Existing Building Analysis

See Street Façade/Building Key Site Analysis Drawings on p 3-13 to 3-15

LEWIS Building

Current Use

- 2 storey Commercial building
- Furniture Sales
- Basement level used for storage
- First floor used as showroom
- No council drawings available

Importance

The existing structure is valuable:
Concrete frame with face brick infill and a corrugated steel roof. Large steel frame windows to the street were boarded up and Lewis signboard constructed over. If removed and windows replaced the façade would have a simple and honest appearance. The building requires some maintenance and upkeep - e.g. some broken windows. The building is not important for Paul Kruger Street's character and contributes nothing to the street. However, the structure is valuable and simple - might be incorporated into the project.

Proposal

Possible Integration into the scheme. Adaptive re-use. To fit the scale of the CBD a structure will have to be constructed over it. The cost of this intricate process vs. an entirely new building must be considered however.

Fig A-1 Lewis Interior

AM CELLULAR

Current Use

- Single storey commercial, currently (June 2004) empty.
- The building extends to the back of the erf since a back section was added. Owned by City Properties
- No council drawings available.

Importance

The building is not important for the character of Paul Kruger Street. It does not fit the scale or architectural expression of the CBD. The many additions and changes leave nothing of the original, and thus no historical value. Maintenance needed.

Proposal

Demolition of building structure

Fig A-2 AM Cellular Exterior

PHARMACY

Current Use

- Single storey commercial, including Downtown Take Aways and Willie Pieterse Pharmacy.
- The Pharmacist L.Fine owns the building that has functioned as a pharmacy for a number of years.
- Downtown Take Away, Restaurant and Pub rents from Mr. Fine.
- No council drawings available.

Importance

The colonnade is of historic importance. It contributes to the Paul Kruger Street character. The Building itself does not fit scale or character of CBD. It requires maintenance and is of no architectural or historic importance. The interiors are very interesting however. The original ceilings can be found, and the Pharmacy has original cabinets and light fittings. Both shops feature interesting mezzanine levels, used as an office and a bar.

Proposal

Conservation of colonnade and integration into new project. Conservation of Interior of Pharmacy and possibly restaurant, as conservation of the memory connected with the site.

Fig A-3 Pharmacy Entrance

WHOLESALE RETAIL

Current Use

A Single storey commercial building that includes Fin Con Cash and Wholesale Retail. Fin Con consists of a single desk standing in a large space that until recently was a Standard Bank (The tellers can be seen). Wholesale Retail sells clothes and miscellaneous items. No permanent fittings can be found. No council drawings are available.

Importance

Colonnade is of historic importance and important for Paul Kruger Street character. The Building itself does not fit scale or character of CBD and requires maintenance. The courtyard at the back of the building is used as a dumping yard and currently very unhygienic conditions exist.

Proposal

Conservation of colonnade and integration of colonnade into new building. Demolition of building. Possible re-use of building rubble.

Fig A-4 Wholesale Interior

PRETORIA OFFICE SUPPLIES

Current Use

Triple Storey Building:
Commercial activities on ground floor, including Pretoria Office Supplies and Hope Engravers Goldsmith & Jewelry suppliers. Offices and Storage on 1st and 2nd floors.
Owner - Julian Edelson.
Council Drawings Available

Importance

Exterior has been recently improved and is in good condition. Interior in a good condition. No architectural or historical value, but valuable structure: Concrete frame and Painted brick infill, Aluminum frame windows and corrugated steel roof sheeting.
The building is not important to Paul Kruger Street's character and 3 storeys not ideal for the CBD scale.

Proposal

Adaptive re-use of buildings and integration into project with new façade introduced. Possibly add lightweight structure to add height.

Fig A-5 Pretoria

AFRIK HOUSE

Current Use

Double Storey Building: Commercial on ground floor, including Picture Frames and Moldings, Curtains and bed sets. Framing workshop on first floor. Council drawings not available.
Owner - Jean-Pierre Beaumont.

Importance

Built ca 1902. One of the few remaining examples in Pretoria of commercial architecture from late-Victorian period. (Le Roux, 1990) The exterior is still intact but the interior has been entirely changed. Important for Paul Kruger's character.
The smaller structures to the left and right of the Afrik House are later additions and of no historical or architectural value.

Proposal

Conserve and Maintain / Restore exterior and the adaptive re-use of interior
The building position is ideal to make a link to the arcade system through the building.
Demolition of smaller structures.

Fig A-6 Lewis Enterior

FATTI'S

Current Use

- Triple Storey Building: Commercial on ground floor: Photo Smile photo development and Sports Fly Restaurant and Pub at the back of the site with an alley entrance from the street.
- Apartments on 1st and 2nd floors.
- No Council Drawings available.
- Owner - Jean-Pierre Beaumont.

Importance

Example of Art Deco building in Pretoria. Important for Paul Kruger Street's character. Fully rented out and in reasonable condition.

Proposal

Conservation and maintenance. No change in function, but potential of linking Sports Fly Bar at the back of the site to the proposed scheme.

SAVELKOUL

Current Use

- Commercial on ground floor: Hair Salon and Cash Wise Cash Loan company. Offices in upper floors. Savelkoul itself is a men's clothing store on over two floor levels.
- Owner - Jean-Pierre Beaumont.
- No Council Drawings available.

Importance

Built during 1940's (Le Roux, 1990). Fits the scale and character of the CBD. Important part of Paul Kruger Streets' character.

Proposal

Conservation of building. No change in function.
Possible link to pedestrian movement.

Fig A-7 View to restaurant behind Fatti's

Fig A-8 Savelkoul interior

Fig A-9 Savelkoul ont the corner of Pretorius and Paul Kruger

SBAT Analysis

The Sustainable Building Assessment Tool (SBAT) document was used as a base document to inform the design planning processes, and to highlight issues that that were of importance in ensuring sustainable building and management practice. The existing SBAT criteria were adapted where needed to make it more relevant and suited to the City Building project. The SBAT tool is not, however, used to quantify the building performance in a numerical value (which is a very subjective process), but rather to determine certain qualities that must be present in the design.
Where requirements are specific to certain building functions, it will be so indicated, while elsewhere the requirements can be considered applicable to the entire development.

This main body of the document was written at the beginning of the Design process. The sections in colour are a critique of the design in regards to the SBAT, written after completion of the design. It is an evaluation of how well the intentions were realised, if at all. It is a personal review and evaluation of the end product, and may theoretically be used to further the design. or to consolidate lessons learned for future projects.

Green text signifies that the goal was realized.
Blue text signifies moderate or partial success
Red text signifies that the goal was not realized.

Social

Occupant Comfort

The building envelope must protect occupants to allow them to live and work comfortably in the building despite a possibly hostile environment outside. This must be done with minimal reliance on mechanical or electrical systems. The following basic considerations are important during the design process:

Ventilation

Natural Ventilation to be the preferred, allowance for cross-ventilation of rooms must be made where possible. All habitable rooms must have openable window sections.

This was successfully implemented in the Residential units and in Talking Beads. The Gallery and Retail levels are dependant upon Mechanical ventilation.

Thermal Comfort

Passive solar design through knowledge of the local climate is required:
Maximize the Northern Orientation of the building and rooms.
Use overhangs or exterior screens to limit sun incidence in summer.
Maximize Northern and Eastern sun incidence into the building during winter.
Minimize unwanted heat loss or heat gain through effective insulation.

Solar design was effectively implemented. Northern sun is passively controlled, Western sun is user controlled through louver systems. Sun is kept off glazed surfaces of air-conditioned spaces.

Lighting
Natural sunlight must be the preferred method of lighting. This applies specifically to work and living environments. No space should have to be permanently day-lit with electric lights.
(GALLERY)This will be a challenge for gallery spaces, where sunlight on the artworks and noise from the street are not wanted.
Successfully implemented for residential units.
Natural light maximized for the gallery. Electric light will be used for additional lighting, but will not be required permanently.
Not effectively implemented into the design. Natural light made available will not be sufficient, because of shop depth. Shops will likely use electric light.

Views
(RESIDENTIAL, RETAIL, ARTS/CRAFTS) Where people spend a lot of time, e.g. shops, offices or apartments, they should have views to activity or greenery, thus to the street or to an arcade / courtyard.
Successfully implemented

Noise
(RESIDENTIAL) Functions with opposing life cycles should not be grouped together e.g. late-night restaurants or music venues with apartments.
(GALLERY) Gallery will require no or little noise, which will be a challenge along Paul Kruger Street. A Study of soundproofing materials is needed and the location of the galleries away from the street might be considered to use other functions as a sound buffer.
Residential units will be exposed to city noise. This was unavoidable.
Gallery acoustics successfully controlled

Indoor /Outdoor connection
Give building users access to outer spaces, e.g.
(RESIDENTIAL) Balconies must be sized to make them useful to their users.
All occupants must have access to a communal oudoor space.
(ARTS-CRAFTS) Social/Relaxation Space to be supplied for Skills training Center.
Succesfully implemented

Inclusive Environments
The building must be designed with the needs of all its potential users in mind.

Transport
The building is situated within the CBD, with excellent access to public transport. This was a consideration in the choice of the site, and **can be considered successful.**

Routes
Disabled persons must be able to access all public spaces. This implies ramps with a fall of not more than 1:12 or lifts of sufficient size. Surfaces must be smooth enough to allow easy wheelchair operation.
Successfully implemented

Circulation
Circulation spaces will be considered as potential social spaces. These spaces have the function of movement, but also of meeting places.
Successfully implemented

Furniture and Fittings
Robustness in design is important for ease of maintenance and public seating should be provided to encourage social interaction.
Successfully implemented

Toilets and Kitchens
Sufficient toilets for disabled persons must be provided.

Sufficient ablutions for building functions as specified in the National Building Regulations will be supplied.
(Talking Beads) Access to sanitation and a place to prepare food will be provided.
Successfully implemented

Access to Facilities
As mentioned above, the building is located in the Pretoria CBD, which gives users access to most facilities suggested as necessary by the SBAT. The following are suitably provided for within the existing CBD context:
- Banking
- Communication
- Work
- Retail

The insertion creates even more opportunities for work/ jobs as well answering the need for residential units in the CBD.
Successfully implemented

Childcare
The existence of childcare facilities in the CBD must be investigated. This facility could be provided for employees/ trainees of the Arts and Crafts Training Centre, and could be used by Museum employees, shop owners and employees as well residents.
Not incorporated into the design.

Participation and Control
When building users can control and adjust their environment, or personalize a space, a sense of ownership is created. So doing occupants will care for the building, which extends the life cycle.

Environmental Control
Occupants must be able to open windows and adjust sunscreens or shutters.
Successfully implemented

User manual/ training
The building should not be dependant on systems that require the training of its users. Systems should be easy to understand and have simplicity and robustness as characteristics.
Successfully implemented

Social Spaces
Seating will be required in public places and along routes that are regularly used to encourage interaction of users.
(RESIDENTIAL) The apartments will have a communal social space, and corridors, staircases or lobbies, etc, will be considered as potential places.
(Talking Beads) A social space is a requirement by the client. At an educational facility a social space can be considered a necessity.
Successfully implemented

Amenity
All users of the building must have access to ablution facilities and refreshment points, e.g. coffee machine. Water fountains must be provided.
Not specifically implemented

User adaptation
Internal partitions, furniture and fittings must allow for rearrangement by the user.
(ARTS/CRAFTS) Must allow for personalization, e.g. billboards or opportunity to store personals, place for plants, etc.
(GALLERY) Ditto, but the above is specifically applicable to offices.
(RESIDENTIAL) Personalization is very important where people live. Flower boxes may be introduced. Users should be allowed to paint the interior of flats, etc.
Can only be measured as the building is used

Local community
No community exists in the CBD. At least not in a formal, structured way. People who live there rent flats, and the community changes constantly. Talking Beads, the client of the Arts and Crafts Centre, teaches skills to many people, and is effectively connected to many communities. Public transport makes the CBD accessible to these communities. Through Talking Beads artists and unskilled labourers can be engaged, and involved in the process.
(Talking Beads/Gallery) By involving artists in the design of the building from an early stage, freedom of expression will be given to them. This will enrich spaces and create a sense of ownership. Spaces can then be decorated or ornamented through the creative inputs of numerous artists.
Facilities such as the Auditorium and Workshops could be available after hours for further adult education programs, etc. Access to Internet facilities and the creation of a reading room must be considered.
Successfully implemented

Education, Health and Safety
Opportunities for education on Health Issues, specifically HIV AIDS must be created, e.g. billboards where information can be pinned. Condom dispensers, etc. must be supplied.

Education
(ARTS-CRAFTS) The Arts, Crafts and Skills Training Centre is an educational facility. Furthermore Internet facilities will be made available, and a reading room to give students access to newspapers and magazines.
(GALLERY) The site is very accessible and passed everyday by many people. The Museum Gallery must engage the city user to educate and so make the fine arts more accessible. Having pupils of Pretoria Inner City schools visit the gallery is an ideal opportunity for arts appreciation and education.
Talking Beads facilities integrated, but not as accessible to public as envisioned.
Gallery has presence to public movement. Considered successful.

Safety and Security
The building must be accessible without any risk to the safety or security of users. Spaces should be visible for different users to allow policing by the occupants ("eyes on the street"), and could be used diurnally.
Successfully implemented

Smoking
Places should be created for smoking that do not force non-smokers into the same space.
Successfully implemented

Indoor air quality
A working and /or living environment must be pleasant and healthy for its users. Natural ventilation of all spaces and adjustable windows/ doors are a necessity.
Successfully implemented

First-Aid
First Aid Kits and Fire Extinguishers must be easily accessible and the location of it clearly indicated.
Not implemented at time of going to print

Exercise & Recreation
The building location in the city provides its users access to public parks, e.g. Burgers Park and the Zoological Gardens, and public transport makes most facilities within the larger city available to city users.
(FLATS) Communal Spaces will be provided for residents.
Successfully implemented

Economic

Local Economy

Local contractors

Building contractors from Tshwane will be used, and these contractors must be prepared to train and involve unskilled workers, identified by Talking Beads. This must be made clear during the tender process. All the skills required will be made available within 15km of the site, and all workers will conceivably be able to access the site with public transport.

Successfully implemented- Only when construction starts will we know.

Local building material supply

Materials will be sourced from Tshwane only, to limit transport and energy costs. Re-use of material from buildings demolished on the site will be investigated.

Reasonably successful

Local components

Local businesses and craftsmen of Talking Beads will be the preferred suppliers.

Outsourcing Opportunities

Small business must be encouraged and helped where possible. Facilities must be made available to help small business people when needed. This is a management consideration and requires the education of the Building management.

(ARTS/CRAFTS) Users must be able to lock away valuables if the spaces are used for other activities at other times.

(RETAIL) Shops provided will be especially aimed at smaller businesses, e.g. approximately 100.square meters floor area.

Successfully implemented

Repairs and maintenance

Local contractors and skills will be used. The robustness of the building, and sensitive use of technology to minimize the need for repairs and maintenance is vital.

Successfully implemented

Efficiency of Use

Space Use

Space should be considered to have the potential for diurnal use, and adaptability and robustness of all spaces is a basic requirement.

Successfully implemented

Occupancy schedule

The building spaces must be occupied a minimum of 30 hours a week. Diurnal use and effective management could ensure this.

(RETAIL, RESIDENTIAL) A variety of functions with a wide spectrum of users will be part of the building, which will ensure activity. More clients also neutralize the danger of a single large client's departure resulting in large vacancies.

Successfully implemented

Management of space

Offices could be shared, and workspaces shared: 'Hot-desking.' The spaces must be adaptable enough to allow various activities

Hot-desking not Implemented

Spaces are reasonably adaptable

Useable Space

The non-useable spaces, such as WC's and circulation should be minimized, and preferably kept under 20% of total area.

Successfully implemented

Disruption & downtime

The building must allow for repairs or maintenance of certain functions without the disruption of other

functions.
Successfully implemented

Adaptability and Flexibility

The Pretoria CBD is a very dynamic place, and the building function may well change over time. The design must take this into account.

Vertical dimension

Higher ceilings create an opportunity for mezzanine levels and storage space while more easily accommodating future changes in function. This should be weighed up against financial implications before a decision is made.
Gallery and Talking Beads Levels adaptable. Residences reasonably adaptable.

Internal partitions

Larger spaces should be allowed by the structure, while internal partitions can be non-structural.
Successfully implemented

Services

Easy access to electrical, communication and sanitation services should be possible, without excessive breaking of the building structure.
Not implemented to a satisfactory level

Structure

Allow adaptability and robustness of use, while not limiting potential layouts or future functions, where possible.
Successfully implemented

Ongoing Costs

Maintenance

Robustness and simplicity of design, the choice of materials and simplicity of services will limit the cost of future maintenance.
Successfully implemented

Cleaning

Materials and surface treatments that do no require intensive cleaning will be specified. Access to areas that have to be cleaned regularly (such as windows or glass surfaces) must be ensured. This will limit costs for specialist cleaners (e.g. window cleaners).
Moderate Success- Market curtain wall will require specialist cleaners.

Security/ Care taking

Design defensible space that can be monitored by its users and residents, and avoiding blind alleys or deserted space will ensure less expenditure for security.
Reasonably successful. The public nature of the building limited this.

Shared Costs

Having different functions share spaces and functions and sharing emergency exists and parking facilities with neighbouring buildings makes financial sense, and the cost of upkeep will be minimized.
(Talking Beads, GALLERY) An Auditorium could be used by both facilities and rented out other users.
Successfully implemented

Cost monitoring

Management of the building needs to ensure an awareness of any wastage of resources, and limit this. Using daylight switches for public space lighting will ensure that it will be turned off during the day, so electricity is conserved.
Not possible to assess.

Capital Costs

Choices concerning capital expenditure can only be made with complete information regarding costs and profits that are associated with the development. Some issues that Capital Costs consideration raise:

Use of existing structures
Existing Structures and facilities should not be dismissed and can be incorporated into the design where possible and feasible.
Incorporated to a limited degree

Shared cost
All stakeholders share in the profit and so proportionally in the capital costs.
Various clients involved – Sectional title development.

Build-ability
The building should be designed to be easily and cheaply built, through choosing simple structures and local materials.

The material palette was kept simple
The structure was not designed to most efficient level.

Proportions of cost/ building size
IA slightly larger building might offer more adaptability and future usefulness despite an increased initial cost. The most cost effective solution may therefore be limiting in many respects.
The size of the building, and multifunctional nature of it is more cost-effective

Environmental
Water

Rainwater
Harvesting of rainwater so as not to use potable water for the watering of plants or for production purposes is essential.
Not implemented. This goal was an unrealistic goal.

Water Use
Creating a culture of not wasting water is important, both during the construction phase and the functioning of the building. Education of the user is important. The contractor must be made aware of this requirement during the tendering process, and the building management must continue the work.
Not possible to assess.

Grey water
Recycling of Grey water to be used for gardening or production purposes would save potable water. The cost, space and required maintenance for a Grey water system is an issue however. A commitment is needed by the users to make this system work. Users who rent buildings might be reluctant to take part and accept the extra implications. Needs to be investigated further.
Not considered applicable to the specific project

Runoff
Rainwater runoff is another potential source for water harvesting but with certain implications of management for its users. To be investigated.
Not considered applicable to the specific project

Planting
Through planting endemic species the need for watering and maintenance will be limited. This saves water.
Indigenous species were selected

Energy

Transport

Local contractors and materials shorten transport distance and also the embodied energy and implied costs. The existing Pretoria CBD public transport system makes it easier to visit the building.

Successfully implemented

Ventilation

Through giving all rooms open able windows or designing to maximize cross ventilation, air can be circulated and naturally cleaned, while air conditioning costs can be curtailed.

Moderate Success

Environmental control

Allowing users the ability to adjust sun shutters and open windows, and through limiting unwanted heat loss or heat gain through effective insulation, this goal can be reached.

Successfully implemented

Appliances and fittings

Limiting appliances that have large energy implications such as air conditioning. Light fittings should fluorescent/ low energy consumption. Educating building users to set geysers to lower temperatures and turn off lights in empty rooms is important. This is a concern of the building management.

Moderate Success

Energy sources, Renewable Energy

Solar water heaters could be used, which would limit the massive energy use associated with geysers. Photovoltaic panels could be implemented to supplement electricity, but the associated maintenance and installation costs must first be investigated.

Not implemented

Waste

Organic Waste

Facilities that process organic waste within the inner city must be identified. A central organic waste collection point will be established for the building users, from where waste can be transported to recycle points when needed.

Successfully implemented

Inorganic Waste

As with organic waste, the facilities for recycling of waste in the inner city do exist, and must be identified. A collection point where glass, metals, paper and plastics can be separately collected must be included.

(Talking Beads) The potential for the re-use of inorganic waste in the making of crafts and artworks is an important possibility.

Successfully implemented

Sewerage

Sewerage would be exposed of through the existing city infrastructure. Space for alternative measures do not exist, and is not supported by building regulations.

Successfully implemented

Construction Waste

Waste of materials will be minimized through modular design. Contractors must explicitly be made aware of the need for careful construction site management during the tender process.

Not possible to assess

Site

Brownfield Site

The site is built up. No Greenfield sites or natural resources will be affected.

Successfully implemented

Neighbouring buildings
The building will link and work closely with neighbouring buildings. Effective integration will benefit the entire area. Infrastructure can be shared with its immediate neighbours. The building must not have a negative effect on neighbouring buildings, e.g. through shading other buildings. By respecting the existing scale of buildings in the CBD this will be minimized.
Successfully implemented

Ecosystems and Vegetation
No natural ecosystems exist on the site itself. An attempt will be made to maximize vegetation on the site through the introduction of plants where possible.
Successfully implemented

Construction process
The process must have as a priority the effective use of materials so as to limit wastage. Water must be conserved and penalties for wasting water must be implemented, and contractors made aware of this during the tendering process.
Not possible to assess

Materials and Components
Material / Component Sources
Will be sourced from within Tshwane, and local craftsmen, contractors and businesses will be involved. Components made from renewable resources.
Not fully incorporated

Embodied Energy
The cost of transport and production of materials will be considered (No materials may be imported), as well as the skill level of the workforce employed: A contractor will be used, but training of unskilled labourers will be required.
Implemented to a satisfactory degree

Manufacturing processes
Details and finishes that requires unskilled workers and can be done on site is preferred.
Implemented to a satisfactory degree

Recycled & reuse of materials & components
The demolished buildings have materials that could be re-used, and finer residue would be preferred for fill material.
(Talking Beads) The Centre will look at the re-use of materials for the making of crafts and artworks.
Implemented to a satisfactory degree

Modular coordination
A modular design will allow ease of construction and the ensuing standardization would result in lower construction costs.
Successfully Implemented