

## Curriculum Vitae



### **Associate Professor Tan Teng Hooi**

Dean

School of Science & Technology

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### **Education Qualifications**

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| 1998 | PhD, Nanyang Technological University                      |
| 1984 | M.Sc (Civil), National University of Singapore             |
| 1980 | BEng (Hons) 1 <sup>st</sup> Class, University of Singapore |

### **Academic and Professional Experience**

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|----------------|--|
| 2012 – Present | Associate Professor, Singapore University of Social Sciences   |
| 2008 – 2012    | Senior Principal/COO, T.Y.Lin International Pte Ltd, Singapore   |
| 1985 – 2008    | Associate Professor/Senior Lecturer/Lecturer, School of Civil & Environmental Engineering, Nanyang Technological University, Singapore<br>Associate Chair/Vice-Dean (Administration), 2005 to 2008, Acting Head, Division of Construction Technology and Management – 2005 |
| 1980 – 1985    | Project/Resident Engineer, Ove Arup & Partners, Singapore  |

### **Memberships and Professional Activities**

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|----------------|--|
| 1985 – Present | Professional Engineer, Singapore, 1985 (Reg No. 2196)  |
| 1986 – Present | Chartered Engineer, UK, 1986   |
| 2009 – Present | Asean Chartered Professional Engineer, ACPE-00124/SG)  |
| 1985 – Present | Fellow, Institution of Engineers, Singapore  |
| 1986 – Present | Fellow, The Institution of Civil Engineers, UK   |
| 2017 – Present | Fellow, Society of Project Managers, Singapore   |
| 2020 – Present | Fellow, Asia-Pacific Institute of Experts, Singapore   |
| 2002 – Present | Member, SPRING, Singapore, (TC 118-2-1R) Technical Committee on Building Structure and Sub-structure |
| 2008 – 2026    | Engineering Accreditation Board Member, IES  |
| 2020 – 2026    | LTA Compensation Board   |
| 2012 – 2024    | Member, Inquiry Panel, Legal Profession Act  |

2019 – 2024	Member, Assessor Panel, Appeals Board (Land Acquisition), MinLaw
2015 – 2024	Member, Strata Titles Board, MND
2015 – 2017	Convenor, SPRING-BCA's adoption of Eurocode 5 in Singapore
2015 – 2019	Council member, Society of Project Managers (SPM), Singapore
2014 – 2019	Member, BCA Assessment Committee for Built Environment Leadership Awards
2010 – 2016	Member, Disciplinary Panel, The Council for Estate Agencies, MND
2009 – 2013	Convenor, SPRING-BCA's adoption of Eurocode 0 and Eurocode 1 in Singapore (from 2006). Also member of the workgroup for Eurocode 2.
2008 – 2013	Member, BCA Assessment Committee for Design & Engineering Safety Excellence Awards
2012	Council member, Association of Consulting Engineers (ACES)
2009 – 2011	Board Member, Professional Engineers Board, Singapore
2008	Co-Chairman, Organizing Committee of the 5th International Conference on "Structures in Fire" held in May 2008
2007	Chairman, Organizing Committee of the 8th Pacific Conference on Earthquake Engineering held in Dec 2007
2004 – 2008	IES - Council member, (2004-08), EXCO member (2007-08), Chairman, Industrial Group (2006-08)
2004 – 2005	Member, Professional Engineers Board Review Committee on Professional Engineering Practices
2004 – 2005	Chairman, IES Geotechnical and Transportation Engrg Technical Committee
2002 – 2004	FSSB Committee on the Development of Performance Based Structural Design for Fire Resistance, Singapore
2001	Executive Secretary for The Eighth East Asia Pacific Conference on Structural Engineering and Construction (EASEC-8) December 2001
2001	Editor, IES C&S Journal, 2001
1999 – 2004	IES Civil and Structural Technical Committee since 1999-2004 [Chairman, Structural Division from 2001-2004]
1998 – 2001	PSB (TC 118/9/1R) Technical Committee (for Structural Engineering Practice)
1993 – 2003	SAC-SINGLAS Technical Committee on Civil Engineering Testings - [Deputy Chairman 1997-2003]

### Research Interests

- Triaxial Stress in concrete
- Structural Design and Appraisal of Building
- Construction Material and Technology

### Honours and Awards

2001	IES Outstanding Volunteer Award 2010
2009	Merit Award, Standards Council of Singapore in recognition of his participation and contribution to standardisation work
2004 – 2005	Served as a Resource person to assist the Committee of Inquiry for the Nicoll Highway Collapse

### Invitations

2023	Keynote speaker on “Opportunities and challenges of using Pre-Fabricated Pre-Finished Volumetric Construction (PPVC) for high-rise construction” at 12 <sup>th</sup> Creative Construction Conference, Hungary 2023.
2018	Invited Speaker for BCA’s seminar on “Safe Built Environment Through Effective Building Control and Innovative Solutions”
2014	Keynote speaker on “How design modules help in the accreditation of engineering programmes” at International Conference on Advanced Design Research and Education.
2010	Invited Speaker for BCA’s seminar on “Appraisal of Building Structure And Slopes”
2008	Invited Speaker for BCA’s seminar on “High Strength Concrete & Alternative Steel”
2007	Invited Speaker for IES - MOM Seminar on “Moving Beyond Nicoll Highway Incident”
2005	Keynote speaker on “Effects of triaxial stress on concrete” at the 30th Conference on Our World in Concrete & Structures, 2005
2004	Invited speaker on “Failure Criteria of Concrete under Triaxial Compression” at the International Symposium on Confined Concrete, China 2004

### Selected Publications

#### Book Chapters:

- Tan, T.H., Li B and Nguyen NB, “Design Guide for the use of Grade B600 High strength reinforcement in reinforced concrete structures”, Building Construction Authority, 2019.
- Chui, Y.P. and Tan, T.H. Chapter 12: Humans still matter in Productivity, Safety, and Technology, The Heart of Learning, SUSS 2017.
- Tan, T.H., Sun Xin, Failure Criteria of Concrete under Triaxial Compression, SP-238 International Symposium on Confined Concrete, ACI 2006.
- Tan, T.H., Nyugen Ngoc Ba, Flexural Stress-Strain Curves of Confined High-Strength Concrete, SP-238 International Symposium on Confined Concrete, ACI 2006.
- Chan, K.S., Tan, T.H., Reinforced Concrete Structures With Epoxy-bonded Steel Plates., ACI Special

Publication SP-165, Repair and Strengthening with Adhesive Bonded Plates, American Concrete Institute, U.S.A. 1996.

**International Journals:**

Wong S et al, "Concrete Prefabricated Prefinished Volumetric Construction for Two High-rise Blocks in Singapore", The Structural Engineer, August 2021, pp 28-35. Won the Murray Buxton Award for the best paper.

Tan, T.H., Ng Leng Ping, 2006, Predicting non-evaporable water loss of cement paste at elevated temperature, Advances in Cement Research (United Kingdom), Vol. 18, No. 2, pp 83 - 89.

Tan, T.H., Nguyen Ngoc Ba, 2005, Flexural Behaviour of Confined High-Strength Concrete Columns, American Concrete Institute Journal (United States), Vol. 102, No. 2, pp 198 - 205.

Shi Xudong, Tan, T.H., Tan, K.H., Guo Zhenhai, 2004, Influence of concrete cover on fire resistance of reinforced concrete flexural members, ASCE Journal of Structural Engineering (United States), Vol. 130, No. 8, pp 1225 - 1232.

Tan, T.H., Nguyen Ngoc-Ba, 2004, Determination of stress–strain curves of concrete from flexure tests, Magazine of Concrete Research (United Kingdom), Vol. 56, No. 4, pp 243 - 250.

Shi Xudong, Tan, T.H., Tan, K.H., Guo Zhenhai, 2002, Concrete Constitutive Relationships of Concrete Subjected to Different Stress-temperature Paths, ASCE Journal of Structural Engineering (United States), Vol. 128, No. 12, pp 1511 - 1518.

Shi Xudong, Tan, T.H., Tan, K.H., Guo Zhenhai, 2002, Effect of Force-temperature Paths on Behaviors of Reinforced Concrete Flexural Members, ASCE Journal of Structural Engineering (United States), Vol. 128, No. 3, pp 365 - 373.

Tan, T.H., 2000, "Effect of passive confinement on fatigue properties of concrete", Magazine of Concrete Research (United Kingdom), Vol. 52, No. 1, pp 7 - 15.

Tan, T.H., Yip, W.K., 1999, Behaviour of axially loaded concrete columns confined by elliptical hoops, ACI Structural Journal (United States), Vol. 96, No. 6, pp 967 - 971.

**Conference Presentations:**

Tan, T.H. et al, "Reaching new heights in the use of concrete Prefabricated Prefinished Volumetric Construction (PPVC): Two 56-Storey Residential Towers in Singapore", Proceeding of the 12<sup>th</sup> Creative Construction Conference, Hungary 2023.

Tan. T.H., "Singapore's 56-Story Residential Towers", World of Modular, Las Vegas 2023

Wong S, et al, "Case Study: The Use of Concrete Prefabricated Prefinished Volumetric Construction for Two Blocks of 40-Storey Residential Flats (The Clement Canopy), Singapore". IABSE Congress, Feb 2021,

New Zealand.

K C G Ong, C T Tam, Tan, T.H. and Chhbra Y, 2019, Proceeding of the 44th conference on Our World in Concrete and Structures, Our World in Concrete and Structures, Singapore.

TAN, T.H. et al, "Design consideration and guidelines in the use of Grade 600 steel reinforcements for reinforced concrete construction", Structural Engineering Session 5, 17-21 June 2019, Prague (Czech Republic)

K C G Ong, C T Tam, Tan, T.H. and Chhbra Y, 2018, Proceeding of the 43th conference on Our World in Concrete and Structures, Our World in Concrete and Structures, Singapore.

TAN, T.H., "Opportunities and challenges in adopting higher strength reinforcement bars in reinforced concrete structures", Creative Construction Conference Proceeding, Slovenia, 2018

K C G Ong, C T Tam, Tan, T.H. and Chhbra Y, 2017, Proceeding of the 42th conference on Our World in Concrete and Structures, Our World in Concrete and Structures, Singapore.

K C G Ong, C T Tam, Tan, T.H. and Chhbra Y, 2016, Proceeding of the 41th conference on Our World in Concrete and Structures, Our World in Concrete and Structures, Singapore.

K C G Ong, C T Tam, Tan, T.H. and Chhbra Y, 2015, Proceeding of the 40th conference on Our World in Concrete and Structures, Our World in Concrete and Structures, Singapore.

K C G Ong, C T Tam, Tan, T.H. and Chhbra Y, 2014, Proceeding of the 39th conference on Our World in Concrete and Structures, Our World in Concrete and Structures, Singapore.

TAN, T. H. et al, "Use of prestressed transfer girder to underpin an LRT pier", Creative Construction Conference, 2013, Hungary

TAN, T. H. et al, "Underpinning of an LRT pier to facilitate a cut and cover tunnel construction", World Urban Transit Conference, Singapore, 2010

Javadian S, Teng S and Tan TH, "High temperature effect on flexural strength of steel-fibre concrete", 3<sup>rd</sup> ACF International Conference – ACF/VCA 2008

Tan, G. H., and Tan, T. H., "Causes of False Alerts in Real Time Monitoring and Alert Systems in Deep Excavation sites" Proceedings of Underground Singapore 2007, Singapore, pp 12-20

Tan, T. H. and Li, Z., "Experimental Study on Triaxial Behaviour of Concrete after Exposure to High Temperature", TG 4.3 fib workshop "Fire Design of Concrete Structures" Coimbra - Portugal 2007.

Chua, Grace, H. Y., Tan, T. H. and Au, S. K., "Dynamic characteristics of Tanjong Rhu suspension footbridge, Singapore", Proceedings of MDCMS, Hanoi Vietnam, Dec 2007, pp93-100.

Nguyen, N. B. and Tan, T. H., "Deflection-curvature relationship of reinforced concrete (RC) columns bent in single curvature", Proceedings of MDCMS, Hanoi Vietnam, Dec 2007, pp239-245.

Boon, C. W. and Tan, T.H., "Structural Monitoring: Effects of EMI on Vibrating Wire Strain Gauge", Proceedings of the URECA@NTU 2006-07.

- Tan, T.H., Zhang Jiangou, 2006, Triaxial behaviour of cement mortar, 10th East Asia-Pacific Structural Engineering and Construction Conference, Thailand, pp 761 - 766.
- K C G Ong, C T Tam, Tan, T.H., 2006, Proceeding of the 31st conference on Our World in Concrete and Structures, Our World in Concrete and Structures, Singapore. (Accepted for presentation.)
- K C G Ong, C T Tam, Tan, T.H., 2005, Proceeding of the 30th conference on Our World in Concrete and Structures, Our World in Concrete and Structures, Singapore.
- Tan, T.H., 2005, Effects of triaxial stress on concrete, 30th Conference on Our World in Concrete & Structures, Singapore, pp 81 - 89.
- Tan, T.H., Nguyen Ngoc Ba, 2004, Applicability of AS 3600:2001 and NZS 3101:1995 to circular high strength concrete columns, 18th Australian Conference on the Mechanics of Structures & Material, Australia, pp 887 - 892.
- K C G Ong, C T Tam, Tan, T.H., 2004, Proceeding of the 29th conference on Our World in Concrete and Structures, Our World in Concrete and Structures, Singapore.
- Tan, T.H., Nyugen Ngoc Ba, 2004, Flexural Stress-strain curves of confined high-strength concrete, International Symposium on Confined Concrete, China.
- Tan, T.H., Sun Xin, 2004, Failure Criteria of concrete under triaxial compression, International Symposium on Confined Concrete, China.
- Tan, T.H., Ting, S.K., 2003, Behaviour of RC slabs under service and ultimate load, 9th East Asia-Pacific Structural Engineering and Construction Conference, Indonesia, pp RCS-11.
- Tan, T.H., Ting, S.K., 2003, Effects of steel corrosion on the serviceability and ultimate state of RC slabs, 9th East Asia-Pacific Structural Engineering and Construction Conference, Indonesia, pp RCS-12.
- Nguyen Ngoc Ba, Tan, T.H., 2003, Analytical procedure for determining stress-strain relationship of concrete under flexure tests, International Conference on Advances in Concrete and Structures, China, pp 1450 - 1457.
- Nguyen Ngoc Ba, Tan, T.H., 2003, Flexure Tests of Confined Normal and High-Strength Concrete Columns, International conference on Advances in Concrete and Structures, China, pp 858 - 866.
- Sun Xin, Tan, T.H., 2003, Moment-Rotation Relationships of Hybrid Connection under Monotonic and Cyclic Loading, 2nd International Conference on Structural Engineering and Construction, Italy, pp 1103 - 1108.
- Sun Xin, Tan, T.H., 2003, Moment-Rotation Relationships of Single Plate Connections, 2nd International Conference on Structural Engineering and Construction, Italy, pp 855 - 860.
- K C G Ong, C T Tam, Tan, T.H., 2003, Proceeding of the 28th conference on Our World in Concrete and Structures, Our World in Concrete and Structures, Singapore.
- C T Tam, D W S Ho, P Paramasivam, Tan, T.H., 2002, Proceeding of the 27th conference on Our World in

Concrete and Structures, Our World in Concrete and Structures, Singapore.

- Tan, T.H., Li Zhen, 2002, Residual Triaxial Behavior of Concrete after Exposure to High Temperatures, 17th Australasian Conference on the Mechanics of Structures and Materials, Australia, pp 303 - 308.
- Tan, T.H., Cheong, H.K., Hu Ouer, 2001, The Experimental Investigation of Triaxial Behaviour of Concrete under Cyclic Loading, Eighth East Asia-Pacific Conference on Structural Engineering & Construction, Singapore, pp 1550.
- Shi Xudong, Tan, T.H., Tan, K.H., Guo Zhenhai, 2001, Deformation Behaviors of Concrete under Different Stress-Temperature Paths, Eighth East Asia-Pacific Conference on Structural Engineering & Construction, Singapore, pp 1188.
- Tan, T.H., Yip, W.K., 2000, Load Transfer by Bond between Steel Section and Concrete, 4th Asia-Pacific Structural Engineering & Construction Conference, APSEC-2000, Malaysia.
- Yip, W.K., Tan, T.H., 2000, End Bearing Mechanism of Steel Section Embedded in Concrete, 6th International Conference on Structural Failure, Durability and Retrofitting, ICSF-2000, Singapore.
- Tan, T.H., 2000, Behaviour of concrete under high passive confinement, 4th Asia Pacific Structural Engineering & Construction Conference, Malaysia, pp 245 - 252.
- Li, B., Tan, T.H., 2000, A comparative study of confinement models of high strength concrete, 4th Asia-Pacific Structural Engineering and Construction Conference, Malaysia, pp 403 - 410.
- Yip, W.K., Ting, S.K., Teng, S., Tan, K.H., Tan, T.H., 2000, Innovative Precast Concrete Technology, HDB International Housing Conference, Singapore, pp 10.3-1 - 10.3-7.
- Sun Xin, Tan, T.H., Irawan, P., 1999, Effect of Stress-Path on the Failure of Concrete under Triaxial Stress State, Proceedings of the Seventh East Asia-Pacific Conference on Structural Engineering and Construction, Japan, pp 1437 - 1442.
- Tan, T.H., Cheong, H.K., 1998, An apparatus for testing concrete under active and passive confining stress, Strength Theory, Application, Development & Prospect for 21st Century, China, pp 557 - 567.
- Tan, T.H., Kong, F.K., 1992, "Effects of External Confinement on Concrete Columns", Proceeding of the Int'l Conference on the Concrete Future, Kuala Lumpur, Malaysia, pp 243 - 251.
- Chan, K.S., Tan, T.H., 1992, Reinforced Concrete Structures With Epoxy-bonded Steel Plates., American Concrete Institute Spring Convention, Washington, D.C., United States, pp P1/1 - P1/12.
- Toh Guan Nge, Tan, T.H., Lai K. Y, Lim P. N., 1991, Transputer Implementation of Data Compression Technique for Remote Communication Nodes, 2nd IES Information Technology Conference, Singapore.
- Tan, T.H., 1990, "Analysis and Design of a Saddle Shell", Proceeding of Our World in Concrete & Structures, Unknown, pp 343 - 350.
- Tan, T.H., 1988, "Influence of Mix Proportion in Strength of Preplaced Aggregate Concrete", Proceeding of Our World in Concrete & Structures, Singapore, pp 407 - 414.

Chan, K.S., Fan, S.C., Tan, T.H., 1988, Epoxy-bonded Steel Plates For Strengthening of Concrete Structures.,  
Materials Technology Symposium '88, Singapore, pp 1 - 10.

Chan, K.S., Tan, T.H., 1987, Water Movement And Durability Of Concrete Structures., Fourth International  
Conference on Durability of Building materials and Components, Singapore, pp 404 - 411.

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