

Paper No: 526 Extreme Studio & Aotea Studio: experiments of environmental, cross-cultural and interdisciplinary projects in New Zealand

Rosangela Tenorio

University of Auckland, New Zealand

Extreme Studio & Aotea Studio

Aotea & Extreme Studios were design based projects for 4th Year Architecture students taught in 2007 and 2008 in New Zealand. The first project centred on the design of a research facility at Tongariro National Park (UNESCO World Cultural and Natural Heritage site). The second project was centred on the design of a creative arts educational facility in Aotea harbour – Waikato (the Aotea canoe arrived first in Aotea harbour about 1300 AD). The principal pedagogical agenda for the studios centred on the notion of interdisciplinary and intercultural explorations, in which environmental design as applied research was an integral part of the process. During the extreme studio experience, students were asked to respond to the condition of being in extremes, learning about the tolerance of human response and understanding their perceptions to such conditions as much as the environmental responses to such conditions. The Aotea studio took advantage again of its surroundings of historical and environmental significance, inviting students to incorporate ideas from thinkers and philosophers (e.g. R. Tagore, P. Freire), where there is the questioning of the role of creative arts in education, correlated with the environmental and holistic architectural approach to design. Students questioned the outdated vocabulary that holds together the stable and enclosed borders of the educational facilities. As quoting from one of the students submissions "...human freedom is not only in our minds: it is a state of grace, natural to us, but too often prevented by the physical environment in which we live"... This paper will focus on the methodological approach and on the student's responses to these projects.

Keywords: architectural education, environmental design, interdisciplinary studies, cross-cultural design studies.

1. Introduction

Both design studios described here, were aimed at fourth year Architecture students, and were undertaken during a 12 week period (each). A total of 44 students took part in these two projects in 2007 and 2008. As part of the overall objectives for such year at the School of Architecture, students were expected to leave with a solid experience of environmental, socio-cultural and contextual aspects. The idea and meaning of NATURE and CLIMATE were to be explored with a strong focus into technical and environmental aspects. Given the overall diversity of our students (more than 60%) coming from a non Pakeha (white NZ) background, (Maori and Pacific, Asia, Middle East, Americas), there was a clear opportunity to develop studios that would cater for such differences, (seeing them as a strength and a point of similarity amongst students and staff too). This concept was earlier developed with two other colleagues at this University and was the recipient of a Teaching Excellence Award in 2006. Both Aotea Studio and Extreme Studio built upon this concept of cultural diversity as a positive asset, a commonality and chose sites with strong historical, environmental, technological and cultural challenges for the students. The idea was

not to detach the idea of nature or climate from all the essential aspects of life, or architecture. To deal with the wider aspects described, it identifies interdisciplinary and applied research as fundamental concepts for a holistic approach to practical applications of sustainable design. For both studios, a general theme was given, (Environmental Research Centre in the case of Extreme Studio and Educational facility for the Creative Arts on the case of Aotea Studio). The overall site also was given, but students needed to experience such sites and specific assignments were set to support their research (practical and theoretical). All students were required to build their own briefs given the general conditions. Group and individual work followed during the 12 week period. Field trips were organized, a number of guest lecturers were invited, interdisciplinary workshops were held alongside with crits (individual, group, peer-reviewed), and students were encouraged to "learn by doing it". The choices of sites were much related to the relevance within the NZ context, and the availability of staff that could be able to contribute in an interdisciplinary way to the construction of the project.

2. Brief

2.1 Intercultural explorations and group awareness: acknowledging site, context and background

The sites chosen for the two studios were Tongariro National Park (UNESCO World Cultural and Natural Heritage site) – Extreme Studio and Aotea Harbour (Waikato Region) – Aotea Studio.

Through the displacement of students from their known conditions of “city comforts”, it was much easier to engage with the whole group, with their different backgrounds. During the field trips, we have realized to our surprise that even being sites of extremely touristic appeal in NZ, more than 70% of our group of students have never been to either of those areas (the majority being NZ born). These conditions gave students a fresh start, where all would learn as a group, rather than a competitive individualistic environment. The nature of both sites had relevance to the general themes chosen. The Extreme studio related to the conditions of extreme climatic conditions, geographic and contrasts of the Tongariro National Site. Learning about extreme environments, about tolerance of human response (e.g. senses) to such conditions; about the way humans mould their environment in response to extreme aspects of life (materials and spaces) to expand their protection and engagement with the environment. Extreme studio investigated aspects such as structural conditions of extreme tension, elasticity; the extremes of climatic experience at hottest, wettest, coldest and driest, and overall how these aspects affect human habitation. The studio aimed at understanding human reactions to natural and man made interventions. The Aotea Studio related to the creative nature, cultures of survival of the beginnings of NZ, as its origins. It aimed at providing a retreat where visual, literary and performing artists, individuals, researchers, students could work uninterrupted. It aimed also as Extreme studio to foster environmental preservation, applied research and the collaboration of interdisciplinary creative fields. Students were invited to incorporate ideas from thinkers and philosophers, who questioned the state and place of art and education in our society. How, where and what sorts of modes and perspectives people learn and how architecture can be an essential tool on interpreting and materializing innovative ideas. Understanding the sites and the themes students were invited to acknowledge the context, their needs and their relationships.

2.2 Tongariro National Park: Extreme STUDIO

Tongariro National Park is the oldest in New Zealand, located in the central North Island. It has been acknowledged by UNESCO as one of the 24 mixed cultural and natural World Heritage sites. It is an area of volcanic and earthquake activity, with extreme climatic changes. There are a number of Maori religious sites in the park and several of the mountain summits are considered sacred (Tapu).



Fig 1. Students at the beginning of the Mangatepopo Walk, Tongariro National Park

To prevent exploitation of the mountains by Europeans immigrants, Te Heuheu Tukino IV, the most significant Maori chief of the Maori Ngati Tuwharetoa iwi (tribe) gifted the heart of the current national park, consisting of the peaks of Mount Tongariro, Mount Ngauruhoe and parts of Mount Ruapehu, to the Crown in 1887, on condition that a protected area would be established. Since that time, the park has been extended and is today under the care of the Department of Conservation, NZ. The Tongariro National park today is a place of intense touristic activity, ranging from climbing, hiking, skiing, rafting, mountain biking, horse riding, among others.



Fig 2. Site images of Tongariro National Park.

2.3 Aotea Harbour: Aotea STUDIO

New Zealand progressively settled from the North to the South by Maori ancestors from Hawaiki. One of the first of its landing happened in Aotea Harbour (with the Aotea waka or canoe). It is generally accepted however that New Zealand was settled by people from East Polynesia, who set off in different canoes at different times, with the first canoes arriving sometime in the 1200's.[1]

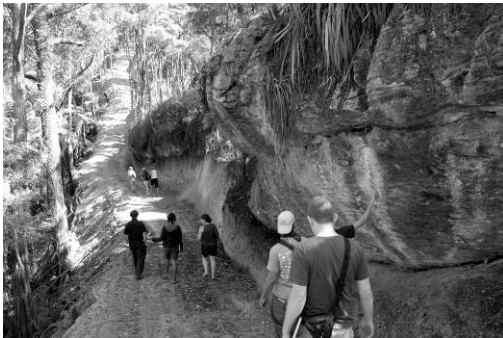


Fig 3. Students at the Farmland site in Aotea harbour, Waikato region

The people, culture and economy of the Waikato region (where Aotea Harbour is located), is highly dependent upon the natural environment. From the beginnings of settlements (Maori 1350's, and Europeans 1840's) they settled along the coast and roads for food and transportation. With the exception of areas of open water, bare lava or permanent snow or ice, the Waikato region was covered in native vegetation prior to European settlement. 26% remains today. Most of today's native vegetation occurs in the hill country and at the 40 acre farmland site chosen for this studio project, it is possible to have a glimpse of the remains of both beech forests, as well as the signs of kauri forests and wetlands, decimated by heavily European farming and logging.



Fig 4. Site images of Aotea Harbour – Waikato region

2.4 Interdisciplinary and practical approach: Guests, field trips & research work

Aimed to reference and maintain dialogue across different fields of knowledge, students were exposed to the theme of extremes from different perspectives. Extremes of the mind, the body and the soul were constant discussions across the group. We had during the studio talks, guests coming from the Medical Health Department to discuss with the students the pathways/behaviour encountered on victim's of suicidal studies, as extreme conditions of the mind. Guests from religious backgrounds to similarly discuss philosophical aspects of the mind and soul. Preparations for our own field trip involved understanding of fatigue, and exhaustion caused by strenuous body conditions. Similarly we

explored and discussed extreme conditions when related to architectural aspects such as structures (e.g.tension, elasticity), as well as climate (e.g. hottest, wettest, coldest, driest) and other aspects pertinent to human and biological interaction and response.



Fig 5. Workshops and presentations during field trips

The staff that contributed to both studios varied from a number of disciplines and backgrounds, architecture, planning, structures, psychology, environmental engineering, fine arts, film, literature and music.



Fig 6. Adrian Welke and individual site discussions with students from Extreme Studio

We had for two weeks during the Extreme Studio the participation of award winning architect Adrian Welke (Troppo architects, Australia) as a tutor, who also joined the field trip to Tongariro. He conducted a number of lectures, workshops and sessions with the students which much enhanced their perception of such environments, given his own personal views and experience with projects conducted in Extreme environments (Antarctica) and at Kakadu National Park [2] (another World Cultural and Natural heritage site in Australia). The combination of inspiring practitioners, interdisciplinary academics, cross-cultural explorations and field trips have contributed for the engagement of the students with the thematic of their projects as much as within their groups. Individual work presented at the end was based on their explorations carried out since the initial stages of the studios.

3. EXTREMES and AOTEA brief development

3.1 Interdisciplinary installations

For the initial stages of the project, students were invited to express their interests and engagement with the theme of the studios through interdisciplinary installations. The Aotea group were given three key design drivers to work with: Art educational philosophy, interdisciplinarity in art education and the investigation of aesthetics across disciplines. (discussions were held related to the works of R. Tagore, I. Kant, J. Ruskin, P. Freire amongst others). The students were asked to produce a manifesto in which the question of creative arts and education are discussed, as a visual-document. Students discussed through their installations aspects such as how multiple forms of art can share a medium (poetry and music, both share sound); or aspects such as art as a social instrument; arts and crafts as high and low forms of arts, among other themes. A number of students carried out the ideas from these early installations as key design drivers. Tagore's concept of open-school's [3] were extensively discussed in regards to its adaptation to the climatic conditions of NZ, and the cultural understanding of education and art. The Extreme studio also developed group work, and students presented much experimental thinking within the thematic of extremes and considering human interaction (senses engagement). (Fig 7)



Fig 7. Studio images of initial installations Aotea (right) and Extreme (middle, left) studios

3.2 Field trip: Tongariro National Park & Aotea harbour

Guided field trips were conducted to both Tongariro National Park and Aotea Harbour. Students during the Aotea Studio able to revisit their design areas a number of times after the initial field trip, because of the proximity of the area from our Architecture School. Students were also able to spend more time at the location but on an individual basis. In the case of the Tongariro field trip, a more intense programme was organized, given the weather conditions (very unstable in the region), along with the accessibility to the different areas of the national park. For the extreme studio field trip, the existing adventurous sports activities/infrastructure was explored, and welcomed by the students. The four elements of water, fire, air and earth were the thematic during the trip, and a number of intense and strenuous physical activities were explored by the group during the day, while workshops and talks were conducted at night by both staff and students, in between meals. White water rafting, mountain biking, caving, hiking

were some of the sports engagement undertaken by the extreme studio group. The trips were all guided by locals, which remained an important reference point for the students.



Fig 8. Getting to know the Tongariro National Park (Extreme studio)

3.3 Design outcomes: natural association of environmental, social and cultural aspects within student's briefs

Following the intense period of research and field trips, students were back to the school to progress with their individuals' briefs. Ranging from geological research centres to spiritual healing centres, the brief was enhanced and dismantled. Locations were chosen according to their individual experiences and interests as much as their understanding of site, context, environmental, social and cultural aspects. Specific areas of knowledge were dealt with specialists being brought into studio with crits dedicated to construction, structures, and environmental aspects at different stages of their projects. Environmental, structural, historical or cultural aspects slowly became discussed in depth by a number of students, and the knowledge of the group widely spread. A consistent system of peer-review was encouraged further at this stage, where students shared and were confident to critic their peers.



Fig 9. Structures Crits, Enviro design sessions and construction desk reviews

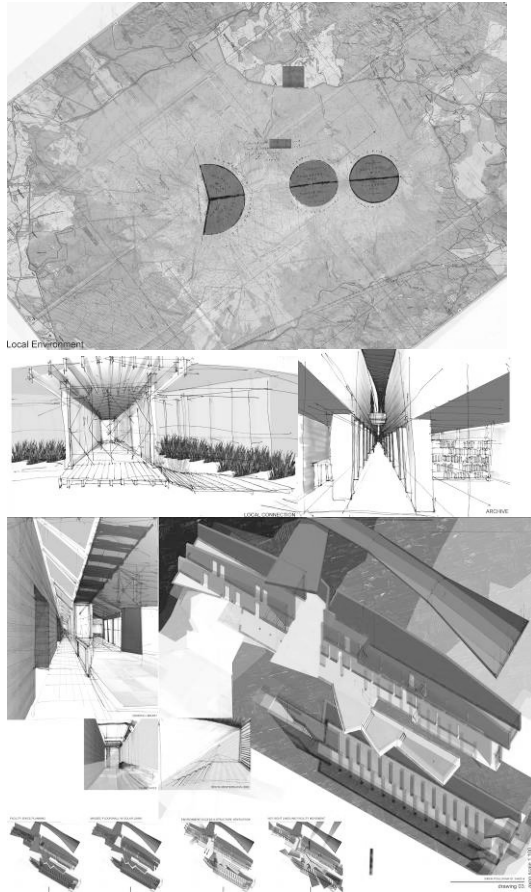


Fig 10. Maori Archival research centre – Simon Paulgrain (strong references to the sacred areas of the National Park, along with correlated environmental design approach)

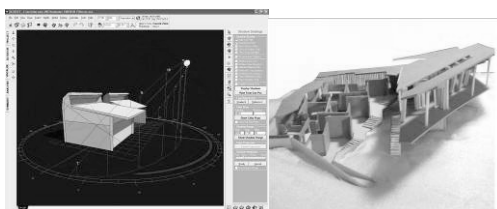


Fig 11. Ecotect solar access analysis and exploratory test model by Brunilda Veseli and Sarosh Mulla



Fig 12. Sectional detail of landscaped gardens in Aotea harbour by Peta Nichols, showing reef bed system, water recycling and energy generation scheme

The level of resolution (drawings, technical) required by both studios, were at a preliminary design stage, following the overall curriculum structure of the Architecture course at the School.

From the 44 students who undertook this course both in 2007 and 2008, only one has failed these courses. The majority of the group has performed well above average for any studio at same level. Evaluations were conducted for 2007 and student's satisfaction with this course was close to 100% in all items. Evaluations results for the 2008 studio has not yet been released.

4. Conclusions

Apart from a group of exhausted students we did manage to get rewarding results from these two studio projects. An exhibition of the work was held in 2007 at the Architecture School and another one is being planned for 2009. The methodology used has been introduced and the student's outcomes and processes. Students interests and appreciation for quantitative and qualitative aspects seemed to have an equal balance throughout both studios, depending obviously on the stages of design that they were in. To some extent the implementation of their ideas were not necessarily as clear and in depth to them as they would like, and this was related to the reduced site information for some of the students during the Extreme Studio. One of the acknowledged pitfalls of the Extreme studio was the considerable bigger area to work with, when compared to the Aotea Studio. The complexity of the site was also acknowledged given the student's outcomes. This has been adjusted during the brief development for Aotea studio. For further studios in 2009-2010, a vertical stream where students could work and develop parts of this project in more detail in groups, or as 1:1 prototypes and modelling is to be explored on site, amongst other aspects of environmental integrated design.



Fig 13. Exhausted students...after a day at the office

5. Acknowledgements

I would like to thank the numerous guests and staff at the University of Auckland and within the wider community who were able to contribute to this studio with lectures, crits, seminars, workshops and individual time to the students. Special acknowledgement to Roberta Queiroga and John Chapman, who co-tutored the Extreme Studio paper. Thanks to Pilkington Glass, Fletcher aluminium and NICA for the financial support, which has enabled the participation of

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