Learning through the multi-disciplinary studio

Xinxin Wang, Matthew Bradbury and Lucia Camargos Melchiors
School of Architecture, Unitec

UNITEC RESEARCH SYMPOSIUM 2020
Problem

• Conventional design education emphasises **disciplinary boundaries** that are related to professional obligations.

• For architecture and landscape architecture disciplines, conventional education methods have led to many **separated solutions**.

• However, these traditional disciplinary silos have proved **inadequate** in exploring potential solutions to the many pressing contemporary issues they facing, not the least, the effects of climate change.
Response

- We argue that a **multidisciplinary focus** is the only way in which these serious challenges to the sustainability of our cities can be met.

- Architects and landscape architects must **work together** to share expertise, specialist knowledge, and skills

- and through **collaboration** develop solutions that are larger than those the individual disciplines can provide.
Method

• **A joint design studio** was established at Unitec to build multidisciplinary collaboration between landscape architecture and architecture students.

• The **aim** of the studio teaching is to
  - facilitate landscape/architecture interaction
  - develop innovative thinking capacity
  - enhance the learning experience
FRAMEWORK

4. Acknowledgment of mana whenua through collective learning
3. Research by design and a design process that is influenced by landscape/architecture interaction
2. Creating a multidisciplinary learning space for collaborative design to help build resilient urbanism
1. Using a real world project, one with a client, a community and a site will be affected by climate change

MULTI-DISCIPLINARY STUDIO
STUDIO PROCESS: Three phases

**RESEARCH**
- Site investigation
- Meeting with clients and community
- Literature review
- Case studies
- Group discussion

**MASTERPLAN**
- Data collection
- GIS mapping and analysis
- Climate adaptation strategies
- Connectivity with local community
- Mana whenua

**DETAILED DESIGN**
- Detailed climate adaptive design interventions
- Detailed building design
- Detailed public space design
- Integration of building/space interface
<table>
<thead>
<tr>
<th>Year</th>
<th>Project</th>
<th>Topic</th>
<th>Stakeholders</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>Wellsford</td>
<td>Urbanism</td>
<td>Wellsford community; Guest speakers; Industry critics</td>
<td>Upper Rodney, Auckland</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2017</td>
<td>Hīhīaua peninsula</td>
<td>Climate change adaptation</td>
<td>the Momentum North group; Hīhīaua community; Whangarei District Council; Maori lecturer; Maori critics</td>
<td>Whangarei</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2018</td>
<td>Mt Roskill</td>
<td>Urbanism</td>
<td>Mt Roskill community; Guest lecturer; Industry critics; Maori critics</td>
<td>Mt Roskill-Mt Albert, Auckland</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2019</td>
<td>Onehunga Port</td>
<td>Climate change adaptation</td>
<td>Panuku Development Auckland; Onehunga Township; Maori lecturer; Maori critics</td>
<td>Onehunga, Auckland</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2020</td>
<td>Onehunga Port</td>
<td>Climate change adaptation</td>
<td>Panuku Development Auckland; Onehunga Township; Local Maori representatives; Maori guest lecturer; Maori critics</td>
<td>Onehunga, Auckland</td>
</tr>
</tbody>
</table>
Case study

• In this presentation we illustrate our argument with results of the Onehunga Port project, located in Auckland, New Zealand. Students were invited by Panuku, an Auckland Council Controlled Organisation, to develop an alternative urban waterfront masterplan for the recently purchased Onehunga Port.

• Architecture and landscape architecture students formed 5 collaborative groups to produce alternative masterplans.

Photos taken by Lucia Camargos Melchiors
Onehunga Port project

The site: A post-industrial waterfront

The site is close to Onehunga township and Mangere, surrounded by a few outstanding landscape features. However, the access road also acts as a barrier, isolating the port from Te Hopua and the Onehunga township.
Onehunga Port project

Key issues:

1. Rising sea levels and their potential impact;

2. Connection with Onehunga township and Mangere;

3. Engagement with mana whenua

Image: student group Deepak Badhan, Peter Chen, Suyi Gan, Haiyue Li, Kelsey Stankovich, Yue Yu
Onehunga Port project

Research phase:

1. Climate adaptation strategies
2. Connectivity strategy
3. Indigenous cultural values

Adaptive strategies for buildings
- Elevate building on fill
- Elevate building on piles
- Amphibious structure

Adaptive strategies for landscape
- Elevation of land and streets
- Raised waterfront parks
- Living shorelines

Images adapted from (Department of City Planning City of New York, 2013). Analysed by students: Trina Gaston, Rory Gray, Torben Laubscher, Thomas Smith.
Onehunga Port project

Masterplan phase: Integrated strategies

Image credit: student group Nicholas Fortier, Christian Castle, Dilukshi Thurairajah, Xuling Zhu, Benjamin Whitehouse
Onehunga Port project

Detailed design phase: Integrating building with public space design

Image: Suyi Gan (landscape architect)
Onehunga Port project

Detailed design phase: Integrating green techniques with building design

Image: Hannah Cronin (architect)
Onehunga Port project

Detailed design phase: Integrated public space and buildings

The entire development is comprised of individual components working together to form a whole. The flow of use from one area to another is detrimental to the proposed ports success.

Instead of flow being disturbed or broken by the iniminent flood, the flooding not only provides opportunity for new ways the spaces can interact with one another, but also provides opportunities for how the whole site can operate, as well.

Image: Christian Castle (landscape architect), Dilukshi Thurairajah (architect)
Conclusion

• Over five years of exploration, the multidisciplinary studio has been proven to be an effective teaching–learning method.

• The design outcomes demonstrated that the multidisciplinary approach has fostered methodological and analytic interaction amongst the landscape and architecture students.

• This has resulted in integrated climate adaptation solutions that would not have happened through a single disciplinary approach.

• The success of this studio has potentials offers great insights into addressing complex urban and environmental issues in a landscape/architecture studio context.