

**Real Estate Development,
Investment Analysis,
Project Management,
And
Architectural Design Practices
In
Hong Kong / China / Asia**

For
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(A) Background and Notes

1. This information package is prepared at the enquiry by Ms. Lorna Pappas of Project Management Institute's ("institute") PM Network Magazine ("magazine") and is meant for reference by relevant reporters / journalists / executives / staff / subscribers / readers of the institute and magazine mentioned ONLY.
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3. ALL or any part of the information contained herein can be published, edited, quoted, or otherwise used by the mentioned institute and magazine, provided that proper credit is given to Zeppelin.
4. Based on the communications with Ms. Lorna Pappas / PM Network Magazine to date, we have decided to categorize information into the following aspects / practices: a) market conditions and trends, b) real estate development, c) investment analysis, d) project management, and e) architectural design. While the information may apply to Asia in general, **the focus is on China**.
5. We have also included a section on "suggestions for project managers" working on foreign / emerging market / China projects and a "project samples/ case studies".
6. Please note the information contained here is very "general" in nature and that some of the data and statistics may not be entirely 'synchronized'. Individual cases and circumstances may differ especially in the more detail levels.
7. Should there be any questions etc, please feel free to contact Stephen Chung at stephenchung@zeppelin.com.hk or swkchung@yahoo.com. Our phone and fax are Hong Kong (852) 24016611 and (852) 24013084 respectively.

(B) Brief Market Conditions and Trends

1. Asia here is confined to countries in the North East and South East regions such as Japan, (South) Korea, China including Taiwan, the Philippines, Malaysia, Singapore, Thailand and Indonesia. As such, it covers cities such as Tokyo, Seoul, Beijing, Shanghai, Guangzhou, Shenzhen, Hong Kong, Taipei, Manila, Kuala Lumpur, Singapore, Bangkok and Jakarta. Other places are not included.
2. Economic / Business Aspect = Since the Asian Financial Crisis (AFC) in 1997, most countries, except China, have yet to regain their former brilliance. Their rates of growth have slowed and the currency values have decreased. While certain aspects such as exports to the USA may have fared better recently, most are still suffering from the AFC hangovers. Restructuring of financial and banking systems has yet to materialize except in a few. Moreover, at the same time, China is becoming more of a 'production power house' (i.e. in manufacturing the goods and products for export mostly to North America / Europe) and is beginning to draw most of the investment and production resources targeted for Asia in terms of Direct Foreign Investment (FDI) and manufacturing orders / industrial investments respectively, thus leaving a smaller percentage for the others, especially those in South East Asia. In varying degrees, this has also caused some "hollowing out" for the more matured economies in Asia such as Hong Kong, Taiwan, Korea and Japan.
3. Real Estate Aspect = Before the AFC, there was much real estate investment interests in Asia, especially in the South East Asian economies. After the AFC, in part triggered by a real estate bubble in some of these countries, many real estate projects were scaled down, put on hold or written off due to tighter capital and higher interest costs. High vacancies became the norm for some and many Asian real estate developers went bankrupt or almost. This attracted the attention of some European / North American real estate funds and speculators in 1998 with some making tours of Asia looking for bargains. Nonetheless, transactions were not as widespread as expected in part owing to real estate prices not having fallen much as anticipated (in some cases prices had held up quite nicely via currency depreciations or financial policies etc). Nonetheless, a few markets became a bit more opened up in the process, e.g. Korea and to a certain extent Japan, where not only real estate acquisitions, both equity and debt, were made by foreign funds and investors, but these markets began to set up REIT-style real estate funds etc. At the same time, real estate markets in China, especially the major cities such as Beijing, Shanghai, Guangzhou and Shenzhen, have recovered from their earlier largely homegrown bubbles in the mid 1990s and were

showing signs of improvements. Some European / American funds have also invested in the major cities mentioned, especially Beijing and Shanghai, mostly in Grade A Offices and Luxury Residences.

4. China – Economy Aspect = Notwithstanding the AFC, China has been able to maintain an annual GDP (Gross Domestic Product) growth rate of around 7% in recent years. If only the major cities are counted, this growth rate may well be in the 10+% range. This was made possible owing to a number of factors, one of which was that its currency was / is still controlled, another was that it attracted / still attracts around half the FDI targeting Asia, and that the fiscal and administrative policies have by and large been supportive of the economy and its reforms. Briefly, China has a population of more than 1,200,000,000 i.e. 1.2 billions and its GDP Per Capita is around US\$1,000. Essentially, there are two very broad economies in China: a) Rural, consisting of around 2/3 of the population with many being farmers / peasants and occupying the more central and western parts of China, and b) Urban, making up the rest and occupying the eastern or coastal parts of China. Demographically speaking, some urban centers may face an ageing population similar to what some advanced industrial countries face in part owing to the one-child policy that has been more stringently applied in the urban centers. Of the urban centers, the 4 major cities, Beijing, Shanghai, Guangzhou and Shenzhen, constituting probably 20+% of the national GDP, have some of the highest income per capita and real estate prices. A recognizable middle class, the backbone of a healthy real estate market, in particular the residential sector, consisting of professionals, managers, business owners, senior government officials, academics and the like, some of whom have been European / American trained, is developing in these major cities. The recent admission into the WTO (World Trade Organization) is likely to assist China in making further economic progresses in years ahead, albeit that the WTO benefits may not be equally applied to each and every industry and region, with some expected in fact to be disadvantaged by it. Also, the award of the 2008 Olympics to Beijing also adds another optimistic dimension in particular on a more psychological / market sentiment level.
5. China – Real Estate Aspect = Generally, most of the real estate opportunities exist in the urban parts of China, and for most foreign European / American investors, perhaps only in the major cities such as Beijing, Shanghai, Guangzhou and Shenzhen. In the past 2 years, real estate markets in these cities have recovered and have been growing in terms of capital invested, construction volumes (floor space being built), mortgage financing, number of transactions, and price movements, especially in the residential sector. At the same time,

the land, real estate, banking-finance, asset ownership and building rules, regulations, laws and policies have been improving in terms of helping to set up a more organized, efficient and open market structure. A couple of important events had also taken place recently: a) the termination of the practice of state companies having to provide 'housing accommodation' to their staff who may now use their pensions to finance the home purchases etc, and b) the amalgamation of the 'local buyer' and 'foreign buyer' market (price) segments in a few cities such as Shanghai (previously one set of conditions and prices apply to local purchasers while another set applies to 'foreign' purchasers FOR THE SAME (QUALITY OF) UNITS). This is expected to become more commonplace in years to come. Also, in these major cities, some purchasers have become more demanding and sophisticated e.g. residential properties have progressed from being 'a physical shelter' to 'a way / style of living' etc. Briefly, and using the residential sector in the 4 major cities mentioned as example, home prices range from a low of around US\$30,000 (say a 700 ft² apartment unit in a far away suburb) to well above US\$300,000 (say a 2,000 ft²+ detached house with a large garden etc or a luxury apartment unit in a prime downtown neighborhood). The GDP Per Capita for these 4 major cities mentioned range from around US\$3,000 to roughly US\$5,000. Government policies seem to be by and large favorable to the real estate industry, albeit with an intent to weed out the less serious and less well-financed projects and developers. There are also contemplations to develop debt-side real estate financial instruments such as REITS and MBS (Mortgage Backed Securities).

A few basic economic data of China and some Asian countries are listed below:

	Hong Kong S.A.R.	Taiwan	China	Japan	South Korea
Land Area km²	1,092	32,260	9,326,410	374,744	98,190
Population	7,116,302	22,191,087	1,261,832,482	126,549,976	47,470,969
GDP/Capita US\$	23,500	15,000	1,000	30,000	9,000
Main Phone Lines	3,708,000	12,000,000	110,000,000	60,300,000	23,100,000
Phones / person	2	2	11	2	2

	Singapore	Malaysia	Philippines	Indonesia	Thailand
Land Area km²	638	328,550	298,170	1,826,440	511,770
Population	4,151,264	21,793,293	81,159,644	224,784,210	61,230,874
GDP/Capita US\$	28,000	3,600	900	1,100	1,900
Main Phone Lines	5,460,000	4,400,000	1,900,000	3,291,000	5,400,000
Phones / person	1	5	43	68	11

(C) Real Estate Development

1. Real Estate Development involves the amalgamation of various processes and aspects such as market analysis, financial analysis, urban / town planning, land and title administration, land acquisition and negotiations, community-political and administrative-governmental approvals, architectural design, construction budgeting, contracting and tendering, building construction and site supervision, project management, occupancy management, marketing and leasing, disposition, property and facility management, and tax / accounting etc. This applies in North America / USA as well as Asia / China.
2. As for private commercial real estate development projects, the basic financial formula is the same: Revenues in terms of sale proceeds and rental income – Expenses in terms of hard land and construction costs and other soft costs such as professional fees and interest payments = profit (or loss).
3. Hence, most of the differences lie in the local-micro practices rather than the more global-macro levels. The following are some of the aspects that European and North American developers, investors and project managers may need to be aware of:
4. Land Tenure = while 'freehold' land is a popular mode of land ownership, 'leasehold' may be more widely used in some Asian economies, such as Hong Kong / China. In many ways, assuming the leasehold period is long enough say 40 years or more, leasehold can feel like and in many cases indeed works like freehold albeit with a land lease termination date. Nonetheless, toward the end of the leasehold, renewal of the land lease is in many cases possible subject to negotiations and further land rent payments thus ensuring some continuity. Also, in some economies e.g. China, the length of the leasehold varies according to the intended / planned use e.g. residential, office, industrial etc of the land. Irrespective of the land tenure system, there are probably land usage taxes and / or rates associated with owning or leasing land.
5. Land Supply = while land can be bought and sold via the market in some Asian economies, the land supply may be more controlled and monitored in others. In some including Hong Kong / China, the government / public administration may actually be the largest source of land supply. Also, there may be different implications in taxes etc for local and foreign purchasers and owners to be such as transaction taxes, capital gains taxes and so on in some of these economies. Some lands are also off limits for foreign purchases.

6. Development Planning and Building Application = as in North America, there are usually some town planning processes to follow and building applications to pursue. Nonetheless, in the more emerging economies, community influence on a real estate development project is lower than its North American counterpart owing to differences in administrative and social-cultural inclinations. Generally, there may be a need to obtain a permit or certification for each of the following: the land use zoning, the right to use / occupy the land, the building design, and the right to commence demolition or construction. There is also likely monitoring of construction activities by related government authorities from time to time when construction is proceeding. When the project is (about to be) completed, other certificates or permits related to construction completion validation, land use compliance, and the like are required before occupancy can formally proceed and / or the property (or parts thereof) be sold. Some economies also require proofs of designated capital resource and expenditure.
7. Professional Consulting Team = this includes real estate analysts, appraisers, architects, surveyors, cost estimators, engineers, interior designers, landscape architects, maintenance inspectors, project managers, facility managers, lawyers, accountants, tax advisors, financiers, real estate brokers (agents), marketers and the like. A few have also been educated in Europe and North America too. Generally, in the major cities, these professionals are sufficiently trained and experienced in their respective technical aspects, though only a few even have had a good dose of international exposure. Nonetheless, attention is to be paid to the 'management' (and coordination) of the professional team and related processes.
8. Management of Real Estate Development Projects = the key word is "Cross-Cultures". Unlike North America where a typical project may involve mostly North American entities, projects in the emerging economies in China / Asia may involve both local and foreign entities, ranging from investors, professionals, site workers all the way to construction equipment and building materials. As such, there are likely to be at least 2 languages involved if not probably more, whether spoken or written. There are also likely to involve people with vastly different cultural backgrounds and experiences. Also, construction contractual systems and agreements may be different in form and practices in addition to differences in building technologies and site practices. The foreign project manager needs to focus on the macro goals and issues (the bigger picture) and to demonstrate empathy, flexibility, versatility and creativity in day-to-day problem solving.

9. Market Analysis, Marketing, Leasing and Sales = Attention needs to be paid to the social-cultural preferences and inclinations. For instance, in China there are continuing discussions as to whether the residential designs should be more 'western' or more 'traditional / Chinese' though the younger urban professionals seem to have a liking for the former while the elders may prefer the latter. Nonetheless, some projects would have proportionately larger bedrooms than living / dining areas due to the traditional preferences for larger bedrooms. Another example would be the development of large malls and their location selections. In North America, this may involve picking a spot along major highways as families drive to shop and large enough for parking 1,000 cars. In China, very few people have a car and most rely on public transportation including buses and subways. Picking a suburban spot may not help.
10. Project Financing = Except for economies that are more advanced, such as Hong Kong, Tokyo, Singapore and the like, European and North American real estate developers and investors may need to arrange the basic financing in their home countries as local real estate project financing may not have the breadth and depth which one finds in Europe or North America. Even if there is local financing available, its terms and conditions etc may not be the most attractive. Normally, in particular the emerging economies, financial benefits may be derived from preferential tax and incentive treatments for foreign investors rather than from through competitive financing. Nonetheless, some economies such as China are also beginning to phase out preferential treatments for foreign investors.

A few statistics on the China Real Estate Development and Construction industries in the year 2001:

Real Estate Capital Investment in Chinese Currency RMB (Renminbi) = 737,800,000,000

Land Area Newly Acquired in m² = 216,610,000

Construction Floor Area being built in m² = 772,140,000

Construction Floor Area being commenced in the year in m² = 359,460,000 (included in being built above)

Construction Floor Area completed the year in m² = 273,030,000

Average Price RMB / Floor Area m² for all saleable real estate types = 2226

Average Price RMB / Floor Area m² for residential real estate = 2068

Average Price RMB / Floor Area m² for office real estate = 4419

Average Price RMB / Floor Area m² for retail real estate = 3375

Overall, 4Q 2001 statistics indicates real estate prices have increased by 1.80% over the same quarter last year based mainly on first hand sales.

Approximately 8.30RMB to US\$1, and 1 m² = 10.76 ft²

(D)Investment Analysis

1. In Europe and North America, especially the latter, real estate investment analysis has become more sophisticated and quantitative, with much usage of financial and econometric modeling borrowed from stock analysis or even quantum physics. Risk analysis and management is also an aspect that has been getting more attention as well. This in our opinion is a reflection of the real estate industry which has experienced some significant changes since the last recession in late 80s and early 90s: a) the demise of some (not all) family-owned real estate development operations and the increased participation of institutional investors, and b) the related gradual passing of ownership in some real assets from private real estate development family groups to institutional funds and investment groups. Added to this were the development of more advanced financial products such as derivatives, hedges and so on, and the increased availability and more timely provision of real estate related data, information and statistics, part of which can be obtained via the web.
2. In Asia, and except for individual cases, such level of analytical sophistication and applicability is not yet overly common. Several probable reasons for this are: a) involvement of institutional real estate investors are overall still small if not in terms of capital amount at least in terms of market percentages, and only recently were there locally bred real estate trusts / funds in Korea and Japan, b) while individual cities may have good information, real estate data, information and statistics overall have yet to become inexpensively, abundantly and timely available for some of these analytical methods to be applied, in addition to the fact that individual countries may have different policies and formats, c) except for a few Asian economies, most do not have the necessary legal, financial and administrative infrastructures to encourage the development of real estate funds etc, and d) Hong Kong has most of the foregoing yet its real estate developers despite the economic downturn are still thriving and cash-rich, in addition to the low income tax environment thus making REITS (Real Estate Investment Trusts) a remote reality.
3. Notwithstanding the above, due in part to keener competition, real estate investment analysis is getting relatively more advanced and applied. Depending on the location, nature, scale and type of projects, some level of analysis is generally done not only for internal review but also to communicate with potential investors and financiers. How detail one goes depends on the resources available including the time allowed, the budget available, and the inclination of the real estate developer and investor concerned. Some are more technically

orientated or cautious while others may be more 'intuitive' or daring. Simple analyses may imply the collection of recent data and statistics and performing a relatively simple discounted cash flow estimate with sensitivity studies and so on. Some factor correlations may also be done to ascertain the factor importance. More complex analyses may involve a comprehensive collection of all / most relevant data and statistics, regression analysis, and other economic calculations. If time and budget allows, specific researches may be carried out to establish or apply macro and / or micro financial models. Naturally, the latter involves more expenses and time.

4. Data, information and statistics sources can be classified roughly into:
a) economic / business, b) social / cultural / demographical, c) administrative / governmental, d) real estate, e) building construction / infra-structural etc.
5. Data, information and statistics may be obtained from: a) government or public institutional sources, b) professional or private reports and databases, c) published media including newspaper, journals, and websites, d) universities and research institutes, e) individual corporations and organizations depending on cases and circumstances, f) business and professional networks and the like. In some economies, there may be designated proper data sources for giving out different types of data.
6. When reviewing, using and applying data and statistics in Asia = please note: a) Asia is NOT one country but consists of many, each with a different linguistic, historic and cultural background, b) data availability and format may change from country to country, or even from day to day within a country – read the definitions and footnotes where possible, c) data accuracy may change from country to country or city to city – allow for some errors, d) data may become out-dated faster as emerging economies develop fast when developing, e) data can be cross-checked using both formal and informal sources, f) visit the places or actual sites where feasible for gaining a first hand feel, g) use various angles, quantitative, intuitive and common sense.
7. Demographics = are very useful for residential and retail projects as family composition, household income, home expenditure, spending patterns, accommodation quality, and so on can tell much about how much a typical family can afford (residential homes) or what goods (retail commodities) they can buy etc. To a certain extent, demographics can also be used to ascertain demand for second / recreational properties, resorts and so on. It may be less direct when applied to office and industrial projects.

8. China = based on the available demographical data and information, and looking from a real estate development and investment angle, the opportunities are mostly in the urban portion of China, i.e. the eastern provinces and coastal regions. In particular, especially for foreign / North American investors, the major urban centers such as Beijing, Shanghai, Guangzhou, Shenzhen and Hong Kong. The first 4 are emerging economies / cities while Hong Kong is a relatively matured one and the GDP per capita for the first 4 range from US\$3,000 to US\$5,000 while Hong Kong's is US\$23,500. Collectively, they occupy perhaps around 40% of China's GDP. In the first 4, the opportunities lie in real estate development i.e. via value creation by developing the land lots to their best possible potentials, while in Hong Kong the opportunities may lie in real estate investment i.e. for rental income potentials. Assuming a real estate fund of any significant size, putting a small percentage of the capital on Hong Kong may reduce the volatility of the overall fund structure.
9. The 4 Major Emerging Cities in China as mentioned = Very roughly, immediate opportunities, to name a few, may lie in: a) developing good quality money for value i.e. reasonably priced yet well-designed and properly managed residential properties as a middle class of educated professionals, executives, senior government officials and business owners start to emerge, b) developing good quality second home / recreational properties to cater to the rising middle and wealthy class, c) developing good quality mixed use office and retail projects and the like, and d) developing good quality logistics centers and related infrastructures. Please note competition is very fierce and at any one time period, there may be for instance over hundreds of residential projects being marketed at the same time. The patronage is also unevenly distributed i.e. some projects do very well while others have few takers (and may kind of wither away). It is not a market for the financially weak, short time spanned, impatient, or not so serious investors.
10. Real Estate Markets' Relative Short History = Except for places such as Hong Kong, Singapore and Japan, most South East Asian countries have had some form of real estate markets for only around 20 years, while China markets have existed for only around 10 years and possibly limited to the major cities too. This implies markets in general are not as matured as those in Europe or North America, and data and information are relatively limited in terms of time spans. For instance, if need be, researchers can go back all the way to the 1950s for data on housing in the US, yet the furthest one can go back in China will be the early 1990s. Observations of e.g. long term trends and implications may be more difficult.

Some basic residential real estate data and statistics on the 4 major cities: Beijing, Shanghai, Guangzhou and Shenzhen in year 2001 in RMB (Renminbi):

Total Residential Real Estate Capital Investment in China in RMB = 427,900,000,000

Residential Real Estate Capital Investment in the 4 cities in RMB = 158,200,000,000 = 37% of country total

Total Residential Construction Floor Area being built in China in m² = 597,660,000

Residential Construction Floor Area being built in the 4 cities in m² = 166,260,000 = 28% of country total

Total Residential Construction Floor Area newly commenced in China in m² = 292,930,000

Residential Construction Floor Area newly commenced in the 4 cities in m² = 68,130,000 = 23% of country total

Total Residential Construction Floor Area completed in the year in China in m² = 225,440,000

Residential Construction Floor Area completed in the year in the 4 cities in m² = 52,070,000 = 23% of country total

Total Residential Construction Floor Area sold in the year in China in m² = 184,990,000

Residential Construction Floor Area sold in the year in the 4 cities in m² = 47,040,000 = 25% of country total

By and large, 4Q 2001 data indicates Beijing prices have gone up by roughly 1%, Shanghai by around 5%, Guangzhou practically little changed, and Shenzhen by 1%, based mainly on first hand sales.

Approximately RMB to US\$1 = 8.30, and 1 m² = 10.76 ft²

	Beijing	Shanghai	Guangzhou	Shenzhen
Population	13,800,000	13,100,000	9,000,000	4,000,000
GDP/Capita US\$	2,800	4,200	4,200	4,800
Average RMB / m²	4,600	3,300	4,300	4,500
Average US\$ / m²	554	398	518	542
GDP/Cap to Av/m²	5	11	8	9

(E) Project Management

1. Project management embraces various parties / people, procedures, practices and processes. In real estate development, project management is used to ensure the development project is completed on time, within cost budget, in accordance with quality and design requirements, and in compliance with relevant laws and regulations.
2. While there are many aspects that we can touch upon, we intend to focus on the following ones.
3. Construction Contractual Arrangements = In North America, the “Turn-Key” arrangement is often used whereby a real estate owner or developer simply contracts with a building contractor to develop and build a certain property to a certain design, quality and size within a certain time schedule. The building contractor even comes up with the design in many cases. For large scale and complex projects, a management contracting arrangement may be used. While these arrangements are / have been employed in say Hong Kong / China / Asia, the ‘ traditional’ arrangement is even more frequently used. In this traditional arrangement, the real estate owner or developer still contracts with a building contractor yet a project consulting team headed usually by an architect will be mentioned in the contract and given much project supervisory / monitoring power i.e. unlike their counterparts in North America, design team members comprising architects, engineers, surveyors, cost estimates and the like have a significant role to play in the post-contract (award) construction to completion stages. Essentially, this traditional contractual arrangement originated from Britain in the last century or so.
4. Project Managers – Where do they come in? = Under the traditional contractual arrangement, historically the architect performed much of the project management tasks e.g. the architect would chair site meetings, inspect the works being carried out, examine the time progress etc. As projects become more complex and expectations rise, project managers are now frequently used in a typical real estate development project. Hence, the architects more or less are now confined to a more design role while the project managers take up the role of monitoring and supervising the overall development progress. Generally, the project managers are hired by the real estate owner or developer either as in-house staff / consultants. Please note however the project managers are to take mainly the interest of the real estate owner or developer first in making sure the project is completed on time etc and they are to be differentiated from construction managers, who are usually hired by the building contractor to coordinate the various construction site activities. Apart from construction issues, the

project managers may also have to take care or be aware of project financing matters including cash flows and loans, make design change recommendations or decisions, settle construction (cost) disputes, coordinate with marketing and sales, negotiating with government departments etc.

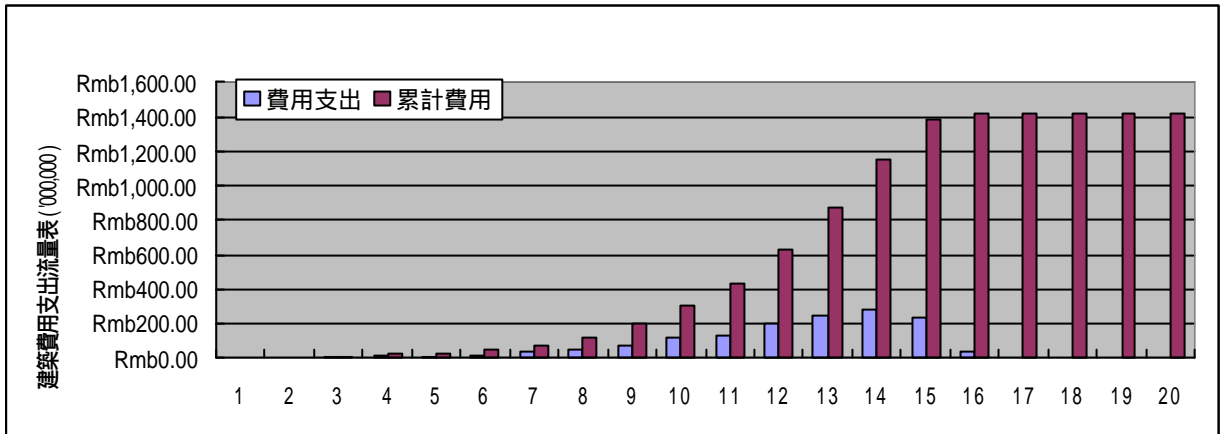
5. Subcontracting systems = As in most places, the building contractor cannot perform all the building construction works direct with his / her own workers and people. Thus, in a normal circumstance, they will subcontract part of the works to other contractors, especially for the more specialist works. At times, the real estate owner or developer wanting to safeguard certain building components' quality aspect, may designate certain subcontractors / material suppliers. These so-designated subcontractors and suppliers are termed Nominated Subcontractors and Nominated Suppliers. The building contractor is still responsible for their part of the works contractually.
6. Building materials sourcing = Depending on project scale, type and category / class, project managers are sometimes very much involved in selecting and making decisions on building materials and systems. This relates not only to design but also to time and cost as well. Hence, a thorough understanding of the various building technologies / practices and their time / cost implications, irrespective of whether the technologies are local or 'imported', can be very useful. Also, project managers may need to keep well abreast not only of the latest technologies or new materials, but also of the best possible sources to obtain best value and timely supplies of building materials and equipment.
7. Construction contractual disputes = A few places in Asia such as Hong Kong which law is modeled on the common law system, construction contractual disputes, regrettable though these generally are, are often settled via the courts or arbitrations. Yet in other places, such as most of China, the laws and regulations related to these aspects may not be fully developed (from a common law viewpoint though the relevant local legal codes may be quite substantial in their own right) or similar (not necessarily a question of whose is better, it is just that the systems are different) to those with which North Americans or Europeans are familiar. Relevant professional assistance can help and some would include clauses in the agreement to allow for international arbitration.
8. Construction workers' unions = In North America, these unions can be quite powerful. In China / Asia, generally worker strikes or pickets are not too much of a concern. Also, good workmanship and skills are available, though some effort in site management etc is required to

ensure such skills are put to good use.

9. **Computerized project management systems** = In Europe and North America, it seems that computerized management tools and software are more commonly applied. In China / Asia, these are also commonly used though their effectiveness depend on the people applying them still. With increased use of the web, the application of a project documentation web platform is also gaining some ground. Essentially, these documentary web platforms provide a centralized facility through which all project documents including drawings, details, architect's instructions, variation orders and the like, can be channeled and stored with dates and identities marked etc. This helps to avoid misunderstanding between parties (contractors, consultants and developers) and each party can know the latest documents (or versions of them) in real time (no more excuses for not having received or knowing a certain design amendment for instance). These software and tools are available in English and Chinese.
10. **The Case for China** = In China, project management activities are gaining recognition following the rapid development of the building industry with the surge of huge infrastructure and building projects with the inevitable problems in the such as building failure, substantial overrun in cost and time. In fact, the Chinese government has introduced the system of compulsory appointment of Construction Supervisors for all projects. They are supposed to manage quality, time and cost, the role performed by Project Managers in other parts of the world. With these compulsory requirements, project management technique is advancing and popular software such as Project Management 2000 etc is widely used. The effectiveness is however very much dependent on the technique and experience of individual professionals.
11. **China - A few more important observations:**
 - a) The no of project management professionals trained in the last 10 years is insufficient to cope with the GDP / economic growth thus there is now a general shortfall of good project management professionals. This in turn leads to high and fast-rising salary levels for comparatively inexperienced project managers.
 - b) The relative huge quantities of projects lead to a lack of inexperienced workers thus making quality control far more difficult than other parts of the world.
 - c) The increases in real estate value in several cities spell financial success for many (though not all or even most in some cases) development projects, sometimes even if the projects are just of general quality in construction and design. Thus, in the eyes of some real estate developers, project management does not seem

vital for survival (yet) and this explains in part the relatively recent emergence (late start) of the project management profession.

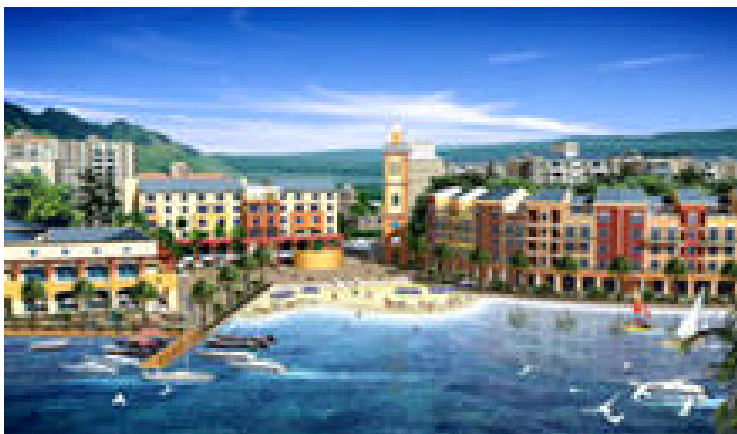
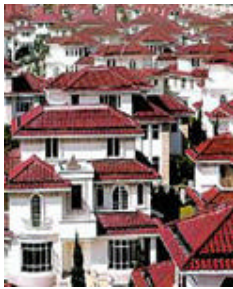
The following is a very simple sample of a building construction cash flow analysis with periodic and cumulative figures. We have kept the original language (Chinese) and currency (RMB) for perhaps more editorial interest or flavor. The blue columns represent the figures for any one period while the red columns show the cumulative amount.

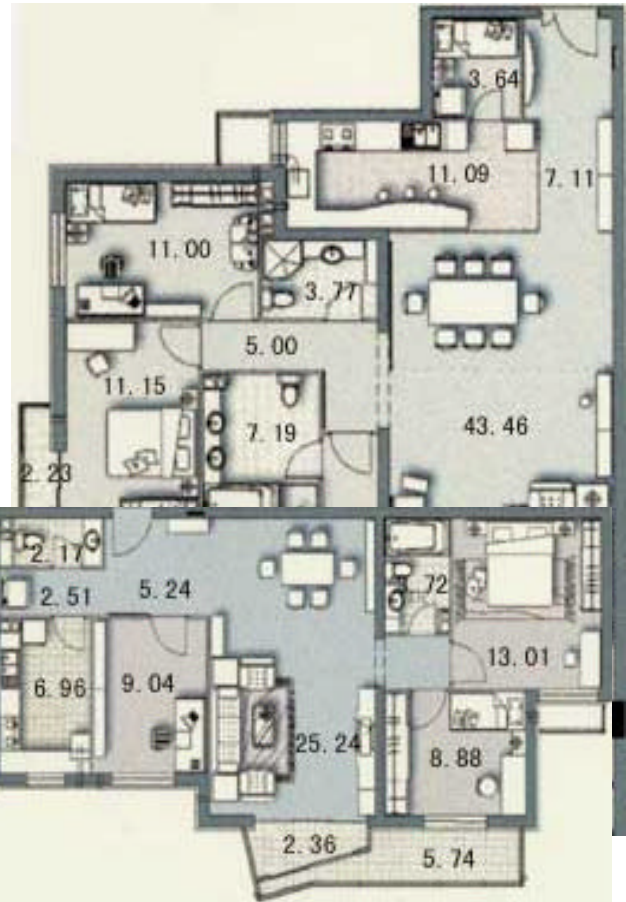
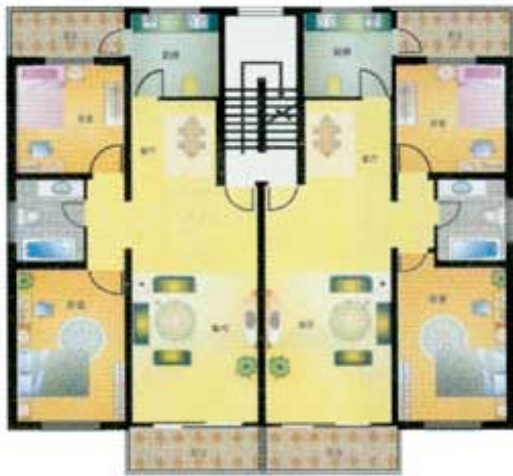


(F) Architectural Design

1. Generally, if some international architectural design quality is required or if the foreign investment partner so wishes, then a foreign architect (from Europe, parts of Asia, North America etc) may need to be involved. The foreign architect is hired in this case mainly to provide the design concept and scheme. Otherwise, architects from the local (China) design institutes would usually suffice. In any event, the local (China) architects will deal with the more technical and building approval matters to make sure that the scheme design is in compliance generally with local regulations or codes of practices etc.
2. Architects from Hong Kong have been performing such conceptual and schematic designs for projects in China for many years and many have had training in British or American architectural design systems. Coupled with an understanding of the Chinese / Asian cultures, Hong Kong architects have been making contributions in enhancing the design competitiveness of projects in China.
3. The stages of works are as follows:
 - a) Schematic design stage - done by the foreign architect appointed
 - b) Project design stage:
 - I) Architectural design – done by the foreign architect
 - II) M & E design - done by local architect / engineer for cost effectiveness and technical efficiency
 - III) Structural design - done by local architect / engineer for cost effectiveness and technical efficiency
 - c) Detailed design stage:
 - I) Architectural design – portion involving design concept to be done by foreign architect, portion requiring compliance with local codes and regulations to be done by local design institute
 - II) M & E and Structural design - done by local design institute with the exception of specialized engineering design.
4. Please note the local design institute takes up the role of the design architect role only, i.e. it does not get involve in the project administrative work that a foreign / Hong Kong architect normally handles.
5. Project administration works, such as tendering, contracting, site documentation, and site supervision etc are handled by “project managers”. Thus, real estate developers in China either have their own in-house project management teams or hire project management consultants to do the tasks.

Representative randomly selected graphics and perspectives related to projects in China are shown below for reference (**please note copyrights to the following have not been formally obtained though they have been obtained from publicly accessed websites etc**):







The foregoing graphics and photos are meant to give readers a general feel of the real estate development types and design possibilities. These are mostly residential and office projects, and as one can see, they range from high-rise towers to low-rise blocks, and all the way to detached / estate homes.

Also, site planning and design have been improving in recent years. Earlier row building layouts have given way to more sophisticated clustering and creative settings mingling with landscapes. At the same time, unit design offers more varieties and western-style apartment living is also catching up. For instance, traditional Chinese cooking does not always favor an open kitchen concept yet young urban professionals have been embracing the idea in part due to leading a different lifestyle than their parents.

(G)Project Samples / Case Studies

We have included a project in which we were involved for illustration. It is a relatively sizable residential project in Hong Kong. For reasons of confidentiality, we shall focus on the larger processes that had taken place and the related basic data and information:

1. Residential project in Hong Kong:
 - a) Project Data: close to 400 residential units consisting of high and low rise apartment condominiums and detached houses situated on around 2,000,000 ft² of land. The project comes complete with its own recreational clubhouse and swimming facilities in addition to having a retail complex. At the peak of the market in 1997, the whole development if sold would be worth around HK\$ 7B = US\$900M.
 - b) When the project was first conceived, the development entity thought of building smaller units and thus a larger number of units for the same total construction floor area. This was understandable as the project was located in the 'suburb' of Hong Kong and as such, prospective purchasers were likely to be middle class families or even retirees. The really rich and wealthy were not expected to be a major buying group.
 - c) As the project was relatively sizable, in addition to the fact that the land use needs to be rezoned anyway prior to any actual development, which in turn meant the leasehold terms had to be amended and that a land premium was to be negotiated and paid, several years had passed before demolitions and substructure works could proceed. When all these town planning, land leasehold amendment and renewal, land premium negotiations and the like were finally completed, the market in terms of purchaser / investor profiles had changed.
 - d) Not only was the overall economy improving and growing fast, implying higher than estimated selling prices, a new group of potential wealthier purchasers had emerged = families who previously run small manufacturing or trading operations had been relocating or trying their luck in Mainland China and had made it big, especially in the Guangtung Province. Nonetheless, as they spend quite a significant portion of their time in Mainland China and also to reduce traveling, expensive homes in the traditional urban locations might be a bit too far away for their purposes.
 - e) In addition, the overall demand and supply situation indicated there was a lack of larger apartment units, and units (called flats in Hong Kong) exceeding 1,300 ft² in size occupied only a small percentage, less than 7%, of the total residential stock.
 - f) Also, moving into the former 'countryside' of Hong Kong had

now become a norm (e.g. the largest real estate developers were then heavily dependent on residential projects, and with the traditional urban locations saturated, the countryside or suburb became the only possible choice for planning major development schemes) and accepted by the public in general. Earlier, there was a subtle stigma for those moving into the former countryside areas.

- g) Hence, in the middle of the project when the construction works were about to begin, there was a change in floor plans and unit designs. The apartment units became larger overall with unit floor plates ranging from around 1,500 ft² to well over 2,000 ft² instead of being around the 1,000 ft² ranges.
- h) Background information = Hong Kong had a population of around 6,500,000 when the project was conceived. Now the population stood at close to 7,000,000. Also, the GDP Per Capita then was around US\$20,000 and now it is US\$23,500 despite having come down from a 1997 high of US\$28,000. Using the project as base, the average price per square foot of (gross) floor area was around HK\$4,000 / ft². Now, the average price per square foot is still similar or slightly higher despite having come down from a peak level of around HK\$9,000. Please note first, residential properties are usually quoted in Gross Floor Area (GFA) terms i.e. the common lobby areas, staircases etc are included in the figures. On a net floor area basis, and depending on projects, probably a 15-30% reduction of the GFA figures is required to roughly gauge the net floor area of the unit(s). Hong Kong has around 1,000 km² (or very roughly 400 square miles) and is divided into mainly 4 parts = Hong Kong Island (with 1,500,000 population), Kowloon Peninsula (1,200,000), and the rest are now in the New Kowloon and New Territories (former countryside now the suburbia) of Hong Kong.
- i) Some of the data, information and statistics involved:

Real Estate Prices = Increased then fell. The following is a popular residential real estate index chart (base = 100 in year 1997) prepared by Centaline (Real Estate) Agency Limited in Hong Kong (the average price in HK\$ / Gross Floor Area ft² in 1997 was around HK\$10,000 / ft², and HK\$7.80 = US\$1.00 pegged. Prices have gone down by some 60% since 1997):



Population on the Rise = The following is a chart taken from published government sources on the population growth. The 1990s was a period of fast population growth in part due to migrants from Mainland China:

Population Census/By-census	Hong Kong Population	Net Increase	Average Annual Growth Rate (%)
1991	5 674 114 ⁽¹⁾	178 626	0.6
1996	6 412 937 ⁽²⁾	543 442 ⁽³⁾	1.8 ⁽³⁾
2001	6 708 389 ⁽²⁾	295 452 ⁽²⁾	0.9 ⁽²⁾

Home Ownership Sentiment Increased = The following is a chart taken from published government sources indicating a growing percentage of home ownership – the middle line – from 46% in 1990 to 53% in 2000:



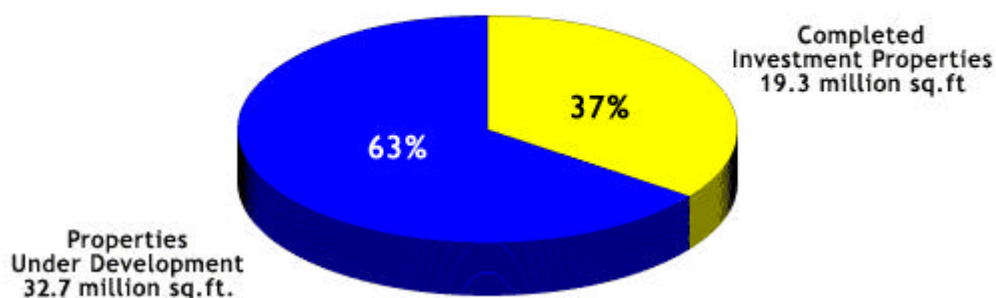
GDP and Income = Have been increasing until recently. The following is a GDP Per Capita in HK\$ based on current market prices abstract from published government sources indicating increases in nominal GDP Per Capita for most of the 1990s until the Asian Financial Crisis (HK\$7.80 = US\$1.00):

		Year-on-year
	(HK\$)	% change
1992	134,357	15.6
1993	152,087	13.2
1994	167,493	10.1
1995	174,972	4.5
1996*	183,812	5.1
1997*	201,679	9.7
1998*#	189,815	-5.9
1999*#	183,483	-3.3

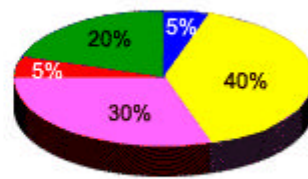
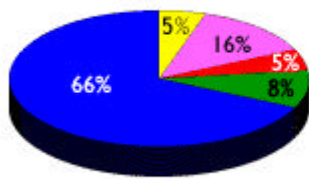
Emphasis on Real Estate Development in the New Territories (suburbia of Hong Kong) = The following is abstracted from the website of one of the largest and prominent real estate developers in Hong Kong indicating its land bank and project composition. Most of the development projects are residential ones, and they are located in the New Territories, i.e. the former countryside / current suburbia, of Hong Kong. Please note the foregoing project sample does not involve this particular real estate developer.

Total Land Bank in Hong Kong

Gross floor area: 52 million sq.ft. (as at 31st December 2001)

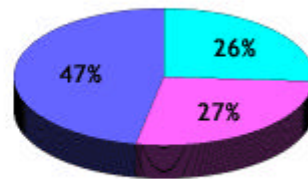
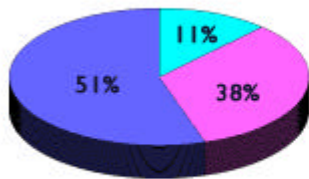


Composition By Usage



Completed Investment Properties

Composition By Location



Completed Investment Properties

Private Residential Stock – very few large sized units = The following is abstracted from 1996 government published statistics on private residential housing indicating residential units exceeding 1,500 ft² (those from Lower D and all of E) in floor area occupied only a small percentage of total stock, then totaling around 886,000 units): [NOTE: ‘ Class” refers to unit size, A stands for the smallest while E stands for the largest. The figures represent the number of units in each size class]

Class A	11,099
Class A	112,820
Class A	211,089
Class B	176,152
Class B	128,036
Class B	95,580
Class C	43,299
Class C	24,786
Class C	17,717
Class D	22,210
Class D	14,061
Class D	7,929

Class E	9,517
Class E	7,084
Class E	2,208
Class E	2,126

2. Office Project in Beijing:

- a) Project Data: a 60,000 m² Gross Floor Area Office Building and is a joint venture between Hong Kong and Mainland China companies. Construction began in 1994 and lasted till 1997.
- b) Originally, the design and style of this office building were meant to be institutional-looking and classic. This was because during the planning and conceptual stage in the early 1990s, there was a huge shortage of good quality office space in Beijing, and good quality then might imply a “serious and sturdy” classical appearance. In particular, the market study then showed most tenants would probably be traditional services companies, e.g. engineers, construction companies, financial services and the like who might also wish to portray such steady / dependable images.
- c) However, when actual marketing and leasing began, the market had for starters changed for the worse, there was an oversupply of offices, and these anticipated services companies were forthcoming in sufficient quantities.
- d) Fortunately, an IT / high tech companies were beginning to happen, and in the course of marketing and construction, a few fundamental changes and decisions were made to cater to these new emerging companies. Not only the building was now to be furnished to offer a modern feel, additional building services were installed etc.
- e) The strategy / switch was successful and the building was quickly filled up with over 90% occupancy rate. Also, a few multinational IT firms have taken up significant floor spaces e.g. Sun Microsystems, Lotus and Cisco. There were and still are not many good quality office buildings which may cater to the needs of IT tenants.
- f) This project illustrates the need to be flexible and vigilant when operating in emerging markets such as China or Asia. Those who have the best combinations and synergy of timing, marketing, construction quality, financing, planning, design and the like will fair better than most.

(H) Suggestions for Project Managers

1. This is meant for foreign project managers who are not familiar with real estate and building practices in China / Asia. It is meant as a brief reference and individual circumstances may differ immensely from what is described here. Readers / investors contemplating pursue of real estate related project management are advised to seek professional assistance or opinions where required.
2. First, apart from technical competence, project managers need to be skilled in managing people and processes.
3. Second, project managers may need to work in and deal with an environment involving multi-cultures and even at times multi-languages and dialects.
4. Third, building procedures, materials, equipment and documentation etc can be vastly different from what foreign project managers are used to. For instance, while steel frame construction is quite popular in the US as far as office construction goes, reinforced concrete may be more popular for most projects. Another example, while many projects in the US focus on keeping the 'warmth / heat' inside the premises in terms of energy conservation (in particular the northern states), keeping the heat out is the focus in many parts of Asia including South East Asia and the southern portion of China.
5. Fourth, the common law (based on the British legal system) system may not be as widely applied in some Asian countries than in Europe or North America. For instance, building contractual disputes may be settled via international arbitration rather than through the local legal system.
6. Fifth, the sources, breadth and depth of project financing may not be as established as Europe or North America. Notwithstanding a trend to catch up in this aspect, project managers may be better off in allowing for fall-back financing strategies / options to be on the safe side.
7. Sixth, pay attention to ergonomics, i.e. the study of human scales (heights, hand to hand width etc) relative to the building components including the interior fixtures and fittings. Using North American or European ones may not be entirely suitable as generally Asian people are comparatively are not as tall or big.
8. Seventh, project managers contemplating working abroad may need to have an outgoing character, empathy for different practices,

flexibility, and exceptional communication / people skills. This does not imply giving up one's assertiveness where required but an understanding or even an appreciation of other cultures may help.

9. Eighth, as with all expatriates, one needs to look hard into not only the career / job opportunity, but also the impact on one's immediate family and loved ones. Nonetheless, in terms of creature comfort and enjoyment of life, China /Asia have much to offer these days, especially in the major urban centers.

(I) Appendix and Bibliography

Data, Information and Statistics

Generally, data, information and statistics have come from the following (types of) sources:

1. Government departments and public authorities
2. Published media including newspaper, magazines, journals and websites
3. Consultants' professional reports and newsletters
4. University studies and researches
5. Business and professional associations

In particular, some of the data, information and statistics are abstracted from the following sources:

1. Asian Wall Street Journal
2. Asia Society Website
3. Centaline Agency and Centanet.com
4. Hong Kong Government – Various Departments and Bureaus such as the Census and Statistics Department
5. Soufun.com

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Information on the Zeppelin Group of Companies and the Major Contributors to this Information Package

Please refer to the summary introductions where attached AND / OR visit our website www.real-estate-tech.com and the links below:

http://www.real-estate-tech.com/zeppelin_about_us.htm

http://www.real-estate-tech.com/zeppelin_key_executives.htm

http://www.real-estate-tech.com/zeppelin_services_offered.htm

Participating Authors from the Zeppelin Group



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Stephen has over 15 years of experience in real estate development, investment, management, marketing and consulting spanning across **Hong Kong / China, Asia and North America**. Prior to joining Zeppelin in 1995, Stephen had held senior management positions with public corporations and major organizations. His interest covers areas of **real estate analysis, investment strategy, portfolio management**, computer systems, software applications, and web content provision in addition to earlier backgrounds in sales & leasing, project management and building economics. Stephen has participated in the development, investment, management and marketing of residences, offices, retail facilities, hotels, resorts, industrial complexes and specialist buildings including several large scale mixed-use developments. Total value handled to date is estimated to be around **US\$15B**.

Stephen is also much sought after by universities and business associations as a **real estate guest speaker** and he is currently an adjunct lecturer with the City University of Hong Kong. He has also delivered professional speeches to peers in China. He has also created the company newsletter **Real Estate Tech** now into its 6th year and 21st issue with a circulation of close to 8,000 subscribers, and the company web-site www.real-estate-tech.com through which Zeppelin intends to share some of the real estate knowledge, information and ideas with interested parties. His analyses and writings to date have been / are being published in the media such as the China Daily, Hong Kong Economic Journal, 21 Century Business Herald (in China), the NACORE Journal, the Real Estate Today, the Journal of the Hong Kong Institute of Surveyors (HKIS) etc and various portals such as hongkong.com, netvigator.com, centanet.com, house18.com, red-dots.com, frogpondgroup.com, and so on. He had also been quoted in the Asian Wall Street Journal. He also writes a column focused on introducing useful websites for the newsletter of the HKIS.

Stephen holds Bachelor degrees from the University of Hong Kong (**HKU**) and a Masters in Real Estate Development from the Massachusetts Institute of Technology (**MIT**). He is also a member of the Royal Institution of Chartered

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Tomman Kwan, Director, Zeppelin Property Development Consultants Limited

Tomman, Authorized Person (List I) and Registered Architect, Hong Kong. Member of the Hong Kong Institute of Architects, Member of the Royal Institute of British Architects, Director: Tomman is an architect with over 15 years of experience and specializes in the design and construction of hotels, high-end residences, commercial buildings and shopping malls. His projects span from Hong Kong to various large cities in China including Beijing, Guangzhou, Shenzhen, Harbin, Nantong, Dongguan and Zhongshan. Prior to joining Zeppelin, Tomman worked for Paliburg Holdings, a major real estate group in Hong Kong.

Record of Our Earlier Responses to Some of the Questions Posted

1. How important is demographic information to the success of your projects? Elaborate. **It depends on the scale, type and use of the projects.** For instance, demographics (defined as data and information on the local population etc) is important for a residential project because the prospective purchasers / tenants would most likely come from the local community / city while it may have less relevance to a Grade A CBD office development project whose occupants are likely to be large foreign multi-nationals or publicly listed corporations, though some prospective occupant profiles can be formed using market statistics and records. **Also, it depends to a certain extent on the investment scale.** For instance, if a project is too small that it does not

justify performing too detail a demographic study, then the project may go ahead with what is generally known at the particular time or a much simpler one.

2. What is your basic approach to accessing and evaluating demographic information? **Generally, demographic data and information can be obtained from government sources and relevant consultants whether via free access or purchase.** In Hong Kong, the quality and accuracy of such data and information are generally acceptable / good though one may need to abstract / rearrange the data and information for use on specific projects. Attention is paid to the methodologies which these data and information have been collected and compiled and specific adjustments may be made. Where possible, we may cross-check some of the data and information, sometimes by actual site visits. Nonetheless, we do NOT tend to recommend making conclusions / views / decisions based ONLY on these data and information (numbers) because (a) quantitative figures are useful but they do not / cannot cover all aspects of a population or an economy / city; (b) these data and information irrespective of how well they are collected etc are not technically perfect; (c) these data and information irrespective of how recent they are etc are still "history", though historical figures can be useful; (d) these data and information may only represent a "glimpse" of certain conditions upon certain dates or time periods. If and when necessary, we would seek the assistance from relevant experts e.g. professors from universities to help us with evaluating and analyzing the data and information or to perform some of the sophisticated economic modelling. For emerging economies, as a general statement, the data and information need to be more carefully scrutinized and discreetly applied. Also, some of them may have designated proper data and information sources.

3. In your estimation, how does this process differ from here in the US? **We do not as a general observation see any major differences in the basic approach,** though we do think the availability of the data and information and their level of detailness are generally higher in North America than in Hong Kong, which in turn is higher than most emerging economies. Nonetheless, whether such data and information, methodologies and quantitative approaches are used **depends also on the real estate developer / investor involved.** There are some who do things systematically, quantitatively and professionally while others may tend to be more 'intuitive' in investment decisions.

4. What has changed in the last few years in how you approach the gathering of the demographic information? In addition to the more traditional methods such as subscribing to government statistics or reading real estate broker reports, **we also use the internet and web to search for / collect data and information**, e.g. by bookmarking the useful websites or downloading the relevant data and information where possible and necessary, whether on a free or fee-subscribed basis. For instance, in Hong Kong, certain content of the statistical publications can also be obtained via the web. The rest of China and most of Asia are still lagging behind North America in terms of availability of data and information on the web but the situation is improving.

5. How has the Internet or other access channels affected the type and level of info available and how does that access affect today's projects? **Previously**, it was not easy to obtain data and information on individual cities though on the national / regional level statistics were more abundant. **Nowadays**, some city data and information are beginning to appear on the web and overall availability is improving. For a few cities, there is a possibility to obtain very detail data and information such as particulars on individual real estate transactions and / or the buyers' profile etc, albeit for a fee. The effects are that data and information, assuming other aspects being equal, can be obtained **faster, less expensively, a bit more in detail and more up-to-date than before**, and this in turn leads to **better project analysis, timing, investment return, planning and risk management**. For instance, in Hong Kong, real estate and demographic data and information have been assembled and put together onto web census maps. In Shenzhen, a website attempts to offer real estate and urban planning data and information.

6. Specifically what type of demo. info. is available now (as opposed to recent past) that may mitigate the risk of real estate development projects? Depending on cities, and in particular the emerging cities / economies, **family income and spending profiles, accommodation type / profile, household compositions, and the like** are now more available than before. This helps the better planning of residential, retail or recreational projects etc.

7. CAN YOU PROVIDE A CASE STUDY SCENARIO (no names, OK) INDICATING A PROJECT'S SUCCESS, OR FAILURE, DUE TO THE DEMOGRAPHIC DATA ON WHICH THE DECISIONS WERE BASED? **To be provided later.**

8. How do real estate project managers know if their market research

consultants are getting the best demo. information in the best ways? **First**, the project managers may need to have some basic idea or knowledge of how these data and information can be obtained, collected, assembled and compiled etc. **Second**, the project managers can ask the market research consultants on the methodologies, definitions, calculations and the like to be adopted. **Third**, the project managers can cross-check some of the data and information with another source or with other economic-social data. **Fourth**, the project managers can visit the city to get a first-hand feel for the place. We know a few real estate developers who work in China actually send in teams to 'live' there for months for research purposes. **Fifth**, if essential, the project managers may consider hiring well-known market survey companies to carry out specific market studies direct. **Sixth**, use common sense.

9. What other trends do you see in this area? **Emerging economies like China seem keen to create and develop better structured and organized real estate markets**, and perhaps related real estate products including real estate funds, mortgage-backed securities and so on. Already, some foreign investment funds are eyeing the opportunities and have made some investments. Continuing on current paths, and with real estate investment trusts (REITS) spreading into Europe and Asia, the need and demand for better analysis and project planning are likely to increase and along with this, the increased applications of demographic data and information.

10. What ADVICE do you have, related to demographics, for project managers of overseas real estate development projects? For emerging economies like China or those in S.E. Asia, **project managers may wish to scrutinize the data and information accuracy and applicability more closely** and to give a higher allowance for potential errors. The point is NOT to NOT use them BUT to use them appropriately as they are. Also, project managers may wish to read the definitions carefully and / or the reporting sources. For instance, real estate 'vacancy rates' in China may be defined as the 'unsold' percentage of newly completed real estate floor space rather than the unused portion in the overall real estate stock. Another example is "living space per person" as it can mean the 'living space' may refer to 'bedroom space' only.