



**DARREN MITCHELL**  
DIRECTOR  
CURRICULUM VITAE

# DARREN MITCHELL CV



## PROFILE

Darren has over 16 years of rounded experience associated with design, management, contract documentation and construction of small to very large building projects in a variety of sectors including health facilities, education, retail, residential, sports, corrections, industrial and commercial office buildings.

Darren has amassed a comprehensive knowledge of structural engineering design experience through his work on buildings projects in New Zealand, Ireland, Australia, Hong Kong and South East Asia. He is experienced with many international design practices and standards including British, European, New Zealand, Australian, ACI and UBC. Darren is skilled in the design of various building materials and systems, including reinforced concrete, precast concrete, timber, glazed facades and is particularly skilled in design of structural steel and post-tensioned concrete buildings.

He is also an experienced site supervisor, with the credibility and communications skills necessary to provide clear directives to the onsite construction team. Darren has proved that he is equally capable of building trusted relationships with clients and other stakeholders.

Darren enjoys applying his engineering brilliance to produce safe and robust structural designs that are tailored to meet the specific requirements of each individual project. He applies 'best practice' to deliver high quality solutions.

Darren's outstanding technical competence coupled to his natural management ability means that he co-led Aurecon's Buildings Structural Group in Auckland successfully for several years. Consequently, Darren is ideally placed to provide structural and civil engineering leadership and technical guidance to project teams. Darren has a positive outlook and team player attitude.

## QUALIFICATIONS

BE Civil (1st Class Hons) – Bachelor of Civil Engineering, University College Dublin 2000

Chartered Professional Engineer (CPEng) 2007

Kings Hospital School, Dublin 1996

Member of the Institution of Professional Engineers New Zealand (MIPENZ)

## CAREER HISTORY

2015 – Present, Director – Structus Consulting Limited

2015 – MSC Consulting, Auckland

2004 – 2015 Associate, Buildings – Aurecon, Auckland (includes overseas placements)

2000 – 2004 Project Engineer, Arup Consulting Engineers, Dublin, Ireland

## MANAGEMENT SKILLS

- Track record in successful leadership and guidance of structural and multi-discipline design teams on large projects
- Ability to relate well to clients, stakeholders and project teams, providing clear direction and advice
- Strong communication skills, can explain technicalities in simple terms when required
- Proven project and design management ability with a large portfolio of successful and timely outcomes
- Loyal client base with negotiated contracts common, and where tendering is required Darren has a history of high quality project submissions and successful contract negotiation Technical Skills

## TECHNICAL SKILLS

- Comprehensive theoretical knowledge supplemented by wide variety of practical experience
- Specialist in the design of steel frame, precast and insitu reinforced concrete, post-tensioned concrete, timber, masonry, and composite structures
- Detailed knowledge of the complete design process and construction documentation
- Proven ability to oversee construction work onsite and act as Engineer's Representative
- Meticulous about meeting or exceeding design standards and safety requirements

## PROJECT EXPERIENCE

### COMMERCIAL AND RETAIL PROJECTS

#### **Tauranga Crossing, Tauranga, 2013 - 2014, \$30m**

Stage 1 of landmark retail development consisting two major stores, two mini-majors and multiple specialty retail stores. Darren won and led the structural engineering component of this landmark project, with engineering and drafting services delivered out of Bangkok, Thailand.

#### **Van Den Brink Development, Auckland, 2007-2012, \$40m**

This development consists of a four-storey Office building over a basement carpark, large Supermarket building with post-tensioned slab over basement carpark, and separate two storey Retail Building. Darren provided leadership for structural, fire and civil engineering services on this development project, from the initial concept through to completion of the construction effort.

#### **Countdown Refurbishments, NZ wide, 2016-present**

Refurbishment of 5 no. Countdown supermarkets to date, including new mezzanines, concrete slabs, structural bracing, rooftop plantrooms, bulkheads, partition walls, pylon signs, building component seismic restraints and floor trenches. Provided structural engineering design, Revit documentation and construction monitoring.

#### **Countdown Tawa, Wellington, 2012, \$8m**

The supermarket building consists of 4,200m<sup>2</sup> of Countdown Supermarket with further on grade parking space for 248 cars. Long span steel portal frames form the superstructure.

Striking Precast concrete panels form a visually stunning façade. The site was developed by the Vendor and a review of the Vendor's civil works design formed part of the scope of works. Provided civil, structural and geotechnical engineering construction monitoring through the Wellington office for this project, while the structural and civil design and client liaising was located in Auckland with the project design team.

**City of Dreams Casino, Macau, 2007, NZ\$5b**

This project consists of six 40-storey residential and hotel towers rising from a multi-level podium incorporating 500,000m<sup>2</sup> of casino, entertainment, and retail precincts. It includes a single level basement carpark under the entire podium. Darren spent four months in Hong Kong as Structural Leader for the podium and energy centre during the design phase. The structural team operated as part of a JV consortium and were based in a project office.

**Brookfield Place, Perth, 2008, AU\$500m**

This slender commercial building consists of a 47-storey office block over a 4-storey basement and is the tallest in Western Australia. It uses a lateral stability system consisting of steel megabridged frames and an offset reinforced concrete core. Darren spent six months in Perth, leading the structural design team from the initial design phase through to production of the construction documentation.

**Maroochydore Government Office Building, Queensland, 2009-2010, AU\$50m**

This project required detailed design and production of construction documentation. This high-profile 10-storey post-tensioned concrete building over single level basement carpark achieved a five star Greenstar rating.

Darren led the structural design team operating from Auckland.

**Liffey House Office Building, Dublin – Ireland, 2001-2003, €14m**

This award-winning landmark building in the city centre consists of an eight-storey office block over single level basement carpark. Darren steered the development from the initial scheme design through to construction completion, and spent six months onsite as the Engineer's Representative.

**67 Customs Street, 2013-present**

Redevelopment of this 12 storey building by adding 3 levels, refurbishing, extending and recladding to create a top class 5+ Star hotel in Auckland's CBD. Darren won this project and managed the façade engineering component for the recladding.

**75 Queen Street, Auckland, 2013-2014**

Seismic assessment, structural strengthening and substantial tenancy refurbishment for this 4 to 6 level heritage building at a prime location in Auckland's CBD. Darren won this project and was project director for structural, geotechnical and fire engineering services through a staged development of the building.

**Westfield Downtown, Auckland, 2008**

Preliminary design of 30+ storey office building, with retail podium over 5 level basement carparks in Auckland's CBD. This building was proposed to replace the existing Westfield retail and carpark building. Precast concrete floor system, insitu RC columns and offset post-tensioned concrete stair and lift core. The defining element of this project was the proposed underground rail link from Britomart to Eden passing through basement levels 2 to 4 on a tight radius. Significant transfer structure was designed to support the

Southern end of the concrete core, which oversailed the rail tunnel. Top down basement construction with contiguous pile diaphragm walls. Darren provided the design and documentation of the basement structure and rail tunnel within the basement for Westfield and Ontrack.

#### **85 Customs Street, Auckland, 2009**

Design and Construct 40+ storey office building, with retail podium over 4 level basement carparks in Auckland's CBD. Darren provided structural engineering construction advice and alternative designs/improvements to the incumbent developed design solution for tender submission with Mainzeal.

#### **35 Barrow Street, Dublin – Ireland, 2004, €18m**

Nine stories over basement city centre office block which Darren carried through to detailed design and documentation for construction stage. In situ reinforced concrete frame and post-tensioned concrete slabs. Flood protected to 3 metres above ground level.

#### **Twilfit House, Dublin – Ireland, 2003, €16m**

Preliminary design of multi-story steel framed city centre office block with hanging glazed conference room. Detailed design and site supervision of intricate three story steel frame terraced infill building incorporating cantilevered concrete foundations, masonry walls and timber framing.

#### **54 Clarendon Street, Dublin – Ireland, 2000-2003**

Detailed design and site supervision of intricate three story steel frame terraced infill building incorporating cantilevered concrete foundations, masonry walls and timber framing.

#### **Marble Mountain, Danang – Vietnam, 2009**

Developed design in Auckland for the superstructure of 12 and 10 storey insitu RC shear wall (longitudinal direction) and sway frame (transverse direction) buildings. Construction documentation in Auckland of the 3m thick insitu RC raft foundations. Collaboration between Auckland, Wellington, Christchurch and Hanoi offices to analyse, design and document these buildings. Site monitoring of the raft foundation settlements, including precast block and sand kentledge, provided results that matched very closely with the analysis. This project was an Aurecon internal awards submission.

#### **Fresh Choice Te Nge, 2016-present, \$4 million**

Single-storey Supermarket building in Rotorua. Mezzanine floor and rooftop plantrooms. Total floor area approximately 1,300m<sup>2</sup>. Provided all structural engineering design and Revit documentation, plus construction monitoring.

#### **Fresh Choice Oxford, 2015, \$3 million**

Delivered by Darren Mitchell while at Aurecon. Provided all structural engineering design and documentation. Single-storey Supermarket building to replace existing Supermarket heavily damaged in the Christchurch earthquakes. The build was required to be staged around the existing building in order to maintain continuous operations of the Supermarket. New carpark and site works, including temporary housing of plant, etc., Mezzanine floor and rooftop plantrooms. Total floor area approximately 1,300m<sup>2</sup>.

#### **Project Diego, June 2016 – Present, \$16 million**

A new 8000m<sup>2</sup> warehouse with 3 no. two story offices, for Stride Property Group. The new

facility is to be located at 1 Rorke Drive, Auckland. The warehouse is to contain a high specification post-tensioned slab. The warehouse width varies from 75m to 100m resulting in large spans for the steel frames.

**Corinthian Drive / CDB Goldair / UD Trucks / Daniel Silva / Bishop Dunn, Auckland, 2004-2015**

Large format warehouse and associated office buildings consisting predominantly of steel portal frames and precast concrete wall structures with 2 storey adjoining office facilities.

**135 St Asaph St / 221 Annex Road, Christchurch, 2015**

Design management of detailed seismic assessment and structural strengthening of large format warehouse and associated office buildings consisting predominantly of steel portal frames and precast concrete or masonry wall structures.

**87-89 Albert Street – Detailed Seismic Assessment and Strengthening, Auckland, 2016**

The building is a 13 storey reinforced concrete moment resisting frame designed and constructed in the 1980's. The building is currently used as an office building. The client wished to consider changing the use of the building, which required that the seismic performance of the building be assessed against the current building standards. In order to assess the seismic performance of the tower advanced computer analysis techniques were used to accurately quantify the building response during an earthquake. Stair remedial works to allow for sliding to accommodate building drifts.

**1135 Arawa Street – Detailed Seismic Assessment and Strengthening, Rotorua, 2016**

1135 Arawa Street is a 10 storey reinforced concrete shear wall building located in Rotorua. The building was designed and constructed in the 1980's. The building is currently used as an office building. The client wishes to consider changing the use of the building, which requires that the seismic performance of the building be assessed against the current building standards. In order to assess the seismic performance of the tower advanced computer analysis techniques were used to accurately quantify the building response in during an earthquake. Strengthening of shear walls through the use of fibre reinforced polymer and stair remedial works to allow for sliding to accommodate building drifts.

**85-101 Alexandra Street – Detailed Seismic Assessment and Strengthening, Hamilton, 2016-present**

85-101 Alexandra Street is a reinforced concrete office and car parking building located in Hamilton. The building is comprised of four separate structures including 4 storey carpark podium and two 10-14 storey Office towers. The building was designed and constructed in the 1980's. The seismic bracing for the building consists of reinforced concrete moment resisting frames. In order to evaluate the seismic capacity of the building Structus developed a computer programme to analyse the frames. This resulted in an accurate determination of the buildings seismic capacity. Structural strengthening works to allow for 100% NBS performance of the building were designed and construction monitored by Structus.

### **165 The Strand – Detailed Seismic Assessment and Strengthening, Auckland, 2016-present**

The building is a 2 storey reinforced concrete moment resisting frame with a 2 storey newer steel structure above. The building is currently used as office and retail tenancies. In order to assess the seismic performance of the building advanced computer analysis techniques were used to accurately quantify the building response during an earthquake. Structural strengthening works to allow for 67% NBS performance of the building were designed and construction monitored by Structus.

### **Millennium Centre, Auckland. Detailed Seismic Assessment and Strengthening, 2016**

Millennium Centre comprises 7 no. mainly office buildings (typically 4 storeys) in total over two level basement carparks, part of which are combined over several buildings. The structures generally comprise reinforced concrete frames and precast concrete shear walls, with the 5 storey carpark a steel k-framed structure. The development was designed and constructed in the early 2000's. In order to evaluate the seismic capacity of the building Structus developed computer programmes to analyse the structures. This resulted in an accurate determination of the structures seismic capacity. Seismic strengthening was implemented to local areas.

### **Pallet Racking Design – multiple projects, 2015-present**

Design of pallet racking presents unique challenges in New Zealand due to the high seismic forces. Structus has worked closely with Pallet Racking Solution to develop design software and processes for the design of these racks. This included laboratory testing

of structural components in order to develop ductile seismic systems which lead to safer and more cost effective designs. Multiple racking design projects nationwide.

### **Peer Reviews, Auckland, 2015-present**

Structural peer reviews for the following projects – 30-40 Enfield Street (\$25m 5 storey residential development), 52 Sale Street (\$13m 9 storey residential development), Pinesong Block G (8 storey retirement village development), Crest Apartments (5 storey development) and Ministry of Education school peer reviews.

## **RESIDENTIAL PROJECTS**

### **Anzac Lofts, Auckland, 2015-2016, \$25m**

Residential development consisting Terraces and Apartment blocks. Terraces – residential townhouse Units to the rear of the site, comprising 4 no. blocks of buildings of 3-4 storey units. Apartments – mixed use development at the front of the site consisting of retail at the lower floor, plus 4 no. additional floors of apartments above, with insets at the upper storeys requiring complex transfer structures. Typically precast concrete intertenancy walls, with steel sway frames in the longitudinal direction, Comflor slab and deep foundations. Full design, documentation and construction monitoring structural and civil engineering services.

### **26 Poynton Terrace, Auckland, 2013 - 2014, \$12m**

Prestigious 10 storey apartment building over 2 level basement in a prominent position near Queen St and Karangahape Road. This building will be an attractive addition to Auckland's skyline. Basement consists complex engineering challenges and incorporates a car stacker system. Darren

won and led this project for structural, civil and geotechnical engineering services.

#### **Gloucester Street Apartments, Christchurch, 2007**

Design and documentation of new 23 storey building comprising mixture of apartments, hotel, carparking, retail and offices. Proposed structure consisted predominantly of insitu reinforced concrete frame with insitu reinforced concrete stair and lift core walls, steel infill framework and precast concrete cladding. In addition, stability was enhanced using insitu reinforced concrete outrigger walls. Darren was Structural Team Leader for this project.

#### **Five Mile, Queenstown, 2007**

Structural design of the first phase of a long term multi-phase 'whole new town'. First phase included retail, offices, carpark and residential buildings typically 3 stories over basement. Mixed use of steel, timber and concrete frame structure. Darren led a structural team in the Auckland office while regularly travelling to Christchurch for meetings and liaising with the client and Structus team there.

#### **North Gheran, Libya, 2009**

Darren was Structural Team Leader for preliminary design and documentation of multiple apartment, hotel, commercial and retail reinforced concrete buildings ranging from 2 storeys up to 10 storeys high on a 1km<sup>2</sup> urban development site in Tripoli, Libya. This project was designed and documented from the New Zealand offices for the Structus Brisbane office.

#### **Le Trong Tan / Dragon Hills / Diamond Island, Vietnam, 2009-2010**

Various projects in Vietnam: Le Trong Tan – Developed design and documentation of 4 no. 30+ storey residential insitu RC towers over single level basement carpark podium. Dragon Hill – Developed design and documentation of 2 no. 30+ storey residential insitu RC towers over single level basement carpark podium. Diamond Island – developed design of 24 no. 20-40 storey apartment blocks over two level basement carpark.

#### **Belle View Residence, Waiheke Island, 2016-present**

Three storey high end residential development including outdoor pools, cantilever roof and floor structures, tiered pile retaining structures on very steep slope. Full structural design and documentation services.

#### **J & K Finlay Apartments, Tauranga, 2005**

Detailed design and documentation produced for three stories over basement apartments at Mt Maunganui. Precast prestressed concrete plank flooring stabilised by reinforced masonry and timber frame walls.

#### **Albany Block C Apartments, Auckland, 2015**

Concept structural design for Resource Consent submission of 3 no. 5 storey 2-wing apartment blocks.

#### **12 Stanmore Street, Auckland, 2015-2016**

3 storey high end residential development including basement carpark, outdoor pool, complex transfer structures and large retaining structures. Full structural design and documentation services.

#### **11 Keridale Lane, Kerikeri – Northland, 2016**

Single storey high end residential development including outdoor pool, exposed engineering timber roof structures. Full structural design and documentation services.

## **EDUCATION AND SPORTS PROJECTS**

### **Unitec Tranche 1 – Hub, Trades and Infrastructure, Auckland, 2015**

Darren tendered for and led the structural and civil engineering design for both these projects, as the first Stage in many on the Unitec campus redevelopment. The Hub project is a Social Learning space and consists two new suspended floors within an existing plaza area, with a Glulam diagrid timber roof oversailing the space, spanning onto 'tree' columns. The Trades building is a large format single storey long span structure to house Trades education spaces, and includes large mezzanine structures and part basement. The Trades building is futureproofed for a 4 storey Performing and Screen Arts building oversailing the Trades structure. New wetland that also functions as stormwater detention pond.

### **Wintec Block D Redevelopment, Hamilton, 2012**

Redevelopment of existing Block D into Laboratory facilities, plus the inclusion of an additional floor for student accommodation. Integration of the Block with surrounding existing buildings, including site infrastructure. Considering of buildability and operational issues in busy Wintec City Campus. Darren delivered the structural engineering design for this project.

### **Kings School New Sports Dome and Teaching Facility, Auckland, 2005-2007, \$13m**

Darren led the structural, civil and building services teams in Auckland, Wellington and

Christchurch offices for detailed design and construction phases of these buildings. Multi-level teaching building consists of reinforced concrete frame and precast concrete walls. Large gymnasium with double basement built into steep slope, and mezzanine viewing platforms. Precast concrete floor systems, masonry walls. Cantilevered bored pile retaining walls with ground anchors and spray concrete infill.

### **Christ the King, Auckland, 2007**

New single storey classroom facilities, church, parish, pool facilities and presbytery. Structure consists of lightweight steelwork frames, timber framing, reinforced masonry walls and precast concrete walls. Darren supervised all building services and structural disciplines during the design phases.

### **Auckland Korean Catholic Church and Community Centre, Auckland, 2004-2005**

Detailed design and site supervision of church and associated hallway, offices and classroom block from scheme stage through to construction completion. Lightweight steelwork roof and frame, precast concrete wall panels, and timber framing. Darren also provided project management services on this project.

### **St. Dominic's College New Gymnasium, Auckland, 2005-2006**

Darren led the detailed design and document production of gymnasium and associated adjoining facilities, and construction observation. Lightweight steelwork roof and frame, precast concrete wall panels and steelwork facilities areas. Lightwork steelwork and glazed foyer area

### **Liston College Classroom Block, Auckland, 2006**

Darren led the detailed design and construction monitoring of this two storey ten classroom block. Insitu and precast reinforced concrete frame and precast prestressed concrete floor system. Lightweight steelwork cranked roof over.

**Queensland University of Technology / Advanced Engineering Building / Queensland Police Academy / Brisbane City Hall and Prince Alfred College, Australia, 2009-2010, AU\$10-200m**

Darren was manager of Revit modelling projects from the Auckland office for the Brisbane, Adelaide and Melbourne offices. Revit modelling and documentation was typically produced to For Construction level. The AEB project was detailed with all steelwork and timber connections documented in 3D.

**Ministry of Education, seismic assessments, 2012**

Seismic assessment and reporting for roughly 60 school buildings in the Auckland region. Darren managed a team of engineers to provide fast-tracked response to MoE requirements for brief seismic assessments for a range of school buildings across the region.

**CIVIC PROJECTS**

**Manukau Precinct Project, Auckland, 2010-2014, \$50m**

*Property Council NZ Property Industry Awards 2016 – Winner Excellence, Special Purpose Property Award*

This project required full multi-discipline design for the refurbishment of the existing Manukau Courts building and a proposed new multi-storey building adjacent to it. Darren successfully tendered this project, was project

director and leader of the structural, civil, geotechnical, building service and fire engineering detailed design effort and construction works, and also acted as client relationship executive for the Ministry of Justice.

**Westhaven Marine Centre, Auckland, 2013, \$25m**

Westhaven Marine Centre consists 3 no. two-storey buildings to house commercial, retail, food and beverage, and sail-making facilities. Darren delivered the structural and civil engineering services for Auckland Waterfront Development Agency. Development of an industry first application of sustainable multi-storey timber design that significantly reduces construction programme and cost, while also providing effective durability in marine environment and enhanced aesthetics. Striking features of the building form, including cantilevered external cross timber laminated stairs and upper storey structures.

**Trinity College Dublin Arts Building, Dublin – Ireland, 2000-2002, €6m**

Detailed design and site supervision of high profile, elegant additional steel frame level with curved steelwork roof over existing multi-level reinforced concrete building. The existing building remained in service throughout construction.

**Mt Eden/ACRP Redevelopment, Auckland, 2010-2011, \$180m**

This project redeveloped the existing prison and included two multi-storey accommodation units, a 4-level support building, gatehouse and car park building. Darren managed the civil and structural engineering works during the construction stage.

**Auckland Regional Women's Correctional Facility Enhancement Project, Auckland, 2014-present, \$10m**

Risk mitigation, security upgrade and sundry buildings for this complex enhancement project. Darren won this project and is project director for services including structural, civil, geotechnical engineering, Safety in Design and Flashfire Protection (both provided via Australian resources).

**Paremoremo High Security Corrections Facility, Auckland, 2006, \$7m**

This project involved construction of the At Risk and Health Unit at this operational maximum security prison in Auckland. Darren provided monitoring services during the construction works, which incorporated structural steelwork and precast concrete wall panel buildings.

**Hanoi Museum, Hanoi – Vietnam, 2010**

Engineering report on rectification of defective concrete on 10m deep x 8.4m span concrete cantilevers at roof level. The building is constructed with four lift/stair shafts and concrete deep beams cantilevering at the top floor level. These beams support steel trusses cantilevering a further 16.8m with 3 levels of hanging steel frame and concrete slab. Site visit in Vietnam to assess the defects and develop a remedial solution, which was to remove the concrete in places, grout inject in others and carry out further investigation on the concrete.

**HEALTHCARE PROJECTS**

**Aria Bay, Auckland, 2016-present, \$30m**

New \$30m retirement village development in Browns Bay, Auckland. 2 no. 5 storey apartments blocks and 4 storey day clinic block form the development within an existing

operational retirement village campus. Structural engineering design and construction monitoring from concept through construction.

**North Shore Hospital Taharoto, Auckland, 2013-2014, \$25m**

Mental Health Unit at North Shore Hospital, consisting of single and two level building with 2 no. basement areas. Darren tendered this project and was project leader for structural, building services (mechanical, hydraulics, electrical, ICT/Security, Acoustics and Fire Protection) and civil engineering on this development project, from the initial concept through construction.

**Whangarei Hospital, Whangarei, 2008-2014, \$30m**

New \$16m Mental Health Inpatient Unit at Whangarei Hospital. Civil and structural engineering design and construction monitoring from concept through construction. 100m long x 4.5m high bored concrete pile retaining wall with ground anchors and Shotcrete finish. New \$15m Maternity unit and site wide infrastructure upgrade (including Energy Centre upgrade), provided structural, civil, ICT and acoustic engineering services plus construction monitoring including management of a local sub-consultant.

Provided engineering services on several other projects for Northland District Health Board including civil and building services infrastructure review, a new road and on grade 200 space carpark, CT scanner refurbishment, new temporary carparks / building platforms and seismic assessments on multiple buildings at 4no. Northland hospitals. Darren was Project Director, Leader and Client Relationship Executive for all work with Whangarei Hospital and NDHB.

**Norfolk Southern Cross Hospital,  
Tauranga, 2005-2006, \$30m**

New multi-level private hospital facility on greenfield site. Darren was responsible for leading the structural team from scheme stage through to detailed design and document production for construction stage. Incorporates insitu and precast concrete frames with prestressed concrete ribbed slab system, with a structural steel portal frame operating theatre block. Provisions made for future additional lightweight steel frame storey and extension of operating theatre block. Darren spent 6 months in Aurecon's Tauranga office overseeing all disciplines during construction.

**St. Vincents University Hospital Main  
Block, Dublin – Ireland, 2003, €65m**

Large-scale insitu and precast reinforced concrete multi-story building on a hospital campus. Long span composite castellated steel beams, steel frame links, cantilevered steel scissor stairs and glazed curtain gable walls laterally stabilised by curved catenary cable trusses. Darren provided extensive computer modelling, analysis and design of the glazed gable walls and vibration of the structure below the operating theatres.

**Caughey Preston Trust Rest Home,  
Auckland, 2009-2011, \$7m**

Civil and structural engineering services for this new extension to the existing Caughey Preston Hospital Campus. Single storey steel and timber frame structure over part basement level. Cantilever 4m high bored concrete piles supporting an existing brick two storey building. Darren was Project Leader and Client Relationship Executive for this project from concept design.

**Mercy Ascot, Auckland, 2007**

Darren provided preliminary designs of a two level Cancer Care unit including 2 no. large concrete bunkers for linear accelerators and a two level carpark structure. Predominantly precast and insitu RC design.

**Hermitage Clinic, Dublin – Ireland, 2003**

Darren provided preliminary design for this major hospital project. Building structure schemes consisted of insitu reinforced concrete frame and of composite steel and concrete frame.

**Galway Clinic, Ireland, 2003, €53m**

Large hospital complex consisting of steel frame, insitu reinforced concrete and composite steel/RC structures. Features include central atrium with long span steel truss roof, three level glass fin wall façade and helical stair. Darren provided preliminary design for this project.

