



Michael Hatjiandreou

Civil engineer, researcher, and early contributor to digital engineering in Australia

Michael Hatjiandreou was a Melbourne-based civil engineer and researcher whose documented work places him among the early Australian professionals exploring the use of computers in engineering practice. Although the available public record is incomplete, the evidence that survives shows a career connected with structural engineering, transport modelling, and the emerging field of artificial intelligence as it applied to building regulation.

Early Life and Education

Hatjiandreou attended St Albans High School in Melbourne during the 1960s.

He then went on to Monash University and in 1971 graduated with a Bachelor of Engineering.

Engineering Career

In 1972 Hatjiandreou joined VicRail in the Structural Design Section.

In 1973 he was appointed Assistant Lecturer in the Department of Civil Engineering at Swinburne Institute of Technology. He lectured in structural analysis, hydraulics and foundation engineering.

In 1974 he had completed his Master of Engineering Science at the University of New South Wales, financially supported by BHP. He researched various aspects of structural steel connections, developed software for structural analysis and did some part-time tutoring in structural design.

In 1975, Hatjiandreou was appointed Lecturer with the Civil Engineering Department at Swinburne Institute of Technology. He lectured in Structural Analysis and Design, Urban Planning and the use of computers in these areas.

He also undertook the Master of Urban Planning course at Melbourne University. His thesis was entitled “Microcomputers in Urban Planning”.

As part of an Professional Experience Program he was employed by Planning Consultants Loder & Bayly and worked on transport planning projects.

From October 1982 to October 1984, Hatjiandreou was employed at the Division of Building Research at the CSIRO. He spent a further six month period with this Division in 1987 as part of his Professional Experience Program. Whilst at the CSIRO, he worked on microcomputer application software development in the field of engineering and urban planning. He worked with computer models which dealt with facilities layout, urban planning and local area traffic management. He also researched the application of expert systems to the Australian Wind Code.

His documented work from the mid-1980s reflects a broad technical range. He contributed to research in structural engineering, traffic engineering, transport modelling, and computer-based building approval systems. Taken together, these areas show an engineer working at the intersection of conventional civil engineering and the new digital tools that were beginning to reshape the profession.

Research and Publications

Traffic modelling and microcomputer-based engineering

In 1985, Hatjiandreou co-authored *Traffic Modelling in the Design Office: A Microcomputer-Based Methodology* with Michael A. Taylor. The work demonstrated how traffic modelling could be carried out on desktop microcomputers rather than relying solely on larger and more expensive mainframe systems. At the time, this represented a significant practical shift, helping to bring computer-based transport analysis into ordinary engineering offices.

Artificial intelligence and building regulation

Also in 1985, Hatjiandreou co-authored *Developing Knowledge-Based Systems for Building-Design Approval* with B. S. Marksjö. This research examined how building regulations could be encoded into software using expert systems, the dominant form of artificial intelligence at the time. Its aim was to support or automate aspects of building-design approval by allowing computers to reason through regulatory requirements.

This work was notably forward-looking. Modern building information modelling and digital compliance systems now perform many tasks similar in principle to those explored in this early research, including rule-based checks against building codes and design requirements.

Structural engineering and steel connections

Hatjiandreou's documented engineering work also included structural testing. In 1986, he was associated with a test report on bolted connections using Huckbolt fasteners, focusing on the strength and performance of steel connections. This aspect of his work reflects the more traditional experimental and materials-based side of civil and structural engineering.

Historical Significance

The significance of Hatjiandreou's career lies not in public fame but in the technical transition his work represents. He was active during a period when engineering was moving from drawing boards, manual calculations, and paper-based regulations toward software modelling, desktop computing, and automated decision support.

His research connected established fields such as traffic and structural engineering with emerging digital methods. In transport, he helped show how microcomputers could be used for practical modelling in design offices. In building regulation, he explored how expert systems could assist with compliance checking, an idea that anticipated later developments in digital design review and computer-aided approval processes.

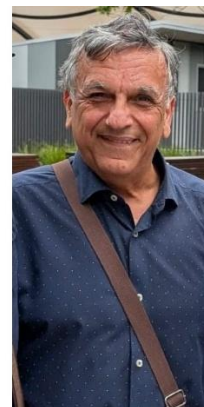
Known Collaborators

Among his documented collaborators were Michael A. Taylor, with whom he worked on traffic modelling, and B. S. Marksjö, with whom he worked on knowledge-based systems for building-design approval.

Assessment

Based on the available evidence, Michael Hatjiandreou can be described as a Melbourne civil engineer and Swinburne-associated researcher who contributed to early Australian work in computer-based traffic modelling, structural testing, and AI-assisted building regulation during the late 1970s and 1980s. His career illustrates a formative moment in engineering history, when civil engineering began to move from paper-based methods toward the computerised and intelligent systems that are now central to professional practice.

N Szwed
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Michael Hatjiandreou
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