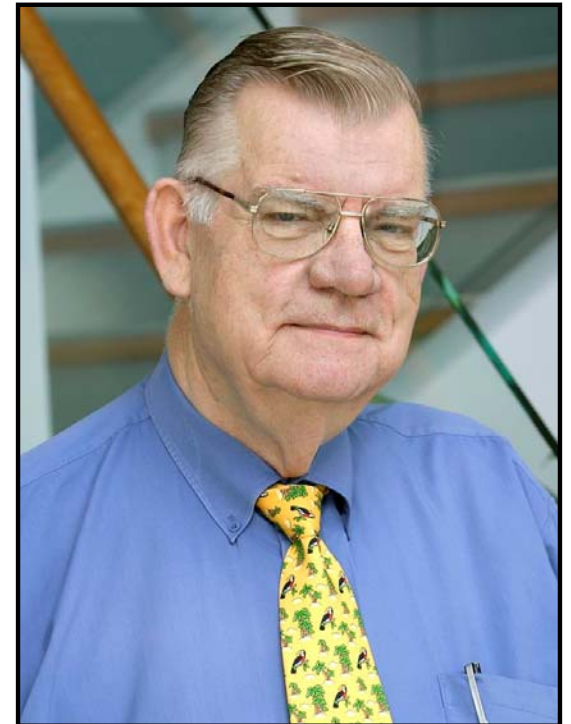


## Honorary Membership of ASCP

- for outstanding contributions to the concrete pavement industry in Australia
- nominations to be invited annually from members
- appropriate criteria might include:
  - design contributions
  - construction achievements
  - research
  - leadership
- perpetual membership of ASCP for no annual fee
- citation in the form of a medallion
- a page to be established on the ASCP website



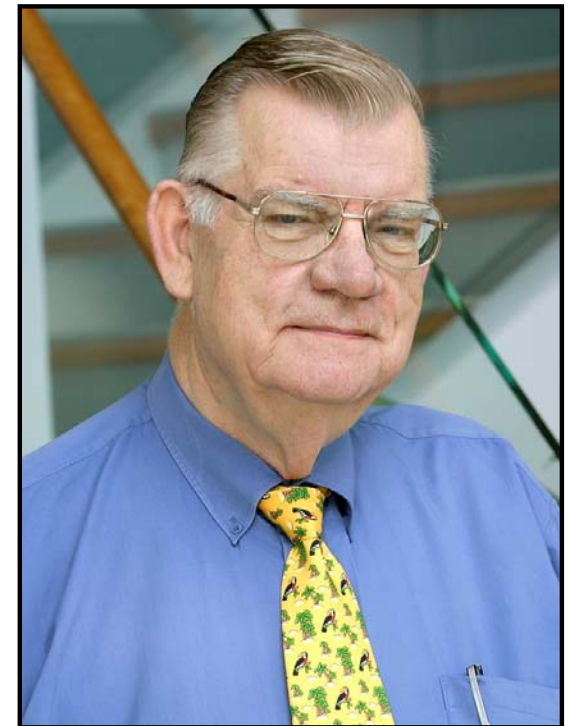
ACPave – Australian Concrete Pavement Association  
Founding member and Director 10 years)

**ASCP – Australian Society for Concrete Pavements**  
Founding Director (to 2011)

ISCP – International Society for Concrete Pavements  
4 years & current

Invited speaker at several local and overseas  
conferences, such as:

- “Concrete Pavements” in Paris
- Baltic International Roads Conference in Estonia
- “Asset Management” in Abu Dhabi



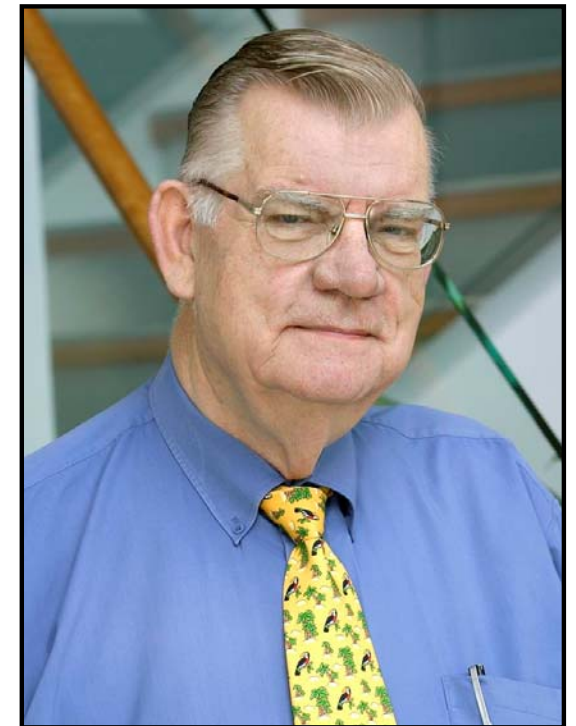
# Arvo Tinni RFD, BE, FIEAust, AIAArbA, CPEng

## Qualifications

- Bachelor of Engineering (Civil) - University of NSW, 1959
- Arbitrator - Institute of Arbitrators, Aust, 1990
- CPEng - NPER 3

## Employment Summary

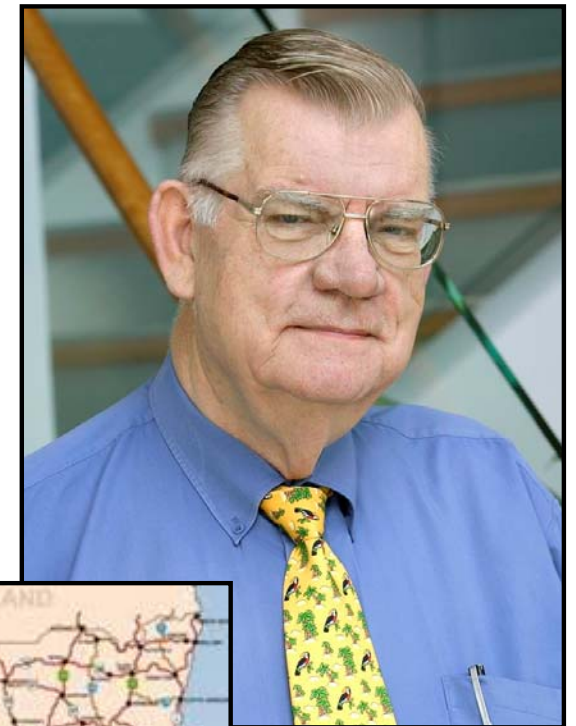
1995 – 2011	Abigroup Contractors Pty Limited
1995 – 1997	Tollaust Pty Ltd, Sydney
1990 – 1995	Statewide Roads, Sydney
1990 – 2011	Tinni Management Consulting Pty Ltd
1988 – 1990	Roads and Traffic Authority NSW
1960 – 1988	Department of Main Roads, NSW



## DMR/RTA 1960 - 1990

- Works Engineer, Ballina
- Works Engineer, Yass
- Resident Engineer, Warringah Expressway
- Works Engineer, Metropolitan Construction Works Office, Granville
- Construction Engineer, Metropolitan Division, Sydney
- First Assistant, Outer Freeways Construction Division
- Divisional Engineer, Newcastle
- **Divisional Engineer, Goulburn \***
- Chief Engineer, Services
- Chief Engineer, Roadworks
- Chief Engineer, Operations
- Director – Priority Projects

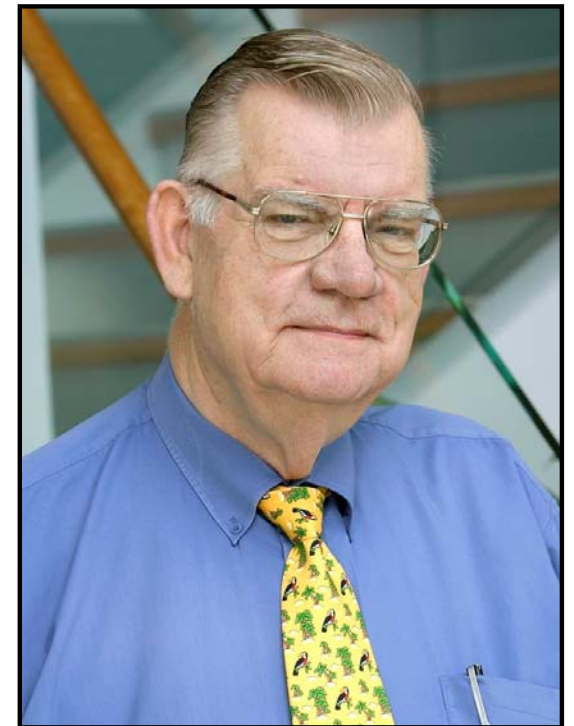
\* Superintendent  
18 concurrent major contracts





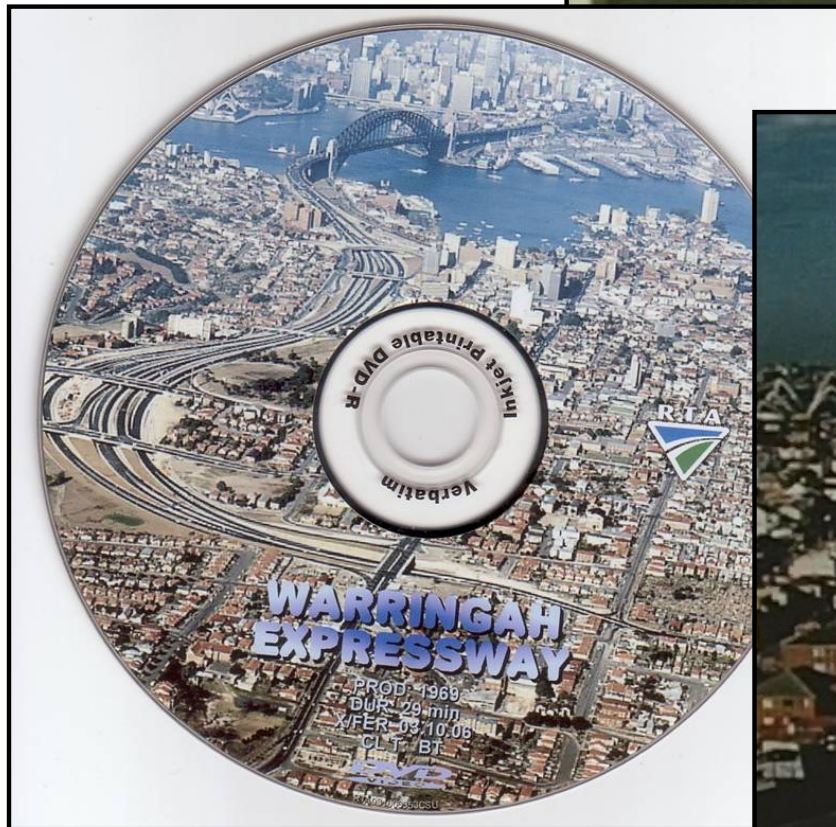
## DMR/RTA 1960 - 1990

- Works Engineer, Ballina
- Works Engineer, Yass
- **Resident Engineer, Warringah Expressway**
- Works Engineer, Metropolitan Construction Works Office, Granville
- Construction Engineer, Metropolitan Division, Sydney
- First Assistant, Outer Freeways Construction Division
- Divisional Engineer, Newcastle
- **Divisional Engineer, Goulburn**
- Chief Engineer, Services
- **Chief Engineer, Roadworks**
- Chief Engineer, Operations
- Director – Priority Projects





18 June 1968

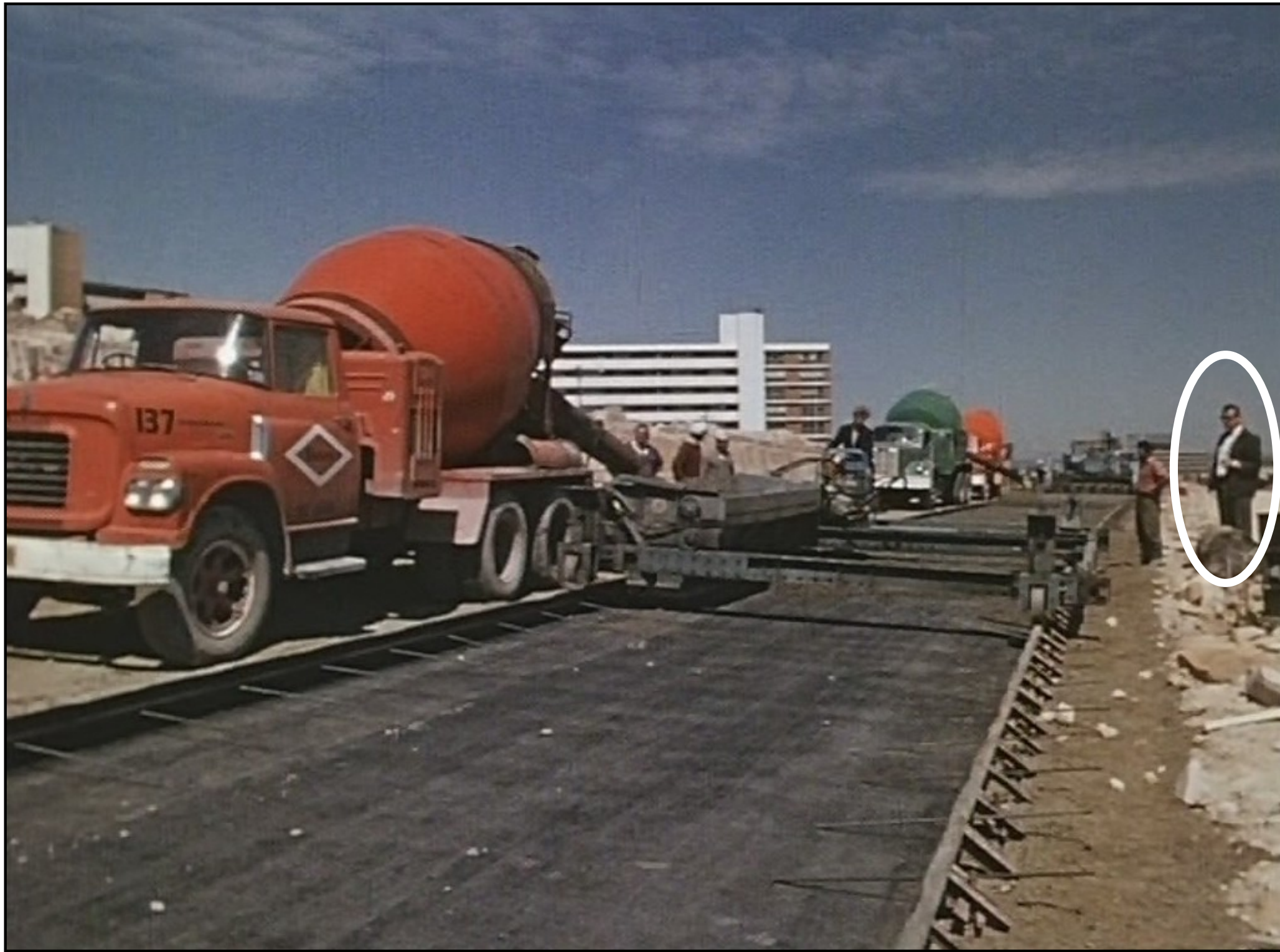




*a hands-on Resident Engineer ....*



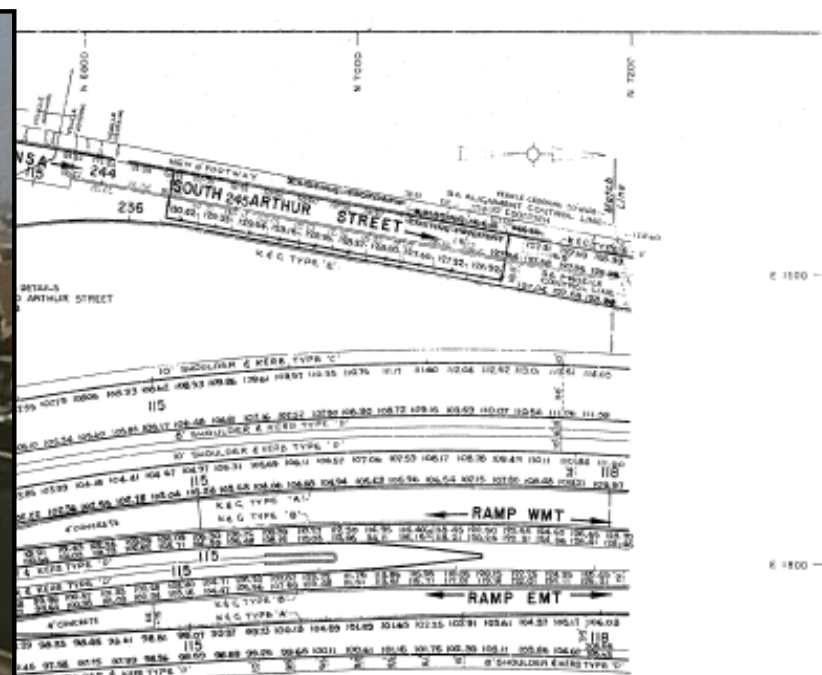












DEPARTMENT OF MAIN ROADS, N.S.W.  
WARRINGAH EXPRESSWAY . MUNICIPALITY OF NORTH

# PAVING PLAN EXPRESSWAY, RAMPS, CONNECTIONS & STR STA. 106+00 TO STA. 118+00

DE LEUW, CATHER & COMPANY  
ENGINEERS  
SAN FRANCISCO, CALIFORNIA

DESIGNED BY EB & AS  
DRAWN BY PJK & MMC  
CHECKED BY EB & RMB JAN 64

APPROVED BY  
R. M. B. 1/25/64

REGN NO. OF PLANS

SHEET NO. P-3

NO OF SHEETS

APPROVED

Chief Engineer  
Department of Main Roads

Date 7-5-64











John Hodgkinson's

# ROAD NOTE 30

CEMENT AND CONCRETE ASSOCIATION OF AUSTRALIA

JUNE 1990

42

WARRINGAH FREEWAY PAVEMENT SYDNEY - 22 YEARS OF MINIMUM MAINTENANCE SERVICE







Lane Cove Tunnel 2007

40-year core testing





## ATTACHMENT B

### ARVO TINNI Papers, Instructional Writings, Presentations Overseas Conferences and Study Tours Since 1994



Date	Topic	Paper	Presentation
<b>Papers, Instructional Writings and Presentations</b>			
September 1994	Use of Pavement Anchors in Concrete Pavements. (Tinni & Stubbs) For RTA NSW	X	
September 1994	Writing and Compilation of "Contracts Management Manual" for RTA NSW	X	
May 1995	Report on Quality of Embankment Construction and Structural Stability of Ben Lamond Road Extension, Minto (Expert Opinion for Arbitration)	X	
October 1995	World's Best Traffic Control Centres The Board, M2 - Hills Motorway		X
August 1996	Major Advances in Long Life Pavement Technology Abigroup	X	
August 1996	Advanced Electronic Traffic Management and Control Centre for Sydney. For RTA NSW.	X	
August 1996	The Theory of Variable Speed Limits For M2 - Hills Motorway	X	
October 1996	Report on Double Layer Concrete Paving in Europe The Board, Abigroup Ltd	X	X
June 1997	Electronic Toll Collection and Electronic Traffic Management Ministry of Transport, Estonia		X
October 1997	Report on Selected Electronic Toll Collection Operations in North America. For the Board M2 - Hills Motorway.	X	X
January 1998	O & M Manual, including ETC and ETM for M2 - Hills Motorway, Sydney	X	
August 1998	Electronic Toll Collection in Trondheim, Norway The Board, M2 - Hills Motorway	X	X
April 1999	Why Concrete Roads? Pavements Forum, Queensland		X
April 1999	Hot Weather Concreting (Discussion Paper) For RTA and Abigroup	X	

Date	Topic	Paper	Presentation
<b>Papers, Instructional Writings and Presentations</b>			
September 1999	Concepts for Event Parking Ticketing and Electronic Parking Management (for the Olympic Park in Homebush) For Abigroup Board & Olympic Co-ordinating Committee	X	X
January 2000	Concept Report for Viaduct above Lane Cove Road to Grade Separate Waterloo and Talavera Roads. For Abigroup.	X	
April 2000	Whisper Concrete in Australia International PAVEX Conference, Paris, France	X	X
April 2000	Evaluation and Performance of Heavy Duty Pavements International PAVEX Conference Paris, France	X	X
July 2000	Tunnel Air Cleaning - Overseas Practices and Current Technology, (A Major Report). For Abigroup Technical Services	X	
June 2001	Report on Affect of Voids Around Tiebars. For RTA NSW.	X	
January 2002	O & M Manual for Pacific Highway, Yalgun to Chinderah For RTA & Abigroup Maintenance	X	
February 2003	Analysis of Slab Stresses to Determine Locations for Induced Longitudinal Joints. For RTA NSW and Abigroup.	X	
April 2004	Maintenance Strategies and Whole-of-Life Analyses of Five Heavy Duty Pavements ( Mitcham to Frankston Motorway) For Abigroup tender.	X	
June 2004	Design of CRCP Reinforcement to Eliminate Longitudinal Joint Tiebars. Abigroup / Leighton Joint Venture - M7 Sydney Western Orbital (Westlink M7 Motorway)	X	
August 2004	Notes on Issues with Types of Pavement Options for Roundabouts. For Abigroup.	X	
April 2006	Reasons and Effect of Cracking in Lean Mix Concrete Subbases. Abigroup Paving Conference.	X	X
June 2006	Presentation to Bilfinger Berger in Wroclaw, Poland on Evaluation of Options for heavy duty Pavements and principles of Concrete Pavement Design		X
August 2006	Evaluation and Comparison of Performance of Heavy Duty Road Pavements. XXVI International Baltic Road Conference, Kuressaare, Estonia	X	X



and more ....

Date	Topic	Paper	Presentation
<b>Papers, Instructional Writings and Presentations</b>			
August 2006	Seamless Continuously Reinforced Concrete Pavement on M7 - Sydney Western Orbital. XXVI International Baltic Road Conference, Kuressaare, Estonia	X	X
December 2006	(Concrete Pavements) Explanatory Notes on the Purpose and Use of Subbases. Abigroup Paving Conference	X	X
March 2007	The Reasons and Effect of Cracking in Lean Mix Concrete Subbases. Abigroup Paving Conference	X	X
March 2007	Cracking in Concrete Pavements Abigroup Project Managers Conference	X	X
May 2007	(Concrete Pavements) Control of Thermal and Drying Shrinkage in Lean Concrete Subbases. For Abigroup Paving Workshop.	X	X
May 2007	Overview of Issues with Concrete Paving Abigroup Paving Workshop	X	X
June 2007	Report on Current Practices in Roadway Asset Management and Recommendations for Requirements Abu Dhabi, United Arab Emirates	X	X
September 2007	Explanatory Notes on the Use and Requirements of Pavement Anchors (Input data for the Seamless Pavement Design) Abigroup Leighton JV – M7 Motorway	X	
October 2007	Issues Relating to the Rehabilitation and Reconstruction of Eastern Service Road and Design of New Concrete Overlay (for Pacific Alliance - Tugun Bypass Queensland)	X	
November 2007	O & M Manual, including ETC, ETM and Asset Management for M7 - Western Orbital Motorway, Sydney (for Abigroup/Leighton Joint Venture)	X	
February 2008	Concrete Pavement Design - The Roles of Selected Subgrade Zone and Lean Mix Concrete. Abigroup Paving Conference.	X	X
June 2008	Summary of Blue Circle Cement Presentation on Flyash at AbiPave Conference	X	
August 2008	Lean Mix Concrete Subbase as Haul Road Abigroup Paving Conference, Wagga Wagga	X	X

Date	Topic	Paper	Presentation
<b>Papers, Instructional Writings and Presentations</b>			
September 2008	Effect of Cold Weather on Concrete Strength and Durability For Abigroup & RTA NSW	X	
September 2008	(Concrete Pavements) Effect of Subgrade Strength on Base Thickness. For Abigroup	X	
October 2008	Effect of Air Entrainment on Concrete. For Abigroup.	X	
November 2008	Importance of Factors Affecting Concrete Strength For Abigroup.	X	
January 2009	Report on Quality of Concrete Placed in Dec 2008 at RAAF Base Townsville. For Abigroup, Queensland	X	
March 2009	Effect of Pavement Roughness on Fuel Consumption ASCP Forum Sydney	X	X
March 2009	Concrete Roads Save Fuel. ASCP Forum Sydney		X
March 2009	Design and Construction Factors that Affect Initial Smoothness. ASCP Forum Sydney	X	X
June 2009	Evaluation of Pavement Distress and Proposals for Remedial Works on M7 Shared Path (for Abigroup/Leighton JV)	X	
August 2009	Heavy Duty Pavements. For Abigroup	X	
September 2009	Latest Theory and Guidelines for Curing of Concrete Pavements. For Abigroup.	X	
September 2009	Explanatory Notes on Design of Concrete Pavements For Abigroup & Main Roads, Western Australia	X	
October 2009	Sustainability in Concrete Pavements (B Murray & A Tinni) For Abigroup	X	
November 2009	Next Generation Low Maintenance Concrete Surfaces For Abigroup and RTA NSW.	X	
February 2010	Concrete Pavement Slab Replacement - Latest Technology For Abigroup.	X	



**NEXT GENERATION  
LOW MAINTENANCE CONCRETE SURFACES**

Development of the Next Generation Low Maintenance Concrete Surfaces has been a topic of research at ACPA. Various noise levels have been compared. This testing


























**Concrete Pav**

Ref. No.  
Pavement

Most common  
year in service  
maintenance

The LTE and  
maintenance

using the Falling Weight Deflectometer (FWD) can evaluate the LTE as well as

-  PIN 20 - Factors Affecting Shrinkage.doc
-  PIN 22 - Roughness & Fuel Consumption.doc
-  PIN 31 - Sustainability.doc
-  PIN 33 - Next Generation Concrete Surfaces.doc
-  PIN 34 - On-board Sound Intensity measurement.doc
-  PIN 36 - Concrete Roads save fuel.doc
-  PIN 37 - Retro-fitting Edge Drains in US.doc
-  PIN 38 - Slab Replacement - opening strength.doc
-  PIN 39 - Maturity Testing.doc
-  PIN 40 - Road and Tyre Noise.doc
-  PIN 41 - OGA vs SMA.doc
-  PIN 42 - CRCP Terminal Anchors.doc
-  PIN 44 - Self Healing Concrete.doc
-  PIN 48 - Energetically Modified Cements.doc
-  PIN 49 - Hiperpave III.doc
-  PIN 50 - Concrete Cracking and Heat of Hydration.doc
-  PIN 53 - Concrete Pavement maintenance - USA Problems.doc
-  PIN 55 - Load Transfer Efficiency of Joints.doc
-  PIN 59 - Conflict of PIN 57 with RTA Spec R44.doc
-  PIN 60 - EUPAVE Snippets from ASCP Forum 02 May 11.doc
-  PIN 62- Solar pavements.doc
-  PIN 64 - Background to Pavement Stresses and Cracking.doc
-  PIN 65 - RTA Pavements 2011 Conference.doc
-  PIN 67 - Cracking due to Curling Stresses.doc
-  PIN 68 - The Reasons and Effect of Cracking in LCS.doc

## Abigroup's Arvo Tinni wins prestigious John Shaw Medal

30 April 2010



Abigroup's National Road Manager Arvo Tinni has been awarded the prestigious John Shaw Medal for 2010. He was presented with the Medal at a Gala Dinner at the Roads Australia Annual Summit in Sydney.

- Outstanding service to road transport in Australia
- Annually since 1978, *“only when the selection committee is satisfied that a candidate merits pre-eminent industry recognition”*.
- Arvo's award was only the 14<sup>th</sup> in 32 years.



Past recipients include:

- ▣ Greg Hallam, Local Government Association of Queensland (2011)
- ▣ Arvo Tinni, Abigroup
- ▣ Dr Max Lay, ConnectEast
- ▣ Colin Jordan, RACV
- ▣ His Excellency Dr Ken Michael AC, Governor of Western Australia
- ▣ Don Aitken, Dept of Main Roads WA
- ▣ Erik Finger, Qld Dept of Main Roads
- ▣ Geoff Youdale, RTA NSW
- ▣ Tom Wilmot, Stabilisation Services Ltd
- ▣ Maurie Benveniste, Transport SA
- ▣ John Bethune, AAPA
- ▣ Rod Payze, Department of Transport SA
- ▣ Neil Doyle, Queensland Main Roads
- ▣ Peter Balfe, VicRoads
- ▣ Dick Wharton, Qld Main Roads
- ▣ John Oliver, ARRB

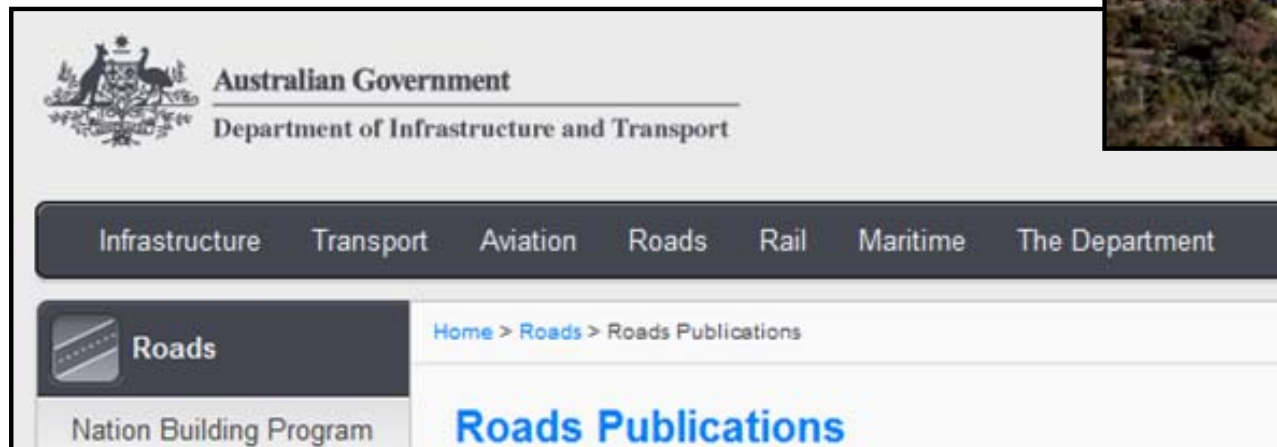
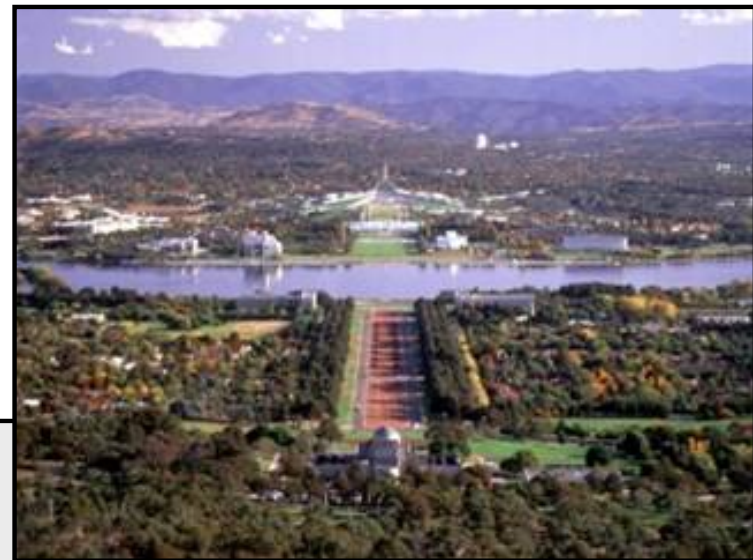
- **Field of contribution** - The field of contribution must be in the area of road transport. Indicative areas of contribution include road construction, design, administration, safety, services, freight, research, and policy development. There must be a clear connection between the field of contribution and road transport.
- **Level of contribution** - The contribution must be outstanding and this will be assessed on the basis of its impact on the industry and the community. The area of unique impact is to be specifically identified in the nomination, in a form which can be incorporated in the citation.
- **Breadth of contribution** - The extent to which the contribution was valued beyond any one section of the Industry and beyond jurisdiction (eg State). The contribution needs to be of National or International significance.
- **Personal achievement** - It must be demonstrated that the candidate's contribution significantly reflects personal endeavour, as distinct from the work of others. The John Shaw Medal is not awarded in recognition of general corporate achievement.
- **Originality** - Candidates will also be assessed on the originality and unique quality of their contribution. If the contribution is, for example, in a field of research, the spark of ingenuity must be identified. If the candidate's claims are in policy or management areas, the areas of leadership which distinguish the candidate must be clearly specified.
- **Durability** - Candidates will also be assessed on the extent to which their contribution is likely to endure and be remembered by future generations. Contribution to corporate success alone is not likely to meet this criterion.
- **Further potential** - Ideally candidates for the award will still have further contributions to make to the industry and the community. It is expected that the award will recognise their achievements to date and thereby enhance the opportunity for the candidate to make yet a further contribution.





## Honorary Membership of ASCP

- for outstanding contributions to the concrete pavement industry in Australia
- appropriate criteria might include:
  - design contributions
  - construction achievements
  - research
  - leadership
  - **advocacy**



# Roads past catch up with Arvo Tinni, visionary engineer

Many exciting challenges face future generations of Australian engineers, from major key projects that will need to be built in Australia, according to the doyen of New South Wales road builders, Arvo Tinni. Bob Lawrence reports.



**HIS LIST INCLUDES** the Very Fast Train between Sydney and Melbourne, permanent water supplies for Perth and inland New South Wales, a new road traversing the Blue Mountains and a new Sydney International Airport.

The tall, 73 year old Estonian born engineer, believes in the inevitability of these projects because he knows that eventually Australia will need them.

He knows Australia has the engineering expertise. Arvo is a proud Australian who is pleased that his refugee toolmaker father, when tossing up whether to emigrate to Australia or Argentina as the place to raise his family, chose the destination furthest from the Russians who had earlier invaded Estonia.

When asked about project funding, this man who started work on fully government funded projects and has seen the rise of Public Private Partnerships (PPPs), expresses faith in the new concept of "alliance contracting" in civil construction.

Arvo says alliance contracting allows the client to be part of the control team. Arvo is involved in them now as national roads manager, Major Project and Technical Service Group with the Sydney-based, Australia-wide Abigroup.

"Abigroup has alliances with the NSW Roads and Traffic Authority and other nation-wide authorities, so decisions are made faster as the client has a representative on the team, and can either give a fast answer, or get one," Arvo explained.

"When an alliance is accepted between parties there is no cost nominated at the time. It's worked out during the process of negotiations. Total out-turn cost is calculated by an independent verifier and agreed by the parties."

He said one of the strengths in the "pain and gain" clause, is that the client shares any savings or cost blow outs.

## Inescapable past

Arvo Tinni can not escape his own past. It is almost impossible for him to make a car trip in Sydney without using one of the roads whose construction he oversaw as he climbed the ladder at the Department of Main Roads from 1960 to 1988.

He had linked with the Department of Main Roads by accepting a paid cadetship in his fourth and final year studying engineering at the University of NSW.

After initially working at Ballina and Yass, Arvo was transferred to be the engineer for the Warringah Expressway that opened up northern access across the Sydney Harbour Bridge in the late 1960s. This massive project (although only 2.5km long, its concrete paving area was equal to 36km of a normal two lane concrete road) required the demolition of 505 houses. It meant diplomatic skills were taxed by officials dealing with the residents. A red light district, with the professions involved seeking help from the young engineer when they wanted to relocate. He was unable to assist!

In the 1970s he was the Works Engineer for the Sydney Metropolitan area with more than 20 projects in hand. In his major project was building the so-called NSW section of the multi-lane Melbourne to Sydney highway. He smiles when he refers to it as a Bi-centenary Project. Politicians announced the new dual carriageway would be completed by 1988.

## Political blinkers

"They didn't believe my 1984 estimate of the true cost of the job". In true Arvo style he told them, honestly, the unpalatable truths as to the cost, which did not fit the rhetoric. "At the time I was probably the biggest spender in the DMR. I said we need another \$200-million to get to

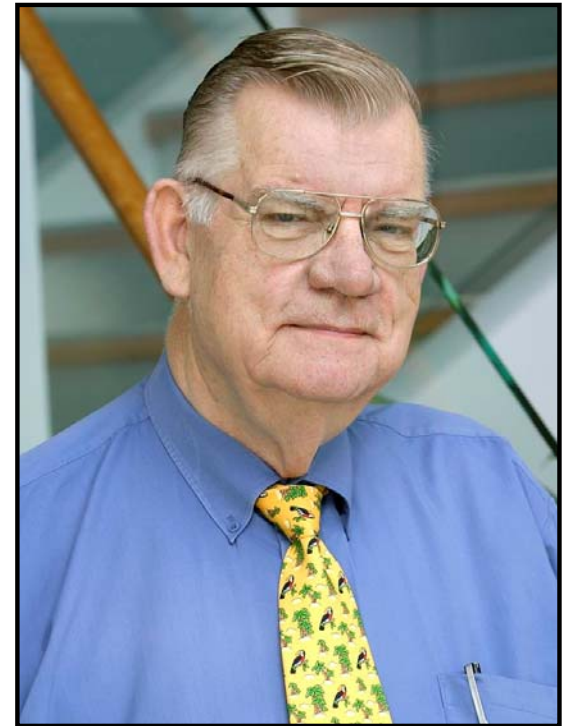
## Concrete v asphalt

While he appreciates the advantages of both surfaces, his preference is concrete as it has a longer life without the potholes and ruts of asphalt.

"I'm a concrete man" he says, noting he was attracted to Abigroup as its core business was concrete pavement.



**Arvo Tinni RFD, BE, FIEAust, AIAArbA, CPEng**  
**..... *and* an Honorary Member of the ASCP**



I would like to be remembered as:

“A very professional Civil Engineer who had a passion for excellence, for learning all his life and the joy of imparting up-to-date knowledge to his colleagues.

In his management and leadership roles, he had a very simple philosophy – to be always fair, firm and friendly. Everybody knew where they stood”.