

DIRECTORY OF  
CURRENT RESEARCH

1988-89



NATIONAL UNIVERSITY  
OF SINGAPORE

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## *Introduction*

The concentration of researchers in the University makes it an important resource centre for a wide range of R & D activities.

Indeed, it is the intention of the University to strive still further to generate excellence in research. The increasingly strong research culture, sustained by more active research by the staff themselves, provides the environment to build up a pool of R & D manpower in wide-ranging areas. 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 and unnecessary duplication of research effort avoided. In the process, funds, facilities and time will be more likely to be put to optimum use.

Besides fostering inter-faculty co-operation in multi-disciplinary research, another of the University's objective is the promotion of closer ties and collaboration with industry. It is hoped that this *Directory* will serve as a means of generating increased industrial awareness of and interest in the University's research skills and expertise which may be used to solve pressing applied problems for the benefit of industry. 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 Miss Irene Koh, at tel: 772-2315.

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## FACULTY OF ARCHITECTURE AND BUILDING

### SCHOOL OF ARCHITECTURE

#### *Associate Professor*

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

Ultrasonic method of evaluating strength of concrete

#### *Senior Lecturers*

**Harrison, James D**, BArch Sheffield

Traditional building forms in hot climates

Integration of environmental control in architectural design

Graphic communication techniques in design

**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

**Hyde, Richard**, BSc, DipArch Birm., PhD, RIBA

Multi-disciplinary research project: The Singapore family phase I & phase  
II

AI, CAD systems and building development

CAAD user/software development

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

Hindu/Buddhist architecture of Southeast Asia

Indigenous architecture of Southeast Asia

Religious buildings in Singapore

**Lim, Jon**, MArch Melb.

The Singapore house, 1884–1940

Architects and civil engineers 1786–1964 of Singapore and Malaysia

Interiors and applied artist (pre-war 1942) (sculptors, furniture designers,  
interiors)

**Lip Mong Har, Evelyn (Mrs)**, PhD Sing., March Sing., DipArch Lond.,  
Dip Bldg Design, Dip Interior Decor and Design, RIBA, RAIA, MSIA,  
Architect

Building construction details in Singapore  
Chinese architecture in Southeast Asia

**Powell, Robert**, BA, Dip Arch Durham, RIBA, MRTPI, MSIP

Urban design: The meaning of urban space and form in Singapore - a case  
study of the visual perception of a multi-racial society  
Conservation in Southeast Asia  
Mass rapid transit systems

**Rao, S P**, ME IISc, BE Bangalore, MCIBSE, MAIRAH, MSSEE, Chartered  
Bldg Services Engineer UK

Dynamic thermal performance of buildings under the Singapore climate  
Roof insulations  
Mechanical ventilation in buildings

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

Art and the public: Public sculpture of the 20th century in Southeast Asia  
Modern art and artists in Singapore and Malaysia

**Teh Kem Jin**, MSc BSc (Hons), RIBA, MSIA

Review of fire regulations and preparation of revised fire code in  
collaboration with FSB and SIA

**Woods, Peter**, BSc Lond., FIES (Aust), MILE, MIEEnvSci

Energy utilisation in combined daylight and electric lighting installations  
Design and evaluation of daylight with reference to energy conservation  
in buildings

#### *Lecturers*

**Kong Shee Chong**, March Cornell, 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, mys-  
tique 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

**Lam Khee Poh**, BA (Hons), BArch (Hons), RIBA

CAAD 'useware' research project: Working procedures and data  
management with particular reference to building structures

**Ong Boon Lay**, MArch Auck.  
CAAD useware  
Auditorium design

**Rojanavanich, Pisit**, MSc/Arch Studies MIT, BArch Chulalongkorn  
A study of school buildings in use

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

## SCHOOL OF BUILDING AND ESTATE MANAGEMENT

### *Associate Professors*

**Brown, Peter M**, MPhil (Hons) Auck., BEc W. Aust., VFM Linc. NZ, RDA S. Aust., FAIV Aust., NZIV NZ, MSISV Sing., MPMI NZ, FSLE  
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

**Dutt, A J**, PhD Liv., BEng Calc., MICE, MASCE, CEng FIAA Lond., MIEM, MIES, PEng M'sia., PEng Sing., MSSEE  
Wind tunnel tests on buildings and structure models  
Vibration dampening of slender structures  
Behaviour of ultra high-rise buildings under vertical and horizontal loads  
Natural ventilation in apartment blocks and wind environment of buildings  
Natural ventilation in industrial buildings and halls of residence

**Field, B G**, MPhil Camb, MA Brunel, BSc City, DipTP PCL, MRTPI UK, MCIT UK  
Contemporary planning theory and its applicability in the Singaporean context  
An evaluation of the London Government Act with special reference to town planning  
Theoretical and operational considerations in the administration of a two-tier, statutory planning system  
The recreational potential of public space in private development



**Khublall, Naturam**, BSc (EstMan) Lond., MSc R'dg, FRICS, of Lincoln's Inn, Barrister

Statutory valuations

Real estate law

(a) land acquisition

(b) land law

(c) landlord and tenant law

(d) legislative controls relating to buildings

(e) property tax

**Khoo Cheng Lim**, PhD Edin., BE Malaya, DIC Lond., MICE, MIEM, FIES, PEng

Piling systems

Basement excavations

Vibration tolerance in buildings

**\*Lim Lan Yuan**, MBA NUS, BSc (EstMan) Sing., BSc (Econ) Lond., LLB Lond., FRICS, FSISV, ACIS

Econometric studies and quantitative methods

Real estate development in the ASEAN countries

Real estate valuation methodology

**Motha, Philip**, MSc (EstMan) BSc (EstMan) Lond., BSc Ceyl., FRICS, FSISV

The Singapore property tax

Computer applications in real estate

Computerised analysis of property market transactions

Management of strata title and condominium property

The MRT and the property market

**Murthy, C K**, PhD Liv., BE Mys., FIES, FIE India, MASCE, PEng

Choice of building configurations, materials and structural systems

Diagnosis of building defects and development of a computer-based information system

Timber-concrete composite construction

**Singh, Surinder**, PhD NUS, MSc Aston, Prof DipQS, Prof DipCE Punj., FIE, FIS India, MBIM, MCIB-W65

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

\*Acting Head of School

*Senior Lecturers*

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

Building maintenance defect case studies

Property management - structure and organisation of the industry in Singapore

Diagnosis of building defects and the development of a computer-based information system

Interrelationship of building design and maintenance

A comparative study of surveying techniques used in assessing the condition of buildings

**Chew-Quah Lee Kiang (Mrs)**, MSc Constrn. Mgt. (Maintenance Mgt)

Distinct. R'dg, UK, BSc (Bldg) (Hons) Sing., MBIM UK, MSISV

Construction technology with respect to methodology

Maintenance management

Maintenance technology

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

Public housing - construction economics of CAI/CAL (CBL) -

Developments in construction cost accounting and management

**Damon, A J**, MSc (Pty Devt Proj Mgt) CNA A, Dip (EstMan) Thames Poly., ARICS

Real estate valuation methodology

Real estate investment appraisal and portfolio management

Development activity in Singapore

Risk management in real estate investment and finance

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

Management of construction businesses

Real estate investment strategies

Development industry manpower planning and training

**Haque, M A**, MSc Lond., BSc Rajsh., Dip NCHVRF E, CEng UK, MCIBSE, MASHRAE

Building services for highrise buildings

Airconditioning and energy conservation

Fire safety in buildings

Clean room technology

**Leong Tuck Wah**, PhD NSW, ME Auck., BSc (Eng) Natn'l Taiwan, MIE Aust, MIES, MIEM, MICE, MPIENZ, PEng, CEng

Concrete, reinforced concrete and prestressed concrete structures subjected under long term and repetitive loading

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

**Lewis, J B**, MSc (Constr Eng) Sing., BBldg Melb., FSIB, MAIB, Chartered Builder

Mechanisation, prefabrication and industrialisation of building construction, automation and robotics in the construction process

Construction, project and contractors management

Construction and maintenance technology and their integration in the design, maintenance and use of buildings

**Lim Chong Nam**, MSc (ConstrEng) Sing., BBldg Melb., AAIQS, FSIB, MAIB, Chartered Builder

The development of construction techniques and equipment appropriate to Singapore

Education and training

**Look Yep Sang**, MSc BSc H W, Prof Dip (Bldg) Poly Sing., FRICS, MSISV, FSIB

Construction cost and economics

Development economics

Design economics

Multi-trade system communication at shop-floor level

**Mathur, Krishan S**, PhD Strathclyde, MTech BTech I.I.T.Kanpur, MSIB, MCIB

Application of computers in the building industry

Use of mathematical (operations research, statistical, simulation) models in building design economics

Building design appraisal and cost modelling

Expert systems in building design and construction

**Netto, A E**, FRICS, ACI Arb., MSISV, MA Cost E.

Construction contracts: Law and administration

Standard methods of measurement

Tender price index

**Ofori, George**, BSc (Tech) Ghana, MSc Lond., PhD Lond.

The construction industry in Singapore

The continuous improvement of the construction industry

The place of construction in national economies

Housing in developing countries

**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

**Robinson, N M**, MSc (Constr.Mgt) R'dg, FRICS, Cert Ed.

Construction law generally

Project management

Construction management - planning, organisation and marketing

Contract documentation and standard forms

Arbitration and conciliation in construction disputes

Measurement theory and practice

Contracting procedures under international aid programmes

Technology transfer in construction projects

**Roy, S K**, ScD MIT, FIDiagE, HonF SIET, MAmCS, MAustCS, MICS,

MIIEI, MICorrT UK, MNACorrE USA

Diagnosis of building defects

Non-destructive testing of building materials and components

Corrosion of building materials

Development of building materials with target properties

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

Real estate development

Condominium development

Planned shopping centres

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

Climatic zoning and building design: Comfort charts

Solar cooling systems

Building energy analysis

Building automation

Microcomputer applications

### *Lecturers*

**Belinda, Yuen (Ms)**, MA (Town and Regional Planning) Sheffield, BA (Hons) Sing., MRTPI, MSIP, Chartered Town Planner

Planning information systems

Urban design and urban redevelopment

Industrial developments

Recreation planning

**Cheng Fook Jam**, DipUrbVal Auck., MSc (Urban Land Appraisal), 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

**Chin Kein Hoong, Lawrence**, BSc (EstMan) (Hons) Sing., MSISV, MSISM

Property management and maintenance

Management of Singapore's new towns

Prospects for low-cost housing in Southeast Asia

**Choo Kian Koon, Steven**, PhD (Urban Planning) Washington, MPhil (EnvironPlan) Nott., BSc (EstMan) Sing., MSISV, ASIP, FSVA

Application of factor analysis to urban planning and estate management problems

Policies of urban development and redevelopment

Development industry in Singapore and ASEAN countries

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

Land law: Landlord and tenant, land acquisition, rent control

Contract law

Company law

**Flood, I**, PhD BSc UMIST

The application of artificial intelligence (AI) techniques to construction

Computer-based construction simulation modelling

Development of operation's research techniques for application in the construction industry

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

Real estate development

Condominium housing

**Koh Ah Meng, Amos**, MSc (Urban Land Appraisal) R'dg., BSc (EstMan) Sing., MSISV, PhD (Business Admin/Real Est) Georgia

Market studies for property development and investment

Investment

Quantitative methods in estate management

Econometric models for forecasting property demand

Property portfolio analysis

Risk analysis in property investment

Urban land economics as applied to Singapore

**Lau-Chook Lai Chan (Mrs)**, MSc (EstMan) BSc (EstMan) Sing.  
Quantitative methods in real estate  
Property maintenance and management

**Lee Siew Eang**, PhD, MSc, BSc Heriot-Watt  
Control of factory noise and hearing acumen among industrial workers in Singapore  
Room design and speech intelligibility  
Sound insulation of composite structures  
Response and radiation of building components to impact excitation  
Acoustical design for auditorium and recording studio

**Ngo-Khng, Monica (Mrs)**, BSc (EstMan) Sing., MSc (Urban Land Appraisal), R'dg, UK, MSISV  
Property maintenance and maintenance performance  
Establishments of standards in property maintenance  
Strata titles

**Ongh-Koh Choon Fah (Mrs)**, MA (BizAd) Georgia, BSc (EstMan) Sing., MSISV  
Financial investment analysis  
Quantitative methods in real estate

**Schein, William**, MS (Real Est Devt), MIT, MBA (Finance), BA (Econ) (U. Cal. Berkeley)  
Feasibility analysis for public sector projects  
Market analysis  
Development planning

**Soon-Sng Kwang Geck, Mary (Mrs)**, MBA BSc (EstMan) (Hons) Sing.  
Management corporations  
Property management  
Strategic management in development industry in Singapore

**Teo Pin**, BSc R'dg, UK, FRICS, MSISV  
Economics of 'intelligent' buildings

**Yu Shi Ming**, MSc (Urban Land Appraisal) (Distinction) R'dg, UK; Dip Urban Valuation (Hons) Auck.  
Advanced methodologies for investment valuation/appraisal  
Relationship between value and maintenance of building  
Application of quantitative methods in property management

#### *Senior Tutors*

**Han Swee Lean (Mrs)**, BSc (HBP)(Hons) M'sia  
Applications of operation research in BEM

**Leong Hoe Yin, Christopher**, BSc (Bldg), ARICS, MSISV

Construction and project management  
Contract procedure and administration  
Design delegation and liability

**Li Hang Han (Mrs)**, BSc R'dg

Building economics: Construction cost and tender price movements  
Durability of building materials in Singapore

**Low Sui Pheng**, BSc (Bldg) Sing., Tech.Dip. (Bldg) (Merit) Sing.Poly,  
Dip.MS UK

Legislative and regulatory control of construction  
Development and implementation of regional marketing strategies in  
construction  
Purchasing pattern of construction products, tendering procedures  
and contractual arrangements within ASEAN/Asia and Western Pacific  
Region for building and civil engineering works  
Sources of financing for overseas trade ventures  
Infrastructural and governmental support for construction export promo-  
tion: The Japan, Korea and Singapore experience

**Tan Chee Keong, Willie**, B Surveying (Hons)

House price modelling  
Real estate portfolios  
Forecasting

**Tay Poh Huat, Danny**, B Surveying Aust.

Resource-constrained heuristic scheduling of projects

### *Teaching Fellows*

**Tan, Rosalind**, LLB Sing.

Revenue laws  
Restitution  
Banking

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

Marketing of real estate professional services  
Marketing orientation of real estate consultants

## FACULTY OF ARTS AND SOCIAL SCIENCES

### DEPARTMENT OF CHINESE STUDIES

#### *Professor*

**\*Lim Chee Then**, PhD Sing., MA BA Malaya

History of Chinese literature, with special reference to Chinese myths and legends, historical and philosophical prose of the Pre-Qin period, and the *Shih Jing* and the *Chu Ci*

Chinese classical novels of the Ming and Qing Dynasties, with special reference to *San Guo Yan Yi*, *Shui Hu Zhuan* and *Xi You Ji*

#### *Associate Professor*

**Lee En Han**, PhD Calif., MA Hawaii, BA Taiwan Normal

Modern China, with special reference to the Chinese diplomatic endeavours in the 1920's and 1930's

Chinese in Southeast Asia, with special reference to the Chinese communities in British Malaya from 1895 to 1945

The Second Sino-Japanese War, 1937-1945 and its aftermath

#### *Senior Lecturers*

**Keong Tow Yung**, PhD Sing., MA HK, BA Nan. and Sing.

History of Chinese philosophy, with special reference to the modern and contemporary Chinese thought

Aesthetic philosophy of Confucianism in the Pre-Chin period

**Ong Tee Wah**, PhD Nan., MA Durh., BA Narr.

Classical Chinese literature, with special reference to the *Chu Ci*

Chinese etymology

Chinese semantics

**Pi Shu Ming**, MA BA Taiwan Normal

Chinese classical novels of the Qing Dynasty, with special reference to *Hong Lou Meng*

Chinese verse

Chinese drama

\*Head of Department



**Shu Sinn Whor**, PhD Nan., MA HK., BA Nan.

History of Chinese philosophy, with special reference to the democratic spirit in the political thought in Confucianism

Modern Confucianism

**Tan Eng Chaw**, PhD MA Sing., BA Nan. and Sing.

The general history of China, with special reference to the history of the Song Dynasty

The involvement of the literature in Chinese politics

History of Chinese literature with special reference to post Tang period

**Wong Yoon Wah**, PhD MA Wis., BA Natn'l Chengchi

The poetics and poetry of Tang Dynasty, with special reference to Sikong Tu and Wang Wei

Singapore Chinese literature since 1919, with special reference to fiction and poetry

Comparative literature, especially literary relationship between modern Chinese and Western literature

Modern Chinese literature, with special reference to Lu Xun, Wen Yiduo, Shen Congwen and Yu Dafu

**Yeo Song Nian**, PhD MA HK., BA Nan.

The history of the developments of Chinese literature in Singapore and Malaysia

Chinese literary criticism, with special reference to the Ming and the Qing poetics

#### *Lecturers*

**Hsiao Wang Kuo Ying**, PhD NUS, MA Harv., BA Natn'l Taiwan

Chinese classical poetry, with particular interest in the poems of parting

The impact of Confucian ideals of service to the state on Chinese poets

**Kow Mei Kao**, PhD NUS, MA ANU, BA Nan., CertEd TTC Sing.

Chinese semantics and textual criticism

Theories and techniques of translation

Chinese fiction of the Ming and the Qing period

Chinese literary anecdotes

**Lee Cheuk Yin**, PhD ANU, MPhil, BA (Hons) HKU

History of China, with special reference to the Ming Dynasty

Theories of legitimate succession in imperial China

Chinese intellectual history, with special reference to Confucianism and the Three Teachings

History of Chinese historiography

History of Chinese political thought