Architects have long been imagining how we will live in the future. In the 1920s it was Italian architect, Antonio Sant’Elia, designing highly industrialised cities of the future. And in the 1960s and 1970s, Archigram dominated the architectural avant garde with its playful, pop-inspired visions of a technocratic future. Architects like these, and many since and in between, have enthusiastically embraced new technologies to design how societies inhabit the world.

Today architect Chris Bosse imagines future cities as large networked systems with buildings that respond to the environment. As co-founder of the architectural firm, Laboratory for Visionary Architecture (LAVA), Bosse explores new frontiers for architecture by combining future technologies with naturally occurring systems – think soap bubbles, snowflakes and spider webs – using fewer materials, less energy and minimal resources.

For CUSP, Bosse presents a sculptural representation of the ‘future city’ – a soaring stretched membrane anchored to the gallery floor by rectangular ‘building’ blocks. You can wander through this city and think about your own relationship to the natural and built environment.

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Many of the problems we grapple with today find their solutions in the creative imaginings of our great designers. George Khut is a designer who is helping to create products that help to calm sick children.

Brighthearts is an application designed to help seriously ill children manage stress and anxiety while undergoing painful procedures in hospital. Using a clip on heart monitor and an iPad, the ‘App’ creates a biofeedback loop of calming colours and sounds that interpret and respond to the child’s heart rate making them progressively calmer and better able to cope with the stress of procedures and allow their bodies to heal.

George Khut who developed Brighthearts with Dr Angie Morrow (a paediatrician with Kids Rehab at The Children’s Hospital at Westmead in NSW) invites us to understand our world through sensation. Khut is an artist and design researcher working across electronic art, design and health. Over the past decades, he has designed body-focused interactive artworks that allow us to reflect on our relationship to the world around us, and inside us. In CUSP we can experience the affects on our bodies by trying out some of the prototypes for Brighthearts and experiencing design in a whole new way.
We keep hearing that Sydney doesn’t have enough housing to support our growing population. This is part of a global housing crisis that demands new thinking. New materials can be used without heavy machinery and are more environmentally sustainable. This, along with flexible designs that enable spaces to transform, according to the needs of the people living within them, are innovative approaches that could hold the keys to overcoming such housing shortages.

Brisbane based architect, Anupama Kundoo works to reduce the environmental impact of building by designing housing that is sustainable, affordable and high quality. Kundoo has used ferrocement, which is a product commonly used in boat building, to create light structures that are efficient and have a low environmental impact. In CUSP Kundoo presents a full size cardboard prototype for LIGHT MATTERS that will allow us to experience Kundoo’s engineering – a strong, light weight structure that is formed using folding techniques inspired by the Japanese art of origami.
A leaky tap, no insulation, a blocked toilet, a busted stove – these are all the sorts of day to day problems that, when combined with a remote location, lack of services, overcrowding and extreme weather conditions can lead to otherwise preventable health problems. Popular myth has it that people living in these houses cause problems by neglecting and abusing their properties. In reality it’s down to poor design and building practices.

When architect Paul Pholeros, Paul Torzillo (a Thoracic Physician) and Stephan Rainow (a public and environmental health officer) arrived in Anangu Pitjantjatjara Lands in northwest South Australia in 1985, their brief was simple: stop people getting sick. They designed a methodology that became the ‘Nine Healthy Living Practices’ – principles used to systematically assess and address the living environments of disadvantaged Indigenous communities in remote Australia. Over the past 25 years, 195 ‘Housing for Health’ projects have improved over seven thousand houses across Australia, with successful projects ongoing in Nepal and public housing in Brooklyn, New York City.

For CUSP, Healthabitat shows us their design process in a series of interactive displays that invites us to connect housing design with health outcomes. Discover that simple design solutions like fixing power points, creating better insulation and designing working kitchens, can dramatically alter people's lives.

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When we think of medical technology, aside from the incredible scientific inventions that help people to hear and speak and move, we might often imagine only rudimentary examples of skin-toned appendages only reminiscent of the functionality of the body part they replace. Rather than being just about how an object looks, design is an integral part of how an object functions, feels and appeals. Design is part of the human experience.

Melbourne-based artist and designer, Leah Heiss, has set out to change the way that these devices look making them more desirable to wear. Early in her research, Heiss discovered that many people opt out of wearing or using their medical devices (such as hearing aid technologies or medic jewellery) because they are perceived to be unattractive and have a social stigma attached. Heiss’ 2007-8 Diabetes Neckpiece is a shining example of one of her aesthetically pleasing medical designs. Crafted as a desirable piece of jewellery, Diabetes Neckpiece is an alternative to a syringe, functioning to painlessly and discreetly administer insulin to diabetes sufferers using nanotechnology.

CUSP presents the iterative design process behind Heiss’ projects categorised as ‘therapeutics’, presented as a series of prototypes created using additive manufacturing (3D printing), including: a series of hearing technologies for the hearing impaired, high performance medic jewellery, an ECG neckpiece to discreetly measure heart rate and her Seed Sensor, which is a swallowable device that unfurls in the digestive tract like a flower, collecting bubbles of gas that can be an early indicator of disease.

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Fashion gives us all a way to carve out an identity. What we wear defines us but is limited by what’s on offer each season or how we assemble fashion pieces new, vintage, handmade, into our own ‘personal look’. But what if the way we feel, think, imagine and respond made its mark on what we wear?

MATERIALBYPRODUCT is a bespoke fashion house that designs systems rather than garments. MATERIALBYPRODUCT’s Creative Director Susan Dimasi believes in creating clothes that become part of the life journey of the wearer. In last year’s Bleed project, a series of MATERIALBYPRODUCT designed garments were marked by hand with a coloured marker, which ‘bled’ into the fabric activated by the body heat of the wearer. Emotional states such as love, passion, frustration or anxiety trigger increases to body temperature when then change the look and feel of the material.

For CUSP, MATERIALBYPRODUCT presents Embodiment, the second project to explore the notion of ‘bleed’. Five public figures have been invited to wear a MATERIALBYPRODUCT dress and publicly document their emotional experiences online over the course of three months. The private musings of the wearers will be broadcast via social media and blogs for audiences to follow. Once the journey is complete and the fabric has bled, MATERIALBYPRODUCT will digitally scan the unique pattern and create a new textile design from which new MATERIALBYPRODUCT garments will be made. Only after purchasing the dress and cracking open the sealed envelope will the identity of the original wearer be revealed.

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We live in the information age. A time when masses of information are generated, analysed, presented and available every waking minute of the day. Information designers use their skills to take large amounts of data and translate it into visually interesting and accessible formats so that we can quickly and easily come to grips with otherwise very complex and dense subject matter. Data visualisation is important to anyone who wants to communicate a complex idea.

Greg More is a designer who has done just that. He takes massive amounts of data and translates it into visual stories, such as communicating how water is used in urban environments. As a designer, senior lecturer at RMIT University, and founder of data visualisation studio OOM Creative, More has worked on many projects that demonstrate this powerful design discipline to make complex information simpler and easier to understand.

For CUSP, More will demonstrate how he does this by drawing on recent projects and adding to his work as CUSP unfolds in its national tour.
What is the future of play? How can we design better interactive experiences than are currently available on the market? From adventure racing to ocean swimming we're all out there looking for physical exertion wrapped up in a fun, social and adventurous experience.

Florian 'Floyd' Mueller and his team at the Exertion Games Lab at the Royal Melbourne Institute of Technology are designing fun sporting experiences like Hanging Off a Bar and Cart-Load-O-Fun, that require intense physical effort and a smile while using online technology. At CUSP you can try Hanging Off a Bar above a projected simulation of a wild river for as long as you can, resting when an occasional 'raft' floats downstream. The longer the player is able to hang on, the less frequent the rafts become, rapidly exhausting the hands, arms and stomach muscles. This deceptively easy game is in fact difficult – very difficult. A typical round lasts a mere 30-50 seconds before players drop from the bar exhausted.

On selected trains running between Central and Casula Stations in Sydney, you can participate in Cart-Load-O-Fun. This interactive experience between two players allows strangers to play an impromptu game that transforms commuting on public transport.

Creating new ways to use gaming technology to support physical health, Mueller’s work is throwing us some challenging ideas that presents new ways for how we might be motivated, engage and play on a social level with others.

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Designer Profile

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Mushin ensures that every fanciful invention is scientifically possible. Whether sketching up plans for suspended micro-cafés powered by farting cows, or designing public amenities that compost human waste for use in urban fruit farms, every aspect of Mushin’s designs are grounded in technical and mathematical certainty. As Mushin puts it, his work is an exercise in "logical absurdity."

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Ecological designer, sustainability planner, industrial designer, hack engineer, artist, shadow puppeteer – Stephen Mushin is a creative tour de force. Mushin applies his creativity to solving real world problems and imagining new possibilities for a future world.

CUSP profiles Mushin’s most recent project is a zero-waste, human-powered, low-cost aquaponics system for growing food in developing countries. For this project, he and his collaborators, Dr. Wilson Lennard and Engineer Neil Faragher, won the British Council’s ‘Big Green Idea’ grant in 2011.

CUSP Profiles will also present a series of satirical illustrations from Mushin’s upcoming graphic work, a visual documentation of ecological design. As wildly captivating as his aquaponics systems are inspired, the illustrations reveal a world where scientific opinion flirts with imaginative play to create a series of intriguing possible future worlds.
Designer Profile

Alison Page
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Home is a place where we feel safe and secure. Within its walls home contains our stories and memories – a storehouse for everything that makes up our unique identity. *The Sit Place* is the work of Indigenous designer Alison Page who, as Creative Director of the National Aboriginal Design Agency (NADA), has reimagined home by filling it with everyday objects that resonate with stories about the land and its people.

Page founded NADA as a vehicle to connect manufacturers with unique design products such as carpets, lighting, furniture, textiles, wall coverings, and architectural products with an Aboriginal aesthetic, telling ancient stories through contemporary design.

Through *The Sit Place*, CUSP audiences will engage with our Indigenous history in the familiar territory of the lounge room – giving us all the opportunity to imagine a future incorporating these stories in the design of our own homes.

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Super Critical Mass riff on many traditions, including the orchestra, homogenous ensembles, sound installation, community arts and public art practice.

For CUSP, Super Critical Mass will present a one-night-only live Sub Mass in Sydney. This performance will be documented and recreated digitally within the CUSP exhibition space as a multi channel audio-visual installation. The configuration of the installation is designed to change across the seven exhibition venues, offering audiences varying pathways through the ‘digital mass’ and subsequently, infinite compositions of the documented soundscape.

Super Critical Mass offers us not only a new way to listen to music but a new way to experience the sounds we hear around us everyday.
Intelligence is difficult to pin down. In a general sense, it describes the brain’s ability to reason, learn, plan, deploy abstract reasoning, experience emotions and exercise self-awareness. In her work artist and researcher Mari Velonaki is seeking to understand what human intelligence is and how we can pass it on to non-human objects.

For the past 15 years, Velonaki has established herself as a leading practitioner at the nexus of art, science and design. She was the first artist in Australia to use a range of intelligent interfaces in her work, including speech recognition, breath activation, computer vision, electrostatic charge measurement, light-reactive screens, robotics, distributed computer systems, laser measurement systems and multi-sensor data fusion.

In late 2012 Velonaki embarked upon a collaborative project with leading researchers in the field to investigate intelligence through the creation of interactive wallpaper that can sense human touch, sound, breath and marks made on its surface. In response, the wallpaper will weep, change colour, display (and rearrange) text and drawings. It becomes the active skin of a ‘living’ system – an evolving memory bank that collects human-machine communication and data. CUSP presents Blue Iris in chapters. As Velonaki and her collaborators develop new forms of intelligence for the wallpaper between 2013 - 2015, these components will be added to the Blue Iris room, covering the walls in an increasingly responsive and intelligent skin.

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