

**NAME:**                   **DAVID LINTON BENEKE**  
**Director**  
**Registered Analyst (Advanced)**

**DATE OF BIRTH:**   23 July, 1968

**PROFESSION:**       Structural Analyst/Engineer

**QUALIFICATIONS:** BE(Hons), University of Sydney (Structural Engineering)  
ME(Res), University of Sydney (Wind Engineering)

**AFFILIATIONS:**     Institution of Engineers Australia, MIE (Aust) CPEng, NPER  
Institute of Professional Engineers New Zealand, CMEngNZ,  
NAFEMS Registered Analyst (Advanced).  
RPEQ - # 8085  
BLA (Vic) - # PE00000062  
RBP (NT) - # 58478ES  
BSP (TAS) - # 660753492

**KEY SKILLS:**       Finite Element Analysis

**SUMMARY OF  
EXPERIENCE:**

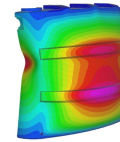
*David Beneke is a senior structural engineer with specialist skills in finite element analysis. Upon graduating in 1990 he joined Hyder Consulting and was involved in the design of large commercial developments, high rise buildings and towers. He joined Cardno in 1995 and was involved in complex computer analysis using finite element analysis as well as product research for a number of Australian companies. He has had experience with sophisticated modelling and analysis techniques and has used them for a various range of structures including those affected by harmonic response, non-linearity and buckling. David is currently a Director of David Beneke Consulting and is also a Professional Simulation Engineer with NAFEMS (National Agency for Finite Element Methods and Standards).*

**EMPLOYMENT  
HISTORY:**

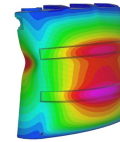
**2010 TO PRESENT   David Beneke Consulting Pty Ltd**  
**Director**

**Finite Element Analysis**

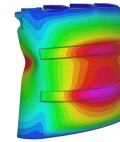
- CSR Hebel Power Panel – investigation into serviceability capacity and thermal movement of CSR Hebel Power Panels with various reinforcement ratios. Non-linear material analysis undertaken.
- APC Maxipacker pallet racking systems – Timaru for Coolpak. Non-linear geometric analysis of 4 level maxipacker steel storage racking system including earthquake assessment to NZS1170.5.
- Proform Solutions - Non-linear geometry analysis and optimisation of a 600 litre and 1,050 litre slimline above ground



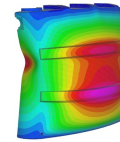
- water storage tanks using Alkatuff 711 UV linear low density polyethylene.
- Global - Non-linear geometry analysis and optimisation of a 2,000 litre, 3,000 litre and 5,000 litre slimline above ground water storage tanks using Alkatuff 711 UV linear low density polyethylene.
  - CSR Hebel Floor Panels - Non-linear transient thermal analysis to simulate the effects of fire in terms of insulation and structural adequacy.
  - Global underground water storage tanks - non-linear geometric analysis of a 3,000 and 5,000 litre underground water storage tanks rotationally moulded using polyethylene.
  - Schaefer Pepsico - India, Satellite pallet racking system –Non-linear geometric analysis of 4 and 5 level steel storage racking system including earthquake assessment to the local Indian earthquake code.
  - Taylex underground septic tank - non-linear geometric analysis of a underground septic tank rotationally moulded using a composite polyethylene/foam core sandwich.
  - Dematic SRM-1200 high bay pallet racking automatic storage and retrieval system (ASRS). Linear static analysis of bottom carriage to mast connection as well as determining the effective width of the mast to guiderail connection.
  - Sulo MGB Australia - analysis of injection moulded clip for a 60 litre food scrap garbage bin. The linear static, linear elastic analysis investigated static and enforced displacement loads on a solid element model in conjunction with thermal load cases which simulated the shrinkage on the component post manufacture.
  - Dematic cantilever racking - localised analysis of a connection between a cantilever arm and upright in accordance with FEM10.2.09. The analysis consisted of 2 D plate shell elements and included non-linear boundary contact, non-linear material properties and non-linear geometry analysis.
  - ØPD Solutions (Norway) - Non-linear analysis and optimisation of rotationally moulded polyethylene roadway barriers. The barriers were designed for the storage of both non-potable water and soil during their service life.
  - Q-Tank - Non-linear geometry analysis and optimisation of a 5,000 litre mid round above ground water storage tanks using Alkatuff 711 UV linear low density polyethylene.
  - Kennovations - 1 Central Park Sydney, linear static, linear buckling, natural frequency analysis and optimisation of heliostats and reflectors for a major residential development. The heliostats, which are placed on a low rise building, direct light up to a series of reflectors mounted off a structure mounted on an adjacent high rise building. The reflectors direct the light into the space between the two buildings. End client - Kennovations Sydney.
  - Aquatec pump out pit, non-linear analysis and proof checking of a underground pump-out pit in accordance with AS/NZS1546.1.
  - Schaefer SSI selective pallet racking - Form 1507 proof checking and review of light gauge steel selective pallet racking for a Coles distribution centre in Victoria.



- Fortlev Brazil - non-linear analysis and optimisation of a circular 20,000 litre above ground polyethylene water storage tank.
- APC selective and maxi-packer racking, 3rd party review of light gauge steel pallet racking located in Christchurch New Zealand for Coca Cola.
- Kennovations - Cross Street Mosman - linear static and linear buckling analysis of a roof top steelwork sliding roof structure. The design incorporated both the sliding roof (supporting glass) and the supporting rail structure.
- Schaefer SSI - Metcash Huntingwood - 3rd Party proof checking of a 35 m high, high bay pallet racking structure. The proof checking involved examination of the global framing structure using GNA analysis as per AS4084-2012 as well a detailed non-linear geometric, boundary contact analysis for the rail structures which support ASRS navettes.
- Remcon Plastics USA - non-linear geometric analysis of a rotationally moulded stacking lid 1,200mm long x 1,100mm wide. The lid which in general was only 100mm deep had to support a load of 2,000kg over a 30 day period.
- Recoila - linear static and linear buckling analysis of the steelwork frame of an industrial size hose reel. The analysis examined the capacity of the support frame plus the "wraps" which support the hoses.
- Kennovations - Wet'n'Wild Sydney - Main Entry Sign - linear static, linear buckling and natural frequency analysis of a 7 metre high steelwork support structure for the main entry sign.
- Non-linear static analysis and proof checking of high bay pallet racking structures - Diageo, Huntingwood for Dematic and Metcash Huntingwood for Schaefer SSI. Both structures were up to 35 metres high, were composed of light gauge steel components and were checked in accordance with AS4084-2012 and AS/NZS4600-2005.
- Kennovations - Talavera Road Feather structures - linear static and linear buckling of a steelwork feather sculpture. The sculpture was composed on both rolled and light gauge steels in combination. The FEA model consisted of 2D plate/shell elements for the steelwork in conjunction with 1D line elements for the fasteners which connected the support structure to the feather.
- Dematic - satellite rack rails - non-linear geometric analysis of light gauge steel rails for use in satellite racking systems. The rail was modeled using 2D plate/shell elements with supports incorporating boundary contact non-linearity. The purpose of the analysis was to investigate the effects of various changes in rail geometry
- Pre-formed line products - linear static and linear buckling analysis of various switchgear assemblies for the power industry. The switchgear is fabricated from structural steelwork members which are modeled using 1D line elements. The FEA models also include the insulator assemblies and loads applied from the transmission lines during a shut-off events, wind loads and earthquake loads.



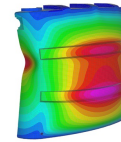
- Proform Solutions - non-linear static analysis of 50,000 litre and 22,500 litre polyethylene industrial tanks with access manholes.
- Warrior Industries PNG - analysis and design of 3,000, 5,00 and 9,500 litre above ground polyethylene water storage tanks. These tanks had to withstand earthquake loads for Region A soft soil and required steelwork external frames.
- Durabuilt - analysis of light gauge steel garden sheds for wind loads up to N2 as per AS4055-2012. The sheeting for the sheds was modeled using orthotropic plate shell elements. Results for full scale testing on fasteners was used to determine fastener spacings for these structures.
- Schaefer SSI - analysis and proof checking of a 35 metre high, high bay rack clad pallet racking system for Blum Sydney. The racking in this case supported the external cladding. As such the rack was exposed to wind loading in addition to static and earthquake loads. The rack was modelled in 3D for using 1D line elements and the rack was composed of both light gauge steel and hot rolled steel elements.
- Cardno - harmonic response analysis of a section of reinforced concrete building supporting new air conditioning chiller units at roof level. The purpose of the analysis was to determine if an alternative support arrangement for the chillers would induce any perceptible levels of vibration in the floor directly below. The reinforced concrete building was modeled using 2D plate/shell elements for the concrete slabs and 1D line elements for the concrete down-turn beams. The chillers were simulated using 1D line element "Stiff beams" whilst the connection between the chillers and the building were modeled using connection elements. The analysis results indicated that the outcome was highly dependent on the structural damping and that for conservative levels of damping perceptible vibration were unlikely.
- Absco Industries - non linear geometric and boundary contact analysis of nested light gauge steel lipped C box section.
- Dematic - New Cold 1 and 2 - non-linear geometric, non-linear material and boundary contact analysis of a light gauge steel rail which supports a moving cart and stored pallets. The cart is used to move pallets from one end of the rail to the other as a part of a automatic storage and retrieval system within a high bay pallet racking system. The rail and its direct supporting elements were modeled using 2D Quad4 plate/shell elements with the movement of the cart along the rail simulated by multiple load cases with the cart in various positions. The final simulation involved loading up the rail with successive pallets in order to check ultimate, serviceability and fatigue capacity.
- Schaefer SSI - Non-linear geometric analysis of light gauge steel shelving system for Stanly Black and Decker Melbourne.
- Bito - Non linear geometric analysis of light gauge steel multishuttle racking for The Iconic, Yennora.
- Viscount Plastics - 2,000 litre above ground slimline water storage tank rotationally moulded from linear low density polyethylene. A non-linear geometric analysis incorporating visco-elastic material model was used to minimise the material thickness of the tank.



- Witron Germany - Non linear geometric analysis of a LFS sequencer for the Coles Redbank Project. This structure was comprised of both light gauge steel and rolled steel members in combination. The purpose of the sequencer is to provide a "parking area" where cartons can be temporarily placed prior to being sent in the appropriate order for palletising. The FEA model consisted of 1D line elements with a significant number of load cases to account for the 2 lifts which are used to place totes within the sequencer.
- News Limited – harmonic response of a reinforced concrete press base for their new print facility in Melbourne. The analysis work included natural frequency and harmonic response analysis of the suspended slab supported by piles in order to predict deflections of the slab under the rotating loads from the printing presses.
- Hong Kong International Airport and Western Sydney International Airport. Structural proof checking of a light gauge steel early bag storage racking structure for Bito Germany. This required non-linear geometric analysis of an FEA model of the racks in conjunction with the use of AS/NZS4600 when evaluating member and connection strengths.
- News Limited - harmonic response of a reinforced concrete press base for their new print facility in Melbourne. The analysis work included natural frequency and harmonic response analysis of the suspended slab supported by piles in order to predict deflections of the slab under the rotating loads from the printing presses.
- Coles DC Redbank – Non-linear geometric analysis of a LFS sequencer for Witron Germany. This structure was comprised of both light gauge steel and rolled steel members in combination. The purpose of the sequencer is to provide a "parking area" where cartons can be temporarily placed prior to being sent in the appropriate order for palletising. The FEA model consisted of 1D line elements with a significant number of load cases to account for the 2 lifts which are used to place totes within the sequencer.
- Viscount Plastic (Pact Group) - non-linear geometric analysis incorporating boundary contact the 5,000 litre "Bagel" and 2,000 litre "Square" polyethylene underground water storage tank used in residential applications. The analysis involved using linear elastic material properties based on long term creep moduli in conjunction with both long and short term loads to both AS/NZS4766 and AS/NZS1546.1

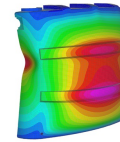
### **Structural Engineering**

- CSR Hebel PowerClad System, development of a design spreadsheet which can design an external cladding system incorporating Hebel panels and light gauge steel framing.
- Dematic SRM-1200 high bay pallet racking automatic storage and retrieval system (ASRS) - development of a design spreadsheet which determined the strength, deflection and fatigue characteristics in accordance with AS4100 and Eurocode 3.



- CSR Lightweight Systems - Cemintel boxed and simply supported eaves linings. Development of span tables and supervision of fastener pull-over/pull-through tests.
- Rheem/Solahart Australia - structural proof checking of light gauge steel framing for supporting various types solar hot water systems.
- Menangle Park Panasonic Screen for Spraycraft - structural design of structural steel framing and foundations to support a 8 x 4 m elevated Panasonic TV screen with 2 off access platform to the rear
- James Hardie Australia - proof checking and certification of the Exotec facade system for ultimate wind loads > 6.0 kPa.
- Gibson Shopfitters - formulation, supervision and certification of proof testing regimes for light gauge steel shelving for Big W.
- Sulo Australia - supervision of proof testing of steelwork bin handling trolleys.
- James Hardie Australia - proof checking and certification of compressed fibre cement flooring.
- CSR Gyprock - certification of the CSR CDS Walling system for both residential and commercial applications.
- Rheem - Form 40 Proof checking of roof mounted aluminium framing structures for solar thermal hot water systems.
- James Hardie Australia - Form 40 certification of James Hardie Easylap fibre cement residential facade system.
- Rheem - Certification of roof mounted photovoltaic panel systems.
- CSR Gyprock - certification of the CSR CBS and Matrix Walling systems for both residential and commercial applications.
- Knauf - certification of the Knauf Compleo autoclaved aerated concrete (AAC) external wall panels used in both commercial and residential applications.
- James Hardie Australia - development of James Hardie cladding systems attached to oriented strand board (OSB). The cladding, which either consists of weatherboard planks or sheet, could be attached directly to the OSB or via a fibre cement batten.
- James Hardie Australia, Form 40 proof checking of all James Hardie Australia façade materials for the Northern Territory BAC deemed to comply manual.
- Masonry Blockwork Breezewalls – development of spreadsheets for the assessing the two way spanning capability of Brickworks Breezewalls. A spreadsheet was created which could determine the stresses and deflections of 2 ways panels using multi-level interpolation functions developed from Timoshenko and Woinonsny-Krieger. Once the design stresses in particular were calculated (both in the vertical and horizontal directions) they were then compared to data associated with small scale bond strength tests.





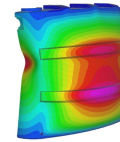
### **Expert Witness Reports**

- Cubic Solutions at Ecoaid - Federal Court Proceedings VID 612/2009 (retained by Keith R Cameron Barristers and Solicitors). Investigations into the performance of below ground arch shaped storage vaults manufactured from injection moulded polypropylene.
- Domm Developments at Kiel Industries & Anor - County Court of Victoria at Melbourne No. CI-09-00715 (retained by Hercules Constan Lawyers). Investigations into elliptical shaped polyethylene above ground storage tanks
- Kingspan at Borealis - Claim No. 2009 Folio 871 in the High Court of Justice, Queen's Bench Division, Commercial Court, London (retained by Kennedys London on behalf of Borealis). Investigations into rotationally moulded above ground polyethylene fuel oil storage tanks. Cross examined by Mr Justin Fenwick QC acting for Kingspan - 15 July 2011.

References regarding this matter:

Mr David Allen QC (acting for Borealis)  
7 King's Bench Walk  
Temple, London  
EC4Y 7DS  
Tel: +44 (0) 20 7910 8300  
[DAllen@7kbw.co.uk](mailto:DAllen@7kbw.co.uk)

- Wadhwa at Chafei - Consumer, Trader and Tenancy Tribunal (retained by MacCallum Lawyers). Investigations brick growth and a water tank failure. Cross examined on 30 September 2013.
- Guilfoyle at Bethell Flooring, Queensland Supreme Court, 2018-2021, investigations into an industrial accident associated with a "Hippo" grout mixing machine. Retained by Australian Business Lawyers.



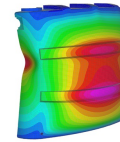
**1995 TO 2009**

**Cardno (NSW) Pty Ltd**

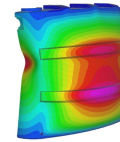
**Finite Element Analysis**

- Sanyi Tunnel, Taiwan, Linear static analysis of slab support structure for rail line fixings.
- Underbridge over the Macquarie River Bathurst, static analysis of cross girder end connection
- Melbourne City Link, Bolte Bridge - Reinforced concrete bridge pier head, static analysis of 3D brick model.
- Emirates Project Dubai, Static analysis of base slab structure for 300m high Hotel and Office towers involving combinations of brick, plate and beam elements.
- Granulator analysis, non-linear static analysis of hardened ring structure utilising compression only gap elements.
- Newdell Line Overbridge Ravensworth, linear static and non-linear analysis of skewed reinforced concrete arch utilising model with beam, plate and brick elements.
- Permanent formwork beams for James Hardie, non-linear analysis of cold formed sections constructed from 8 noded quadratic plate/shell elements.
- EDS Tower Adelaide, linear static analysis of stainless steel glazing supports.
- Phosphate Hill Ammonia Plant, Natural frequency and harmonic analysis of reinforced concrete generator support structure.
- Windy Hill wind Farm Stage 2 - Proof checking of 60 metre high wind turbine support structures including non-linear point contact finite element models of the foundation bases.
- Graham Park Stadium, static analysis of single anchor riser mount seat fixings.
- Concrete plant structures for Favco (Australia) - Linear static and linear buckling analysis of the following structures:
  - 400 tonne 8 celled aggregate bin
  - 100 tonne single celled cement silo
  - 75 tonne twin celled cement silo
- South Australian Cricket Arena lighting towers, linear static analysis of stiffened splice plate connections for a 60 metre high lighting tower. Proof checking for Connell Wagner.
- Mui Fat Buddhist monastery, Hong Kong, preliminary linear static and natural frequency analysis of 60m x 60m clear span triangular space frame roof structure.
- Polycure APS, natural frequency analysis of support structure for 3 off 5 tonne polyurethane vats with rotating agitators.
- Sydney Internal Aquatic Centre Stage 2 - linear static and linear buckling analysis of the dismantling of the temporary Olympic seating structure.
- 124 Walker Street, North Sydney - linear static and non linear analysis of strengthening for existing 22 storey office block. The finite element mesh consisted of the entire building and contained 110,000 degrees of freedom.
- Rotary Dryer - Non linear material and non linear geometric analysis of a 10 m long and 2.3 m diameter rotary dryer. The dryer was heated to 700°C and was constructed from both Grade 304 and Grade 253 MA stainless steel.





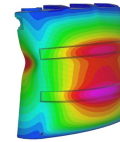
- Briteline 2000 light fitting - Linear static analysis of cast aluminium light fitting. The finite element mesh consisted of over 100,000 10 noded tetrahedron solid elements producing a model with over 600,000 degrees of freedom. The analysis was undertaken to reduce re-tooling costs and to ensure that the light fitting could withstand cyclonic wind loads.
- James Hardie Hardiwall VII - transient thermal analysis of new walling system for a Standard 90 minute fire.
- 124 Walker Street, North Sydney - Impact analysis (non-linear transient dynamic) on double glazing. The double glazing had to resist a 1kg object travelling at 25 m/s.
- Transgrid 330/110 kV Haymarket substation - natural frequency analysis of basement level slab supporting 9 off 95 tonne SF<sub>6</sub> gas cooled transformers oscillating at 100 Hertz.
- Ezidek flooring system, transient thermal analysis of new flooring system for a Standard 60, 90, 120, 180 and 240 minute fires.
- Burnley Tunnel, Melbourne, Point contact modelling of enhancement works for existing concrete lined tunnel.
- TransRamp™ Impaired mobility access platform, non-linear geometric and impact analysis of stainless steel nose plate, shock and spectral analysis of rolling stock support frame.
- Alcan Aluminium, non-linear geometric and linear buckling analysis of precipitator tank support cleats. Analysis undertaken investigated a number of different cleat geometries to ensure that stresses on the main tank shell were kept at an acceptable level.
- ADI Limited, Australian Navy Patrol Boat Tender Bid, transient thermal analysis for the comparison of bulk-heads constructed from steel, aluminium and fibre reinforced plastic during standard fire events.
- Newcastle City Council, Gibson Street car parking station, natural frequency and spectral response analysis of multistorey car park for the purpose of optimising strengthening requirements for earthquake loads.
- Light gauge stainless steel modular water storage tanks - post buckling behaviour investigations using non-linear geometric analysis with non-linear material (elasto-plastic) and point contact.
- Analysis and design of light gauge racking structures including selective racking, pick module racking and drive-in racking. Analyses include non-linear geometric, linear buckling and post buckling behavior.
- Linear buckling analysis of pallet runner support beams within drive-in racking structures.
- Siemens Dematic, Linear buckling and non-linear post buckling behaviour analysis of wide framed high bay racking structures.
- Christmas Island Detention Centre – Linear Static Soil-Structure interaction modelling of a reinforced concrete building supported by engineered fill of varying depth.
- Freight Australia/Renzo Tonin Associates – Evaluation of cracked bolsters in existing S Class locomotives in accordance with RCP-5102.



- Alstom – Linear static, linear buckling and post buckling behaviour analysis of a 375 cubic metre elevated fly ash silo with intermediate ring beam stiffening and multiple outlet hopper.
- Alcan Gove Stage 3 – Team leader for a group of 4 analysts with fee value approximately \$200K. Scope consisted of non-linear geometric analysis and post buckling behaviour of thickener tanks and washers for Area 641, 634 and 653. Analysis also included allowance for pre-assembled module transport via road and sea.
- Dubai International Airport Terminal 3 – Material optimisation of cast stainless steel glazing spider supports.
- Royal Brisbane Hospital, Post buckling behaviour analysis (incorporating imperfections) of 6 metre high stainless steel cylindrical flues with D/T ratios up to 200.
- Dawson Alliance – linear/non-linear static analysis of a 50 metre diameter thickener with sag plate floor.
- Chatswood Central – investigations into vibration of an existing 10 storey reinforced concrete building using both finite element analysis and on-site monitoring.
- Hong Kong Mega Tower – Linear static optimisation analysis of cast stainless spider castings for Hycast metals.
- EGR Display – non linear geometric optimisation analysis of a 1500 litre above ground polyethylene water storage tank.
- Trymak – non-linear geometric analysis of a 2000 litre slimline polyethylene above ground water storage tank.
- Spantec Systems, non-linear geometry, non-linear point contact analysis of light gauge steel box beams fabricated from nested and riveted C sections. Investigations into major axis flexural capacity for various effective lengths.
- Roll over protection cage (ROPC) design to ADR 59/00 for both Ford Ranger and Renault Kerax mining vehicles. Non-linear material, non-linear geometric impact analysis for Leightons Indonesia.
- Supervision of the linear static/linear buckling analysis of a 85,000 litre truck mounted, 4 celled baffled diesel tank for Atagora Australia.

### **Structural Engineering**

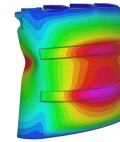
- Avoca Palms Residential Development Avoca, 33 residential units, reinforced concrete carpark slabs, transfer structure, suspended residential slabs, load bearing masonry and structural steel roof design.
- Maroubra Road, Maroubra, Detailed design of 9 storey residential building which included the design of normally reinforced flat slabs with irregular geometry and support system.
- Goulburn ICMC - detailed design of additional maximum security prison at Goulburn Jail.
- Blue Haven retirement village Kiama, Stage 5 Phase 1, detailed design and documentation of a normally reinforced 7 level building. The building consisted of 2 levels of car parking with transfer structures and 5 levels of self care apartments on top.



- Koppers Australia, formulation of design charts for cantilever and crib type retaining walls constructed from treated slash pine.
- Certification and design of James Hardie fibre cement sheeting systems as shear walls in residential applications.
- Development of the James Hardie 'Hardiwall VII' lightweight walling system. Our involvement included structural design for vertical and lateral loads and combinations thereof.

### **Expert Witness Reports**

- A V Jennings Pty Limited ats Dance & Anor - District Court Proceedings 3414 of 2000 (retained by Hunt and Hunt)
- Corkjoint (Australia) Pty Ltd & Ors - ats - Hyder Consulting (Australia) Pty Ltd, Winmallee Sewerage Treatment Plant - Supreme Court Proceedings 55044 of 2000 (retained by Minter Ellison)
- Caterair Airport Services – investigation into failed autoclave door – non-linear point contact analysis of autoclave door assembly including investigations into failure scenarios - report dated 13 September 2005 (retained by Norman Disney and Young).
- North Sydney Council ats Binks – Non-linear transient dynamic analysis of a timber lightpole during a vehicular impact – report dated 21 February 2006 (retained by Phillips Fox).
- Expert witness report on brand compatible steel storage racking – draft report 14 February 2006 (retained by Siemens).
- Workcover ats Consolidated Extrusions Pty Ltd – Non-linear geometric analysis of rolled section steelwork cantilever racking, 2183 of 2006, Industrial Court of NSW (retained by Sparke Helmore).
- Chalker T/A Chalker Constructions ats Dalamaras, investigation of composite flooring system, Consumer Trader Tenancy Tribunal of NSW, HB 05/17813 (retained by Caldwell Martin Cox).
- Darren Quirk ats Metalco Pty Limited, investigation into industrial accident involving fork-lift trucks, District Court of NSW, 6214/06 (retained by Watkins TapSELL).
- Academy Builders and Restoration P/L ats Owners Corporation of Strata Plan 11775, investigation into aluminium balustrades, District Court of NSW, 2231/2008 (retained by McCabe Terrill).
- Watson Cold Store (Sydney) P/L ats Gamcorp, load rating and long term creep analysis of an insulated slab on ground supporting selective pallet racking. Supreme Court of NSW, 55063/2007 (retained by McCabe Terrill).
- Lucas Drilling, Rig #151, investigation into fatality at Roma, August 2009. Examination of load restraint applied to a semi-trailer transporting pipe rack drilling equipment September 2009 (retained by Sparke Helmore).



**1990 to 1995**

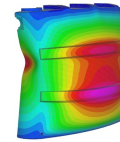
**Hyder Consulting**

**Finite Element Analysis**

- Head Office for Prospect Electricity, Huntingwood - 67m high structural steel tower, linear static and natural frequency analysis.
- Extensions to Earville Shopping Centre, Cairns - linear static and natural frequency analysis of structural steel canopies.
- Extensions to Wallerawang Power Station - linear static analysis of dry stacker storage shed, 109m diameter clear span portal frame.
- Sydney Harbour Tunnel Project - linear static analysis incorporating staged stressing for the modifications to the Conservatorium Road bridge, converting a 2 span bridge into a single span bridge.
- Western Harbour Crossing Tunnel Project, Hong Kong - linear static analysis of slabs and transfer wall elements for the Sai Ying Pun and West Kowloon reclamation ventilation buildings, linear static analysis of Sai Ying Pun ventilation building sheet pile wall cofferdam strutting.
- My Thuan Bridge, Ho Chi Minh City, Vietnam - linear static analysis of 200m span double cantilever bridge, linear buckling analysis of bridge piers, linear static analysis of approach spans considering incrementally launched construction.
- Development of a Gypsum Clay Pigeon - linear static analysis of a clay Pigeon target.
- Geraltion Grain Silo - linear buckling analysis of ring beam.

**Structural Engineering**

- Head Office for Prospect Electricity, Huntingwood - 3 level reinforced concrete building with structural steel roof.
- Centrepont Tower Lightning Protection, Sydney - design check of new lightning protection facility.
- Melbourne City Link, Southern Bypass, Melbourne - Tender design of:
  - Cut and Cover Tunnels using bottom up construction, top down construction with diaphragm walls and cast insitu box construction.
  - Ventilation buildings, reinforced concrete design.
- Western Harbour Crossing Tunnel Project, Hong Kong - Design of Sai Ying Pun and West Kowloon reclamation Ventilation buildings in reinforced concrete and Sai Ying Pun ventilation building sheet pile wall cofferdam strutting in structural steel.
- Sydney Harbour Tunnel Project - design of prestressed concrete planks for the exhaust air tunnel adjacent to the north east pylon of the Sydney Harbour bridge.



**1989 to 1990**

**University of Sydney Wind Engineering Services**

### **Wind Engineering**

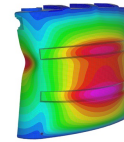
- Lillyvale (ANA) Hotel, Circular Quay Sydney - Aeroelastic wind tunnel tests.
- Quay West Apartment Complex, Circular Quay Sydney - Aeroelastic and cladding pressure wind tunnel tests
- Singapore International Convention Centre, Suntec City Singapore - Aero-elastic, cladding pressure and ground level environmental wind tunnel tests.

### **Published Papers**

- D.L. Beneke & K.C.S. Kwok - "*Aerodynamic effect of wind induced torsion on tall buildings*", Proceedings of the Second International Colloquium on Bluff Body Aerodynamics and Applications. December 1992. Special Edition Journal of Wind Engineering and Industrial Aerodynamics, Volume 50.
- D.L. Beneke & K.C.S. Kwok - "*An estimation procedure for wind-induced torsion of tall buildings*", Proceedings of the Third International Symposium on Wind Engineering Volume 1 p.p.341-346.
- D.L. Beneke, W.P. Chant and V.Q. Hua – "*Simulation of Fire Tests On Concrete Slabs Using Finite Element Analysis*", NAFEMS Benchmark July 2005, Australian Structural Engineering Conference September 2005.
- D.L. Beneke, W.P. Chant and J.B. Anderson – "*Optimisation of carbon fibre laminate reinforcement in the upgrading of reinforced concrete buildings using finite element analysis*", FRPRCS-8 University of Patras, Greece, 2007.
- D.L. Beneke and R.J. Feller – "*Reinstatement of the flexural fatigue strength of precast concrete link slabs using CFRP*" Asia-Pacific Conference on FRP in Structures (APFIS 2007), University of Hong Kong, China, 2007.
- Beneke, D.L., Thumkunta, J.R and Koen, D. J. (September 2010), "*Optimal Structural Design of Circular Rotationally Moulded Above Ground Polyethylene Water Storage Tanks*", American Society of Civil Engineers, Practice Periodical on Structural Design and Construction, Volume 16, No. 2.
- Hendarta, W, Beneke, D.L. and Koen, D. J., "*Ductility Tuning of Light Gauge Steel Pallet Racking for Earthquake Loading in the Cross-Aisle Direction*", Australian Structural Engineering Conference, September 2018.

### **Presentations**

- MSC Software - Competitive Advantage Engineering 2003 - Keynote Speaker - "Design of Wind Sensitive Structures using Finite Element Analysis".
- MSC Software – Virtual Product Development 2004 - Keynote Speaker - "Analysis of light gauge pallet racking".



### **Technical Committees**

- Member of Standards Australia/New Zealand Technical Committee BD-062 Steel Storage Racking
- Member of Standards Australia/New Zealand Technical Committee PL-046 – Polyethylene below ground storage tanks and sub-committee for above ground water storage tanks.

### **Board Representation**

- Australian Rotational Moulders Association, technical advisor 2010-2015

### **Interests**

Martial arts - 5th Degree Black Belt, Australian Hapkido Association - Hornsby Heights Dojang

Motor Racing - Impreza WRX Club NSW -, Speed Championship Rookie of the Year 2012, Motorsport Club Champion 2016, Top 10 outright Subinats 2015 and 2018 and Class 6D CAMS Supersprint Champion 2019.

Travelling overseas