Nelson Mandela University Department of Architecture
2nd Year Architectural Design AAV200 proposed design/build project 2019

CRÈCHE 2019

A PROPOSED STUDENT DESIGN/BUILD FOR A PRE-MANUFACTURED PLAYSCHOOL PROTOTYPE

PROPOSED BENEFICIARY: CRÈCHE 13, AIRPORT VALLEY, GQEBERA

NMU DEPARTMENT OF ARCHITECTURE 2ND YEAR DESIGN STUDIO AAV200

STUDIO MAKE: TECTONICS AND THE ARCHITECTURE OF COMMUNITY

PROJECTS: 2 / 3 / 4 / 7

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19 March 2019

Photo: Crèche 13, John Andrews

NELSON MANDELA UNIVERSITY

This document is an outline for a Nelson Mandela University Department of Architecture (NMU DoA) 2nd Year Design Project and although it hopes to construct, it does NOT promise a building. In the event that the building not be built due to funding, or for any other reason, the project will end after the final design stage (see Project Programme: Stage 4) and the formal outcome will be digital images / photographs of architectural models and drawings. With aspirations and ambition the document has been written to the full scope of the project – Design/Build.

This first part of this document serves to articulate the full scope of the project to be carried out by the 2nd year design studio and includes the dimensions of Teaching / Learning, Creative Research and Engagement. Titled, *The Project Dimensions*, the chapter aims to first introduce the background, design challenge and aims of the task before articulating in more detail: the experiential and critical pedagogical preoccupations in *Teaching and Learning*; the tectonic investigations of the *Creative Research*; and the service, level and extent of the projects internal and external *Engagements*.

The second part aims to outline the project brief and begins by defining, *The Project Context*, which includes the clients brief, site constraints, budget, consultancy and the method of construction. This is followed by, *The Project Programme*, which sets out the tasks and the academic project of the various stages: project scope; learning aims and objectives, tasks and marking criteria. The stages, level of complexity and the learning outcomes are aligned with the work stages and educational expectations of the South African Council for the Architectural Practice (SACAP).

RELATED / REQUIRED DOCUMENTATION

BEFORE START OF PROJECT

Project Brief: Project Dimensions, Project Context, Project Programme (John Andrews)
Indemnity: NMU and NMU Students
MOU: Between NMU, Crèche 13, Walmer Angels Project and Community Representative (John Andrews)
Motivation: Walmer Angel Project

DURING PROJECT

Research: A4 document including Context, Programme, Tectonics and Sustainability (Design Studio)
Pre-Design Funding Documentation: A4 document (Funding Team)
Conceptual Proposals: A4 Photographic Documentation of Conceptual Proposal (Design Studio)
Team Proposals: A4 Photographic Documentation of Team Proposal (Design Studio)
Final Proposals: A4 Photographic Documentation of Final Proposal (Design Studio)
Final Consolidation: A4 Research, Concept, Team, and Final Proposal (Design Studio)

FUNDING STAGE

Engagement Advancement Funding: Approved (John Andrews)
Faculty Research and Engagement Funding: Approved (John Andrews)
Teaching and Learning Funding: Pre Application Process; Design/Build as a Humanising Pedagogy in Architectural Academic Settings (John Andrews)
3dr Stream Funding Applications: A4 Document: Project Proposal / Costing / Letter from NMU DoS / Letter from Studio Master / Authenticity (Design Studio)

BEFORE PREMANUFATURE

Construction Permissions on Campus: Security and Health and Safety (Design Studio)
Construction Documentation: Working drawings, Material quantities / cost, tools required (Design Studio)
Health and Safety Operations Document: Approval from NMU Health and Safety (Design Studio)

BEFORE DELIVERY AND ASSEMBLY

Assembly Permissions: Nelson Mandela University and Crèche 13 / Municipality (John Andrews)
Ownership: Nelson Mandela University and Crèche 13 / Municipality (John Andrews)
Municipal Approvals: (John Andrews)

AFTER CONSTRUCTION

Final Documentation: A4 Document of Research, Concept, Team, and Final Proposal and Construction Process and a short video of the construction process. (Design Studio)
Research Paper: Design/Build as a Humanising Pedagogy (John Andrews)

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PART 1: THE PROJECT DIMENSIONS

PART 2: THE PROJECT BRIEF

THE PROJECT DIMENSIONS

TEACHING / LEARNING, CREATIVE RESEARCH, ENGAGEMENT

PROJECT OVERVIEW

Crèches in the informal township setting fulfil an important role, keeping children safe, off the streets and preparing them for the school environment; while busy parents venture out to work. These crèches are predominantly homes, on private/permissioned property, which have been converted into day-care centres. Parents pay a minimal fee to the operators of the crèche and despite the humanitarian efforts of the crèche owners / teachers, in many situations the setting is dire. Facilities in areas such as Airport Valley, are unstable informal shack constructions with no formal access to municipal infrastructure of water or electricity.

The design task is to imagine a better setting for the crèche and produce a pre-manufactured kit-of-parts prototype that can be adopted in these circumstances. The design proto-type aims to be specific for use as a crèche, but universal in its potential location, aiming to create a model which can be repeated in several different scenarios. The studio will take on the task to design and construct (design/build) a final 1:1 design proposal. The prototype will be pre-manufactured off site and students will be involved on site to do the necessary ground preparations and the assembly of the design. The team will spend 6 weeks designing it, 4 weeks constructing the proto-type (on the NMU campus) and 1 week installing the building on site in Airport Valley. Contingency time has been allocated during the mid-year recess and 2 weeks have been made available after the construction of the project.

With permissions from the community representatives and in collaboration with the Walmer Angels Project[1], the prototype will be donated to Crèche 13 in Airport Valley (photos left from Google Earth). The crèche will also serve as the *sandbox* contextual and programmatic scenario for the design of the prototype.

1

[1]"Established in 2005 by Glenda Brunette, affectionately known as Mamtshawe, the Walmer Angel Project is a Non-Profit Organisation that gives support to the community of Walmer Location, especially the day-care / crèche going children of this community. Since inception, the organisation has taken 17 crèches under its wing." The Walmer Angel Project also runs the Shine Chapter programme, food gardens, soup kitchens, Love Sandwiches and various charity drives for children and school amenities. www.walmerangelproject.co.za

The project aligns with the core learning content of the second year and BAS curricula at the Nelson Mandela University Department of Architecture, which aims to teach students tectonics as a primary area of investigation, and secondly the architecture of community through the design of small/medium scale community buildings. The act of constructing the final prototype allows students to get hands-on experience in order to better develop their skills in understanding the translation of drawing to final construction, and the influence of the project setting and programme on the material expression and detail design of the building. Set in real-world project conditions, it also allows students to gain experience of the full architectural project scope; an awareness of the spatial and community depth of these settlements; to creatively and sympathetically engage with the careful making of architecture for children; and possibly contribute in a meaningful and tangible way to the exiting environment.

In the scope of the bigger academic project, the exercise is part of a journey that looks to imagine the second year design studio as a platform where staff and students can collaborate and contribute to the core functions of the university: teaching learning, [creative] research and engagement. The integrations of these functions bring new dimensions to the students learning experience in an attempt to create a learning environment that is situated, critical and inclusive. The crèche project lends the 2nd year design studio the opportunity to integrate these core functions and - as a social agency - the production of "useful" and relevant product that generates formal creative research, and affords additional architectural facility to communities of economic scarcity.

The following discussion looks at the different dimensions of the project in hope of illustrating how the design/build project affords these possibilities: the experiential and critical pedagogical preoccupations in *Teaching and Learning*; the tectonic investigations of the *Creative Research*; and the service, level and extent of the projects internal and external *Engagements*.

ALIGNMENT TO NMU VISION

"NMMU's Vision 2020 is to be a dynamic African university, recognised for its leadership in generating cutting-edge knowledge for a sustainable future"[2]. This vision aims to be achieved by "offering a diverse range of quality educational opportunities that make a critical and constructive contribution to regional, national and global sustainability" and embedded in the core values of "diversity, excellence, ubuntu, social justice and equality, integrity and environmental stewardship"[3]. In a "quest to be of service to society through our core business of teaching and learning, research and engagement"[4].

The design/build project is a complex pedagogical method that requires mediation between the spheres of academia, profession and community. This creates a rich and integrated learning environment that is situated and provides the opportunity for students and staff of the design studio to make a "critical and constructive contribution to regional (and with greater aspirations) national and global sustainability" in a concrete and tangible way; through the physical construction of a building. This process not only offers as an authentic architectural learning experience but also allows the studio to become a social agent by engaging with underserviced communities and providing amenity to environments of economic scarcity.

The pedagogical process of the design/build project requires collaboration between all members of the team, the profession and the community in the design and construction of a final product. This collaboration promotes a *diversity* of different ideas and contributions, embraces *ubuntu* as a fundamental medium through which to achieve its goals; strives for *social justice and equality* in its pedagogical setting and humanitarian agendas; and aspires to the be *stewards* in the making of "humane, inclusive and sustainable"[5]*environments,* while acting with *integrity* in the pursuit of academic and architectural *excellence*.

The complexity of the design/build project also creates the possibility to re-envision the studio as a platform that not only promotes an innovative teaching/learning environment, but also produces creative research through the production of the final built building and

[2]https://www.mandela.ac.za/About-us/Our-impact/Mission,-Vision-Values
[3]https://www.mandela.ac.za/About-us/Our-impact/Mission,-Vision-Values
[4] NMU "Case for Change"
[5] NMU Department of Architecture Vision Statement (HoD Andrew Palframan)

fosters engagement in its reciprocity with a local community. The integration of the core functions of the university and engagements with communities of need, allows the design studio to be of "service to society through our core business of teaching and learning, research and engagement".

In all its aspirations, the design/build pedagogic practice pursues education as a means to "deal critically and creatively with reality and discover how to participate in the transformation of the world"[6], and to "offer a diverse range of life-changing educational experiences for a better world"[7].

TEACHING / LEARNING

In architectural education a design/build project is where students are involved in the design and construction of a small scale building or architectural installation. It is becoming increasingly popular globally and has extensive precedent internationally[8], and to a limited and intermittent degree nationally[9].

The project began with an interest in the *experiential* learning in the design/build project, and its contribution to teaching and learning architecture. More recent discoveries have shown insight into how the processes and real-world setting of the design/build project may further contribute to a humanising, *critical* and transformative practice in architectural education.

> Design/build projects are, "if pedagogically understood and appropriately managed, a natural setting for a situated, critical and inclusive education"(Morrow & Brown, 2012).

[6] Paulo Freire. *Pedagogy of the Oppressed*. 1968.
[7] https://www.mandela.ac.za/About-us/Our-impact/Mission,-Vision-Values

[8] E.g. Rural Studio, Auburn University, USA; Scarcity and Creativity Studio, AHO School of Architecture, Norway
[9] E.g. Design Build Research Studio, CPUT; Earth Unit, UFS

The design/build project is pedagogically complex, entrenched in *experiential* learning practices, (Dewey 1938; Kolb 1984); and the educational discourse of *critical* pedagogy[10] (Freire, 1968). *Experiential* learning engages with the how and physical setting of learning, while *critical* pedagogy preoccupies itself with the social and political context in which education happens.(Brown, 2014)

As *experiential* learning it is an opportunity for students to engage in a tactile manner with the core content of the 2nd year design studio theme; *MAKING* and engages with the tectonics of architecture as a social, expressive and technical undertaking. It is an opportunity to work collaboratively, under professional guidance, with real construction and materials, and an authentic project context - underpinned by a socially sympathetic cause and real-world ethical responsibility.

The benefits of situated, *experiential* learning are potentially more well-known than the potentials of the design/build as a humanising pedagogy.

DESIGN/BUILD AS A HUMANISING PEDAGOGY:

The following discussions are some tentative observations of the advantages of the design/build project as a humanising practice. These insights have been illuminated by brief encounters with Paulo Freire's work, *Pedagogy of the Oppressed*, 1968, and more specifically in architecture by: Dutton, 1984; Crysler, 1987; Brown's PhD thesis "*A Critique of Live Projects in Architectural Education*"; and his collaboration with Morrow on *Live Projects as Critical Pedagogies* (Morrow & Brown, 2012).

Thomas Dutton's work has been particularly interesting, and while his comments relate to potential approaches towards further humanising traditional architectural settings, his core issues of *hierarchy* and *competition,* as points of pedagogical concern, are transferrable when trying to understand the design/build learning practice. In addition the issue of a *humanitarian spirit* is another dimension not covered by Dutton's work, but strongly applicable when considering the potential of design/build practice as a humanising pedagogy.

[10] Critical Pedagogy, conceived by Brazilian educator Paulo Freire, aims to illuminate power differences in educational settings (oppressor / oppressed) through a critical engagement, not directly with the content of curricula, but the social and political context in which teaching happens.

As a *critical* pedagogical practice the setting, process and execution of the design/build project may: alter the social polarizations of teacher / student (Paulo Feire's oppressor / oppressed), by promoting reciprocity rather than hierarchy; restructure the design process from individual glorification to one of collaboration; and promote a humanitarian consciousness through engagement with a situated real-world project context and a concern for social justice in an underserviced settlement; and through its realised physical construction, an authentic and direct responsibility to the community and the final users of the design.

Reciprocity / Hierarchy:

> "My position is that hierarchy obviates the presence of dialog. Dialog here is more than simple conversation or discussion. As a fundamental precondition dialog requires an equality of participants-an equal distribution of power-which by definition is lacking in any system of hierarchy" (Dutton, 1987).

The above statement refers to the lecture / student relationship and is suggested later in the article that hierarchy in learning settings is manifested, among other things, by imbalances in labour practices and opposing educational interests.

In a design/build project the teacher is invested in the project beyond that of a normal studio design project: mediating a class of ideas into a single conclusion; performing professional administrative and organisational tasks; and to navigate and maintain a professional service and quality of the final product (Doyle & Whitehead, 2017). This has more complex implications when the project is infused with academic engagement and creative outputs incentives.

In this situation the lecturer is required to be "hands-on" and normal divisions between the roles of teacher and the student, where one instructs and the other does, takes on new roles where both parties are required to contribute to the production of a unified final outcome.

In a reversal the students also become active players, not only in teaching and learning, but also contribute to more traditional teacher functions of producing creative research and professional engagement. Transparency and awareness of the course pedagogical positions, and the research and creative objectives, aims to futher allow students to contribute meaningfully and understand their positions in the full scope of the academic project.

As a spatial learning setting the construction process of the design/build also takes students outside of institutional classrooms and into warehouses, and the site, as places of learning. In these environments the hierarchies are de-formalised in a change of physical setting, allowing discussions and learning in a variety of degrees of formality. This further allows for more open conversations and dialog about ideas between the teacher and students, and the students among themselves.

A shared interest, unified objective, a blurring of roles and a change of the physical setting: produces a situation, although the lecturer is still required to lead, that begins to destabilise the teacher / student polarizations and leads to a potentially better resolution of the "oppressor and the oppressed", in the aim of promoting learning environments that promote dialog, or in Dutton's (1968) words "reciprocity rather than hierarchy".

Collaboration / Autonomy:

> "Competition tends to promote the belief that ideas are unique, to be nurtured individually, closely guarded, and heavily protected against stealing. Such a system portrays ideas as personal, not meant to be shared, lest someone else gain a competitive edge" (Dutton, 1987).

In some traditional learning settings, students work independently and architecture acts as medium for self-expression. This promotes self-indulgence, competition and a glorification of those who do well; creating overly competitive conditions of "needless emotional pressure and antipathy among peers" (Dutton, 1987). In the design/build project student's work together towards a single final goal promoting the value of collaboration over competition in the production of a team solution to the design task at hand.

The project starts with the development of individual designs which enables students to engage with their own positions and ideas. This creates an *idea bank* from which students, in collaboration with interested parties and studio staff then elects 11 projects to be taken further in teams. Student's whose projects are selected to be further developed are not allowed to work on their own project further and any authorship needs to be donated to the new respective team. During this process students collaborate to rework differing positions and potential hybridizations, drawing inspiration from the idea bank and constructing new

ideas. single design is then selected from these proposals and the class works together to make final revisions and produces the technical documentation and constructs the building.

During this process the project escalates from the individual to the collaborative. In the end authorship becomes a team phenomenon where students retain an equal sentiment and authorship of the final single project (Hermansen, 2018).

Individual tasks allow students to still develop their own voice and allow observation of individual development, but primarily the design/build task concentrates on collaboration which assists students to understand their positions in a larger social setting, work together and to contribute and recognise their individual strengths to the production of a shared goal.

Assessment practices are also collaborative and students and community advise on the success of proposals and the selection of projects to develop further. Students mark each other in peer performance reviews and the community contributes to assessments. The reponsibility of good architectural judgment is no longer solely in the hands of the lecturerbut becomes a collaborative task; allowing students to contribute to the values of their own curriculums and the production oftheir classes final grades - through critical discussion.

Institutional funding opportunities also become possible when the project is structured and aligned with academic engagement, creative research and innovative teaching practices. This funding and collaborative design product allows costs to be shared and may assist to reduce student financial burdens for the cost of expensive model building materials and digital printing needed in the course.

A Humanitarian Spirit:

However there is another dimension to the transformative potential of design/build projects. Adam Hopfner[11] alludes to this when he states design/build is “not just learning how to swing a hammer or how something sits on something else, but there’s a real interest in being citizens of a larger community”(Sokkol, 2008).

The setting of the project in a real world context disolves the degree of separation between the academic environment and the community, by placing students in real-world project contexts. Students do not sit outside looking in, but become faced with real ethical commitment.“Design-build serves as a rather potent means for manifestingthis commitment as it results in real artifacts and shelters that people can see and touch”(Canizaro, 2012).

“We’re not just trying to help a community, but we’re trying to deconstruct students’ privilege. We’re trying to get them to be better citizens, better community advocates, and to understand the complexity of urban areas” (Sokkol, 2008).

In conclusion, the project proposes to explore these potentials, but does not argue that the design/build project is the answer for architectural education, but rather that it can bring another dimension when momentarily set within the context of the overall curriculum.

In aligning with the core values of the Nelson Mandela University (diversity, excellence, ubuntu, social justice and equality, integrity and environmental stewardship), an environment that promotes reciprocity rather than hierarchy and allows for the possibility of the integration of *diversity*, not only between distinctions of teacher / learner, but between academia, the profession, community and the students themselves. This process of collaboration and social engagement identifies with *ubuntu* and the social sentiments underlying these ideas promote an understanding that “we are only human through the humanity of other human beings”[12], as a diverse group of different ideas and positions. The engagement with a social and real-world context promotes“social *justice and equality”*, where students are afforded the opportunity to deal critically and creatively with reality and to discover how to participate in the transformation of the world”[13]; while hoping to contribute to the community with *integrity* and in the pursuit of *excellence*.

Design/build projects are, “if pedagogically understood and appropriately managed, a natural setting for a situated, critical and inclusive education” (Morrow & Brown, 2012).

[11] Director of the design/build program at Yale University established in 1967.

[12] Nelson Mandela

[13] Paulo Freire – Pedagogy of the Oppressed 1968

[CREATIVE] RESEARCH

THE PROBLEM

The existing shack crèche of the township and more particularly Crèche 13 presents a number of architectural challenges:

- The building is **structurally and climatically unstable.** The corrugated iron of the sheets makes shade, but do not stabilise fluctuations in the climate. Informal corrugated assemblies and a crude relationship to the ground creates water problems when it rains. The structure of the crèche, specifically in this instance, attempts to create a larger span than the spaces required for a house and the roof is sagging and structurally unstable. The building also has no floor and blankets are used to cover the natural ground to make it usable. In addition the crèche has no formal means to water and electricity.

- The building embodies an **industrious character** that is aesthetically harsh for learning environments for children. The shacks predominantly include industrial materials that have been designed around cost efficiency for efficient and economic warehouse architecture. The use of these materials embodies the architectural semantic and expressive qualities of the industrial, produced for the machine rather than people.

- These buildings are informal, ephemeral and **lack presence** that helps people to *concretise* their environment, a "temporary" architecture. This sense stems from the informal, precarious and lightweight nature of the construction, which lacks endurance and erodes over short periods of time. Its raw relationship to the ground contributes to its general lack of environmental presence.

- While there are many crèches in the informal settlement, the expression of the crèche remains unvaried to the typical nature of the house, as with all other buildings. This creates a strong sense of continuous fabric, offset by a complex and informal production of in-between spaces. This condition, while spatially and texturally rich, produces environments that lack hierarchy in architectural expression and make **orientation** difficult. Orientation in these environments is dependent on knowing subtle indicators and variations in the physical environment. These crèches are the spatial "centres" for the children of the community and a differing architectural identity may start to add structure to the homogenous character of the surrounding settlement, or purposefully not.

- Lacks **positive outdoor spaces** that relate to indoor spaces to create an environment where children have the ability to prospect, and play and learn outside, while at the same time protected by the verandas and internal spaces of the architecture.

These issues can be further clarified as issues of the *Context*: climate and orientation; *Programme*: issues of indoor/outdoor relationships; and the *Tectonic*: structural instability, industrial expression, presence and orientation. [14]

Image: Crèche 13, John Andrews

RESEARCH THROUGH DESIGN

In response to the issues of the shack crèche the creative research is aligned with the core theme of the second year design course: *TECTONICS AND THE ARCHITECTURE OF COMMUNITY. An* attempt to define the issues of the informal crèche has been discussed and it is with a tectonic preoccupation that it moves forward in response to two key questions:

- **What are potential tectonic approaches to address the architectural issues of the crèche?**

- **What are the potentials and limitations of these tectonic approaches?**

In aspiration to achieve the following aim:

- **To create an economic, universal and pre-manufactured crèche prototype that is: socially, culturally and environmentally sympathetic; structurally and climatically sound; creates spaces for children that are not industrious and become appropriate places for early learning; has a sense of presence, and begins to establish expressive centres to create identity and facilitate better environmental orientation?**

In response to the first question the identification of potential tectonic approaches has evolved out of a precedent study of images of similar projects in the context of South Africa. Through this process 3 primary tectonic *types* have been identified and categorised as: *Container Conversion, Off-the-Shelf* and *Re-use* (see next discussion overleaf).

In the individual design stage of the project, students will select an approach and creatively explore their selected tectonic strategy stated above. This stage is followed by a group stage where students work in teams on selected proposals from the individual stage. These proposals are then proposed to be consolidated to produce a final single design to be constructed.

The formal outcome of this investigation will be in the form of architectural drawings and models that document the creative research in the individual and group stages; and the final construction, which concludes the investigation in an attempt to draw together potential approaches into a final, built and inhabitable architectural position.

In addition to the tectonic research, the project will aim to be well documented and form first-hand experience and data, which may potentially be used to produce formal research through a reflection of the process.

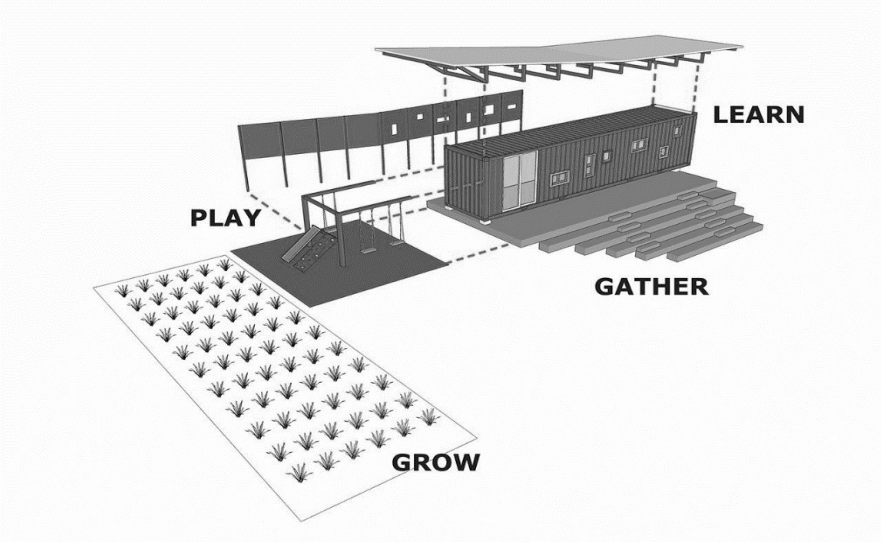
The experience will also serve as a learning opportunity to understand the professional, academic and administrative complexities of the design/build project; and the integration of core academic functions into the studio (teaching, research, engagement). This aims to create a foundational understanding to potential further explorations and execution of similar projects in the future. The project, if it reaches its aspired objectives, will also be submitted for Creative Outputs recognition in 2020.

A discussion follows of the potential tectonic approaches: Container Conversion, Off-the-Shelf and Re-Use; and how they respond to the issues identified in the problem discussion: Structural and Climatic Instability; Lack of Positive Outside Spaces Industrious Character: Lack of Presence and Urban Orientation.

CONTAINER CONVERSION

This approach looks at the conversion of an existing container. The approach is popular, however faces many potential difficulties in making it habitable for classroom purposes. The flat top of the container holds water which fosters rust; the container is narrow, which makes it difficult to use as a classroom; the structure of the container is integrated into the sheet cladding and when this cladding is altered it may affect its structural integrity; it lacks architectural presence; is a *closed* form that by itself does not create a relationship with the spaces around it; and lastly, the container is made for industrial purposes and may be considered harsh, lacking aesthetic and climatic human sentiment.

The Vissershok Playschool[15] (Tsai Design Studio) is an example of the container conversion. It manages the rusting roof issue through the placement of a roof overhead that also enables the closed form of the container to better engage the outdoor spaces around the container, creating a positive outdoor space for play and a front veranda. Limited and careful placement of windows creates a sheltered space inside for learning, and retains the structural integrity of the container, while producing a playful sense for a children's architecture. The windows also de-industrialise the container, along with the roof that invests the container with a sense of shelter, and a base prepares the site and gives the container presence. The base further extends the inside / outside relationship of the container and creates a gathering space for community. The space remains narrow and looks difficult to use from the purposes of teaching and learning, but does present an economic design solution that is universal and through the rendering of the base can be adopted to a number of different contextual settings[16].



[15]Image Left: https://www.plataformaarquitectura.cl/cl/C:/Users/Usuario/Downloads/10%2002%202017%20APLICACION%20DEL%20DOBLE%20TECHO%20ECOLOGIA%20ARQUITECTURA.html

[16]Image Right: https://www.archdaily.com/216867/vissershok-container-classroom-tsai-design-studio/vissershok-1-concept; Image Overleaf: https://inhabitat.com/the-vissershok-school-is-a-colorful-shipping-container-classroom-for-kids-in-south-africa/

The Silindokuhle Play School[17] (Colectif Saga) above is an example of a playschool that innovatively looks at the potential of foraged materials. The construction is made from donated sheets, re-uses forklift pallets, old paper cardboard tubing(as cladding and roof trusses), off the shelf rough cut timber products, and amongst other found objects and old skate board. Innovations include the roof which looks how donated roof sheets could be built with minimal structure required below, to save costs. Paper tubes are explored as cladding and structural elements and pallets are used creatively to clad the structure. The skyline of the building establishes the buildings identity and its relationship to the landscape. An L plan and veranda produces a positive outdoor space and mediates the inside and outside spaces. The innovative use of materials breaks the industrious nature of the recycled materials and variety gives the building a warm tactile quality. The large roof collects rainwater into tanks for re-use as grey water.

RE-USE

This type of tectonic approach is defined primarily by a serendipitous acquisition of materials that are *foraged* through recycling and donations from other sources. Much like the container, found objects can also become industrial, and not surprising that many re-usable materials are from items produced for industrious purposes (e.g. forklift pallets and tyres).

[17] Landscape Image: https://www.designboom.com/architecture/collectif-saga-silindokulhe-preschool-joe-slovo-west-south-africa-07-28-2017/; Exterior Image: https://www.archdaily.com/875103/silindokuhle-preschool-collectif-saga/595ba1cfb22e38e81900020b-silindokuhle-preschool-collectif-saga-photo ; Interior Image: https://www.archdaily.com/875103/silindokuhle-preschool-collectif-saga/595ba0bbb22e38e819000205-silindokuhle-preschool-collectif-saga-photo

OFF-THE-SHELF

This approach looks at the use of inexpensive building materials that are easily and readily available from local DIY stores and suppliers. As an alternate to *foraging* for materials, this approach purchases inexpensive building materials for a cost effective architecture. These materials may include corrugated roof sheeting, polycarbonate sheeting, chip board, rough cut timber and other cost effective materials. Again, the materials do have a potential of producing an industrious expression because these materials are either produced for the cost efficient production of large spaces, such as warehouses, or are raw products that require further finishing's to complete. The challenge in designing with this tectonic is to again to produce environments that are sensitive and appropriate for early childhood development.

The Olifantsvlei Playschool in Johannesburg[18] (Institute for Experimental Architecture / Studio 3 – Design/Build – Austria) adopts this approach using corrugated roof sheeting, an industrious steel structure and chipboard. Its playful forms are penetrated by windows which give the character of the building vibrancy and to reduce an industrial expression while using industrial materials, further established by the mass expression of the classroom elements under the roof. The sailing industrial roof overhead produces well sheltered outdoor spaces that allow children to comfortably play, learn and gather outside.

In conclusion the discussion has presented three potential tectonic approaches that all aim to resolve the issues identified in the problem statement while producing an economic architecture:

- Structural and Climatic Instability
- Industrious Character

[18] Image Veranda: https://www.flickr.com/photos/77276861@N04/6971743828/; Image Exterior: http://architypereview.com/project/olifantsvleiissue_id638/

- Lack of Presence
- Lack of Positive Outdoor Space
- Urban Environmental Image (Identity, Orientation)

BASELINE RESEARCH:

As part of the central creative research project, traditional research will also need to be done in order to clarify the contextual, programmatic, tectonic and sustainable issues that will need to be addressed through the design of a pre-manufactured crèche prototype.

Students will visit a number of crèches in the area and more specifically Crèche 13 will be used to qualify the programmatic and contextual issues of "crèche" as a building type, and the nature of its informal shack settlement. This will be done in teams by way of graphic mapping and analysis of the site; and an investigation of relevant precedents pertaining to issues of context, programme, tectonics and sustainability. For specifics of these investigations see Stage 1: Inception of the Project Programme.

ENGAGEMENT

This document is a NMU DoA 2nd Year Design Project and although it hopes to construct, it does NOT promise a building. In the event that the building not be built due to funding (no funding has been granted to date), or for any other reason, the project will end after the final design stage (see Project Programme: Stage 4) and the formal outcome will be in the form of digital images / photographs of architectural models and drawings. With ambition the document has been written to the full scope of the project.

The Walmer Angels Project Non-Profit Organisation has been operating in the area since 2005. Amongst other things the project assists with a reading centre and a number of local crèches in the area. The project began by asking the Project if there was an opportunity to engage with a design/build project in the area. Through this dialog it was identified that the crèches are important places in the community because they support the children and that the conditions of these places are in need of assistance.

In response, the idea came to look at a potential model school prototype that would aim to address the problem universally through the design of a prototype that could be flexible to a number of different situations. Should the prototype manage to be constructed it has been proposed to be donated after completion of its construction at the NMU South Campus.

In collaboration between the Walmer Angels Project and the community representatives: Ward Councillor Ayanda Tyokwana and Airport Valley Chairman Zama Mona; it was agreed that Crèche 13 would be suitable beneficiary for the prototype. The crèche is a shack with carpets on natural uneven ground, the structure is unstable and the conditions are dire. Crèche 13 will serve as the *sandbox* contextual and programmatic scenario for the design of the prototype. Should Crèche 13 not be able to accept the donation, an attempt will be made to source and alternate beneficiary of equal necessity.

The project also proposes to team up with the NMU Construction Department for advice on costing and the structural integrity of the building; and the NMU Interior Design Department should the opportunity arise. Funding engagements have already included the approval of Engagement Advancement Funding and Faculty Research and Engagement. The possibility of funding for Teaching and Learning Innovation is still currently being explored along with potential of private third stream funding. Before construction or assembly the municipality and the NMU Health and Safety Office will also need to be consulted.

Various other internal and external specialists have also been consulted during the inception of this project. A tentative project team and consultants are as follows:

TENTATIVE PROJECT TEAM

NMU Department of Architecture Design Team:

NMU 2nd Year Design Studio Master / Project Leader: John Andrews
NMU Architecture HoS and HoD: Boban Varghese / Andrew Palframan
NMU Design Studio Assistants: Clayton Johnson-Goddard, Mpumzi Mbulawa
Class Team Leaders: Michael Churchman, Rozanne Oosthuizen
Photography, Social Media and Data Management: Tavonga Gune / Anneli Jooste
Fundraising: Ashley Harwood, Michael Churchman

Student Project Team: 2nd year Class of 2019 – Vanessa Akullo; Ruben Carstens; Michael Churchman; William Duncan; Aadilah Ebrahim; Leon Engelbrecht; Emma Fraser; Tavonga Gune; Oyama Gqamane; Katelin Hageman; Ashley Harwood; Robert Hill; Kyra Jonker; Anneli Jooste; Tyniele Jordaan; Leonard Kleynhans; Cornelius Kriel; Tirtha Lalla; Shadaan Loonat; Mac Machete; Earvin Magura; Mivuyo Makubalo; Silindokuhle Mancam; Miv Matai; Zintle Mkonwana; Rachel Mlosy; Asiphe Mzanzi; Justin Martin; Tato Mohkesuoe; Kyaterekera Mugerwa-Sekawabe; Gillian Muller; Hermien Muller; Sarita Nair; Josh Nel; Henco Nigrini; Siphesihle Nogantshi; Bianca Nortjie; Rozanne Oosthuizen; Leah Palacious; Wendy Poole; Rachel Puttergill; Helena Richter; Chrissio Robberts; Limpho Rodolo; Brandon Roome; Danielle Shone; Mieke Strydom; Asamashle Swana; LuthoTshali; Anka van Anraad; Alex van der Merwe; Cameron van der Wath; Morgan van Staden; Hein Walsh; Megan Waterson; Cameron Watkins ;Lunga Zitha

Community Consultants:

Walmer Township: Ward 4 Councillor - Ayanda Tyokwana
Airport Valley: Community Chairman - Zama Mona
Project Mediator: Walmer Angel Project – Glenda Brunette
Beneficiary: Crèche 13, Airport Valley – Tobeka Mbada

Funding:
Engagement Grants: Engagement Advancement Funding (EAF) (approved)
Faculty Research and Engagement Funding (FR&E) (approved)
Teaching and Learning Funding (application stage)
Third Stream Funding: Still to be defined

Specialist Consultants:
Quantity surveyor: Honours QS student?
Structural Engineering: Ms. Katharina Crafford (NMU QS Department)
Contractor / EME: Necessity dependent on funding/design
Interior Design: Lene Smit (Still to be confirmed)

Informal Consultations:
CPUT Design Build Program: Rudolph Perold
NMMM Human Settlement: Schalk Potgieter
Walmer Ward Councillor: David Heyselden
NMU Legal Services: Daryl Newton / Nombuso Shange
NMU Health and Safety: Yanga Gibe (Still to be confirmed)
The Herald Newspaper: Estelle Ellis
Ethics: Prof. Charmaine Cilliers

IN PROCESS CONSULTANCY

The project programme has been defined by the SACAP works services outline to organise the process of the project and the stages and relevant consultancy is as follows:

Stage 1: Inception (1 Week) 25 March

- 25 March: Introductions to community representatives, @ Airport Valley Community Centre
- 25 March: Site Visit Crèche 13 Staff, @ Airport Valley Community Centre

Stage 2: Concept and Viability (1 Weeks) 1 April – 8 April

- 8 April - Presentation with community representatives and crèche consultants @ NMU

Stage 3: Design Development (2 Weeks) 8 April –22 April

- 15 April - Presentation with community representatives and crèche consultants @ NMU
- 9 April – Observational critique quantity survey and structural engineering @ NMU

Stage 4: Documentation (2 Weeks) 22 April – 6 May

- 22 April - Presentation with community representatives and crèche consultants @ NMU
- 29 April - Observational critique quantity survey and structural engineering @ NMU
- 7 May - Health and safety operation presentation @ NMU

ETHICS

In all circumstances of uncertainty - *ERR ON THE SIDE OF CAUTION*

During the process of site visits the following is to be noted:

- Discussions with staff members of the crèche or any other members of the consultancy are to remain operational in nature. Site research is to remain architectural; this is not a social study.
- Research done on site will not be published. Any research that will be documented will be in the form of the operational nature of the crèche facility and the design proposals. Individuals of the community will not form part of this publication.
- There will be no deliberate interaction with minors under any circumstances, beyond human courtesy.

NMU Legal Services has stated the requirement of the following documentation:

- A Memorandum of Understanding to be signed between the Airport Valley Community Chairman, the Walmer Angels Project, Crèche 13 and the NMU.
- Indemnities to be signed between students and the NMU before excursion and construction.
- Permissions agreement between Crèche 13, Municipality and NMU to construct on site.
- Post ownership and agreement and liability indemnity between Crèche 13 and NMU.
- Health and Safety Approval from NMU Health and Safety Office.

Photography:
- No children may be photographed as to be recognisable – blurring and back, post editing.
- No photos to be used without permission.
- Photos of architecture can be used.

Social Media:
- Posting on NMU SoA Facebook or Instagram to be co-ordinated through studio master.

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- Dewey, J. (1938). Experience and Eductaion. Kappa Delta Pi.
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THE PROJECT BRIEF

PROJECT CONTEXT / PROJECT PROGRAMME

PROJECT CONTEXT

The project is structured by the stages and services outlined by the South African Council for the Architectural Practice[19]. The project breakdown is subject to change during the design process and the stages relate to student projects. Students will be accessed after each stage of the project.

It is very likely that dates will be moved and contingencies allocations will be used.

The overall time allocated to the task is 11 weeks: 6 weeks for the design of the building and 5 weeks for construction. A space has been allocated over the mid-year recess period to allow for funding and act as a contingency to the design process of the project. An additional 2 weeks have been left after the project as a contingency to the design process. The project context is as follows:

THE CLIENTS BRIEF

The project proposes the development of a pre-fabricated, kit-of-parts model for the crèche as a type and does not have a single client. It aims to serve the children of communities who attend these schools to learn, develop and be protected; while parents are at work. The design is required to be specific as a crèche, but adaptable to different locations. Research will be done by the project team to the programmatic concerns of designing architecture for children, precedent studies of relevant existing crèche designs, and identifying how the township crèche works through precedent study of crèches in the area.

As a tentative accommodation the building is to serve roughly 40-50pre-school children and requires 2 class rooms (48sqm), a small kitchen space (4sqm), storage (2 Sqm) and a single room living space for the caretaker of the crèche (16Sqm). The total area of the new building cannot exceed 70 Sqm, to maintain that the building execution may be possible in the programme of an academic year.

[19]https://cdn.ymaws.com/www.sacapsa.com/resource/collection/7E4759E1-870D-4483-A3F9-8020ADDFFD2A/Board_Notice_121_of_2015.Scanned_version.pdf - pp.103,104

Tectonics for the building need to consider, processes of pre-manufacture, cost and the final expression needs to respond appropriately to the spirit of play-school and the “typical” context of the informal shack settlement. Airport valley will serve as a precedent for the identification of the opportunities and constraints in informal settlements and the final destination for the proposed prototype.

THE SITE AND RIGHTS AND CONSTRAINTS

In this situation the site is not specific, and will embrace the informal settlement type as a generic spatial and formal setting. The building will be constructed off site and be donated to Crèche 13. Before delivery, documentation will need to be submitted for approvals from the community representatives, the crèche and the municipality. In the event that Crèche 13 is not a viable option due to factors outside of the design studio, an alternate donor will be sourced. The project will identify land-ownership and municipal construction regulations in the by-laws of the Airport Valley area. Permissions need to be confirmed by the municipality and NMU as to the construction of a temporary structure on campus.

BUDGETARY CONSTRAINTS

The budget of the project is still yet to be determined, but the project will look to be as inexpensive as possible in its selection of materials, construction techniques and processes. The current estimation is still crude, and estimates 150 000, but a low cost per square meter rate still needs to be determined. The budget would not include potential donations and discounts which will be sought from material suppliers.

Funding it is hoped to be obtained from available internal NMU grants (EAF, FR&E, CLTM,) and external sources. Internal funding applications have been made, and external funding can only be pursued once a design has been developed to obtain exact costs and create hype around the project. This external process will include using media (Herald, Algoa Radio and the schools social media pages) as a platform to promote the project and attract potential donors. Students may be involved in the fundraising process on a voluntary basis.

Should the budget not be obtained the project will not be built and the project will end after stage 4.

Potential Expenditures:

Potential outsourced Work: Site preparation, concrete pads, moving jungle gym
Materials: Frame, Cladding (floor, roof, walls)
Glazing: Doors, Windows, Glass, Polycarbonate
Fixings: Screws, Bolts, Adhesives
Finishes: Paints, Treatments, Adhesives
Tools: Table saw, Drills, jigsaws, angle grinder, hammers, pliers, screw drivers,
Facility: Storage Rental, Workspace Rental
Transport: Getting components to site, collecting materials, collecting supplies, seeking fundraisers

NEED FOR CONSULTANTS

At this point there is no budget for any construction consultancy. Should there need to be assistance with site preparations the project proposes to approach the Walmer EME to find assistance. A contractor at the NMU construction department will be consulted with regards to the development of a health and safety operations manual.

The crèche personnel will be consulted for establishing the requirements of the design and will also be invited to the design studio to give feedback and preferences during the various stages of the design process.

The studio will also request assistance from the NMU construction department student/s for the costing and structural integrity of the building. These departments have been contacted to request with these tasks and tentative dates have been allocated, although these departments still need to confirm involvement.

The NMU Interior Design Department may also assist with the design of the building.

Additional operational consultancies include the NMUSoA Dos and HoD, Walmer Angels Project, community representatives, Human Settlement and other approval municipal authorities, NMU legal services, NMU Ethics, and NMU health and safety.

PROJECT PROGRAMME

See final component of this hand-out for a detailed combined academic and professional programme

METHODS OF CONTRACTING

The project is a DESIGN/BUILD project and will be built by the designers; the student and staff the second year design studio. The studio will be responsible for site surveying; acquiring the materials, tools and premises; and the construction of the building. The studio has no intention at this point to have any construction consultancies, but this may become necessary as the project develops and should funding allow.

PROJECT PROGRAMME

25 March – 26 August

The project programme has been aligned with the SACAP work stages of an architectural project and defines the project scope, tasks to be completed, learning aims and outcomes, and the marking criteria for the different stages of the project.

Learning aims and objectives are defined in accordance with the SACAP terminologies used for describing learning levels where *AWARENESS is a*cquaintance with relevant concepts and methods, without necessarily being skilled to paraphrase information; *KNOWLEDGE* is familiarity with relevant information, without necessarily being skilled to see its fullest implication or application; *UNDERSTANDING* is full assimilation and comprehension of information, and the skill to correctly paraphrase it and relate it to other situations, including its practical implication; and *ABILITY* is Skill in analysing problems, identifying appropriate information for the accomplishment of tasks and to apply it to the solution of specific problems.[20] The complexities of the problems and setting of these learning levels are set out by SACAP[21] in to categorizations of ADVANCED, HIGH, MEDIUM, LOW and MINIMAL. The stipulated requirements by SACAP in second year predominantly sit in the LOW to LOW/MEDIUM range. The clarification of these terms set the basis for the discussion of the learning aims and outcomes.

Marking criteria will be further articulated and clarified during the various stage of the project in class and the final marks sheets issued to students. In team stages students will be required to mark the performance of the peers in their team (Peer Performance Review). The mark from the team will be used as a factor mark for the final grade. In the instance that a mark of 80% is given in peer review, that member will receive 80% of the final grade for the team.

[20] https://c.ymcdn.com/sites/www.sacapsa.com/resource/collection/B3744FC2-793D-4037-AB99-DD5C8EE4F96C/The_Purple_Book._Guidelines_for_the_validation_of_courses_in_architecture_by_SACAP_Visiting_Boards_–_Revision_1,_September_2012.__.pdf

[21] https://c.ymcdn.com/sites/www.sacapsa.com/resource/collection/B3744FC2-793D-4037-AB99-DD5C8EE4F96C/The_Purple_Book._Guidelines_for_the_validation_of_courses_in_architecture_by_SACAP_Visiting_Boards_–_Revision_1,_September_2012.__.pdf

STAGE 1: INCEPTION

Team: 25 March – 1 April 2019 (1 week)

SACAP DESCRIPTION:

Receive, appraise and report on the clients requirements with regard to:

- The clients brief
- The site and rights and constraints
- Budgetary Constraints
- Need for consultants
- Project Programme
- Methods of contracting

PROJECT SCOPE:

The bulk of the above tasks above have already been completed to define and develop the project and established the project context discussed in the previous section.

What is still required is the research component that identifies the contextual, programmatic, tectonic and sustainable issues of the design. The following tasks will need to be done:

1. A Site visit: (don't photograph people, bring a tape measure)
    a. Site Survey and Documentation of Crèche 13 (Teams of 10)
        i. Measure site, buildings, infrastructure and surface changes
    b. Tour by Airport Valley Chairman (AVC), Zama Mona of the crèches in Airport Valley.
        i. Rough sketch *moments* and *background* including buildings, spaces and infrastructure… notice things.(All)
        ii. Sketches, plans, sections and elevations of crèches visited – Site, building, infrastructure, furniture. (All)

2. A context analysis:(25)

    a. Natural Form
        i. Analysis of Contours (Models, Drawings) (5)
        ii. Environmental flows and conditions (2)
    b. Built Form (Macro / Micro)
        i. (Figure / Ground)(2)
        ii. Sort sketches from site visit into spatial and formal types (2)
        iii. Streetscape elevation (Photograph) (2)
        iv. Infrastructure – Water, Electricity, Waste(2)
        v. Materials and construction of crèche 13 (Materials Schedule) (4)
    c. Movement (Macro / Micro)
        i. Articulation of places of movement and pause, hierarchies of connections; modes of transport (2)
    d. Activities
        i. Map on Google plan image, sit with WAP or AVC? (2)
        ii. Identify variety and nature of activities and their topographical distribution (2)

3. A study of relevant precedent to identify:

    a. Tectonics (11)
        i. Different types of tectonic approaches (1)
        ii. Document and get costs/quotes for all the different boarding, sheeting, fencing, and planks. Think of other potential low cost materials and identify a preliminary cost per sqm. (2)(2)
        iii. Materials of Re-use. Look at precedent and list the different potential materials or items for re-use and their assembly. (2)(2)
        iv. Potential Systems of Modulation / Component Construction (2)
    b. Programme (18)
        i. Crèche 13: Operations (time, duration, how, who, where, shortcomings, required environments) (2)(2)
        ii. Analysis of different crèche site and internal layouts as crèche types (sketches from site visit) (2)(2)
        iii. Analysis of different crèche constructions (sketches from site visit) (2)(2)
        iv. Generic spatial forms, patterns and relationships of the activities of crèche (image / literature precedent study) (2)(2)
        v. 3 Global crèche/children precedent study (2)

4. Funding and Social Media (4)

    a. Funding Documentation
        i. Project Outline
        ii. Core Values of Project
        iii. Objectives and Outcomes
        iv. Corporate Benefit to Sponsor
        v. Alignment with Sponsor Values
    b. Social Media
        i. Project write-up for NMU website
        ii. #tags and Media Posting Processes

TASKS:

1. **Wed 9am: 27 March: Research Team PowerPoint Presentations Submission:**

The presentations should reflect the research undertaken by the class with regards to the contextual, programmatic, tectonic and sustainability concerns of the project. Presentations are to be structured by the following sections: Mapping (drawings and photographs), Analysis and Observations (conclusions) and be presented in the form of a PowerPoint. A discussion with each group will happen on Monday afternoon (25 March) as to the specifics of each team's research objectives.

Final submission requirements:

- PowerPoint Presentation

2. **Fri 3pm: 29 March: Consolidated Research Document of Power Points:**

On completion of the presentation, PowerPoints are to be reworked based on studio feedback and consolidated into A4 document format. Each team will submit a print of their respective section and a file copied to the *students/share*. A generic format (Mpumzi) will be given and the class will need to print and insert their research content. If there is more than one team researching a specific task, the contribution is to be a combination of the two studies. All images and text to be referenced.

Final submission requirements:

- Printed A4 Document in Generic Format
- Digital copy saved to *Student/Share*

3. **Mon 10am: 1 April: Conceptual Submission**

During the process of doing the research, students should also be developing ideas around the issues which have been imagined or illuminated through the process of understanding the various complexities of the project. This will include sketches and the production of a junk model (draft submission, Friday 29 March).

TEACHING / LEARNING AIMS AND OUTCOMES:

- To… have *KNOWLEDGE* of the different constituents and concerns of a generic project context; in order to have *ABILITY* to identify the contextual, programmatic, tectonic and sustainable requirements, opportunities and constraints; at a *LOW/MEDIUM* level of complexity.

- To… *UNDERSTAND* the value and role that precedents play in the design process; in order to illustrate an *ABILITY* to engage with project relevant architectural precedent in a strategic manner; at a *LOW/MEDIUM* level of complexity.

MARKING CRITERIA:

Marks will include:

1. Peer performance Review Mark (factor mark)
2. Group mark by staff and consultants based on the following criteria:

- Degree of rigour - breadth and width of the investigation
- The ability to distil and articulate research in a useful and relevant manner to the design task at hand.
- Academic Practice (referencing and structure).

STAGE 2: CONCEPT AND VIABILITY

Individual: 25 March – 8 April 2019 (2 week [overlap])

SACAP DESCRIPTION:

- Prepare and initial design and advise on –
    - The intended space provisions and planning relationships;
    - Proposed materials and intended building services; and
    - The technical and functional characteristics of the design
- Check for conformity of the concept with the rights to the use of the land
- Review anticipated costs of the project
- Review the project programme

PROJECT SCOPE:

This task will be done as individuals and the idea is to develop a data bank of potential responses to the contextual, programmatic, tectonic and sustainable issues. The objective is to produce design proposals that are not detailed, but remain conceptual, yet produces a final presentation through models and diagrams.

LEARNING AIMS AND OUTCOMES:

- To… be able to *ARTICULATE* the different constituents and issues of the project; in order to have an *ABILITY* to generate creative and clear responses to these issues; at a *LOW/MEDIUM* level of complexity.

- To… *ARTICULATE* the different design strategies of the proposal and have *ABILITY* to present these ideas in an appropriate spirit and clarity through the use of diagrammatic sketches and models; at a *LOW/MEDIUM* level of complexity.

TASK:

1. **Mon 10am: 8 April: Design Submission**(see attached programme for interim submissions)

The final submission for the project is an "in-the-act" submission, which means that the design does not aim for resolution, but is a presented process submission including diagrams, sketches and models that covey the core "features" of the design. The advantage of such a project is that it allows individual observation of a student's process, rather than an evaluation of a final project. The idea is to sell your ideas, which are relevant in response to the design issues outlined in the research stage of the project. Sketches and models should be adventurous in materials and abstraction aligned with the conceptual positions of the design. See design schemes - Korsten Library 2018.

The final proposals will be pinned up in studio and presented on the projector (take photos and bring on USB) to the class, Crèche 13, Walmer Angels Project and staff. 11 projects will be selected to be further developed in the next stage of the project.

Final submission requirements:

- Development Models
- Development Sketches (Plans, Sections, Perspectives)
- Design Diagrams (Plans, Sections)
- Final Concept Model (1:50)
- Photographs for Projector Presentation on USB

MARKING CRITERIA:

Marks will include:

1. Individual mark by staff and consultants based on the following criteria:
   - Rigour in Design Process
   - Clarity of diagrammatic representation of ideas
   - Response and relevance of proposed contextual strategies
   - Response and relevance of proposed programmatic strategies
   - Response and relevance of proposed tectonic strategies
   - Response and relevance of proposed sustainable strategies
   - Quality of "pitch" presentation

STAGE 3: DESIGN DEVELOPMENT

11 Teams: 8 April – 22 April 2019 (2 weeks)

SACAP DESCRIPTION:

- Confirm the scope and complexity.
- Review the design, and consult with local and statutory authorities.
- Develop the design, construction system, materials and components.
- Incorporate and co-ordinate all services and the work of consultants

PROJECT SCOPE:

This stage of the project is to develop the selected projects in teams to a point where the technology and planning is well refined. On completion of this stage the building should be able to be reasonably costed. The process will involve the clarification and hybridization of ideas developed in Stage 1.

LEARNING AIMS AND OUTCOMES:

- To… be able to *ARTICULATE* the conceptual underpinnings of the project and have *ABILITY* to refine the detail characteristics of the building, understanding connections and structure, towards these ends; at a *LOW/MEDIUM* level of complexity.

- To… be able to *ARTICULATE* the requirements of the programme and have the *ABILITY* to produce a careful and detailed plan and appropriate spatial environments that accommodates the activities; at a *LOW/MEDIUM* level of complexity.

TASK:

1. **Tues: 23 April: Design Submission**(see attached programme for interim submissions)

The final design submission will include large scale models and drawings which reflect the tectonic detailing of the project. The models are to be structurally working and not simply be a spatial representation of the construction of the building. Detail models will also be required. Drawings are to be of a technical nature *and* convey the ""atmosphere" of the design. Relevant conceptual models and sketches from stage 1 are to also be included in the final submission. The submissions will be reviewed by the relevant structural and cost advisors and presented formally at the NMU architecture department to WAP and Crèche 13.

Final submission requirements: (scales to be confirmed)

- Development Models
- Design Diagrams (Plans, Sections)
- Working/Presentation Drawings
- Working Structural Model
- Model Technical Studies
- Photographs for Projector Presentation on USB

MARKING CRITERIA:

Marks will include:

1. Peer performance Review Mark (factor mark)
2. Group mark by staff and consultants based on the following criteria:

- Development and Clarity of Ideas established in Phase 1
- Degree of Contextual resolution
- Degree of Programmatic resolution
- Degree of Tectonic resolution (Detailing and Construction Process)
- Degree of Sustainable Resolution
- Quality and Detail of Modelling and Drawings

STAGE 4: DOCUMENTATION

1 Team: 23 April – 6 May 2019 (2 weeks)

SACAP DESCRIPTION:

4.1. Prepare documentation for local authority submission:

1. Co-ordinate technical documentation with the consultants and complete primary co-ordination
2. Prepare specifications for the works.
3. Review the design, costing and programme with the consultants
4. Obtain the clients authority, and submit documents for approval.

. 4.2. Complete construction documentation and proceed to call for tenders

5. Obtain the clients authority to prepare documents for procurement offers for the execution of the project
6. Obtain offers for the execution of the works
7. Evaluate offers, and recommend on awarding the building contract.
8. Prepare the contract documentation, and arrange the signing of the building contract.
9. Funding Documentation

PROJECT SCOPE:

This stage of the project will select 1 project from the previous 11 selected proposals for final construction. The tasks undertaken may vary considerably and different teams will be established to complete the following documentation:

- Construction documentation(final structural contributions)
- Large Scale Model
- Health and Safety documentation (construction operations)
- Municipal documentation (if necessary)
- Calculate required materials and get material quotes and requests for donations and discounts
- Funding application documentation

LEARNING AIMS AND OUTCOMES:

- To… be able to *ARTICULATE* the complexity of an architectural project; in order to have *UNDERSTANDING* of the regulatory and non-design responsibilities in practicing as a professional architect; at a *LOW/MEDIUM* level of complexity.

TASK:

1. **6 May: Final Design Documentation** (see attached programme for interim submissions)

The final submission will be in the form of a large scale model which emphasises all the detail as a dress rehearsal to the final construction. Drawings will include plans, sections, elevations and schedules and will be ready to get a final costing for the project. A number of documents will also need to be completed to allow for the necessary approvals to be obtained. A list of requirements is as follows:

- Drawings – Plans, Sections, Elevation, Schedules
- Model – 1:10 Final Construction Model
- Documents – Health and Safety / Construction Programme, Costing, Fundraising
- Municipal Submission Drawings (if necessary)

MARKING CRITERIA:

Marks will include:

1. Peer performance Review Mark (factor mark)
2. Group mark by staff and consultants based on the following criteria:

- Project will be marked on an individual basis given the nature of the task. Marking criteria will be articulated during the course of the stage.

MID-WAY CONTINGENCY:

FUNDRAISING AND APPROVALS – 6 JUNE – 22 JULY 2019

The midway contingency is to allow for the studio to finalise:

- Design refinements
- Obtain NMU Health and Safety / security permissions
- Obtain approvals from the municipality if necessary
- Obtain a final cost for the project
- Fundraise and source potential material donors
- Collect Materials

Should there be any need to extend the design process of the project or to allow for completion of the above tasks additional contingency has been included after the proposed completion of the construction. The construction phase would then be shifted to accommodate the completion of these tasks.

STAGE 5: CONSTRUCTION

1 Team: 22 July – 26 August 2019 (5 weeks)

SACAP DESCRIPTION:

- Administer the building contract.
- Give possession of the site to the contractor.
- Issue construction documentation
- Initiate and/or check sub-contract design and documentation that are appropriate.
- Inspect the works for conformity to the contract documentation and acceptable quality in terms of industry standards.
- Administer and perform the duties and obligations assigned to the principal agent in the JBCC building contract, or fulfil the obligations provided for in other forms of the contract.
- Issue the certificate of practical completion.
- Assist the client in obtaining the occupation certificate.

PROJECT SCOPE:

This stage of the project will look to construct the building. Given a design/build approach the functions listed above will happen internally. The construction will be in two stages. The first stage is the pre-manufacture stage and will aim to be constructed on the NMU campus. Premises still need to be confirmed. The design will need to consist of components and once manufactured will then be delivered and assembled on site. During this stage the current crèche activities will be relocated to possibly the Airport Valley community centre. The Walmer Angels Project will co-ordinate this. A detailed construction guide and health and safety documentation will be produced, after the completion of the design stage.

LEARNING AIMS AND OUTCOMES:

- To… teach students / staff the relationship between architectural representation and the final artefact; in order… that they may be more informed about the real-world material and technological implications of their design decisions.

- To… teach students / staff the depth of architectural practice, not as an elitist phenomenon, but as a social phenomenon (*integrity / social justice and equality*); in order… that they may deconstruct their own privileges / perspectives and contribute, "critically and constructively", to the making of better environments (*environmental stewardship*) for all.

- To… teach students / staff the value of collaboration, between academia, the profession and the community (*diversity*); in order… to understand and reflect on their positions in a larger social setting (*ubuntu*), work together and to contribute and recognise their individual strengths to the production of a shared goal.

TAKS:

1. **Mon: 19 August: Completion of Pre - manufacture**
2. **Mon: 26 August: Final Completion of Building**(see attached programme for interim submissions)

MARKING CRITERIA:

Marks will include:

1. Peer performance Review Mark (factor mark)
2. Group mark by staff and consultants based on:

- The quality and craft of the final execution
- The ability to co-ordinate construction tasks

FINAL CONTINGENCY:

GENERAL – 26 AUGUST – 9 SEPTEMBER 2019

The final contingency is a 2 week period after the final completion of the project. This time is allocated to assist with potential requirements for additional time for design or construction, but will also serve to allow for the finalising of the photographic and formalization of the numerous documentations of the project into a single work as formal and extensive formal documentation of the project.

CLIENT CONSULTANCY		QS, STRUCTURAL, CONSTRUCTION CONSULTANCY		SUBMISSIONS	

		Monday	Tuesday	Wednesday	Thursday	Friday
Week 1	STAGE 1: INCEPTION	25	26	27	28	29
		Site Visit to Creche		Report Back on Research (PowerPoint)		Submission of Contributions to Document in A4 in perscribed layout
				Rule of Thumb Presentation		Presentation of Conceptual stratergies
				Site Visit to Emmanuel Advice Care Centre		
Week 2	STAGE 2: CONCEPT DEVELOPMENT	1	2	3	4	5
		Submission of Conceptual revisions		Development Submission	KBS Test	Interim Submission
		Critique and Feedback from Creche staff, Walmer Angels Project and Community Representative				
Week 3	STAGE 3: DESIGN DEVELOPMENT	8	9	10	11	12
		Final submission of individual proposals	Divergence Workshop	Submission of first Team Proposal		Material Tectonic Submission of first Team Proposal
		Critique and Feedback from Creche staff, Walmer Angels Project and Community Representative				
		Selection of 11 Projects to Take Forward				
Week 4	STAGE 3: DESIGN DEVELOPMENT	15	16	17	18	19
		Material Tectonic Submission		Presentation Submission 1		PUBLIC HOLIDAY
		Observational Critique on Cost, Construction and Structure				
Week 5	STAGE 4: DOCUMENTATION	22	23	24	25	26
		PUBLIC HOLIDAY	**Final Submission of Team proposals**	Material Tectonic Submission		Material Tectonic Submission
			Critique and Feedback from Creche staff, Walmer Angels Project and Community Representative			
			Selection of Final Stratergy			
Week 6	STAGE 4: DOCUMENTATION	29	30	1	2	3
		Material Tectonic Submission		PUBLIC HOLIDAY		Material Tectonic Submission
		Observational Critique on Cost, Construction and Structure				
Week 7	END OF STAGE 4	6	7	8	9	10
		D-DAY - Design Documentation to develop quantities, cost, funding documentation, and municipal approval	FURTHER DEVELOPMENT OF INDIVIDUAL PROPOSALS FOR PORT FOLIO			
		Final Presentation to Creche staff, Walmer Angels Project and Community Representative				