

PILOT STUDY REPORT

ON

GLOBAL COMPARISON

OF

BUILDING CONTROL SYSTEMS

by

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PREFACE

This report documented the research findings of a pilot comparative study on global building control systems. The study was initiated by Barnabas H.K. Chung, a Governor of the World Organization of Building Officials (WOBO), in conjunction with the WOBO Fourth World Congress and supported by a research team at the Hong Kong Polytechnic University led by Man-wai Chan, Associate Professor of the Department of Building and Real Estate. The questionnaire was designed by Barnabas H.K. Chung and the responses were analysed by the University team. The purposes of the study are to compare and contrast different statutory building control systems under different built environments and to identify variation of practises by different building control professionals. 125 responses from 10 countries were received and the findings will hopefully form a basis for future research on global building control systems.

1. Introduction:

A pilot study on global building control systems was initiated in 1995 in conjunction with the organisation of the WOBO Fourth World Congress of Building Officials. This research aimed at gathering information on global building control systems and to explore the differences among different countries/local authorities in executing such control in practise. A further aim of the study was to explore the very basic guiding principles and philosophy adopted by different authorities and how these are affected by the different built environment and socio-political background.

2. The study:

The pilot study was carried out through questionnaires mailshot via the WOBO network. 125 returns were received mostly from UK and Australia. Some very interesting returns were also obtained from Sweden, Cyprus, USA, Canada, Poland, New Zealand, Hong Kong and Nigeria. The distribution of the respondents' countries of origin apparently reflects WOBO membership distribution.

Fig.1 Respondents statistics:

| Countries: | No. of responses: |
|-------------------|--------------------------|
| United Kingdom | 81 |
| Australia | 32 |
| Canada | 3 |
| USA | 3 |
| Cyprus | 1 |
| Poland | 1 |
| Sweden | 1 |
| New Zealand | 1 |
| Hong Kong | 1 |
| Nigeria | 1 |
| TOTAL: | 125 |

The questionnaires collected information on the authorities' background such as population, characteristics of built environment and the social/legal background of the respondents. The latter part of the questionnaires concentrated on the practises of building control. The survey results are summarised in Fig.2

- 3.13 About half of the countries responded require registration of contractors. Most local authorities in UK do not require building contractors to be registered. Whereas in Australia, the ratio of those authorities requiring contractor registration to those not requiring is 3 to 1.
- 3.14 Most countries require separate planning approval except Nigeria, Poland and Sweden.
- 3.15 There is no consensus as to the requirement of fire protection certificate/permit. Countries like Nigeria, Poland and New Zealand do not need such a certificate/permit. For USA and Canada the ratio is 2 to 1 for those authorities requiring fire protection certificate/permit against those which do not require such certificate/permit.
- 3.16 Most do not require separate land use permit. Some authorities in US, Canada, Australia and UK do need such permit.
- 3.17 Most authorities responded state that the systems they are practising are the same throughout the country or states/province. (In effect, most are probably wrong?)

4. Comments on results:

- 4.1 The ten countries that responded (apart from Poland and Sweden) practise common law and are to some extent influenced by the British legal system. (Hong Kong is still a British Colony till 1997.) This probably results in some similarity of their responses. Naturally, a more diverse result may be obtained if responses from more countries can be obtained.
- 4.2 Apparently, there appears to be a global consensus on the underlying principles for building control: namely public health, safety and facilitation/control of building development.
- 4.3 The global differences as revealed appear to centre on the practicality in the execution and how different countries adapt to their environmental and socio-economic factors in accomplishing their stated goals.
- 4.4 Differences in the building control systems are likely the results of differences in:
- the administrative and legal system
 - the political system
 - the built environment of the individual countries/council
 - the extent of professional liabilities
 - geographical and environmental influences.
- 4.5 Other practice-related issues may be regarded as means to "safeguarding the liabilities of the building officials". It is then interesting to note that different countries have different approaches in relation to:
- certification of building plans (e.g. plan certifiers)
 - registration of contractors
 - registration of professionals (e.g. Authorized Person in Hong Kong)

building plan approval
occupation permit requirements
fire certificate requirements
treatment of planning related matters

5. Future research:

Global differences in building control may open to future correlational studies if enough data can be obtained from more countries/authorities. The following issues may be worth pursuing in a global context (amongst others):

- 5.1 The interrelationship between building development and Building Control systems.
- 5.2 The influence and effectiveness of computer and Information Technology in Building Control.
- 5.3 The global emphasis on Quality and its influence on Building Control.
- 5.4 The conflict of private vs public participation in Building Control.
- 5.5 Integration or segregation of Building Control from environmental management and country planning.
- 5.6 Liabilities in Building Control and professional indemnities.
- 5.7 Building Control practice and the built environment.

6. Summary:

- 6.1 This is probably the first study on global building control systems. The questionnaire which is mainly open-ended obviously need refining and updating. Maybe the study can be automated and regularised in future through the establishment of a WOBO WWW homepage.
- 6.2 Although the research tools used are generally unsophisticated and the outcome are for indication only, some interesting differences are identified and they point to areas for future research. The research may, for example, develop further through correlational and regression analysis on the performance of building control against characteristics of control systems and practices in a global context. Such findings may be more beneficial to enhancing the profession and identifying areas for improvement in the long run.
- 6.3 The purposes of research are to foster better understanding of the subject matter and to promote the interest of the community. Maybe the long-term goal of the research is to establish a Global Best Practice/Benchmark in building control through collaboration with WOBO.

- 6.4 The study carried out so far was mainly fact-finding. On-going opinion or perceptive surveys will serve to broaden the scope and purposes of the study and further promote the professionalism of Building Control .

Bibliography:

1. Cooling P., Shacklock V, Scarrett D. *Legislation for the Built Environment* Donhead, 1993
2. Downward A., *Building Control - A guide to the Law* CEM, 1992
3. *People's Republic of China - Construction Regulations (1991-92)*
4. DOE, *Product approval, quality control and building control procedures in Sweden, The Netherlands and Denmark* BRE 1974
5. Hong Kong Government, *Buildings Ordinance and related regulations*

Appendix:

1. Open Letter to Building Control Authorities.
2. The Questionnaire.

Further information:

The research team welcomes suggestions and advice from members of WOBO. For further information and collaboration in research please contact:

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June 10, 1995

To the Government Authority responsible for
the control of new building constructions

Dear Sir

Fourth World Congress, World Organization of Building Officials (WOBO)

I am pleased to inform you that the World Organization of Building Officials (WOBO) will be hosting its **Fourth World Congress** in Hong Kong from 2-8 November 1996, the theme of which is *Built Environment at the Crossroads - Towards a Sustainable Future*. We are expecting more than 500 building officials and building professionals from all over the world to meet at the Hong Kong Convention and Exhibition Centre with the purpose of revisiting key issues on building control and sharing experience on the latest development in building technology and construction.

In conjunction with the event and as a WOBO contribution to all nations, it is intended to collate comparative data on different building control systems on a worldwide basis. Hopefully this will provide a ready reference for building officials and to foster further exchange of expertise and experience.

I would be most grateful therefore if you could complete the attached proforma as far as possible (providing alternative answers on separate sheets where appropriate) and return it to me or our Congress Secretariat by mail or by fax. Collated data will be sorted and published with copies distributed to delegates to the World Congress as well as to all contributors.

Please write to me if you need further clarification. Thank you in anticipation of your most valuable input.

Yours faithfully

A large, stylized handwritten signature in black ink, appearing to read 'Barnabas H K Chung'.

Barnabas H K Chung, Governor WOBO
Chairman, Organizing Committee



MEETING PLANNERS (HK) LTD



World Organization of Building Officials



HongKongTouristAssociation

1996 WOBO FOURTH WORLD CONGRESS

Congress Secretariat: 12A Dai Fat Street, Tai Po, New Territories, Hong Kong. Contact Person: Esther Ho Tel: (852) 2665 0990 (852) 2667 6927

WOBO FOURTH WORLD CONGRESS OF BUILDING OFFICIALS

"BUILT ENVIRONMENT AT THE CROSSROADS - TOWARDS A SUSTAINABLE FUTURE"

Comparison of Building Control Systems

City/Municipality : _____

State/Province : _____ Country : _____

Building Control Organization : _____

Title of Responsible Post : _____

Address : _____

Tel : _____ Fax : _____ Postal Code : _____

Background

Area of City (sq m): _____ Population (million): _____

Climate (e.g. tropical/mediteranian etc) : _____

Temperature : lowest _____ °C in (month) _____ highest _____ °C in _____

Wet Season (months) : _____ Annual Rainfall (mm) : _____

Natural Phenomenon (e.g. typhoon/earthquake etc) : _____

Building Type :

_____ % high rise of _____ storeys mainly for (use) _____

of mainly (construction) _____

_____ % medium rise of _____ storeys mainly for (use) _____

of mainly (construction) _____

_____ % low rise of _____ storeys mainly for (use) _____

of mainly (construction) _____

Building Control System (for new building development)

Building approval/permit required : YES NO

Building approval/permit granted by : _____

Mandate (e.g. Building Act/Administrative Order etc) : _____

Mandate enacted by (e.g. Parliament/Minister of State etc) : _____

Application for approval to be made by (developer/architect etc) : _____

Fee to be charged per (e.g. total floor area/building cost etc) : _____

Application to be responded within (time period) : _____

Avenue for appeal against refusal of approval/permit : YES NO

Building plans to be certified by (design architect/private certifier etc) : _____

_____ to support the application / instead of the application

Separate permit for commencement of work : YES NO

Building works to be supervised by : _____

Building officials to inspect building works : YES NO

_____ as a statutory duty / as an optional monitoring

Liabilities to ensure compliance with building code rest with : _____

Satisfactory completion of works to be certified by : _____

Occupation permit of new building required : YES NO

Occupation permit issued by : _____

Building professionals required to be registered : YES NO

What categories (e.g. Architects/Building Surveyors/Engineers etc) : _____

Building contractors required to be registered : YES NO

What categories (e.g. General Contractors/Specialist Contractors etc) : _____

Separate planning approval/permit required : YES NO

Planning approval/permit granted by : _____

Separate fire protection certificate/permit required : YES NO

Fire protection certificate/permit issued by : _____

Separate land use permit/licence required : YES NO

Land use permit/licence issued by : _____

Same system as other cities in the same state : YES NO

Same system as other cities in the same country : YES NO

This form completed by : _____

Title/Post : _____ Date : _____

Contact Tel : _____ Fax : _____