The furniture showrooms design attempted to contrast with the heritage as much as possible. Juxtaposing as mentioned in chapter 6 is the positioning of two or more contrasting elements, forms, or spaces, it heightens interest and induces emotional suspense. The existing Boiler House speaks a language of honest 20th century industrial architecture. Its column and beam structure is exposed and presents the buildings’ form, the brick infill is set back. The new intervention firstly acknowledge the heritage by also implementing a column and beam structure, but then counteract it. As the showroom needed to be as transparent as possible, the column and beam structure was set back and the infill pushed forward. The materials that are found in the existing structures, brick, concrete and glass, are also used in the new structure, but it is reinterpreted to create a contrasting structure that emphasizes the robust industrial nature of the heritage. Where different materials touch, the plains shift, and shadow lines are created. It reads as a push-pull architecture, one element moves out of another and into the landscape.

The new intervention inside the existing structure partially mimics the materiality of the building, as the building once again houses an industrial process, the building called for a robust material. A concrete column and beam structure is added to the inside, but where ever the new structure touches the old the poignancy of the moment is captured by a kiss. Elements come deliberately close to one another, but newer quite touches. Before the point of impact the material changes and subtly connects with the old.

fig. 146_ Diagram illustrating the idea of push-pull architecture

fig. 147_ Contrasting materials can focus the attention on the connection between old and new
fig. 148. Sketches illustrating possible connections between old and new that can capture the poignancy of the moment.
The 1935 Boiler House situated North of the 1940 Boiler House, was declared unsafe. Brick work is falling from the structure, the framework determined that the steel structure will be retained but the brick work removed. The open steel canopy, will define the new public square.

A study was conducted to determine a colour pallet for the showroom. The new material had to draw attention to the timber furniture as well as the boiler house. Creating a more clinical atmosphere or a blank canvas to the interior and the exterior, warmer elements like varnished timber or clay brickwork are emphasized. Whitewashed common bond brickwork not only corresponds with the heritage but it also creates an atmospherically tension between old and new, therefore acknowledging the heritage but stressing its existence by contrasting colours and shapes.

**WALLS:** Brick work will be reused for paving as well as to construct part of the showroom. The brick work will be reused in the same common bond style, as it was before, and whitewashed to generate a architecture that is in contrast to the existing, robust, industrial heritage.

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**fig. 149** The brick work of the dilapidated 1935 Boiler House will be reused to construct part of the showroom.

**fig. 150** Contrast created between whitewashed brickwork and natural brickwork.

**fig. 151** Brickwork as a backdrop for exhibiting timber furniture: timber is not accentuated.
fig. 152. Wood as a backdrop for exhibiting timber furniture: furniture blends in with the panels.

fig. 153. Whitewashed brickwork as a backdrop: timber is accentuated the most when it is placed in front of a white service.

fig. 154. Concrete brickwork as a backdrop: timber is accentuated in front of grey services as well.
The new furniture showroom’s structure is set at the same grid as the Boiler House’s, the change in direction is caused by a pedestrian walkway that crosses over the site. The columns in the showroom is set back, round columns are used to contrast the existing building’s square columns. Round columns also indicate high intensity movement spaces.

The shape of columns change as activity changes. The new addition to the existing structure has industrial spaces, that require thicker square columns. Vertical and horizontal movement is indicated by rectangular columns.
8.4 Technology
SOIL FILLING COMPACTED IN LAYERS OF 300
150 MM COVER COARSE AGGREGATE
PERFORATED GEOPIPE; 100 Ømm
REINFORCED CONCRETE STRIP FOUNDATION AS
PER STRUC. ENG. SPEC.

250 Ø OFF SHUTTER REINFORCED
CONCRETE COLUMN TO ENG. SPEC.

22.8 LAMINATED DOUBLE GLAZING FIXED TO
STEEL STRUCTURE AND CONCRETE FLOORS
WITH STAINLESS STEEL SPIDER CLAMP

STRUCTURAL STEEL SYSTEM CONSTRUCTED
WITH 80 X 80 X 5 SQUARE HOLLOW SECTIONS
FIXED IN BETWEEN FLOORS

255 REINFORCED CONCRETE SLAB

0.6 PRE-PAINTED MATT WHITE
GALVANISED CORRUGATED S-PROFILE
STEEL ROOF SHEETING

150 X 65 X 20 X 2.0 STEEL LIPPED CHANNEL
PURLIN SPACED @ 970 CENTRES BOLTED TO
CLEAT WITH 4 X M16 BOLT

38 X 38 TIMBER BATTENS @ 400
CENTRES BOLTED TO CLEAT

PRE PAINTED STEEL TRUSSES @ 1800 C/C

NOTES:
FIRE PROTECTION: PROTECT ALL
STRUCTURAL STEEL - MUST COMPLY
WITH THE REQUIRED FIRE
RESISTANCE AS SET OUT IN SANS
10400-T TABLE 17

152 X 89 X 17 STEEL I-SECTION
30 COLUMN RECESS WITH CHAMFERED EDGE

152 Ø X 4.0 HOLLOW SECTION
CONNECTION BETWEEN I-BEAM AND
CONCRETE COLUMN

WHITE PAINTED TONGUE AND GROOVE
TIMBER CEILING

20 POLYETHYLENE HEATING AND COOLING
WATER PIPE SYSTEM COVERED WITH MATT
OAK GREY CHEMICAL RESISTANT SELF-
LEVELING EPOXY FLOOR SCREED

230 BAG PLASTERED
FACEBRICK WALL

0.53 TCT CAPE WHITE
ZINCALUME STEEL RESIN
COATED

85 CONCRETE SURFACE BED ON 0.25 POLYOLEFIN
MEMBRANE

HARDCORE SOIL FILL

ACOUSTIC CEILING BOARD WITH
BRANDING AND CEILING HANGERS AS
PER MANUFACTURER SPEC.

139
80 X 80 X 5 SQUARE HOLLOW SECTIONS

M14 BOLT

BASE PLATE: 50 X 50 X 5 SQUARE HOLLOW SECTION FACTORY WELDED TO 65 X 90 X 8 UNEQUAL LEG ANGLE

M12 ANCHOR BOLT CAST IN CONCRETE

300 X 150 REINFORCED CONCRETE UPSTAND WITH CHAMFERED EDGE

20 POLYETHYLENE UNDERFLOOR HEATING AND COOLING WATER PIPE SYSTEM

MATT OAK GREY CHEMICAL RESISTANT SELF-LEVELING EPOXY FLOOR SCREEED

M12 ANCHOR BOLT CAST IN CONCRETE

SILICONE SEALANT

PACKING SHIMS & ISOLATOR TO ACCOMMODATE STRUCTURE DEVIATION RECESSSED IN CONCRETE

STAINLESS STEEL SPIDER CLAMP CONNECTIONS

22.8 LAMINATED DOUBLE GLAZING MADE UP OF 2 NO. 6.4 CLEAR LAMINATAND GLASS SHEETS AND 10 CAVITY

255 REINFORCED CONCRETE SLAB
Water Harvesting_

The showroom and Boiler House has separate water harvesting tanks. Water harvested will be used as non-potable water for flushing toilets.

SHOWROOM:
The runoff from the roof area and hard surface areas, on the square between the Boiler House and showroom, will be collected and stored. Oil tanks on site will be retrofitted to store water, the tank that stores water for the showroom has a capacity of 95,832 liter.

- Showroom roof area  242.57 m² +
  hard surface area 590 m²
  = 832.57 m²
- Water consumption per month (only toilets) :  20,088 liter

<table>
<thead>
<tr>
<th>Month</th>
<th>Rainfall in Pretoria (mm)</th>
<th>Actual Rainfall Harvesting Capacity (L)</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>82</td>
<td>61,443.67</td>
</tr>
<tr>
<td>February</td>
<td>60</td>
<td>44,958.78</td>
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<tr>
<td>March</td>
<td>52</td>
<td>38,964.28</td>
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<tr>
<td>April</td>
<td>33</td>
<td>24,727.33</td>
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<tr>
<td>May</td>
<td>11</td>
<td>8,242.44</td>
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<tr>
<td>June</td>
<td>5</td>
<td>3,746.56</td>
</tr>
<tr>
<td>July</td>
<td>3</td>
<td>2,247.93</td>
</tr>
<tr>
<td>August</td>
<td>6</td>
<td>4,495.87</td>
</tr>
<tr>
<td>September</td>
<td>17</td>
<td>12,738.32</td>
</tr>
<tr>
<td>October</td>
<td>43</td>
<td>32,220.46</td>
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<tr>
<td>November</td>
<td>85</td>
<td>63,691.61</td>
</tr>
<tr>
<td>December</td>
<td>81</td>
<td>60,694.35</td>
</tr>
<tr>
<td>Totals</td>
<td>478</td>
<td>358,171.6</td>
</tr>
</tbody>
</table>
By only using a 20 088 liter tank the building is nearly self sufficient in water for 8 months of the year (Jan, Feb, Mar, Apr, Oct, Nov, Dec). The building can thus be completely self sufficient, when the monthly consumption and additional water required for low rainfall months are calculated. 20088 + 68969 = 89 057 liter tank will be needed.
fulbores drain into stormwater pipes
stormwater pipes run inside the suspended ceiling to the tank

sump
Stack ventilation
Site Plan

8.6.
ground floor plan
first floor plan
second floor plan
Photographs of Model
The dissertation has investigated the principles of adapting and reusing industrial heritage buildings in order to find a solution to create socially responsive industries. The study focused on a 1940 Boiler House situated at the Pretoria West Power Station. Nationally and internationally the architectural approach to heritage buildings and how they should or should not be preserved are widely discussed and considered. The author used the Burra charter as guideline for the design, which states: as much as necessary and as little as possible. The majestic nature of the site rests in the structures and the spaces formed between them. Very early in the design process the author conducted a phenomenological assessment on the significance of the building structures on site their character, and how it should be conserved. These considerations were prime within the design process and decisions.

The research further revealed that despite the fact that industrial society stresses the significance of sustainable industries, that social sustainability is neglected. Industrial buildings do not interact to the outside world and interior working conditions are not always favorable. Sustainability means to be aware of the environment and to strive for better working and living conditions. It is not only about, keeping the user of a space in mind, but also the passer by. This aspect was specifically addressed in the design resolution.

The result is a new contrasting architecture of a furniture showroom that accentuates the heritage of the boiler house, it stands back from the old structure respecting its story and acknowledging its future. The connection with the old mostly occurs underground and internally, keeping the form and character of the existing structure in place. Creating an environment, that prickles the senses. The design has proved a possible solution to the improvement of industrial buildings, to be more socially responsive. The furniture production process is physically and visually revealed as an attempt to create an industrial building that interacts with the public. The public can buy furniture and is simultaneously made aware of the production process. People are therefore exposed to a production process and a direct connection can be made between furniture maker and buyer.