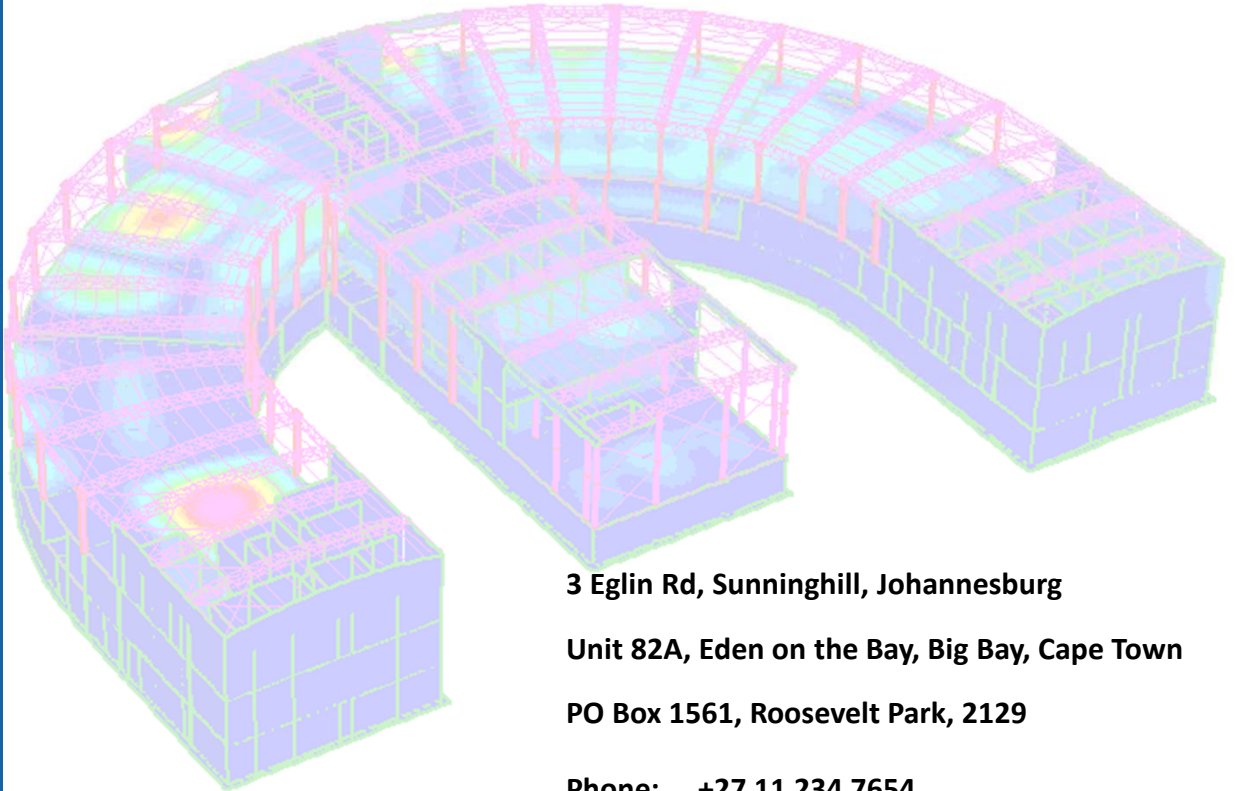




Civil, Structural and Infrastructure Engineers



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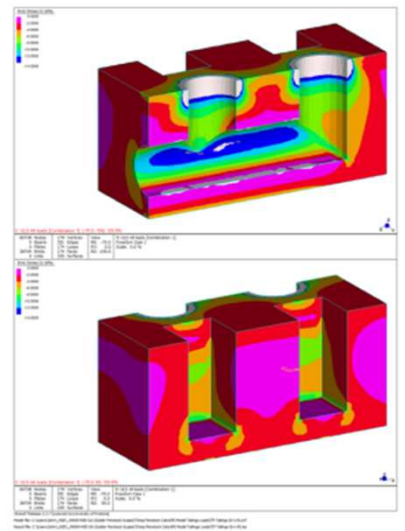
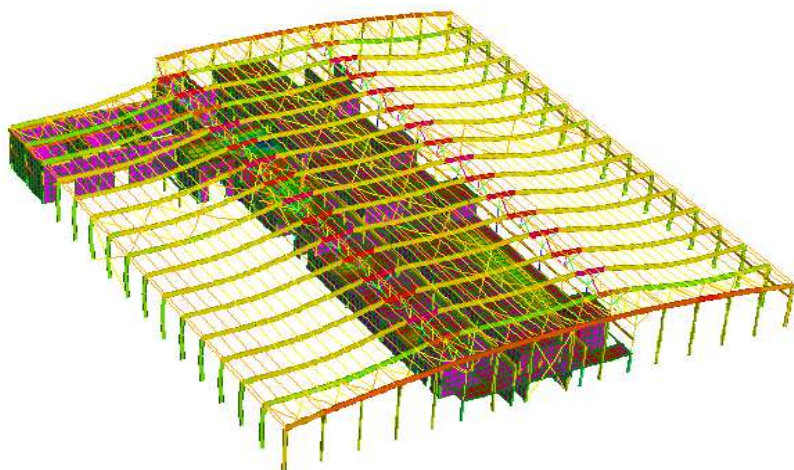
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Vision

NSE is a privately owned company focussed on Civil, Structural and Infrastructure Engineering Design. We are a young company of highly talented people with a passion for solving problems.

We pride ourselves on our ability to tackle complex and challenging problems and provide high quality service to our valued Clients. Our vision is to become one of the leading organisations in the field of Civil, Structural, Geotechnical, Forensic and Construction Engineering aspects of Industrial facilities.

Why choose us?

NSE has extensive involvement in fossil, hydro and nuclear power plant siting, development, qualification and life cycle maintenance of utility infrastructure extending over a 30 year period. As a result we provide a comprehensive list of services:

- Analysis of intricate loading conditions (Vibration, Seismic, Fire, Blast & Impact and other Extreme Events)
- Expertise in Finite Element analysis and design
- Reinforced concrete design and investigation
- Heavy Industrial Steel Design (Cranes, conveyors, pipe rack systems, etc.)
- Conceptualisation, layouts and design of Industrial Facilities,
- Soil / structural interaction,
- Field & laboratory investigations of subsurface soils,
- Infrastructure analysis, design & construction supervision of sewer, storm water & water reticulation,
- Road planning & design.

NSE's complies with:

- Health and Safety legislative requirements (OHSA),
- ISO 9001-2008

Our Clients rely on NSE to reduce their risk and cost of operational downtime emanating from civil and structural problems.

BBBEE Status

We recognise the moral and social need to advocate for change in South Africa; NSE remains committed to our transformation policies and has thus far managed to achieve a BEE level 2 status. This status includes a procurement recognition level of 125%. We will continue to strive for change and put in place the necessary processes to ensure that this change continues into the future.

Our clients trust us to find solutions to difficult problems



Our range of specialist services

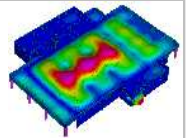
Concrete Investigation

Our services include site investigations, structural analysis of failed (or failing) structures using finite element methods (FEM), providing expert opinions based on visual inspections or concrete analysis and acting as expert witnesses in cases that require these services.



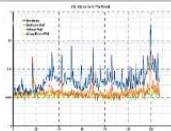
Seismic analysis and design

Due to our extensive experience in the nuclear industry, our analysis and design processes have been adapted to suit the rigorous standards and requirements of this industry. This has resulted in a standard design procedure that has included seismic design criteria since the establishment of the company.



Vibration Analysis

Vibration in structures is undesirable for various reasons – increased noise, uncomfortable conditions perceived by human occupants, poor mechanical plant performance and in severe cases, increased structural loads. Our experience in this field can assist clients in solving structural and mechanical problems.



Blast and Fire Analysis / Design

The behaviour of structures subject to extreme transient loading and temperatures experienced during blasts and fires is unpredictable. By utilising FEM analysis software and non-linear analysis techniques, we can assist clients in predicting the likely behaviour of structures and possible failure scenarios.



Plant and equipment qualification

We are able to estimate the seismic capacity of power plants. This is based on hazard assessments and walk-downs of the plant including visual inspections of the structural and mechanical equipment by highly experienced engineers, with backup calculations for components that appear marginal.



Extreme event analysis

Extreme events are rare events that are difficult to predict and difficult to quantify. We have experience in the quantification of hazards complimented by analysis and design of extreme loading conditions such as high seismic loads, vapour cloud explosions, impact loads and high wind or tornado conditions.



Our range of professional services

Structural Design

Our structural design experience encompasses an array of Industrial structures including power plants, heavy fabrication plants, the furnace and smelting industry and mining and petrochemical. These industries offer unique challenges in terms of design, but we always follow a consistent process.



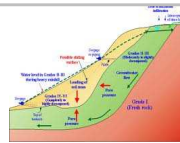
Geotechnical Investigations

This includes all aspects related to obtaining a good understanding of the static and dynamic soil characteristics. This is critical in order to be able to effectively design structures, both from a static and dynamic point of view. It is vital that the raw data obtained from test methods is interpreted correctly.



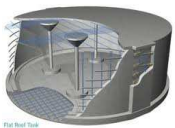
Slope Stability

The objectives of slope stability analyses are finding problematic areas, analysis of potential failure mechanisms, determination of the slope sensitivity to different triggering mechanisms, designing of optimal slopes with regard to safety, reliability and economy with possible remedial measures.



Tanks and water retaining structures

Our tank designs are conducted using advanced FEM software capable of taking into account the static water loads including the possible dynamic effects of seismic loads, resulting in sloshing of the water within the structure. It is possible to predict the sloshing effects with animated results.



3rd party reviews

Our skilled team of engineers are capable of reviewing and commenting on designs. Our speciality is concrete and steel structures, including aspects such as pre and post-tension design, concrete durability, impact of seismic loading conditions; as well as general aspects of constructability.



Lectures and training

NSE offers an ECSA approved course on Analysis and Design of Concrete Structures presented by Dr. J Robberts and Dr. V Marshall. Subjects include Reinforced Concrete construction; Structural Analysis (Engineering) and Structural Design. A course on seismic engineering is also available.



Infrastructure Design

Our services include design and management planning of sewer, storm water and water reticulation. We can also assist with road planning and design for large sites. This can include topographical terrain mapping for large sites in order to analyse best routes for roads, piping, runoff areas etc.



Mining and Industrial

Our industrial plant services include the analysis of industrial structures, investigation & feasibility study and design of plant expansions or upgrades, problem finding and analysis of vibrating equipment, piping and pipe support designs especially for seismically sensitive equipment and other related services.



For all your Civil, Structural & Infrastructure Design requirements contact 

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