Zimbali Lakes Resort Sustainability Guideline

Kwa-Zulu Natal South Africa

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Sustainability Guide

The objective of these guidelines is to offer a long term development that will constantly thrive to reduce its local and global environmental impact while improving resilience for the owners and occupants without detracting from the lifestyle offering.

These guidelines have been drawn up in acknowledgement of the rapid change in utility costs, related technologies, how these are delivered and the cost benefit of scale and significant retrofit costs compared to implementation at the initial construction phase. ZLRMA will update these guidelines periodically as the sustainability context and related opportunities change.

1. Energy

Energy cost and reliability has become an unknown variable in recent times with mediation of this often coming at a significant expense – financial or comfort. This is amplified when considered at the scale of a single household. However, when considered at a larger scale, the expense and operational aspects can be reduced significantly for the owners and occupants.

1.1 Electricity

Each erf will be provided with a smart metered electricity supply that will be connected to an online prepaid system. The meter will be able to manage consumption and should over consumption occur due to misuse the supply may be governed. Relays to large peak energy consumption including but not limited to air conditioning and pool pumps will be included in the electrical reticulation design of each dwelling that may be connected to the smart meter for peak energy management. It is suggested that related equipment selected should have a built in reset function so that when supply is reconnected the system reset to original operation. The reasonable measures taken below will prevent any governing of supply.

1.2 Renewable Energy

Each dwelling will have a solar PV installation that is designed to provide a minimum of 15% of the annual dwelling consumption based on conventional occupation patterns and the peak system capacity should be sufficient to offset 50% of the installed electrical capacity of all air conditioning systems in the dwelling. Installation of the Solar PV system is to be completed within 6 months of practical completion of the construction and will include a smart meter of a type compatible with the development electricity metering system. ZFM have contracted installers of solar PV systems and will arrange installation of system in batches of dwellings to assist with reducing related capital costs as well as future support of these systems. Owners may choose to increase the capacity of their systems and ZFM will purchase excess production at market related rates if the related equipment meets required safety standards for grid feed in. Owners may choose to include an Uninterrupted Power Supply system in their dwelling for equipment they believe to be essential for their comfort of living and this may be linked to the Solar PV system.

1.3 Gas

Gas will be used for cooking hobs, water and space heating. Gas will be bought from ZFM either in bottled or piped form at market related rates. Note that this can be in the form of compressed liquid gas petroleum or natural gas and may influence the selection of appliance. Houses will be piped accordingly and the services servitude should allow for future piping from the services connection point of erf to the dwelling. Should natural gas be provided to the development, owners/occupants will convert/adapt their related equipment for natural gas with 24months of the supply being installed.

1.4 Water Heating

Solar water heaters may be used to reduced gas consumption, however any top up of solar heating requirements may not be by electrical means

1.5 Energy Efficient Appliances

ZFM has a list of energy efficient rated appliances over a wide range of brand and pricing and has arranged preferential pricing. Please consider purchasing these devices through ZFM who would also arrange for maintenance and replacement components.

2. Water

South African municipalities are not obliged to guarantee quantity nor quality of supply. These aspects can easily change over the duration of home ownership at Zimbali. While in a relatively high rain fall area, droughts are still not uncommon, and when combined with the increase in development in this part of KwaZulu Natal, it makes sense to mediate any impact on the value of your asset and your comfort in occupation through including a number of simple interventions that are significantly more cost effective when undertaken at the design and construction phase of projects compared to retrofitting these aspects at a later date.

2.1 Provision

Each dwelling is to be piped to receive two potential sources of water – non-potable water for irrigation and toilet and urinal flushing and potable water for other uses. Piping is to extend from the services connection point. Each erf will be provided with smart metered water supply(ies) that will be connected to an online prepaid meter system. The meter(s) will be able to manage consumption and should over consumption occur due to misuse the supply may be governed to levels that comply with regulations. This includes detection of leaks which will assist owners/occupants with water costs and possibly related leak damage.

2.2 Boreholes

No boreholes will be allowed unless approved by ZFM to protect the underground water. Should ZFM give permission for boreholes it will be done under strict terms and conditions and water extraction will be managed by ZFM including smart metering of the extraction. Sharing of this with ZFM for the general use will be encouraged and an important factor in in the application

2.3 Waste Water

Waste water is to be separated into grey water (baths and showers) and black water (kitchen and toilets) with wash hand basins to be connected to either based on reducing complexity of design. Each separate waste water system will extend to the respective erf boundary connection point. Onsite grey water harvesting systems may be incorporated into the building design, however this system will not result in any overflow or resulting residue to discharge into the grey or black water sewerage systems.

2.4 Storm Water

Each erf will manage both the quality and quantity of storm water from roofs and soft and hard landscape within the erf boundary for up to 1:10 year storm events. This will be done in accordance with the South African Guidelines for Sustainable Drainage Systems and eThikwini Municipality requirements. This is to be integral to the landscape design and distributed across the site in order to not result in a single distinguishable traditional attenuation pond. It is encouraged that rain water harvesting is included in the strategy specific to the erf. .

3. Waste

3.1 Construction Waste

Please refer to the environmental management requirements related to construction activities.

3.2 Household and garden waste

ZFM will contract waste management service providers to collected recyclable and none recyclable waste. Dwellings are to be designed to have designated areas – a minimum of 1 large and 3 smaller wheely bins- that are accessible to external service providers but not visible from the street or adjacent erfs to support this. Owners/Occupants are encouraged to undertake onsite composting and management of garden waste, however these areas should be screened from site of other erfs and the road and should not result in undesirable smells. Removal of garden waste is to be coordinated with ZFM and should be undertaken within 24 hours of generation of that waste.

4. Construction Materials

Construction materials should be in accordance with the architectural guidelines. However owners are encouraged to refer to the Green Building Council of South Africa https://www.gbcsa.org.za/ for guidance on how to reduce the environmental impact of the construction of their dwellings and to select finishes that are healthier. ZFM have access to a range of materials and finishes that meet the GBCSA requirements that may be used during maintenance or renovations.