

HKIS / RICS (HKB) 10 ANNUAL DINNER 97



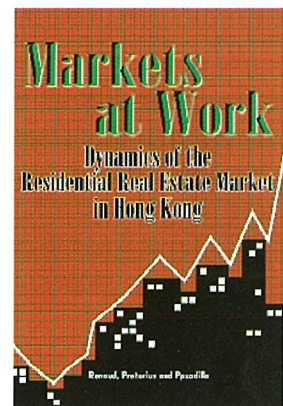
Hong Kong University Press
香港大學出版社

New Publication

Markets at Work:
Dynamics of the Residential Real Estate Market in Hong Kong
Renaud, Pretorius and Pasadilla

This book explores the key factors that shape the dynamics of Hong Kong's residential real estate industry, and their interactions with domestic and international capital markets by using the Fisher-DiPasquale-Wheaton model. It will be most useful to Hong Kong and international practitioners in the finance, banking and real estate industries.

962-209-438-4. 128 pp. 1997. HK\$120



Other related titles:

Zoning and Property Rights:
A Hong Kong Case

Lawrence Wai-chung Lai

962-209-405-8. 204 pp. 1996. HK\$110

Privatization of Urban Land in Shanghai

Li Ling-hin

962-209-421-X. 208 pp. 1996. HK\$150

To order, please complete and return the enclosed order form. Titles also available in local leading bookstores.

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NEWS FROM THE SECRETARIAT

DATES FOR YOUR DIARY

8/7/1997

Surveyors Lunch

Time : 12:30 pm.

Venue : Sheraton Hotel, Tsimshatsui, Kowloon.

Guest Speaker : Mr K Y Yeung, CBE JP, Chairman & Chief Executive of KCRC

11/7/1997

GP Divison CPD - ISO 9000

Time : 6:30 - 8:30 pm. Venue : VTC, Wanchai

Guest Speaker : Mr C L Tang, Technical Manager, Hong Kong Q-Mark Council

Further details from the Secretariat

26/7/1997

LS Division CPD - Technical Tour to Ting Kau Bridge

Time : 9:15 am

Further details from the Secretariat.

2/8/1997 and 9/8/1997

JO Eleven-a-Side Soccer Competition

Time : 1 pm-7 pm & 1 pm-5 pm respectively

Venue : Sandy Bay Road, HKU

Further details from the Secretariat.

16-18/9/1997

The Asian Property Market - Exhibition & Conference

Venue : Singapore International Convention & Exhibition Centre, Suntec City

All enquiries to Christine LAM, Reed Midem Organisation, Hong Kong. Tel : 2965 1613.

16-20/9/1997

Building & Construction Indonesia

Venue : Jakarta International Exhibition Centre

See separate heading for details.

23-27/10/1997

HKIS Beijing and Shanghai Visit

All members and their families are welcome. Details to be announced in future issues of the newsletter.

26-29/10/1997

Pacific Rim Council on Urban Development

9th Conference

Venue : Westin Stamford, Singapore

Enquires to: Conference Secretariat, c/o School of Bldg & Estate Management, National University of Singapore, 10 Kent Ridge Crescent, Singapore 119260

21/11/1997

Surveyors Annual Dinner

Time : 7:30 pm. Venue : Regent Hotel, Tsimshatsui, Kowloon.

Guest Speaker : to be advised.

AMENDMENTS TO "STANDARD FORM OF BUILDING CONTRACT" (With or Without Quantities)

Members who purchased the above publications from the Secretariat recently would have noticed the amendments made on Clause 35(1) on page 33. Such action forms part of the many issues needed to be addressed in preparation for the forthcoming closure of the RICS HK Branch.

BUILDING & CONSTRUCTION INDONESIA - September 16th-20th, 1997

The HKTDC advised the Institute that a promotional stand will be organised at the above exhibition. The key objective of the event is to raise the profile of Hong Kong's building and construction industries as a whole in Indonesia, which has been identified as being a rapidly

Richard Ellis

International Property Consultants

V A L U A T I O N

Our Valuation and Professional Services Department invites applicants for the following posts:

Senior Surveyor (VAL/GI/97/1)

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- Post-qualification experience in Hong Kong and PRC markets is preferable
- A strong market sense and ability to prepare detailed reports is required

Valuers (VAL/GI/97/2)

- Degree or RICS Student Member
- Minimum 2 years experience in mortgage valuation
- Ability to give verbal approximate valuations is preferable

We offer attractive remuneration package to the right candidates. Interested parties for the above positions please reply with a detailed resume, recent photo, expected remunerations, available commencement date quoting the respective reference number on the envelope: The Valuation Department, Richard Ellis Ltd., 32/F Bank of China Tower, 1 Garden Road, Central, Hong Kong.

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NEWS FROM THE SECRETARIAT

expanding market for all manners of infrastructure services. The HKTDC is inviting surveying practices to support the promotional booth, which is to be manned by the staff of the Council. Supporting trade associations or relevant companies in the industries, selected at the sole discretion of the HKTDC, can have their materials presented at the booth free of charge. Enquiries to Mr Stephen Liang (Tel. 2584 4421) or Mr K K Chan (Tel. 2584 4236) of the HKTDC.

AVAILABLE FROM THE SECRETARIAT

The following are available on a first come first served basis. Pick up a copy in person or make a request by sending an A4 stamped and self addressed envelope, postage as indicated.

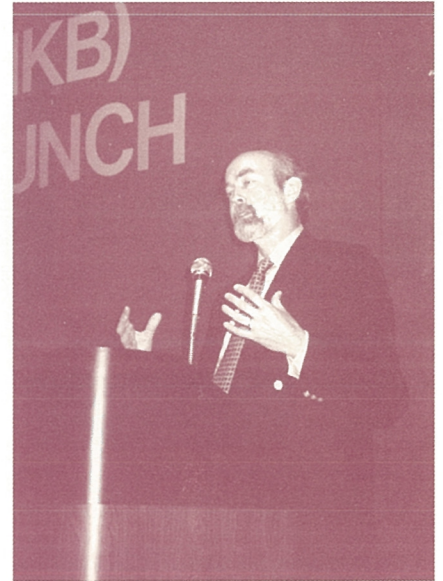
"A New Dimension in the Maintenance of Private Buildings in Hong Kong" - a report produced by the Building Safety Concern Group, Building Surveying Division (HK\$3.50).

"The FIG Bulletin", June 1997 edition - newsletter of the International Federation of Surveyors (HK\$1.80).

THE HKIS/RICS(HKB) SURVEYORS LUNCH, 28TH MAY 1997

A Surveyors Lunch was held at the Sheraton Hotel on 28th May 1997. The guest speaker, the Director of Housing, Mr Tony Miller, gave a speech on "Housing Department: Towards a Better Tomorrow".

A copy of the speech, in English or Chinese, is available from the office on a first come first served basis. Pick up a copy in person or make a request by sending a stamped and self addressed envelope (postage HK\$1.80).



XV INTERNATIONAL COST ENGINEERING CONGRESS



Rotterdam, April 20 -22, 1998

The Cost Engineer Counts!

Call for Papers & Posters, Abstracts Due By August 29, 1997

*Abstract Can Be Up to 250 Words and Should Provide a Description of the Paper.
For More Information On the Poster Conference Please Contact Us.*

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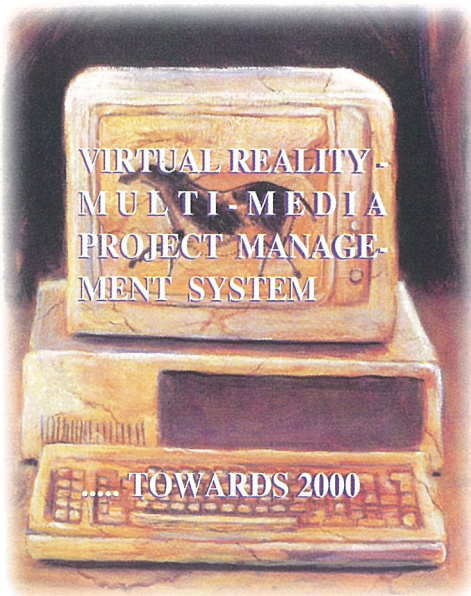
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FEATURE



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Summary

Virtual reality is a computer-based technology that provides a three dimensional experience to users. Equipped with specialized equipment or by viewing the virtual model on the computer screen, users move through the simulated building environment and interact with its components.

It is expected that virtual reality would become the latest technology and most useful tool for project management for large-scale real estate development and sales presentation. The implementation of the full model from project inception assist in the process of understanding key issues as the design develops, providing immediate identification and elimination of co-ordination problems.

The principal benefit is to allow various members of a project team to have an early visualization of their working effort and thereby improving the total construction standard and, hence, value of a project.

1.0 INTRODUCTION

Nowadays, many professionals are involved in the real estate development process including architects, engineers, surveyors, contractors, accountants, bankers, etc. Each of the disciplines have developed special techniques in their own areas of work but there are few efforts made to coordinate their input in order to achieve overall control. A number of computer softwares are now available in the market for visual simulation, critical path analysis, programming and scheduling, cost control, facilities management, etc., but none of them can encompass a total project management approach.

Furthermore, design drawings produced to control the overall development form and details are still by means of two dimensional drawings which are difficult to define the eventual end product which is of a three dimensional nature. Problems usually arise when various components, finishes and electrical and mechanical installations are being put together at design stage. The end-users generally find that they have difficulties to visualize the final product until the buildings have been constructed and any further improvements desired will result in substantial expenses, i.e. wastage in both time and resources. Changes required during construction stage will also result in disputes amongst the developer, the consultant team as well as the

contractor and subcontractors, creating prolonged arguments and court cases.

2.0 THE IDEAL SITUATION

Due to the complicated inter-relationship amongst the parties involved in a real estate development, any alterations, no matter how simple, might result in substantial abortive work and wasted time on the part of the other professionals involved. We are therefore of the belief that total control can only be achieved on a four dimensional basis and inputs from all parties should be transparent to the others involved to ensure centralization of efforts. Such system can then be used to closely monitor the entire real estate development process to provide a clear picture of the finished product at all times to the developer, the professionals as well as the end-users. By proper distribution of information on a first hand basis, the requirement to amend any part of the design initiated either by the developer or the architect can be instantly conveyed to other members of the professional team with the impact critically analysis in all relevant aspects. Eventual cost implications can then be assessed and business as well as technical decisions can then be made at the shortest time span.



Figure.1
Development of Computer applications in Architectural,
Engineering and Construction Industry.

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3.0 A STEP TOWARDS PERFECTION - IRTUAL REALITY PROJECT MANAGEMENT”

The computer and software we use today has increased considerably in capacity. What we five years ago used to call a super computer is today called a workstation and tomorrow a PC or video game. Increased computer capacity has opened the possibility to interactively calculate 3D graphics in real-time. This technique is called Virtual Reality”. Originally developed for military applications, Virtual Reality will become the latest technology and most useful tool for project management in construction industry.

We believe that Virtual Reality Project Management (VRPM) is the right step towards total control of the complex real estate development process. This is by means of the creation of a central file system to allow for proper assimilation of information by all professionals involved in the process. The system also allows for gradual build up of the various information files, taking advantage of the fast improving computer techniques available currently in the market.

The process starts from the initial design stage and incorporates all facets of the development process including feasibilities studies, design parameters, capital investment analysis, development programming, cost in use studies, sales and rental strategies, facilities management, etc.

VRPM approaches the entire development process in a four dimensional manner to ensure real time” control of the finished product.

4.0 VRPM APPLICATIONS

VRPM can enhance the following stages of the development process :-

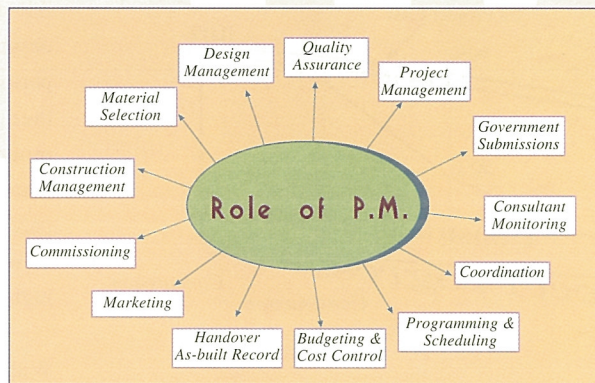


Figure.2 Application Areas of VR Models.

4.1 Design Coordination

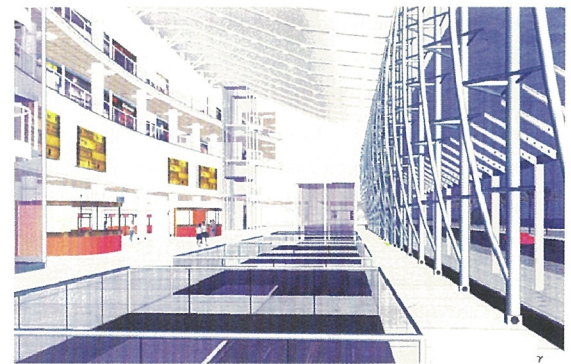
With the assistance of a VR model, the design professionals and project manager can gain better understanding of key issues as the design develops. They can illustrate to the client how the client brief and government requirements are met. The real-time visualization can show what the proposed development would look like, down to the colour scheme, lighting scheme and alternative internal layouts just a few weeks after the preliminary design were presented and agreed with the client. This will leave plenty of time to the project team to identify all potential design improvement opportunities because continuous enhancement can be done in parallel with other traditional project process.

The most useful feature is that when a change of design is made by one discipline, the corresponding effects on the other disciplines are reflected instantly in the model. It is not just another computer aided drafting system but takes design technology to a much higher level of intelligence and sophistication. The VR model will enable designers to fine tune

their ideas in pursuit of perfection, cutting out unnecessary human errors and move towards design optimization.

Using VR model, multi-disciplinary design teams can solve a great many of complex design and engineering problems, from sizing a complex HVAC network to calculating the strength of reinforced concrete beams and columns. With the aids of integrated software package, financial analyses can be taken place in the same system and developed into a totally coordinated database of project information.

Figure.3 Virtual Reality Model was used for design management and coordination purpose in the project of MTRC Central Station, HK.

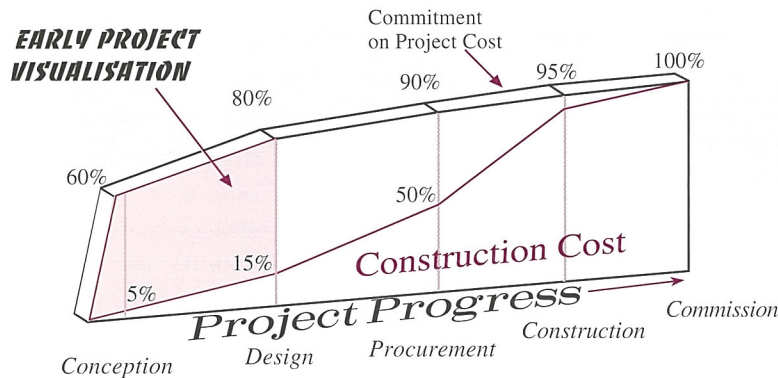


4.2 Project Strategy

An important role of the project manager is to assist the client to formulate a sensible and profitable project strategy. In the past, this is normally addressed in the form of a master programme together with a cash-flow analysis. It is now possible to assign dates to each of the model element and to examine their inter relation by running the model in construction sequence. This kind of time-event models helps to assure that the objectives laid down by the clients’ business plan and operation requirements can be fulfilled. It will not only speed up the decision

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Figure.4 Importance of Early Project Visualisation



making process but also reduce the project risk.

Sometimes, the VR model can be used to provide a means to present planned events in a format much easier to comprehend than engineering drawings and numeric spread sheets. Metropolitan development project such as urban planning, change in land use and application for planning relaxation are good examples of applications in which, “project of the future” can be done with a level of accuracy and reality. Town planning board members may be more easily convinced than before.

Project managers can use the VR model as the working record, giving a true and accurate picture of all elements of the project as it progresses. They can easily produce multi-media progress reports even in real time to the client. It is particularly useful when the clients are stationed overseas.

4.3 Quality Assurance

In seeking the objective of excellence in building, quality assurance is an essential management process which has to be applied. Cost and functionality are the primary concerns. By combining the visualization capabilities of VR models and time-event

model, it provides a team environment for all parties to the building process to input their contribution. In return it will substantially reduce the degree of waste of effort expended and manifestly improve the quality of the final product.

VR PM helps to control the entire design and construction process through the use 3-D modelling to check and resolve the usual problems of interfacing amongst components, finishes and services installations. This allows the design process to progress with clarity so that all design drawings can be properly checked and coordinated. The improvement in quality at the design stage will promulgate better quality control at the construction stage in particular when the assembly process can be illustrated on a 3-D basis. This allows the workmen doing the actual installation to easily grasp the construction method and for the supervisors to check and monitor the works.

ISO 9000 requirements can also be fully incorporated in the VR model so that every part of the design and construction works can be checked in a systematic manner, any errors or defects can be rectified instantly. As-built records will be available on real-time basis. If the VR model is being implemented to its full

extent, we envisage that a defects free building can be produced.

4.4 Time Control

All developers prefer their project to be designed and built within the shortest possible period but based on normal costs. This will then allow them to dictate the marketing programme as well as to cut down the cost of finance for the land. This aspect is of particular importance in cities where land cost as well as prices of completed products are high.

With the help of VR models, time savings can be made in the design stage by cutting out unnecessary abortive works. Accurate design drawings can be produced to allow detail programming of the construction works.

The VR model can also closely monitor the entire design and construction process by comparing programme with actual work done so that the developer and his project manager can tightly control the overall time frame previously agreed. In the case if there are any slippage in the original programme, various time saving alternatives can be tested based on the VR model to find out the best way to catch up on the lost time. Cost implications on these alternatives can be evaluated with the help of the quantity surveyor and the main contractor.

The handover procedure can be easily derived in accordance with the detailed information gathered to ensure that the end-users can take occupation in line with the pre-agreed time schedule.

4.5 Marketing Tools

Whether the finished building is for sale or for lease or a combination of sale and lease, the marketing agents require detailed information including building form, floor areas, facilities provided, user restrictions, etc. All these

FEATURE

aspects are available by simulation of the inputs from the professional team during the design stage.

3-D models formed to assess buildability, inter-relationship between components and finishes, colour coordination, etc, are all in the computer files which can be extracted for the production of marketing materials such as brochures, coloured floor plans, building specifications, videos.

Orientation simulation can also be produced based on these information together with photos of the surrounding environment so that end-users can visualize the overall view of any particular unit even before the building is completed. Developer can use the same information to set sale and rental price level, obviously units with a better view can command a higher price.

Pre-sale and pre-letting shows can be organized with the help of walk through visualization”, a special feature offered by the VR model.

In practice, VR PM can enhance the marketability of the building by allowing the end-users to realize what their preferred units are like when these are finally built. It gives confidence for the end-users to make their commitment to buy or lease and to re-assure them that the units chosen are suitable. It will also allow the occupants to decide on the interior fit out arrangement at an early stage as their appointed interior designer can use the VR model to further produce alternative design schemes without the need of on-site measurements. This, in turn, will shorten the fitout period - a definite gain on the part of the occupants as well as the landlord.

4.6 Facilities Management

All sophisticated buildings require continuous monitoring and upkeeping. VR model should

be seen as valuable aid to user care and the vehicle by which property management and maintenance may be most effectively performed. Building managers can use the readily available model to administer all aspect of the building from the interior environment to the people who live and work there.

As built information are readily available based on the files assembled during the design and construction stages. Owners and occupants records can then be added including all the fitout information. These files can be expanded without any restrictions. The information contained can assist in future real estate transactions such as history of ownership and tenancy, building price and rental trends, etc.

An accurate graphical record of the building and its contents can be displayed advising the building manager when an asset was brought, its cost and when it needs replacement or overhauling. Besides, we can link sensors and devices in the building to the VR model and allow a central building automation control. On the other hand, the pathology of building behavior can be handled in systematic manner and eventual renewal of aged building elements and installations is enhanced and safer because the form of construction is well understood.

5.0 CONCLUSION

With the recent announcement by Central Government that real estate sector will be one of the main driving forces in the future growth of PRC, many large scale real estate developments are expected to be implemented in this five year plan. VRPM takes advantages of the current innovations to bring real estate development into the computer age. The system will allow total transparency of the entire process as well as the best use of

limited resources. The system will also enable proper assessment of savings in development cost, improve quality of end product and to ensure maximization of profit targets. The approach is also in line with requirements of ISO 9000 in ensuring total quality control and to match products with end-users.

The system can be developed in various levels according to the need of the developer and the professional team. A basic model can first be developed using a relatively simplified format and further details can subsequently be added according to the level of perfection required, a reflection of the goal of the developer as well as the target quality level of the end product. The cost of the VR model is obviously linked with the level of complexity required but we are of the opinion that the time and cost savings achieved at both design and construction stages will be more than enough to cover the cost of the VR model needed.

VR PM is the first step towards the production of a "defects free" building and a real contribution towards the improvement of living and working conditions for mankind.

Reference

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- 2) Superscape, Inc. "Mapping Reality with Superscape", 1996
- 3) Silicon Graphics Computer System "Onyx at the City of San Diego" - Urban Planning - 06-1996
- 4) R Lee Sulhvan, "Virtual Reality Made Easy" Forbes January 2, 1995
- 5) Reflex Systems, "Building models to reflect reality" - U.K. 1995



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