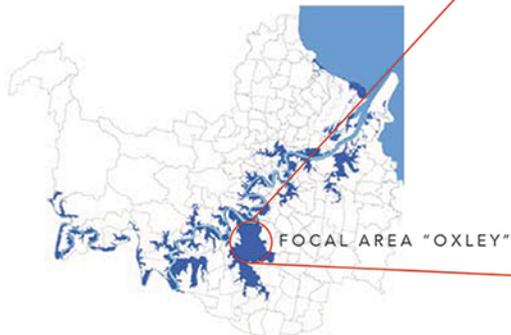


CONTEXT ANALYSIS



WHERE IN THE WORLD?



2011 BRISBANE FLOODS - REGION

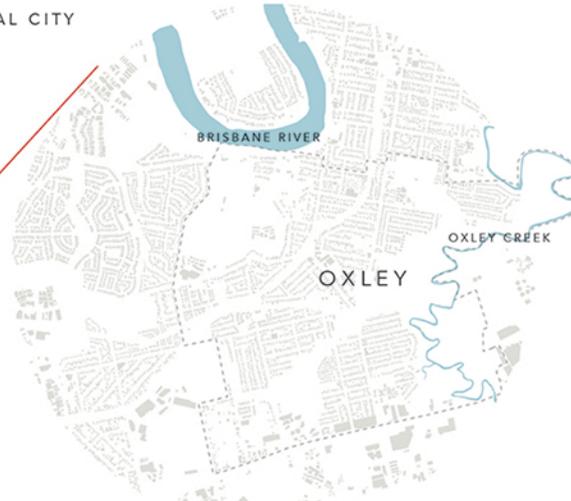
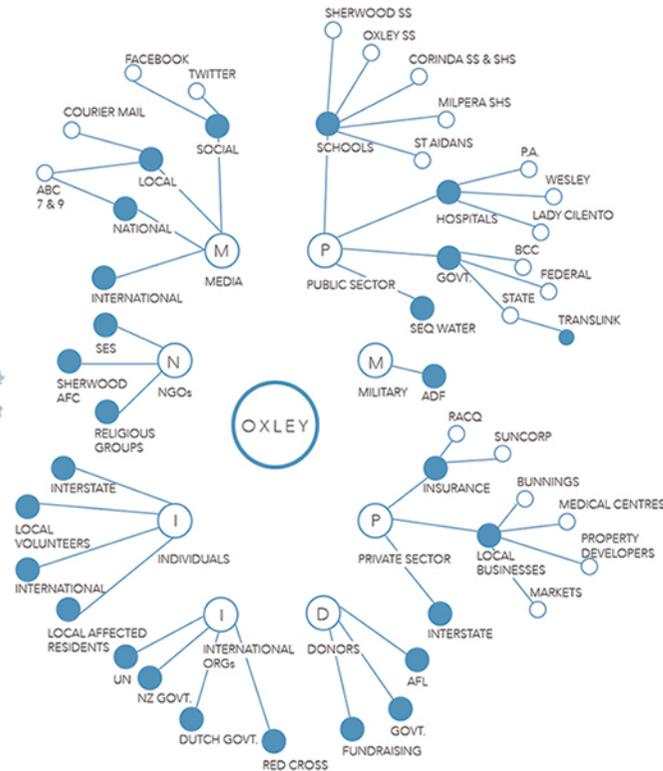


FIGURE-GROUND MAP
EXISTING DEVELOPMENT
1:40,000
NT

STAKEHOLDER ANALYSIS OXLEY



- HL** HIGH POWER, LOW INTEREST
 - NATIONAL MEDIA (ONLINE, TV)
 - MILITARY
 - INTERNATIONAL MEDIA
 - INTERNATIONAL ORGS. (UN)
 - FEDERAL GOVT. PROVIDING MONEY
 - INSURANCE GROUPS
- HH** HIGH POWER, HIGH INTEREST
 - LOCAL MEDIA (ABC, NEWSPAPERS)
 - NGOs
 - PRIVATE SECTOR
 - LARGE DONORS
 - BCC AND STATE GOVT.
 - EMERGENCY SERVICES
 - MEDICAL FACILITIES
 - PROPERTY DEVELOPERS
 - ENVIRONMENTAL PROTECTION AGENCY
 - TRANSLINK
- LL** LOW POWER, LOW INTEREST
 - INTERSTATE INDIVIDUALS
 - INTERNATIONAL INDIVIDUALS
 - INTERSTATE BUSINESSES
- LH** LOW POWER, HIGH INTEREST
 - LOCAL INDIVIDUALS
 - INDIVIDUAL DONORS
 - SCHOOLS
 - OXLEY SS
 - CORINDA SS & SHS
 - MILPERA SHS
 - SHERWOOD SS
 - ST AIDANS

STAKEHOLDER MATRIX

HOLD ON

HOLD ON IS A TEAM OF POST-DISASTER STRATEGISTS, FACILITATORS, DESIGNERS, ARCHITECTS, AND ADVOCATES, WHO COLLABORATE WITH COMMUNITIES AND STAKEHOLDERS IN AN EVOLUTIONARY PROCESS OF TRANSFORMING THE URBAN ENVIRONMENT FOR THE BETTER.

WE USE DESIGN AND ARCHITECTURAL THINKING AS A TOOL TO UNIMAGINED OPPORTUNITIES. OUR DESIGN STRATEGIES UNDERSTAND THE COMPLEX METABOLISM OF THE BUILT ENVIRONMENT TO RESPOND NIMBLY TO A VARIETY OF SETTINGS, FROM THE SCALE OF THE CITY DOWN TO THE NEIGHBOURHOOD, THE INDIVIDUAL UNIT, AND THE HUMAN BEING.

WE PUT PEOPLE, COMMUNITY, AND ECOLOGY FIRST. WE ARE ENABLED BY TECHNOLOGY AND THE SHARING ECONOMY. PARTICIPATORY DESIGN GIVES EVERYDAY PEOPLE AGENCY IN THE DISASTER RECOVERY PROCESS. WE EDUCATE THE RISKS OF VULNERABILITY AND GIVE STRATEGIES FOR RESILIENCE.



1974 FLOODS: IMPACT AND EXTENT



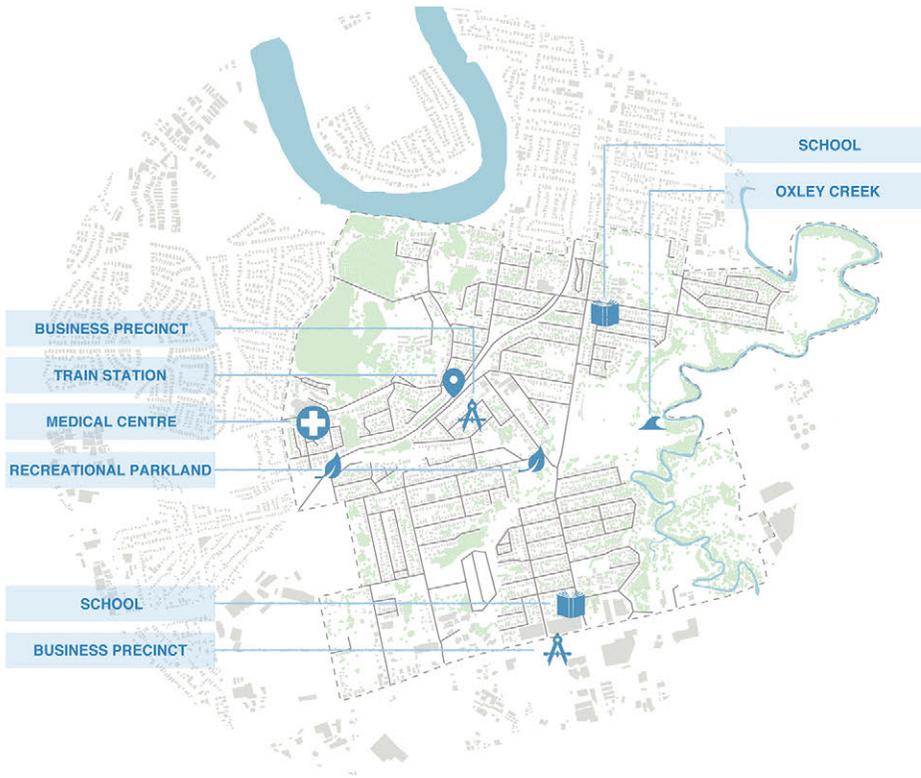
2011 FLOODS: IMPACT AND EXTENT

THE STATS

- THE 1974 AND 2011 BRISBANE FLOODS CAUSED WIDESPREAD DAMAGE AND DESTRUCTION.
- 2011 FLOODS, RESULTED IN **35 DEATHS**
- OVER 78%** OF QUEENSLAND WAS AFFECTED
- ESTIMATED **\$2.38 BILLION** IN DAMAGE
- MAJORITY OF AREAS AFFECTED WERE SETTLED **50 - 150 YEARS AGO**
- 6,791 PRE - 1946** OR CHARACTER BUILDINGS WERE LOCATED IN THE FLOODED AREA
- 1,811 DEVELOPMENT APPLICATIONS** FOR HOUSES, APARTMENTS AND COMMERCIAL WERE APPROVED IN THE FLOODED AREA SINCE 2005

8th i-Rec student competition - People On The Move - 10 May 2017
Queensland University of Technology, School of Design. +61 7 3138 2000
Gardens Point Campus, 2 George St, Brisbane Qld 4000, Australia.
Supervisor Liz Brogden, +61 7 3138 7094. liz.brogden@qut.edu.au

2017 OXLEY FLOOD



Environmental = High Risk

There was drought for several years, which ended abruptly with a few months of consistent and heavy rainfall. There was initial relief as the dam filled breaking the current water crisis situation. Relief transformed to concern as the dam reached maximum capacity and the rain continued to fall upon our city. This rainfall not only affected the Oxley/Rocklea area (Oxley Creek) but also covered the majority of the south-east catchment area. The government proceeded to release water from the dam (an approach left too late during the 2011 flood). The 2011 floods had left the dam structurally weakened/damaged which then resulted in a partial collapse of the wall causing excessive water release which could not be contained.



Health = Low Risk

Diseases and infections as a result of contaminated flood waters (caused by pollution contamination of Oxley Creek and surrounding top-soil) were prevalent following the 2011 flood. Although the community had started to recover, vulnerability still exists today. Mental health (PTSD following the 2011 flood) remains an issue.



Political = Low Risk

The general perception of government is strong but satisfaction has declined as the community questions leadership solutions to current issues (as resilience has not improved).



Economic = Moderate Risk

There's been a global recession, many businesses are vulnerable and with the devastation to infrastructure and properties caused by the flood, the majority of small businesses can not recover and are forced to close down. Unemployment and homelessness has been rising since the recession.



Social = High Risk

Due to extreme infrastructure damage most of the town has been destroyed. Schools and many homes no longer exist which has caused serious social implications within the community. Parents of primary school students are unable to return to work as alternative means of childcare do not exist (which is affecting the economy). Gangs of social youths are forming as high school students have no alternative system of education/entertainment. Many are homeless due to the unlivable condition of residential areas.



Food = Low Risk

Following the 2011 floods the Rocklea Market Precinct has put measures in place to become resilient in the event of a recurrence. Due to this, fresh food supply is in abundance.

Post-Disaster Scenario

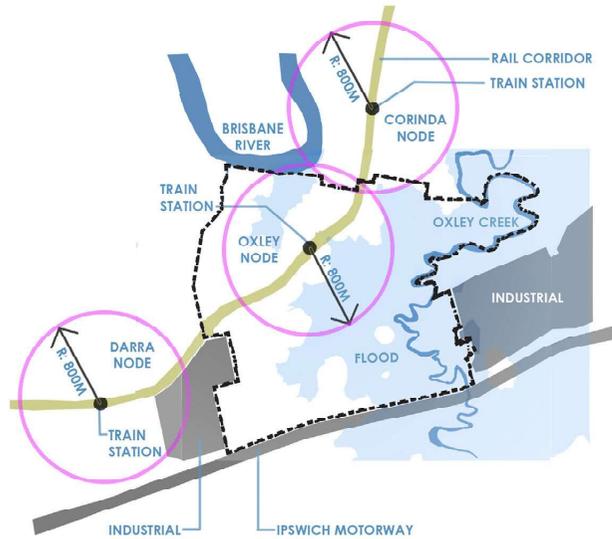
IMPACT OF NEW DISASTER SCENARIO



FLOOD

ON

OXLEY AS A RESILIENT NODE



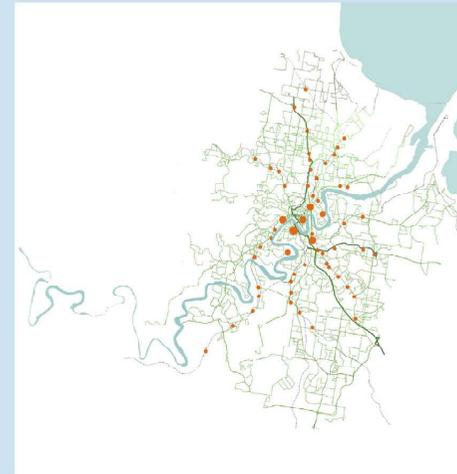
Morphology of built systems (highway, industrial zones, transport infrastructure, transit nodes) and natural systems (river, creeks, flood plains) generate the Oxley microcosm and define the scope.

OXLEY URBAN NODE & COMMUNITY



The networks of settlements, infrastructure, programmes, and land use are understood as comprising the built system of the urban metabolism.

OXLEY & REGION: BUILT SYSTEMS



Considering the interaction of the built and natural system we identify potential sites for urban acupuncture - the node system.

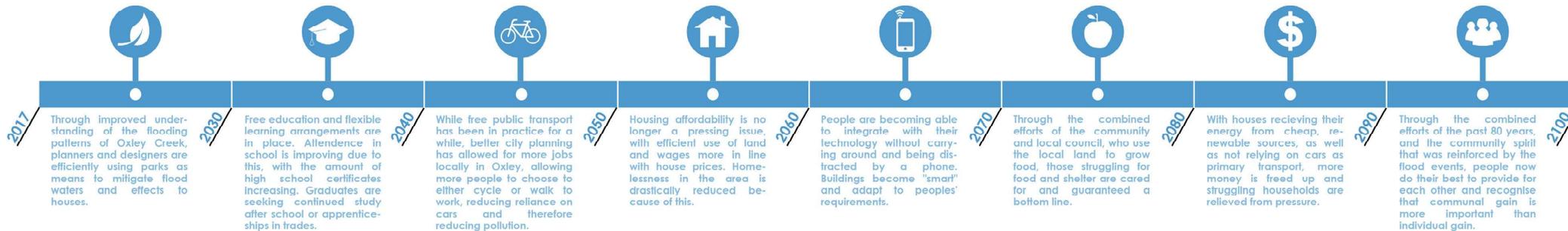
OXLEY & REGION: NODE SYSTEMS



The networks of rivers, creeks, vegetation, catchments and floodplains are understood as comprising the natural system of the urban metabolism.

OXLEY & REGION: NATURAL SYSTEMS

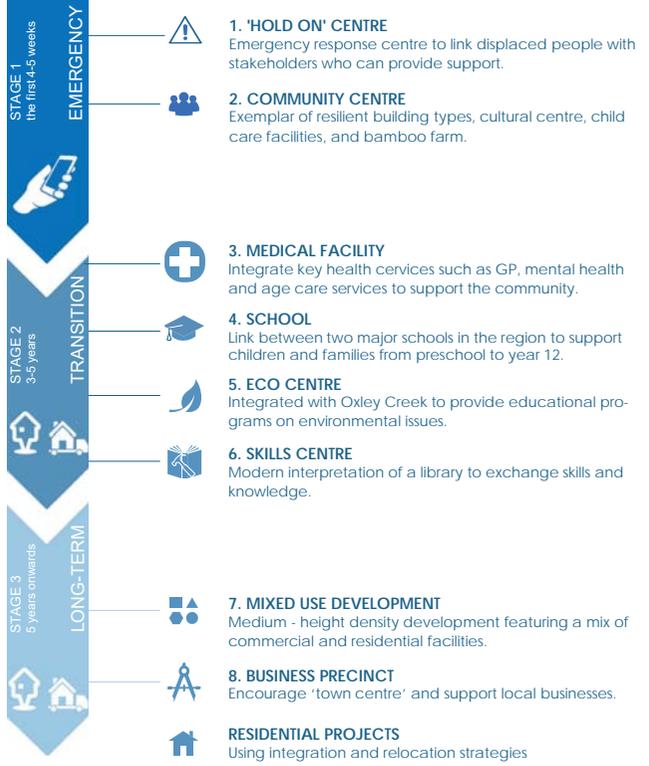
HOLD ON



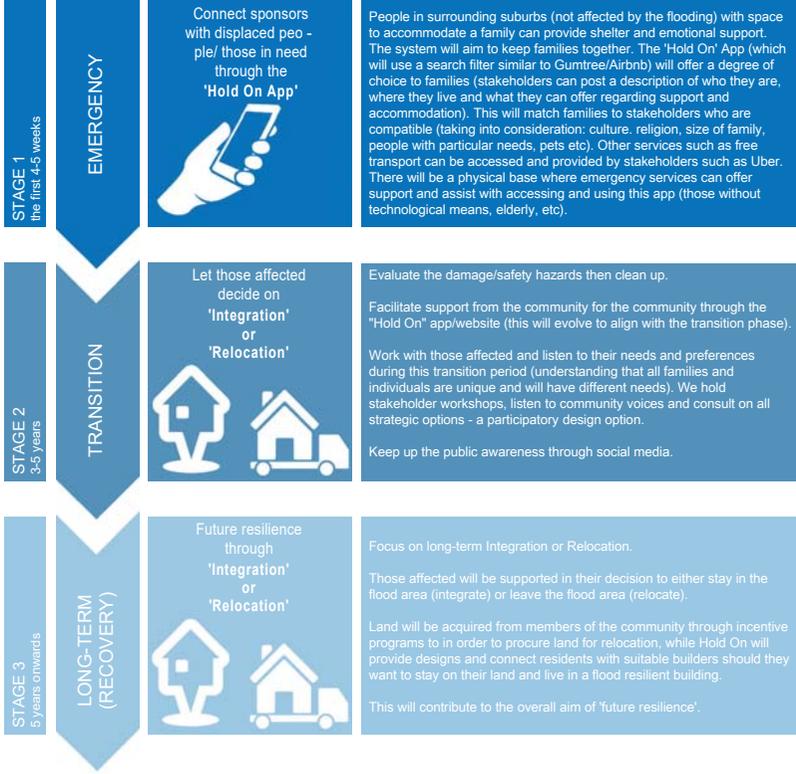
THE FUTURE OF OXLEY



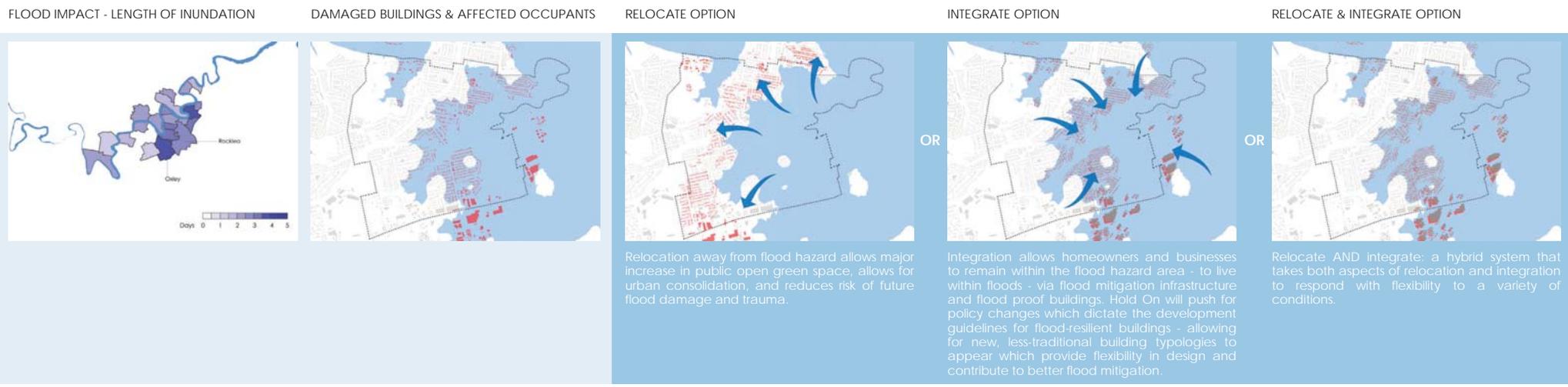
PROPOSED NEW 'RESILIENCE-BUILDING' PROJECTS
 1 : 40,000
 NI



OXLEY RECOVERY TIMELINE



'RELOCATE' OR 'INTEGRATE': TWO RECOVERY OPTIONS



HOLD ON

PROJECTS - HOLD ON CENTRE & LITTLE HOUSE



PROJECT LOCATION
1 : 20, 000
N



INITIAL PHASE

Major stakeholders will be involved from the initial phase to offer various forms of support and assistance to people and businesses affected by the floods. These stakeholders will include; Red Cross, SES, Salvos, medical professionals, Community Groups, Services ('floodbnb'), insurance companies and local builders.



TRANSITIONAL PHASE

The structure will become more permanent and provide multi use areas for different groups; VET education and local business facilities to help tackle social and economic issues



PERMANENT PHASE

The structure will consist of open plan space that can be easily configured into separate areas if needed depending on the use, and reverted back to the emergency program whenever the next disaster strikes. This permanent structure will be known as a flood emergency area where people can go for assistance.



FLOOD ZONE



CENTRAL PRECINCT
Within 10 min radius



CENTRES & SUPPORT FACILITIES



IDEAL LOCATIONS



SITE

The site is positioned on an under utilised block of land which is currently vacant, and located in between the business / transport precinct and the medical centre. The land chosen is not within the flood zone, and easily visible from multiple areas both during and post disaster.



INSTANT RESPONSE

Easily set up for immediate response



EMERGENCY FACILITIES

Health care workers and support (i.e. stand by pods for those who have been badly affected)



LIVING SUPPORT

Displaced people who need somewhere to stay and do not have anywhere to go will be assisted with case workers who will help find them suitable accommodation for the initial, and long term. Through means of Flood bnb and other support from stakeholders (i.e. pods)



BUILDING SUPPORT

Local builders / developers who are able to provide information and resources to help vulnerable people - i.e. knowing the importance of letting a house dry out before re building / putting up plaster sheets -> decay that could cause structural issues and health problems



INSURANCE SUPPORT

Insurance company reps to offer information and support as to how people can repair and what options will best suit them



ADAPTIVE

Flexible design to be arranged and built upon depending on the communities needs. After the initial disaster, the space can be changed to suit educational and local business needs. All materials needed will be brought by the user and taken away at the end of the day - so in case of another emergency the space can easily convert back to its initial purpose without extra furniture in the way.



SUSTAINABLE

The centre will have a long life span and continue to be used in future disaster events and community engagements



LOCAL RESOURCES AND SKILLS

The centre will be built with local, and recycled, resources and skilled tradesman. The local Bamboo Farm supplies materials that are integrated into the build.

PROGRAM OF THE CENTRE

The program will be 'factory like' when used as an emergency centre. Distressed people will enter, greeted by case workers who will support them through the process, then additional support will be offered to the individual. Once the disaster has been dealt with the space will re - configure to suit different user needs.



PROJECT LOCATION
1 : 20, 000
N



INITIAL PHASE

Pre-designed houses will be delivered to families throughout the affected area with amenities and spaces to suit different circumstances (i.e. individual, couple, young family, large family). These houses will be parked on site next to the flood affected house.



TRANSITIONAL PHASE

Whilst the original houses are being repaired and worked on, regardless of the timeframe involved, people will be able to live comfortable throughout this process without the stress of being displaced completely. Alternatively, the little house can replace the regular, pre existing, flood affected house.



PERMANENT PHASE

Once the houses are repaired, people are able to move back into their homes and keep the removable house for future flood events. As these are flood prone areas, it is very likely they will need future emergency shelter. Alternatively, the little house will replace their house allowing people flexibility and endless opportunities.



FLOOD ZONE



RESIDENTIAL PROPERTIES



DIRECT CREEK PROPERTIES



IDEAL LOCATIONS



SITE

The site is positioned on a small block of land in Lawson St, one of the most flood affected areas in Oxley. Near Oxley Creek, the site presents the phases involved for our resettlement strategy



TRANSPORTABLE

The little house pod pieces are easily moved when needed. Build on trailer beds, they can be moved by regular family cars.



ECONOMIC

Affordable for all people within the community (i.e. families, first home buyers, individuals). Pods range in prices and services, which can be added or subtracted when needed.



ADAPTIVE

Flexible design to be arranged and built upon depending on the clients needs. (i.e. family expecting another child can add extra services and space, as well as subtracting when the child grows up and moves out) No need to sell and downsize when couple retire, they can simple adapt their home to suit them.



DURABLE

High quality recyclable materials that have a long life span. Durable for different weather and climates within Australia, as families may decide they want to pack up and move - i.e. travel from Brisbane to Melbourne



QUALITY OF LIFE

The flexibility and affordability of the little house allows people to live a higher quality life, saving money and time for what is really important. The little house encourages adventure and re-thinking how we live and what we value.



SUSTAINABLE

Environmentally friendly, off grid designs that contribute to the health of the world, instead of taking away from it. The little house harnesses energy from the sun and wind, collects water via built in tanks, and disposes of wastes through various systems.



LOCAL RESOURCES AND SKILLS

Local resources are used to create the pods, and extensions such as decks. The local Bamboo Farm supplies materials that are integrated into the outdoor elements of the build. Local skills, from various trades, are used to build a production line of pods to encourage local economic growth and exchange of skills.

PROGRAM OF THE CENTRE

The little house will be movable as one piece, however when established - the deck space will 'slot' out to provide additional outdoor space. Internal cupboards and storage space will also 'slot' out to provide extra internal space. The little house will consist of clean white walls, and large windows throughout to make the space feel larger than it is and create cross ventilation

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PROJECTS - ECO-CENTRE & INTERGENERATIONAL HOUSE

ECO-CENTRE INTEGRATE STRATEGY



CONCEPT PLAN 1:10000

OXLEY CREEK ECO-CENTRE is a catalyst project for the Oxley community and the natural environment of the creek. Through education programmes, the project will address the need to engage with the social & environmental issues facing the community. Education will encompass understanding of water quality in the creek, flooding, mangrove ecosystems, indigenous history, diversity of vegetation, and creating a reimagined productive landscape for the Eco-centre. The project is staged in order to provide the community with immediate programmes that do not require a physical building, such as monitoring water quality, kayak tours, and planting within restoration zones. The project aims to reframe water, the creek, and flooding as an asset to the community. The physical buildings will celebrate place and connection to nature via subtropical & sustainable design principles and the buildings will acknowledge the specifics of the landscape through floodable resilient architecture.



CONCEPT IMAGE

the concept of flood space - the space of disaster - generates ideas for the Eco-Centre as a catalyst for community and environmental transformation.

INTERGENERATIONAL ADAPTABLE HOUSE RELOCATE STRATEGY



CONCEPT IMAGE

The concept of subtropicality - connection to nature - generates ideas for the intergenerational adaptable house for family & community transformation.



CONCEPT SECTION



CONCEPT PLAN 10m

INTERGENERATIONAL ADAPATABLE HOUSE is a residential project that addresses the relocation shelter & settlement strategy, one of a suite of approaches adopted by the Oxley community post-disaster. The project is possible through voluntary local government buyback of flood affected land & properties, & through the revision of the town plan. Residential land within the walkability radius of Oxley town centre is permitted to be higher density - a plot ratio of < 2:1 - enabling models of suburban development not typical in the area. The project addresses community issues of social isolation, housing affordability & aged care through a housing structure that enables several generations of a family to live together. The rationale for the adaptable house is that houses situated in flood zones are unsuited for universal access & not practical as models of adaptability. The project will enable grandparents and/or carers to occupy the ground plane with direct access to gardens and communal spaces.

The house can grow with the family & flexibly adapt to changing circumstances of young adults returning to or staying in the family home to live independantly. The concept of subtropicality has allowed the project to reimagine forms of occupation in the Brisbane climate through a combination of courtyards and verandahs, lightweight timber and thermal mass. A waste heirarchy will drive the sustainability ethos of the project. Materials recovered post-disaster will be reused as a priority. The project can be staged and built incrementally to suit the transition requirements of the owners. The incremental possibilities lead to the concept of a mini-village surrounding a communal courtyard. The vision of subtropicality and sustainable resilience activate responsibilities to catchment. Rain gardens combined with rain water storage and permeable streets are the outcome of this thinking. Subtropicality connects the city to nature in a housing form that creates a city in miniature for the transformation of family as community.

Residential Project Integration



THE INTEGRATION PROCESS

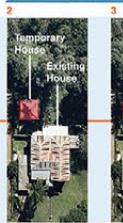


1 EMERGENCY



Existing flood affected design.

2 TRANSITION



Temporary backyard home is placed on site for family to reside in while renovating main house.

3



When suitable family moves back into main house and can lease the temporary house to help pay for renovation.

4



Main house renovation is complete and temporary house is removed and returned for future use.

5 LONG-TERM



Proposed new design is flood resilient and integration is achieved.



EXISTING HOUSE

PROPOSED FLOOD RESILIENT HOUSE



Existing flood affected house with proposed temporary backyard house.

The design intent of this process is to allow families to stay together during a crucial period of recovery (the transition stage). Families will be able to still reside on their properties, in a familiar area, surrounded by a familiar community.



TEMPORARY BACKYARD HOUSE

Materials for the temporary backyard house are sourced from the Community Centre Bamboo farm. Construction will be undertaken at the Community Centre workshops. The temporary backyard houses will be stored there when not in use.



Community Centre Integration



PROPOSED COMMUNITY CENTRE & BAMBOO FARM



FLOOD RESILIENT VERTICAL DESIGN

FLOOD RESILIENCE VERTICAL DESIGN

The building is elevated through vertical design above flood levels allowing for flood resilience through integration into the flood zone.



COMMUNITY COUNSELLING



Community counselling and art therapy is offered to the public for those affected by the flood in prevention/ treatment of PTSD.

BAMBOO FARMING



BAMBOO CONSTRUCTION



A bamboo farm is located on the site and is maintained by the community centre. Materials are used to construct temporary housing for the transition stage of flood recovery. Bamboo construction workshops are offered to the public. This promotes a material that is grown locally, cost effective, lightweight, transportable, and sustainable.

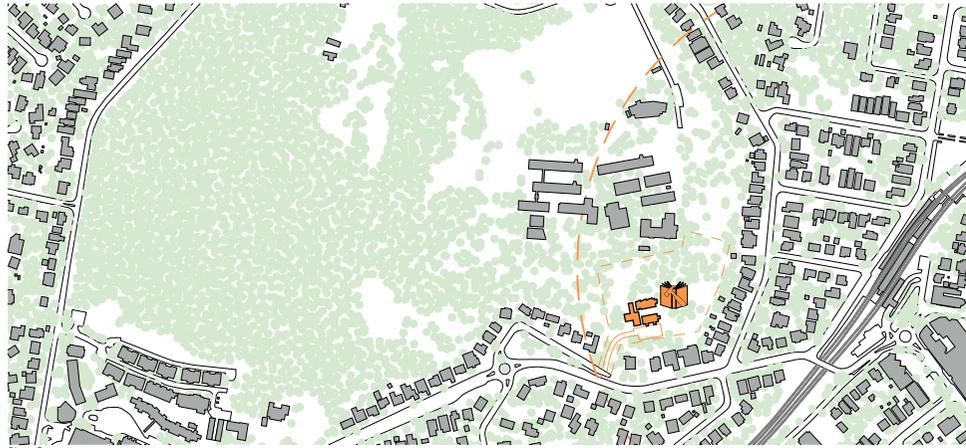
COMMUNITY GARDENS + COMMUNITY KITCHEN



A community garden functions off a systems of bamboo aquaponics sourced from materials grown in the Bamboo Farm. The food grown is used in the community kitchen, which provides meals that promote healthy diet and provided to community members in need. This system is self-sufficient and assures a source of food in the event of a future flood.

PROJECTS - SKILLS CENTRE & INFILL HOUSING

SKILLS CENTRE RELOCATE STRATEGY



Site Context
1:10000 N↑

NEIGHBOURS

Residents of the several nearby aged care facilities can be invited to share their knowledge in the Oxley Skills Centre with eager learners - the proximity allows for easy transportation to reach the site.

SITE

The chosen site is the abandoned Oxley Secondary College. While the state government doesn't have any immediate plans for using the site, using it as the location of the Oxley Skills Centre is a great way of re-utilising disused land for a good purpose.

5 MINUTE WALK

Being located within a 5 minute walk to the town centre and train station, the Oxley Skills Centre is very accessible to people on foot. Further, the Skills Centre is accessible to many more residents of Oxley who are live within a short walk of the centre, reducing even the need for travel via public transport.

THE OXLEY SKILLS CENTRE

The Oxley Skills Centre was born out of a need to address Oxley's dwindling social and economical contexts. Part of what is contributing to these is insufficient education, which is addressed by Hold On's commitment to initiating flexible learning arrangements in schools.

What is often not addressed, however, is education after school - tafe and universities exist, but unless you are pursuing a career in what you're learning, the cost is prohibitive. Traditional libraries exist for the public for recreation but also to further their education through literature - but what about other ways of learning?

The Oxley Skills Centre implements learning and development opportunities in several key areas:

TRADES - MUSIC - DRAMA - KNOWLEDGE SHARING

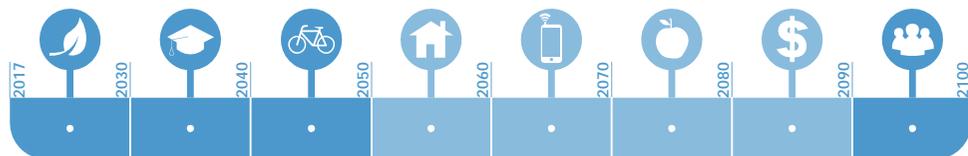
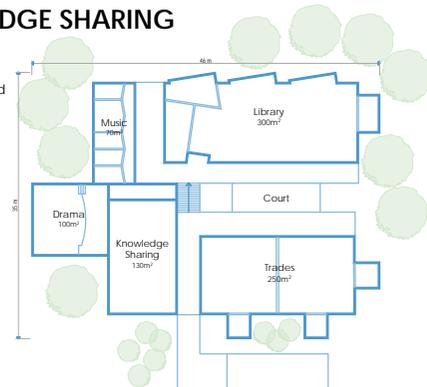
Users of the space can undertake self directed work if they, for instance, want to use the trades section to work on a project in their own time. Music rooms can be booked out for lessons, if the tutor doesn't have a business address and the student isn't comfortable doing it at their own home. The residents of the nearby aged care facilities can share their knowledge with the younger generations.

TRANSITIONAL PHASE

The Oxley Skills Centre will take some time to build, but will be completed in the latter half of the transitional phase (2.5-5 years).

PERMANENT PHASE

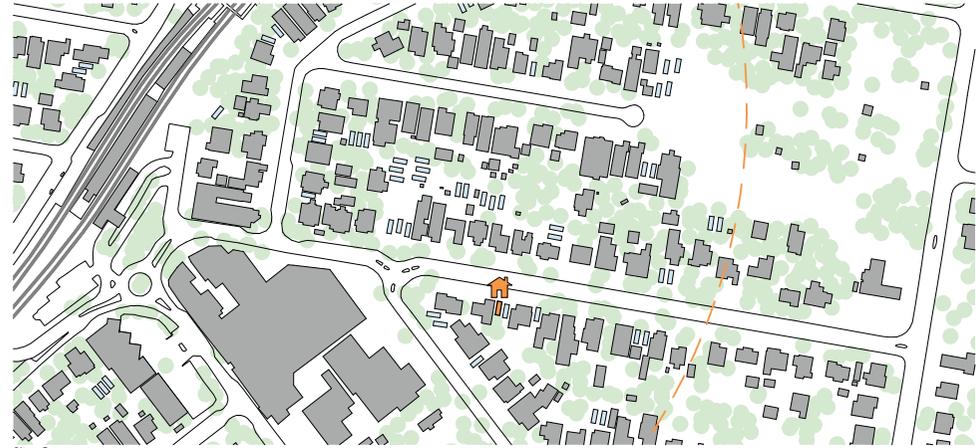
The Oxley Skills Centre will become a permanent fixture of Oxley, and will contribute to the lifelong learning initiatives set in place by Hold On to target the low social context. It will future-proof what knowledge is held by the residents of Oxley and give people a much needed option for learning, post-schooling.



RELATION TO 100-YEAR VISION

The timeline elements shown in dark blue indicate the vision milestones the Oxley Skills Centre addresses.

INFILL HOUSING RELOCATE STRATEGY



Site Context
1:5000 N↑

AMENITIES

Concentrating population near amenities such as shopping hubs further reduces reliance on cars and promotes healthier lifestyles.

SITE

The chosen site is between two existing buildings along Cook Street. There are many examples like this where there is sufficient land between houses, though this was chosen due to its sub-5 minute walk to the train station.

5 MINUTE WALK

Within this line is where we have identified the opportunity for higher density housing, as people are more likely to walk to the train station shown on the map in blue.

ALTERNATE LOCATIONS

The small and narrow nature of these buildings allows for density housing, as people are more likely to walk to the train station.

THE INFILL HOUSING STRATEGY

As part of Hold On's settlement strategy for Oxley, it is up to the residents to decide whether they want to relocate out of flood waters or stay where they currently are. Due to this, it is impossible to come up with a firm number for those who may want to move out of their flood-affected lots and live closer to the town centre. Flexibility in shelter strategy and the ability to apply it to many locations is necessary.

Our one-hundred year vision relies on a higher density of housing located within a five-to-ten minute walk of the town centre. As Oxley is already an established suburb, building higher density dwellings is hard to do on land that is already used by typical residential dwellings. What's possible, though, is to use the land in between existing dwellings for small, affordable housing.

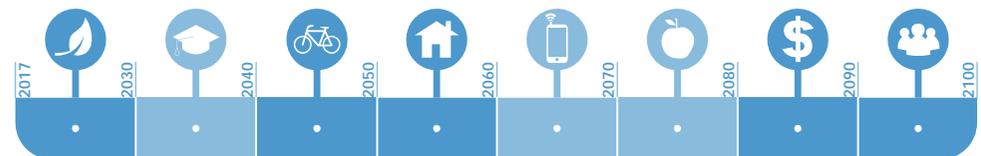
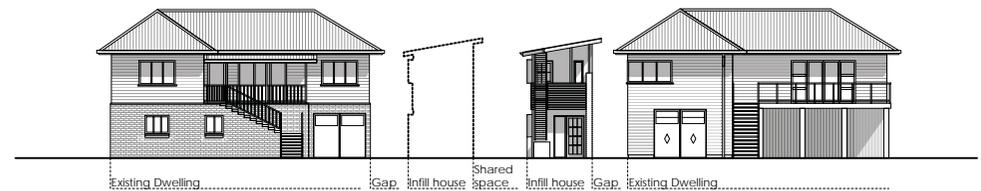
The idea is not to replace existing houses in Oxley, rather to maximise the use of underutilised land in an attempt to provide higher density living arrangements at a more affordable price.

TRANSITIONAL PHASE

As this housing typology still shares construction techniques akin to typical residential dwellings, it may take up to two months to arrange construction of the houses - not including council permit waiting times. This means that the houses will be available for use very early on in the transitional phase.

PERMANENT PHASE

With traditional housing materials used, these houses will last the typical half century or so. If the land needs to be repurposed for new housing development in the future, the small nature of the houses will allow for easy deconstruction and efficient material recycling.



RELATION TO 100-YEAR VISION

The timeline elements shown in dark blue indicate the vision milestones the Infill Housing Typology addresses.