

TREVOR EDWARD KELLY

STRUCTURAL ENGINEER

QUALIFICATIONS

B.E. (Hons) University of Canterbury, New Zealand (1973)
 M.E. (Structural) University of Canterbury (1974).

PROFESSIONAL REGISTRATIONS

Civil Engineer, California (CE 31837)
 Structural Engineer, California (SE 2441)
 Fellow of New Zealand Institute of Professional Engineers
 Member of New Zealand National Society of Earthquake Engineering

POSITIONS HELD

1974-1975 Construction Engineer, MWD, New Zealand.
 1975-1978 Structural Engineer, MWD, New Zealand
 1978-1980 Structural Designer, Degenkolb and Associates,
 San Francisco, California
 1980-1985 Project Engineer, Computech Engineering Services
 Inc., Berkeley, California
 1985-1991 Vice President of Engineering, Dynamic Isolation
 Systems, Berkeley, California.
 1993-Present Technical Director, Holmes Consulting Group

PROFESSIONAL EXPERIENCE

Mr. Kelly has over thirty years professional experience in the design and analysis of a variety of structures, with particular emphasis on the non-linear response of structures to seismic loading, the earthquake evaluation of existing buildings and the application of base isolation and energy dissipation techniques to a variety of structural types.

At Holmes Consulting Group Mr Kelly, as technical director, performs advanced analysis and provides computer programming support for the Company's five offices. He is responsible for the design, analysis and testing of base isolators for all types of structures. Mr. Kelly has also provided technical advice and completed base isolation design and analysis for over 20 building and bridge projects for isolation hardware manufacturers.

Mr Kelly has also been project engineer for the seismic evaluation and design of earthquake strengthening for over 40 steel, concrete and masonry buildings in the USA, New Zealand and Mexico. These projects use nonlinear analysis techniques, either pushover or time history or both.

AREAS OF EXPERTISE

Structural Design

Base Isolation and Energy Dissipation Systems - Design, Specification, Testing
 Reinforced Concrete
 Structural Steel
 Fiber Reinforced Polymers (Composites)

Structural Analysis:

Linear and Nonlinear Static and Dynamic Analysis
 Analysis of Base Isolated Structures
 Buildings, Bridges, Industrial, Dam Structures and Nuclear Power Plants
 Correlation of Experimental Results with Analysis
 Development of Computer Software

SIGNIFICANT PROJECTS

San Onofre Nuclear Generation Station Seismic Evaluation, CA. Seismic Evaluation of Spent Fuel Building using three-dimensional non-linear model.

Seismic Retrofit of Sierra Point Bridge, CA. First bridge retrofit using seismic isolation in the U.S.

Coopers Lybrand Tower, Auckland, NZ. Nonlinear seismic analysis of 42 storey ductile concrete perimeter frame structure. Included full yielding in all columns and girders.

New Zealand Parliament Buildings Restoration. Design of lead-rubber seismic isolators and analysis of strengthening buildings..

Museum of New Zealand, Te Papa Tongarewa. Design, non-linear analysis, specification and testing of isolation system for monumental building.

Berkeley Civic Center, Berkeley, CA. Design of a lead rubber isolation system for an existing historic building; evaluation of prototype and production tests to UBC requirements.

The Gateway, Salt Lake City, UT. Seismic evaluation and design of strengthening for an historic unreinforced masonry railway station being converted into a retail complex.

San Francisco Piers 1½, 3 & 5, CA. Seismic evaluation and design of strengthening for reinforced concrete piers, using pushover analysis in accordance with FEMA 273.

Calleguas, CA MWD-66" PCCP Rehabilitation Project. Strengthening of 1675 mm internal diameter prestressed concrete pipes using FRP.

Wellington Railway Station, New Zealand. Seismic evaluation and design of strengthening for a 1931 steel framed building with masonry infill.

Mecidiyekoy Viaduct, Turkey. Design, non-linear analysis, specification and testing of a lead-rubber isolation system for an Istanbul motorway viaduct.