MA in HOUSING STUDIES
SA6804 CAPSTONE PROJECT
2010-2011

A study of environmental protection practices in
Hong Kong Properties

Programme: MAHS

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Submission File name: G15 Capstone Project 2010-2011 A study of environmental protection practices in Hong Kong Properties.doc

Date of Submission: 18 April 2011

Group: G15

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Declaration

We hereby declared that the research of our capstone project is original and all references cited in the project have been read as appropriate.

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ABSTRACT

Environmental Protection is good for both environment and financial benefits. However, it is insignificant in the properties of Hong Kong. This study investigates the relationships between property owners and environmental protection. A research model has been set-up by the literature regarding public goods and collective actions. In order to further explain the framework, in-depth interviews and questionnaires have been developed to collect data for analysis. It was found that several reasons in relation to the degree of environmental protection attitude of the property owners. The busy lifestyle in Hong Kong discourage the sense of environmental protection, and in-result the sparse of the neighbourhood relationship which further depress their enthusiasm of carrying out environmental protection measures. Moreover, the availability of money is a realistic fact in the study, and the sense of ownership also has significant difference in the concept of environmental protection. During our study, we also found that cost-benefit reallocation is one of the main factors, which motivating or dismotivating their environmental protection behavior by providing various positive and negative incentives for their satisfaction and raise their commitment. Therefore, the involvement of the IO/OC and management company seems to be very important as they have the right and responsibilities to organize and implement the said measures. Last but not least, the provision of information takes an important role in the enhancement of environmental protection measures. It is suggested that the HKSAR Government and property managers in Hong Kong own the responsibilities and necessitation to play a more important role of organization, promotion and enhancement of the participation of property owners in Environmental Protection Measures.
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CHAPTER ONE
INTRODUCTION

1.1 Background of the Study
Environment protection practices have been widely promoted in the developed countries. In Hong Kong, many environment protection schemes were launched by the HKSAR Government in recent years.

Environmental protection practices can be regarded as a kind of public goods. According to Samuelson (1954), public goods means that consumption by an individual would not affect the consumption of others and it is possible to exclude the consuming of such goods. As suggested by Olson (1965), the problem of free-riders is created when providing the public goods which is knows as collective actions. This phenomenon exists because no one is willing to contribute at an equilibrium level. Environment protection practices can be considered as voluntarily providing a public goods. The provision of public goods is affected by human behaviour involving collective actions. Public’s value can directly determine their action towards public goods. Some people may become a free rider which creates collective action dilemma.

Allocation of cost and benefit from public/common level to personal/individual level can be treated as a solution to the dilemma. Although the HKSAR government put many efforts in Environment protection recent years to overcome the problems of collective actions, the respond from the public is still not satisfactory in Hong Kong.

1.2 Significance of the Study
Environmental protection is highly promoted and is an emerging trend in many countries including Hong Kong. It is a significant practice in improving Hong Kong environment and for financial benefits. As it is worth for the landlords or property management companies to help promoting environmental
It is proved by many real examples that “Energy Saving” is an investment with very impressive return. For example, after replacement the “Heat-pump System” of the Eaton Hotel, a reduction of $1.5 million in annual electricity expenditure is recorded. In 2001, The Hong Kong University of Science and Technology adopt the suggestion from CLP Power Hong Kong Limited, replacing new “Heat-pump System” as dehumidifier, resulted in a reduction of 50% of electricity consumption per year, which equals to $1 million. Harbour City adopts the suggestion from CLP Power Hong Kong Limited in replacing 20,000 lamps and “Heat-pump System”, saved $3.6 million on electricity expenditure. Kwan Yin Court enjoyed a reduction of $200,000 electricity expenditure annually after a replacement work of 1,100 lamps. Investment in “Energy Saving” does not only result in reducing the electricity consumption, A research made in America discovered that buildings with certificate of LEED (Leadership in Energy and Environmental Design) average in 30% higher in rent and selling price when compared with buildings without LEED. China Resources Building is now having renovation works in order to meet the standard of LEED, and is expected from others that the rent will be increased by 9% once the renovation work is completed.

However, the fact is that, although many environment protection schemes were launched by the HKSAR Government, environmental protection is still not very popular in Hong Kong when compared with other countries or cities. It is known that the Environmental Protection Department in Hong Kong is now deciding whether it is suitable and applicable to use incinerator to reduce the pressure of landfill and reclamation areas from being saturated. Some experts concluded the unsatisfactory outcome of recycling in Hong Kong. Citizens in Hong Kong are not willing to participate in recycling spontaneously. Without the legislation by the government, there is no motivation for them to involve in recycling. Moreover, representatives in recycling industry claimed that the burdens for conducting environmental protection industry are the small market size of the industry and the weak sense of
environmental protection among citizens when compared with other countries.

Besides the sense of citizens and the small market size, the standpoint and effort paid by the HKSAR Government also lead to the unsatisfactory performance in environmental protection. An article from Hong Kong Economic Times said that, government should encourage environmental protection by working out an enthusiastic financial budget which use positive and negative incentives to encourage, guiding and forcing citizens to participate more in environmental protection. It is blamed by the public that, the HKSAR Government is short-sighted in environmental protection, and lack of courage to overcome the obstacles, no matter in the issues of planting incinerators, expanding landfill and reclamation areas, or ban idling vehicle engines. There is another example of plastic bag levy which supports the above argument. Plastic bag levy has been executed in Japan, Taiwan and Singapore for many years, and with apparent and satisfactory outcome. However, the HKSAR Government is so slow that

The plastic bag levy was just started in 2009.

Many studies and researches from literatures have been found related to the collective action dilemma due to the provision of public goods. In view of such findings, it has provided a theoretical foundation to explore the situation in Hong Kong.

Although it has been proved that “Environmental Protection” is a significant practice in improving Hong Kong environment and for financial benefits, the respond is not satisfactory in Hong Kong. What is the major reason that owners in Hong Kong not interested in “Environmental Protection”? How can the HKSAR Government and property managers in Hong Kong overcome such obstacles and cooperate with the owners to take part in “Environmental Protection”? 
CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

As mentioned in the previous chapter, environmental protection practice is a kind of public goods that can be provided from collective actions. In fact, environmental protection is not popular among Hong Kong people. Free rider problem exists if the public are not willing to contribute to the public goods e.g. environmental protection practices.

In order to ascertain the possible reasons and solutions behind environmental protection practices in Hong Kong, literature related to public goods and collective actions will be reviewed in the beginning of this chapter. Possible solutions examined by some scholars to solve the collective action dilemma will also be reviewed. In addition, related concepts e.g. free rider will be identified in order to explain the reasons of collective action dilemma. Finally, a summary will be provided at the end of this chapter.

2.2 Definition of Public Goods


Table 2.2 Categories of goods and services

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<td>Easy</td>
<td>Toll/ Club Goods</td>
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<td></td>
<td>High</td>
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According to Samuelson (1954), public goods means that consumption by an individual would not affect the consumption of others and it is not possible to exclude the consuming of such goods. However, Public goods may create free rider problem. It means that the non-excludability of the goods makes the
marginal cost of production zero and non-excludability makes the supplier goods difficult to compensate for the cost of production. Hence there is no incentive to produce the public goods.

The Environmental Protection practices can be regarded as public goods in the above concepts. The non-excludability of the outcomes and benefits from Environmental Protection investment makes the marginal cost of production (Environmental Protection investment) zero and the supplier goods (outcomes and benefits generated by the Environmental Protection investment) difficult to compensate for the cost of production (investment).

2.3 The Concept of Collective Actions

According to Bengtsson (1998), the provision of public goods is known as Collective Action, which are non-excludable and jointly supplied. Olson (1965) suggested the problem of free-riders. It assuming that human being is rationally self-interest, argues that the cost of contribution will most of the time outweigh the net benefit, and logical individual will seldom voluntarily contribute to the common goods. An individual will be willing to contribute to the production of a good only if the net benefit they can enjoy is positive. This can be understood by the concept of cost-benefit relationship.

2.4 Problem arising from Collective Actions - Free Rider

Problems of provision of public goods exist as no one is willing to contribute at an equilibrium level. As participating in the Environmental Protection investment means individual owners has to put in extra resources where the benefits will be enjoyed and shared with the public, the net benefit that particular owner can enjoy is rare and can be neglected. Therefore, problems of Collective Action and Free-riders happened. Environmental protection policies or measurements can be considered as voluntarily providing a public goods. The provision of public goods is affected by human behavior involving collective actions. Public’s value can directly determine their action towards public goods. Some people may become a free rider which creates collective action dilemma.
2.5 Three levels of Collective Actions

2.5.1 1st Level: Individual

In the context of sustainability, the ability of households to participate in sustainable practices involving ‘care for the environment’, and to engage in environmental action to ‘save the earth’, is in large part determined by their daily practices and everyday experience of the immediate environment. It is only when people have a certain ‘quality of life’ that they are able to engage in sustainable practices. Quite simply, there is less likelihood of much understanding of global sustainability, and more emphasis on the immediate concerns to do with safety, litter, secure employment etc. Households suffering from poverty, due in part to the operations of the housing and urban systems, are more likely to have weak environmental concerns, and their definitions of ‘environment’ are likely to differ considerably from the one being projected by local and national governments, and ‘green’ groups (see Burningham & Thrush’s paper in this focus issue). Indeed, most members of the modern ‘green’ movement are characterised by middle-class groups who are concerned to protect ‘nature’ and wildlife. (Mark Bhatti & Andrew Dixon, 2003)

It is often assumed that environmental problems affect everyone equally; it seems common sense that global warming, pollution and ozone depletion would affect us all. Even so, our ability to alleviate, mitigate or even escape (temporarily at least) ecological deterioration is dependent on how much income we have, where we live, which social class we belong to and whether we suffer discrimination in other areas of our lives. Furthermore, where environmental policies have been implemented without taking this into account those worst affected have suffered even more! Campaign groups in the UK have argued that the ability of poorer groups to escape environmental degradation is often limited and even compromised by government environment policies (see for example Friends of the Earth, 2001). Thus it appears that all too often those promoting environmental solutions fail to consider the ways in which environmental protection can actually lead to stress for certain households. An example of this is VAT
on fuel implemented in 1993, which was broadly welcomed by green groups as an environmentally sound measure to reduce CO2 emissions. However, “low income persons and people of colour have borne greater health and environmental risk burdens than the society at large” (Bullard, 1999, p. 3).

Recent trends in Spanish housing prices have had a significant impact on both middle-aged and elderly homeowners, giving rise to a paradoxical situation in which a significant share of the population is ‘asset wealthy and income poor’ (Hancock, 1998, p. 2). In Spain many older adults who own their dwelling are income poor, and fit in the so-called ‘cash-poor and house-rich’. They are willing to contract (WTC) certain financial instruments that provide liquidity (reverse mortgages) to cover the financial expenditures of old-age care. (Costa-Font, Joan, Gil, Joan and Mascarilla, Oscar, 2010)

Taking a sociological perspective by looking at the everyday concerns of lone parents, older people, black and ethnic minorities, and low-income households, they argue that before social integration is possible there needs to be recognition by policy makers and, especially, green pressure groups that certain disadvantaged groups have a disproportionate exposure to environmental ‘bads’. This often means they are experiencing environmental inequality, as well as housing problems and other social problems. This further affects their definitions of the ‘environment’ in the context of their everyday lives. Quite often this is at odds with how ‘expert’ and green groups present environmental issues. Burningham & Thrush suggest that before disadvantaged groups can be expected to engage with, for example, global warming issues, their everyday concerns need to be recognized. (Joseph Rowntree Foundation, 2000)

2.5.2 2nd Level: Organization

In the development process, different actors play different roles. The actors in the development process all have different objectives (Ostrom, 1986, p. 463). Distinguishing the actors and their roles allows us to say more about the outcome of the development process. Interdependency between the actors in the
process needs other participants to realise their objectives. Elias (1971) describes dependency as a fundamental aspect of human interaction, and dependency relations between persons as the inverse of power relations. Whenever two or more persons interact, there is a certain ‘power balance’ that determines the possibilities of each of the persons to influence actions of the others. We use this idea below to analyse spatial policy processes (see Goverde, 1987; Dekker et al., 1992; van Damme and Verdaas, 1996). If we follow Elias’ description of power and dependency as each other’s inverse, this means that dependency relations can take three forms: Economic dependency (some actors have scarce means that other actors need but do not have); Juridical dependency (the action space of the actors is limited by law and by regulations); and Communicative dependency (actors depend on the information that other actors have). The interdependency between the actors is the reason why negotiations take place in the development process. The dependency and power relations in a specific development process influence the form of the interaction that is going to take place, and therefore the ability of the actors to affect the outcomes of the process. That is, the dependency and power relations influence the negotiations and in consequence the residential environment. We assume that the residential environment is affected by the amount of money available, the division of this money and the division of the power in the development process.

If the houses and their residential environment are of good quality, the owner can set its prices higher. Examples of a private developers spent their money on are public art or works to increase traffic capacity such as new roundabouts or traffic junctions or contributions to community facilities (Healey et al., 1995, pp. 11-12). There will be a break-even point, where this extra expenditure equals the increase in income that results from higher prices. The case of Great Britain illustrates this (section six). However, some first owners will not be interested in the residential environment if they do not sell the houses, so they do not profit from an increase in house prices because of a higher overall quality of the residential environment. (Roelof Verhage and Barrie Needham, 1997) Sense of ownership is also a factor to determine the degree of involvement in estate. Therefore, there is an explicit linkage between
economic activity and social responsibility was compounded by a sense that participation processes were dominated by higher-income, middle-class residents; such groups tended to be seen as more articulate and capable of influencing decision-making processes. (Manzi, Tony, 2010)

Helen Jarvis provides data at the household level. Her work demonstrates that it is unlikely that households by themselves will make environmentally friendly decisions (as assumed by many neo-classical environmental economists). She concludes that there needs to be a much stronger role for planning policies. (Mark Bhatti & Andrew Dixon, 2003)

In 1st level, Individual, it is difficult for some group of property owner like elderly, low-income level groups and different social class to contribute to environmental protection measures, no matter they care the environment or not.

In 2nd level, Neighbourhood, just like the case in Hong Kong, there isn’t a close relationship between neighbourhood. Therefore, peer group interaction neighbourhood effects may not so significant in this case.

In 3rd level, Organization, different actors play different roles in the negotiation process. Therefore, the combination of residential mix including owner, investor and tenant maybe one of the significant factor. Also, OC or IO may be the important role in this topic.

2.5.3 3rd level: Neighbourhood

Jencks & Mayer (1990) overview how the mechanisms underpinning neighbourhood effects had been conceptualised. They argued that the literature was characterised by three distinct models: first, the ‘epidemic’ or ‘contagion’ model, in which the emphasis was on how ‘deviant’ behaviours and attitudes spread and become normalised in neighbourhoods as the result of peer group interactions; second,
‘collective socialisation’, which refers to the deleterious socialisation that can occur in neighbourhoods with few positive role models; and third, the ‘institutional’ model, which argues that the attitudes and behaviours of those working in neighbourhood institutions can compound neighbourhood disadvantage (Jencks & Mayer, 1990, p. 115).

Communitarianism (Etzioni, 2004), an ideology with strong moral overtones, emphasising the collective responsibilities of citizens, as opposed to their rights. Hence, rather than imposing fines for social problems such as litter, it is more effective to rely on peer pressure and social disapproval as a discouragement, aiming to reach a point where behaviour becomes a self-sustaining personal norm (Halpern & Bates, 2004, p5). The aim has been to develop a responsibility thesis (Cowan, 1999) whereby residents exercise (self) control to achieve appropriate standards of behaviour. Resident involvement strategies, aimed at both improving service delivery and the empowerment of communities, increasing self-worth and developing trust and informal networks within communities, relating to what has been termed the development of social capital (Putnam, 2000). The development of an active social policy, where citizens have greater involvement in day-to-day decisions (Cochrane, 2007) Society of responsibility, wherein the decent law-abiding majority are in charge; where those that play by the rules do well; and those that don’t, get punished. (Blair, 2004) This process of responsibilization (Flint, J. 2006) in housing practice has a wider significance, serving to construct new forms of citizenship that may, on the one hand, empower some; yet, on the other, subject transgressive groups to a greater variety of sanctions and disciplinary mechanisms.

Residents are encouraged to reporting and addressing anti-social behavior. However, problems did not exist unless they directly affect residents; “If people are not kicking their door, assaulting or harassing them, then as far as they are concerned it is not happening’ (Interview, 16 January 2007) (Manzi, Tony, 2010)
2.6 Solution to Collective Actions

2.6.1 Cost/ Benefit Reallocation

Therefore, allocation of cost and benefit from public/common level to personal/individual level can be treated as a solution to the dilemma. Afterward, the benefit and cost would become more obvious, measurable and visible, just like imposing $0.5 plastic shopping bag levy which changed their cost from indirect to direct, so they would be more likely to act in environmental protection. Moreover, positive incentives have been created that makes benefit is bigger than cost after cost and benefit allocation. Yet, the public behavior is still abnormal due to public goods and collective action dilemma. Therefore, empirical data should be collected to verify the captioned relationship.

According to Tibeout (1956), “vote-with-the-feet” model is proposed to overcome the demand revelation problem. The quantity of provision of local public service is tied to the local tax residents pay. Residents will move to a locality in which the level of local tax matches with their expectation of the level of provision of public services. According to Bergstrom, Theodore C., Lawerence Blume, and Hal Varian (1986), when a single public good is provided at positive levels by private individuals, its provision is unaffected by a redistribution of income. This holds regardless of differences in individual preferences and despite differences in marginal propensities to contribute to the public good. Therefore income redistribution among contributors will not change the supply of a public good if it does not change the set of contributing consumers. In this analysis, government provision of a public good will crowd out private contributions and to demonstrate that equalizing income redistribution tend to reduce the voluntary provision of a public good. Although a transfer of wealth from non-contributors to contributors will increase total contributions, it is not true that the reverse condition will decrease contributions, as some of the non-contributors may decide to begin contributing, and in result increase the supply of the public good, even if the set of contributors changes.

Abrams and Schmitz (1978) using time series data for the U.S., and implies that one dollar increase in
governmental transfers lowers private charitable contributions by around 28%. Roberts (1984) cites historical evidence that the introduction of large-scale government welfare programs in U.S. was accompanied by a reduction in private charitable contributions. Warr (1982) and Roberts (1984) present their analyses that a dollar for dollar reduction in private contributions result from government's contribution. These rely on the assumption that all of the taxes that pay for the government's contribution are collected from contributors. Therefore, the set of contributing consumers is only a small subset of the taxpaying population, and the extra taxes paid by them are likely to be much less than the government's contribution. (Bergstrom, Theodore C., Lawerence Blume, and Hal Varian, 1986)

2.6.2 Critical Mass Theory

According to the critical mass theory (Oliver et al 1985), the production of small group of dedicated and resourceful individual who contribute most the cost of such action. Incorporated Owners and Owners Committee (Building Management Ordinance Cap. 344) is an example of the existence of critical mass that can contribute to the collective action. The owners would be benefit more from the collective good in condition with the more heterogeneous the group is. More heterogeneous of the group may be easily found in large properties or estates and more conductive to the accumulation of critical mass. Therefore, most of the large properties or residential estates in Hong Kong can form IOs & OCs whose members possess with the resources in running the organization.

2.6.3 Selective Incentives

According to Bengtsson, it is a group of agents to make others co-operate by promises of rewards or threats of punishment. (Bengtsson 2001, p.184) People can be motivated by the selective incentives. In order to encourage the public to participate in environmental protection schemes, the award or punishment can be implemented by the government. For instance, the HKSAR Government launches the $450 million Building Energy Efficiency Funding Schemes - “Energy-Cum-Carbon Audits” (ECA) and “Energy Efficiency Projects” (EEP) as a positive incentive. This is one kind of selective incentives
(no matter it’s positive or negative) that can motive the public to participate in environmental protection schemes. The punishment can be a penalty, fine or coercive action to the public to contribute and an award can be a sense of social prestige. “Only a separate and “selective” incentive will stimulate a rational individual in a latent group to act in a group-oriented way.” (Olson 1965, p.51) For instance, the government imposes $0.5 plastic shopping bag levy and sewage services charging scheme as a negative incentive.

2.6.4 Assurance Game

In addition, the solution to collective action would be explained by the theory of changing the simple prisoners’ dilemma games to assurance game. As suggested by Bengtsson (1998), people will change the policy to reach stable equilibrium that cooperation will eventually be generated. People hope to get the best payoff by knowing the others will cooperate through the exchange of information. Therefore, the goal was set by the HKSAR Government in 2004. There was 6% reduction of the expenditure on electricity consumption in four years when compared with the expenditure in the financial year 2002 to 2003. Moreover, the HKSAR government can build up the social norms of the cooperation among the public though the promotion of the social norms of cooperation. For example, the government tries to encourage the individual to participate in recycling programme by establishing “Environmental Campaign Committee (ECC) and formulating of “Loving a Green Hong Kong” campaign.

2.7 Summary

According to the literature review, the provision of public goods e.g. environmental protection practices is known as collective action. There are three levels of collective actions, i.e. individual level, organization level and neighbourhood level. A free rider problem exists when no one is willing to contribute to the public goods. Solutions to the collective actions are suggested to solve the dilemma. The aforesaid concepts about public goods are related to this research in examining the environmental protection practices in Hong Kong.
In order to meet the objective of this research, a conceptual framework of public participation in environmental protection practices is developed by referencing the valuable academic literature.
CHAPTER THREE
CONCEPTUAL FRAMEWORK

3.1 Conceptual Framework of the Study

In this study, public participation is a kind of solution to the collective action problem that helps promoting environment protection practices. The reasons, process and solutions can cause impact on motivating people to launch and participate in environmental protection practices.

The analytical framework of this study is illustrated as follows:

Figure 1: Framework of public participation in environmental protection practice

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<td>Environmental Protection Measurements</td>
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<td>2. Improve Living Environment</td>
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<td>1. Allocation of Cost &amp; Benefit</td>
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<td>2. Government Intervention</td>
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<td></td>
<td>3. Selective Incentives</td>
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<td></td>
<td>4. Individual Solutions based on Motivation</td>
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<td></td>
<td>5. Individual Solutions based on Rational Expectations</td>
</tr>
</tbody>
</table>
3.2 Conceptualization and Operationalization

According to the previous literatures, environment protection practices have been widely promoted in the developed countries. In Hong Kong, many environment protection schemes were launched by the HKSAR Government in recent years. The Environmental Protection practices can be regarded as public goods. According to Bengtsson (1998), the provision of public goods is known as Collective Action. An individual will be willing to contribute to the production of a good only if the net benefit they can enjoy is positive. This can be understood by the concept of cost-benefit relationship.

Problems of provision of public goods exist, as no one is willing to contribute at an equilibrium level. As participating in the Environmental Protection investment means individual owners has to put in extra resources where the benefits will be enjoyed and shared with the public, the net benefit that particular owner can enjoy is rare and can be neglected. Therefore, problems of Collective Action and Free-riders happened.

Collective Actions can be further divided into three levels. They are individual, neighborhood and organization, and can been studied in the view of social or economic aspects. In the individual level, it is suggested that people will engage in environmental action to “save the Earth” when they have a certain “qualify of life” that they are able to engage in sustainable practices. Also, the ability to alleviate, mitigate or even escape ecological deterioration is dependent on how much income we have, where we live, which social class we belong to and whether we suffer discrimination in other areas of our lives. These economic factors affect individuals in engaging in environmental protection practices. In the sociological perspective, disadvantaged groups have a disproportionate exposure to environmental “bads” which affects their definitions of the “environment” in the context of their everyday lives. Quite often this is at odds with how ‘expert’ and green groups present environmental issues. Burningham & Thrush suggest that before disadvantaged groups can be expected to engage with, for example, global warming issues, their everyday concerns need to be recognised. (Joseph Rowntree Foundation, 2000)
In the neighborhood level and from the sociological perspective, Jencks & Mayers (1990) argued that the literature was characterized by three distinct models: the ‘epidemic’ or ‘contagion’ model, ‘collective socialisation’, and the ‘institutional’ model (Jencks & Mayer, 1990, p. 115). Moreover, Communitarianism (Etzioni, 2004) is an ideology with strong moral overtones, emphasizing the collective responsibilities of citizens, as opposed to their rights. Hence, rather than imposing fines for social problems such as litter, it is more effective to rely on peer pressure and social disapproval as a discouragement, aiming to reach a point where behavior becomes a self-sustaining personal norm (Halpern & Bates, 2004, p5). This process of responsibilization (Flint, J. 2006) in housing practice has a wider significance, serving to construct new forms of citizenship that may, on the one hand, empower some; yet, on the other, subject transgressive groups to a greater variety of sanctions and disciplinary mechanisms.

When studying the collection actions in organizational from the economic perspective, Ostrom suggested that in the development process, different actors play different roles. The actors in the development process all have different objectives (Ostrom, 1986, p. 463). Interdependency between the actors in the process needs other participants to realize their objectives. Elias (1971) describes dependency as a fundamental aspect of human interaction, and dependency relations between persons as the inverse of power relations. If we follow Elias’ description of power and dependency as each other’s inverse, this means that dependency relations can take three forms: Economic dependency; Juridical dependency; and Communicative dependency. The interdependency between the actors is the reason why negotiations take place in the development process. The dependency and power relations influence the negotiations and in consequence the residential environment. We assume that the residential environment is affected by the amount of money available, the division of this money and the division of the power in the development process.
In addition, if the houses and their residential environment are of good quality, the owner can set its prices higher, and there will be a break-even point, where this extra expenditure equals the increase in income that results from higher prices. (Roelof Verhage and Barrie Needham, 1997) Sense of ownership is also a factor to determine the degree of involvement in estate. Therefore, there is an explicit linkage between economic activity and social responsibility was compounded by a sense that participation processes were dominated by higher-income, middle-class residents; such groups tended to be seen as more articulate and capable of influencing decision-making processes. (Manzi, Tony, 2010)

When focusing on sociological perspective, Helen Jarvis provides data at the household level. Her work demonstrates that it is unlikely that households by themselves will make environmentally friendly decisions. She concludes that there needs to be a much stronger role for planning policies. (Mark Bhatti & Andrew Dixon, 2003)

In conclude, in 1st level, the Individual level, it is difficult for some group of property owner like elderly, low-income level groups and different social class to contribute to environmental protection measures, no matter they care the environment or not. In 2nd level, the Neighborhood level, just like the case in Hong Kong, there isn’t a close relationship between neighborhoods, therefore, peer group interaction neighborhood effects may not so significant in this case. In 3rd level, Organization, different actors play different roles in the negotiation process. Therefore, the combinations of residential mix including owners, investors and tenants maybe one of the significant factor. Also, OC or IO may be the important role in this topic.

Solutions to tackle and overcome the collective actions include Cost/ Benefit Reallocation, Critical Mass Theory, Selective Incentives and Assurance Games. Cost/ Benefit Reallocation make the benefit and cost become more obvious, measurable and visible.
According to the critical mass theory (Oliver et al 1985), the production of small group of dedicated and resourceful individual who contribute most the cost of such action. Incorporated Owners and Owners Committee (Building Management Ordinance Cap. 344) is an example of the existence of critical mass that can contribute to the collective action. The owners would be benefit more from the collective good in condition with the more heterogeneous the group is.

According to Bengtsson, Selective Incentive refers to a group of agents to make others co-operate by promises of rewards or threats of punishment. (Bengtsson 2001, p.184) People can be motivated by the selective incentives. In order to encourage the public to participate in environmental protection schemes, the award or punishment can be implemented by the government.

In the concept of Assurance Game, the solution to collective action would be explained by the theory of changing the simple prisoners’ dilemma games to assurance game. As suggested by Bengtsson (1998), people will change the policy to reach stable equilibrium that cooperation will eventually be generated. People hope to get the best payoff by knowing the others will cooperate through the exchange of information.

3.3 Research Hypothesis and Null Hypothesis

Data collected is to be used to analysis the relationship between the collective problems and solutions on environmental protection practices. Moreover, the data is also collected to understand the reasons behind that people in Hong Kong are not interested in “Environmental Protection”.
In this study, seven hypotheses are under studying:

**Hypothesis 1**
The stronger the neighborhood relationship, the more the willingness to perform environmental protection practices of the neighborhood.

**Hypothesis 2**
The more the money available within an organization, the more the willingness to perform environmental protection practices of the organization.

**Hypothesis 3**
The stronger the sense of ownership, the less the willingness to perform environmental protection practices.

**Hypothesis 4**
The cost / benefit reallocation has positive effect on performing environmental protection practices.

**Hypothesis 5**
The more involvement of IO / OC, the more willing to perform environmental protection practices.

**Hypothesis 6**
The positive incentives increase the willingness on performing environmental protection practices.

**Hypothesis 7**
The more the environmental protection information provided, the more the willingness to perform environmental protection practices of the organization.
CHAPTER FOUR

METHODOLOGY

4. Research Design

4.1 Research Method and Sampling

For the hypothesis concerning individual and neighborhood levels, Incorporated of Owners (IO), Owners Committee (OC) and single-ownership owner will be the target population of this part of the research. The targeted interviewees usually represent the views and standpoints of tenants or owners of a particular property and have great influence on the determination or willingness to perform environmental practices in the properties. The attitudes of the interviewees also indicate the actual outcomes of the environmental-related policies launched by the HKSAR Government.

Two survey methods will be adopted in this research. Firstly, an in-depth interview as a qualitative research method will be conducted in order to observe the comprehensive and complicated reasons and beliefs behind of the behaviors and practices towards environmental protection. Total six numbers of properties will be chosen as the target interviewees. The background information of the properties is listed as follows:-
Table 4.1 Background information of the properties

<table>
<thead>
<tr>
<th>Property name</th>
<th>Lakeshore Building</th>
<th>On Ning Garden</th>
<th>Oscar by the Sea</th>
<th>26 Nathan Road</th>
<th>Tsuen Wan Plaza</th>
<th>Merry Garden</th>
</tr>
</thead>
<tbody>
<tr>
<td>District</td>
<td>Tuen Mun</td>
<td>Tseung Kwan O</td>
<td>Tseung Kwan O</td>
<td>Tsim Sha Tsui</td>
<td>Tsuen Wan</td>
<td>Yuen Long</td>
</tr>
<tr>
<td>Year of Intake</td>
<td>31</td>
<td>20</td>
<td>10</td>
<td>15</td>
<td>20</td>
<td>6</td>
</tr>
<tr>
<td>No. of Block</td>
<td>1</td>
<td>6</td>
<td>7</td>
<td>1</td>
<td>1</td>
<td>36 (G/F to 2/F)</td>
</tr>
<tr>
<td>Gross Floor Area (square feet)</td>
<td>104,000</td>
<td>246,000</td>
<td>1,561,000</td>
<td>179,000</td>
<td>586,000</td>
<td>50,000</td>
</tr>
<tr>
<td>No. of Unit</td>
<td>120</td>
<td>2,300</td>
<td>1,959</td>
<td>53</td>
<td>160</td>
<td>72</td>
</tr>
<tr>
<td>Type of property</td>
<td>Single-Block Building</td>
<td>HOS Gated community</td>
<td>Commercial buildings</td>
<td>Shopping centre</td>
<td>Low density estate</td>
<td></td>
</tr>
<tr>
<td>Ownership</td>
<td>Multi</td>
<td>Multi</td>
<td>Multi</td>
<td>Single</td>
<td>Single</td>
<td>Multi</td>
</tr>
</tbody>
</table>

Secondly, a semi-standardized survey interview will be conducted to explore the attitude and actual performances of the property management companies towards environmental protection practices. As the hypothesis concerning both organization and neighborhood levels, the management staff of property management companies of different types of properties will be the target population for the part of the quantitative research. The questionnaires comprise measures of the reasons, attitudes and performances of environmental protection practices from the interviewees’ point of view and their real experience.
4.2 Data Collection Plan

The whole survey is predicted to be carried out for one month. To obtain in-depth observations, the leasing staff, members or representatives of IO or OC representing individual level will be invited to participate in the in-depth interview in order to obtain non-verbal signals and answer the questions closely related to environmental protection topics during the interview through open-end questions. The interview will be conducted in face-to-face. All interviews will be recorded and will be lasted between 30 minutes to an hour.

In order to collect larger amount of primary data concerning organization level, questionnaire will be used to collect organizations' response. In order to maximize the number of respondents, questionnaire will also be valid via web. In this situation, all final year students of Master of Housing Studies of City University and the staff of Hong Yip Service Company Limited, which is one of the leading property management companies in Hong Kong will be our main target interviewee. They are the agent of the organization of the whole properties, which reflects the organizations' view and willingness on environmental protection practices. As some personal information will be left on the completed questionnaire, the information collected will only be used for research purpose only and will be treated confidentially.

To act as supplement to our survey, secondary data such as surveys reports and statistics from Census and Statistics Department, the Land Registry and different universities, concerning the relevant aspects will also be explored.

4.3 Design of In-depth Interview

Meaningful similarities, differences and relationships among the key themes will be explored. The systematic exploration of the coded interview transcripts will result in the identification of main theme that are grounded empirically in the data and well supported by evidence from the respondents’
accounts. A list of tentative interview question is listed as follows:-

**Area A  : Personal background information**

Possible Questions : 
1. income level 
2. educational level 
3. ownership status (e.g. time of purchase, purpose of purchase) 
4. age level 

**Area B  : Thoughts regarding Environmental Protection in Hong Kong**

Possible Questions : 
1. overall impression 
2. views on recycling 
3. views on energy-saving 
4. views on education related to environmental protection in Hong Kong 
5. views on promotion of environmental protection in Hong Kong 

**Area C  : Factors affecting the involving in Environmental Protection**

Possible Questions : 
1. The factors behind that drive people (you) to participate in Environmental Protection practices 

**Area D  : Intervention of HKSAR Government**

Possible Questions : 
1. comments on taxation (negative incentives) 
2. comments on subsidization (positive incentives) 
3. is it enough or effective for the intervention measures in Hong Kong
Area E  : Individual vs General

Possible Questions :
1. current environmental protection practices in the building
2. degree of coherent between personal views and collective decisions
3. reasons and details of incoherent

Area F  : Outcome of Environmental Protection Practices in the building

Possible Questions :
1. outcomes and returns of environmental protection practices
2. satisfaction on the outcome
3. any improvement suggestions

Area G  : Other opinions regarding Environmental Protection

The interview transcripts are closely read and analyzed using an iterative hermeneutical process. The transcripts are read and re-read in the entirety to gain a sense of the whole interview. General concepts are expected to be identified from which key themes could be derived.

4.4 Design of Questionnaire

The questionnaire includes total twenty-three questions which are divided into three main parts: 1) environmental management practices; 2) environmental information communication; 3) general information. Respondents are asked about the actual practices and perceptions towards environmental protection in their properties. Demographic factors about the respondents are also collected at the end of the questionnaires.
Respondents are requested to read the instructions before proceeding with the questionnaires. The cover letter of the questionnaire explains the objective of the study. Each questionnaire is used for collecting a building’s or an estate’s data only. If the respondents manage more than one building or estate, they are require to fill in extra questionnaire(s) for other building(s) and estate(s).
CHAPTER FIVE

RESEARCH FINDINGS, DATA ANALYSIS AND DISCUSSION

5.1 Introduction

With the aim of observing the comprehensive and complicated reasons and beliefs behind of environmental protection behaviors and practices, hypothesis mentioned in Chapter 3 are tested by setting related questions in in-depth interview and questionnaire survey (as shown in the appendix II). The main aim for the in-depth interview and questionnaire survey is to investigate the validity of the categories as listed below to support the conceptual framework and explore any invisible or interesting factors that influence the willingness to performance environmental protection practices.

Before conducting the research, we expected citizens in Hong Kong are generally willing to support environmental protection. As mentioned in the literature review, environmental protection practices can be regarded as public goods. According to Olson (1965), as individual will be willing to contribute to the production of a good only if the net benefit they can enjoy is positive. In Hong Kong, most people claim that they are willing to support environmental protection, and the HKSAR Government pays greater effort nowadays to promote environmental protection. However, the overall performance and outcomes still fall behind when compared to other developed countries or cities like Taiwan and Japan. As the provision of public goods is known as collective action that is non-excludable and jointly supplied, individual will seldom voluntarily contribute to the public goods. There are some solutions to the problem of collective action as mentioned in the conceptual framework e.g. allocation of cost and benefit and selective incentives.

5.1.1 In-depth Interviews

In-depth interview had been conducted in March 2011 with six interviewees who are all playing important roles in their developments. They included the chairman of I.O. of HOS (On Ning Garden); representatives from the Landlord of shopping centre and commercial building (Tsuen Wan Plaza and 26
Nathan Road); I.O. members of private housing estate (Oscar by The Sea); the vice-chairman of I.O. of private single-unit building (Lakeshore Building); and the representative from the Developer (Merry Garden). They are selected because the role they played in the developments enabling them to have a thorough understanding in the situation of environmental protection performance of their developments, and ensuring them to have involvement in the decision making process whether environmental protection practices are to be carried out or not.

According to the previous literature review, it has mentioned some factors that affect the willingness to performance environmental protection practices and the outcomes obtained. The factors are summarized as follows:-

1) Organizational factors e.g. neighborhood relationship;
2) Money available within an organization;
3) Cost/benefit reallocation; and
4) Incentives and information availability

For the purpose of analyzing the factors that affect the willingness to perform in environmental protection practices. The in-depth interview is mainly divided into the following main categories:-

1) Investigation of personal background;
2) Discussions on views regarding environmental protection in Hong Kong;
3) Factors that affect the involvement in environmental protection practices;
4) Intervention by HKSAR Government;
5) Difference between personal perceptions and general views;
6) Outcomes of environmental protection practices within the developments; and
7) Other opinions regarding environmental protection practices.
5.1.2 Questionnaire

Survey was conducted in March 2011 through sending the questionnaires to the management staff of property management companies from different types of properties in Hong Kong. A total of 150 questionnaires were sent to the targeted interviewees. 96 questionnaires are collected. The response rate was around 70 percent. After collecting those completed questionnaires, data is inputted into Microsoft Excel program to compute descriptive statistics e.g. mean and percentage, etc. Besides, in order to explore the relationship among variables e.g. correlation, statistical technique called Chi-square is used for analyzing the categorical data. Useful data is analyzed by this statistical tool to examine whether the hypothesis set in the previous chapter are rejected or not.

As illustrated in the part of in-depth interview analysis, there are some factors related to the problem of collective action as mentioned in the conceptual framework, which is similar to our survey analysis:

1) Cost-benefit reallocation;
2) Involvement of the IO/OC; and
3) Provision of information

The survey result is categorized according to the above aspects in order to examine the hypothesis testing and find out the linkage between both in-depth and questionnaire surveys towards the conceptual framework.

5.2 Data Analysis and Discussion

After conducting both in-depth interview and questionnaire survey, the factors related to the problem can be categorized into the following seven aspects:-

1) Demographic factors;
2) Neighborhood relationship;
3) Availability of money;
4) Sense of ownership;
5) Cost-benefit reallocation;
6) Involvement of the IO/OC; and
7) Provision of information

5.2.1 Demographic Factors

Small families are the main stream in Hong Kong with working couples. According to the data from the Census and Statistics Department in 2008, number of members per household is 3.0, and it is predicted to further decrease to 2.7 members per household in 2036. In 2008, one fourth of households have only two members, where only 14% of households consist of five or more members. Families with working couples are very common in Hong Kong nowadays. Most of them may prefer hiring domestic helpers to take care for the household duties. In January 2009, Immigration Department announced that there are around 259,000 foreign domestic helpers in Hong Kong.

The culture of small families with working couples and the practice of hiring domestic helpers hinder the implementation of environmental protection in Hong Kong. When sharing the unsatisfactory outcome in the trial of “Source Separation of Domestic Waste”, Chairman of I.O. of HOS (On Ning Garden) mentioned that “young couples living here normally go out for work together and therefore paying only little effort on environmental protection”, he also expressed that “cannot ensure that the helpers will help them to separate the domestic waste”, “elderly residents do not have enough sense on environmental protection that drives them to participate in waste separation actively”. Representatives from the Landlord of commercial building (26 Nathan Road) also shared similar point of view, “Most of the Hong Kong people are very busy with their works and / or families. They do not concern about the environmental protection because they think it is not directly or immediately affect their daily life even they don’t join the environmental protection practices.”
It is observed that citizens are willing to participate in environmental protection practices. Yet, a busy-working life results in the overlooking of environmental protection. Their sensitive level on environmental protection is very low especially for the groups which normally stay at home i.e. domestic helpers and elderly. These all hinder the implementation of environmental protection measures in Hong Kong.

5.2.2 Neighborhood Relationship

Neighborhood relationship can affect the willingness to participate in environmental protection practices in household level. Vice-chairman of I.O. of private single-unit building (Lakeshore Building) mentioned that the close relationship between neighborhood and management staffs could enhance the promotion of environmental protection. He stated that “When we seek substitutes for existing Management Company, we requested the new management company to hire the existing security and cleansing staffs. We get along with the staffs many years, and communicate to each other just like a neighbor. They suggest us a lot in the improvement of our building”. He admitted that the security staffs and cleansing staffs helped a lot in promoting environmental protection and mentioned that “the outcome of recycling is satisfactory because occupants meet the cleansing staff “Sister Ling” everyday, everyone here does not want to let her know if he or she improper handled the recycling waste. Moreover, they also want to help “Sister Ling” by ensuring her a more convenience working condition”.

An opposite example can be demonstrated by Representative from the Developer (Merry Garden), he suggested that the weak neighbor relationship resulting in rare experience of collective actions and little involvement in environmental protection. He said that “the connection between neighborhoods only limits to occupants upstairs, downstairs or next to him/her, it is difficult to have close relationship for occupants living further away”.

In addition, pressure will be increased if the neighborhoods show support to the environmental protection and to push particular developments to perform environmental protection practices. Chairman
of I.O. of HOS (On Ning Garden) said that “funding schemes related to separation in domestic waste and energy-saving are very welcomed by residential estates in Hong Kong. At least many residential projects in Tseung Kwan O had applied for these funding schemes”. It shows that the Representatives from the Landlord of commercial building (26 Nathan Road) concerns whether the neighborhood developments had applied for the funding schemes or not. Moreover, Representatives from the Landlord of shopping centre (Tsuen Wan Plaza) also reflected this standpoint of the Landlord by mentioned that “when everyone in the market does it, it would become pressure for us to follow. Otherwise, there is a huge effort to pay to recover such distance”.

It is obvious from the above evidences that neighborhood relationship is an important factor to promote environmental protection. Residential buildings are more or less influenced by other developments nearby. For commercial developments, it mainly influenced by the market trend and competitors and occupants are influenced by neighbors and frontline management, security and cleansing staffs.

**5.2.3 Availability of Money within Organization**

Availability of money affects the decision on carrying out environmental protection investments. When discussing the obstacles and hurdles in launching environmental protection practices in Hong Kong, Representatives from the Landlord of commercial building (26 Nathan Road) mentioned that “the company has to invest the money first. If the financial status of a building is poor, the landlord may not consider affording the certain amount of money for environmental protection investment”. Interviewees A and E also shared similar point of view during the discussion regarding the subsidization schemes in Hong Kong. Chairman of I.O. of HOS (On Ning Garden) said that “it is welcome that subsidize is provided by the government to reduce our financial burden”, and I.O. members of private housing estate (Oscar by The Sea) stated that “Subsidization can lower the cost of investment that attracts people to involve in environmental protection investment”. The amount to be invested and the money available are main concerns when deciding on the investment proposal related to environmental protection. The
experience came across by Vice-chairman of I.O. of private single-unit building (Lakeshore Building) further enhance this argument. When sharing about the experience of lift replacement work in his building, he mentioned that the replacement work finally passed because surplus was recorded and so the amount of money shared by each premise was small. “Owners willing to replace the elevator because surplus is recorded in our building, so every premise needed to share few hundred to few thousand dollars only. Moreover, breakdown occurred frequently which also affected the power supply of the building. Therefore the proposal of elevator replacement was fully supported”.

Availability of money is a factor that influences the decision on the investment proposal related to environmental protection scheme. Subsidization is one of the methods to increase the money available to the public. As mentioned in the conceptual framework, selective incentive is one of the solutions to the collective action. Subsidization schemes can be treated at a positive incentive which lowering the financial burden of the citizens. From the interviewees’ point of view, positive incentive is a good catalyst for promoting environmental protection in Hong Kong.

5.2.4 Sense of Ownership

Owners are more likely to perform environmental protection practices than tenants as no direct benefits for tenants to perform such practices. While exploring the obstacles and hurdles in launching environmental protection practices in Hong Kong, Representatives from the Landlord of commercial building (26 Nathan Road) mentioned that “most of the tenants mainly concentrate on their own business. They were not keen on joining the environmental protection practices”. Chairman of I.O. of HOS (On Ning Garden) also shared similar point of view; he said that “Hong Kong is quite a realistic city”. Tenants concerns more on the rent and its own business while speculators focus more on the value of the developments. Therefore, they show little support to the environmental protection. People do not have incentive to produce the public goods as the non-excludability of the goods makes the marginal cost of production zero and non-excludability makes the supplier goods difficult to compensate the cost
of production. Hence, public goods create free rider problem as mentioned before in the literature review.

5.2.5 Cost-Benefit Reallocation

Cost-Benefit reallocation is a major factor that alters the overall performance of environmental protection in Hong Kong. Incentives are typically used in shifting costs or benefits to the citizens. Most of the interviewees shared the same view during their interviews. Chairman of I.O. of HOS (On Ning Garden) mentioned that “Hong Kong is quite a realistic city that people always care about the cost and the benefit. Practices will not be so welcomed if no benefit will be generated”, “Residents usually not involve in environmental protection practices voluntarily”. The best evidence can be shown by Chairman of I.O. of HOS (On Ning Garden), environmental protection activities like swap meet where material incentives like souvenirs would be provided, were very successful and welcomed by residents; but the outcome of the “Source Separation of Domestic Waste” in test period was not satisfactory. Chairman of I.O. of HOS (On Ning Garden) blamed that “It is hard to persuade residents to separate their domestic waste at home and at their own cost”, “The management company suggested that, if we want to have a better outcome in Source separation of domestic waste, material incentives and promotion are needed”. He argued that “shifting of cost to the citizens can result in a more immediately effect on environmental protection measures, instead of education and promotion”, and “The most effective way to promote environmental protection practices is to shift the cost of performing it to the citizens, and through the means of legislation”. Representatives from the Landlord of commercial building (26 Nathan Road) also rose out that “Many Hong Kong people are increasing their awareness in the environmental protection. Yet, very few of them are taking actions in joining the environmental protection practices until the government imposing tax on them”. To receive better result in environmental protection practices, Representatives from the Landlord of commercial building (26 Nathan Road) suggested that “In order to attract the tenants to join the recycling program, the management company of 26 Nathan Road has considered promoting the recycling activities by giving
some souvenirs to the tenants who meet the targeted recycling volume”.

Selective incentives can motivate the public to participate in environmental protection. Incentives can be divided into positive and negative incentives, and in the forms of monetary or non-monetary. Positive incentives for launching the environmental protection practices usually refer to subsidies, funding and achievements like positive reputation or image and brand name gained by the parties. Negative incentives normally refer to the taxation or charges that the parties suffered. Most of the interviewees admitted that negative incentives can cause immediately effect on environmental protection when discussing the issue of plastic levy. Chairman of I.O. of HOS (On Ning Garden) mentioned that “after the launching of the tax, the usage of plastic bags in Hong Kong drops dramatically”, and “shifting of cost to the citizens can result in a more immediately effect on environmental protection measures, instead of education and promotion”. Representatives from the Landlord of shopping centre (Tsuen Wan Plaza) also agreed that “$0.5 taxation for each plastic bag in Hong Kong is successful, no matter $0.1 or $0.5, the main point is, put the burden back to the user, and then they will change their behavior in order to save the cost”. Representatives from the Landlord of commercial building (26 Nathan Road) showed similar view that “taxation is an effective method to push the Hong Kong people to join the environmental protection”, “The taxation policy is more effective that the subsidization policy in term of awareness”. Similar statement was stated by I.O. members of private housing estate (Oscar by The Sea) that “Taxation on plastic bags is a good practice as it forces citizens to comply with environmental protection practices”, “After imposing taxation, the usage of plastic bags drops dramatically. Only a little number of customers nowadays will ask for plastic bags after shopping in supermarket. After taxation is imposed, the cost shifts to the end-users. Therefore, less plastic bags have been requested and used”. Representative from the Developer (Merry Garden) mentioned that “Plastic levy is now gradually implemented by the HKSAR Government. People will obey the regulations once money is involved. Therefore the HKSAR Government should implement it earlier”.
It is no doubt that monetary incentives can enhance the willingness of environmental protection practices. Yet, it should be noted that some parties focus more on non-monetary incentives than monetary incentives when making decisions related to environmental protection practices. Companies concern more on the brand name, reputation, image, and achievements more than cost saving. Representatives from the Landlord of shopping centre (Tsuen Wan Plaza) mentioned in the discussion that “all we need is the most significant and visible outcome and return, although I agree that cost could be save in long-term, but not our focus at this moment…We satisfy with the image-building work, it can have the immediately effect which is visible”, “developers / landlord put a lot of resources and effort to carry out environmental protection practices because of good will, that’s one of the paths to build up social responsibility and positive image”. Representatives from the Landlord of commercial building (26 Nathan Road) shared the similar point of view by stated that “In competitive business environmental, most of the companies would like to take the social responsibility to increase the reputation and competitive power in the market”. During the interview, Representative from the Developer (Merry Garden) emphasized that “a bronze award is obtained in Source Separation of Domestic Waste Competition”. It shows that non-monetary incentives like image, brand name, reputation and achievements, are more important for parties like developers, landlords and IO/OC.

Similar findings are discovered from the result of questionnaire. Question 5 of the questionnaire is designed to view the level of performance improvement achieved in the past two years after implementing the environmental protection programs including: 1) increase in return on investment; 2) increase in market share; 3) increase in profit; 4) cost reduction; 5) greater customer satisfaction; 6) improvement of environmental reputation in the industry. This question is related to the cost / benefit reallocation which create incentives on performing environmental protection practices.

By grouping the above 1 to 3 types of achievements, the mean value is 2.8. Almost 80% of the respondents believe that the investment return from environmental protection programs is average or
even below average. For items 4 to 6, the achievement of cost reduction and the invisible benefits like improvement of customer satisfaction and reputation, the mean value is 3.3 and over 80% of respondents believe that is average or above average (Figure 5.2.5a). Besides, a chi-square test is applied to test the correlation between the number of environmental protection programs implemented and cost reduction. After running the test, the result is P-value: 0.007696855. As the probability is smaller than 0.05, which means that they are dependent on each other.

Figure 5.2.5a  Achievement of environmental protection programs
For the selective incentives, Question 21 is used to view the perception of respondents towards both negative incentive i.e. imposing tax by HKSAR and positive incentive i.e. provision of subsidy by HKSAR for the effectiveness in increasing the awareness and participation of the residents or tenants on environmental protection (Figure 5.2.5b).

Figure 5.2.5b Effectiveness of selective incentives

More than 80% and 90% of the respondents with the mean value of 3.64 and 3.8 respectively believe that both positive and negative incentives respectively is effective in increasing the awareness and participation of the residents or tenants on environmental protection. Based on the above result, a chi-square test is applied to test the correlation between the participation level in the environmental protection programs of residents and provision of positive incentive i.e. subsidy by HKSAR. After running the test, the result is P-value: 4.9E-08. As the probability is smaller than 0.05, they are dependent on each other.
According to the findings above, special parties like developers, landlords and IO/OC concerned more on the non-monetary incentives. The reasons behind can be explained by the main concern form the developers or landlords. For developers and landlords, better reputation means higher value of their companies or developments, where the capital gained are much greater than the money saved by environmental protection practices. IO/OC is a voluntary body where enthusiastic owners gathered together and perform management work for their owned developments. Better reputation and achievements satisfy their ultimate goals that they can receive the admiration they want, and sometimes it is also stepping-stone for them to start their career in District Councils. In order to promote environmental protection, the HKSAR Government should learn from the results and analysis above, better utilize the subsidization schemes, awarding schemes and taxation plans, to improve the involvement level in environmental protection of Hong Kong citizens.

5.2.6 Involvement of the IO/OC

With refer to the critical mass theory by Oliver et al (1985), the production of small group of dedicated and resourceful individual who contribute most the cost of such action. IO/OC is an example of the existence of critical mass that can contribute to the collection action. The higher involvement of IO/OC usually results in better performance in environmental protection. IO/OC usually acts as leader and pioneer in making collective decisions and implementing new arrangements within the developments they represent.

From the results obtained in the interview, IO/OC with high involvement in environmental protection normally have better understanding in environmental protection, come across more information regarding environmental protection, more willing to join environmental protection activities and subsidization schemes, holding more environmental protection related activities and hence resulting in better performance in environmental protection. According to the interviews, the followings are some common practices which are normally adapted by the IO/OC with high involvement in environmental
protection:

1. Funding schemes

- Funding of ECA and EEP
- Funding schemes related to Source separation in domestic waste
- Subsidization in repairing of using environmental-friendly materials

2. Awards or certificates

- Award from “Source Separation of Commercial and Industrial Waste” or “Source Separation of Domestic Waste Competition”
- Award of IAQ (indoor air quality)
- Award of "Power Smart" Energy Saving Contest
- “Conscientious Recycling”
- WWF “Earth Hour” Event

3. Activities and measures

- Source separation in domestic waste
- Using T5 lightings to replace T8 lightings, and the use of LED

Besides the involvement of IO/OC, the participating level of management company can also influence the performance of environmental protection of particular development. It is noted that IO of On Ning Garden has a close relationship with the management company when making decisions related to environmental protection, Chairman of I.O. of HOS (On Ning Garden) mentioned that “We requested the management company to find out the reasons behind and make suggestions to us for improvement”, and “The management company suggested that, if we want to have a better outcome in Source separation of domestic waste, material incentives and promotion are needed” demonstrate the close connection of these two parties. In contrast, although the involvement of IO in environmental protection is not low, malfunction of the management company leads to the result that the building can only perform environmental protection practices according to the suggestions made by the security staffs and
cleansing staffs.

Similar findings are discovered from the result of questionnaire. Questions 14 to 16 of the questionnaire are used to test the hypothesis 5 related to more involvement of IO / OC, the more willing to perform environmental protection practices (Figure 5.2.6). The result shows that only around 7% of properties established environmental concern group, around 35% of I.O./O.C. put the environmental protection issue into I.O/O.C. regular meeting and almost 70% of I.O./O.C. support implementation of environmental protection practices.

Figure 5.2.6 Involvement of IO/OC

Based on the above result, a chi-square test is applied to test the correlation between the numbers of environmental protection programs implemented and putting the environmental protection issue into I.O/O.C. regular meeting. After running the test, the result is P-value: 3.1981E-05. As the probability is smaller than 0.05, which means they are dependent on each other.

From our estimation and hypothesis, it is noticed that the number of environmental protection programs implemented of active involvement of IO/OC will be higher than the inactive number of environmental protection programs implemented. After the completion of survey, it is reviewed that the number of environmental protection programs implemented and put the environmental protection issue into I.O/O.C. regular meeting are positively dependent on each other.
Although almost 70% of I.O./O.C. support implementation of environmental protection practices, only around 35% of I.O./O.C. put the environmental protection issue into I.O/O.C. regular meeting, and around 7% of property set up environmental concern group. The result shows that the enforcement of involving the environmental protection issues in the I.O./O.C. meeting can enhance the implementation of environmental protection measures of Hong Kong.

### 5.2.7 Provision of Information

The information and education provided by the HKSAR Government regarding environmental protection are enough in quantitative aspects. However, much more effort should be kept for long term commitment. Vice-chairman of I.O. of private single-unit building (Lakeshore Building) mentioned that “Sometimes posters issued by the government were received, and the topics of these posters mainly focus on encouraging recycling, beware of noise nuisance, and keep the environment clean, etc. It makes me feel that the effort paid by the government is not enough”. Representatives from the Landlord of commercial building (26 Nathan Road) also claimed that “I do not know the details about any subsidization provided by the government as the landlord or the management company of 26 Nathan Road does not apply the subsidization”.

Similar findings are found from the result of questionnaire. Question 17 of the questionnaire is used to examine hypothesis 6 that related to the more the environmental protection information provided, the more the willingness to perform environmental protection practices of the organization. The result shows that only 5% of the respondents are motivated by the Home Affairs Department / Legislative Council (Figure 5.2.7).
In addition, Question 19 of the questionnaire is used to examine the residents or tenants' awareness toward environmental protection news/notices. Nearly 70% of respondents with a mean value of 3.2 are aware of environmental protection news/notices. A chi-square test is applied to test the correlation between the number of environmental protection programs implemented and residents’ or tenants’ awareness toward environmental protection news/notices. After running the test, the result is P-value: 0.0261894. As the probability is smaller than 0.05, which means they are dependent on each other.

Another chi-square test is applied to test the correlation between the participation level in the environmental protection programs of residents and the residents’ or tenants’ awareness toward environmental protection news/notices. After running the test, the result is P-value: 1.609E-15. As the probability is smaller than 0.05, which means they are dependent on each other.

Both of the participation level in the environmental protection programs of residents and the number of environmental protection programs implemented and residents' or tenants' awareness toward environmental protection news/notices are positively dependent on each other.

The mentioned result proves that the effort by the HKSAR Government has to be improved if a better outcome in environmental protection is expected. It is suggested that the role of District Office and
Home Affairs Department can be better utilized in promotion and education as their mainly duties are communicate with IO/OC within their district and provide necessary assistance.

5.2.8 Other Useful Data

Except for the above mentioned aspects, there are some useful data that related to willingness of performing environmental protection practices. According to figure 5.2.8a, more than 50% of properties have obtained the environmental certifications, and over 60% of those properties have certified by ISO 9001 / ISO 14001. The provision of environmental certifications could become one of the channels to provide sufficient environmental protection information to the estate.

Figure 5.2.8a  Percentage of properties obtained environmental certifications

In addition, question 18 of the questionnaire shows the frequency of occurrence of the practices that the management companies applied for promoting the environmental protection issues. It includes: 1) encourage residents or tenants to participate in the environmental program in the properties; 2) awareness of the residents or tenants towards the environmental programs launched by the management company; 3) easy to obtain environmental information; 4) using tools to promote environmental information and 5) share environmental management information with residents or tenants. According to figure 5.2.8b, the result for those mentioned practices is quite average at around 90%, with mean of 3.3-3.4, fall into low, average and high averagely.
5.3 Summary for Findings

After conducting the research, we discovered that the mentioned seven factors can affect the willingness of performing environmental protection practices in Hong Kong in the following aspects:

1. role in promoting environmental protection.

2. For “provision of information” which is related to the effort paid by the HKSAR Government. It is
argued that the information about Small families are the main stream in Hong Kong with working couples, and household duties are left to domestic helpers. The busy-working lifestyle results in the overlooking of environmental protection, with the groups which normally stay at home i.e. helpers and elderly do not have enough sense on environmental protection.

3. For “neighborhood relationship”, pressures will be produced if the neighborhood shows support to the environmental protection.

4. The “availability of money” makes developers and landlord more willing to perform environmental protection practices than owners. Developers and landlords generally have more money available so they concerned more on image and value of the properties while owners emphasize more on the money to be invested.

5. For “sense of ownership”, owners are more likely to perform environmental protection practices than tenants as no direct for tenants to perform such practices.

6. For “cost-benefit reallocation”, Hong Kong is a realistic city and people normally care about cost and benefit. Shifting the cost to the citizens is a good way to enhance environmental protection in Hong Kong. Therefore, incentives, no matter positive or negative, monetary or non-monetary, are important in promoting environmental protection.

7. For “involvement of the IO/OC” of the development, higher involvement of IO/OC results in better performance in environmental protection. Moreover, it is also noted that management companies also play an important role. Education provided by the HKSAR Government regarding environmental protection are enough in quantitative aspect. However, the information is not sufficient in qualitative aspect.
Moreover, it draws our attention that most interviewees suggested that the HKSAR Government should pay more effort in the field of environmental protection. The intervention and implementation by the government is queried by the public. Quoted from Chairman of I.O. of HOS (On Ning Garden), “major problem are implementation and execution of environmental protection policies in Hong Kong”, “The government is so short-sighted that it only focuses on problems that are more easily to handle with, but lack of a thorough and long-term planning to tackle the problem like air-pollution, saturation of landfill area, etc”. For Representative from the Developer (Merry Garden), he mentioned that “government should have a detailed planning on environmental protection and setup necessary taxation or charging schemes”.

In order to receive better achievements in environmental protection in Hong Kong, the HKSAR Government is suggested to examine the seven factors that mentioned above, and have a better long-term planning on environmental protection, and exploring other necessary taxation mechanism.

Also, both of the management companies and the IO/OC, which find it difficult to promote and implement environmental protection measures in their properties, should consider to revise their strategy as refer to the above seven factors, in order to build up the environmental-concerned mind and then push up the participation rate of residents / tenants to achieve success of environmental protection programs.
The main objective of the study is to enhance the popularity of launching environmental protection practices in Hong Kong properties. Although the awareness of public towards environmental protection is raised in recent years, the actual performance in terms of participation still has room to be improved. Therefore, the survey of this study focuses to explore the factors that influence the willingness of public to perform environmental protection practices.

According to the literature review, environmental protection practice is a kind of public goods which is non-excludability. The production of public goods is known as collective actions. A free rider problem exists when no one is willing to contribute to the public goods. Solutions e.g. selective incentives to the collective actions are suggested to solve the dilemma.

The result of this research reflects that there are seven factors that can affect the willingness of performing environmental protection practices in Hong Kong. Some factors has been mentioned in the previous part of literature review and matched with the conceptual framework. The seven factors are demographic, neighborhood relationship, availability of money, sense of ownership, cost-benefit reallocation, involvement of the IO/OC and provision of information.

Recommendations have been listed as below based on the findings of the survey. HKSAR Government, landlords, property management companies and IO/OC can play a crucial role in promoting and implementing environmental protection.

Education is one of the important methods to enhance the public awareness towards environmental protection. The education can target the public from all ages through institutions, mass media and
companies. Property management companies should put much more effort on promoting environmental protection by issuing regular promotion circulars, launching talks or activities to the residents or tenants.

According to the critical mass theory (Oliver et al 1985), the production of small group of dedicated and resourceful individual who contribute most the cost of such action. Incorporated Owners and Owners Committee (Building Management Ordinance Cap. 344) is an example of the existence of critical mass that can contribute to the collective action. The findings of survey reflected that higher involvement of IO/OC results in better performance in environmental protection. Therefore, if the IOs or OCs of the properties can take actively actions in supporting and promoting environmental protection practices, it may help increasing the awareness of residents.

Raising public awareness is the first and basic step in promoting environmental protection. Selective incentive is one of the methods to further motivate the public to take real actions in joining environmental protection practices. Both positive and negative incentives should be considered. For the government, subsidy as a kind of positive incentives can be offered to the public to reduce their finical burden. As mentioned in chapter six, the “availability of money” makes developers and landlord more willing to perform environmental protection practices. Although some subsidy schemes have been launched by the HKSAR Government, most of the public do not clear about the details of scheme due to lack of promotion. Besides, the scheme is not diversified. For the property management companies, positive incentives e.g. providing free gifts to the residents or tenants who joined the recycling programmes is one of the common practices in Hong Kong. Apart from the monetary or tangible incentives, non-monetary and intangible incentives e.g. enhancement of brand name and reputation can be also be treated as a positive incentive as most of the property management companies are highly concern. Therefore, the government department can increase the quantity and diversify the environmental protection programmed. Recognition e.g. issuing certificate can be a method to motivate the companies to participate. According to the survey findings, neighborhood relationship can be a kind
of factors affecting the willingness of participating in environmental practices. Pressures will be produced if the neighborhood shows support to the environmental protection. Therefore, companies may follow the competitors to join the environmental programme due to the concern of image and pressures from the competitors.

In addition, the majority of the survey respondents agreed that taxation is one of the effective methods to push the public to participate in environmental protection. Therefore, the government should consider the negative incentives e.g. imposing tax. Apart from the plastic bag levy, the government can consider imposing tax on high consumption of electricity in order to encourage the people to save the electricity. Government intervention by legislation is one of the methods in solving the collective action problem.

Environmental protection seems to become more and more important issue around the world. Most of the developed countries are paying much more attention and effort in environmental protections in recent ten years. For the situation in Hong Kong, it still in a starting step. The environmental protection performance in Hong Kong properties could be further enhanced by coordinating the efforts from the HKSAR Government, landlords, property management companies and the members of I.O. / O.C.
➤ Roelof Verhage and Barrie Needham (1997), Negotiating about the Residential Environment: It is Not Only Money that Matters, Urban Studies, Vol. 34, No. 12, 2053-2068
APPENDIX I: Questionnaire for In-depth Interview

Topic: Survey on environmental protection practices in Hong Kong properties

Objective: To observe the comprehensive and complicated reason(s) and belief(s) behind of the environmental protection behaviors and practices.

Target: Members of Incorporated of Owners (IO), Owners Committee (OC) and leasing staff of single-ownership property from six different types of properties in Hong Kong

Questions:

Area A: Personal background information
Q1: Income level
Q2: Educational level
Q3: Number of year(s) working in your existing company
Q4: Age level

Area B: Thoughts regarding Environmental Protection in Hong Kong
Q1: What is your overall impression regarding the environmental protection in Hong Kong?
Q2: What are your views on recycling?
Q3: What are your views on energy-saving?
Q4: What are your views on education related to environmental protection in Hong Kong?
Q5: What are your views on promotion of environmental protection in Hong Kong?

Area C: Factors affecting the involving in Environmental Protection
Q1: What are the obstacles and hurdles in launching environmental protection practices in Hong Kong?
Q2: What are the factors behind that drive the landlord to support the management company to participate in environmental protection practices?

Area D: Intervention of HKSAR Government
Q1: Do you have any comments on the taxation policies on environmental protection launched by the government?
Q2: Do you have any comments on subsidization e.g. Building Energy Efficiency Funding Schemes provided by the government to promote the environmental protection practice?
Q3: Is it enough or effective for the intervention measures in Hong Kong to promote the environmental protection practice?
Area E: Individual vs General
Q1: What are the current environmental protection practices in your building?
Q2: What are the degree of coherent between personal views and collective decisions?
Q3: What are the reasons and details of incoherent?

Area F: Outcome of Environmental Protection Practices in the building
Q1: What are the outcomes and returns of environmental protection practices?
Q2: Do you satisfy on the outcome?
Q3: Do you have any improvement suggestions?

Area G: Other opinions regarding Environmental Protection
Q1: Do you have any other opinions in environmental protection practices?
APPENDIX II: Questionnaire for Qualitative Survey

Survey on Environmental Protection Practices in Hong Kong Properties

24th February, 2011

Dear Participant,

We are writing to invite you to participate in our research on studying the environmental practices and environmental performances in Hong Kong Properties. We are confident that the research findings will be beneficial to the environment and useful to improve the corporate performance in environmental practices in future. Your participation will provide us with practical information in conducting a truly meaningful and representative research.

We would like to attach herewith a questionnaire for your kind completion. It should take you approximately 15 minutes to complete. Please return the completed questionnaire via e-mail to ---@student.cityu.edu.hk on or before 3rd March, 2011. Please be reminded that each questionnaire is used for collecting a building’s or an estate’s data only. If you manage more than one building or estate, you are welcome to fill in extra questionnaire(s) for other building(s) and estate(s).

Your response will be treated in strict confidence, and all the collected data will be analyzed and reported in aggregate with those of many others and used only for research purposes. Please feel free to contact us if you might have any concerns regarding this survey or our study by the captioned e-mail.

Your contribution to this study will be greatly appreciated. We look forward to receiving your response soon. Thank you for your time and kind assistance.

Yours faithfully,

Tse Shiu Ting, Kerry
Lam King Lok, Pius
Lee Chi Ching, Cindy
Students of Housing Studies
Part 1: Environmental Management Practice

Q1. Has your building/estate obtained any environmental certification(s) (e.g. ISO 14001)
   □ Yes (Please specify:________________________________________)
   □ No

Q2. Does your building/estate participate in the following environmental protection programs launched by the Hong Kong Environmental Protection Department?
   □ Wastewi$e scheme
   □ Source separation of domestic/commercial and industrial waste
   □ Others (Please specify:______________________________________)
   □ N/A

Q3. Does your building/estate implement the following environmental protection programs?
   □ Energy-cum-carbon audits
   □ Waste separation
   □ Second-hand exchange program
   □ Recycling program
   □ Energy saving scheme (Please specify the details:______________)
   □ Others (Please specify:______________________________________)
   □ N/A (Go to Q.6)

Q4. Please list out three main reasons of implementing environmental protection programs in your building/estate?
   1. ____________________________
   2. ____________________________
   3. ____________________________
Q5. Please indicate the level of performance improvement achieved in the past two years after implementing the captioned environmental protection programs.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Significantly below average</th>
<th>Below average</th>
<th>Average</th>
<th>Above average</th>
<th>Significantly above average</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Increase in return on investment</td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2. Increase in market share</td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3. Increase in profit</td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4. Cost reduction</td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5. Greater customer satisfaction</td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>6. Improvement of environmental reputation in the industry</td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

Q6. Have your building/estate participated in any donation activities to the Environmental Protection Organizations?

☐ Yes (Please specify the details:_______________________________)

☐ No

Q7. Does your building/estate invest any environmental protection programs?

☐ Yes

☐ No (Go to Q.12)

Q8. Has your building/estate ever conducted study on the amount and return of environmental protection investment?

☐ Yes

☐ No

Q9. Please indicate the proportion of average monthly expenditure of environmental protection practices in total management expenditure account of your building/estate.

☐ Below 5%

☐ 5% - 9%

☐ 10% - 14%

☐ 15% - 19%

☐ 20% or above
Q10. Does your building/estate have any money return by implementing any environmental protection programs?
   ☐ Yes (Please specify the program(s): _____________________________)
   ☐ No (Go to Q.12)

Q11. What is the average amount of return per month?
   ☐ below HK$5,000
   ☐ HK$5,000 – HK$9,999
   ☐ HK$10,000 – HK$14,999
   ☐ HK$15,000 – HK$19,999
   ☐ above HK$20,000

Q12. Has your building/estate successfully applied for the subsidy by the HKSAR Government? (e.g. Building Energy Efficiency Funding Schemes)
   ☐ Yes (Please specify: _____________________________)
   ☐ No (Go to Q.14)

Q13. What is the amount of subsidy granted?
   ☐ below HK$200,000
   ☐ HK$200,000 – HK$399,999
   ☐ HK$400,000 – HK$599,999
   ☐ HK$600,000 – HK$799,999
   ☐ HK$800,000 – HK$999,999
   ☐ above HK$1,000,000

Part 2: Environmental Information Communication
Q14. Does your building/estate establish an environmental concern group?
   ☐ Yes
   ☐ No

Q15. Does the I.O./O.C. of your building/estate (if any) always put the environmental protection issue into the I.O./O.C. regular meeting agenda?
   ☐ Yes
   ☐ No
   ☐ N/A
Q16. Does the majority of I.O./O.C. member (if any) promote continuous support towards implementing environmental protection practice(s)?

☐ Yes
☐ No
☐ N/A

Q17. Do any members of Home Affairs Department/Legislative Council motivate the residents to implement environmental protection practice(s) in your building/estate?

☐ Yes
☐ No
☐ N/A

Q18. Please indicate the frequency of occurrence of the following items in your building/estate.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Very Low</th>
<th>Low</th>
<th>Average</th>
<th>High</th>
<th>Very high</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Residents/tenants are encouraged to participate in the environmental program(s) in the building/estate</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2.</td>
<td>Residents/tenants are aware of the environmental programs launched by the management company</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3.</td>
<td>Residents/tenants can obtain the needed information on environmental programs easily</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4.</td>
<td>Tools (e.g. circular, notice, website) are used to promote environmental information</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5.</td>
<td>Environmental management information is shared with residents/tenants</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

Q19. Do the residents/tenants are aware of the news/notice regarding environmental protection? (1 = Least aware, 5 = Highly aware)

Mark: ____

Q20. Do the residents/tenants participate in the environmental protection program(s) launched by your company? (1 = Least active, 5 = Most active)

Mark: ____
Q21. Please indicate the level of effectiveness of the following methods for increasing both awareness and participation of the residents/tenants towards environmental protection?

<table>
<thead>
<tr>
<th>Method</th>
<th>Very Low</th>
<th>Low</th>
<th>Average</th>
<th>High</th>
<th>Very high</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Imposing tax by HKSAR</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2. Provide subsidy by HKSAR</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3. Increase promotion</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4. Increase education</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

Q22. Do you agree that implementing environmental protection programs can really help in reducing the environmental pollution problem? (1 = Least important, 5 = Most important)
Mark: ___

Q23. Do you think environmental protection is important? (1 = Least important, 5 = Most important)
Mark: ___

Part 3: General Information

1. Name of the building/estate : ______________________
2. Address of building/estate : ______________________
3. Name of developer : ______________________
4. Year of development : ______________________
5. Management fee per square feet : ______________________
6. Name of management company : ______________________
7. Position in your company : ______________________
8. Number of working years in your company : ______________________
9. Years of experience in property management : ______________________
10. Date : ______________________

~ The End ~