

THE INSTITUTION OF ENGINEERS, AUSTRALIA
SYDNEY DIVISION ENGINEERING HERITAGE COMMITTEE
ORAL HISTORY PROJECT

INTERVIEWEE: HENRY J COWAN

No: IEA 16

INTERVIEWER: RICHARD RAXWORTHY

17

DATE: 25 MAY 1992

NO. OF TAPES: 2

TAPE 1, SIDE 1

B & H Eiki Recorder

- 010 Introduction. tape 16a, 25.5.1992
Interview with Professor Jack Cowan
Interviewer: Richard Raxworthy
- 013 Personal Details.
Born: 21 August 1919, Germany (town is now in Poland)
At age 13 went to England.
Family background. Father was a doctor. One of the
pioneers of the diagnostic use of X-rays.
Influences. Father's scientific outlook.
- 030 Schooling. Classical education. Catholic school.
Religious influence. Catholic anti-Semitism. Best
subject - mathematics.
- 044 Impression of Germany at that time. Primitive.
Agricultural methods. Poverty stricken.
- 051 Move to England. Sent by parents. Finished school.
Manchester University. Father and mother got out just
in time. Went to Palestine.
- 063 School in England. Jewish school. Recruiting Jewish
boys from Germany. Academic side. Academic
achievements of school.
- 086 University of Manchester. Studied Engineering [BSc in
civil and mechanical engineering 1939]. Decision to
study engineering. Influence of university staff.
Intellectual atmosphere. Practical work.
- 106 Architecture/ Army career. Became interested in
architecture during the war. Joined army. Mine
accident. Discharge on medical conditions.
Ramifications for applying for jobs. First job.

- 133 Interned during war. Went to Canada. Returned to England to join army. Thoughts on government's decision to intern.
- 175 Army career. Pioneer Core, 'the army's rubbish bin'. Move to Royal Engineers. Bomb disposal. Incident when bomb exploded.
- 208 Post-war England. Job with building contractor [Draftsman, higgs and Hill, Building Contractors, London, 1945-6]. Became a 'regular civilian'. Job with company making aluminium prefabs. [Structural Designer, S&M Development Engineers, 1946] Aircraft designers. Houses designer 'like aeroplanes;'. Ultimate strength design - anecdote re collapsing roof due to incorrect calculations.
- 270 University research establishment. Job at University College, Cardiff [Assistant Lecturer in Civil Engineering, University College Cardiff 1946-48]. Building Research Station, England. Deputy Director - Norman Thomas - interested in architecture. Chair at Cardiff - educating the builders. Persuaded university to set up a university course in building. JC hired - set up course in soil mechanics.
- 340 Establishment of course in soil mechanics. Parents had moved to America to join sister. Visited them and saw people in America about soil mechanics.
- 360 Job in Sheffield. Dual appointment in civil engineering and architecture.

Norman Thomas

SIDE TWO

- 020 Sheffield, 1940s [Lecturer Civil Engineering and Special Lecturer, Architecture, University of Sheffield 1948-53].
Responsibilities for concrete. Concrete - a relatively new material in the 1940s. Research potential. Worked on reinforced and pre-stressed concrete. Difficulties. Difficulty measuring stresses. Equipment available.
- 053 Electrical Strain gauge. Discovered during WWII in aircraft industry. Had not yet been tried on concrete/ Problems with measuring strains with concrete. JC pioneered use of strain gauge in England.
- 080 Waterproofing. Developments during the war. Gained PHD and published papers. Funding of research.
- 104 Australia. Very interested in his research. Became Vice Chairman of the Concrete Structures Committee.
- 115 Teaching. Taught concrete to architects. Architects and calculations. Changes to the course.
- 147 Personal Life. Married 1952. Advertisement for Chair of Architectural Science. Application for chair.
- 167 Australia 1953
- 170 Visiting Professor
- 172 First years in Australia. Implication of aeroplane travel for Australia. Australia out of touch. Potential realised within ten years.
Impression of Sydney as a provincial town in the 1950s. Changes in the late 1950s, early 1960s.
- 206 Changes in Architecture in this period. 1912 attempt to build a 12 story building. Regulation that buildings must not be higher than 150 feet. Role in removing 150 ft rule in 1957.

- 225 Life at university. Background to appointment.
Architecture department.
Alfred Hook. Lesley Wilkinson. Disagreement between.
Retirement of Hook. Moves to abolish chair/ opposition
to architectural chair.
Calls for architects to become more technically minded.
Proposal for chair of Architectural Science.
Conflict within department.
- 277 Changes to courses. Updating structural courses.
Wanted people to think in terms of making the fabric of
the building itself work toward producing a better
thermal environment. Sunlight penetration, sound
insulation/ ideas that had been neglected.
looking ahead to 1970s when energy conservation became
an issue.
- 327 Academic staff. Harry Ashworth.
- 332 Concrete. Introduction of concrete course. Wrote the
first Australian test book on concrete. Structure no
longer a major issue and concrete no longer a major
issue for architects.
- 368 Aesthetics of concrete.

Alfred Hook, Lesley Wilkinson - University of Sydney
Harry Ashworth - University of Sydney

SIDE 3

- 009 Sydney Opera House. Involved from the beginning of the Opera House competition. Opinion of Opera House. Problems. Price. Utzon.
- 331 Where it went wrong. People wouldn't listen to Walter Benning - one of the unsuccessful competitors. Seating conditions stipulated by ABC as part of the design conditions. Positioning of auditoria. Sir Joe Cahill - turned Sydney from a city interested only in Rugby League to a city interested in culture. Building started. Shells built before there was an inside. Problems with interior design.
- 067 Alternative suggestions for structure. Utzon's rejection of other ideas. JC not involved in consulting. Harry Ashworth - chairman on committee.
- 088 Utzon. Popular belief in his sacking. Utzon's design for the interior. Matters of dispute: interior, seating capacity. Letters between Davis Hughes and Utzon.
- 120 Utzon's departure. Opinion of Utzon. Sir Davis Hughes.
- 135 Opera House - 'a flawed masterpiece'. Problems with Concert Hall, Opera Theatre. Visually great. David Littlemore's comments re 'this magnificent shell'.
- 162 The Capitol Theatre. [comments of interviewer]
- 172 Work at university. Setting up of model analysis laboratory. Use of models. Development of idea. Use of strain gages. Testing - Sydney Tower, MLC Building, telescope at Coonabarabran. Impact of computers on model analysis. Mathematical modelling v. physical modelling.
- 220 1st test 1958. Consulting job. Last contract - Lend Lease.
- 249 Sydney Tower.

Utzon, Walter Benning, Sir Davis Hughes, Harry Ashworth

- 250 Description of model analysis for Sydney Tower.
Problem with restaurant at top of tower. Water tank.
- 279 Professional relations with engineers.
- 300 Architecture library. Funding for books. Chairman of
Library Committee.
- 322 University. Position as Dean. Administration.
- 340 Books. Compiling the Dictionary of Architectural
Science.
- 362 Building technology. Difference between science and
technology and architecture.

END OF SIDE 3

INSTITUTION OF ENGINEERS OF AUSTRALIA, SYDNEY DIVISION.

TAPE 16, Side A:

Prof. Jack COWAN interviewed by R. Raxworthy, 26/5/92.

13 Born 21/8/1919 at..... in E. Germany, now Poland.
Aged 13 went to England.
Father doctor, interested in xrays.
Common interest in physics.
Mother not intellectual influence.
Classical education at catholic school.
Catholics least antisemitic.
Excelled at mathematics.

45 Area underdeveloped: farming methods primitive, labour
intensive. Poverty.

52 Schooling in England.
Manchester University.

57 Travelled to England alone.
Father unable to make living overseas.
Parents later went to Palestine.

INTEREST IN ARCHITECTURE

88 Engineering Faculty, Manchester Uni.
Became interested in architecture during WW2.
Joined army.
Injured by mine, eyesight .
Medical discharge.
Employment with building contractor; low wage.

138 Interned prior to joining army, sent to Canada.
Returned to England to join army.

181 Joined Pioneer Corp, transfered to Royal Engrs.
Field Co. 50th Scottish Div.
Mine disposal needed by rapid advance.

199 Booby trap mine.

214 Stayed in England after war.
Aluminium pre-fab company.
Roof designs.

280 University College, Cardiff. Building lectureship. Prof. Thomas.
Course in soil mechanics.

356 Visit to parents who had moved to America.
Research info on soil mechanics there.

378 Dual appointment in Civil Engineering & Architecture at
Sheffield.
380 Side A ends.

Prof. Thomas. | PF1.

TAPE 16, Side B. Cowan cont.

CONCRETE RESEARCH

23 1940's. Sheffield. Concrete research - torsion, prestressed.
Stuart Armstrong, testing machine. Waterproofing.
Published papers. PhD.

90 Research grants.

CAREER IN SYDNEY

102 English firms not interested in torsion.
In Australia, became vice chairman of Concrete Structures Committee.
Put torsion into Aust. code, American code.

120 Taught concrete to architects.
Stephen Welsh.
1952 Marriage.
1953 Migrate to Aust.
Chair of Architectural Sc., Sydney Uni.
Later visiting Prof. to Cornell, Ghana, Turkey.
179 Impressions of Sydney on arrival.
Potentials being realised.
1957 Move to change height rule on buildings.

235 Uni. life, colleagues.
Wilkinson, Hook.
Chair abolished. Became Chair of Arch. Sc.
Updated codes.
Better thermal environment in buildings.
1970's conservation movement.
Harry Ashworth.

343 Maintained interest in concrete.
Vice Chairman of Committee for new concrete code.
Aesthetics.

415 Tape 16, Side B ends

TAPE 17 Prof Jack COWAN cont.

Side A:

COMMENTS ON OPERA HOUSE

10 Opera House. Utzon.
Walter Bunning.
Joe Cahill's ambition.
Harry Ashworth.
Arrup.
Ralph Symonds - plywood interior.
Davis Hughes - seating capacity plan.
Utzon resigned in umbrage.
Flawed masterpiece.

Stuart Armstrong: Stephen Welch: Harry Ashworth: Prof. Wilkinson:
Hook: Utzon: Walter Bunning: Joe Cahill: Arrup: Ralph Symonds.
Davis Hughes. | PF1.

166 Sydney Capitol Theatre redevelopment.

180 Own work at Uni.

Limited facilities.

Model analysis laboratory.

Nervi.

Strain gauges - tests.

Obselete with computers.

Dusseldorf

Sydney Tower.

Wind tunnel tests in Ontario.

290 Relations with Civil Engrs.

Architectural library.

Professorial Board.

354 Dictionary of Arch.Sc.

Course on history of building technology.

391 Side A, Tape 17 ends.

TAPE 17, Side B:

20 Science & technical mechanics.

Historical bias to architechture

Course: relationship between science, architecture & building tech.

Visit to Korea. Roman connection.

Published 2 books.

76 Gaudi.

90 Envolment with Inst. Engrs.

Building Sc. Panel.

Member of Engr.Heritage Committee.

Hon. Member of Inst. of Architects.

106 Seidler.

Grosvenor Place project.

Jack Munday.

Philip Cox.

157 NSW Uni lectures on civil engr.

178 Finger wharf, Woolloomooloo.

Cahill expressway.

Sydney Custom House & square.

Railway station.

230 Travelled widely.

244 Visiting lectureships.

America.

263 Present concrete constructions boring.

Changes.

277 Present interests:

Energy problems.

Comments on glass buildings.

Dusseldorf; Gaudi; H.Seidler;J.Munday;Philip Cox. | PF1.

311 Lectured in English in Turkey.
Return visit to Germany. Problems in Austria.
Future problems with neo Nazis - reunification.
Anti seminism re-emerging in Europe.

397 Not involved in politics - swinging voter.

414 Interview ends. |PF1.