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DRAFT BUILDING USERS GUIDE FOR CITY HALL, PIETERMARITZBURG

DRAFT – NOT FOR DISTRIBUTION

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SYNOPSIS

Compile a Building Users Guide for building occupants within City Hall, PMB.

KEY WORDS:

Building Users Guide, Water, Electricity, waste

QUALITY VERIFICATION

This report has been prepared under the controls established by a quality management system that meets the requirements of ISO 9001: 2015 which has been independently certified by DEKRA Certification.

Verification	Capacity	Name	Signature	Date
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1 INTRODUCTION TO THE BUILDING USERS GUIDE

This Building User Guide (BUG) is compiled for all occupants of City Hall in Pietermaritzburg and aims to be an easy-to-use guide on how to operate and work within the building. The BUG aims to educate users to ensure that the building operates as efficiently as possible for maximum performance potential and comfort.

The City Hall was built between 1893 and 1900 and as such is an old building. It is also *Protected as a Heritage Landmark (Category II – Provincial)* in terms of the KwaZulu Natal's Heritage Act (No. 4 of 2008). The heritage significance of the building means that limited external upgrades / modifications can easily be made to the façade of the building. It is acknowledged that the building requires internal maintenance and upgrades, and this document should be updated accordingly, as and when improvements or changes are made to the building and how it operates.

The City Hall is used by the Msunduzi Municipality and includes the Municipal Chambers and offices, which are located on three sides of the building. The building has three floors and a basement, although the basement is not used. In addition, a large concert hall is located in the centre of the building where numerous events, such as concerts, weddings, funerals and various other small to large functions are held throughout the year.

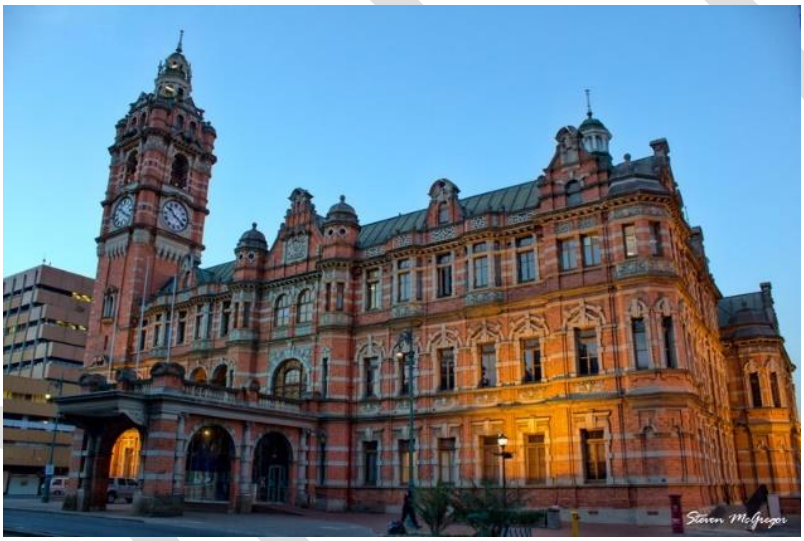

Figure 1: City Hall, Pietermaritzburg (https://www.pmbtourism.co.za/).

A Baseline Water, Energy and Waste Assessment was conducted in 2021 to identify areas of improvement to enhance the environmental efficiency of the building. A number of recommendations and interventions were identified. As and when these interventions are implemented, this document should be updated to incorporate these aspects.

2 BUILDING SERVICES OVERVIEW

2.1 Access

City Hall is accessed via one main entrance that is security controlled. Employees and visitors are required to pass through a security scanner and visitors are required to sign in. All occupants exiting the building also pass through a full body security scanner.

2.2 Security

Security guards are on duty during the day and night with 2 – 3 guards on duty at night. The caretaker opens and locks the building. Security do not have keys to the building.

Additional security are employed on days / nights when there are large events.

2.3 Lighting

Lighting includes a mix of inefficient bulbs, such as halogens, compact fluorescent lamps (CFL's), fluorescents and incandescent bulbs, as well as efficient Light Emitting Diodes (LED's). As and when bulbs fuse, they are replaced with LED's, thus slowly improving the energy efficiency of lighting within the building.

Lighting for offices is manually operated within each individual office. As such, users are encouraged to only turn on lights when needed and to ensure that lights are switched off when offices / rooms are not in use. Staff are responsible for ensuring that the lighting in their office is switched off at the end of the day.

The internal passages are lit via a number of chandelier light fittings. There are four passageways per floor and each passageway has its own light switch. Passage lights remain on 24/7 to provide light for staff who make use of the building at night. When there is sufficient natural lighting, some of these passage lights should remain turned off and only switched on when needed.

The following principles should be followed for night-time use of the building, whether by staff or visitors:

- Only tun on lighting for sections of the building being used.
- Ensure that all required lighting is turned off when the last person leaves.

2.3.1 Disposal of fused light bulbs

Staff are to contact the caretaker of the building, Skhumbuzo Zuma, via phone or email, when light bulbs are to be replaced. The caretaker will then arrange for the bulbs to be replaced.

All fused light bulbs should be sent to the Assets Department for safe disposal. Florescent tubes should be collected and deposited in the specialised containers in the recycling area at the landfill site. No light bulbs are to be disposed of as general waste.

2.4 Heating, Ventilation and Air Conditioning (HVAC)

The building is heated and cooled via split air conditioning units (wall, through wall and ceiling mounted cassettes) throughout the building except for the council chambers, which has a roof Precision Airconditioning System (pac) unit[1]. The split units are manually operated in each office / section to allow occupants to control the temperature.

As such, user behaviour is key to improving energy efficiency of heating and cooling within the building.

The following tips should be followed:

- Ensure that the heating / cooling is turned off when the office / room is vacant.
- Only use the air conditioners when necessary.
- Report any faulty air conditioners to the Building Facilities Unit Call Centre.
- Use curtains or blinds to block out sunlight, thereby reducing the rooms temperature.
- Turn off any unnecessary lights, as lights emit heat and contribute to warming a room.
- Bring additional items, like a blanket, extra jersey for added warmth before turning to mechanical heating.
- Do not use extreme temperature settings.

In addition, regular maintenance of all systems is vitally important to ensure they continue to operate optimally as well as ensuring their longevity. A regular maintenance schedule must be put in place.

[1] We were advised against going onto the roof to confirm the number of pac units for safety reasons. However, no further information was provided apart from the asset register which lists a 35kW rooftop unit (no further details).

2.5 Water

The City Hall has various types of sanitary fittings, ranging from push flush to manual taps, as well as different toilet cistern sizes. At present, there are no efficient fittings to reduce the volume or flow of water. As such, user behaver is critical to ensure that water is not wasted. The following tips should be taken into consideration when using the bathrooms:

- When using the manual taps, ensure that the taps are not left running for longer than needed.
- Ensure that all taps are properly turned off after use.
- Report any leaking taps or toilets to the caretaker as a first step.
- Report persisting leaks to the Building Facilities Unit Call Centre if the caretaker is unable to fix the problem.

2.6 Indoor Environmental Quality

Indoor Environmental Quality refers to aspects relating the comfort and health of a building for its occupants and includes aspects around air quality, lighting, thermal comfort, glare control, sound levels and access to views.

2.6.1 Indoor Air Quality

Indoor air quality can play a significant role in the productivity and well-being of building occupants. Office based employees spend the majority of their time indoors, and salaries typically comprise the bulk of many companies' expenditure. Numerous studies have shown both the negative cognitive and health implications due to poor air quality. Apart from damaging respiratory and circulatory systems, air pollution has been found to have negative cognitive effects on individuals, from reduced memory, impaired concentration, and lower decision-making capabilities to decreased language and mathematical abilities[2].

The management and maintenance of the building is therefore key to enhancing indoor air quality.

2.6.2 Ventilation

Ventilation, in the form of fresh air, is key to a healthy indoor environment. Where possible, the following should be practised:

- Make use of openable windows before turning on the air-conditioning.
- Ensure regular maintenance of all HVAC equipment, to remove dust build-up, etc., to ensure operational efficiency.
- Report any faulty systems to the caretaker and the Building Facilities Unit Call Centre.

2.6.3 Avoiding Air Pollutants

2.6.3.1 Volatile Organic Compounds

It is important to consider ways in which to avoid negatively impacting air quality when any upgrades or changes are made to the building. One of the key considerations is to reduce or limit volatile organic compounds (VOC) as these compounds can cause a range of reactions in humans, such as headaches, irritation of the eyes, nose and throat, while some VOCs are cancerous.

Materials and furnishings generally all emit varying levels of VOCs, such as paint, carpets, wood products, adhesives, etc. As such, any future materials and furnishings bought for the building should have low to zero levels of VOCs.

2.6.3.2 Smoking

City Hall is a non-smoking building, with occupants required to make use of outside areas, such as external balconies.

[2] https://www.breeze-technologies.de/blog/why-indoor-air-quality-is-important-for-every-business/

All cigarette butts should be placed in refuse bins. If no suitable bins are available, bins should be requested from the Building Facilities Unit Call Centre. No cigarette buts are to be discarded onto the ground.

2.6.4 Ways to improve Indoor Air Quality

Plants can assist in absorbing pollutants, such as carbon dioxide, from the atmosphere. As such, including indoor plants within offices can assist in cleaning the air. In addition, they enhance the aesthetics of a room.

2.7 Office Stationery

Staff are to request stationary, paper for printing, etc, through Regina Khumalo, who is to be contacted via email or telephone, who will either order or supply the staff member with the necessary stationery.

2.8 Transportation

City Hall includes a designated parking area adjacent to the building. If this parking is full, staff are to find alternative parking in the surrounding public streets.

The only public transport service in the area is provided by taxi's. A Taxi Rank is located approximately 400 m to the north east of City Hall at the Market Square Taxi Rank.

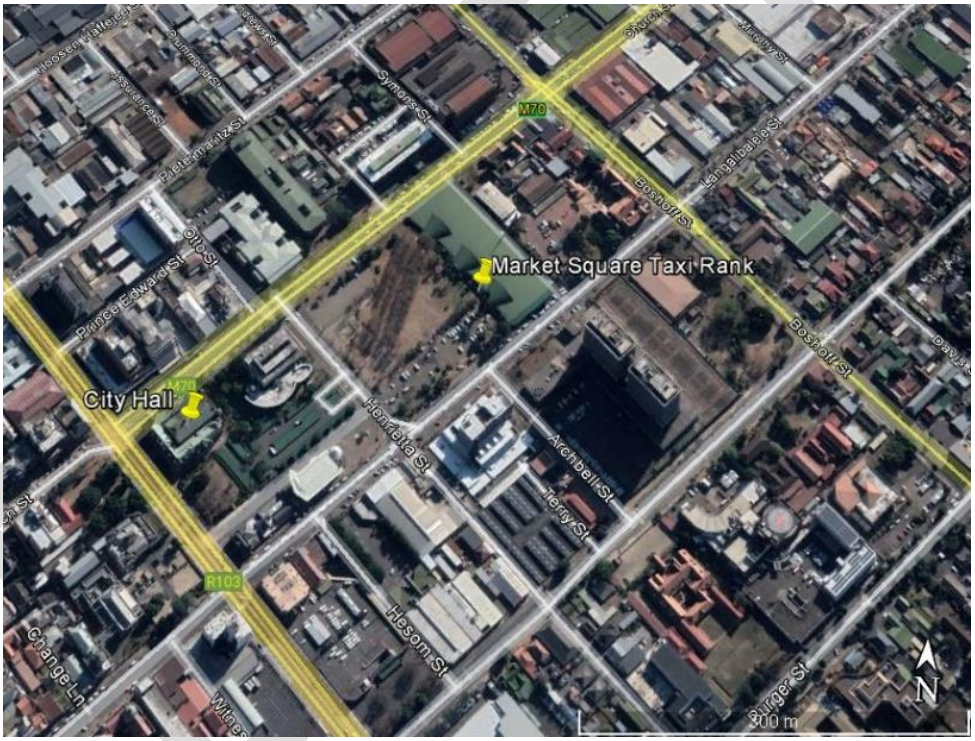

Figure 2: Location of Taxi Rank to City Hall.

2.9 Waste

Waste generated at the City Hall is not separated. Small bins are placed in offices and emptied into refuse bags by cleaner's weekly, which are placed on the pavement and collected by the Municipality for disposal at the New England Road Landfill Site in Pietermaritzburg.

2.10 Materials

Building materials contribute significantly to negative environmental impacts and an increase in Greenhouse Gases as a result of the production process, which requires the extraction of various raw materials, manufacturing and processing of the product, transportation to market before the product / material is used

and then ultimately disposed of. As such, it is critical to reduce the environmental impacts of buildings as far as possible.

The following provides a few aspects that should be taken into consideration:

2.10.1 Concrete

As far as possible, any additional concrete used in the building should include the replacement of Portland cement component with an alternative, such as slag or fly ash, which are both by-products (i.e. a waste material) of other industrial applications. The benefits of reducing the Portland cement component include reduced energy, reduced greenhouse gas emissions, and reduced use of raw materials.

2.10.2 Steel

Where possible, any steel requirements within the building should be sourced from recycled steel products, thereby reducing the reliance on natural resources for this material.

2.10.3 Local Sourcing

Materials should be sourced locally, as far as possible. This reduces the transport requirements and reduces greenhouse gas emissions.

2.11 Fire Protection and Emergency Exits

The building includes the following four emergency exists on the ground floor:

- Main entrance
- Exit onto Church Street
- Exit into the gardens of the Library (northern side)
- Exit into the parking lot

Staff are to familiarise themselves with these exits as there is no emergency signage within the building and the fire alarm system is currently not working. In addition, there is no intercom system to alert staff in the event of a fire or emergency.

The first floor includes balconies on the southern and northern ends, but there is no access to the ground floor from these areas.

2.12 Upgrades and Retrofits

The following provides guidance as to how any upgrades or retrofits can be undertaken in an environmentally responsible manner:

Management:

- Employ a contractor with ISO 14001 accreditation
- Implement a Waste Management Plan to manage and reduce construction-related waste and divert waste from landfill. A target % diversion should be identified and met.

Energy:

- Select equipment and appliances that have a high energy star rating. The South African Energy Label provides a rating from A (the most energy-efficient) to a G (the least energy efficient) for various appliances. (Note – compare energy rating levels for the same product as opposed to only looking at the rating level.)
- Install energy meters to understand energy usage within the building.

Water:

- Install only efficient and low flow fittings and fixtures.
- Bathroom taps – 1.4 litres/minute
- Toilets – dual flush (3 / 6 litre/flush)

Indoor Environmental Quality:

- Maximise areas with access to natural light and views, while controlling glare.
- Avoid the use of composite wood products containing formaldehyde.
- Use only low VOC paints, sealants, adhesives and carpets.

Materials:

- Any waste materials must be recycled or re-used as far as possible to limit waste sent to landfill.
- Consider furniture and fittings that include aspects such as recycled content, include re-used parts, wood from sustainable sources (e.g. FSC certified label), a company that offers a take-back policy or a company that offers repairs to goods, zero formaldehyde coatings, third party certified products, etc.

3 VISITOR INFORMATION

Visitors are to use the main entrance to access the building. Security is provided with a register / guest list to manage access. Additional security is provided for large events. Event organisers and service providers needing to bring equipment, etc., into the building access City Hall via the entrance leading directly from the parking lot.

Visitors can park in the parking lot, if parking is available, alternatively street parking is to be used.

Visitors may make use of any of the on-site bathrooms. Signage is provided.

The caretaker will ensure that all lights are turned off and the building is locked at the end of all events / functions.

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