

DIRECTORY OF

**CURRENT
RESEARCH**

**ACADEMIC YEAR
1993-94**



**NATIONAL UNIVERSITY
OF SINGAPORE**

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**DIRECTORY OF CURRENT RESEARCH IN
ACADEMIC YEAR 1993-94**

Introduction

The University is a rich resource centre with a strong research culture that actively encourages research on all fronts. Besides fostering inter-faculty co-operation in multi-disciplinary research, the University aims to promote closer ties and more collaboration with industry through technology transfer activities.

It is the intention of the University to achieve excellence in all faculties and disciplines. The research infrastructure is particularly conducive to building up a significant pool of R & D manpower in important areas, in line with the national emphasis on the development of a high technology and knowledge-intensive economy. With a resource pool that includes 1,600 academic staff, 2,400 research students and several hundred research scientists, assistants and technicians, the University is well-placed to play a pivotal role in the promotion of R & D for the country's advancement.

More than two-thirds of the University's 1,600 academic staff are PhD holders. It is hoped that this Directory will help staff to identify common areas of research interests so that expertise in different disciplines may be pooled for multi-disciplinary research activities. In the process, funds, facilities and time will be more likely to be put to optimum use.

This Directory also aims to serve as a means of generating increased industry awareness of the University's resources and research skills and expertise. The heightened interest and research effort thus generated may be harnessed to providing cost-effective solutions to technology-related problems. Commercialisation of university technology is actively promoted as it contributes to industry's technology upgrading and productivity. This publication should also prove useful to government ministries and other research bodies.

Enquiries on research collaboration may be addressed to: The Director, University Liaison Office, 3rd Floor, Administration Building, National University of Singapore, 10 Kent Ridge Crescent, Singapore 0511.

Other enquiries relating to the publication itself can be directed to Mr Cham Toon Ken of the University Liaison Office at tel: 772-2511.

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FACULTY OF ARCHITECTURE AND BUILDING

SCHOOL OF ARCHITECTURE

Associate Professor

Foo Ah Fong, PhD Lond., MArch NUS, DipTCP Auck., DipArch PolySing., DiplCHPB B'Trum., MNZPI, MSIP, MSIA, Architect/Planner

Urban design and planning

Implementation strategies for urban development programmes

Hussain, Abdul H M, DipTP Poly Central Lond., ARIBA, MRTPI, MBIM, MSIP

Commercial developments in the city

Land use/transport relationship

Urban planning

Inter-faculty research on Singapore's transport policies and systems

Powell, Robert, BA, MArch NUS, DipArch Durham, RIBA, MRTPI, MSIP

Conservation and urban renewal: Conservation of the Singapore heritage
The tropical city: The planning and development of post-colonial cities in Asia

The Asian house: Comparative analysis of contemporary dwellings in Southeast Asia

Design, technology and resource conservation

Tharmaratnam, K, PhD MSc DIC Lond., BSc Ceyl., MICE, MIES, MIE India, PEng

On teaching building structures for architects

Ultrasonic pulse method of evaluating strength of concrete

Choice of building configuration and structural systems for tall buildings

Senior Lecturer

Chan Yew Lih, MA York, DipArch SingPoly, MSIA, Architect

Conservation of historic buildings in Singapore

Recording and documentation of conservation of shophouses

Study of the conservation approach and restoration technique

Chou Shiuh-lin, David, PhD Cantab., MSc UCL, BA (Hons) DipArch Brist., RIBA

Modernism in architecture as the basis of a historically specific formal/aesthetic discipline with its unique limitations and possibilities

Relation between the above (Modernism) and aspects of classical Chinese aesthetics, particularly in garden design

Methodology in the description of architectural form and its relation to developing strategies in design

Art historical aspects of perception

Relation between Fine Art and Architecture in culture - specific context

Gan, Jeanette, BArch Sing., BSc(Arch) Syd., MSIA, Architect

A study of school buildings in use

On-line Architectural Studio Information System (OASIS): A multi-media information technology project to deliver design reference information to the designers' fingertips

Harrison, James D, BArch Sheff.

Traditional building forms in hot climates

Integration of environmental control in architectural design

Graphic communication techniques in design

Designing for the disabled

Indorf, Pinna (Miss), BArch Texas, PhD Sing.

Hindu/Buddhist architecture of Southeast Asia

Indigenous architecture of Southeast Asia

Kong Shee Chong, MArch C'nell, BArch Houston, ACSA

Calligraphy of the land: The evolution of possibility and probability of a theory of form from the ground up with an anthology of work

Meta architecture: The roles of mimesis, method, metamorphosis, mystique and metaphysics in the making of architecture

A visual study of tropical architecture typology in Southeast Asia:

Some specific views on vernacular architecture of Singapore and Malaysia

Lim Guan Tiong, PhD Lanc., BSc (Hons) Hatfield Poly

"Integrity investigation, non-destructive testing and repairing of reinforced concrete structures" 1984 onwards

Structural systems and architectural space and forms

Computer-aided structural analysis and design

Lim, Jon, PhD NUS, MArch, BArch Melb.

Architects and civil engineers (1786-1964) of Singapore and Malaysia
Interiors and applied artist (pre-war 1942) (sculptors, furniture designers,
interiors)

The origin of the shop - and terrace house in Asia

Lip Mong Har, Evelyn (Mrs), PhD MArch Sing., DipArch Lond.,

DipBldg Design, DipInt Decor & Design, RIBA, RAIA, MSIA, Architect

Building construction details in Singapore

Chinese architecture in Southeast Asia

Ong Boon Lay, MArch Auck.

CAAD useware

Auditorium design

Acoustics/Auditorium design

Ecological application of architecture

Parker, Kenneth, BSc (Hons) Bath, MSc UCL, CEng, MCIBSE

Low-energy building design

Building services maintenance

Comfort and adaptational issues in buildings

Rao, S P, ME IISc, BE B'lore, MCIBSE, MAIRAH, MSSEE, CEng

Glass in buildings, thermal comfort

Indoor air quality in buildings

Sabapathy, T K, MA Calif., BA (Hons) Sing.

Modern art and artists in Singapore and Southeast Asia

Research methodology of Southeast Asian art history

Tan, Milton, PhD Harv., BArch (Hons), BA (Hons), RIBA

Shape Grammar with particular reference to the recognition of emergent
forms

Virtual Reality interface for architectural design

On line Architectural Studio Information System (OASIS) : A multimedia
information technology project to deliver design reference information
to the designers' fingertips

Teh Kem Jin, MSc BSc (Hons) Belf., RIBA, MSIA, A.I.Fire E
Fire safety in buildings

Waller, Edmund, DipArch, Cert TP, MLA, ALI, RIBA
Landscape architecture
Ecology of Singapore
Environmental education and planning
Land reclamation
Rural planning

Lecturer

Lam Khee Poh, BA (Hons), BArch (Hons), RIBA
CAAD-useware research project: Working procedures and data
management with particular reference to building structures

Lim Ee Man, Joseph, PhD Heriot-Watt, MSc Strath., BArch (Hons)
NUS, MSIA
Structural theory in relation to architectural design in the studio

Teh Yoke Chong, Robert, MPhil Sheff., BArch BA (Hons) Manc.
On-line Architectural Studio Information System (OASIS)
Digital design media

Wong Yunn Chii, MArch, BA Arch, BS (CE) Wash.
A study of school buildings in use
Western settlement pattern in Southeast Asia
Environmental design evaluation

Senior Tutor

Ng Kit Har, Ivy, BArch (Hons) UNSW
Public places in Singapore
Contemplative gardens

Tan Hock Beng, BA (A.S.) BArch (Hons) Sing.
Postmodern critical attitudes
Tradition and modernity in Southeast Asia
Philosophical concepts in architecture

Teaching Fellow

Nalbantoglu, Gulsum Badyar, MA BA METU Turkey, PhD UC Berkeley
Modernity the post-colonial condition in architectural discourse and practice

SCHOOL OF BUILDING AND ESTATE MANAGEMENT
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Associate Professor

Brown, Peter M, PhD NUS, MPhil (Hons) Auck., BEc W.Aust., VFM Linc., RDA S.Aust., FVLE (Val & Econ) Aust., NZIV, MSISV, MPMI
The real estate market, local and overseas
The real estate cycle
The demand and supply of space
Computer applications in real estate
Land value mapping
The influence of legal decisions on valuation methodology
Real estate as an investment
Maintenance costs

Khoo Cheng Lim, PhD Edin., BE Malaya, DIC Lond., MICE, MIEM, FIES, PEng
Piling systems
Basement excavations
Vibration tolerance in buildings

Khublall, Naturam, BSc (EstMan) Lond., MSc R'dg, FRICS, of Lincoln's Inn, Barrister
Real estate and construction law
(a) land acquisition
(b) land law
(c) landlord and tenant law
(d) defective premises law
(e) planning law and development
(f) public housing

Leong Tuck Wah, PhD UNSW, ME Auck., BSc (Eng) Taiwan, MIE Aust, MIES, MIEM, MICE, MPIENZ, MIABSE, PEng, CEng
Performance of structural concrete under long term and repetitive loads
Temperature and shrinkage effects on concrete structures
Properties of early aged concretes and its effect on building construction
Long span structures
Precast and prestressed concrete buildings
Effects of admixtures on concrete and structures
Defects and repairs of concrete structures
Composite structural steel and concrete columns

***Lim Lan Yuan**, MBA NUS, BSc (EstMan) Sing., BSc (Econ) LLB Lond., FRICS, FSISV, ACIS
Alternative Dispute Resolution
Real estate development in the ASEAN countries
Town councils and property management

Mathur, Krishan S, PhD Strath., MTech BTech IIT Kanpur, MSIB, MCIOB, MAACE
Integrated Knowledge-based CAD
Knowledge-based systems in cost-performance and building defects
Information technology for the construction industry
Operations research models in building design economics and cost modelling

Ofori, George, PhD MSc Lond., BSc (Tech) Ghana
The construction industry in Singapore
The continuous improvement of the construction industry

Singh, Surinder, PhD NUS, MSc Aston, Prof DipQS, Prof DipCE Punj., FIE, FIS India, MBIM, MCIOB
Problems related to construction project management, management information systems, building sites, management and technology, cost management, international contracting, organisational forms, construction economics, structural design economics and quantity surveying
Education and training

* Head of School

Senior Lecturer

Briffett, Clive, MSc (Arch) Lond., FRICS, Cert Ed(FE), MSIB

Environmental impact assessments

Environmental planning and management

Assessment of surveying techniques used for determining the condition of buildings

Building maintenance defect case studies

Interactions of the built and natural environment

Chin Kein Hoong, Lawrence, PhD (Bus Admin) Georgia, BSc (EstMan)

(Hons) Sing., MSISV, MSIM, ARES, AFS

Real estate finance and investment analysis

Evaluation of intelligent buildings' performance

Corporate real estate

Chong Sun Ming, BSc R'dg, FRICS, MSISV

Cost information systems and cost price relationships in construction

Gan Cheong Eng, MBM A.I.M., BSc (Bldg) Sing., FSIB, FSISV

Organisational growth in the development and construction industries

Management of development and construction businesses

Manpower planning and training

Real estate investment strategies

Haque, M A, MSc Lond., BSc Rajsh., Dip South Bank, CEng, MCIBSE, MASHRAE

Air-conditioning and indoor air quality

Fire safety in buildings

Clean room performance in hot-humid climates

Lee Siew Eang, PhD MSc BSc Heriot-Watt

Control of factory noise and hearing acumen among industrial workers in Singapore

Community noise study

Sound insulation of composite structures

Response and radiation of building components to impact excitation

Acoustical design for auditorium and recording studio

Construction site noise

Leong Hoe Yuen, Christopher, BSc (Bldg) (Hons) Sing., ARICS, MSISV, MSc (Constrn Mgt) Lough., PhD Lond., ACIArb
Construction and project management
Contract procedure and administration
Design delegation and liability

Lim Chong Nam, MSc (Constrn Eng) Sing., BBldg (Hons) Melb., AAIQS, FSIB, FAIB, Chartered Builder
Building services for highrise residential buildings
House keeping in public housing
Cleaning and maintenance of highrise buildings
Current construction techniques

Malone-Lee Lai Choo (Mrs), Master (Town & Country Planning) Syd., BSc (EstMan) Sing., MSIP
Impact of information technology on planning
Development control
Urban conservation
Development guide plans and planning standards
Environmental issues in planning

Netto, A E, FRICS, ACIArb., MSISV, MA Cost E.
Construction contracts: Law and administration
Standard methods of measurement

Quah Lee Kiang (Ms), PhD Heriot-Watt, MSc Constrn. Mgt. (Maint Mgt) Distinct. R'dg., BSc (Bldg) (Hons) Sing., FCIOB MBIM UK, MSISV, Chartered Builder
Maintenance management and technology
Economics and management of refurbishment
Management of risks in tendering and construction
Indoor air quality and building related issues

Rajendran, S, PhD Camb., BSc Eng Ceyl., MIES
Computer modelling of reinforced concrete structures
Diagnostic study of structural defects in building
Timber-concrete composite structures
Choice of building configurations, materials and structural systems
Development of software for computer-based learning of structures

Roy, S K, ScD MIT, MSc BSc Calc., FIDiagE, HonF SIET, MAmCS, MAustCS, MICS, MIEI, MICorrT, MNACorrE

Diagnosis of building defects

Non-destructive testing of building materials and components

Deterioration of building materials

Development of building materials with target properties

Sim Loo Lee (Ms), PhD NUS, MSc LLB (Hons) Lond., BA Sing

Land use and development

Private housing

Retail planning

Law of agency

Sridharan, Govindan, MTech ITT Madr., MS Iowa, MBA C'dia, CCE

Management of J.V. construction projects

Management reporting - Singapore experience

The place of Singapore contractors in international construction

Teo Pin, BSc R'dg., FRICS, MSISV

Construction industry in People's Republic of China

Ullah, M B, PhD UMIST, MSc Eng B'desh UET, BSc Eng Lahore, MCIBSE

Building energy analysis, air-conditioning and lift design

Building and home automation, intelligent building

Microcomputer applications

Yu Shi Ming, PhD R'dg, MSc (Urban Land Appraisal) (Distinction) R'dg., Dip Urban Valuation (Hons) Auck., MSISV

Advanced methodologies for investment valuation/appraisal

Use of property information and information technology in real estate

Application of quantitative methods in the real estate profession

Lecturer

Chan Chuen Fye, Philip, DipBldg Sing. Poly, LLB (Hons) LLM DipEd Lond., Barrister-at-Law (Middle Temple), Advocate & Solicitor of the Supreme Court of Singapore

Contract and tort (generally and in the construction industry)

Reception of English law

Law of agency

Law relating to the powers of Management Corporations and Town Councils

Cheng Fook Jam, DipUrbVal Auck., MSc (Urban Land Appraisal) R'dg, ANZIV, MSISV

The investment method of valuation as applied in Singapore
Statutory valuations in Singapore
Application of the capital market theory to real estate appraisal in Singapore

Chew Yit Lin, Michael, PhD (Bldg) UNSW, MEngSc (Str Eng) Syd., BBuild (Hons) UNSW

Fire assessment
Diagnostic techniques for building defects
Concrete durability
Evaluation of polymer modified repair systems
Textile form method
The study of the behaviour and performance of various stones and stone glues
High strength concrete

Christudason, Alice (Mrs), LLM Lond., LLB (Hons) Sing., Advocate and Solicitor of the Supreme Court of Singapore

Land law: Landlord and tenant, land acquisition, rent control, building control
Contract and tort
Company law

Han Swee Lean (Mrs), MSc (Ind Eng) BSc (HBP) (Hons) M'sia

Construction cycles
Applications of CAD/CAM in building works

Ho Kim Hin, David, BScTech (Hons) Sheff., Systems Eng, USNPS Monterey, MPhil (1st C1 Hons with Distinction, Land Economy) Camb.

Urban policy evaluation
Real estate economics

Ho Siew Lan (Miss), MSc (Urban Land Appraisal) R'dg., BSc (EstMan) Sing., MSVA, MSISV

Real estate development
Condominium housing

Lee-Khor Lean Suan, Amy (Mrs), MBA San Jose State, BSc (EstMan) Sing., MSISV

Statutory valuations

Current valuation practices in Singapore

Real estate investment and financing

Property performance measurements and indices

Econometric forecasting models as applied to real estate

Application of financial models to real estate appraisal

Li Hang Han (Mrs), MSc (Ind Eng) BSc R'dg

Building economics: Construction cost and tender price movements

Durability of building materials in Singapore

Low Sui Pheng, PhD Lond., MSc (Eng) Birm., BSc Bldg (Hons) NUS, DipBldg Sing. Poly, MSIB, MACostE

The global construction industry

Quality management systems in construction

The influence of construction and marketing on economic development

Ong Seow Eng, BSc (Est Mgt) (Hons) NUS, CFA (ICFA)

Property portfolio analysis

Property companies

Regional property markets

Investment theories and application

Judgemental forecasting

Asset optimisation

Asset allocation models

Sekhar, S C, PhD Adel., BE (Mech) (Hons) Rajsh., MIEAust., CPeng., ASHRAE (Assoc Member)

Building energy analysis

Thermal comfort, ventilation and indoor air quality

Sick building problems

Cooling and dehumidification systems - heat and mass transfer analysis

Comfort integration with air conditioning systems (cooling and dehumidification systems)

Tan-Thang Chze Lin, Doreen (Mrs), MBA NUS, BSc (EstMan) Sing., MSISV

Marketing of real estate professional services

Marketing orientation of real estate consultants

Japanese real estate investment in Singapore

Property market information systems and data bank

Tay Poh Huat, Danny, BSurveying (Hons) Aust., MSc (Bldg) NUS
Neural networks for property price forecasting
Fuzzy sets for real estate decision-models

Teo Ho Pin, PhD, MSc (Project Mgt) (Distinction) Heriot-Watt, BSc (Bldg) (Hons) NUS, MSIB, MAPM
Management information system for competitive tendering and maintenance management
Risk management in tendering for refurbishment work
Property and maintenance management
Building defects and diagnosis
Building cost analysis and tender price forecasting
IT applications in the construction industry
Environmental impact of the construction industry

Tham Kwok Wai, PhD MBldgSc Syd., BEng (Hons) NUS
Design theory and methodology, cognitive models and automation of design
Applications of knowledge-based techniques to design
Intelligent buildings and building automation
Building energy and occupant comfort
Building performance and diagnostics
Indoor air quality

Yuen, Belinda (Ms), MA (Town & Regional Planning) Sheff., BA (Hons) Sing., MRTPI, MSIP, Chartered Town Planner
Development control in Singapore
Industrial development planning in Singapore
Land information system in planning
Urban redevelopment

Senior Tutor

Goh Bee Hua (Ms), MSc (Bldg) BSc (Bldg) (Hons) NUS, DipBldg SingPoly
Building tender price index construction
Time series analysis and forecasting of construction prices
Construction tender bid analysis
Construction industry economics
Neural network forecasting of demand for construction