5.1 INTRODUCTION

The design generation and development process will be outlined in this chapter. The steam punk movement, as the major design informant will be introduced and outcomes from its principles will be identified. The design concept resulting will be defined and illustrated in the form of mood boards and images of physical models as a form of design exploration and possibilities. Design, programmatic and conceptual development will be documented through visual and written explanation. Critique and outcomes of the process will be mentioned. Lastly, a final design draft will be presented.
5.2 STEAM PUNK

Steam punk is a movement of the 1980’s and 1990’s which strove to reinterpret the Victorian steam age nostalgically with a science fiction and fantasy twist which saw the machine achieving the impossible. The illustration below strives to explain this combination of historical with the technological science fiction and fantasy.

The movement is technologically oriented, with particular focus on the fantasy of what technology may be capable of (Illus 5.1). Steam punk is prevalent in art, design, literature, music, architecture, fashion and film.

Examples are illustrated alongside (Illus 5.2, Illus 5.3, Illus 5.4).

Illus 5.1 Steam punk (Author, 2011)

Illus 5.2 Jules Verne’s ‘20 000 Leagues under the sea’ (1869) is a classic literary work which influenced the steam punk movement (Willis, 2009)

Illus 5.3 Hayao Miyazaki’s ‘Laputa Castle in the Sky’ (1986) is a Japanese anime film which falls within steam punk genre (Canth, 2011)

Illus 5.4 Jean Pierre Jeunet’s “The city of the lost children” (1995) is stylised and contains steam punk elements (Hudler, 2010)
Steam punk is of relevance to the design project in that it accepts the truths of an historical age to an extent, and thereafter, imagines the impossible within the historical framework. The imagination of the impossible detaches the historical from its time and appropriates it to futuristic possibility, thereby freeing it to another time.

The first mood board (Illus 5.5) alongside demonstrates the immediate response to the steam punk movement as a possible design generator. Images utilised in a digital collage format involve the fashion, architecture, interior spaces and technological focus of the movement.

Although the mood board does accurately reflect the steam punk movement, its response to the 1909 CEO / 2011 POPUP is not adequately expressed. The theory of cultural production and the addressing of change in occupation, as outlined in the theory of alteration, are ignored in this process. The design direction is inconsiderate of its context, users and time. Spaces of this nature would be too removed from the point of reference of the users, which contradicts the theory of cultural production which strives for product relevance and specification to its users (Venkatesh & Meamber, 2006: 12).

From this, it is concluded that for the design to move in a direction true to its theoretical informants, the 1909 CEO and 2011 POPUP should be reflected as the major design informants in terms of users, times and programmes. However, the exploration into the steam punk movement is not without value, since ideas regarding the approach to the historical may be abstracted within relevance to the 1909 CEO / 2011 POPUP.

The design concept may be defined as the re-imagination and reinterpretation of the “historical ideal” (Scott, 2008: 108) through current cultural production.

The “historical ideal” is recognised as the ideal aspects of the building which have been established according to the stripping back method. In the 1909 CEO / 2011 POPUP, this is identified as the facades and interior staircase, tiles and balustrades as discussed in Chapter 2.

Current cultural production is regarded as the need to apply extreme relevance of the design product to it users. This is intended to be achieved through exposing products created by skills learners as design generators which serve to reflect the users in the interior design.

The second mood board (Illus 5.6), alongside is a development from the first, with increased consciousness of the historical and current users, time and programme.

It differs from the first in that it uses the products created in the building (craft, textiles, textures, fashion, mosaic, murals) as the opportunity for new elements. The building’s historical and current users are depicted. An historical photo of the building interior (boardroom) is shown. Its furniture and finishing can provide meaningful points of departure for the new furniture and product design, especially in terms of stripping back as a means to take the design back and then forward.

This mood board strives to address the concerns that steam punk may be too removed from the design project by reflecting site, programme and users which are current and historical.
5.3.1 Design Draft 1

The first model (Illus 5.7) demonstrates the historical ideal of the building, its facade and internal staircase, as well as a design proposal within this shell. The intervention is inspired by the precedent study, the Santa Caterina Market in Barcelona, and its treatment to the historical by a single radical element which caused a design impact to the architectural form and interior space of the building.

Natural light, within the 1909 CEO, although seen as being treated generously and resulting in pleasant spaces in the building, is not treated intelligently, since it is merely represented by a row of fenestration along the four facades. Orientation, thermal comfort and programmatic compatibility with lighting type is not considered.

Through this reasoning, it was decided that the idea of light may become a major design element through atriums and light wells which illuminate the inner parts of the building through natural light during the day, and may be backlit through artificial lighting at night, creating a visual impact to the building exterior.

Critique

- The design concept of reinterpreting and re-imagining the historical “ideal” is not clear or visible.
- Cultural production is poorly reflected (model scale is a limit to product design ideas which can only be demonstrated through sketches).
- The spatial freedom is limited by the structural columns.

Conclusion

- Break the skin for increased space in mezzanine levels.
- Maximise the quality and potential of light in the building beyond atriums and light wells. Consider the facades.
- Be bolder with the interior design.
- Remove everything but the ideal, and redesign the building.
- Return to the concept for design guidance.

Illus 5.7 Model 1, May 2011 (Author, 2011)
5.3.2 Design Draft 2

The second model (Illus 5.8) progresses the design from the first in that it accepts the shortcomings of the initial design attempt and strives to attend to these. The concept is reconsidered first in this process and the light wells (also seen in Illus 5.11), as the major design element, is recognised as being a reinterpretation of the stairwell of the “historical ideal” staircase within the 1909 CEO. These new wells are similar to the historical in that they are seen as opportunities for natural light and circulation but differ in that they may become objects related to the user through signage, exhibition, seating, surfaces and storage spaces. This is clear in Illus 5.11.

Further modifications involve projecting beyond the facade of the building to create North facing mezzanine spaces which also have views across the railway line (Illus 5.9, Illus 5.10). This is seen as an extension to the reinterpretation of light in the building. Mezzanines reinterpret and challenge the high volumes of the 1909 POPUP through the introduction of intermediate levels (Illus 5.9).

Critique
- The second mood board and model do not respond to each other even though the concept is the same.
- There is a lack of programmatic knowledge which is evident in the design process.

Conclusion
- Reinterpreting the historical is more clear, since the “ideals” have been identified, but the passion of the mood board must be introduced to plan and section.
- Schedule of accommodation guidelines are required to determine the sizes of spaces which break out of the facade. A more detailed programmatic analysis is required to address this.
- The architectural language and the interior design language need to be considered.
- Precedent studies should be looked at for more guidance.

Illus 5.8 Model 2, May 2011 (Author, 2011)
Illus 5.9 Plans and Section A, May 2011 (Author, 2011)
Illus 5.10 3 Dimensional Stripping Back Study, May 2011 (Author, 2011)
Illus 5.11 Re-imagining the Historical "Ideal", May 2011 (Author, 2011)
5.4 CONCEPT DEVELOPMENT (MAY 2011)

In order to overcome the difficulty of demonstrating the design ideas of the mood board in the plans, it was decided to map aspects of the mood board (Illus 5.6), model 2 (Illus 5.8) and the “historical ideal” as discussed in Chapter 2. These would be committed to plans which would then be layered, observed and outcomes identified.

Layer 1: Mood Plans (Illus 5.12)
This plan, conveys the patterns, textures and atmospheres portrayed in the mood board in locations which are mapped intuitively. The concept of cultural production is also used to imply activities in space, such as the red onion in food labs.

Layer 2: Diagrammatic Plans (Illus 5.13)
These drawings serve to diagrammatically simplify the intention of the model in plan. The main characteristics include the link of light wells as continuous vertical elements, new mezzanine levels within existing volumes, projecting beyond the skin and a possible new geometry.

Layer 3: “Historical Ideal” Plans (Illus 5.14)
In these plans, the existing and demolished historic characteristics are mapped. This includes the past relationship between the building function and railway line, floor finish (chequered terracotta tiles), the demolished bridge, the hierarchy of facade elements, staircase and natural light.

This exercise served to highlight the major characteristics of the building’s ideal, the design intention and the mood or atmosphere to be created. The major outcomes include:

- The use of pattern on vertical and horizontal planes as a design element, and reinterpretation of the existing chequered floor pattern,
- The exposure of cultural production occurring in spaces through exhibition and transparency,
- The manipulation of natural light,
- The use of an atrium and/or light wells as a reinterpretation of the continuous volume within the stairwell,
- Recreating the sense of entrance,
- Re-establishing the relationship with the railway line,
- The projection of the facade beyond the skin as a reinterpretation of the current image and static nature of the building, and
- The creation of intermediate mezzanine levels and new geometries which reinterpret existing volumes.

Apart from this exercise, architectural guidelines were briefly consulted in the third design draft in the form of ergonomics.
5.5 DESIGN DEVELOPMENT
(JUNE 2011)

Using the outcomes of exercises in 5.4, the following has been considered:

5.5.1 Entrance:

The entrance to the skills centre is currently uneventful, difficult to identify and congested. There is no central reception and inadequate signage to direct users and visitors. The sense of entrance is considered a significant aspect to the design in terms of arrival, direction and sense of place. This has been considered as follows:

- A new axis perpendicular to the skills centre is created to direct users to the building by means of a paved surface (Illus 5.15).
- The church and donations building alongside of the skills centre (East) is partially demolished and set back to allow a square entrance court between the two buildings creating a sense of arrival. This also highlights the hierarchy of activity on site, through size (Illus 5.16).
- Steel columns and glazing along the site edge frame views of the railway line, which creates a sense of place (Illus 5.17).
- A new reception area is proposed at the entrance of the church and donations building, for direction and assistance.
- Signage columns and banners are placed along the axis route and within the entrance court (Illus 5.18).

Critique:
- The entrance design is considered separately to the rest of the design and it should be one language.
- The entrance design is critical and further development should occur.
Illus 5.17 Plan through Entrance 1:200 (Author, 2011)

Illus 5.18 Section A through Entrance 1:200 (Author, 2011)
Illus 5.19 Sketch of entrance and arrival (Author, 2011)

Illus 5.20 Sketch of entrance and arrival (Author, 2011)
5.5.2 Cultural Production (Illus 5.21 - Illus 5.26)

The sense of cultural production activity in the building is reflected through the spatial distribution of places of production (food LAB, Arts and Crafts and Decor and Garment Manufacturing) on the new mezzanine levels. These levels project beyond the existing facade in a new geometry which reflects transformation, exposes activity to the exterior (through glazing), allows the passage of North light into spaces, increases facade exposure to railway views and plays on the concept of “POPUP”, as a branding element visible across the railway line on the city side. This play of form indicates a change of the building’s occupation (user, time and programme) (Scott, 2008:1) and thereby appropriates new space to change through new image.

Critique:
• Spatial layout needs consideration
• Food LABS and wet service allocation is important.
• Food LABS on the North side of the building may be unsuitable due to heating. Media Centre Lounge would benefit more.
• Circulation is problematic.
• Inhabitation of space is not evident.
• Branding should be explored

5.5.3 Light (Illus 5.21 - Illus 5.26)

Two light wells spanning the volume of the entire building allow a visual connection between levels within the building interior and allows natural light to the central spaces of the building. This breaks the static nature of the building.

Critique:
• The light wells are communicated as solid and a lack of openings reduce connection between spaces. An atrium should be considered.
• The effects of layering light and shadow should also be explored.

5.5.4 General Comments (Illus 5.21 - Illus 5.26)

• The difference between old and new fabric needs to be reflected.
• The design could be more dynamic, reflecting the movement of the railway line.
• The outcomes of patterns, texture, exhibition and transparency can be exploited further.
• Technical requirements of specialised spaces, such as Food LABS should shape the design further.
Illus 5.21 Ground and Mezzanine 1 Floor Plans 1:200 (Author, 2011)
Illus 5.22 First and Mezzanine 2 Floor Plans 1:200 (Author, 2011)
Illus 5.25 Section B 1:200 (Author, 2011)

Illus 5.26 Section C 1:200 (Author, 2011)
5.6 Accommodation Requirements (July 2011)

Due to the lack of technical knowledge driving the previous design draft, it was decided to document the spatial and technical requirements of certain spaces. For this, the building was divided into its respective functions, which were investigated through building standards, precedent investigations and ergonomics. The outcome of this exercise is as follows:

5.6.1 Dining Hall

The dining hall is a space used between 12h00 and 13h00 as an eating and food serving space for the 60 to 70 learners of the skills programmes. Food served includes light lunch meals, such as sandwiches, fruit, water and salads. Outside of these times, the space may be used for recreational purposes, such as social seating areas, break spaces or waiting areas between classes.

The dining hall was housed in the building alongside (East of) the skills centre, but will now be accommodated within the building since it caters for learners specifically.

- Lunch will be prepared in the Food LAB.
- Learners will bring their own sandwich containers and crockery with dedicated space for self service washing up and drying in the dining hall.
- The meals will be issued on a digital meal ticket system operated by an employee of POPUP.
- Certain areas of the dining hall may be enclosed out of dining hours as class rooms.
- Cleaning will occur daily between 13h00 and 13h30, after which classes (in enclosed dining spaces) may resume.

Deliveries would occur along the back of the building (Portico Entrance) and transported to the floors above using the passenger lift.

5.6.2 Studios

The Garment and Decor manufacturing studio requires spaces for storage of fabric rolls, sewing equipment, cutting surfaces, meeting areas and work spaces. The Arts and Crafts Studio requires storage space, meeting areas and work surfaces. A sink will also be required for washing up.

5.6.3 Food LAB

Access to the food lab will be controlled on the ground floor through a glazed screen and door to the staircase. This door will be unlocked before class by a staff member of POPUP and locked once class is over.

All wet services will be allocated to the south of the building, including toilets, sinks, cold room and the washing trough.

Air supply to the food lab and cold room will be mechanically provided and extractors placed above each stove top for smoke and smell control.

The cold room requires technical consideration in that it is insulated, has a ramped entrance, epoxy floor an air curtain at the entrance and an insulated door with an automatic closer.

5.6.4 Lecture Rooms

Lecture rooms will be acoustically insulated. Seating will be provided in a bench and table unit system which allows 500 mm seating space per student.

A permanent work space will be placed in each room to accommodate the teacher. Each lecture room accommodates 35 students, including two wheelchair spaces in front.
Illus 5.27 Ergonomic seating conditions (Neufert, 1999: 16)

Illus 5.28 Dining Seating Conditions (Neufert, 1999: 455)
5.7 BRANDING (JULY 2011)

A refreshment of POPUP’s existing branding and logo (Illus 5.29) strategy was deemed necessary as a change in the building and spaces would assist in establishing a new sense of appropriation to the space.

The approach to the logo design was seen conceptually as a reinterpretation of the existing POPUP logo, with the introduction of graphic elements which reflected the design intention too.

An analysis of the original logo revealed a sense of upliftment, aspiration and achievement, but was criticised for its formal and old-fashioned font, illegibility and busyness. It was decided that a less formal logo be developed, with the font also having a recognised graphic quality (as seen in Illus 5.30) that maybe adapted. The colour, orange, seen as a brand colour for POPUP is used in the new logo (Illus 5.31) and in the interior design.

Furthermore, the logo was adapted into various forms which reflect the values of POPUP (Illus 5.32). These variations still refer to the principal logo in font and size but differ according to each value’s message.
Kingdom Focus

Teamwork & Synergy

Excellence

Informality

Authenticity

Reproduction

Growth

Illus 5.32 POPUP logo Variations (Author, 2011)
The design concept of reinterpreting and re-imagining the “historical ideal” through current cultural production has been exploited through the design process from the major design characteristics to the product design. The mood board was used as a point of reference to inform design decisions in the treatment of space.

These characteristic design interventions include:
- the introduction of new mezzanine levels which reinterpret existing volumes and add new structure.
- the introduction of a multivolume atrium and skylight which allows natural light into spaces and visibility between and across spaces, revealing the activities to users.
- the finishing of surfaces which refer to the historical but are applied by learners of the relevant skills training in a creative manner through concrete, wallpaper and mosaic.
- the exposure of spatial activity through storage elements and furniture which exhibit food, art, craft, garments and decor.
- a re-established relationship with the railway line in its inclusion as a contributor to site atmosphere achieved through, a promenade, views and visibility.
- a new geometry which reinterprets the static, encompasses views, allows north light into spaces, plays on the word “POP - UP”, reflects transformation and is a visible branding element across the railway line from the city.

These characteristics are apparent in Illus 5.33 - Illus 5.40.
Illus 5.33 Ground Floor Plan (POPUP student information and visitors centre, Dining Hall)- 1:200 (Author, 2011)
5 DESIGN DEVELOPMENT

Illus 5.35 First Floor Plan (Food LAB) - 1:200 (Author, 2011)
Illus 5.36 Mezzanine 2 Floor Plan (Media Centre) - 1:200 (Author, 2011)
5 DESIGN DEVELOPMENT

Illus 5.37 Second Floor Plan (Offices, Staff room, Lecture Rooms) - 1:200 (Author, 2011)
Illus 5.38 Section A - 1:200 (Author, 2011)
5.8.1 Design Outline

This view of POPUP from Salvokop Bridge is indicated in Illus 5.41. This is a significant view point and passageway, which is encompassed in the framework design as a route which intersects Salvokop Square. This is the major pedestrian route between Salvokop and the city.

Here, the 2011 POPUP is shown within the landscape and industrial context of Salvokop’s railway buildings and abandoned open spaces to be designed as a new landscape route within the framework.

The new transparent floor (second floor) is an addition to the building and improves visibility into current POPUP activities, while reflecting that the 1909 CEO has experienced transformation.
Illus 5.42 depicts the entrance to the building via the information and direction structure east of the 2011 POPUP.

The pedestrian entrance is shown as a direct route into this rectilinear space. Also shown is the sculpture court and waiting area outside the 2011 POPUP, with concrete boxes of different heights (450 and 900 mm) to facilitate exhibition or seating. These boxes are to be acid etched with the POPUP logo, painted orange or left as raw concrete. The angle of the boxes and tiles reflect the new geometry of the Northern facade, extending the sense of transformation to the building exterior.
Illus 5.43 demonstrates the relationship between the building and the railway line. Salvokop residents often walk along the railway edge, and the new promenade should provide a pleasant walkway which involves the railway atmosphere.

The new geometric mezzanine floors, projecting beyond the historical skin are also depicted. This would be visible from the city side which is opposite the railway line. The geometric facades are potential for branding through visible signage.

The stepping up of the facades play on the aspiration and upliftment values of the POPUP brand and new logo.
The railway promenade, shown in Illus 5.44, demonstrates the conceptual intentions of pattern, light and texture. The new folding ceiling extends beyond the dining hall to encompass outdoor space as a continuation of the interior space. The use of translucent Perspex as the ceiling material will allow the passage of colourful light and shadow to be cast onto the facade in a variety of patterns and positions throughout the day.

The gabion seating, filled with crushed brick from demolition, refers to the historical, but differs in scale and use. The gabions are organised within the new facade geometry, extending the sense of transformation to the exterior space.

The shwe shwe pattern, which is an inspiration to the new floor paving is shown abstractly and is to be developed in detail.

Ground Floor
The entrance (Illus 5.43) to POPUP has been designed to accommodate all visitors to the complex seeking assistance, information and orientation.

A linear path leads directly to the POPUP Student Information and Visitors Centre, a new rectangular steel framed building, which also houses a changing exhibition of art and craft of POPUP students. The sculpture court, which diverges off the linear route (Illus 5.43) is scattered with concrete boxes of varying heights for seating and exhibition. This court space leads to the entrance of the skills centre and is a waiting area for learners and staff of the skills centre.

The skills centre retains the historical eastern entrance to the building. Chequered tiles on the ground floor are retained. The ground floor (Illus 5.33) is an open space dining hall with modular tables (detail 6) which may be rearranged for classroom purposes in a portion of the space which may be enclosed out of dining hours. The atrium, located centrally within the building, acts as an orientating device, through establishing hierarchy and directing attention to the serving area, also located centrally.

The dining hall walls are treated with a wallpaper reinterprets the historical wallpaper and is inspired by POPUP artworks (c.f. 6.7.2), while adding pattern and texture to the space.
The new Perspex ceiling panels in translucent red and yellow add interesting light and shadow, as well as colour and texture to the interior space.

The dining hall opens out on the Northern facade to the railway promenade which views the railway line, establishing a relationship between the railway line and the building. Additional seating and planting buffer the railway line from the building edge without obstructing views. The shwe shwe inspired floor tiles (detail 1) of the promenade continue the sense of pattern and texture to the exterior while reinterpreting the “historical ideal” of the chequered floor tiles.

Mezzanine 1
The garment and decor manufacturing studio and the arts and crafts studio share the mezzanine 1 floor (Illus 5.34). The introduction of a new steel structure to support the intermediate floors gave rise to opportunity for a new floor material; panels of engineered hardwood bamboo. The floor panels continue over the steel edge and to the ceiling below as seen in Illus 5.40. The atrium alongside allows visual access from the studios to the dining hall below and food lab above. The edges are furnished with clear storage boxes (c.f. 6.7.5) which take advantage of the visual exposure along the atrium, through exhibiting decor and craft in the process of manufacture.

Tables for the arts and crafts studio and the meeting area are modular (c.f. 6.7.6) and may be rearranged. A specialised screen for fabric rolls (c.f. 6.7.7) has been designed to screen off studio space from meeting space. Rolls can be removed and taken to the sewing stations or they may be measured and cut at the meeting tables over loose cutting mats.

First Floor
The food LAB for cooking skills training is located on the first floor (Illus 5.35). The chequered floor tiles are retained and complemented with a large glossy red wooden banquet table for class discussions and charity banquets.

The cooking stations are designed according to functional use and materials such as bamboo, stainless steel and caesar stone are utilised for surfaces related to washing, chopping, cleaning and preparing of foods. A cold room has been proposed, with island unit stainless steel baskets and glass cupboards along the edges. Fruit and vegetable storage boxes (c.f 6.7.3) exhibit ingredients along the edge of the atrium to mezzanine 2 above and mezzanine 1 below.

Ingredients are delivered to the food LAB from the ground floor via the escalator platform, which allows ample space for 1 wheelchair or 1 trolley.

Mezzanine 2
The media centre, to be used by learners, staff, teachers and occasionally the public, is located on the mezzanine 2 floor (Illus 5.36). The exhibition of stored books in the book box (c.f. 6.7.3) is found, once more, along the atrium edge, lending an idea to the activity within the space based on its storage. Meeting tables (c.f. 6.7.6) are modular and may be re-arranged. Lounge furniture (c.f. 6.7.5) is also modular and may be rearranged according to seating requirements of social, corridor or bench formats.

Second Floor
The second floor (Illus 5.37) compromising mainly of lecture rooms and offices, looks down to lower floors through the open atrium void creating a visual link between spaces and allowing natural light to flow down from the skylight above (Illus 5.40). Waiting areas are furnished with modular seating (c.f. 6.7.5) as found in the media centre. Offices and meeting rooms are furnished with modular tables of incremental sizes (c.f. 6.7.6). The edges of the atrium void are predominantly circulation space and are treated with a crafted balustrade (c.f. 6.7.4) which reinterprets the “historical ideal” of the waiting areas. Lecture rooms are located east, to the quieter side of the building and accommodate 1 wheelchair in each room.
5.9 CONCLUSION

From this chapter, it may be concluded that the design draft processes in mood boards, models and sketches provided meaningful options for design direction. The process of recording, analysing, criticising and concluding design findings have provided useful outcomes for the design development.

Furthermore, it is recognised that all design explorations of this chapter served to find unity through the process of overlaying ideas, and an intensive process of reviewing which led to the development of plans and sections which embody the conceptual intention.