

BACK TO THE FUTURE

NORTH ARM COVE

STUDENT COMPETITION 2020 - 2021





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“Our future is determined by the choices we make, don’t make, or
leave for others to make for us.”

- Brad Larsen



ABOUT

Back to the Future – North Arm Cove was a student research competition looking for innovative multi-disciplinary proposals for future regional Australian settlements, by example of North Arm Cove, NSW. Competition has been organised by DESIM-ARCH (architectural and planning practice from Sydney) in collaboration with North Arm Cove Ratepayers Community (NACRPA), SONA (student organised network for architecture). Key support has been provided by Walter Burley Griffin society, The Henry Halloran Trust and Stantec.

The objectives of the competition are:

- a) to promote academic research and explore:
 - The historical context of North Arm Cove, local and global
 - Ideas behind “ideal city” of Port Stephens and assessment of those ideas in today’s context
 - Environmental, economic, and social context of North Arm Cove today
- b) to provide recommendations and answers to:
 - Anticipated challenges in the next 20-30 years related to:
 - o Climate change,
 - o New technological advances,
 - o Changing core values, lifestyle changes caused by COVID -19 and likely similar events in the future

- Innovative ways of addressing those and other future challenges. Having faced bush fires, floods, and a pandemic all in the same year, we have all identified persistent problems from varied sources at different levels; starting from individuals or communities all the way up to a national and global scale. Moreover, these problems greatly vary in nature broadly covering social, environmental, and economical aspects. Evidently, problems that are so diverse, call for varied skills, expertise, and ideas from more than a single discipline.

If design is about solving problems, planning is about anticipation of the future, identifying future problems and opportunities, and acting now to be ready for both.



Figure 1: The plan was signed off by Walter Burley Griffin, Landscape Architect and H. Sheaffe, Surveyor and Architect. NSW Stroud Shire Council & Land Ltd (1918). Plan showing 10 feet contours, Land Ltd's estate, Port Stephens. National Library of Australia

BACKGROUND

North Arm Cove (NAC) village of around 450 people lies 200kms north of Sydney on the northern shore of Port Stephens in the Mid North Coast area of NSW. In 1899 NSW Royal Commission included North Arm Cove as the 16th of 40 potential sites for the nation's capital. Although losing out to Canberra for the prestige of being the national capital, the site was selected by Walter Burley Griffin as most suitable place for a new major city and seaport – ‘the New York of Australia’ – with a visionary approach to planning of the continent as a whole, including its interior.

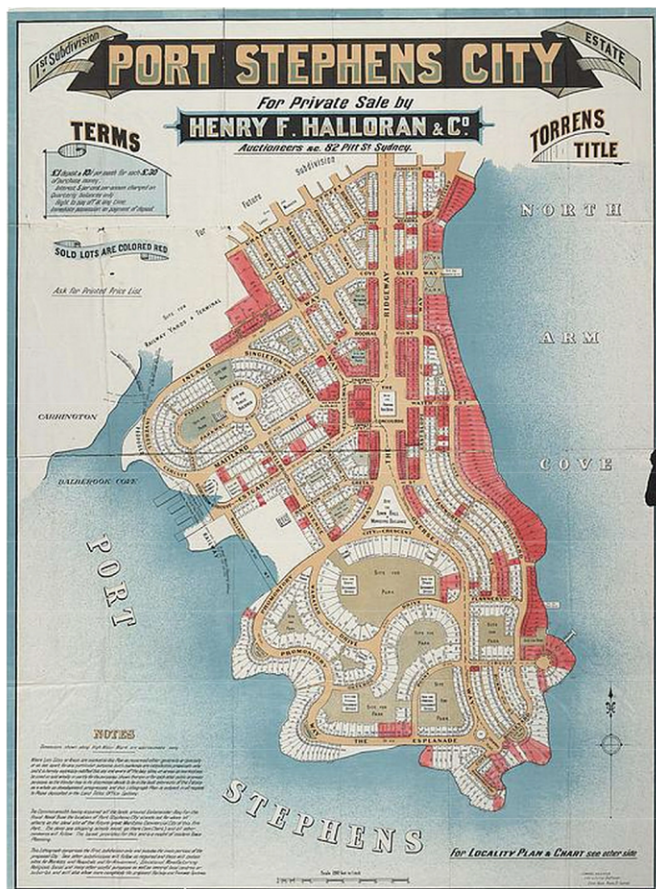
While still working on the Canberra design project, Walter Burley Griffin was commissioned by Austin Chapman's company ‘Land Limited’ to prepare the masterplan for this site. The plan was approved by a resolution passed at a regular meeting of Stroud Shire Council held on 6th May 1918. The new future urban settlement was given the name ‘Port Stephens City’.



Marion Mahony Griffin credited her husband with the identification of the locality as one of only two ‘natural seaports’ in Australia. She wrote that ‘in his innocence he interested a client, who was carrying on a considerable real estate business, in the opportunity offered at Port Stephens ... It was surveyed and staked out and the allotments rapidly sold’.

The master plan to this unique site was Griffin's vision of an ideal city/town in 1918. It was the time of great city plans all over the world. In Australia *the 1910s was a decade of extraordinary activity in establishing town planning as a vital social concern and issue for public policy.*^[1] Planned private sector subdivisions of estates were popular for land sales in the 1920s, the planning era of the first draft bills to introduce town planning legislation.

[1] Freestone, Robert. 2010. Urban Nation – Australia's Planning Heritage. CSIRO Publishing & Australian Government Department of the Environment, Water, Heritage and the Art.



In her typescript *'Magic of America'*^[2] Marion Mahony Griffin described Walter's most likely first encounter with Aborigines and their culture when working on the 'Port Stephens City' project:

"Then he was up there (surveying Port Stephens City site) he made the acquaintance of King Billy, an aboriginal who worked with the surveyors. Finding Griffin sympathetic King Billy talked freely with him and gave him much interesting information about the native plants. Through him Griffin learned how precise was their knowledge for King Billy could identify at a distance even a dead tree. The aboriginals were interested, as Griffin was, in the character of the form rather than in the minute distinctions which the botanists as a whole center on which in fact gives them the ability to attach

names but does not give them real knowledge of the plants they are listing. When Griffin asked him what he thought about the surveyors' setting fire to the bush before they surveyed it he said - "That is because they are cowards. They have no right to do this because it belongs to the birds and the animals as much as it does to them." The surveyors wore heavy leggings. King Billy went bare legged through the bush and had no fear. Contact with the ancient peoples should awaken us to the fact that they use a different kind of thinking from ourselves an experience which, if we were open minded, would lead us on to the investigating and mastering of that kind of thinking, to take as much pains as we have taken in the mastery of rational thinking in these modern times."

Griffin's plan for Port Stephens City has never been realised. In 1921, Walter and Marion started building their bohemian-flavoured community in Castlecrag, Sydney's lower north shore. The suburb, with similar topography as North Arm Cove, was dubbed 'Paradise on Earth'.

Current exhibition titled 'Paradise on Earth' at the Museum of Sydney explores Marion's collaboration with Walter Burley Griffin and key projects in Australia including Canberra, with a special focus on the life and community of Castlecrag. The exhibition is open until 18 April 2021.

[2] Griffin, Marion Mahony. *The Magic of America: Electronic Edition*. August 2007. The Art Institute of Chicago and The New-York Historical Society. 29 October 2008 <<http://www.artic.edu/magicofamerica/index.html>>

COMPETITION IS ABOUT

- Promoting Australian planning cultural heritage and the Griffins' legacy in Australia and North Arm Cove as a place of extraordinary national cultural heritage
- Exploring history of NSW planning and the role of governments, private enterprise, and communities within the socio economic and political framework
- Exploring the role of an architect in the past 100 years
- Exploring the past, present and future through interweaving environmental technological/ infrastructure, economic, social and design aspects, as architects of the past used to do it
- Looking at our lives in relationship with our planet and proposing pathways to improved outcomes
- An exercise of planning for a new settlement within the existing NSW strategic planning framework



Social

How do we build cohesive and sustainable communities? How are changing climate, pandemics and new technologies affecting the ways we live, work, learn, travel, and generally interact with each other? How could communities become more resilient to challenges like changing climate, changing world economies, future pandemics? What are the social challenges of North Arm Cove? What significance do built and cultural heritage have in contemporary lives?

Technology/Infrastructure

How have advances in technology affected the relevance of Griffin's proposals? What are the lessons from the past? Can technology provide answers for the challenges of living in a changing world? What present and future technologies can assist?

Environmental

Walter and Marion Griffin imagined a place where natural and built environments exist in perfect balance to create a model settlement on the picturesque shores of Port Stephens Bay one century ago. Are we closer to that 'paradise' now? Is it still our collective goal? What do we learn from the past? What are the opportunities and challenges?

Economy and governance:

Can we afford to live in better places? Is happier and safer life of better quality profitable? Should we expect it to be? Can citizens build their own 'better place' independent of the official State and local land and development governance? What form of collective and individual decision making, and financing would be needed? How do we achieve affordability of life? Would heritage assist or present an obstacle?

Green Zoning

Accelerating Smart Growth in Single Family Zones

by Matt Hutchins
CAST architecture

"How can cities that have green building codes have zoning bylaws that protect low-density single family housing?"

— Lloyd Alter, TreeHugger

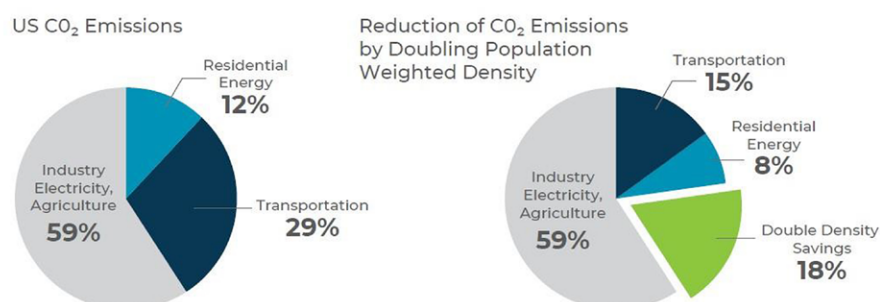


Figure 3: Reduction of U.S CO₂ emissions by doubling population weighted density . Image by Matt Hutchins, CAST architecture

5 POINTS

Urban Design

Can we measure the performance of our homes, buildings, neighbourhoods, communities, towns? How do we determine what is a 'better place'? Should we rely on legislation for determining better design?



Figure 4 and 5: by A2M Architects, presentation at SPPHC conference by Sebastian Moreno-Vacca

TIMELINE

19TH NOVEMBER '20

LAUNCH OF THE COMPETITION

1ST DECEMBER '20 - 12TH DECEMBER '20

INITIAL BRIEFINGS, PRESENTATIONS
BY EXPERTS

18TH JANUARY '21 - 30TH JANUARY '21

ONE ON ONE MENTORING SESSIONS

19TH FEBRUARY '21 (C.O.B)

DEADLINE FOR SUBMISSIONS

12TH MARCH '21

ANNOUNCING WINNERS

SPEAKERS



Bronwyn Barry
President North American
Passive House (NAPHN).
**Decarbonization Through
Planning/Zoning And Design**
[https://www.youtube.com
/watch?v=rOWeXpX1Ydk&t=1s](https://www.youtube.com/watch?v=rOWeXpX1Ydk&t=1s)



Glenda Korporaal
Associate Editor
The Australian newspaper
**Marion's Garden
(Marion Mahony Griffin story)**
[https://www.youtube.com
/watch?v=5iOPZUGPdNA&t=9s](https://www.youtube.com/watch?v=5iOPZUGPdNA&t=9s)



Iain Walker
Executive Director
New Democracy Foundation
Citizen's Jury
[https://www.youtube.com
/watch?v=FXcwN-xpXw4&t=258s](https://www.youtube.com/watch?v=FXcwN-xpXw4&t=258s)



Sebastian Moreno
Architect and Founder
partner A2M
**Permacities, Renewable
Cities**
[https://www.youtube.com
/watch?v=DaNO-nrbkdc&t=215s](https://www.youtube.com/watch?v=DaNO-nrbkdc&t=215s)



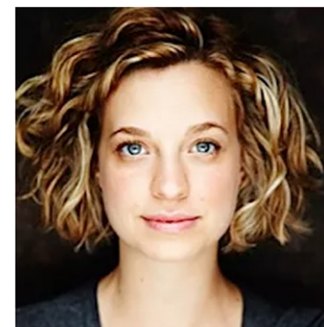
Sara Wilkinson
Professor of Sustainable
Property (UTS)
**Conceptual Understanding
Of Sustainability**
[https://www.youtube.com
/watch?v=3smE5HEEwwg](https://www.youtube.com/watch?v=3smE5HEEwwg)



Daniel Kress
Certified Passive House Trainer
Smart Plus Academy
**Healthy, Sustainable,
Affordable Living**
[https://www.youtube.com
/watch?v=rTfjWFXSrNU&t=220s](https://www.youtube.com/watch?v=rTfjWFXSrNU&t=220s)



Joseph Walsh
Group Leader, Buildings
Stantec
**Smart Cities and
Microgrids**
[https://www.youtube.com/
watch?v=Fm28z638G4s&t=35s](https://www.youtube.com/watch?v=Fm28z638G4s&t=35s)



Polita Cameron
Director of Engagement
New Democracy Foundation
Citizen's Jury
[https://www.youtube.com
/watch?v=FXcwN-xpXw4&t=258s](https://www.youtube.com/watch?v=FXcwN-xpXw4&t=258s)



David Whitting
Developer Solutions
Altogether
**Sustainable Communal
Infrastructure**
[https://www.youtube.com
/watch?v=ykRJxSv3NO&t=2928s](https://www.youtube.com/watch?v=ykRJxSv3NO&t=2928s)

SPEAKERS



Nimish Bioria
Associate Professor
University of Technology Sydney
**Smart Cities: A Socio -
Technical Persepective**
[https://www.youtube.com/
watch?v=hQn1WtimY7M&t=18s](https://www.youtube.com/watch?v=hQn1WtimY7M&t=18s)



Alen Malenica
CEO (Prop Tech Company)
Metroengine
Planning Tools
[https://www.youtube.com/
watch?v=DOe2lqyeKOE&t=75s](https://www.youtube.com/watch?v=DOe2lqyeKOE&t=75s)



Michael Thomson
Vice President
Walter Burley Griffin Society
**A Tale Of Three Cities:
Canberra, Melbourne, Sydney**
[https://www.youtube.com/
watch?v=V18m64nR3kA&t=313s](https://www.youtube.com/watch?v=V18m64nR3kA&t=313s)



Tatjana Djuric Simovic
Senior Asset Planner
Planning Manager - DESIM
**North Arm Cove Heritage
in NSW Planning framework**
[https://www.youtube.com/
watch?v=7R6GVPjlm_w&t=293s](https://www.youtube.com/watch?v=7R6GVPjlm_w&t=293s)



Dejan Simovic
Director - DESIM
Certified Passive House Designer
**Briefing to Back to the
Future, Mentoring**
[https://www.youtube.com/
watch?v=ce_QNT4WGsc](https://www.youtube.com/watch?v=ce_QNT4WGsc)



Peter Phibbs
Chair Urban Planning & Policy,
USYD, Director Henry Hollaran
**Urban infrastructure funding
and Value Capture**
[https://www.youtube.com/
watch?v=BXKDkiexx2o&t=238s](https://www.youtube.com/watch?v=BXKDkiexx2o&t=238s)



Mark Price
Senior Energy and Electrical
Project Engineer, Stantec
Smart Cities and Micro grids
[https://www.youtube.com/
watch?v=Fm28z638G4s&t=35s](https://www.youtube.com/watch?v=Fm28z638G4s&t=35s)



Elliot Alfievich
Group Lreader, Buildings,
Stantec
Smart Cities and Micro grids
[https://www.youtube.com/
watch?v=Fm28z638G4s&t=35s](https://www.youtube.com/watch?v=Fm28z638G4s&t=35s)



Ian Harris
Urban Place- Team Lead
Stantec
**Integrated Water Cycle
Management**
[https://www.youtube.com/
watch?v=Auf6OXJx_JA](https://www.youtube.com/watch?v=Auf6OXJx_JA)

JURY



Tatjana Djuric Simovic
Senior Asset Planner
Planning Manager- DESIM



Peter Phibbs
Chair Urban Planning &
Policy, USyd,
Director Henry Halloran Trust



Elizabeth Griffin
Urban Planning Team
Leader, Stantec



Sara Wilkinson
Professor of Sustainable
Property (University of
Technology Sydney)



Adrienne Kabos
Founder Walter Burley
Griffin Society(Australian
Chapter)



Mikhaeyla Kopievsky
Fiction Author
North Arm Cove Resident



SUBMISSIONS

Over this unique summer 8 student teams from different parts of Australia came together to discuss about the future of cities, hear from experts on different subject matter and share ideas to shape a liveable future. From a cohort of 35 students, 2 teams made it till the end by submitting their innovative proposals for the future of North Arm Cove as a prosperous, sustainable, resilient urban community



TEAM 1: BACK ON TRACK

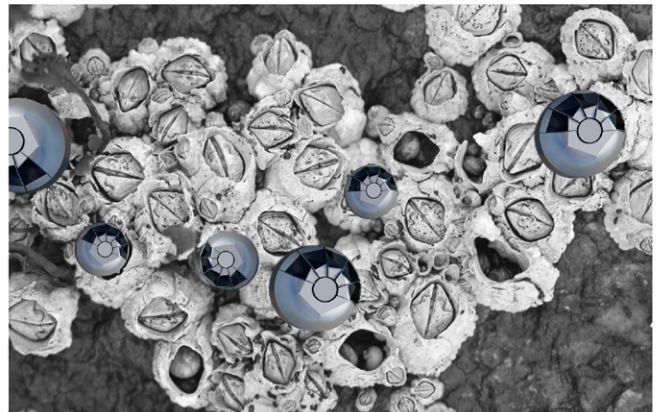
Noah Watson
Iina Lohi
Sofya Savenkova

Our goal is to develop a community in North Arm Cove that embodies the vision that Marion Mahony and Walter Burley Griffin had for North Arm Cove through an understanding of environmental and cultural context in relation to modern considerations surrounding city planning and future technology. Ultimately creating a 21st Century modern community based on the preservation of natural and cultural values in relation to future technologies targeted at the development of cyclic economy and protection of the environment.

Through the insertion of a linear axis we were able to organise infrastructure in such a way that allows us to more effectively consider the environmental and historic context as well as enable our proposal. The linear axis is informed by environmental context such as topography and natural water systems as well as the original Griffin plan.

Presentation Link :

https://www.youtube.com/watch?v=I_xAcuhFuTA



TEAM 2: IGNIS

Senlina Mayer
Liam Leblond
Sionnan Gresham
Kefan Ren
Alexander Hill

IGNIS' response, the 'Oyster-Tecture Program' fundamentally looks to reinvigorate the centralisation model within the context of North Arm Cove's needs by drawing artistic and scientific inspiration from the region's native species, oysters. Having started in the late 19th century, oyster farming proliferates the town's coasts, and their refined biological capabilities as well as that of other marine life, can be harnessed for an 'ideal city'.

By returning to Walter Burley Griffin's vision for an environmentally driven North Arm Cove, an understanding of ecological communities may be applied to optimise the human community in symbiosis with the rest of life, and bring to fruition the interconnectedness of man and nature understood of its traditional custodians, the Worimi people.

To structure the growth of Oyster-Tecture, phases will categorise sectors of focus - throughout which collective participation in sustainable community and human settlement design nourish sense of place and identity.

Presentation Link :

<https://www.youtube.com/watch?v=LGZxX5QC-pOE&t=6s>



JUDGEMENT

Both submissions have responded well to required scope, providing imaginative and innovative approaches with huge effort in research of heritage, sustainability, and new technologies. Both teams have actively participated through presentation stages of the competition. The submissions are presented well and clear with high level of competence, both in written and video/live form. Both teams have expressed high level of competence, compassion for local community and interest in future outcomes.

Jury's overwhelming majority has selected team "Back on Track" as an overall winner.



Jury's feedback on winning team submission:

"A well-researched and considered proposal."

"General urban design principles are sound and capture original Walter Burley Griffin concept with innovative planning ideas like 'play streets', activation plans, scaled bet-terment funding, and community hub/satellite planning. The depth of research was demonstrated around design-ing community places, sustainable energy, water quality and supply, new and emerging technology, and Indigenous values."

"A very well co-ordinated team response. Each component of the proposal fits with other components indicating a very collaborative approach has been adopted to devel-opment of this proposal. Presentation has linked back to planning and placemaking philosophies and approaches – e.g. the Venn diagram of people, place, and process; the community hub objectives; the integration of natural and built environments."

"Inclusion of funding and governance is important to the success of the proposal. Ideas are generally realistic. The proposed home energy management system is a very practical and worthwhile tool. Algae facades are an interesting conceptual idea worth further exploration."

"This is good and solid review and research student project. It could have been improved with a bit more research on the existing broader context of NAC, i.e. Hunter Region, proximity to other strategic centres such as Newcastle or even Sydney Metropolitan area. There could have been more on the Strategic planning and activation precincts in the vicinity, such as Williamstown."



PRIZES

First Prize

Team 1 - Back on Track

Second Prize

Team 2 - IGNIS: Oyster-tecture

Individual Prize

Overall individual contribution winner

Noah Watson

Second individual prizes

Sofya Savenkova

Iina Lohi

Senlina Mayer

Sionnan Gresham

WINNING ENTRY

BACK ON TRACK (Team : Noah Watson, Iina Lohi, Sofya Savenkova).

Our goal is to develop a community in North Arm Cove that embodies the vision that Marion Mahony and Walter Burley Griffin had for north arm cove through an understanding of environmental and cultural context in relation to modern considerations surrounding city planning and future technology. Ultimately creating a 21st Century modern community based on the preservation of natural and cultural values in relation to future technologies targeted at the development of cyclic economy and protection of the environment.



Development Zoning:



1

Focusing on establishing and reinforcing the current community of North Arm Cove. Activating the economy to allow infrastructure growth. Educate people on the local environment and indigenous culture to develop an environmentally and culturally conscious community.



2

Developing infrastructure like Pavegen, solar, smart grid, e bikes and the aged care centre to support ageing community. Support the mental wellbeing of occupants. Employ betterment levies would to help fund current and future infrastructure.



3

Developing other physical quadrants using the same methods as mentioned in Phase 1,2. The order and zoning of each quadrant is organised in relation to the currently developed community, The Griffin Plan, The Linear organisational axis.

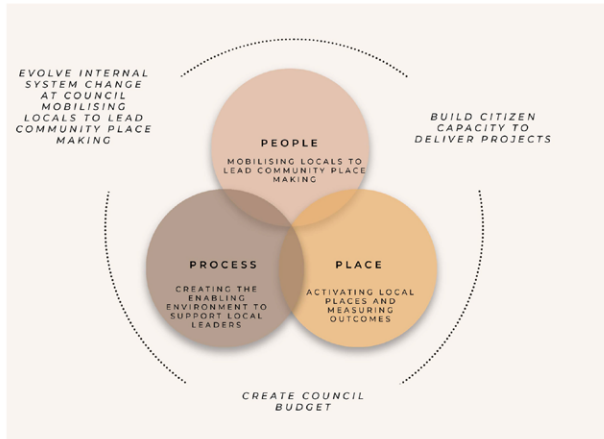


4

Develop educational facilities. Support a mixed use high school and primary school. Allowing families to easily and conveniently live in North Arm Cove and with that, secure the future of North Arm Cove culture and sense of community.

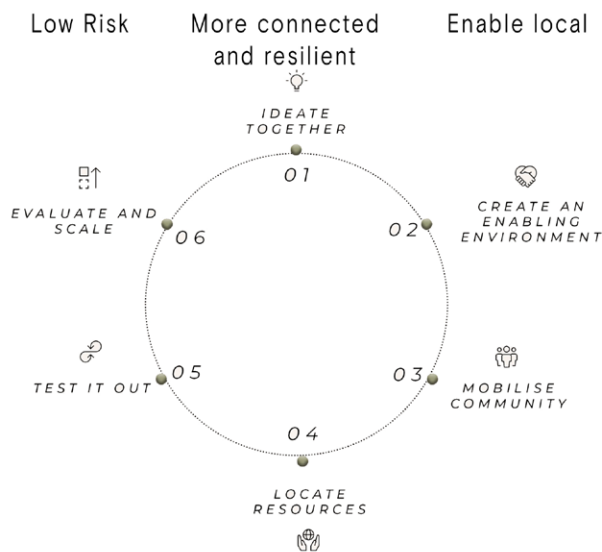


Great places are made when people are given the opportunity to influence the places they live. This can't happen unless those who govern places have processes in place to support communities taking action in their local places.



Community building projects of North Arm Cove are closely linked with the financial and economic aspects of the project's development. Placemaking activities deliver benefits to the local areas such as investments. The more the North Arm Cove is activated, accessible and vibrant, more visitors from outside the community will visit the site and return back.

LOW COST- SMALL SCALE- LOCALLY LEAD



The main objectives of the community hub will be to 'improve job opportunities and economic growth in North Arm Cove', 'encourage and facilitate the use of sustainable transport', 'provide an new, innovative outdoor communal area', 'improve public health', 'reduce the effects of urban heat' and 'inspire and foster innovation and growth'.

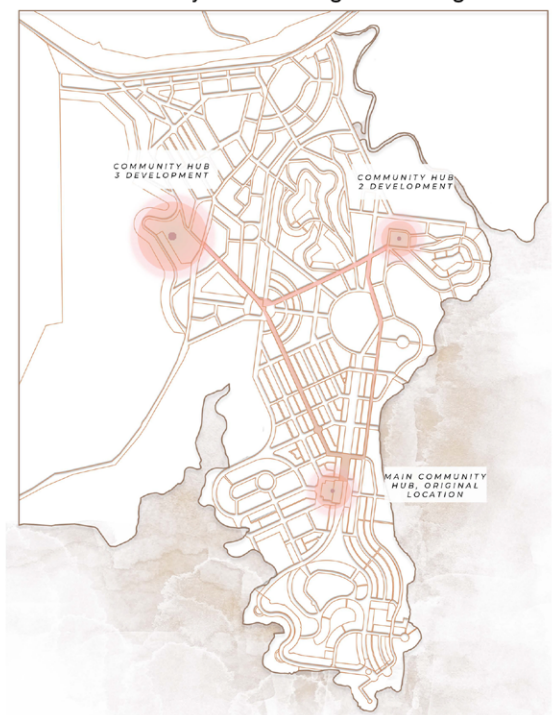
Commercial centres are important for the final vision of north arm cove and identifying as a self-sustaining village. We have decided to locate our commercial precinct in the heart of north arm cove as defined by the Griffin plan. This location also gives the opportunity to integrate water management systems into commercial infrastructure, as the location is within the major water catchment of the site.



Main Community Hub Location



Community Hub Program Diagram



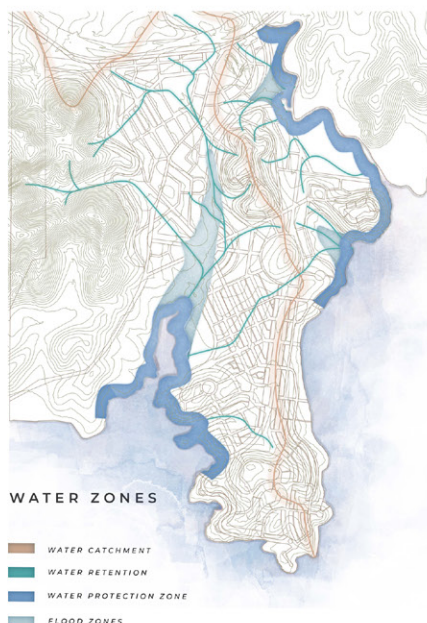
Community Hub Development Strategy

URBAN

The notion of creating a 'Water Sensitive City' was central to all facets of the design of North Arm Cove, and in particular to the allocation of the blue and green infrastructure; to the social programs to be put in place; and to the building innovations to be systematised in the process of development. This is extraordinarily displayed using algae recycling technology within the building energy systems of one of the major community hub facilities, but also through the reed bed designs, and parkland pond systems to be integrated into the green networks of the site



Water Catchment

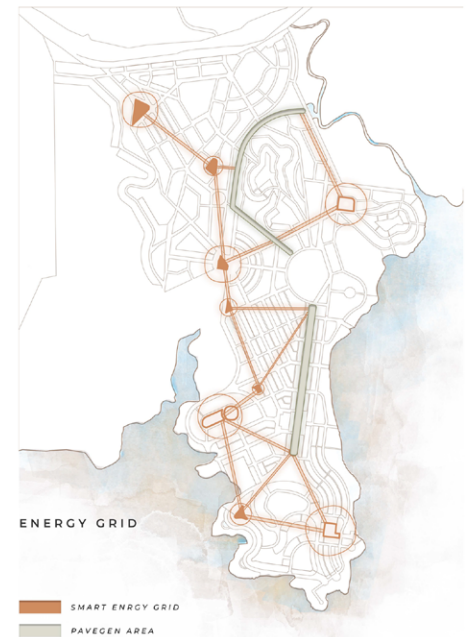




Through the insertion of a linear axis we were able to organise infrastructure in such a way that allows us to more effectively consider the environmental and historic context as well as enable our proposal. The linear axis is informed by environmental context such as topography and natural watersystems as well as the original Griffin plan.



The road infrastructure is informed by the locations of community and pedestrian infrastructure as well as the number of blocks on each street which would theoretically be a residence. By taking into account blocks and infrastructure, roads can be efficiently developed to substantially reduce the cost of road infrastructure. From this reduced cost of infrastructure more substantial interventions can be made such as an overpass for safe exit and entry.

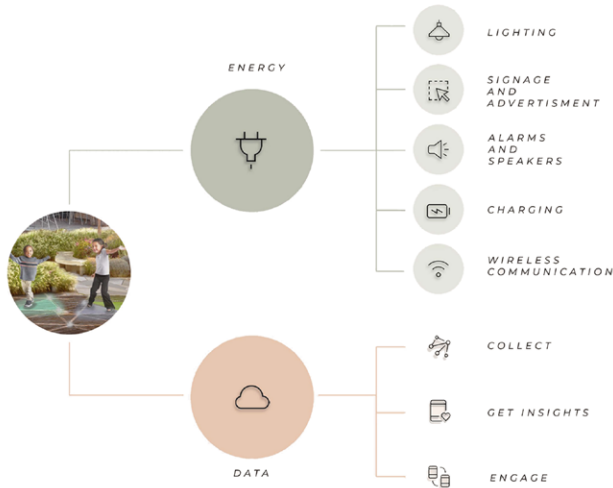


Our approach to energy integrates non-fossil fuel energies into a microgrid network of energy infrastructure distributed throughout. Solar panels are integrated into solar infrastructure as well as certain community and commercial infrastructure based on solar radiation analysis of the place to locate areas that could benefit from solar panels. The distribution of energy acts as nodes which energy can be stored and distributed to other nodes within the grid.

TECHNOLOGY

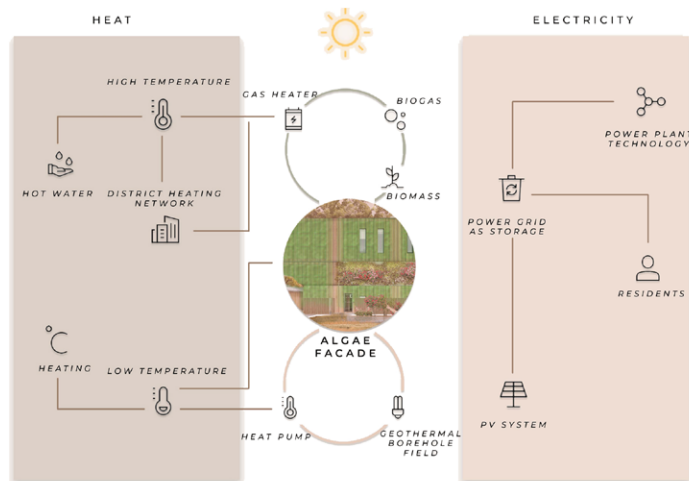
PAVEGEN

Pedestrian strip that runs along the length of north arm cove, creates a physical link throughout the site. This pedestrian strip runs along the length of the linear axis dividing and sectioning the site. The pedestrian strip allows residents and visitors to easily and quickly move throughout the site. The pedestrian strip will also integrate Pavegen technologies which is a form of kinetic infrastructure that generates electricity when activated by pedestrian and bicycle movement creating a source of clean energy to support the community.



ALGAE TECHNOLOGY

Algae technology will also be integrated into the energy systems for an additional source of power that could be used for commercial infrastructure where it is used. Algae facades also reduce the need for air conditions as it acts as insulation and additionally reduces the heat island effect.



EV CHARGING STATIONS

EV charging stations are placed to support our public transport scheme. These stations will be located closely to our smart energy grid that is distributed throughout north arm cove and will be supported by pavegen technology.

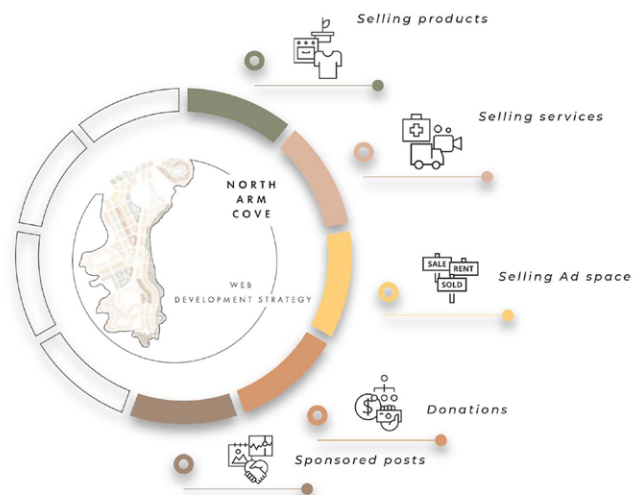
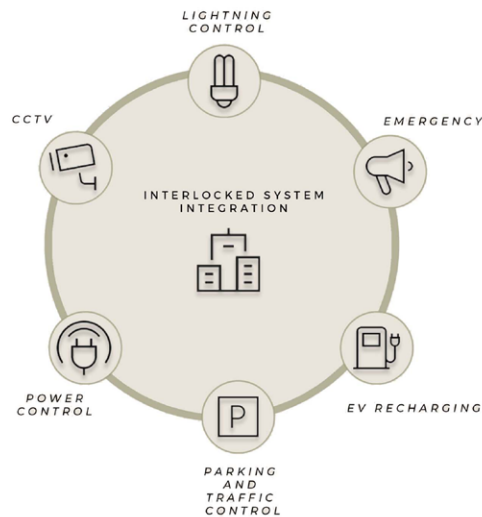


Much of the technology we rely on in our daily lives is connected. This is why it is important to introduce new technologies in easy and understandable ways for the locals. Devices such as mobile phones and even laptops have become an important part of our daily lives.

BUILDING ENERGY MANAGEMENT SYSTEM

A building energy management system is a sophisticated method to monitor and control the building's energy needs. By developing a linked system integration operating platform we can collect and use the energy for public benefits such as lighting control, emergency, ev charging stations, parking and traffic control, power control and cctv.

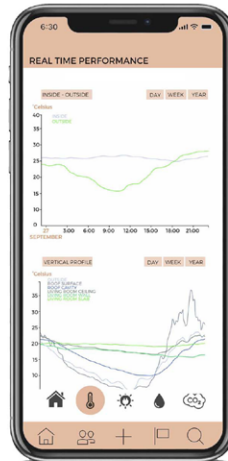
The "smart" reduction and increase of the building's loads can allow commercial buildings to enter the energy markets and become a source of energy demand. This will also improve the building's energy performance.



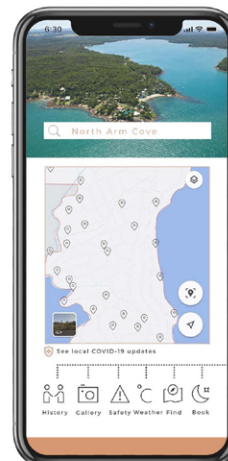
Electricity Usage



Water Usage



Temperature



For Tourists and Locals

- History**
Historical context of North Arm Cove
- Gallery**
Real time photo sharing/connection to social media like Facebook and Instagram. Leaving feedback and sharing thoughts
- Safety**
Safety rules for tourist and residential areas. Emergency contacts and guidelines in case of potential hazards
- Weather**
Current weather and weather broadcast. Warning of potential dangerous weather conditions
- Search**
Look for the nearest bio-toilet or gas station nearby
- Book**
Book and check for available rooms or tents for night stays

REAL TIME PERFORMANCE AND COMMUNITY BUILDING

Digital platforms are an excellent, cost effective way to get the message out and increase community awareness. An app platform is a significant part of the area's Smart Development Digital program. Acting as infrastructures of urban exchange, platform services institute basic match-making capabilities between mobile subjects, whether for transportation, shopping, accommodation, dating, or, simply, public discourse.

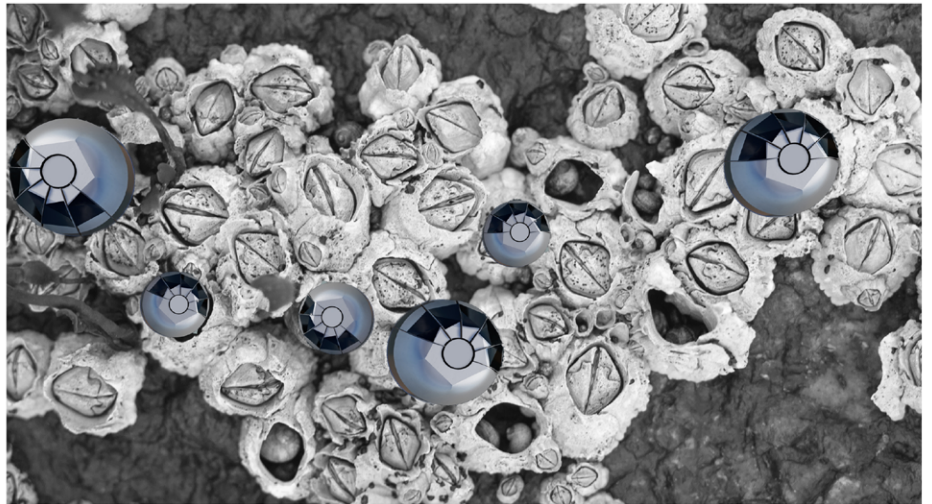
Real time house performance and data collection is crucial for making buildings more environment-friendly and to control its performance. A long-term change is possible only with conscious human based shifts to responsibly consuming and managing their resources and understanding their impact on the environment they are living in. These are examples of how in one click people can check the data of their house. It is important to educate people how to use and respond to the information given.

SECOND PRIZE

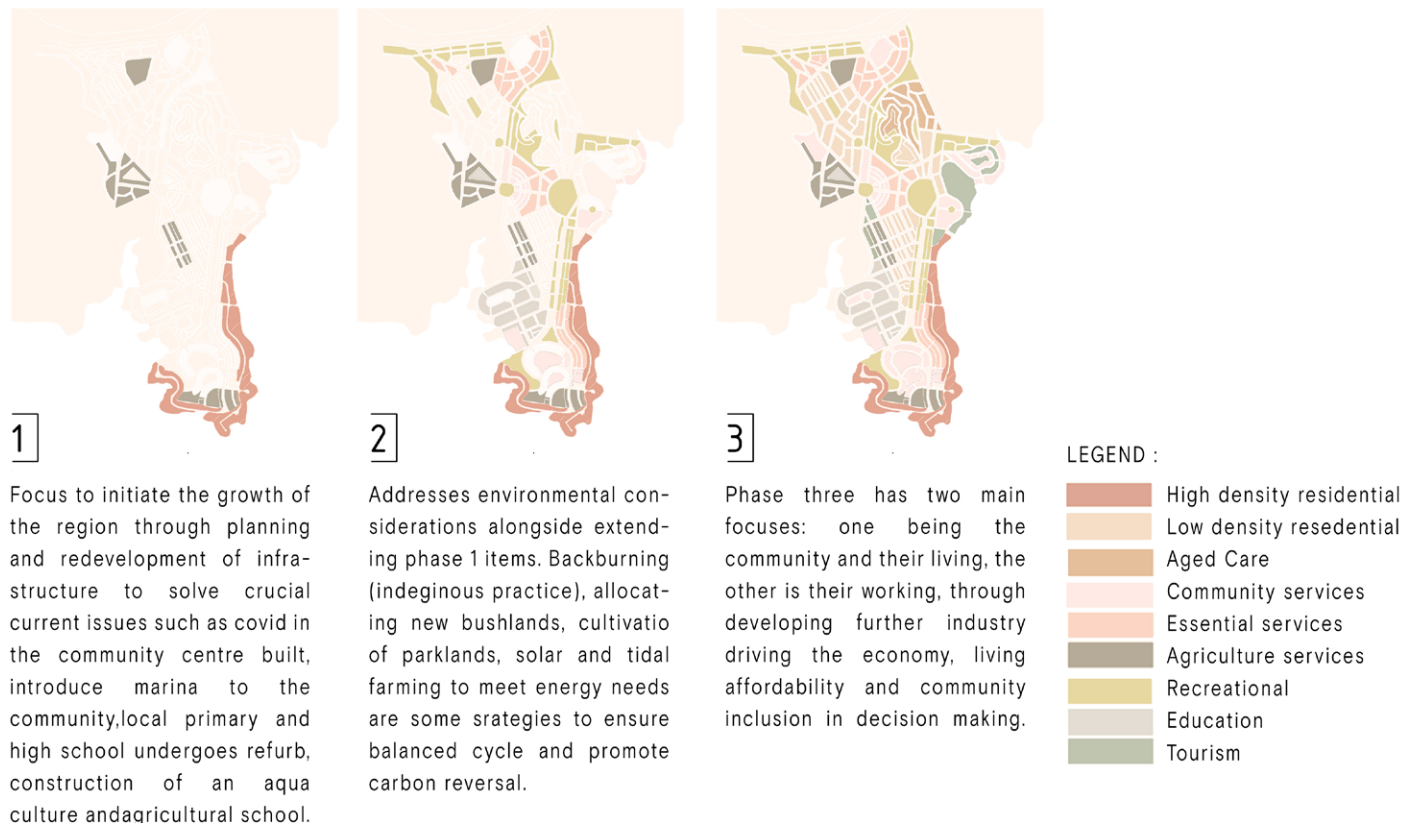
OYSTER-TECTURE (Team IGNIS : Senlina Mayer, Liam Leblond, Sionnan Gresham, Kefan Ren and Alexander Hill).

The 'Oyster-Tecture Program' fundamentally looks to reinvigorate the centralisation model within the context of North Arm Cove's needs by drawing artistic and scientific inspiration from the region's native species, oysters.

The programs has three phases each of which work to balance with the developing economy, bringing in further income into the region and expanding the industry whilst maintaining the community's living quality.



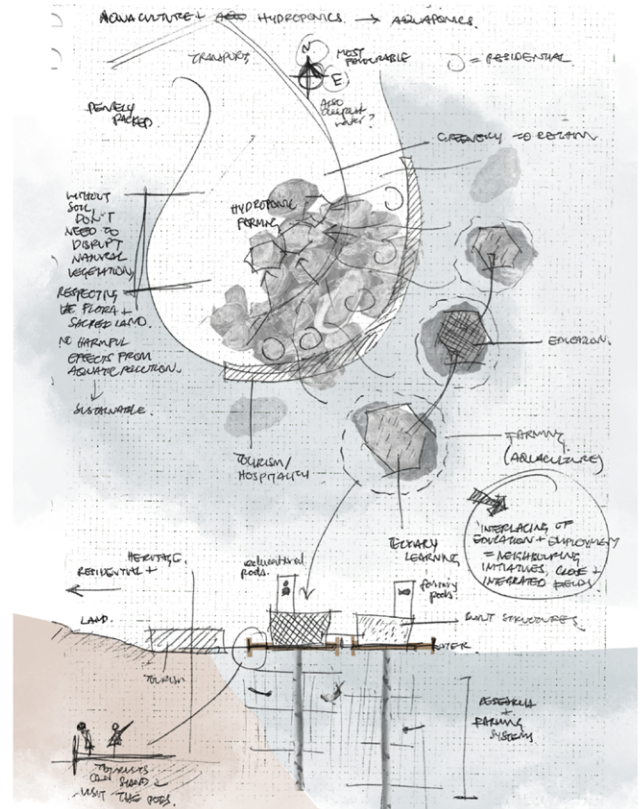
Development Zoning:



SOCIAL

Oyster-Tecture looks to opportunities in agriculture, tourism, conservation and associated fields of employment, education and training. By further adapting the existing aquatic farming industry, having been refined by local tradition, retains the established community and propels the economic opportunities for tourism and education, supported by technological and scientific advancements. Opportunities for low-intensity aquaponic and hydroponic farming are integral systems that require minimal land use and effectively cultivate communal relationships as renewable financial resources.

North Arm Cove thus vanguards the dynamics of agriculture, social wellbeing and interconnected communities, where tourists in search of a 'sea change' find also education and employment. Diversity in building typologies also supports the sustenance of community dynamics in extreme circumstances such as physical isolation during a pandemic.



Conceptual Map: Multi Use Oyster Pod Architecture



URBAN

As a team we have developed a design proposal for our proposed community centre which includes equity for various members of the community and the way in which they are represented, and embraces the culture of the indigenous roots of the land working with local indigenous artists to curate the architectural form and display artworks. The design itself physically depicts our vision for North Arm Cove, concentric around a communal focus given its cylindrical form with the central courtyard. Like all of the new development occurring through each of the three phases, the community centre in the Baromee Hill region will act as a carbon neutral development being run entirely on clean energy through solar and tidal power acting as an example for the residents of the future of their lifestyle. An assurance of protection of culture and heritage along with further development for implementation of adherence to the responsibility to future generations of Cove.

INFRASTRUCTURE

The city will not possess any traditional public rubbish bins for public property, rather instead it will use vacuum tubes that will lead directly to a rubbish processing centre where it will be processed, and the appropriate waste will be separated and sent to the waste to energy generator. These can be seen in Figure 2. The city will also make use of a stormwater recycler in order to make the water supply more sustainable and self-sufficient.



Image showing how the vacuum rubbish tubes will work (Green, 2021)

The economic development plan in North Arm Cove will be mainly directed in three directions to account for the groups of people constituting the city's population.

- Employability
- Tourism
- Affordable Housing

- Aquaculture

One of the benefits of being a coastal city is the potential of developing Aquaculture. As the world's population increases, so does the demand of sea-food. The unique geography of North Arm Cove makes it a perfect habitat for oysters. Therefore, oyster farming can also be a highly profitable industry that is suitable to develop in North Arm Cove.

Additionally, aquafarming can provide the locals with job opportunities, restoring the endangered species, and provide space for scientific research.

- Marina

A marina can be built to accommodate the tourists, and it is like an open arm to display the welcoming side of the city and showcase that it is ready to transform into a tourism city.

- Affordable Housing

Dense living is one of the perfect solutions to reduce the housing price but maintain a high-quality lifestyle. To face the inevitable population growth in the future, building properties that would contain more people on limited land is the key.

ECONOMY

Image: Modular pod and school design



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