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DXB210
Critical Experience Design

Overview & Introduction

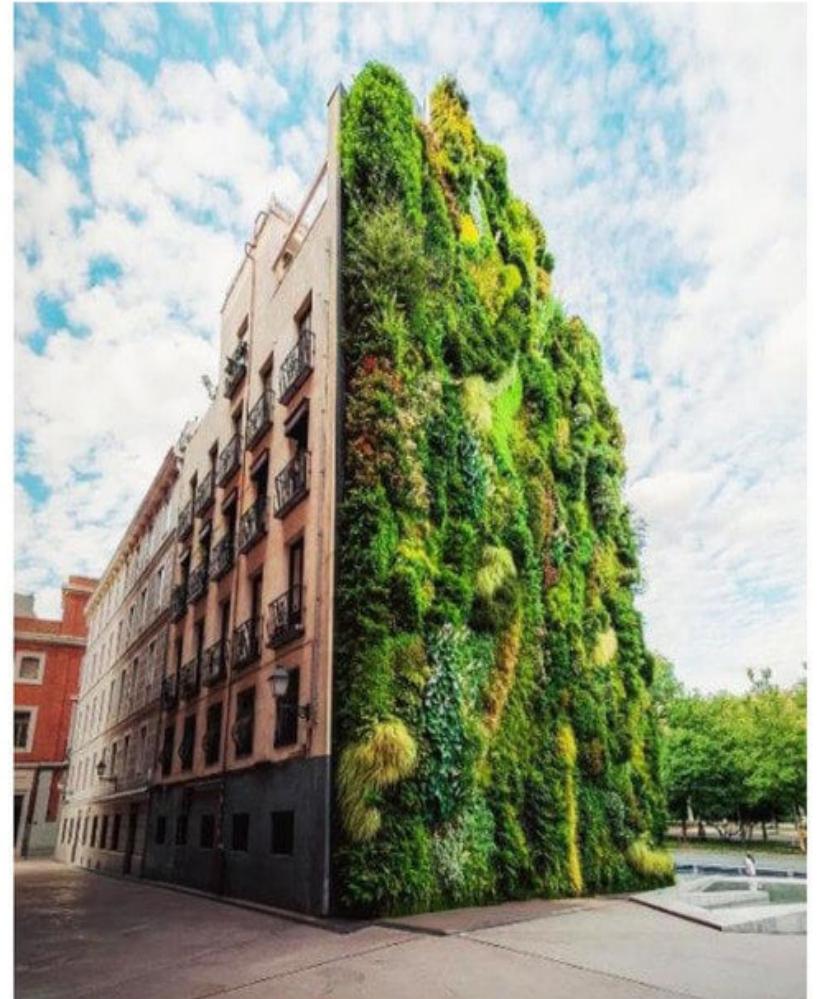
More-Than-Human Technological Futures in 2070

The theme “More-Than-Human Technological Futures in 2070” can be interpreted to refer to a future in which technology is deeply embedded into our lives, society, and the environment. As we progress toward the future, we can see this statement becoming more and more apparent. This concept proposes that by the year 2070, our environment will not only be built for the convenience of humans but rather interact with and support all living beings.

The phrase “more-than-human” implies that the future will give more thought into the needs and desires of animals, plants, and the ecosystem as opposed to being solely focused on human-centric concerns. It aims to address this shortcoming by imagining a world where technology is designed with profound respect and comprehension for the non-human world. This suggests that future technologies will be designed holistically, taking into account how people, technology, and the environment are interconnected.

The year 2070 introduces a timeframe that is both realistic and allows for major technological advancements. The specific timeline highlights the pressing need for new technology that is ethical, sustainable, and beneficial to all life.

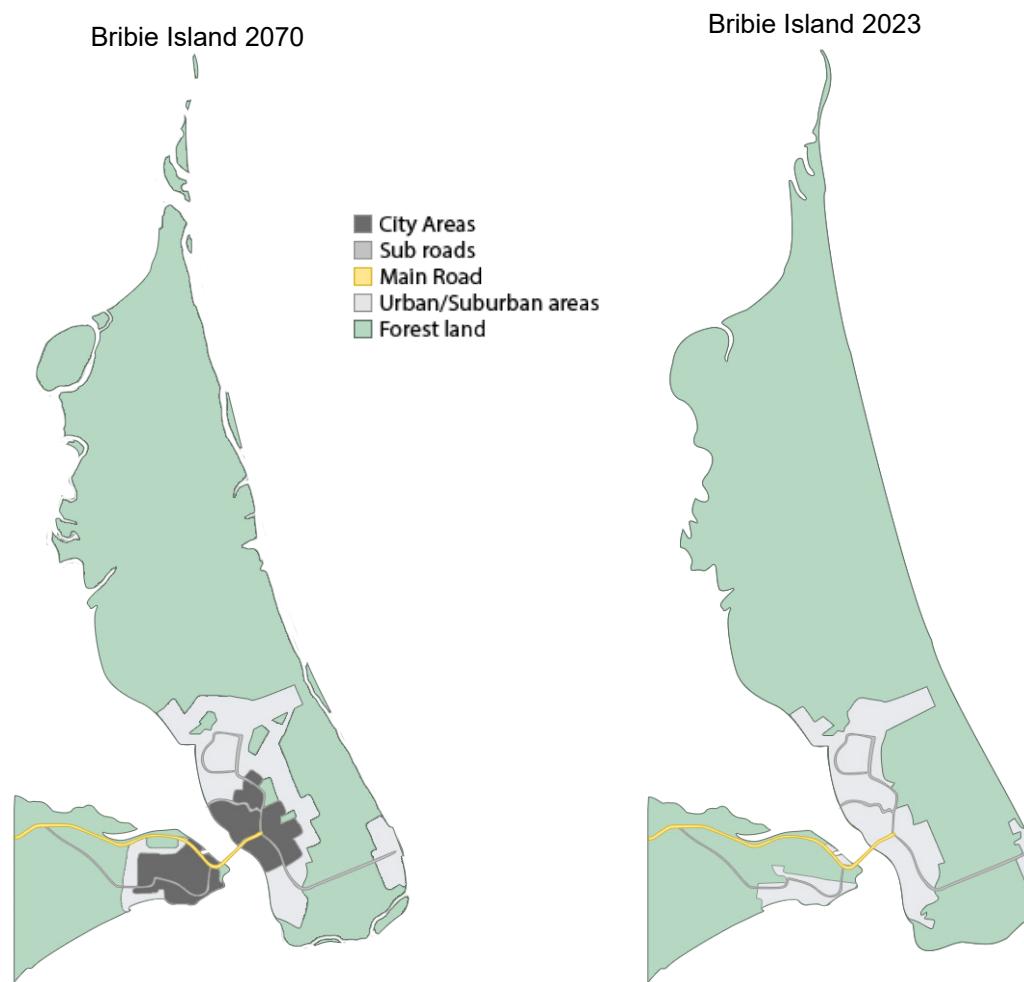
Overall, this years design theme “More-Than-Human Technological Futures in 2070” implicates that the future will incorporate technology that considers and supports the welfare of the environment and all living beings, within a realistic timeframe.



“Living walls have become popular over the last ten years; however, some have problems with irrigation or selection of plant species and have become a maintenance burden”(Lehmann, 2021)

Brief Summary

In the future, Bribie Island has developed into the City of Bribie, which prioritises environmental sustainability and the preservation of all life. The city's natural sanctuary is used to protect local and relocated flora and fauna, using technology to assist in creating a more sustainable environment. With a seemingly perfect world, there must be challenges. These include overpopulation, debates around the use of AI and concerns about genetic modification and implants. Despite these obstacles, the City of Bribie hopes to pave the way for a more sustainable future through the responsive use of new technologies and proper management.



Contextual Research

Principles

More-Than-Human Design

The current state of the world is dominated by human-centered design, which means that our world has been influenced by designs that prioritise human needs and desires. As a result, as we move further into the future, we will face ecological and environmental challenges including pollution and climate change (Wright, 2020).

The more-than-human design approach builds on the ideas of human-centered design and encourages us to exploring the requirements of non-human ecosystems. The interests and desires of people are still taken to account when designing, but with much more thought into the consequences of human involvement in the ecosystems, animals, and plants.

This design method is preferable when designing for the future as human-centered designs “have contributed to a society that threatens inclusion, diversity, and wellbeing.” (Deep Dive Repository, n.d.).

Climate Change

Temperature Rise

South East Queensland's currently experiences average high temperatures of 29 degrees in its summers and 20 degrees in its winters.

It has been projected that Queensland's climate will increase by a degree between 1.2 and 3.9 depending on the level of emissions. Making Queensland's average summer temperature approximately 32 degrees (Queensland Government, 2020).

These predictions lead to hotter days, fewer frost days and an increase in harsh fire weathers.

Extreme Weather Events

Climate change has an impact on a variety of weather events, increasing the risks to Australian Societies and ecosystems.

CSIRO predicts longer fire seasons and more days with hazardous fire conditions. Tropical cyclones and cold weather will occur less, although they will be more intense. The oceans will warm and cause severe bleaching (CSIRO, 2021)

Rising Sea Levels

In a scenario with mid-level emissions, it is currently projected that sea levels in South East Queensland will increase by 0.5 metres by 2070. Therefore, if humans do not drastically reduce their emissions, sea levels may rise much more (Xiaoming Wang, 2010).

These rising levels receive contributions from:

- Ocean thermal expansion
- Glacier mass loss
- Collapsing of ice shelves
- Changes in land water storages (dams and ground water storage)



(Plenio, 2019)

Contextual Research

Extinction

According to a report by the Australian government, the country's flora and fauna have suffered because of bush fires, droughts, and the effects of global warming. a statement stating that additional species were in danger of going extinct.

Past occurrences like the “Black Summer” of bush fires in 2019–20, which killed or displaced over 1-3 billion animals and consumed 9% of koala habitats, have had a significant impact on Australia’s animal and plant species. Ocean heat waves have led to wide-spread bleaching in our reefs, especially the Great Barrier Reef in 2016–2020 (DW, 2020).

Food

Extreme weathers caused by climate change has continued to threaten many factors of Australia’s food, such as price, quality and availability.

These dangers have a significant impact on animal products used in food. In the case of cows, for instance, heat stress results in the use of a more heat-tolerant breed, which diminishes the quality of the meat and milk yield by 10-25 percent. Beef prices will be impacted by a decrease in the number of seasons where cattle can grow well on pastures and an increase in the need for supplemental grain feeding (Climate Council, 2016).



(Moss, 2018)

Human Displacement

Extreme weather events linked to climate change have permanently relocated and reduced the living standards of people all over the world. Floods, for example, may obliterate houses and livelihoods and certain jobs become challenging in the heat.

From 2010-2019, an estimated total of 23.1 million people on a yearly average were displaced, creating refugees and leaving many in poverty.

Architecture

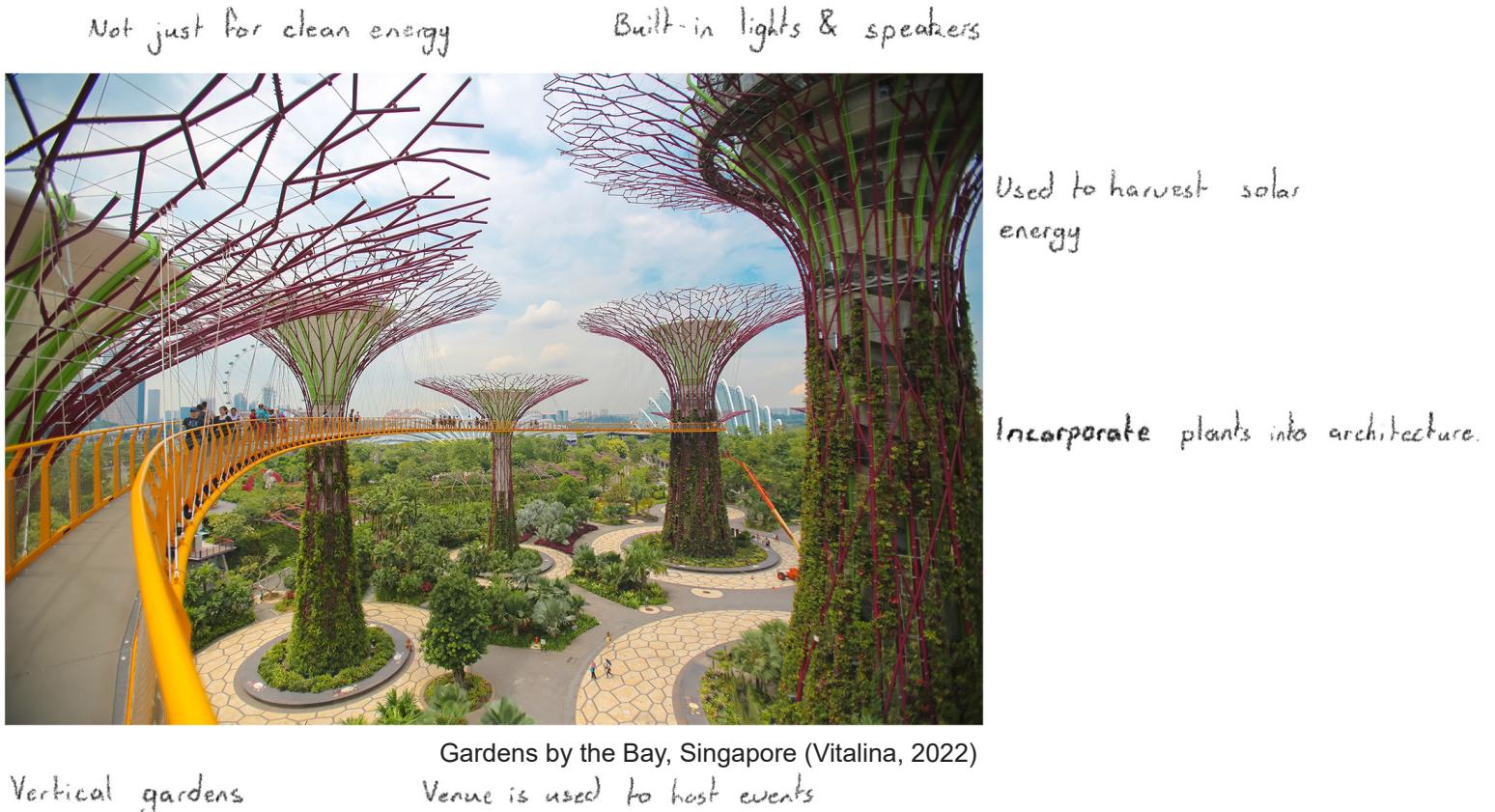
Buildings cause carbon emissions during their entire life cycle, and one fifth of all emissions in Australia come from the built environment (RAZZHIGAEVA, 2023).

High quantities of carbon emissions are frequently produced by the energy-intensive lighting, ventilation, air conditioning, and heating systems in modern buildings. Modern architecture generally prioritises the aesthetics and functionality over sustainability, which results in the production of construction materials such as concrete and steel that produce a substantial number of greenhouse gases, and leads to the depletion of resources and erosion of ecosystems (Anna Zinecker, 2022). Therefore, we must incorporate the environment into the way we design our buildings, as it is essential to creating a sustainable future.

Contextual Research Inspiring Design

Has a number of environment cleaning capabilities

Home to over 162,900 species of plants



Contextual Research Inspiring Design



Plain colour design

Twin tower design
connected by bridge

modern design

self-sustaining wind energy

zero plant incorporation

Contextual Research Relevant Technologies

Genetic Engineering

Food

Through genetic engineering, scientists can combine plant and animal DNA to provide new dietary advantages. Selective breeding has been used throughout history, although offspring may exhibit undesired traits. This is where genetic engineering excels because it significantly reduces the likelihood of undesirable traits.

Genetically altered foods provide benefits such as:

- More nutritious and tastier foods
- Disease and drought resistant plants
- Reduced chemical use
- Reduced cost and increased supply
- Faster plant growth

Though many people have voiced their worries about illnesses and other negative consequences from eating genetically altered foods. However, before they are made available to the general public and placed in stores, these items typically go through a thorough safety assessment (Manetti, 2022).

Renewable Energy

Power sources

According to statistics, Australia ranks first globally for PV solar capacity per capita and is one of the most appealing countries for renewable energy investment and deployment, placing sixth.

The government has received an investment of \$24.9 Billion to change how Australia produces and consumes energy, with the goal of becoming net zero by 2050.

Hydrogen is a clean-burning fuel that can be utilised for electricity

production, energy storage and transportation. Australia was the first country in the world to export hydrogen, and it currently strives to become the world leader in hydrogen power. Australia is well on its way to achieving this goal; by 2050, it is predicted that it will be the largest net exporter of low-emissions hydrogen (Global Australia, n.d.).

More-Than-Human Designs

Designing With The Environment

Although eco-friendly structures are not a commodity, the current examples of eco-friendly architecture that are already available are excellent models of sustainable design.

Amongst the twenty most eco-friendly buildings in the world, is the Cor building located in Miami. Due to its energy efficient design, which includes garden terraces and wind turbines, the building is highly sustainable.



Bank of America, New York
(Process Industry Forum, n.d.)



Cor, Miami (Process Industry Forum, n.d.)

The Bank of America building in New York is another example. In addition to using natural lighting and solar heating, the tower is capable of reusing its rainwater and waste water. Even sustainable materials were used to construct the structure.

(Process Industry Forum, n.d.)

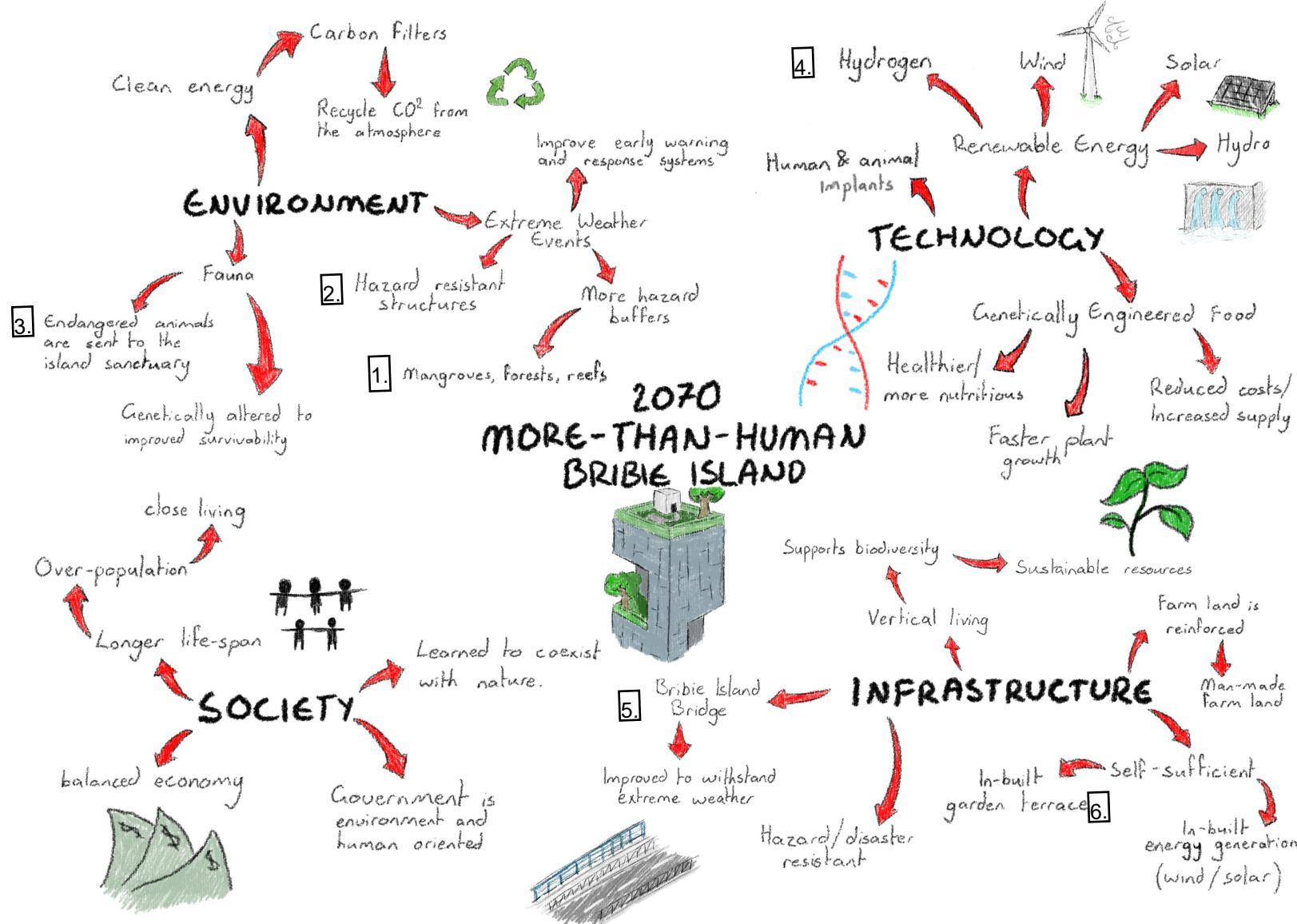


World Buidling



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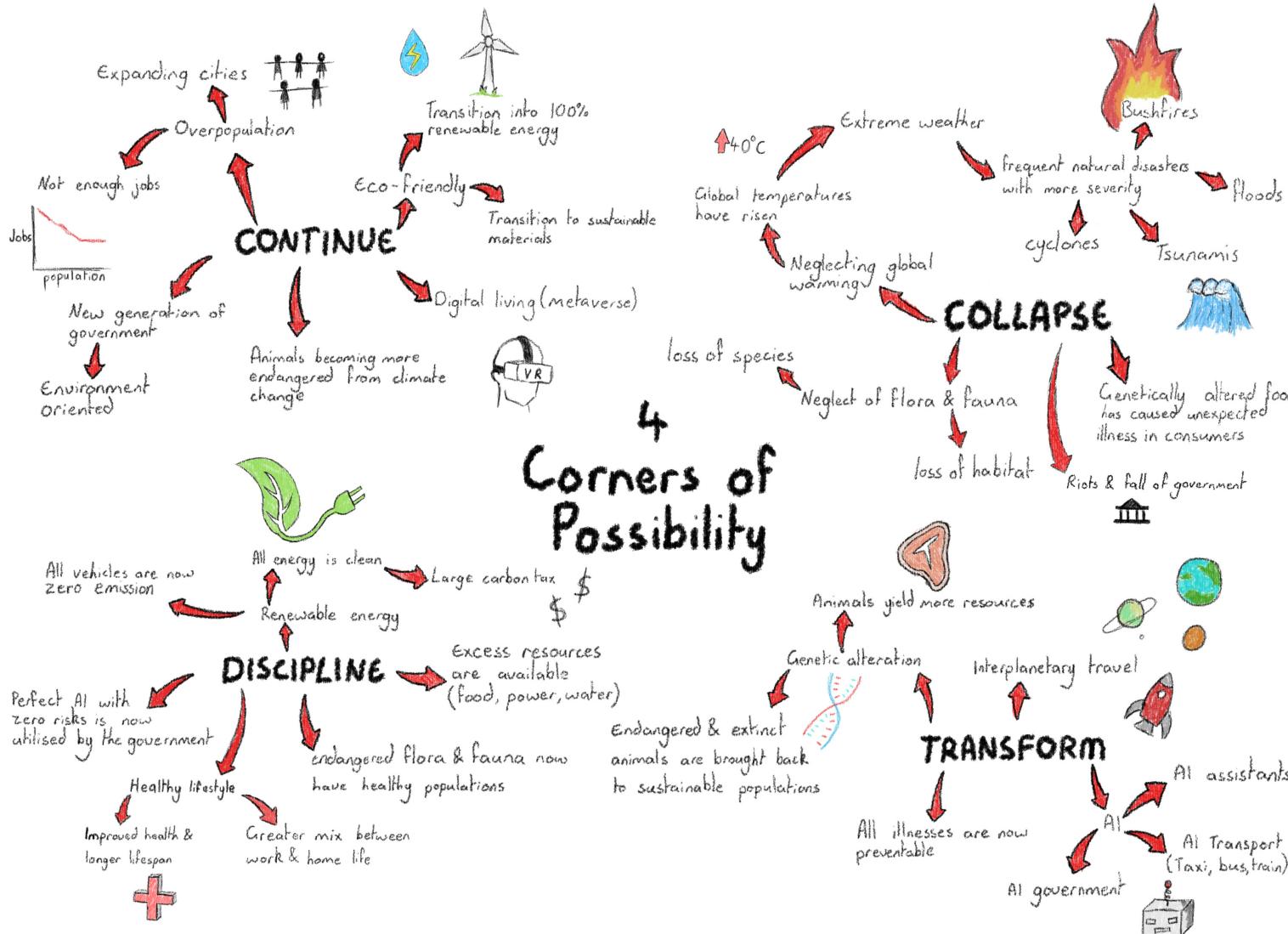
Rich Pic



1. Mangroves decrease erosion effects by waves.
2. Hazard resistance can be things such as reinforced foundations or flood proof solutions.
3. The majority of Bribie Island is national park. In the future situation, it would turn into an animal sanctuary.
4. Australia was the world's first hydrogen energy exporter.
5. Bribie Island only has 1 bridge, approx 830m long.
6. Comparable to Cor, Miami (on prior pages)

As Bribie island is currently not as developed as a Brisbane city, it has a large amount of potential and could go in any direction.

Four Corners



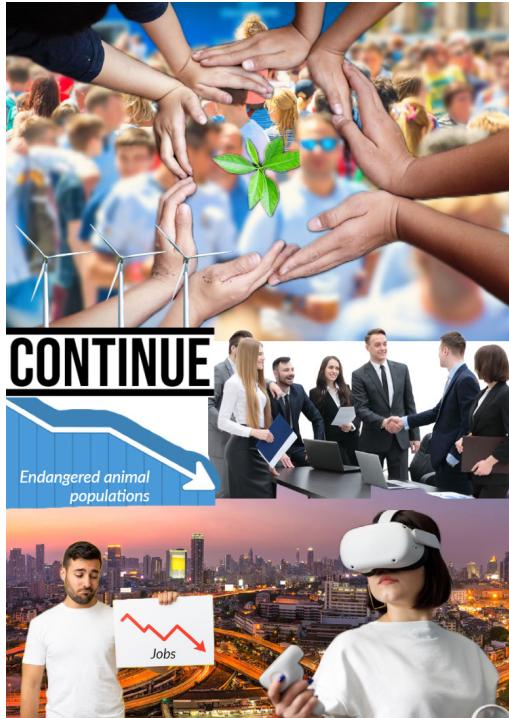
If the world was to continue as it is, we would inevitably transition into 100% renewable just the same if we to progress in a disciplined future. The primary difference is when we would achieve it.

In a disciplined world, we would achieve an excess of resources to become an entirely zero-emission based civilisation. To discourage the use of carbon-emission sources, we would increase the carbon tax. People would have more time to spend with their family and have a healthy lifestyle which in turn would improve health.

If the world were to collapse, it would be from primarily from negligence. Global warming would be the largest contributor to the collapse, where extreme weathers would cause mass destruction across the globe. We would experience massive losses in animal species and their habitats. Government collapse would also become a disaster event for civilisation.

In a transformed world, we would have the capability to develop interplanetary travel and AI is utilised for almost everything. Genetic engineering has reached its most advanced form and animal product yield has increased tremendously. Endangered and extinct animals also have the potential to be revived into healthy and sustainable populations.

Four Corners - Mood boards

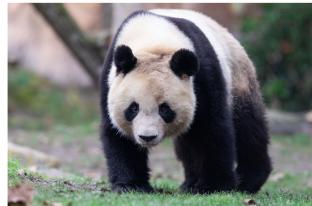


Headlines

CITY OF
BRIBIE

BRIBIE NEWS

TOP STORIES



SCIENTISTS FAIL TO REINTRODUCE RESTORED ENDANGERED SPECIES

Views on genetic alteration to revive endangered species when naturally born pandas avoided cloned pandas when scientists attempted to reintroduce the species, as if they could sense they were unnatural.

BREAKING NEWS



GMO FOODS CAUSE UNEXPECTED HEALTH ISSUES IN CONSUMERS

Recently released gmo foods have reportedly caused serious health issues in consumers. How this managed to pass the gmo food safety assessment is being investigated.

LOCAL NEWS



FEARS OF OVERPOPULATION AMONGST BRIBIE BECOMING "BEST UPCOMING CITY"

Many citizens voiced their worries about the significant increase in the population after the City of Bribie is awarded "Best upcoming city of 2070".



BRIBIE ISLAND NOW USES 100% CLEAN ENERGY

After many years, Bribie finally uses 100% clean energy.



A PIECE OF BRIBIE'S HISTORY NOW BECOMES A PIECE OF IT'S FUTURE

Bribie's iconic bridge finally joins the rest of the city and becomes part of a cleaner future.

TECHNOLOGY

NEW GENERATION 8 IMPLANTS PLANS TO RELEASE THIS YEAR

THE FUTURE OF TESLA IS NOW IN THE HANDS OF X & A-12

US PLANS TO USE ADVANCED PROSTHETIC TECHNOLOGY IN THEIR MILITARY

POLITICS

POLICE HAVE UNCOVERED PLANS TO SHUT DOWN AI GOVERNMENT

HOW ETHICAL IS HUMAN CLONING AND GENETIC ALTERATION

THE WORLD UNITES WITH EARLY IDEAS OF A SINGULAR CURRENCY

HEALTH

AUSTRALIA'S OLDEST CITIZEN HITS 150

KEEPING UP WITH THIS GENERATION'S FITNESS ROUTINES TO LIVE A LONG AND HEALTHY LIFE

ARE GMO FOODS REALLY BETTER THAN NATURAL FOODS



The ‘Future’ World

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Current State		Discipline				Future Scenario			
2023-2029		2030-2039		2040-2049		2050-2059		2060-2070	
<ul style="list-style-type: none"> Bribie Island announces plans to become a green city. Global warming has caused the oceans to rise at an alarming rate. Bribie island as a coastal barrier is one of the first locations to become submerged. The government pushes the green initiative after predictions of extreme weathers worsening caused by global warming. 		<ul style="list-style-type: none"> Extreme weather caused by global warming has caused parts of Bribie Island to erode and become submerged. Extreme weather around the globe has effected food suppliers and has created a food shortage. New buildings eco-friendly buildings have completed construction on the outskirts of the city. Construction begins on upgrading already existing buildings to support the environment. Extreme weather becomes less frequent but is more intense and potentially destructive. 		<ul style="list-style-type: none"> To combat the food shortage, scientists have had to developed new sources of food. Lines of genetically altered food have become popular and is commonly found in stores. Bribie Island national park becomes a natural sanctuary for animals rescued from bushfires, floods, and other disasters. Much of the City of Bribie is now only reliant on renewable energy sources. Majority of vehicles now produce zero emissions. Australia has improved early warning and response systems in areas mostly affected by extreme weathers. Human implants have been revealed to the world. 		<ul style="list-style-type: none"> Upgrade construction has completed. The City of Bribie is awarded the "best upcoming city' award. Fears of overpopulation cause city to expand across the bridge to the mainland. Decision to upgrade the Bribie's iconic bridge is approved. AI has been refined and is used within the government to assist in making decisions. Australia now has an excess of resources (food, power and water). Genetic engineering has given scientists a chance to bring back endangered animals. 		<ul style="list-style-type: none"> Construction of City of Bribie bridge has been completed. City of Bribie has become 100% reliant on clean energy. Government announces large carbon tax to encourage the leap to clean energy. Animals are avoiding their genetically modified counterparts. GMO foods have been reported to make people sick. 	

description of future (one paragraph)

In the future, Bribie Island transitioned into the City of Bribie, stretching off the island onto the mainland. In the aftermath of the devastating extreme weather that struck the globe, many countries began to prioritise environmental sustainability. Bribie's society is primarily concerned with living a comfortable life and the preservation of life. As a result, the City of Bribie is now a thriving hub of eco-friendly technology and infrastructure.

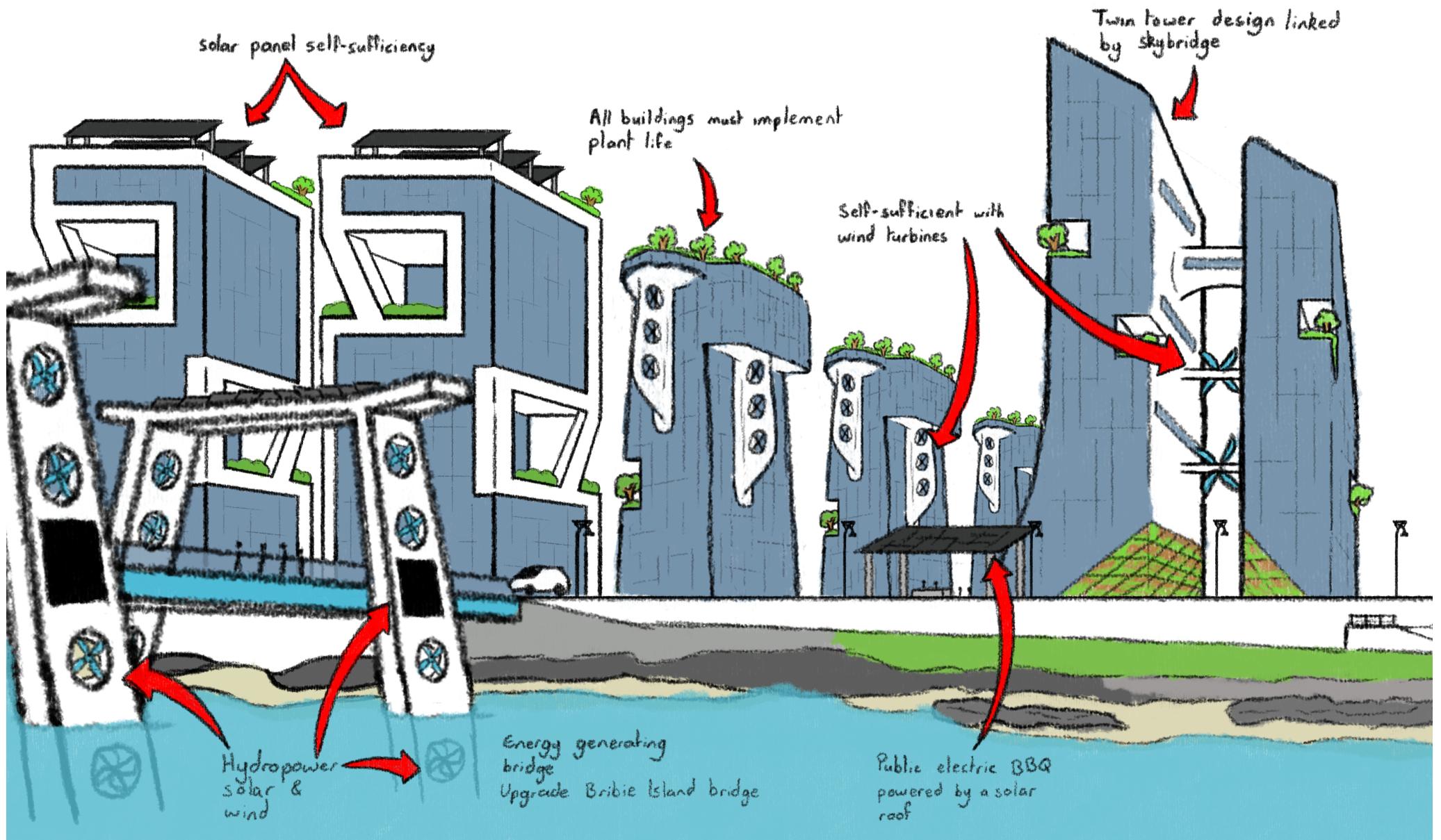
One of the key features of the new city is its natural sanctuary on the island. Designed to protect the local flora and fauna while also assisting in the relocation of animals that have lost their habitats as a result of natural disasters. The city allows many different species to coexist with humans by incorporating natural feeders into the city's architecture and implementing strict laws and regulations to ensure their safety.

Technology is an integral part of everyday life in Bribie, although, it is not forced upon the citizens. Even as society enters a new age of technology, some people prefer traditional technology. For example, mobile phones are considered traditional as new mobile technology has been developed in the form of human neural implants. Throughout the city, technology is geared towards creating a more sustainable environment, with eco-friendly structures and clean energy solutions.

Despite having many advantages in this future world, there are still some obstacles to overcome. Overpopulation has become a concern after Bribie's popularity skyrocketed. As artificial intelligence becomes more advanced, discussions about incorporating it into the government and other areas of society have sparked opposing views from citizens creating a major political issue. Additionally, the widespread use of genetic modification and implants has raised concerns about potential abuses and inequalities.

Overall, the City of Bribie's society is strongly driven by preserving all life and protecting the environment is a top priority. With proper management and responsible use of new technologies, Bribie can lead the way into a more sustainable future.

Concept mockup image of world





Sociotechnical Themes & Design Approach



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discussion into themes (max 500 words)

Living a healthy lifestyle and spending more time outdoors with friends and family has significant socio-technical implications. Over time as technology advances it has become easier for people to stay connected and communicate without being in person. However, this has caused a growing concern that people are becoming overly reliant on this technology and are spending less time outdoors and interacting with others.

This trend has many implications for social well-being, as time spent outside and engaging in physical activity can improve mental and physical health as well as social connectedness. Furthermore, becoming too reliant on this technology and not getting enough exercise produces many negative health risks.

To address this issue, we can develop technology that encourages people to spend time outside such as virtual reality experiences that simulate outdoor settings, or interactive public parks and community run attractions.

Secondly, as the City of Bribie progresses, the human population continues to grow steadily. Building more housing would be the obvious solution, although the City of Bribie is determined to preserve its small size. To accommodate an influx of new citizens, the city's architecture must prioritise vertical expansion, unless the population count reaches a point where horizontal expansion is inevitable.

The city's architecture provides for many of the citizens' daily needs, however, there are some that oppose the vertical architecture and prefer a private home, which are available on the outskirts of the city but new housing construction has been prohibited.

Thirdly, animal farms have remained a major topic in politics in terms of ethics. Many voiced their opinions about the amount of animals through captive-breeding have been killed. After the effects of global disasters, food became scarce until scientists discovered an efficient and safe way to increase the yield of animal products through genetic alteration. This decreases the number of animals slaughtered, however, it raises the question whether or not genetic modification for captive breeding is ethical.

Thirdly, in terms of ethics, animal farms have remained a major topic in politics. Many people expressed their concerns about the number of animals killed as a result of captive breeding. The effects of the global disasters caused food supplies to become scarce until scientists discovered an efficient and safe way to increase the yield of animal products through genetic modification. While this reduces the number of animals slaughtered, it raises the question of whether genetic modification for captive breeding is ethical despite the fact that it provides food for humanity.

Description of the critical & speculative design approach (300 words max)

The speculative design approach is a design method in which we ‘speculate’ about the future. Although James Auger writes that “It is not only to encourage contemplation on the technological future but can also provide a system for analysing, critiquing and re-thinking contemporary technology” (Auger, 2013).

Typical design approaches take a look at small issues whereas speculative design broadens the scope and tackles the biggest issues in society. Designers are given the opportunity to creatively imagine design solutions for these issues without the limitations of current technology, culture, and politics. Professors Anthony Dunne and Fiona Raby note that speculative design is not predicting the future, but rather imagining on what it could be (Tran, 2019).

As defined by Brad haylock, “‘critical design’ describes design projects and practices that interrogate the status quo in various ways, or which propose variously unorthodox future scenarios” (Coombs, 2018). It is an effective design strategy that attempts to challenge established norms.

Critical design is an effective design method that seeks to challenge established norms and as Brad Haylock defines it, “describes design projects and practices that interrogate the status quo in various ways, or which propose variously unorthodox future scenarios” (Coombs, 2018). Whilst it is closely related to speculative design, critical design is not focused on producing aesthetically pleasing or functional designs. Its main objective is to provoke critical thinking and debate about significant social, cultural, and political issues (Anthony Dunne, n.d.).

The social and cultural consequences of design are heavily emphasised in critical design. It acknowledges that design is profoundly political and that our perceptions, attitudes, and behaviours create who we are as people. By interrogating the status quo and proposing alternative scenarios, critical design will assist designers in actively shaping the future by expanding our understanding of design as a social and cultural practice.

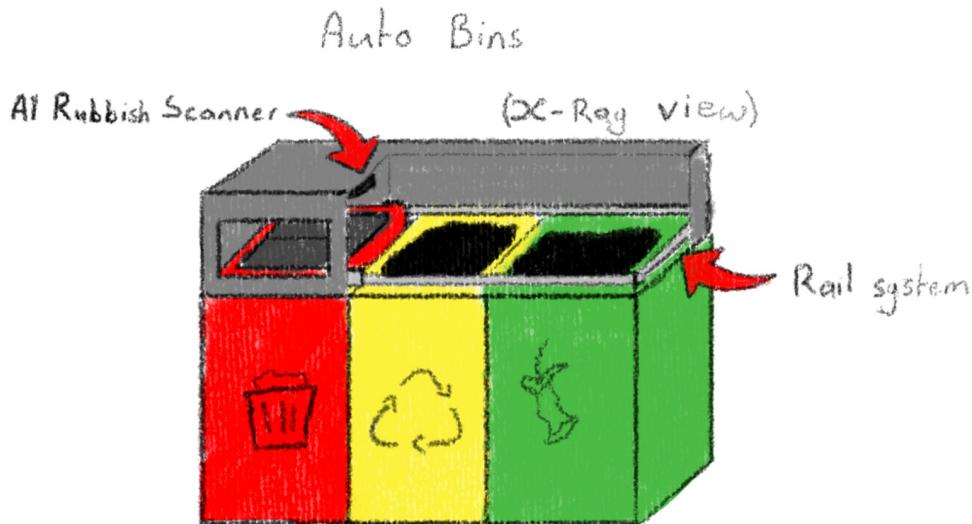


Speculative Design Ideas



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sketches of 8 unique ideas (page 1)



Auto Bin

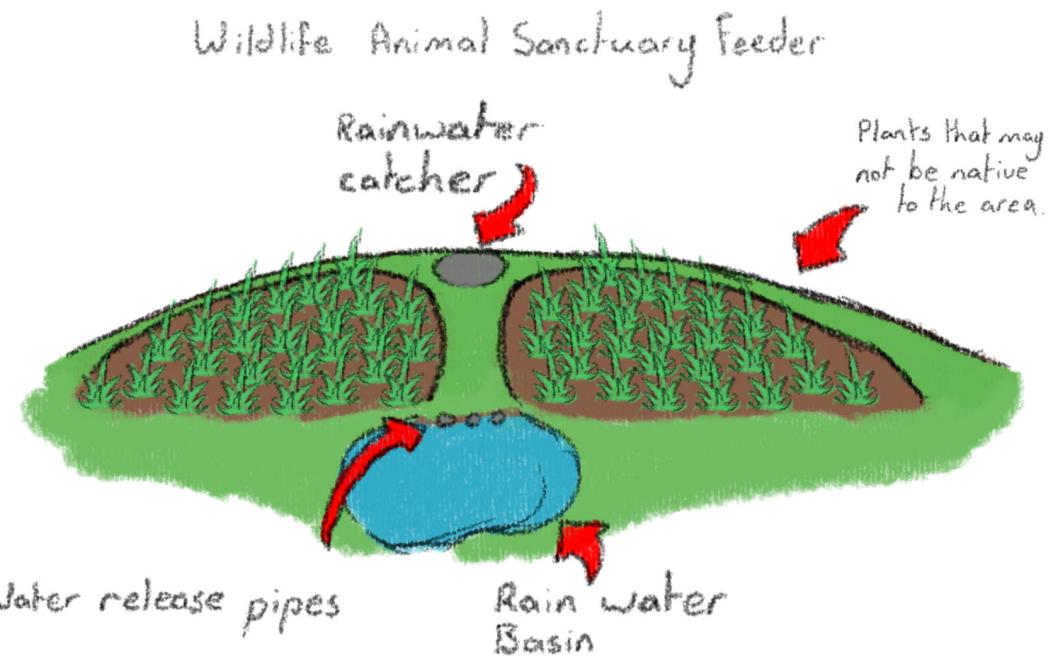
The auto bin is designed to accurately sort and allocate rubbish into the correct bin type. Using smart AI technology and a rail system, rubbish is easily and quickly placed into the designated bin. Lowering the chances of incorrect bin usage.

Wildlife Animal Sanctuary Feeder

This design utilises four specifically designed planters in a circle formation to allow non-native plant-life to grow in the animal sanctuary to assist relocated animals in finding food naturally.

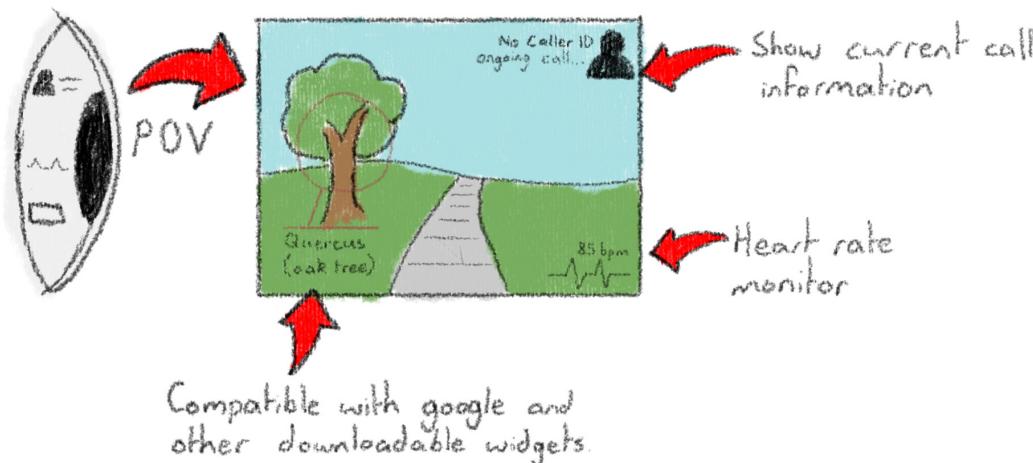
This design recycles rainwater that is captured and kept in a underground water tank.

this tank will then release water into the basins when sensors detect that the water has gone below a certain level.



sketches of 8 unique ideas (page 2)

AR LENSE



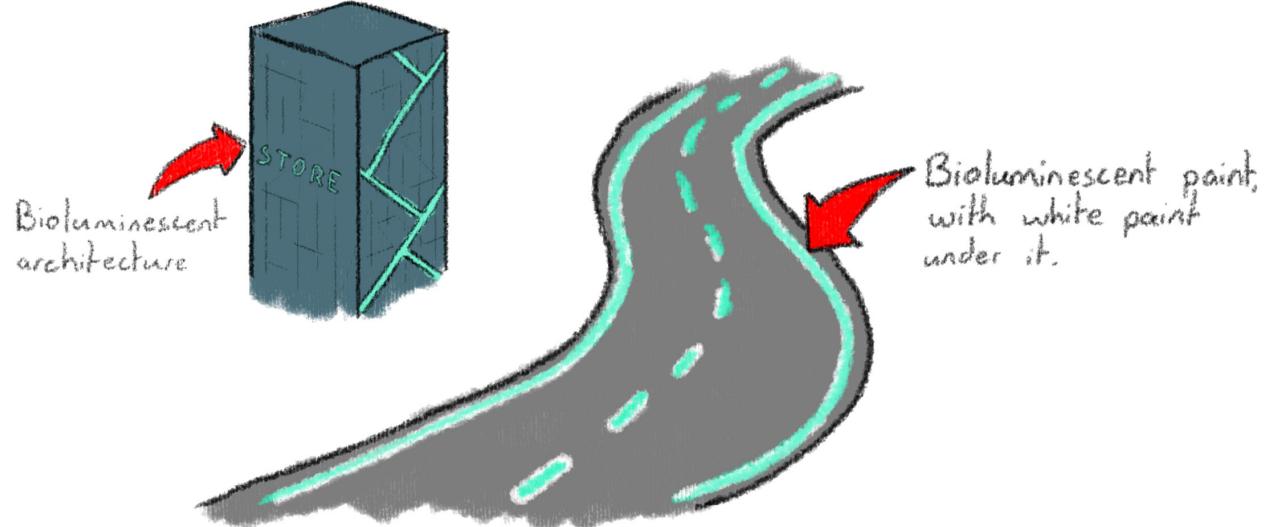
AR Lense

The AR Lense allows users to essentially use their smart devices hands free. This technology is available to those who do not wish to have a permanent implant.

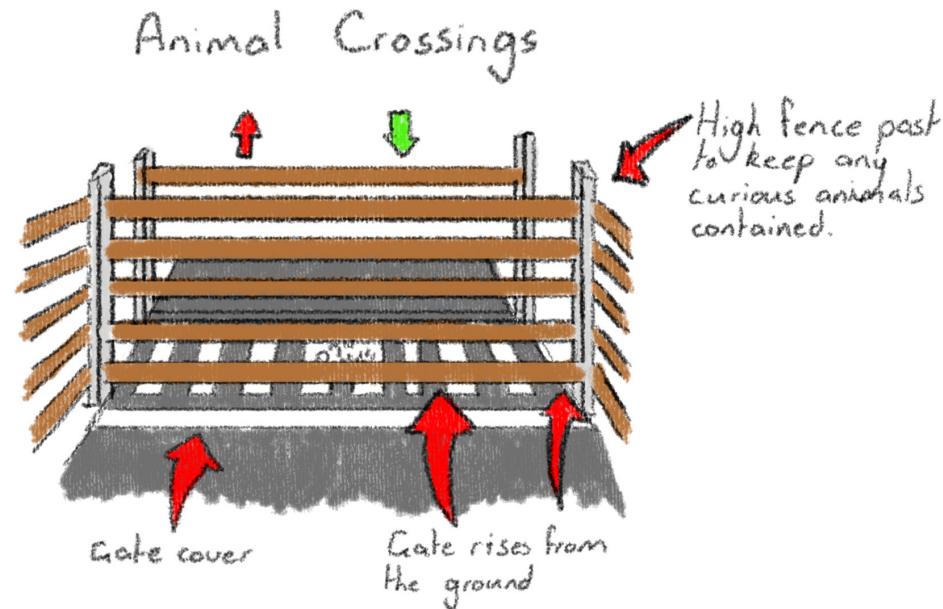
AR Lense has many downloadable widgets that can assist in every day life.

Natural Bioluminescent Lighting

Bioluminescent lighting allows large cities that use a lot of power to reduce their usage and instead create a natural emission free light source. This technique is used in roads and buildings to decrease power consumption through the night.



sketches of 8 unique ideas (page 3)

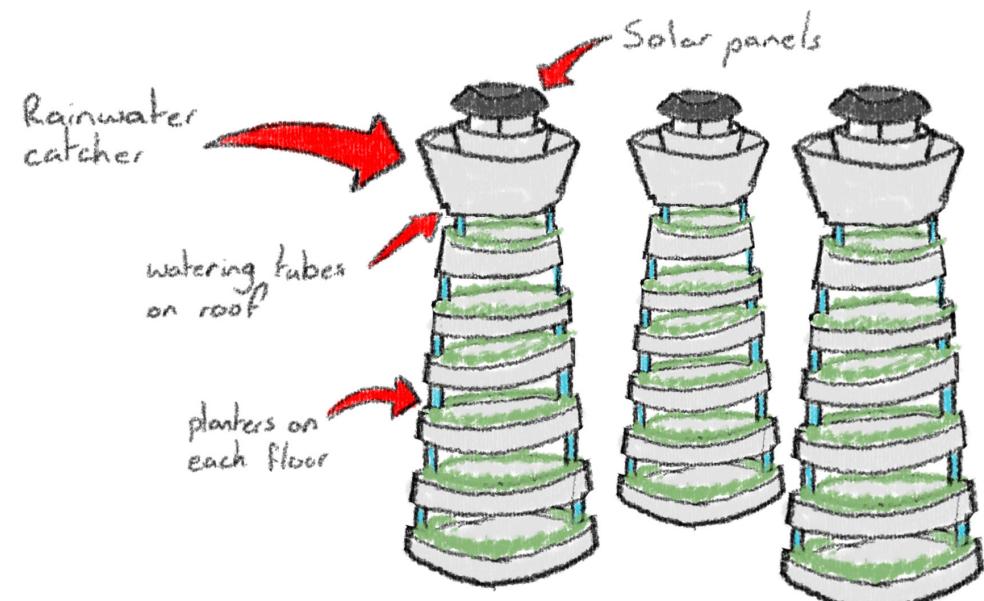


Vertical Agriculture Tower

This design concept takes inspiration from the Garden by the Bay super trees in Singapore. Using tubing along the roof above each planter to water the plants and solar energy to manage lights and temperature, this tower becomes self-sufficient.

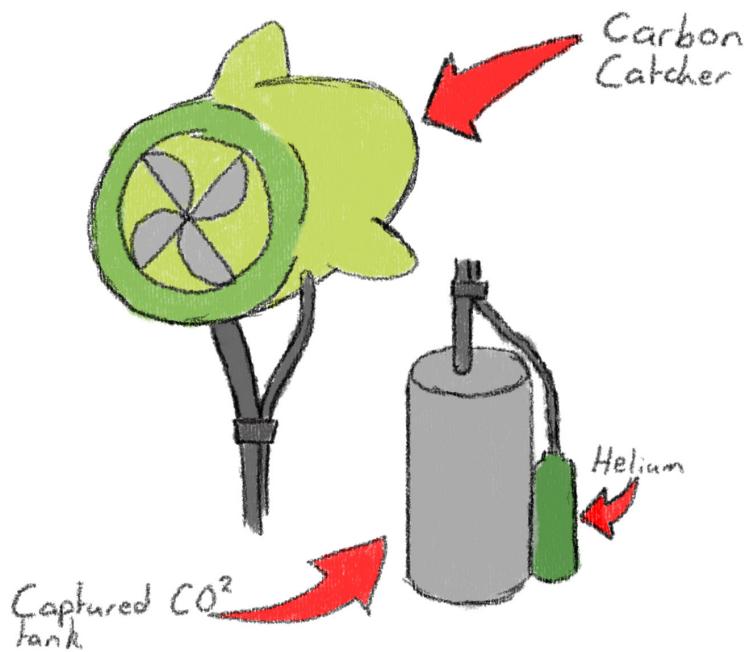
These towers can be placed in the city, as an attraction and fully functioning farm.

Vertical Agriculture Tower



sketches of 8 unique ideas (page 4)

Kite Carbon Catcher



AI Driven Public Transport

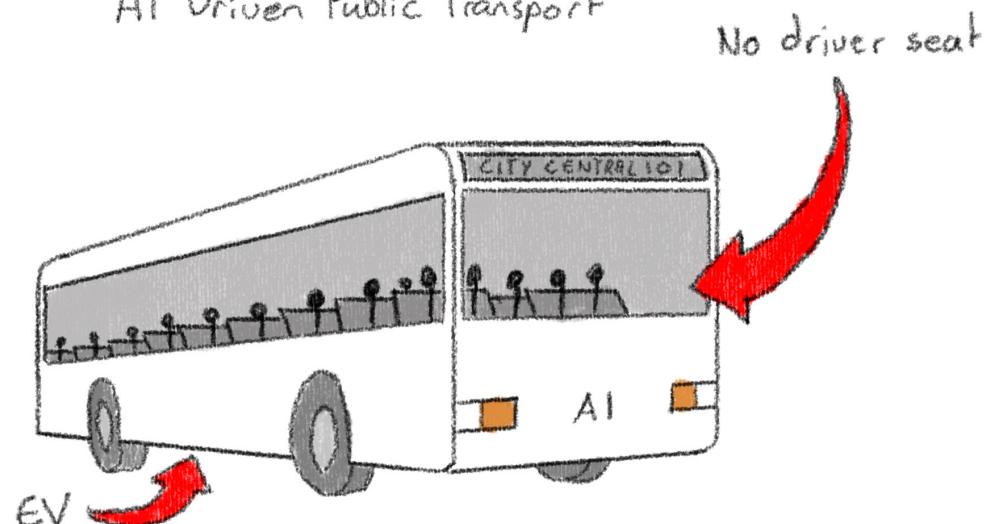
AI Driven transport such as buses have no driver seats, allowing the bus to have more space for passengers. All vehicles are electric or hydrogen based to maintain the zero-emissions city. AI vehicles are marked with the 'AI' symbol

Kite Carbon Catcher

The Kite Carbon Catcher is kept in the air using helium that refills automatically from the helium tank via a cable. This catcher collects carbon dioxide from the air and sends it down through the cabling to the capture tank.

These kites are flown above buildings to reach keep the collection tanks out of sight.

AI Driven Public Transport



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