

Notes on New Energy Efficiency Regulations

1. Background

On 26 October 2011 the Cape Agulhas Municipality finally approved the “Revised Design Parameters for L’Agulhas Nature Reserve, 12 August 2010 as updated by the L’Agulhas Nature Reserve Home Owners’ Association”.

Section 17 of this document related to Energy Efficiency, making it clear that that all designs had to comply with the forthcoming new National Building Regulations, including solar water heating, insulation, etc.

2. New Energy Efficiency Legislation on 9 November 2011

In a significant development that sees all new buildings and refurbishments in South Africa having to comply from 9 November 2011 (the official date of the new legislation) to minimum standards of energy efficiency, the SABS have developed SANS 10400 part XA – the first of a set of minimum standards for environmental sustainability in new and refurbished buildings.

The document is called SANS 10400 PART XA: ENERGY USAGE and goes hand in hand with SANS 204.

Written exemptions may be applied for during a period of six months up to 8 May 2012, after which all regulations must be complied with.

These regulations/standards stipulate the planning and design of buildings which includes aspects such as:

- The orientation of the building, with well-used areas facing north to make best use of natural sunlight and warmth;
- Suitable roof overhangs to keep out the high summer sun but let in the winter sun, when the sun is lower in the sky;
- Sensible fenestration (windows) to let in light and sun, but not so much that natural warmth or coolness cannot be retained;
- Choice of building materials;
- The use of appropriate heating, ventilation and air-conditioning installations where required;
- Solar water heaters become mandatory with new buildings being erected;
- Day lighting; and
- Competent persons signing off the energy efficient designs. .

A useful summary is contained at: <http://www.buildaid.co.za/Resources/Summary%20ESBS%20-%20For%20website.htm>

Further details are contained in the attached document reviewing SANS204 - Energy Efficiency in Buildings.

Such regulations have transformed the built environment in countries such as Germany, where their first such standard was introduced in 1975. South Africa can learn from such leading nations and hopefully leapfrog to avoid taking 45 years to get where those nations are now in terms of sustainable design.

SANS 10400 Part XA essentially tackles how buildings are designed and built by addressing and providing guidelines for minimum requirements for things such as glazing, insulation, shading, orientation and building services, including air-conditioning, hot water and lighting.

The standard gives a few options for proving compliance, which will need to be substantiated with any building plan submitted to a municipality for plan approval.

The Green Building Council of South Africa has welcomed SANS 10400 part XA, and has applauded and congratulated the SABS and government for putting a stake in the ground for the first time in terms of minimum energy consumption requirements for new buildings and refurbishments. Such regulations have transformed the built environment in countries such as Germany, where their first such standard was introduced in 1975. South Africa can learn from such leading nations and hopefully leapfrog to avoid taking 45 years to get where those nations are now in terms of sustainable design.

The requirements for the use of solar water heating systems (as set out in the regulations and duplicated in SANS 10400-XA) are interesting, as several alternatives are given. As the standard says, " A minimum of 50% by volume of the annual average hot water heating requirement shall be provided by means other than electrical resistance heating, including, but not limited to solar heating, heat pumps, heat recovery from other systems or processes".

3. Implications for LNR HOA Members

3.1 The LNR design parameters will need further review in due course to comply with the new regulations/standards once implications have been fully understood by the building industry (e.g. overhangs/canopies over windows, insulation material, window sizes, no skylights, solar panels & geyser with wrapped pipes, etc).

3.2 The fact that all plots face north in LNR could be a very positive marketing point

3.3 The fact that the ±150mm Agulhas stone cladding provided for in the design parameters would add further insulation to the walls, is a very clear benefit when using computer models to ascertain compliance with the new regulations. Determination of the exact improvement figures may require testing of samples of such stone walls

3.4 There will be higher costs for:

- (a) compiling plans;

(b) building materials & equipment to SABS standards (e.g. installing solar water heaters, wrapped pipes, etc); and

(c) engaging competent persons to design & sign off compliant energy efficient designs.