ecolution consulting

We live, work & play
Sustainability
www.ecolution.co.za

Certified B Corporation

Building Energy Modelling - Optimise Building Performance

We integrate the work of architects and engineers to find the sustainability "sweet-spot"

At Ecolution Consulting, we take an integrated approach to Energy Modelling to optimise building performance. We collaborate with architects, designers, engineers, owners and the operational team at every stage of the process to ensure that we achieve lasting energy and cost savings.

Why use energy modelling services?

Energy modelling ensures an effective balance between the heating, cooling, lighting and thermal comfort of a building, thereby saving electricity over the lifetime of the building and reducing mechanical equipment & maintenance cost. Some of the benefits include:

- Mindful design for balancing energy sustainability and comfort
- Lower building energy requirements
- Better thermal comfort
- Understanding seasonal dynamics of your building
- Climate-responsive passive design
- Selection of best suited glazing and other envelope materials
- Future-proofing of your building

Why Choose Ecolution Consulting?

Our solutions are holistic! With over 6 years experience in building energy modelling and commissioning, we offer a holistic approach that does not stop at excellent design, but extends to commissioning and sustainable operation of buildings.

WHO BENEFITS?

OWNERS

Enjoy living in an efficient and energy sustainable building, and reap the benefits of a higher property value.

BUILDING OPERATORS

A resource-conscious building performs well, has less utility costs and produces greater long-term savings.

DEVELOPERS

Future-proof your new buildings now by focusing on energy sustainable design. Rate your building performance with SANS100XA, Green Star, Edge.

ARCHITECTS & ENGINEERS

Consult experienced energy modellers to inform the design of your building while keeping within the boundaries of your aesthetic or design vision.

+27 21 012 5225 | hello@ecolution.co.za | www.ecolution.co.za

All of our energy modelling services are carefully crafted to suit your project budget.
We offer two classes of energy modelling services:

1. Design Modelling

Optimise building performance by balancing between heating, cooling, lighting and thermal comfort.

2. Certification Modelling

Evaluate and certify building performance according to the National Standard or International Building Rating systems*

1 **Climate Design Requirements**

Understand design inputs

2 **Envelope Design**

Evaluate and optimise building envelope

3 **Mechanical & Electrical Design**

How efficiently does your building use electricity?

4 **Assessment**

*SANS 10400-XA, Green Star and LEED

Your score rewards your design efforts

Design modelling for climate-responsive design

Climate Study

Meteonorm Software is used to calculate hourly weather data for any location in the world. We analyse the data using simple graphic displays, and recommend climate responsive passive design initiatives.

Glazing and Solar Control

Controlling solar heat is vital part of building design. Energy modelling is used to evaluate solar dynamics across the year and find the best combination of glazing type, size and external shading.

Natural Ventilation Design

Energy modelling is used to evaluate the effectiveness of opening sizes and position for cross flow and stack ventilation. Improve natural thermal comfort, and greatly reduce the need for AC cooling.

Optimising HVAC Systems

We work closely with design engineers to model HVAC systems down to component level, to evaluate design alternatives and find optimal operational settings.

Thermal Comfort

Design for thermal comfort according to ASHRAE Standard 55, or PMV. Especially useful for evaluating natural ventilation, HVAC control settings, the Green Star IEQ-9 credit.

Material Envelope Design

The scientific results from energy modelling will inform the building design, showing how thermal mass and insulation can benefit the energy flow in the building. This is a vital part of passive design.