The dynamic nature of architecture implies constant change. This study has thus far investigated the notion of change affecting a building or place prior to its alteration. It is this change that signifies the need for altering architecture. Of equal importance is the change that is required during the process of alteration and intervention, and the resulting change the future user might experience as a result. In order to facilitate change, a technical intervention is required in this study. The execution of this intervention, however, should serve as a reinterpretive gesture and should add to the overall improvement of the programme it facilitates. David Chipperfield (Ryan 2001:30) acknowledges a technically sound intervention by defining his approach to altering the Neues Museum:

*The intervention should accentuate a symbolic structure whilst at the same time allow the user to orientate himself and house temporary exhibitions.*

The technical reinterpretation of the Administration Building will in this chapter be approached as a linear process.
Diagram 8.1 The technical strategy to the reinterpretation of the Administration Building highlights key factors that will be addressed according to Scott’s theory of stripping back. The chapter will discuss the approach to each of these elements from an interior perspective.
8.1 Restorative Maintenance

8.1.1 Addressing the Problem

Insufficient maintenance may endanger the cultural significance of a place. As noted in Section 5.3, the ICOMOS Burra Charter (1999:6) requires routine maintenance in order to prevent the above. In the instance of the
Administration Building, maintenance has been focussed mainly on the exterior of the building, thereby neglecting the interior. Through the application of specialised maintenance to key areas of the built fabric (indicated in Table 8.1), Carroon (2010:9) argues that repair ability contributes to the historically green nature of a building. His argument implies that focussed maintenance could reduce the need for the replacement of building components. It can further be argued that the intervention of to the Administration Building should continue its passive survivability (ibid.). Seeing that the Administration Building was built before the demand on energy, it was designed to function without the introduction of technological building control devices. The building has the ability, therefore, to last without these elements.

8.2 Alteration

8.2.1 Demolition

The grid-bound spatial layout of the Administration Building has to effect that its adaptability to public functions is limited. Opening the interior environment up should allow for the introduction of the Human Anatomy Centre in this project, but should also allow for the introduction of alternative exhibition programmes in future. A distinction should be made between two scales of demolition. Primary demolition includes all building components pertaining to the structure of the building, while secondary demolition includes the removal of building components not part of the building structure.

8.2.3 Retention of Building Components

The north-facing walls of the Administration Building contain most of the wet services. The introduction of a newly built programme is placed in relationship with the existing service walls, eliminating the need for the additional disruption of historical fabric in order to house new services. Most wooden framed windows are retained to ensure that the style of the building remains legible. In the hall the existing staircase is modified to remain mostly intact, but to fulfil a new route.
Table 8.1 Secondary demolition elements

<table>
<thead>
<tr>
<th>building component</th>
<th>task</th>
<th>aim</th>
</tr>
</thead>
<tbody>
<tr>
<td>Floor finishes</td>
<td>Remove existing floor finishes without historic value</td>
<td>To make it possible to install new specialized flooring materials</td>
</tr>
<tr>
<td>Floor skirting</td>
<td>Partial demolition of existing floor skirtings</td>
<td>New floor finishes will require a different junction to the wall plane</td>
</tr>
<tr>
<td>Doors</td>
<td>Remove specified doors</td>
<td>To open up the interior spaces it is required to remove some doors</td>
</tr>
<tr>
<td>Ceiling</td>
<td>Demolish first floor ceiling</td>
<td>By exposing the rafters an enlarged interior volume is possible on the first floor</td>
</tr>
<tr>
<td>Bathrooms</td>
<td>Demolish existing bathrooms</td>
<td>The envisioned programme requires a new placement of bathrooms</td>
</tr>
</tbody>
</table>

8.3 The Intervention
8.3.1 Structural Intervention
The structural working of the Administration Building could not be altered in

Diagram 8.3 First floor demolition plan: Orange indicates primary demolition elements while green indicates secondary demolition elements
order to accommodate partial penetrations through the first floor slab. As a result, double volumes are created by the entire demolition of selected areas, followed by the replacement thereof with new building material that has the ability to facilitate an opening signifying a double volume.

*Illustration 8.1 Structural intervention after new wall penetration.*
The partial demolition of selected wall areas calls for the installation of additional structural support. *Illustration 8.1* indicates such structural installation.

8.3.2 Flooring
8.3.2.1 Surface treatment

Existing floor finishes are kept in the foyer and entrance hall. These floor finishes add a significant addition to the character of the interior environment. A linoleum finish was later added to the rest of the ground floor. This linoleum finish will be removed. Replacing this finish is a stretched vinyl finish. The versatility and durability of this floor surface type, together with the intended homogenous application, should prove to be beneficial in a display space. The starched vinyl floor will be applied on a dry sub floor that will be discussed later in the chapter. The third floor type is a Flowcrete anti-bacterial and chemically inert floor finish that will be applied in rooms where medical professionals interact with open human tissue. For hygienic purposes these floors should be sloped towards a specialized “blood” type floor drain that feeds into a medical waste container that will be emptied periodically by a medical waste contractor.

8.3.2.2 Dry Sub-Floor
Dry sub floors provide a self-levelling function to the floor it is applied to. The

*Diagram 8.3 Articulation of dry sub floor joints*
under floor structure reduces the transfer of structure borne noise up to 28dB when installed over a concrete floor (Hausladen & Tichelman 2010:158).

The constant movement of this floor implies that large tiles are prone to crack (ibid.). The specification of a stretched vinyl floor in the instance of the Human Anatomy Centre should allow for this movement. The fire rating of a dry sub-floor is dependent on the placement of the board product specified over the loose fill. If the latter is a timber board product, the interior of the fire rating is generally accepted as 30 minutes. For gypsum board products the rating is 60 minutes.

*Illustration 8.2 Exposing overhead service tray through removal of first floor ceiling*
Services may be placed under the dry sub-floor. In such instances, however, care should be taken to fix the services to the structural floor in order to secure it in place before the loose fill is added around the elements and the board product is placed over it (ibid.:158).

The articulation of floor joints should allow for the movement of board products, allowing the floor finish to move with the expansion and contraction of the host building. Diagram 8 indicates the execution of these typical floor joints.

8.3.3 Ceiling and Roof Structure

8.3.3.1 Ground Floor Ceiling

The introduction of a ceiling to the first floor soffit acts as an insulative acoustic barrier eliminating structure borne sound resulting from the use on the first floor. The introduction of acoustic absorbent material ensures a reduced reverberation time on the lower floor. The provision of a marginal ceiling void should serve as an overhead plane to allow for the placement of lighting, mechanical ventilation ducting and the services associated with the above.

The ceiling of the first floor will be removed in an attempt to expose the roof trusses visible on the first floor. The need therefore arises for the introduction of newly placed thermal insulation. Overhead services on the first floor are to be exposed, and the articulation of the aforementioned is envisioned to be integrated as an aesthetic component.

8.3.4 Walls

8.3.4.1 Treatment of Existing Walls

The introduction of interior insulation over massive walls, like in the Human Anatomy Centre, has the potential to be detrimental to the structure. Carroon (2010:185) warns that interior moisture entrapment may result. Moisture entrapment occurs when moisture particles move through the porous brick structure from the exterior to the interior and the path of this airborne moisture becomes blocked by the placement of an insulative membrane.
The result of moisture entrapment is water damage and the growth of mildew that deteriorates historic built fabric, and may in some instances even lead to structural failure (ibid.). Carroon (2010:186) also remarks that recent in-situ testing has found that traditionally built brick have better U-values than initially assumed. The approach in the instance of the Human Anatomy Centre is to allow the building to “breathe”. This notion should allow marginally less insulation than that of insulated walls, but will drastically reduce the danger of the deterioration of historic built material.

8.3.2.2 Addition of New Walls

Similar to the approach of the dry sub-floor, the addition of drywalling as new wall system is meant to enable disassembly, should it be required for the building to accommodate a new programme. This term is coined as “the long life/loose fit approach” (Carroon 2010:11). In the instance of the Human Anatomy Centre a single-stud wall with one layer of gypsum fibre board,
internally filled with 30mm acoustic insulation will be applied. Due to the height of the walls in some instances, plasterboard panels will be staggered; skim plastered and painted a colour to approved sample.

8.3.5 Lighting and Electrical Installation

8.3.5.1 Control of Natural Light
The designed control of natural light can ensure the use of high quality illumination onto subject matter whilst reducing the immediate demand for artificial illumination (Hausladen & Tichelman 2010:48).

Three lighting control mechanisms are proposed to allow different intensity, and quality of natural light is manipulated to create a display space.

Light Box
A light box is added that allows for elements to be illuminated from the side. This eliminates direct glare typically experienced by the user when gazing from an environment with low illumination levels into a brightly illuminated light source. The side illumination panels will be equipped with retractable blinds that would allow lighting to pass through.

Shading Panel
The shading panel allows the occupant of the space to adjust the levels of illumination by moving the lighting panel either in or out of the existing window opening.

Lighting Diffuser
The incorporation of lighting into the existing opening allows for natural illumination to be used in as rear lighting. It is in this application that natural lighting be used as effect lighting, more on this later.

8.3.5.2 Artificial Light
The luminance of specific interior spaces is listed as a requirement in lux in the table below:
Three different strategies are applied to the lighting in the Human Anatomy Gallery. These are:

- ambient lighting
- focussed lighting
- specialised lighting.

8.4 Technical Investigation
sliding body storage unit
horisontal plasitination display
horizontal plastinated display
_interactitive information station
_holographic display table
Horisontal plasitination display
section AA
SCALE 1:20

measuring station
_wet sample display carcass
ground floor plan
The boiler is currently located in the basement. The building has been fitted with a boiler radiator heating system during the winter months.

This building has a high level of heat gain from the northern facade, which are covered in an industrial carpet. This building is located in a relatively quiet street. The challenge, however, is that the hospital staff and students make their way home either around the Administrative Building or through it. As a result, it may be a disturbance to the users of the building, should they be exposed to this noise pollution. The noise imposing on the building use can be divided into two categories: firstly, there is sound conveyed through the building structure and (G), on the building elements and flanking paths and cable ducting. In the case of the Administration Building, the constant flux of people through the foyer contributes to an uncomfortable working environment. The solution to this challenge is the provision of openings in the internal structure to aid the flow of air. This building, however, has the potential to have effective cross ventilation, as well as the frequency of its placement on the facade, becomes a distinctive trademark of the building. The figure below indicates a selection of the existing colour palette of the Pretoria Algemene Hospitaal.

The design of the envisioned project should therefore engage with the existing natural lighting strategies. This poses a challenge as the control of natural illumination in the interior environment is of the utmost importance. The design requirements involve the possibility of reducing the reliance on artificial illumination, as well as the frequency of its placement on the facade, becomes a distinctive trademark of the building. The result of this approach to openings allows for the interior to be washed with an abundance of natural light, which is essential for the effective control of natural illumination without disturbing the style or the future historical value of the architecture. The design requires careful consideration of the relationship between the incoming natural illumination and the existing natural lighting strategy. The initial positioning of task lighting was limited to one lamp per room. The quantity of lamps, combined by their placement in the ceiling or soffit above, must have allowed the interior spaces of the building, resulting in poor acoustic performance. There are wooden doors and window frames, the building exterior and interior are let. It is clear that most of the colour perceived originates from the availability for the construction. It may also be argued that material is used in a rather conservative application. The material palette of the Tshwane District Hospital is limited in its composition. They be exposed to this noise pollution. The noise imposing on the building use can be divided into two categories: firstly, there is sound conveyed through the building structure and (G), on the building elements and flanking paths and cable ducting. In the case of the Administration Building, the constant flux of people through the foyer contributes to an uncomfortable working environment. The solution to this challenge is the provision of openings in the internal structure to aid the flow of air. This building, however, has the potential to have effective cross ventilation, as well as the frequency of its placement on the facade, becomes a distinctive trademark of the building. The figure below indicates a selection of the existing colour palette of the Pretoria Algemene Hospitaal. The Tshwane District Hospital. Expression is obtained through material form, and not always material application. Ashby & Johnson (2006:78) indicate that what may possibly be perceived as conservative available for the construction. It may also be argued that material is used in a rather conservative selection and aesthetic appearance. The material palette of the Tshwane District Hospital is limited in its composition. It may be argued that material is used in a rather conservative selection and aesthetic appearance. The material palette of the Tshwane District Hospital is limited in its composition. It may be argued that material is used in a rather conservative selection and aesthetic appearance. The material palette of the Tshwane District Hospital is limited in its composition. It may be argued that material is used in a rather conservative selection and aesthetic appearance.