact area: Environment

Esli Ee: "We strive towards an outcome where we can create more value to businesses, shed more light on the local manufacturing industry and more importantly, intervene at the source of the problem by reducing the waste that comes out of the industry."

Edmund Zhang: "We will be working to get more factories onboard and to scale the project further. As we grow our inventory of materials and firm up post processing methods, source materials will also be available for sale. We are open to collaborating with like-minded creatives who are keen to contribute to this project."

5. We can redesign the value of felled local trees



Project: Stabilising Local Wood Sustainably by Roger&Sons

Research: Although more than 13,000 trees will be felled in Singapore over the next 13 years, these logs will not be used due to the high cost of overcoming challenges such as warping. Roger&Sons sought to better understand local wood, so as to develop sustainable and eco-friendly processes to rehabilitate abandoned logs and stabilise the wood. It can then be turned into durable objects and furniture, giving new value to trees that have been felled for urban development.

Impact area: Environment

Morgan Yeo: "In Singapore, we are overly reliant on imported materials and resources. It is growing extremely easy to source materials overseas and thus our growing reliance on it. This has resulted in negligence towards our own natural resources. With this research and future researches, we would like to continue to explore working and upcycling local trees felled due to urban development. This will allow us and the woodworking industry to be a lot more sustainable to the environment."

6. We can design fashion confidence for the mobility challenged

Project: Werable by Claudia Poh

Research: Existing forms of ready-to-wear often fail to meet our needs throughout the different phases of our lives. Werable tackles dressing challenges that arise from reduced dexterity and stiff limbs. The research is focused on finding unconventional ways to cut garments at the design stage, so that dressing can continue to be an exciting, empowering and dignified experience. Werable addresses not only the physical challenges that often come with our personal longevity but also the longevity of our clothing. It shows that relevance and ongoing functionality can be addressed at the genesis of a product.

Impact area: Communities and Culture

Claudia Poh: “My vision for Werable is that it'll establish its footing as the go-to for easy-to-wear fashion, beyond the adaptive market. I hope that our subject matter expertise can be of value to healthcare practitioners and their stakeholders.”

7. We can design urban infrastructure with renewable materials

Project: KENOPY: Kenaf Biocomposite Canopy Tiles by Studio SKLIM

Research: Singapore is constructing 150km of sheltered linkways by 2040. The materials currently used for shelter construction are non-renewable and generate a significant amount of greenhouse gases. We need more ecological and sustainable materials and a deeper understanding of the potential of using alternatives like biocomposites for interior and exterior architectural tiles. This project will see the development of the KENOPY shelter prototype utilising sustainably grown kenaf biomass and upcycled industrial waste content (such as slag, fly-ash and lime).

Impact area: Environment

Kevin Lim: "We intend to shift mindsets toward the acceptance and usage of organic fibres for both interior and exterior roofing tiles. We hope to create a new type of building tile that is not just climatically resistant for our region but also driven by Asian aesthetics."

8. We can design new hybrid music and art experiences

Project: Meta-current by Rizal Yatim

Research: "The turn towards virtual concerts in the wake of COVID-19 seems an obvious transition, but most shows fall short of replacing physical events entirely. Can we elevate the music experience by closing the gap between artistic expression and cutting-edge technology? Meta-current proposes a bold new service model for a novel music and art experience beyond the crisis. It looks through the lens of customer experience, using service design and trans-media storytelling. It also demonstrates how local performing arts practitioners can create new sources of revenue using VR.

Impact area: Communities and Culture

Rizal Yatim: "The research aims to provide an overview of the state of play for the performing arts in order to kickstart their innovation journey with immersive technology."

Race Kehel (Research Collaborator): "The performing arts industry is experimenting with new ways to perform for an audience while it explores and creates new sources of revenue beyond live shows. Being at the cusp of change, our research enables us to capture this movement that will undoubtedly shape the next normal for music and the arts."

9. We can design apparel using the region's crafts and agricultural by-products

Project: PALFCRAFT: Sustainable Heritage Textiles by NOST

Research: Traditional artisanal crafts are on a steady decline as artisans are unable to compete with commercial mass production. This project uses artisan-printed and woven yarns and fabrics derived from pineapple leaf fibres – an agricultural by-product found abundantly in Southeast Asia – in lightweight apparel and textiles. By ensuring a reliable source of sustainable fabric for artisans, and developing modern architectural prints made using heritage textile methods, the project seeks to combine innovation with heritage.

Impact area: Environment; Communities and Culture

Felicia Toh: "We're excited to preserve artisanal heritage and reduce agricultural waste through this novel fabric made from pineapple leaves, and believe that this story will find alignment with many brands similarly interested in sustainability."

10. We can design more empowerment for seniors in their daily lives

Project: Designing for Enjoyable Ageing by STUCK Design

Research: By 2030, one in four Singaporeans will be aged 65 and over, and not all seniors will have strong family support. Design for ageing tends to be approached from an outsider point of view. This project aims to uncover a seniors-led approach to enjoyable ageing, looking beyond the current prioritisation of safety and efficiency in care toward the provision of both physical and emotional support structures. In reframing the idea of 'helping the elderly' to 'supporting the elderly to get the help they want', STUCK changes the way design can intervene through fittings and furniture.

Impact area: Communities and Culture

Yong Jieyu: "We believe assisted living or some form of community-based living will play a critical role in tackling important ageing issues such as social isolation and we hope to contribute to this conversation through design."

11. We can design products to support local manufacturing

Project: Design & Made in Singapore by Studio Juju

Research: The design and manufacturing of products contribute to shaping a country's culture and identity in tangible ways. In recent decades, much of Singapore's product manufacturing has been outsourced to lower-cost manufacturing overseas. Inspired by our local production capabilities and contemporary times, Studio Juju aims to establish a collection of products designed and made in Singapore, as a creative movement that strives to find an emerging Singapore design identity.

Impact area: Communities and Culture

Timo Wong: "We hope to research and discover the opportunities of being locally made, and to showcase that Singapore's production capabilities and design go hand in hand."

Priscilla Lui: "We want to pursue production with local makers and close the loop of research-design-make-sell – to make more and design more. We also want to highlight this importance to us all, to understand how design and made in Singapore are important, both for designers and buyers."

12. We can design ways to improve our mental well-being at work

Project: Designing Practices for Better Mental Health and Well-being at Workplaces by Common Ground

Research: The World Health Organisation estimates that countries lose nearly US$1 trillion per year in productivity to mental health issues, but organisations are unsure how to provide better support. This project aims to build impactful and preventative upstream initiatives for enhancing mental well-being beyond the medical and/or therapeutic approaches.

Common Ground partnered with Studio Dojo, designers, mental health professionals and organisations, leveraging their human-centred lens and professional skills to redesign mental wellbeing initiatives and find creative ways of mobilising workplace communities.

Impact area: People and Organisations

Khee Shihui: "We hope this project will not only improve our quality of life, but also allow Singapore to have a stronger voice in the global mental well-being conversation."

13. We can design ground-up empowerment for youth to be city-makers

Project: The Next Generation of City-Makers by Shophouse & Co

Research: Urban planning and design in Singapore have evolved to include ground-up and community-led approaches. This project looks at the growing movement of active youth citizenry and connects young people so they may catalyse and design innovative solutions for their city. By identifying gaps and opportunities in the current city-making system, this project hopes to move youths from ideating to implementing change in their city, and develop a ground-up network of young city-makers.

Impact area: Communities and Culture

Stella Gwee: "We believe that young people have the fire and desire to solve problems. We want to help them discover and exercise their agency to turn their passion into meaningful actions and start different projects in the city."

14. We can design safe playgrounds to nurture creativity, empathy and meaning

Project: A Community Playground of the Future by ART-ZOO

Research: The digital age and the pandemic conditions have both influenced how families and communities interact, grow and learn through play. By reimagining learning and playing, this project encourages children to discover their natural curiosity. Art-Zoo believes the playground of the future will be rooted in experience, education and storytelling to help families discover their 'superpowers' for making change. The project studies the design experience of Art-Zoo's playgrounds and touchpoints, and establishes an educational framework that promotes creativity and empathy while creating the foundation for meaningful storytelling.

Impact area: Communities and Culture

Jackson Tan: "We see play as an important tool to inspire the creators of a brighter world, and to empower the future generation to solve the challenges of the twenty-first century."

15. We can design a better relationship with our work in an endemic world

Project: So Near, Yet So Far by Agency

Research: The impact of COVID-19 on how we live and work has been far-reaching, and we need to move past a 'reactive' response. How can the employer-employee relationship be supported in a sustainable way? Agency's design research sprint culminated in a workshop-style session to address the immediate, short-term and long-term needs of Singaporeans in the workforce. A self-help toolkit was developed to assist business owners and employees with reflecting on the individual, team and organisation to inform the transition to a 'new normal' for everyone at work.

Impact area: People and Organisations

Alistair Norris: "A lot of the conversation around remote working has been about what's coming next but very little has been about pausing, taking stock and talking about what it means to get to what's next."

16. We can design healthier community interactions

Project: Designing Communities for Sustained and Inclusive Growth by Common Ground

Research: The 2020 COVID-19 pandemic heightened fears and tensions in every country, including Singapore. Common Ground wanted to explore why some people turned towards the government for intervention in a crisis and why others turned towards themselves as well as each other, building their own response to emerging needs, threats and opportunities. Common Ground partnered a public-sector agency looking to support community-led, neighbourhood-based movements for health. Together, we uncovered emotional-linguistic patterns that predisposed individuals/groups to mobilising themselves or others to take actions that would meet their needs.

Impact area: Communities and Culture

Kuik Shiao-Yin: “We cannot tackle any complex issue alone – we need to learn how to do things together.“

17. We can design constructive conversations for the well-being of organisations

Project: Conversation Design for Large Systems and Society by The Thought Collective

Research: Organisations are linguistic constructs. As they grow, their people will face challenges that need to be discussed well to avoid destabilisation. How can we help organisations design constructive conversations that build truly worthy outcomes? This project studied why organisational conversations are complex, and developed useful core practices for change management. The resulting field-guide equips leaders to diagnose their situations and design constructive conversations for better outcomes.

Impact area: People and Organisations

Kuik Shiao-Yin "I want to see more people have better conversations that support their ability to live more meaningful personal, professional, organisational and civic lives."

ANNEX B: Good Design Research initiative

The intersecting crises and challenges of our time call for new approaches and innovative solutions to address today's most critical issues, from pollution and waste, to climate change, inequality, pandemic-induced stress and disruption, and our ageing society.

Singapore designers are turning crises into opportunities. They are rising to tackle society's biggest questions with bold new initiatives. They are designing for impact through research and experimentation with materials, technology and processes.

Launched in March 2020 in the middle of a pandemic year, Good Design Research by DesignSingapore Council underscores the importance of how design backed by deep research can make a true difference – empowering designers to build deep domain knowledge and solve the most pressing global and societal challenges.

The initiative provides homegrown designers with sponsorship, mentorship and industry support to design impactful solutions through research and experimentation, supported by a wide network of knowledge partners.

Following the launch of the initiative, DSG made open calls for proposals across three tracks: identify and culture, systems and processes and new technologies (material or digital). Submissions were assessed by an external evaluation panel, comprising members with expertise in business, technical and design recognised by the industry, based on a set of selection criteria such as strength of proposal, proposed design impact, enhanced unique value proposition. There are also a set of eligibility criteria that practising designers need to fulfil, such as design enterprises being incorporated in Singapore for more than three years.

For more information, please visit https://www.designsingapore.org/initiatives/good-design-research.html

About the National Design Centre

The National Design Centre is the nexus of design, the meeting point for creative minds and businesses and the venue for presenting all things design. It is also home to DesignSingapore Council. The repurposed, award-winning conserved building is as much an emblem for outstanding Singaporean design and architecture, as it is a thriving venue for visitors to attend showcases and programmes. Find out more at www.designsingapore.org/national-design-centre.html.

About the DesignSingapore Council

DesignSingapore Council's (Dsg) vision is for Singapore to be an innovation-driven economy and a loveable city through design by 2025. As the national agency that promotes design, our mission is to develop the design sector, help Singapore use design for innovation and growth, and make life better in this UNESCO Creative City of Design. The Dsg is a subsidiary of the Singapore Economic Development Board. For more information, please visit www.designsingapore.org.

MEDIA CONTACTS

DesignSingapore Council
Serene Lim
Communications
DesignSingapore Council
Serene_Lim@designsingapore.org
D: +65 9877 1595

Sharhind Singh
Edelman for DesignSingapore Council
sharhind.singh@edelman.com
D: +65 9001 4639