

NGUTU KÄIKÄ

Tātaki Whakakitenga
Exhibition Guide

Shear Wool Power 2025



Industrial Design Year 2
22 - 31 October

Strong wool, as a category of sheep's wool, makes up approximately 90% of New Zealand's total wool production. In contrast to the well-known fine merino fibre, strong wool is characterised by its coarse, thick fibres and is more commonly used in bedding, mattresses, carpets, insulation, and upholstery. Over time, the wool in these applications has been replaced with synthetic alternatives, relegating strong wool to a by-product or waste product of the meat industry. This perception, and a lack of demand, has become a significant problem for New Zealand's wool growers - it currently costs farmers more to shear their sheep than they are getting for the sale of their wool.

With increasing industry and consumer attention on natural, renewable and biodegradable materials, there is an opportunity to increase demand for this locally grown, natural fibre. In part, this is being achieved with a return to strong wool in traditional application areas. In this Strong Wool studio paper, second year Industrial Design students are challenged to take this further, exploring and harnessing the functional and aesthetic properties of strong wool in the design of innovative, value-added products. Taking a material driven approach, students study strong wool to better understand its properties and explore the potential of this fibre to contribute to regenerative design solutions.

Shear Wool Power presents strong wool innovations; exploiting the exceptional properties of this local natural fibre in new product designs.

ABEL WONG

ThumbShield

Getting a jammed thumb while batting is inevitable. However, injuries can affect a player's batting performance and their confidence. ThumbShield offers baseball players ultimate comfort, performance, and protection, reducing the sting and pain from thumb jamming.

Unlike the traditional silicone thumb guards, ThumbShield's design increases comfort with its wool padding and uses an ergonomic shape to fit better in your hand. Felted strong wool, known for its iconic properties of shock absorbing and breathability, are used as a base for the guard. This is covered by leather to increase the grip against the bat, and stitched together with a baseball seam pattern.

With ThumbShield you can hit 'tanks' without worrying about your thumb.



ADRIAN CRUZ

BakeMate

BakeMate is a revolutionary dual-purpose kitchen essential: part oven glove, part heat-resistant mat. Designed for those who love to cook but refuse to compromise on safety or sustainability, BakeMate offers unmatched protection for hands and surfaces.

Its unique foldable double-flap design wraps securely around your arms when handling hot cookware, then unfolds into a durable mat for placing pots and pans directly on your countertop. No need for multiple kitchen accessories; BakeMate does it all.

Crafted with super felt-wool lining and filled with carded wool, it harnesses the natural thermoregulating and fire-resistant properties of wool to shield against burns from open flames and high temperatures. Unlike conventional oven gloves made from flammable synthetics, BakeMate is naturally flame-retardant, waterproof, and built to last. BakeMate is more than a product; it's a movement toward reducing household clutter and embracing eco-friendly materials without sacrificing quality or comfort.

BakeMate. Cook boldly. Stay protected. Live sustainably.



ALEXANDER PENNEY

TuffPak

TuffPak adds a layer of reusable protection to your conventional meal box delivery service. Currently, eggs and other fragile food items are not guaranteed protection due to the packages they are delivered in. Designed to travel in the meal box, and unloaded on site, TuffPak utilizes the natural superpowers of NZ strong wool to keep the fragile foods in your meals safe and fresh, lowering complaints and boosting customer satisfaction. Once used, these can be left out for collection at your next scheduled delivery to be reused for their useful life.

TuffPak's PLA plastic frame can sustain shocks thanks to its absorbent walls and can be recycled or composted at the end of its life cycle. Tuffpak will add sustainable protection to your brand, ensuring your deliveries provide quality over the competition.



ALIA MIKYLA POLON

Grab n Grow

Life on the road invites freedom. However, keeping food fresh and minimizing waste can be hard to achieve. Grab n Grow responds to this lifestyle through a sustainable microgreens kit. Made from paper pulp reinforced with New Zealand strong wool, this low-value byproduct of the meat industry is reimagined as a functional, durable, biodegradable material. Its lanolin-coated interior naturally repels water and provides antibacterial and antifungal protection, enhancing freshness and longevity for on-the-move dwellers.

The packaging itself functions as both a water-resistant container and a growing medium, streamlining the experience and eliminating the need for pots and excess materials. Grab n Grow is designed to sustain, store, preserve, and nourish those who are constantly on the move. By transforming low-value agricultural waste into a circular design solution, it offers travellers a meaningful way to journey sustainably and eat freshly on the road.



Grab n Grow
microgreens



Grab n Grow
microgreens

AMELIA BROWN

Woolyroots

Woolyroots is a classroom friendly, reusable growing kit designed to educate children about the life cycle of a plant, from seed to maturity. Unlike traditional growing kits, Woolyroots uses water and wool to grow plants, making it soil free. Acrylic windows allow children to observe the growing process as the seed sprouts and roots emerge, while HDPE plastic supports add a playful pop of colour.

The main material of this kit is the wool growing medium which removes the need for aeration, electricity, and water nutrients of existing kits. Wool's natural properties supply the nutrients plants need as it decomposes, supporting healthy plant growth. When the water level gets low, children can use a pipette to refill it. Once the seed germinates, the plants and wool can be transferred directly into the school garden.

Woolyroots provides a playful nontoxic growing kit that encourages children to learn about plant growth.



BENJAMIN BOWIE

Vinyl Sanctum

For the dedicated vinyl collector, preservation is paramount. Yet, current storage solutions often leave collections vulnerable to the unseen threats of temperature shifts and humidity. Vinyl Sanctum was born from a harmony of natural materials, designed to create a sanctuary for the audiophiles and archivists cherished vinyl.

Vinyl Sanctum's story begins with a robust reclaimed wood exterior providing structural security. Inside, a dense wool felt lining actively creates a stable microenvironment, buffering against the thermal shocks that warp vinyl and absorbing excess moisture to shield precious artwork from mould. For the enthusiast dedicated to their craft, Vinyl Sanctum offers peace of mind, ensuring every record is perfectly preserved for a lifetime of listening.



CHRISTY BOTHA

Niraflow

Do you ever worry about microplastics affecting your well-being and the environment around you? Niraflow balances function with ecological impact, packaged in an eco-friendly and sustainably designed greywater filtration system for off-grid accommodation and nature retreats.

Supporting the environment in two key ways, Niraflow initially aims to reduce microplastic pollution released by processes such as washing clothes and dishes in remote accommodations. Additionally, water usage is reduced by channelling the filtered water back into use in these washing processes.

Developed through research and testing, the Niraflow system integrates natural filtration media with replaceable components and a long-lasting, recyclable body, allowing for ease of maintenance and adaptability in a variety of contexts. It works in a three-part system, removing sediments in the water, reducing harsh chemicals released, and capturing microplastics in the wool fibres, greatly reducing the impact greywater has on the environment.



CONNOR BOWES

Nocturne

Nocturne combines strong wool and reclaimed hardwoods to create a refined sensory experience while playing the guitar. Played unplugged, Nocturne dampens the resonance, helping reduce the impact on others in shared or high-density living spaces. When playing plugged in, at high volumes, Nocturne's inner layers of wool reduce the chance of unwanted feedback for a discerning playing experience.

Nocturne is carefully crafted from reclaimed Rimu and Matai, paired with New Zealand strong wool. Carefully selected areas of wood, which would normally dominate the weight and resonance of a traditional electric guitar, are replaced with wool. In this way, the design of Nocturne creates a lightweight, high-quality solution for high-density living, with the added benefit of reduced strain on musicians' shoulders, neck, and back.



EMILIE KRISTINE SKØDT

Woolwave

Woolwave is an interchangeable wall-mounted pin board that combines storage with acoustic functionality. It is designed for school environments and addresses teachers' need for multifunctional wall systems while also encouraging interaction from children. The modular design allows accessories such as pegs, pockets, and holders to be rearranged, supporting both the display and storage of artworks and everyday classroom tools.

The baseboard is made from lightweight, durable plywood, which offers affordability and strength, making it accessible to schools. The strong wool surface is naturally dyed with tea, providing a sustainable material with sound-absorbing qualities. This both improves classroom acoustics and introduces a tactile element for students to engage with.

By combining storage, display, and sound absorption into a single solution, Woolwave offers a flexible, eco-friendly design that enhances both the functionality and ambiance of learning spaces.



JAMES CLARK

BioBuds

BioBuds are a single use earplug designed for occasional use hearing protection at events, site inductions, and factory tours. Through its innovative design, BioBuds aims to replace the annual billion wasted polyurethane earbuds with a material system that supports local farmers and makes biodegradable disposal part of the user ritual.

BioBuds combine strong wool fibres with a food grade biopolymer to create a soft plug that seals well, stays elastic during storage, and returns to soil after use. The minimal packaging pouch keeps moisture in, then composts alongside the plug, offering a real alternative for occasional use of earplugs.

BioBuds provide comfort, hearing protection, and care for the land. The story is simple. Protect your hearing today, return buds to Aotearoa's soil tomorrow.



JOSEFINE KJÆR LAURSEN

Soundshelf

Soundshelf is a multifunctional acoustic panel designed for retail environments, combining sound management with product merchandising. Designed to enhance point-of-sale areas, it improves the quality of shared spaces by reducing noise and boosting visual merchandising, creating a calmer environment. Its modular design allows for easy customization. Acoustic structures can be replaced with shelving units using pegboard-style assemblies to adapt to changing interior layouts and retail requirements.

The Soundshelf system features shelving, acoustic elements, and fixing points, providing convenience and flexibility. The outer surface is primarily made of layers of super-felt and wool, while the shelves are constructed from Pine. Both materials are valued for their acoustic and aesthetic qualities, balancing practicality and visual appeal. The Soundshelf supports dynamic retail environments where atmosphere and adaptability are essential.



JOSHUA KUBA

Contra

Volleyball players spend a lot of time hitting the ground. We slide, kneel, dive, fall, and throw ourselves on the ground all day long for the sport we love. However, our kneepads currently can't move with us to protect us where we need to go to keep the ball in play.

Contra begs to differ on that. Designed to help you move like all the rest of your muscles, Contra contracts as you move to protect against those heavy kneeling moves and extends back out to cover for you as much as possible in those chaotic slides and dives. The Strong wool that brings Contra to life allows for superior padding, memory, and exceptional breathability all at once. With great moisture protection and naturally durable fibres, this pad will last longer, protect you when you need it most, and stay out of your way when you don't.



JOSHUA TAYLOR

Strike

Strike offers an innovative new form of focus pads in a shape that accounts for a natural guarding position, ensuring a more comfortable experience and quicker guarding against punches, hooks, kneeing and kicking.

I am a 3rd-grade black belt in Gojyuryu Karate, and I have been training for 15 years. Having been put in charge of instructing ages as young as 8 to adults, I care about the legacy of this art, and the impact it could have on future generations.

Current-day focus pads are remarkably simple with minimal changes over many decades. By combining the shock-absorbing properties of New Zealand's strong wool and an angled focus pad design, the introduction of Strike focus pads to dojos will provide a more comfortable training experience for all practitioners.



JOSHUA VAN DALSUM

Kāinga Matau

Surrounded by the ocean, rivers, and lakes, Aotearoa offers an abundance of fishing opportunities. But so much variety means chaos in an angler's fishing bag. Kāinga Matau - Home of the Hook - is a hand-crafted tackle box designed to care for your gear between fishing trips. Its exquisite design offers an attractive display of your gear arranged by fishing type, encouraging a habit of unpacking new products at home. This ensures proper disposal of packaging, keeping it out of Aotearoa's wild spaces respecting the Māori value of kaitiakitanga.

The airflow through the felted wool effectively regulates humidity within the box, allowing wet gear to dry, and reducing rust while keeping odors contained. Made from responsibly sourced materials, including reclaimed native wood and strong wool from Kiwi farmers, Kāinga Matau is inspired by Aotearoa's land and Māori culture, built to last and to be passed down through generations.



JULIE BLADINIÈRES

Tākave

Tākave combines functional comfort with cultural identity to address both the physical and emotional aspects of anxiety. A large part of Cook Island culture is dance, yet many young dancers hesitate to participate due to experiencing heightened anxiety before performances. The Tākave jacket is designed to provide discreet, wearable, and culturally meaningful support.

Inspired by weighted blankets, Tākave features internal panels of comforting, weighted, strong wool that create deep pressure stimulation, imitating the feeling of a hug to help lower cortisol and increase dopamine and serotonin release. Motifs on the jacket are inspired by the Cook Island quilting practice called tivaevae, evoking familiarity, pride, and connection to culture. The collar is infused with the scent of tiare, a flower native to the islands, evoking memories of home and cultural belonging.

By supporting cultural heritage and personal well-being, Tākave encourages young dancers to engage in cultural dance and carry traditions forward.



LINDA PHAM

TechTote

TechTote is a roll-up case for carrying and organising electronic components. Designed for students and beginners, it replaces bulky plastic and cardboard kits with a compact, portable storage alternative. Made from strong wool, TechTote utilises its shock-absorbing, anti-static, fire-retardant, and temperature-regulating properties to protect delicate components. The carefully arranged layout highlights key elements while concealing clutter to streamline the circuit-building experience.

Born from my personal frustration of carrying rigid kits across campus and on public transport, TechTote was designed to make electronics storage more convenient, adaptable and enjoyable. Its playful form provokes curiosity for users new to electronics, while its durability ensures it meets long-term needs. TechTote challenges conventional storage with a functional and visually distinctive approach, encouraging new users by bringing a dimension of creativity and simplicity to DIY electronics.



LUCY CARR

Shear Relief

Blisters are a common barrier for walkers and trampers, caused by friction, moisture, and ill-fitting footwear. They limit mobility and enjoyment of outdoor activities, yet current solutions such as synthetic plasters and adhesive tapes often sacrifice comfort, breathability, and durability. Many also rely on petroleum-based plastics and single-use formats, creating waste that clashes with the values of people seeking to tread lightly in natural environments.

Shear Relief introduces a portable blister protection kit that leverages the natural performance of strong wool fibers combined with biodegradable backings and skin and environmentally safe adhesives. Designed as a compact, medical-style kit, it provides cut-to-size pads, backup adhesives, and lightweight tools, giving users adaptable and reliable protection in changing outdoor conditions.

By uniting wool's cushioning, antimicrobial, and moisture-wicking qualities with a repairable and sustainable system, Shear Relief offers both immediate comfort and long-term value, innovating beyond single-use plastics towards user-centered, eco-conscious foot care.



NELS VICTOR KROGSHAVE STOFFERSEN KIDMOSE

AoteaCloud

AoteaCloud is a sustainable windscreen protector, designed for nature-loving freedom campers in New Zealand. Traditional protectors are usually made from plastics and nylon, generating intensive waste. In contrast, this design uses locally produced strong wool blended with hemp - both biodegradable, renewable, and eco-friendly materials. Wool and hemp not only provide insulation but also absorb moisture, helping to create a more comfortable sleeping environment inside the van by reducing dampness. In this way, AoteaCloud improves the camping experience while directly addressing environmental concerns.

By drawing on New Zealand's wool heritage, the protector embodies a cultural stamp of quality and innovation from nature. It offers a practical solution to replace synthetic products, reduces environmental impact, and reflects the values of users who love the outdoors. This design demonstrates how natural materials can solve modern problems while inspiring greener, more responsible lifestyles through a circular economy.



NOAH SKOUBOE

SoftSky

SoftSky is a ceiling-mounted acoustic lighting solution designed for children's hospitals. In this setting, children often experience anxiety and stress as a result of being in a new, uncomfortable, and noisy environment. SoftSky combines calming fiber-optic lights with wool's natural softness to create a comforting night sky galaxy; a galaxy that can also provide a relaxing conversation starter and ease the tension between children and caretakers.

SoftSky utilizes wool's properties of sound absorbency and moisture regulation, creating a calmer, healthier atmosphere. Though developed with hospitals in mind, the panel is flexible and can be used in other contexts where grid systems are used as ceiling solutions, such as dental clinics and daycares. Designed as modular 60x60 cm panels that fit existing suspended ceilings, the system is universal and scalable for institutional use.

In places children usually associate with anxiety and stress, SoftSky helps shift this experience to one of calm and comfort.



OLIVER LLOYD

Roll a Rat

Roll a Rat offers a new approach to pest eradication, supporting New Zealand's goal of becoming predator-free by 2050. Lightweight and easy to use, Roll a Rat is designed to broaden the number of New Zealanders involved in the fight against pests. At its core, the station utilises strong wool—a biodegradable material that can be placed in the bush without the need to retrieve it. Its design caters to rat behaviour: the tunnel-shaped wool keeps bait dry and insulated, while the addition of beeswax enhances sensory appeal. Outer rings elevate the station off the ground, improving airflow around the bait and helping to prevent the station from being knocked over. The flat-pack design also allows for easy transportation and setup. Roll a Rat is impregnated with native seeds, which grow over time to help disguise the station—creating its own ecosystem in the process. Kill a rat, plant a forest.



ROLL a RAT

KILL A RAT, GROW A FOREST

PLACE CENTRE
BAT! ROLL HERE



PEP POPATA

HeatLocker

Simple, practical, and effortless to use, HeatLocker is designed to warm your clothing and provide comfort on cold mornings by the water. Specifically created for early morning Waka Ama training, its rechargeable heated pads are powered by an integrated power pack, keeping your base layers comfortably warm while you are outside training or working.

Changing into warm clothes after training supports your body's recovery and promotes overall wellbeing. On winter mornings when the chill sets in, fingers go numb, movement slows, and even simple tasks become harder, HeatLocker provides reliable warmth exactly when you need it, helping your body recover from the cold and making it easier to continue your day.

Whether it is a frosty dawn, a demanding outdoor activity, or simply a moment when you need to warm up, HeatLocker offers a simple, immediate solution to prevent the cold from holding you back.



RAJIV CHANDRA

Garden Buddy

Garden Buddy combines comfort, durability, and environmental care in a sustainably designed kneeling pad to improve the gardening experience. Design features include a weatherproof exterior that withstands outdoor use, a soft, quilted top that keeps knees comfortable during extended garden use, handy side sleeves for small tools, and a braided wool handle, making it easy to carry. Instead of the usual synthetic foam, Garden Buddy is filled with strong wool, providing excellent cushioning while reducing environmental impact. Designed with the circular economy in mind, the design features renewable, biodegradable materials that can be repaired, reused, or composted at the end of their life. Thoughtfully crafted from start to finish, Garden Buddy demonstrates how simple design choices can create products that are both effective and gentle on the planet.



REBECA LOPEZ VALDES

ARVA

ARVA is a beginner-friendly, indoor plant pot designed for inexperienced or busy plant enthusiasts. Common materials like plastic, ceramic, wood, and metal can harm plants if not managed properly, leading to issues such as overwatering, poor airflow, overheating, and the release of toxic additives. ARVA addresses these problems in a pot that is made from 100% felted strong wool, with a ceramic base.

Wool's properties make it an ideal material for this purpose; it allows airflow and effective drainage while retaining water within its fibers. Additionally, it provides thermal regulation, and the fibers' degradation supplies nitrogen to the plants. ARVA functions just like any other plant pot: water your plant until the soil is adequately moist, then place it in sunlight or shade as needed. When your plant outgrows the pot, the wool container can be planted directly into the soil of a larger pot, to biodegrade and provide further nutrients to the plant.



SAM ELWORTHY

FOIL SAFE

Wingfoiling is a highly competitive sport, where everyone competes for that little advantage through cutting-edge gear and technology. As this setup is a significant investment, wingfoilers are conscious of caring for their equipment, to prevent damage and keep their gear in good condition. Many wingfoilers feel that that current protective covers can be difficult to use and don't contain the same thoughtful design and considerations as is put into the gear itself.

FOIL SAFE is designed to address the problems of current options. The unique antimicrobial property of the woollen cover prevents mould growing in damp conditions, and the padded Superfelt corners protect the foil's sharp edges. Velcro and zips, which scratch the foils and wear out in harsh, salty conditions, are replaced with a seamless magnetic closing system sealed in EVA foam to prevent rust.

FOIL SAFE - allowing wingfoilers to foil safely and safely store their foils.



VinGuard

VinGuard is developed within the context of modern lifestyle and sustainable design culture, where people travel frequently, purchase wine directly from producers, and value environmentally responsible products. Designed for wine enthusiasts, tourists, and collectors, VinGuard is a sustainable wine travel bag crafted from Strong Wool, chosen for its durability, shock absorption, and biodegradability. The design process involved extensive testing to determine the optimal wool composition needed to prevent bottle breakage during travel. Prototypes tested different assembly techniques, before achieving the final form, which ensures both strength and a refined aesthetic.

VinGuard's design offers superior impact protection, temperature regulation, and UV resistance, preserving the wine's quality. Beyond its travel purpose, VinGuard functions as an elegant everyday wine bag, merging practicality, craftsmanship, and sustainability. The project highlights how thoughtful material innovation can connect lifestyle, design, and environmental awareness in one cohesive product experience.



WEI SHIN CHONG

Woolfden

Have you ever stepped on your dog's toys scattered around the house or felt their things slowly taking over your space? Woolfden was created to make everyday life easier, giving dogs a cozy spot to rest while helping owners keep their homes tidy and organised.

Designed for compact homes, Woolfden combines a soft, comfortable bed with a built-in drawer that neatly stores toys, leashes, and accessories while keeping them always within reach. Crafted from sustainable wood and strong wool, it is designed for both durability and comfort. Rounded edges protect playful pets, while natural materials give it a warm and inviting feel.

Woolfden is more than just a dog bed, it helps bring calm and order to busy households. By turning clutter into simplicity, it balances function, comfort, and thoughtful design, making everyday life smoother and more enjoyable for both pets and their owners.



WILL GIBB

Wool-Fi

Wool-Fi reimagines speakers demonstrating how good sound and sustainability can co-exist. Modern speakers often rely on synthetic acoustic foams to improve sound. Over time, these lose their structure, affecting sound performance and releasing microplastics into the environment. Rooted in the idea of incorporating New Zealand strong wool into consumer electronics, Wool-Fi replaces these foams with wool, a local fibre, that utilises its natural properties to effectively absorb and dampen sound, significantly improving its quality and clarity.

Wool's natural elastic properties allow it to absorb sound for years without losing its structure. The strong wool knit cover protects the components from dust and damage, so you can enjoy Wool-Fi both in and outdoors. Knitted in its raw natural shade, the wool cover softens the Wool-Fi's presence so that it naturally blends into its surroundings and evokes a sense of comfort.



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With thanks to our Industry Partners

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Exhibition Guide

Te Wai Ngutu Kākā Gallery
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2025

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