Introduction

Sustainable urbanism can be read as successful urban redevelopment. Our research indicates that Hong Kong is possibly a most favorable locality for this. This work is presented in three main sections: arguments for success in the recent redevelopment of older urban areas; findings from empirical analysis of structural determinants; and discussion on globalization and sustainability in the long term.

We argue that Hong Kong’s recent redevelopment is a model of success. Evidence draws in part on private sector redevelopment activity. This activity has been quantified from a survey of historical trends of building demolitions and occupancies between 1984 and 1993. The contention of success is also supported by case-study findings of positive outcomes for the majority of persons displaced by two, block-scale, comprehensive urban renewal schemes.

An empirical analysis of structural determinants for redevelopment in older urban areas is revealing. Statistical association used trends, correlation coefficients, control variables, and multiple regression analysis to establish causation. Multiple non-policy determinants were approached as independent variables. Housing is at the forefront in building volume terms, with higher education, employment in service occupations, and income having the strongest influence on building stock upgrade.

Discussion of long-term viability in development and redevelopment aims at the global nature of financing urban construction, and the implications from current Asia-wide economic meltdown. Directions for future research can be found in the concluding remarks.

Success in the Recent Redevelopment of Hong Kong’s Older Urban Areas

In a city state like Hong Kong, relatively strong control over labor in-migration combines with low unemployment. Other given features are a mass public rehousing program and positive outcomes from what Yucekus and Banerjee (1998) might refer to as blackboard planning, or, in more formal terms, comprehensive renewal. These atypical features remain under Special Administrative Region (SAR) status newly assigned by the PRC. Still, Hong Kong is referred to by Choe (1998) as an exemplary Asian city. Comparable cross-regional conditions include high-density built form and rapid economic growth. Crowding is famous. Yet even in external density terms (persons per square kilometer), other Asian localities are near neighbors (Hong Kong 5453, Singapore 4481, Taiwan...
A strong economy also makes it an interesting place. Recent growth (average, real GDP growth between 1985 and 1992, in percent) figures support linkage to its regional counterparts (South Korea 8.5, Taiwan 7.7, China 6.0, Singapore 5.9, Hong Kong 5.6, UK 1.5, US 1.1, and Canada 0.3) (Europa World Yearbook 1994). One context where Hong Kong’s sustainable urbanism could be prototypical is the upcoming Yangtze Basin plan. Over two hundred cities are expected to be rebuilt (Citizen 1997). Region-wide interest in Hong Kong’s urbanization is therefore clear.

Most of the research reviewed on redevelopment in Hong Kong is over a decade old (Drakakis-Smith 1976, Ho 1984, Fong 1985, Leung 1986, Pang 1992). A gap in research lent support to a pilot study of redevelopment activity. Recent redevelopment activity was observed to be strong for both the private and public sectors. Privately owned housing, and housing managed by the Hong Kong Housing Authority (HKHA) shared equally in the total 1.75 M units at the end of 1994 (Rating and Valuation Department 1993). Supply rates were also fairly balanced with net growth rates for each sector around 3 percent, historical and projected, from 1992 to 2001 (HKHA 1993). The redevelopment of obsolete HKHA estates appeared strong, with an annual average rate of 30 percent of residents rehoused from 1989 to 1994 being under the ‘reprovisionment’ category (HKHA 1994). The private sector redevelopment of Hong Kong’s older urban areas was then investigated in greater depth.

Our findings revealed increasingly active redevelopment of Hong Kong’s older urban areas by the private sector. From sample data (Buildings Department) between 1984 and 1993, in the private sector alone, redevelopment activity in urban districts is estimated at daily rates of 1.5 buildings demolished, and 1.3 buildings newly constructed. Redevelopment by the private sector has also been increasing in urban areas. One estimate finds that prior to 1986, buildings demolished remained below 500 buildings per year. From 1987 onward, this value has not dropped below 700 buildings per year. Future expectations for private sector-led redevelopment of Hong Kong’s older urban areas remain high. Since the stock of buildings more than thirty years old will double from 20 percent to 40 percent during the next twelve years (Hong Kong Standard 1997).

Trends in building type reveal housing activity as primary, with some commercial building activity replacing housing. From the same sample (1984–1993) of demolition data, it is estimated that tenement type dwellings and apartment type dwellings accounted for, on average, the majority of building types demolished, at 70 percent and 17 percent respectively. From occupancy data, only an estimated 50 percent of total usable floor area was dedicated to domestic type occupancy. Twenty percent was dedicated to commercial use. A trend towards increasing shares of commercial space and decreasing shares of housing space is further suggested. When the first (1984-1988) and last five year figures (1989-1993) are averaged and compared, the share of space intended for commercial occupancy rises from 16 percent to 31 percent. In contrast, the share of space intended for domestic occupancy declines from 61 percent to 38 percent. Trends include infill or single-building redevelopment, and medium-rise structures being replaced by high-rise form. This spatial transition accommodates an improvement in floor area per person, where decreasing household size, increasing self-containment of households, and increasing unit size is readily observed (Census and Statistics Department 1981 1991, Rating and Valuation Department 1984 1993). One estimate placed displaces between 10,000 and 20,000 persons annually on account of private sector redevelopment. However, this mobility amounts to only 5 percent of estimated annual moves between 1976 and 1981 (Census and Statistics Department 1981). Findings on displacement are comparable to documented statistics on involuntary mobility in the US.

Redevelopment by the private sector, infill or otherwise, is complemented with small but increasing activity by Hong Kong’s urban renewal agencies, the Land Development Corporation and the Hong Kong Housing Society. In 1994, this public/private development sector held only a two percent share of the total housing units. In the near future, local planning will likely enhance this sector’s share of Hong Kong’s redevelopment further, by way of an Urban Renewal Authority scheduled to commence operations in 1999 (Hong Kong Standard 1997). The public/private sector has a history of redevelopment activity in areas of need overlooked by the private sector due to uncertain profit margins. Advantages are land resumption opportunities, subsidization, and zoning. Case studies involving a total of nearly 8500 displaced persons revealed that living conditions for a minimum 55 percent of the population improved. Case-study findings are detailed elsewhere (Susnik and Ganesan 1997). In brief, displacement outcomes usually meant relocation to a building with better infrastructure and quality of construction, internal densities decreasing from nine to four persons per housing unit, increased open space and other amenity provision, a reduction in monthly rental burden to one sixth of the original expenditure, and rehousing in mostly neighborhoods of equivalent status. Other gains observed for those affected by the renewal projects are home ownership and elderly shelter opportunities. The redevelopment housing provides more ‘sandwich class’ housing at subsidized rental rates or purchase price, increases internal space provision from 8 sq.m. per person to 15 sq.m. per person, and stabilizes the housing stock in central urban districts. Through phasing, in-situ elderly housing is increased. Specifically augmented is the quality of life of beneficiary mature households through aging in place (Pollack 1994) and independent living (Wister 1989) factors.

This completes our presentation of evidence in support of Hong Kong’s success in the recent redevelopment of its older urban areas. The remainder of this paper is aimed at providing issues for consideration by localities faced with an increasingly obsolete building stock, and global economies.
**Possible Structural Determinants of Redevelopment**

This section, built upon Clark’s (1994) synthesis, serves as a preliminary but quantitative presentation of the possible causes of urban redevelopment for Hong Kong. The main research question was, what structural forces determine Hong Kong’s redevelopment activity. New production, the shift from industrial to service sector growth, is recognized as transforming building stock in urban areas (Smith and Williams 1986, London 1992, Frey 1993). Real estate as a variable of causation is essentially reflected in the shift in capital investment to central city property development (Cox and Howard 1973, Feagin 1982, Bourne 1993). Social transition is also believed to influence building upgrade. The in-migration of residents with higher social status to inner cities is currently at issue (Zukin 1982, Smith and Williams 1986, Filion 1991).

From background theory, the following independent variables were analyzed:

- **Real estate** - office rental rates and purchase price, housing rental rates and purchase price, and housing stock and supply;
- **Production** - services/manufacturing shares, office and factory space, and residential patterns by industry of employment; and
- **Social factors** - income, occupation, education, employment status, living quarter type, and tenure type.

Data on building demolition and new occupancy activity is obtained from monthly statistics on permits issued by the Buildings Department, Government of Hong Kong. The description of redevelopment is based on type, frequency, and location of building demolition and occupancy consents issued. Quantitative data are again for the ten-year period between 1984 and 1993. In the case of data on causal factors, data were retrieved from the Rating and Valuation (RVD) and Census and Statistics (CSD) Departments of the Hong Kong Government. Most independent variable figures are for the ten-year periods fluctuating between 1981 and 1994.

There were limitations to this study based on inconsistencies between the various sources of data. Inconsistencies in data are due in part to differences in geographic district delineation. To overcome this difficulty, an agglomerated system of districts for identifying attribute populations was used. Due in part to this procedure, the sample size, i.e. number of districts compared, becomes limited in size to 16 or, in the case of purchase and rent prices, below this. Several approaches were used to overcome these limitations: testing causal factors with a diversity of attributes; exploring longitudinal data; and combining three tests of statistical association. The results are therefore fairly reliable.

The dependent variable, redevelopment, has several possible causal relationships among real estate, production, and social factors. Correlation analysis produced moderate to strong results for most bivariate associations. A comparison between the results for service industry workers relative to persons in service occupations was warranted. Service industry workers include: services; wholesale and retail trades, restaurants; hotels; transport, storage, and communication; and financing, insurance, real estate and business services (Census and Statistical Department 1991). Service occupations are: professional, technical, and related workers; administrative and managerial workers; clerical and related workers; sales workers; and service workers (Census and Statistical Department 1991). Service occupation employment appeared to produce consistently strong results with redevelopment activity. For service industry workers, association reduced from strong to moderate between 1981 and 1991. Other inconsistent results were for office purchase price and rental rates. Where association to redevelopment appeared strong for purchase price, it was weak for rental rate. These two factors do not always move in tandem. More so, contrasting results may be attributable to limited redevelopment for office space in certain districts. Additionally, the status of owner occupancies revealed an increase in statistical association to redevelopment from moderate to strong between 1981 and 1991. This differential is likely attributable to the substantial increase in home ownership opportunities over the ten year period.

A partial correlation coefficient analysis was also revealing. Among production, real estate, and social factors, nine attributes resulted in Pearson’s $r$ values of 0.7 or better for the first data set (1981 or 1982). Four or more control variables were introduced into the relationships between these nine attributes and redevelopment activity data. When control variables were introduced, the argument for possible causality among certain attributes strengthened. In addition, a hierarchy among determinants was suggested. It would appear that, foremost, social factors are partially causal to redevelopment activity. After control variables were introduced, the following three variables produced the strongest links to redevelopment: higher education, service occupation, and service industry employment. What became clear is that while attributes of real property development may be arguable as impetus behind redevelopment activity, they appear to be contingent on transitions in society and production.

Multiple regression analysis was used to test support or dismissal of results from correlation and controlled correlation analyses. Four equations were run. The attribute higher education retained the strongest influence on demolition activity, with the highest estimated coefficient at 28.7. In the second equation run, with the former variable omitted, above median income is highest with an estimated coefficient of 3.6. Similarly, service occupations ranked third in relative priority, with an estimated coefficient of 9.3 in the third equation run. In the fourth run, housing stock produced the highest estimated coefficient at 1.3. The following argument is thereby put forward.

Social factors are the impetus behind redevelopment in Hong
Kong’s older urban areas. Empirical analyses of structural factors point to a hierarchical order, with increased education as most important, followed by growth in personal income, and finally service occupation employment.

**Discussion: Economic Globalization and Sustainability in the Long Term**

The issue chosen for discussion is, can Hong Kong’s redevelopment be sustained in the long term? In response to this dilemma, this discussion attempts to link structural determinants of redevelopment to economic globalization. The prevailing Southeast Asian currency crisis is addressed.

A basic demand for trade, financial and insurance services has long underpinned Hong Kong’s strong economic ties to the mainland and other Asian Territories. In the last two decades, this demand has stretched into technology transfer needs and information technology. Education and advanced professional training is vital in this context, and the beneficiaries invariably enjoy a higher income and a better social status. The more affluent households demand upgraded residential space, and boost demand for recreational, commercial and all forms of modern services. The real estate sector responds with more intensive use of land, high rise structures, which, in recent years, has taken the form of mixed use layouts and developments promoting mixed uses within the same building. New and more educated recruits to the service sector use more office space per capita. The information revolution further increases the space occupied by those in service occupations. Investment in real property, whether in new projects or in redevelopment activity, will follow only when upward social mobility of the residents is established. Our analysis confirms this understanding. Still findings also indicate that elements of real estate, in particular, the allocation of land for competing uses, as well as the land pricing mechanism, remain important to the causation model of redevelopment. For example, it would seem that housing is a major force within redevelopment. Yet the cost of office space is approximately twice that of residential space in inner or central urban areas. Because Hong Kong emulates a city-state, with a fairly good transport network, many households are attracted to cheaper residential location within a reasonable distance of service employment centers. Developers of office, hotel, or other commercial uses are able to offer higher prices at the government land auctions. Thus, commercial space is replacing housing in older urban areas, a primary force being the higher price. The issue of sustainable urbanism through the redevelopment of older urban areas may therefore be complemented by discussion of economic viability in the long term.

The ability of Hong Kong to generate resources for development or redevelopment depends crucially on its economic ties with the mainland. With the rapid development of Guangzhou in South China and Shanghai, Hong Kong’s service sector would face increasingly stiffer competition, but at the same time, benefit from regional economic agglomeration. It makes sense to view Hong Kong’s future as part of South China. Streeten (1989) draws our attention to greater interdependencies in the world economy. Government policies elsewhere impact on interest rates, exchange value, and inflation in developing countries. A balance in payment crisis in a developing country will mean deflation, increased cost in local currency repaying local and foreign debts, and corporate bankruptcies for many. Social demands upon the governments of developing countries have increased. Ability to satisfy them is handicapped by IMF policies on third world debt management, and US monetary policies which often tighten credit and increase the value of the US dollar.

Stewart (1992) reinforces this contention. Many countries in the Southern Hemisphere need foreign exchange injections to keep their economies growing. The 1997 Asian stock market crisis has focused precisely on this issue. South Korea, Indonesia, and Thailand together owe US $379 billion to foreign debtors. Hale (International Herald Tribune, January 3, 1998) argues that South Korea’s debt crisis is the result of an effort to maximize industrial production. In this article, Robert Broadfoot claims that “in Thailand, it was corruption, in Indonesia, nepotism, and in Korea, a warped relationship between business and government, that led to gross asset misallocation.” South Korea’s president-elect, Kim Dae Jung, has said that he is committed to replacing the “corrupt connection between business and political power.” The analysis of Hale, however, claims that of the US $379 billion that is owed by these three countries, US $294 billion is owed by the private sector, mainly by companies that made use of political access to invest in “excessive and unprofitable” industrial, real estate, and infrastructure expansion. Bangkok’s Golden Town is a monument to wasteful urban construction. Thailand’s biggest residential project, financed by foreign loans, intended for 0.5 million people, stands abandoned as at January 1998. It is difficult to argue against the plan to build housing units on such a large scale in a city with acute housing shortages, but it is the high foreign resource content and the resulting prohibitive costs that have led to its abandonment.

Stewart (1992:10) emphasizes “the generalized foreign exchange shortages in the South” but excluded specifically South Korea and Taiwan from this difficulty in 1992. Within a period of only six years, South Korea is on the verge of bankruptcy, clearly unable to pay its foreign debt as originally scheduled. New loans from the IMF and other lenders are primarily being used for debt servicing, and not for purposes of productive investment or healthy consumption. As South Korea had enjoyed several years of favorable trade balances, the inescapable conclusion is that foreign exchange was used indiscriminately for conspicuous consumption, unproductive investments; i.e., projects that failed to generate adequate foreign income during their operations, and imports of raw materials to service local industries, where these enterprises were earning little foreign exchange. Similar difficulties are seen in Indonesia, Malaysia and the Philippines. Even a country that enjoys a favorable trade balance for several years, such as China in the recent past, can have its stability
threatened within a few years, if correct investment policies are not followed for the economy in general, and in particular for the huge urban real estate sector. Essentially, foreign debt and investment flow from overseas must be used to strengthen the long term productive capacity of a nation’s economy, especially in those sectors where necessary capacity increases cannot be achieved by the use solely of local resources. Foreign investment will slow down when the rate of return from the stock and property markets, or other financial instruments, begin to fall. When export markets shrink, following minor contractions in the economies of the US or the European Union, local currencies begin to depreciate, making the real rate of return decline even more. Subsequent inability to pay foreign debts threatens the stability of a local currency, poses the danger of imported inflation in construction, collapse of construction demand, loss making by construction and real estate firms, slow down of the urban economy and long-term loss of jobs.

Urban construction by itself is a large industry, justifying its own development strategy. A strategy must serve the principal macro-economic objectives related to growth, productivity, income distribution, saving and employment creation. Streeten (1981) correctly points out that “models that have been evolved in different historical and physical settings cannot be directly transplanted into entirely different cultures, or can be transplanted only at a cost.” What is also referred to is mounting evidence that combining traditional and modern features can lead to successful developments. In the last three decades, output has grown twice as fast as employment in developing countries (Bhalla 1992). There is a need to adopt a technology for urban development that represents a prudent mix of foreign and local resources. Importing of foreign technologies to serve productivity and capacity needs in selected industries or new economic activities will coexist with a mass of capital saving and labor intensive activities. A key resource is international finance capital ne cessary to procure advanced technology and other resources for innovations and modernization.

Urban construction tends to attract a greater proportion of a nation’s foreign debt than its share in GDP would justify. Foreign debt is incurred by a combination of one or more of the following:

1. Foreign direct investment in a project requiring reparation of investment and profit at a later date;
2. Loans of various forms such as bonds issued overseas, commercial paper, loans from foreign banks raised by local investors;
3. Foreign exchange required during design and construction such as direct import of materials, equipment, among others;
4. Foreign exchange utilized during manufacture and distribution of building materials and other services for design and construction, furnishing and maintenance;
5. Overheads and profit of foreign design and construction firms; and
6. Foreign expenditures incurred during recurrent operations of the venture.

Development policy should therefore take a long-term view of a country’s foreign exchange situation, and recommend an affordable level of foreign exchange availability to the urban development sector. An affordable level could well be the sum of two components. Allocation of foreign exchange to the sector should be in proportion to its contribution to the GDP. To this may be added the net foreign earnings from construction intensive projects, that is, annual earnings in foreign currency from a project minus the annual equivalent of the foreign exchange used in the development of the project, as well as net savings in foreign exchange resulting from the project’s operation. It is quite possible that construction and related physical infrastructure could legitimately demand up to a quarter of all foreign exchange used for urban development.

In practice, the foreign exchange content of the market value of many urban ventures such as high-rise office and commercial buildings, hotels, and luxury residential blocks reach up to 75 percent in many Asian cities. With the exception of hotels during times of tourist booms, they seldom earn enough revenue in foreign currency to repay their debt. It is unwise, for example, to spend on an entertainment park up to 70 percent of its building cost in foreign exchange, if it will generate only 10 percent of its revenue in foreign currency. Such ventures could have a negative impact upon the trade balance, current account balance, as well as the overall balance payments of a country. The above condition is made worse by all forms of malpractice. Corruption increases investment cost by 10 percent or more, reduces investment return by a similar margin, and reduces a business’s ability to repay local and foreign debt.

What lessons can be drawn from the severe Asian crisis for sustainable urbanism for Hong Kong and South China? No region in the world has grown faster than South China, including Shanghai and Hong Kong in the last twenty years. Joint business ventures between foreign and local parties that supply design, construction and development services, as well as commercial building and infrastructure projects were among the principal beneficiaries of foreign direct investment. Favorable trade balances and a healthy foreign reserve have helped China to maintain exchange rate stability so far, and minimize Asian contagion. An optimum level of foreign investment in urban construction should be maintained in South China, including Hong Kong and Shanghai, such that the overall balance of payments in all of the PRC is not adversely affected. Ganesan (1979, 1994) has addressed the practical implications of this strategy for the construction sector in developing countries.
Conclusions

It is hoped that Hong Kong’s model of successful redevelopment will challenge others to initiate comparative research elsewhere. Hong Kong itself experiences no foreign exchange shortages. One interesting comparison could be made where, unlike in Hong Kong, there is a contrasting foreign capital base to the economy, and real estate and construction investment. Other factors that could be incorporated into comparative analyses may include the following: weakness in control over rural to urban migration, higher unemployment, differentials in public housing stock or comprehensive renewal opportunities, medium to low density built form, and finally reduced economic growth.

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