APPLIED
COLLABORATIONS

8TH INTERNATIONAL CONFERENCE AND EXHIBITION OF THE
ASSOCIATION OF ARCHITECTURE SCHOOLS OF AUSTRALASIA
This paper critiques three case studies of architectural large pre-fabrication collaborative projects in Christchurch; Lux City 2012/Canterbury Tales 2013/City Up’s 2014, from students from Unitec Department of Architecture. These were the student responses to FESTA’s (Festival of Transitional Architecture) call for projects to reinvigorate the city centre after the earthquakes of 2010 and 2011, for a 24-hour period over Labour Weekend.

The aim is to identify the use of design processes within the three case studies and with the aspiration to conclude that design processes are an integral part of an architect’s arsenal of skills; Architectural Education has embedded design methodologies (First Insight/Empathy, Preparation, Incubation, Illumination, Verification) within its core studio teaching, these case studies being directed and produced within BAS second year studio, and which characterize/personify these processes.

The English language (Anglo-Saxon) does not delineate the difference between “Design” as a domain and design as a process or methodology. Are we then confusing architectural students when we talk of “the design” (i.e. the scheme or programme) or “design” (the process through which one creates an architectural proposition) and how can we resolve this? Or perhaps it is not necessary? I hope to illustrate that the design process is epitomised within architectural practice/education.

According to Professor Sam Bucolo of Sydney’s University of Technology, “design should not be a noun but a verb, he says, ‘It’s a process and quite a rigorous process.’ So how do you think like a designer? ‘Design thinkers’ start with empathy (…) ‘It’s a people-first approach.’ Design thinking is also integrative; designers try to draw as many threads together as possible” (…)

The word design etymologically is sourced from the Italian word Disegno meaning to mark out; however this is just its noun form; its verb form comes from the Latin designare “mark out, devise, choose, designate, appoint.” It also can be used as a “verb used with an object” and a “verb used without an object”. In general terms one can assume it means to make a drawing of a work; however it also is used as a description of “an object of the applied arts”. However the word Design within the Anglo-Saxon cultural norms has morphed and been substituted to describe many other things.
A recent discourse about design terminology provides an insight into the complex world citing a wide variety of adjectives, nouns, prefixes or suffixes to the word ‘Design’. Alastair Fuad-Luke describes this in his book Design Activism, Beautiful Strangeness for a Sustainable World.

This morphing of the word to encompass so much has led to an apparent design-washing akin to the so called greenwashing/eco-sustainability washing of disciplines which has become an enormous taxonomy problem for not only the designer but also for the general populace; not only does the prefix of design get affixed to nearly all the so called disciplines in Fuad-Luke’s diagram but it confuses both the designer and the amateur to the vast array of design-led frame works which have co-opted the word when describing the functionality of being design-led. This ambiguity or plurality of the meaning of the word design often as not leads to architectural students confusing the process of design with the product of the design, or rather the architectural design proposition. This complex design paradigm will be partially unravelled by the case studies as demonstrated in Appendix 1-3.


The parameters of this paper will deal with the case studies over a three year period 2012 to 2014, where architectural students from the second year programme of the Bachelor of Architectural Studies (largely the entire student cohort roughly 90 students in 2012, 110 + in 2014, 30 odd in 2013) at Unitec Institute of Technology worked with the umbrella organisations of FESTA and Studio [ ] Christchurch to realize a number of architectural pavilions / interventions within the former red zone of the aftermath of the Christchurch earthquake of 04 September 2010 and 22 February 2011. Largely due to the intense size of the architectural projects involved this paper will really only seek to clarify the design methodology and process outcome of the Unitec students; this is no way reflect on the other architecture schools or staff but rather to address the plurality of the nature of the process from within the author’s teaching dimensions.

COLLABORATIVE DESIGN – FRAMEWORK-STAGE 1

2012 commencement of the project was pitched to the entire student cohort, led by all Lecturers (see Appendix 1) they were assigned into groups of roughly five with the expectation that they should research other architectural light pavilions and present their findings to a joint audience of both Unitec staff and students plus the students and staff of University of Auckland alongside CPIT and AUT. An expert panel of external academic and professional practitioners of architecture
would judge the fabrication of these transitional architectural pavilions,

As the upshot of this was the collaboration necessary between a variety of Architecture schools, to create a design critique for 18-20 projects each of which only 6 would move forward into the second round of being matched with a client and moving to the prefabrication and council permissions. This was a huge learning experience for the students having to give a verbal presentation to students within other universities and to understand the scope of the variety of projects. The projects were ranked according to: 1) Design potential; was it feasible from a budgetary and from a locational aspect bearing in mind that the sites which the students designed for were a constantly changing feast due to buildings being demolished, and the Red zone being reduced in size. 2) Did it encompass the elements of a “city of light”? both in a literal sense and in a pragmatic sense as the predominate number of the students were designing, being based in Auckland for shipping to the site in Christchurch 1082km distance. 3) Was it great transitional Architecture? Design by Committee – “It is commonly held view that good design results when projects are driven by an autocratic leader and bad design results when projects are driven by democratized group”12.

Students typically moved through the five stages of design methodologies, seeking research, preparing design solutions, incubating their ideas, however once they had pitched their ideas to an external panel of professional architects the next phase of the design problem occurred. The six projects, which progressed to the next phase, meant for a complex blend of personalities, cultures and expectations. This led to a complex iteration of the design process as students worked in their groups of five for a period of two weeks using Empathy or First Insight, Preparation, Incubation, Illumination, Verification, obviously some groups navigated the complex relations between students to realize a potential design outcome and this outcome was ranked by the external panel as to those which should progress to the second stage.
ABSTRACT

COLLABORATIVE DESIGN – FRAMEWORK- STAGE 2; RE-FRAMING THE DESIGN METHODOLOGIES

The numerous component design problems within the brief of at least 16 identifiable components (see diagram figure 16) which were impactful on the incubation of the design, meant that once the groups of five students had merged into a group of 18-20 students a re-framing of their ideas; to blend, merge and reassess the relevance of the ideas in order to then re-frame the solution meant for a complex process. Needless to say the reiteration of the concept of Ockham’s Razor became a necessity. Ockham’s Razor states “given the choice between functionally equivalent designs the simplest design should be selected.” Ockham’s Razor (Latin, ex parsimoniae, which means 'law of parsimony’) asserts that simplicity is preferred to complexity in design, exemplified by the notion of “forms follows function” variously attributed to 18th Century Jesuit Monk Carlo Lodoli and latterly Horatio Greenough and Louis Sullivan. Though not intended truly for design the concept has been appropriated into the vast array of schematics for working with design methodology. Whereas some groups had a “lead group” which often as not was the design concept, groups were merged together by the tutors involved in order to ensure that at least 16 or so identifiable problems were in different proportions. (See Figure 16.)

CASE STUDY – ARCHROBATS

To navigate the design process and build a sense of community within a group and to glue the various design methodologies and cultures and knowledge base was a complex process. This reframing of the idea concept was typified by a group in 2012 (Archrobatics) who had a complex idea to include

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**Figure 9.1**

The popular five-stage model of the creative process.

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Bryan Lawson¹² Five Phases of the Creative Process, after Kneller, G.F. (1965)

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¹³ Five Phases of the Creative Process, after Kneller, G.F (1965)

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¹⁴ Ockham’s Razor (Latin, ex parsimoniae, which means 'law of parsimony')
very large helium filled balls (2 m or so) with some of the concepts of previous groups, which include large strung up objects and a complex pulley system. This group went through an intensive reframing led by a number of the lecturers in a bid to work through their ideas rather than the steadfast attempt to hold forth with all the ideas from the five groups. The culmination of this was a need to refine, redefine and simplify in fact to exemplify the concept of *Horror Vacui* – a Latin expression meaning the “fear of emptiness” – to fill empty spaces with information or objects over leaving places blank or empty. Lecturers spent vast quantities of time with these students insisting on a clarity of concept and simplicity of ideas; this eventually occurred moments before drawings were needed for council permits. Using the simple idea of using the bird netting normally used to drape around the vineyards, the core concept was a lightweight material which had certain stretchiness on the diagonal which meant that the netting was cut into a sort of scalene triangle which under three points of pressure made for an impactful solution of concept and was in fact in 2012 was one of the most commented about “pavilions” due to its simplicity of structure.

2014 – CASE STUDY AURORA

Aurora was the culmination of three groups pitching to move forward for City Up’s 2014; *Aurora* (http://auroralightsnz.wordpress.com) *Inflate* (http://inflatechristchurch2014.wordpress.com) and *Puffed Up*+ (http://cityups2014.tumblr.com) *Inflate* dealing with the concept of using car batteries to inflate and deflate a large balloon like structure; *Puffed Up*+ dealt with the concept of recycling plastic bags and creating a sort of structure looking not un-like a bunch of hanging grapes; and Aurora’s genesis was from using the childhood toy slinkies, trying to figure out how to scale these up without losing the concept of interactivity. Once the windage became a huge factor in this project; one of the most successful projects was by a group of students “Illuminate” who quickly realised that the LED lights could be sourced cheaply and once taken out of their “housing” were quite easily able to be used in other ways. The concept was to make a modular hexagon repeating lightweight flexible structure which could be built up creating a dense like cloud which also had the notion of transparency and translucency. These were made from variously coloured drinking straws which lit up from the LED light source in the centre of the module; since the hexagon was expanded in the middle section it became rather like the concept of quilting to attach the modules together. Much testing to ensure they would last the pulling and grabbing from the crowd meant that a support system of small sticks was necessary within the drinking straws to reduce the fully flexible system. Ironically the group found that the most practical and easily sourced same sized small sticks turned out to be kebab sticks, which caused quite some issues on their health and safety report as to the ability to ensure that they were all removed safely from site at the end of the night. Probably the main reason that this was so success on the day was the ease with which the modular system could be changed due to site specifications (site specification changed regularly) the need to raise and lower the structure via four scissor lifts and the ability to make the structure on site albeit the students had created the hexagon modules in Auckland and transported them down to Christchurch via excess baggage on the plane; they were able to connect them to make larger modules in the days before the Labour Day opening which meant for efficient use of time. The simple structure once repeated meant for an impactful final resolution of design. (See figure 17,18,19)
three groups of five students merged they needed to work through the design processes to identify the most likely design concept, that would work and once they had identified that flexible ducting (Air-condition unit ducting) had similar properties to the slinky, the design could move forward. The problem for this group became that once they were one of the teams to have these large 12m x 10m frames a system of hanging the ducting became an architectural engineering problem. However, this was resolved by using scaffolding to bisect the large scale frame to hang the tubing free from the structure. This became one of the most cogent designs of the night due to the interactive nature of the design, with the ability for the audience to interact with one another via “talking down the tube” just like a childhood toy.

DRAWING DESIGN CONCLUSIONS
Over the three years of these projects, one of the defining conclusions which must be drawn is the impactful way in which working in a collaborative team, creating a small defined community within themselves, creating connections to other communities of practice, other institutes, communities’ retail partners within the greater community of Christchurch has led to a greater understanding of the design process. Learning to use these design methodologies via team collaboration and having an outcome which was then variously disseminated with a vast audience (30,000 in 2012 and 10,000 in each of 2013 & 2014) has led these students to define their own design thinking truly demonstrating the feed-back loop as described in figure 16 with the application of the design thinking overlaid within an architectural context and in particular these three case studies. The student groups constantly had to interpret the process for strategically identifying the problem and finding solutions to their many and varied problems both of design and of the design, both verb and noun.
AURORA

Figure 20

CITYUPS + FESTA: AURORA

Figure 21
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Fud-Lake, A. Design Activism, beautiful strangeness for a sustainable world, 2009 Earthscan
Hauffe, T. Design a Concise History 1998, Laurence King
Thorburn, W. M. The myth of Occam’s Razor, Mind 1918
Unitec Department of Architecture, Asylum 2013
Unitec Department of Architecture, Asylum 2014

APPENDIX 1
PROJECT DETAILS
UMBRELLA ORGANISATION - (FESTA) Festival of Transitional Architecture, Studio [ ] Christchurch
https://studiochch.wordpress.com
TITLE - LUXCITY
DATE – 2012
LOCATION – Christchurch Canterbury New Zealand
DESIGN – Architectural Light Pavilion’s
LEADERS – David Turner, Lester Mismash, Cesar Wagner, Peter McPherson, Annabel Pretty, Julian Rennie, Maurits Kelderman (Department of Architecture, Unitec)
ARCHITECTURAL DESIGNERS - Altitude, Archrobatics, TeamTensile, Soundcone, Silhouette Carnival, Tonic
COMMUNITY PARTNERS – Cassel’s & Sons, The Brewery, Beach Bar, Fledge, George Parker & Free Theatre, The Dark Room
WEBSITE http://studiochristchurch.co.nz/2012/08/22/altitude-2/
http://studiochristchurch.co.nz/2012/08/22/spherical-sounds-2/
http://studiochristchurch.co.nz/2012/08/22/team-tensile-2/
http://studiochristchurch.co.nz/2012/08/22/sound-cone-2/
http://studiochristchurch.co.nz/2012/08/22/silhouette-carnival-2/
http://studiochristchurch.co.nz/2012/08/22/tonic-2/
http://stajegrouparchitects.wordpress.com
www.facebook.com/tonicluxcity2012

APPENDIX 2
PROJECT DETAILS
UMBRELLA ORGANISATION - (FESTA) Festival of Transitional Architecture, George Parker & Free-Theatre
http://festa.org.nz
TITLE – Canterbury Tales Carnival
DATE – 2013
LOCATION – Christchurch Canterbury New Zealand
DESIGN – Architectural Light Pavilion’s, in conjunction with community partnerships
LEADERS – Peter McPherson, Annabel Pretty, Julian Rennie, (Department of Architecture, Unitec)
ARCHITECTURAL DESIGNERS – Team 2013 Highlight, Team Illuminate, Anamorphic Shadows
COMMUNITY PARTNERS – Pacific Underground (Tanya Muagututia, Mishelle Muagututia, Posenai Mavaega, Mark McIntyre), Smash Palace & Johnny Moore, Cassel’s & Sons, The Brewery – Zak Cassel’s
WEBSITE http://2013highlight.wordpress.com
http://teamilluminate.wordpress.com
https://www.facebook.com/TeamIlluminate2013
http://anamorphicshadows.wordpress.com
https://www.facebook.com/anamorphichatbox/?ref=ts
http://canterburytales2013.wordpress.com

APPENDIX 3
PROJECT DETAILS
UMBRELLA ORGANISATION – (FESTA) Festival of Transitional Architecture, Studio [ ] Christchurch
http://festa.org.nz
https://studiochch.wordpress.com
TITLE - City Up’s – The Future is Live
DATE – 2014
LOCATION – Christchurch Canterbury, New Zealand
DESIGN – CityUps consisted of 10-15 large scale frames (approx. 10m x 12m)
LEADERS – Peter McPherson, Annabel Pretty, Julian Rennie, Maurits Kelderman, Graeme McConchie (Department of Architecture, Unitec)
COMMUNITY PARTNERS – Black Betty’s, The Games Hall, Harry Knight, Cassel’s & Sons, The Brewery, RAD Bikes
WEBSITE –
https://auroralightsnz.wordpress.com
http://thenaturalsequence.wordpress.com
http://inspirenurturegrow.wordpress.com
http://kinglowcity.wordpress.com
http://scopecity.wordpress.com
https://luxcityunitec.wordpress.com

ANNABEL PRETTY, Transitional Large Fabrication Architectural Design Propositions in a Post Earthquake Environment, The Virtuous Circle Cumulus Milan, 2015 P121 McGraw Hill Education Italy

1 Photograph Annabel Pretty
2 Professor Sam Bucolo; #Think UTS Business School, 2014, Mahlab Media
3 Thomas Hauffe, Design a Concise History p10 1998, Laurence King
5 Alastair Fuad-Luke, Design Activism, Beautiful Strangeness for a Sustainable World, page 1, 2009 Earthscan
7 FESTA Festival of Transitional Architecture http://festa.org.nz
8 Studio [ ] Christchurch, a collaboration of architectural programme predominantly in New Zealand http://studiochristchurch.co.nz
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16 Annabel Pretty interpretation of Kneller’s creative process as applied to case studies
17 Photographs Annabel Pretty plus Unitec Architecture Department – Asylum 2013
18 Photographs Annabel Pretty plus Unitec Architecture Department – Asylum 2013
19 Unitec Architecture Department – Asylum 2013
20 Photographs Annabel Pretty
21 Photographs Annabel Pretty and Department of Architecture Asylum 2014