XA Compliance for Dwellings
SANS 10400 XA

There are two "Routes to Compliance" available for domestic residences:

1. PRESCRIPTIVE ROUTE
When using this route we separate the building elements (ie: walls, roof, fenestration) and test them for compliance.
Minimum R-values and conductance/solar heat gain values are given for the various building elements in the building regulations.
We make specifications to meet these requirements.

Compliance Calculations are required if the total fenestration area is greater than 15 % of the nett floor area.
This method works well for houses with a fenestration : nett floor area of up to approximately 20-max 28% (aluminium frames) *or* 20-max 35% (timber or PVC frames).

2. RATIONAL DESIGN (REFERENCE BUILDING ROUTE)
When working with this method we model the building envelope as a whole; i.e. good insulation of walls, floors and roofs can offset XA stringent fenestration requirements. Working with Certified Thermal Modelling Software we 'build' a 3D model of an XA compliant 'reference model' and compare this with the 3D model of the actual building in terms of energy demand and consumption. This is called 'rational design'.

This specialist method is more time consuming and detailed and therefore more costly than the Prescriptive Route. Our experience has been that for dwellings with large fenestration/floor area ratio, rational design can reduce fenestration specifications substantially, making rational design a very cost effective route.

OTHER SERVICES
Alongside our rational design service we offer an inclusive energy efficiency/green design advisory service. i.e. we can advise how to modify your building envelope to optimise energy efficiency, where to use low E and /or double glazing to best effect, and recommend building products (energy and cost efficient) which we have researched. This is free of charge, on request.

If you require a more detailed technical green design service we offer this at an hourly rate, or by quotation. We use Design Builder software to simulate building performance, using local climate data and orientation to inform the outcomes. We specialise in passive solar design, thermal modelling, and thermal comfort analysis for residential buildings.

Regards,

Sandy Adams.

Mphil Barch PrArch

info@newearth.co.za