MASTER

Stimulating sustainable Brownfield redevelopment
a case study of George Town, Penang

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Graduation thesis

"Stimulating sustainable Brownfield redevelopment: a case study of George Town, Penang"
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Executive summary

On 7 July 2008, Melaka and Penang received the UNESCO World Heritage Site status. They are designated under the name “Historic Cities of the Straits of Malacca”. The Historic City of George Town covers a 109.38-hectare site what is regarded as the core zone and a surrounding buffer zone of 150.04-hectare. The inscription into the UNESCO World Heritage List has certain consequences for the built environment. Where buildings listing as heritage are exposed to strict regulations. These restrictions are based on the maintenance of the three CUV’s that ensure the prescription into the UNESCO World Heritage List. Next to this, the Rent Control Act of 1985 also had its consequences. Controlled rents in privately owned buildings constructed before 1 January 1948 resulted in properties that became uninteresting for redevelopment because of a lack of profitability.

Governmental Organizations are having difficulties coping with the challenge on how to stimulate initiatives in Sustainable Brownfield redevelopment in the heritage core zone of Penang. The research main question has a direct link to this challenge.

Main question: How can Governmental Organizations in Penang stimulate the sustainable redevelopment of George Town’s heritage related Brownfield sites?

To answer this question, the research used a holistic case study approach, incorporated with stakeholder-, PEST- and SWOT analyses to identify the challenges faced by the most influential potential initiators in sustainable Brownfield redevelopment.

The first step to the identification of faced challenges revolves around the definition of Brownfields and sustainability. Brownfields are classified as previously developed land and/or buildings that are not in current use in an urban area and may be partially occupied, vacant and/or derelict. Sustainability, which revolves around three pillars: economical, social and environmental. Each have a direct link with heritage; in this research, sustainability will be referred to as preservation of heritage.

To classify the need for Brownfield redevelopment in the heritage core zone of Penang, a Visual Brownfield Analysis has been performed. A total of 42 Brownfields have been identified in this analysis, which amounts to a total of 5.5 percent of the total core zone area. The need for redevelopment is evident since 27 Brownfields are in dilapidated state.
As identified in this analysis, the three most influential landowners in Brownfield redevelopment are: Khoo Kongsi, MAINPP (Waq) and Private parties, since these parties have most Brownfields in possession. Given that initiation mostly occurs via the owner of the property, the focus lies on these three landowners.

The early phase of a heritage related (sustainable) Brownfield redevelopment process is finalized with the application for planning permission. For planning permission to be granted, MPPP's One Stop Center procedure has to be followed through. This procedure takes up to six months and involves different departments from Federal, State and Local Government level. Each department checks the plan for compliance to their regulations/guidelines. Amongst the guidelines is the heritage guideline, which prescribes the most specific constraints for redevelopment of heritage buildings.

A case study, revolving around the identification of other challenges faced by the three major landowners, has been performed. Via interviews with influential parties in three Private redevelopments and important persons within the organizations of MAINPP and Khoo Kongsi, a list of faced challenges has been acknowledged.

Not exclusively, challenges faced by these three parties decrease initiatives in sustainable Brownfield redevelopment. Environmental factors are identified via PEST analysis, where political, economical, socio-cultural and technical aspects are recognized. Notable are the main issues of these four aspects, respectively the compliance to the existing enforcement is an existing challenge next to deficient amount of awareness under owners/developers of heritage buildings, the financial incapability of the property owners for redevelopment, the existence of autonomous Endowment Boards and Chinese clans who own significant amount of properties in the heritage core zone, and the difficulties between the implementations of energy-efficient systems and the preservation of the original heritage value.

Financial incapability of property owners, extra costs of redevelopment of a heritage building and less development-freedom due to constraints imposed by the heritage guidelines, are direct causes for the unattractiveness of the redevelopment of a heritage building. Incentives, made available by State and Local Government, usually don't level with the extra costs, which make them rather ineffective.

In order to recognize other possibilities for stimulation of sustainable Brownfield redevelopment initiations, a stakeholder analysis has been performed to identify the behavior of the involved stakeholders. Knowledge of most important stakeholders is essential, since stimulation efforts should be directed to the party that can actually make a difference. The most important stakeholders in such a process are the Local Government, the Owner/Project Developer and the Architect.
Challenges faced by the most important stakeholders are rather diverse, though they can be categorized into three groups: preservation, regulatory and financial. The faced challenges are:

**Preservation:** Awareness on heritage and its value amongst residents and property owners is lacking.

**Regulatory:** Local Plan, Special Area Plan and heritage guidelines not gazetted.
- Non-compliance to guidelines
- The long procedure time for the One Stop Center
- Heritage guidelines and fire department (Bombai guidelines conflict)
- Heritage guidelines are out of date (original materials are scarce)

**Financial:** Financial incapability of property owners
- MPPP incentives are fairly ineffective.
- ThinkCity grant lacks of publicity and procedure time is too long.

In order to stimulate sustainable Brownfield redevelopment in George Town, certain steps are required to be taken. Concerning the preservation of built heritage, Governmental Organizations should create more awareness on its value and acknowledge successful redevelopments. In relation to the regulatory system, there is a necessity to shorten the OSC procedure time, improve coherence between MPPP departments, revise the heritage guidelines and provide stricter enforcement. The Penang Government should first and foremost offer effective monetary incentives as a financial stimulant to redevelop heritage related Brownfield sites.

By implementing the associated recommendations, the challenges faced by Private parties will be reduced, which will ultimately lead to stimulation of Private initiatives in the sustainable redevelopment of George Town's heritage related Brownfield sites.
Acknowledgements

During the course of this research many people have helped us in someway or another. They deserve a warm word of appreciation.

First and foremost, we would like to thank Dr. Mohamed Amruddin Fawzi Bahaudin for his assistance and willingness to help us. Without him, this research most likely wouldn't have been conducted in this context. Furthermore, we would like to thank Dr. Aidan Otter, Dr. Han Q and Ms. dr. Nor Zarifah Makti for helping us to structure the research.

At Universiti Sains Malaysia we would like to thank Prof. Dr. Mahyuddin Ramli and Prof. Dr. Abu Hassan Abu Bakar for making it possible for us to study at USM as exchange students.

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Furthermore, we would like to thank all lecturers at USM, interviewees and everyone else that assisted us with the data collection.

Finally but less important, we would like to thank all of our family-members and friends whom have supported us during the course of our study; especially during the course of this research.
Preface

This report is the dissertation for the academic degree of Master of Science in Construction Management and Engineering at Eindhoven University of Technology. The dissertation is the result of a research of eight months, developed in cooperation with Universiti Sains Malaysia and Eindhoven University of Technology.

The idea for this research arose during the period in which we attempted to perform a research abroad. With help from dr. Ad den Otter we came into contact with Universiti Sains Malaysia and with some effort from both sides, a project-based learning agreement was signed. This gave us the opportunity to perform the research in Malaysia. Process analysis has always been a topic of our interest. In combination with Brownfield redevelopment, and the extra constraints that heritage preservation attains, this compiled to become a highly interesting research.

Since the Malaysian situation in which we would arrive was uncertain, the research topic has been adjusted during the course of this research. The initial literature study, which was performed from December 2009 until February 2010, had to be adjusted to align with the possibilities in Malaysia. From March 2010 until July 2010, the research was conducted on location in George Town, Penang. In these four months the research gained body and compiled with the constraints that are applicable in Malaysia.

Hopefully this research will assist in sustaining an restoration of the built and cultural heritage in George Town, Penang.

Kind regards,

Marcel Hoogsieder and Menno Meulebeek.
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Introduction

This research is conducted as a graduation thesis for the Master study Construction Management and Engineering (CME) at the Eindhoven University of Technology. CME is a two year program that focuses on management of large scale urban (re-)development projects. In the two-year course students are introduced to subjects related to this focus, i.e. stakeholder analysis/management.

1.1 Setting

As a result of the unofficial collaboration between Eindhoven Technical University and Universiti Sains Malaysia, this research could be conducted. A project-base-collaboration was needed to facilitate the research, which works as a so-called 'test drive' for further bilateral agreements between both Universities.

As a third party, Majlis Perbandaran Pulau Pinang (Municipal Council Penang island), is introduced in the research setting. MPPP encounters multiple issues that require research. Together with MPPP this research was formed to investigate and unravel the main issues in sustainable Brownfield redevelopment. As an end result this research intends to recommend MPPP on how to stimulate sustainable Brownfield redevelopment in George Town, Penang.
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2 Context

2.1 Research background

In the Netherlands, 27,600 hectares was obsolete and recognized as Brownfields\(^1\), which comes down to a share of 34% of the total gross stock of 79,800 hectares of industrial areas (Schuddebom et al., 2007). This shows a serious need for redevelopment of a large number of Brownfields, in the Netherlands and internationally (Han et al, 2009). It is steadily becoming clearer that there is a vast potential in Brownfield redevelopment. Increasingly, Governments are adopting their legislation and putting emphasis on Brownfield redevelopment instead of Greenfield development. Penang (Malaysia) is no exception to the rule, though, Penang copes with an extra constraint when redeveloping Brownfield sites, namely: heritage. Two forms of heritage can be identified: cultural and built. To preserve both the cultural and built heritage while redeveloping Brownfields does not only create difficulties for Governmental Organizations, but also decreases the profitability and interest for Private parties to redevelop these sites.

2.2 Document index

This research is divided into five elements. Table 2.1 shows the division between elements and the involved chapters of this document:

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Table 2.1: Document elements

\(^1\) Definitions found in this research are explained in Chapter 17: Glossary
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3 Research framework

3.1 Problem definition

**Problem definition:** Governmental Organizations in Penang have difficulties in stimulating the sustainable redevelopment of George Town's heritage related Brownfield sites.

3.2 Research objective

By locating the Brownfields and analyzing the different types of landowners and their attitudes in the early process of sustainable Brownfield redevelopment in George Town's heritage center, an understanding of the current state of affairs, regarding these types of heritage related Brownfield redevelopment, will be created. The aim is to acknowledge the negative and positive aspects faced in sustainable Brownfield redevelopment in the heritage core zone of George Town. Together with stakeholder-, PEST and SWOT-analyses this research will result in recommendations regarding sustainable Brownfield redevelopment. This research will contribute to this field of research within the USM and MPPP and shall present these findings to the TU/e in the form of a case study.

3.3 Research method

The focus in this qualitative research lies in the question: how can sustainable Brownfield redevelopment be stimulated in George Town? As proposed by Yin in 2004, the case study method is best applied when research addresses descriptive or explanatory questions (why and how) and aims to produce a first-hand understanding of people and events. A case study revolving around this early phase redevelopment process, under the reign of different landowners, facilitates the understanding of the several process structures and ultimately creates a platform for stimulation of redevelopment projects in George Town. This method is applicable to multiple cases in various countries, provided that a similar Governmental structure is present, heritage related Brownfields exist, and sufficient data can be collected.

A distinction has to be made between a single and multiple case study. Table 3.1 shows the advantages and disadvantages of each method.
in respect to the research topic, the scope’s magnitude doesn’t contain the capability to perform a multiple case study, since, in order to fulfill a multiple case study, cases of the same significance and structure have to be available; in which George Town heritage core zone lacks. Together with the fact that a single case study provides much more depth, this results in an indisputable redirection to a single case study. However, as table 3.1 describes, a single case study limits the ability to generalize. The purpose of this case study is to generalize stimulation possibilities for heritage related Brownfield redevelopment in the whole core zone of George Town; the limits of the ability to generalize therefore have to be reduced.

By using heritage related Brownfield redevelopment as a Holistic case and incorporating three developments of the most significant landowners as embedded sub cases, to serve as a base for the Holistic case (Yin, 2004), these limits can be diminished and generalization of stimulation possibilities for the entire Heritage Core zone is made possible.

3.4 Research questions

**Main question:** How can Governmental Organizations in Penang stimulate the sustainable redevelopment of George Town’s heritage related Brownfield sites?

**Sub questions:**
1. What are the characteristics of a Brownfield?
   1.1. What are Brownfield characteristics?
       - Definition
       - Problems
       - Opportunities
   1.2. How can a Brownfield in Penang, Malaysia be defined?
   1.3. What are important factors in or for Brownfield redevelopment in George Town?
   1.4. In which areas of George Town’s Heritage Core zone can Brownfields be distinguished?
2. What is **Sustainable** development?
   2.1. How can sustainability be defined?
   2.2. In what degree is energy efficiency implemented in (re)development projects?
   2.3. What is built heritage?
   2.4. What does built heritage mean for George Town?
   2.5. Which legislation, policies and regulations apply to redevelopment of heritage?

3. How is Malaysia **Governed**?
   3.1. How is the Malaysian Government structured and how is their decision-making arranged?
   3.2. Which legislation, policies and regulations apply to Town Planning in Penang?
   3.3. Which parties are involved in Town Planning of George Town?

4. How is the current sustainable Brownfield redevelopment process structured in **George Town** and why do stagnations occur?
   4.1. Which type of landowners are significant in heritage related Brownfield redevelopment?
   4.2. How can these types of landownership be distinguished (Waqf, Kongsi and Private)?
     4.2.1. Which stakeholders are involved in George Town’s redevelopment process?
         • Which share/stakeholders are involved?
         • How are the relations and collaborations structured?
      • Decision/Power/Attitude/Interest
      4.2.2. What stages can be distinguished in the current redevelopment process?
         • Which actors are involved in the different stages?
         • Which actor leads the process in each stage?
      4.2.3. Why and where do problems and stagnations occur in the early stage of the process and what are their causes?

5. Which instruments do **Governmental Organizations** hold to stimulate a sustainable Brownfield redevelopment in George Town?
   5.1. What are the Governmental Organizations’ key drivers in a sustainable Brownfield redevelopment?
   5.2. What types of instruments have been used in the past?
   5.3. Are the current instruments sufficient for stimulation of sustainable Brownfield redevelopment.
3.5 Research approach

To attain the required knowledge to answer the proposed research question, this research is approached systematically. By performing a literature study on Brownfields, sustainability and heritage, and by studying the Malaysian context in regard to Governance and Urban Development, a complete overview on the background of sustainable Brownfield redevelopment in George Town is formed, which will serve as a base for the entire research.

While revising the general Brownfield definition to adapt to the situation in Penang, a Visual Brownfield Analysis is performed. This analysis allocates every Brownfield, which fits the adapted Brownfield definition, in the heritage core zone of George Town. Combining this analysis with data on land use results in the recognition of the landowner with most Brownfields ‘in possession’.

As posed in the previous paragraphs, this research uses a single Holistic case study approach with three embedded sub cases. For both Waqf and Kongsi ownership, a detailed overview of Brownfield redevelopment will be elaborated, via depth interviews with important persons within each organization. Furthermore, for three Private redevelopments, interviews will be conducted with an influential stakeholder in the redevelopment process. This will result in a complete overview on the process structure of Brownfield redevelopment in the heritage core zone of George Town. To conclude this section, a stakeholder analysis is performed for the entire Brownfield redevelopment process.

The results of these depth interviews form the basis of the process analysis and will also be analyzed using the four factors of PEST (Political, Economical, Social/cultural and Technical). This shall result in a list of faced challenges in a redevelopment process.

The penultimate step in this research is the SWOT analysis. Advantages and disadvantages will be weight out to each other in order to identify potential stimulation policies for heritage related Brownfield redevelopment.

An résumé will be drawn from the complete analysis, which will lead to conclusions and recommendations for MPPP on stimulation of Brownfield redevelopment in the heritage core zone of George Town.
3.6 Data collection

Data collection depends on the availability of the required channels. Since this research is conducted in Malaysia, the method of data collection varies from data collection in The Netherlands. In The Netherlands, data can be collected through papers and channels instated to inform the public about the progress of certain projects. In Malaysia such channels are rare and most likely bias.

To obtain the required data, interviews will be conducted with professionals on matters that are considered, their expertise. A list of those interviews is shown in appendix 10. Furthermore, scientific papers and suggested books/publications by experts will be issued to complete the overview, which can be found in the bibliography.

3.7 Case study selection

A vital part of a case study is the selection of the cases themselves. As the Holistic case is set as a general view on heritage related Brownfield redevelopment, the research requires the implementation of sub cases which are corresponding with the whole. When zooming in on the heritage core zone, we can identify three major types of Brownfield redevelopment, namely on: Waqf, Konsg, and Privately owned land. These three types each have their distinctive features but nevertheless the same goal: Brownfield redevelopment. Since, the redevelopment of Publically owned land is scarce and stimulation of Publically owned land isn’t required, it is excluded in the case study selection.

As the sub cases are obliged to represent the whole population (Holistic case), it is essential that they are similar in magnitude and significance. To sustain this approach, selection criteria for the sub cases has been set up.

To be eligible, sub cases need to satisfy the following criteria:

1. The case must revolve around the redevelopment of a Brownfield;
2. The site must comply with the research’ Brownfield definition;
3. The site must be heritage related;
4. The site must be situated in the heritage core zone of George Town, Penang;
5. Sub cases can’t be of a similar owner;
6. An important stakeholder involved in the project has to be available for a depth interview.

After evaluating the chances for an influential person within Konsg or Waqf to speak openly about the challenges in one of their redevelopments, it couldn’t be denied that the chances were very slim. Multiple suggestions from professionals in the work-field led to the choice of analyzing three development of private ownership instead of one development of each type of ownership.

To still be able to generate a complete overview of Brownfield redevelopment in George Town,
the general process structure of Kongsi and Waqf redevelopment are analyzed. This led to a case study structure as shown in figure 3.1.

Figure 3.1: Holistic case approach

3.6 Research model

The selection of a Holistic case approach results in the research model, as shown in figure 3.2. It can be explained as a systematic approach towards the stimulation of sustainable Brownfield redevelopment in George Town, Penang. The model is divided into 4 steps: The (a) required knowledge forms the basis for the research and the (b) data collection, which results in a foundation for the (c) analysis of obtained data regarding the sustainable Brownfield redevelopment process. With this outcome (c) the recommendations for Local Government on stimulation of sustainable Brownfield redevelopment in the heritage core zone of George Town are formed.

Figure 3.2. Research model (Verschuren & Doorewaard, 2007)
4 Theoretical framework

4.1 Background

4.1.1 Brownfield definition

The definition of a Brownfield (Alkar et al.), which is described in appendix 1.1, is adjusted to meet the requirements of the Malaysian situation. This research focuses on previously developed land and/or buildings, which are currently not in use in solely urban areas. This complies with specific defined Brownfield criteria, but varies on the fact that it doesn’t take rural areas in consideration. Concerning the possible criteria, the focus is on partially occupied, vacant and/or derelict land/buildings; contamination aspects and green belts (reserves of public open spaces and recreational areas) aren’t included. Figure 4.1 shows the scope of the revised definition; the criteria of Alkar et al. (2000) are slightly adjusted.

Figure 4.1: Scope Brownfields

Brownfield definition: Previously developed land and/or buildings that are not in current use in an urban area and may be partially occupied, vacant and/or derelict.

4.1.2 Sustainability

4.1.2.1 Sustainability definition

The transition of the sustainability definition, as described in appendix 1.3, led to the most recent definition of sustainability by the Johannesburg Declaration on Health and Sustainable Development: “We recognize that sustainable development aims to improve the quality of life of all the world’s people, both today and for future generations, without increasing the use of our natural resources beyond the earth’s carrying capacity. This requires integrated actions towards economic growth and equity, conservation of natural resources and the environment, and social development. Each of these pillars is mutually supportive of the others, creating an interconnected sustainable development triad, which underpins good health” (JCHSD, 2002).
Thus, sustainability defines (1) what is to be sustained, (2) what is to be developed, and (3) for how long; all under the principles of the three-pillar system: economical, social and environmental.

To identify sustainability in practice, sustainability objectives can be assigned to the individual pillar of sustainability. For instance, an economical sustainability objective such as, provide a mix of uses to create choice of employment, or a social sustainability objective such as, provide open space for community benefit; can be implemented into the design.

4.1.3 Heritage

4.1.3.1 Built heritage in Penang, Malaysia

In Penang, George Town (Malaysia), the particular role that built heritage plays in sustainable development has been recognized. George Town was established in 1786 by the British and as such has more than 200 years of urban history. Apart from colonial buildings, George Town has more than 5000 units of traditional shophouses with heritage value. Through intentional and unintentional policies to sustain built heritage in Penang, George Town has almost completely been preserved. The Rent Control Act of 1956, which was revised in 1966, controlled rents in privately-owned buildings constructed before 1 January 1948. Initially, this policy was introduced since construction of new housing was not keeping the pace with population growth. As a result, houses that were subjected to the Rent Control Act of both 1956 and 1966 became uninteresting for redevelopment because of lack of profitability, thus preserving the built heritage of this colonial town (Lee et al., 2008). On 7 July 2008, Penang received international recognition for its cultural heritage by being formally inscribed as a UNESCO World Heritage Site, which utterly protects the built and cultural heritage of this unique colonial town.

4.1.3.2 Built heritage and sustainable development

As mentioned in chapter 4.1.2.1, sustainability revolves around 3 pillars: economical, social and environmental. The first pillar, environment, mainly directs toward the use of resources, both natural and environmental. Maintaining fabric of existing buildings in a redevelopment has a direct linkage to preservation of built heritage. The second pillar, economical, has long been seen as the most important prerequisite for the fulfilment of human needs and for any lasting improvements to the living conditions of citizens. The role of preserving historical buildings in the promotion of economic growth through urban regeneration is increasingly acknowledged. Built heritage attracts tourists, particularly to established heritage cities, who boost the local and national economy. The last pillar of sustainability, social, emphasizes the need of improvement of quality of life for all citizens. This dimension is most relevant to the need to consider built heritage as a part of sustainable development. Built heritage, therefore, plays an important role in all three dimensions of sustainable development (Tweed et al., 2007).
4.1.4 Sustainable Brownfield Redevelopment

4.1.4.1 Benefits

The expression 'regeneration' is often related to Brownfields. Regeneration implies the actions that create lasting improvements in the economic, physical, social and environmental conditions of an area (Booth, 2005). Parts of this latter phrase can be identified in the term 'redevelopment'. Regarding Brownfield redevelopment, the following three aspects are important to take into account:

1. economical;
2. social;
3. environmental.

Chen et al. (2009) and Yousefi et al. (2007), amongst other Brownfield experts, recognize these aspects as a range of benefits, which can be reached through the redevelopment of Brownfields. If Brownfield sites remain the same, they will represent a significant loss of economic opportunity to the community in which they are situated. De Sousa (2001) speaks of the potential of Brownfield redevelopment for encouraging more compact urban development, reducing development pressure on Greenfield sites, enhancing the quality of the environment, attracting investment to older urban centers, and improving the social conditions of local communities, while emphasizing the role of private sector development. Table 1.1 in appendix 1.5 shows the public benefits associated with Brownfield redevelopment according to De Sousa.

The most frequently mentioned public benefit through Brownfield redevelopment is the economical benefit, which helps to restore the tax base of vacant or underutilized lands and promotes the real utilization of the infrastructure. The reduction of Greenfield development is a discussed and self-evident environmental benefit. An important social benefit, also accountable as a positive stimulant to Private Developers, is the elimination of the social stigmas associated with living in (the proximity of) Brownfield sites, which will help increase the economic value of the real estate.

4.1.4.2 Challenges

In order to reach the desired benefits from Brownfield redevelopment, obstacles related to this type of sites should be assessed. Sounierpanclian (2005) state that Brownfields involve several uncertainties, including:

- Uncertainty about the extent and seriousness of contamination at a site;
- Uncertainty in investigation and clean-up costs;
- Uncertainty in the length of time that will elapse between commencement of the investigation and the granting of permission to break ground for new construction;
- Uncertainty in financing the costs;
• Uncertainty in the buyer's long-term financial liability in the event some contamination remains following remediation.

These type of uncertainties, considered as obstacles, form the basis for the challenges within Brownfield redevelopment. A number of authors have highlighted these kinds of obstacles in their publications (Younit et al., 1998; Meyer and Lyons, 2000; McCarthy, 2002); selecting and combining the most relevant obstacles resulted in a set of challenges, which are issued in this research (see appendix 1.6). These are mainly obstacles for Private Developers for entering the Brownfield redevelopment process.

4.1.4.3 Policies: instruments/incentives

Redeveloping Brownfields has shown to have the potential to be beneficial. The discussed obstacles form challenges for as well the Governmental Organization and Private Developers to overcome. This study analyses the Governments' instruments to stimulate the Private Developers to triumph their challenges. Governments pose a wide range of instruments; components of their land policies. Healey et al. (1988) divided these in four types of policy measures: (1) regulatory, (2) developmental, (3) financial and (4) information and guidance. Figure 4.2 shows the classification of the encountered challenges under the land policy measures.

![Classification of challenges under policy measures](image)

All measures have been used in conjunction with one another, so there will be a lot of overlap between the challenges. De Sousa (2001) illustrates that there is strong evidence for promotion of Brownfield redevelopment. This research will adopt this vision, analyze the Public instruments in George Town and identify the most reoccurring challenges for this type of redevelopment. The challenges in Brownfield redevelopment mainly come from policy and planning problems including liability uncertainty, limited funding, regulatory complexity, insufficient information about the locations and conditions and confusion regarding clean-up levels (Wang et al., 2009) all processed in the figure above. The effect of preservation of heritage in combination with Brownfield redevelopment is rarely written about; it is a relatively unexposed aspect in this field of research. The Governmental Organizations in Malaysia, including the discussed policies and planning instruments, will be analyzed in order to form a base for the acknowledgement of challenges in heritage related Brownfield redevelopment in George Town, Penang.
4.2 Federation of Malaysia

4.2.1 Three-tiered Government

After Portuguese, Dutch and British ruling, the Federation of Malaysia emerged as a Federal Constitutional Monarchy with a system of Parliamentary Democracy, based on the British constitution with the set-up of the US Federal system. The constitution provides for a "separation of powers" between the legislative and executive, and an independent judiciary.

The federalised system consists of three levels:
1. Federal level
2. State level
3. Local level

Local Governments aren't sovereign bodies; they are created by the State Governments or even Federal Government. Their power and roles are decided by these creators and they generally fall under the ambit of the State Government and tend to cover very large areas. The Governments contain several departments; the three-tiered Governmental system, along with the relevant departments, are summarized in figure 4.3.

Departments (relevant to our research)
- Ministry of Housing and Local Government
  - Federal Town and Country Planning Department
  - Local Government Department
  - National Housing Department
  - National Landscape Department

State Department of Town & Country Planning
District & Land Office of South West

Town Planning & Development
Buildings
- Consultitude Development Planning

Governments
- Malaysia
  - Federal Government

- Penang State Government
- 12 other State Governments

Penang Island Municipality (MPPP)
Penang Mainland Municipality (MPSP)

Figure 4.3: Three-tiered Governmental system of Malaysia

The legislative powers towards Town and Country Planning are concurrent, both State and Local Governments are competent to legislate subjects concerning this matter. State Governments' authority lies above those of the Local Government. The State is responsible for the identification of land for housing and decides on applications by developers for land sub-
4.2.2 Urban planning in Malaysia

4.2.2.1 Town planning in Malaysia

In 1976 the Town and Country Planning Act 1976 (Act 172) was introduced. This Act (TCP) ensures uniformity of laws and regulations relating to Town and Country Planning in Peninsular Malaysia. Thus, creating structure and consistency on behalf of the different responsibilities amongst the three different levels of Government burdened with Town and Country Planning.

In Malaysia, Town and Country Planning is carried out at the discussed three levels of Government. At Federal level, the Ministry of Housing and Local Government is responsible for formulating and administering all national policies relating to Town and Country Planning, via the Federal Town and Country Planning Department. At State level, the State Department of Town and Country Planning acts as an advisory body to the Municipal Government. At the lowest level, Local Authorities are responsible for executing Town and Country Planning function as prescribed in the Local Plan (Mohd Sukuran et al., 2008).

To outline this division, the following table has been generated.

<table>
<thead>
<tr>
<th>Governmental level</th>
<th>Responsibilities</th>
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<tbody>
<tr>
<td>Federal</td>
<td>Formulating and administering all national policies relating to town and country planning.</td>
</tr>
<tr>
<td>State</td>
<td>Advise Municipal Governments.</td>
</tr>
<tr>
<td>Local</td>
<td>Plan, control and conserve land and buildings in their localities.</td>
</tr>
</tbody>
</table>

Table 4.1: Planning responsibilities per Governmental level

In support of the division in responsibilities amongst the three levels of Government, plans regulating Town Planning are drawn up. These plans, so called Development Plans, are a type of blue print or backcloth against which an application for planning permission is determined and outline an expression of the Government's planning policy. This policy is largely set out in the National Development Plans comprising of the National Development Policy, Five Year Development Plans, and Vision 2020 issued by the Federal Government (Mohd Sukuran et al., 2008).
4.2.2.2 Development plans
A five-some of Development Plans, which describes land use in the entire country, is created to outline the future development intended to translate Government policies, personified in the Vision 2020, into action. Development Plans are principally aimed at enabling the Federal and State Governments to assist Local Planning Authorities to produce plans toward arranging different uses of land and to utilize the land efficiently in the best interest of the people (Mohd Sukuran et al., 2008).

The five development plans, in order of high Governmental level to low, are: (1) National Physical Plan, (2) Regional plan, (3) Structure Plan, (4) Local Plan, and (5) Special Area Plan. They are elaborated in appendix 2.3, followed by the explanation of Public participation (2.4) and the Penang Appeals Board (2.5).

4.3 George Town

The State of Penang is one of the eleven constituent States on the northern peninsula of the Federation of Malaysia. The State of Penang (Negeri Pulau Pinang) comprises Penang Island and its mainland component (Seberang Perai). George Town, the State capital located on Penang Island, is the heart of the metropolitan area that is the second largest urban conurbation in Malaysia, served by a seaport as well as an international airport. Since 2008, George Town is listed as an UNESCO World Heritage Site, after a joined nomination with Melaka. The next paragraphs discuss the evolution from swampy land to the vibrant city we know today and address the unique characteristics and important features in the view of this research.

4.3.1 The origin

At the end of the 18th century, the British founded George Town and used it as the base for the British East India Company in the Malay States. Fort Cornwallis was the first structure to be built after clearing the vegetation and leveling the ground; in nearly fifteen years the population exceeded the 10,000.

In 1826, Penang, Melaka and Singapore were joined together under the umbrella of the Government of the Straits Settlements; Penang was chosen as its capital. The British practiced an open door policy in their economy; policies, especially in political, economic and social developments were based on a - divide and rule - approach. This policy encouraged large immigration of Chinese and Indians. Different Kapitans were appointed to the Chinese, Indians and Malays and all ethnic groups were located separately. This division could also have been the choice of the communities themselves, this is not entirely sure.

Light Street (north), Beach Street (east), Chulia Street (south) and Pitt Street (west) frame the original grid laid out in the early existence of George Town. The grid covers an area of approximately 18.6 hectares and was subdivided into 18 rectangular blocks, as can be seen on the left map of figure 4.4. This grid forms the historic commercial center and was segmented
into the banking and trading areas related to the port activities, which included shipping companies, import and export trade and wholesalers.

Figure 4.4: Maps of George Town, dated 1708 and 2006 (Source: UNESCO Nomination Dossier)

At the turn of the 19th century, the northern section of Beach Street and its surrounding was known as the "high streets" where European stored and sold exclusive goods for European community and the elites in Penang. The Logan Building, as described in paragraph 8.1, stands as an example of such an 18th century commercial block. Another distinct segment of the historic commercial center is the shopping area of Tamil Indians who are mainly Hindus. This area was called "Little Madras" but is known today as "Little India". In the western and southern part of the grid, China Street and King Street form respectively the main street and social center for the Chinese community within this commercial quarter.

4.3.2 Multicultural heritage

Due to the open door policy of the British, large numbers of Chinese and Indian immigrants settled in the George Town. Because Penang is a port settlement, and Malaka as well, it became more multicultural than the rest of Malaya. In general, the Malays dominated the agricultural area, the Chinese the mining sector and the Indians the rubber estates. These economic zones were situated far apart, but in the port settlements all ethnic groups lived in coherency.

Through the years, this rare cohesion and harmony of the townscape and urban fabric is maintained. With the values of tradition and evolution in mind, the continuity and sustainability of the various cultures haven't been compromised; together with the built heritage, the cultural heritage of George Town is well preserved. The multicultural heritage is still alive; you can experience it everyday by the sound of the call of the Muazzin from the mosque and the ring of the bells from the Hindu temple or by the scent of joss sticks from the Buddhist temple.
During colonial rule, all major communities were led and represented by their Kapitans. The individual leaders made way for social institutions to represent their community. The institution for the Muslim community is named Waqf, the Chinese community consists of several Kongsi (association based on a clan) and the Sangam in general reflects the Hindus. Each social institution acts as a trustee for the community and is therefore responsible for management and maintenance of the communal property. For Waqf and Kongsi these properties exist of residential dwellings, commercial lots and respectively mosques and temples; the Sangam is predominantly concerned with temples.

4.3.3 Urban fabric

Despite the rapid urban and industrial development Penang experienced over the past three decades, George Town has largely retained the urban fabric of historic buildings with the original street patterns and open spaces still intact. The historic inner city encompasses a rich collection of these historic buildings, in different styles. The most familiar styles are Indo-Malay Palladian, Anglo-Indian Bungalow, different styles of Shophouses, Sino-Anglo Bungalows, Neo Classical, Art Deco, Early Modern and Late Modern; along with this variety of architecture the city contains a numerous number of religious buildings.

The shophouses in the historic city of George Town are pervasive: they dominate most of the street views. The form of the shophouse is based on the traditional Chinese courtyard house. All of the shophouses normally had a similar plan configuration as well as used materials and an extension to the street without any forecourt. The shophouse commonly incorporated a shop or business premise on the ground floor while the family could reside on the top floor (see appendix 3.1 and 3.2 for further information on shophouses and architectural styles).

The Portuguese, Dutch and foremost English planning principles shaped George Town's Heritage center as it stands today. In 1822, Raffles introduced by-laws, which imposed the inclusion of five-foot-ways in the building forms. An elaborated description of more recent planning principles is shown in appendix 3.3.

4.3.4 UNESCO World Heritage Site

On 7 July 2008, Melaka and Penang received the UNESCO World Heritage Site status. They are designated under the name "Historic Cities of the Straits of Malacca". The Historic City of George Town covers a 109.36-hectare site what is regarded as the core zone and a surrounding buffer zone of 150.04-hectare.
George Town contains in total 1,715 heritage buildings within the core zone, with another 1,926 heritage buildings located in the buffer zone.

UNESCO confirmed the properties in the "Historic Cities of the Straits of Melacca" to be of Outstanding Universal Value (OUV). The following three criteria are assessed (see appendix 3.4 for the broad description and justification):

1. Multicultural trading towns forged from exchanges of cultures;
2. Testimony to multicultural tangible and intangible heritage;
3. Melting pot of multicultural architecture and townscapes.

The cultural criteria, frequently referred to as the three OUV's, are the foundation for the UNESCO inscription. When the authenticity and integrity of the Site isn't properly maintained, UNESCO will repeal the inscription. The first application for inscription was declined because of an insufficient conservation management plan; what means that this aspect has been improved and should be operating efficiently to ensure that the state of conservation and heritage values of the site are maintained and enhanced.

This heritage management plan is not intended to be prescriptive or binding but rather to provide guidance for activities and programs, which may have an impact on the site. It discusses the objectives and implementation and integrates the existing legislation and policies.
Furthermore, several recommendations have been made, which are applicable to this study and can be contributed to through this research:

- Encourage residents to plan and develop economically sustainable projects;
- Increase stakeholders' awareness and sensitivity towards sustainable heritage developments;
- Monitor that the key elements governing the overall setting and characteristics of the Core Area and Buffer Zone are maintained through enforcement of proper guidelines and legislation.
- Provide better communication, co-ordination and monitoring amongst the stakeholders;
- Promote sustainable development that is sympathetic to the Outstanding Universal Values of the Site;
- this page is left blank intentionally -
5 Study area

The theoretical description of the research topic, brief elaboration on the Federation of Malaysia and the rough sketch of the proposed study area George Town, Penang provide a base for further demarcation of the research. Through adapting a pragmatic approach it is possible to limit the scope and focus on location-specific issues. After exploring the land use in the historical center of George Town and performing a visual analysis on Brownfields in the oldest part of the area, the research can be further demarcated.

5.1 Land use

The State Town and Planning Department of Penang Island was able to release a preliminary draft of a land use survey on the UNESCO World Heritage Site. The findings in this paragraph are mainly subtracted from this recently conducted survey, supplemented by information from the UNESCO Nomination Dossier and additional gathered data.

Since the study concentrates on heritage related (sustainable) Brownfield redevelopment, a preliminary demarcation can be made: the boundaries of the UNESCO World Heritage Site will act as the borders of the study area.

5.1.1 Figures

The heritage zone contains a large amount of heritage buildings; together with Melaka it holds the largest quantity of shophouses in South-East Asia.

<table>
<thead>
<tr>
<th>Dimension (hectares)</th>
<th>Core zone</th>
<th>Buffer zone</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>109.36</td>
<td>100.04</td>
<td>209.42</td>
</tr>
<tr>
<td>Number of buildings</td>
<td>2,344</td>
<td>2,921</td>
<td>5,265</td>
</tr>
<tr>
<td>Number of heritage buildings</td>
<td>1,715</td>
<td>1,926</td>
<td>3,643</td>
</tr>
</tbody>
</table>

Table 5.1: Number of buildings within the heritage zone of George Town
(Source: UNESCO Nomination Dossier)

In the heritage core zone alone, 1,715 heritage buildings are listed. The land use data, collected in the historical area of George Town, displays that 40% of the properties are occupied by businesses, 32% is used for residential purposes, 2% is possessed by clan, non-Government or religious organizations (e.g. Wee and Kongsii) and 10% is currently vacant (7.3% of the properties weren’t part of the survey). In terms of floorspace, the calculation in table 3.1 appendix 3.5 is made.
5.1.2 Occupancy

5.1.2.1 Population
The total population for the inner city of George Town is calculated on approximately 10,200. There are very distinguishable patterns: the South and West area of the core zone has the highest concentration of residents, while as often the case the population density is relatively low in the central business district. The average household size is 4.4 persons, with a main typology of elderly couples with mature children living at home, followed by one-person households.

5.1.2.2 Ethnicity
The majority of the households are Chinese Malaysian (73%), followed by Indian Malaysian (13%) and Malay Malaysian (16%). Spatially, the three main ethnic groups have some patterns, with the most of the Malaysian Indian community living in Little India. The Malay community is scattered, with a small cluster around the Kapitan Keling Mosque and North of Penang Street. The Chinese residents are more widely dispersed throughout the heritage zone.

5.1.2.3 Religious associations
In George Town there are some unique types of ownerships, one of which is the commonly owned property by clan. They are either used as ancestral homes or common clan halls where the clan will gather during certain celebrations. The Kongsi owns different types of properties in the heritage zone, from temples to residential dwellings.

Another typical ownership is the Muslim "Waqqi". Some properties are endowed for public uses such as mosques, religious schools and cemeteries. The properties will be appropriately used for the benefit of the Muslim communities and can furthermore be used for commercial and residential purposes.

5.1.2.4 Ownership
Earlier analysis of a large part of the World Heritage Site revealed a concentration of ownership of properties among a small group of individuals, corporations and institutions. It indicated that five entities, one private and four institutional owned 34% of the properties; furthermore, seventeen owners owned 46% of the private properties. Some properties are in common ownership, often grouped, as in a row of shophouses. The percentages over the whole area will be slightly different, but the main perception remains: a substantial amount of property is owned by a limited group of people and associations.

These properties are often rented out to tenants for a long period. The majority of the properties, 64%, are tenant-occupied and 76% of the businesses operate from rented premises. A lot of owner-occupied premises are located in the jetty communities, at the eastside of the heritage site; this implicates the owner-occupancy in the core zone will be even lower.
While clan or religious temples use only 3.3% of the total area, these associations own a substantial amount of land and properties. The major owners of properties within the heritage core zone are private owners, Chinese clan associations (Kongs) and religious institutions including the Muslim Endowment Board (Waqf).

The latest figures state that within the core and buffer zone, approximately 45% of the properties is publicly owned, which includes public and religious buildings, open spaces, roads and other Government or quasi-Government (religious organizations; further stated as semi-private) owned properties. Privately owned properties account for the remaining 55%. Figure 5.1 illustrates the division of ownership in the heritage zone.

![Figure 5.1: Types of ownership within the heritage zone of George Town](source: UNESCO Nomination dossier)

5.1.3 State of properties

The heritage site has a large stock of buildings in need of restoration or serious redevelopment. Most, if not all, deteriorated buildings have a significant heritage value. Within the World Heritage Site, 66.5% of properties have heritage significance. Furthermore, some of the sites within the area are vacant land or sites that are occupied by temporary structures.

5.1.3.1 Vacancy and dereliction

Multiple types of buildings, which are explained in appendix 3.6, are situated in George Town. Of these buildings, vacant and abandoned buildings form a noteworthy problem for the heritage site. No maintenance is carried out and the buildings become sensitive for deterioration. According to the recent conducted survey, 15% of the buildings are vacant (based on the floor area).
space estimates). The 1237 identified vacancies counted 866 vacant buildings/floors, 67 vacant lots and 54 derelict buildings; the other vacancies were car parks and buildings under renovation, for rent or for sale. The degree of dereliction wasn’t stated, as it was not part of the survey.

No conclusions concerning the degree or quantity of derelict, deteriorated and abandoned buildings can be drawn from these figures since they solely state the type of vacancy and don’t necessarily comply with the stated heritage related Brownfield definition. The fact remains that there is a vast amount of vacant buildings, some of them derelict (4%), of which several quality for redevelopment.

5.1.3.2 Dilapidation
A first estimation of derelict/deteriorated buildings can be drawn from another recent study: an inventory of dilapidated shophouses in the World Heritage Site. This inventory, listed by George Town World Heritage Incorporated, counts a total of 118 dilapidated shophouses, 53 in the core zone and 56 in the buffer zone. Their interpretation of dilapidated property encompasses shophouses that are inadequately maintained; falling into ruin; becoming obsolete; abandoned; incomplete or burnt.

This number of buildings can’t directly be integrated in this research, because the definition of dilapidated property once again isn’t similar to the stated Brownfield definition. The assessment of dilapidated buildings for example contains shophouses, with minor plant overgrowth or which are just not properly maintained. Despite this inconsistency, the number of dilapidated houses indicates a significant need for restoration or redevelopment and emphasizes the importance of this research.

5.2 Visual Brownfield Analysis
As explained in preceding paragraphs, four types of ownership in Brownfield (re-)development are acknowledged in the heritage core zone of George Town; Public, Private, Kongs and Waqf. To identify the ownership with the most potential for Brownfield redevelopment, a visual analysis on Brownfields in the heritage core zone is performed. By cross-linking the findings from the visual analysis with the data on ownership, the type of ownership with the most Brownfields ‘in possession’ can be recognized. With this knowledge, Governmental Organizations can directly stimulate the redevelopment of the identified Brownfields. For understandable reasons, Public ownership isn’t taken into consideration in this analysis.

5.2.1 Brownfield criteria
The scope of Brownfields has been adjusted to be applicable for the heritage core zone of George Town. In this context a Brownfield is previously development land or buildings in an
urban area, which are currently not in use, and both buildings and land may be vacant, partially occupied and/or derelict.

To create a consistent analysis, further specification of Brownfields is required, since multiple cases on building level are imaginable that fit the context of Brownfields, but aren't appealing for redevelopment: such as a single shophouse unit. A single shophouse unit might be previously developed and presently vacant in an urban area, though, the redevelopment of a single shophouse is in all probability not economically viable. Furthermore, the transformation of a single shophouse has more interfaces with refurbishment than redevelopment.

By indicating a row of three uniform vacant shophouses as a minimal criterion for specification as a Brownfield, next to other deteriorated buildings and land orientated Brownfields, a consistent analysis arises. The choice for a row of three is based on an expert's opinion, stating that a minimum of three shophouses would be interesting for redevelopment. No constraints are laid upon the maximum size, in this research the size of the identified Brownfields are equivalent to the size of their plots.

5.2.2 Analysis structure
Through a systematical approach, of the visual Brownfield analysis in the heritage core zone, several Brownfields are identified. A list of characteristics for the data collection has been set up to ensure the comprehensiveness of the data collection. These characteristics are: type of Brownfield, building use, number of buildings, land use, occupation, condition and heritage issues, as shown in appendix 5.1. The complete collection of gathered data is elaborated in appendix 5.2.

5.2.3 Geographical Information System (GIS)
A Geographical Information System, most commonly referred to as GIS, is a system that captures and stores various data that is linked to a certain geographical location. For instance, Cadastral maps with information on ownership, area demarcation and dimensions.

Penang State Government uses such a GIS system to upkeep data on their land. A simplified version of this comprehensive GIS data was made available especially for this research. Information on land use, core and buffer zone dimensions, building locations, mkim dimensions, and heritage lot dimensions are incorporated in the simplified version. In the following paragraphs, the GIS data is used and edited to obtain the required information.

5.2.4 Identified Brownfields
The results of the visual analysis were next to remarkable, since a large amount of Brownfields is recognized. A total of 42 Brownfields are situated in the heritage core zone of George Town. To identify different degrees of Brownfields, a foursome of condition-characteristics has been set
up: poor, fair, good, very good. These characteristics are based on the assessment of dilapidated shophouses in the Dilapidated Heritage Shophouses List. It describes properties in need of little renovation (very good), severe renovation (good), little redevelopment (fair), and properties that need complete redevelopment (poor). The following figures: 5.2-5.4 identify the type, condition and occupancy of Brownfields in the heritage core zone of George Town.

Figure 5.2: Type of Brownfields

Figure 5.3: Condition

Figure 5.4: Occupancy

2 On May 20th 2010, a Press Conference was held on the release of the Dilapidated Heritage Shophouses List. Initiated by GHAT (Cultural Heritage Action Team) and World Heritage Office.
To illustrate the amount of identified Brownfields, the following figures have been created. Figure 5.6 shows the level of dilapidation of each Brownfield. Figure 5.6 shows the type of ownership of the Brownfields.

Figure 5.6: Identified Brownfields in heritage core zone

Figure 5.6: Ownership of identified Brownfields
By making use of the received GIS data of the heritage zone of George Town it is possible to calculate the total amount of Brownfields, in square meter, and the division in percentage amongst the three types of ownership. The following table elaborates on the area division.

<table>
<thead>
<tr>
<th></th>
<th>Area (in sq ft)</th>
<th>Area (in sq m)</th>
<th>Percentage of total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Brownfields</td>
<td>375,425</td>
<td>34,673</td>
<td>100 %</td>
</tr>
<tr>
<td>Private properties</td>
<td>329,425</td>
<td>30,604</td>
<td>87.8 %</td>
</tr>
<tr>
<td>Waqf properties</td>
<td>7,000</td>
<td>650</td>
<td>1.9 %</td>
</tr>
<tr>
<td>Kongsai properties</td>
<td>39,000</td>
<td>3,623</td>
<td>10.3 %</td>
</tr>
</tbody>
</table>

Table 5.2: Brownfield area division

Although, figure 5.6, clearly stated a substantial division between the different types of owners; table 5.2 provides a more mathematical approach. Evidently, Brownfields in the heritage core zone of George Town are generally represented in private properties. 87.8 percent of the total amount of Brownfields is in this group, where Kongsai lags with 10.3 percent and Waqf with 1.9 percent.

As a total, the heritage core zone of George Town complies of 190 hectare, or 1,900,000 square meters. However, this figure represents more than just the land plots in the heritage core zone; it incorporates all that is stated to be within the core zone, like streets, waterways and land. To describe the impact of the amount of discovered Brownfield, the accumulative area of land plots wherein the Brownfields fall is calculated. To elaborate more on this matter, the accumulative area represents the plots within the area shown in figure 5.5 and 5.5. This area amounts to 311,270.68 square meters.

The total area of Brownfields, as shown in table 5.2 is 34,878 square meters. This amounts to 5.5 percent of the total of George Town’s heritage core zone area. The average size of a Brownfield can be derived from the simple calculation; the total area of Brownfields divided by the amount of Brownfields (42). This totals on 830 square meter per Brownfield.

5.3 Demarcation

5.3.1 Area

The first aspect of demarcation is the designation of the research area. Since, the research is concerned with heritage related (sustainable) Brownfield redevelopment, not all types of land or premises will be taken into account. The UNESCO World Heritage Site of George Town en masse an area with a high quantity of heritage buildings, which are protected by several heritage laws, regulations and guidelines and consists of a core and buffer zone. This study will be conducted within the borders of the core zone, for three reasons:

1. The core zone is the most important area for the UNESCO listing;
2. The legislation in the buffer zone slightly differs from those in the core zone;
3. The size of the core zone of 100 hectare is a manageable area for the duration of this study, in contrary to the total size of almost 280 hectare.

In the visual analysis all types of Brownfields within the definition are indicated, from empty plots to severely deteriorated properties. From this point on, further analysis concern those Brownfields who are listed in category 2 (explained in appendix 3.6) of the UNESCO World Heritage Site categories. This category is chosen because of its significant amount of heritage properties and potential redevelopment cases, together with the prospects of evaluating redevelopment examples.

5.3.2 Stakeholders

The major stakeholders/owners of properties within the heritage core zone are private owners, the Kongs and Waqf. Initially, a comparison between the different types of ownership was planned but after further research and the visual analysis the focus shifted.

All three types of ownership will be analyzed and described, though the main focus will point towards the investigation of private redeveloped heritage related Brownfields. This focus arose from the findings in the visual analysis, in which nearly 88% of the Brownfields appeared to be privately owned. The lack of Kongs developed properties and scarcity of information contributed to this decision.

5.3.3 Challenges

As shown by figure 4.2 in paragraph 4.1.4.3, the challenges faced in Brownfield redevelopment are divided into four categories: developmental (will be referred to as preservation throughout this research), information, regulatory and financial. Collected data pointed out that within these categories a few challenges are not applicable to this research, such as contamination. Contamination is too small of a scale in George Town for it to become a real challenge, which also deprives ‘clean-up costs’ as a challenge. Furthermore, the presence of stigma, bidding competition and market conditions are out of reach for this research; for the reasons that valid information concerning these aspects is often disclosed, difficult to collect. Moreover, these aspects do not represent a direct method for stimulation of Private initiatives and are, considering the limited timeframe of this study, not taken into account. Thus, the focus will lie within the challenges that are of significant and relevant occurrence: preservation of heritage, complicated regulatory requirements, redevelopment restrictions and funding/financing inability. Preliminary data showed considerable challenges in these areas; figure 5.7 personates this distinction in challenges.
5.3.4 Final products

The foremost goals of this study are directed in advising the Local Authority of Penang Island (MPPP) on the current early process of a sustainable Brownfield redevelopment in George Town's heritage area. The results will consist of an (1) identification of Brownfields in the core zone of George Town's heritage area, the (2) recognition of challenges for Private Developers for redeveloping heritage related Brownfield sites, which consequently result in (3) advise on improvements of the early process of sustainable Brownfield redevelopments.

Another important objective is the collection of data concerning the early process of a sustainable Brownfield redevelopment in George Town's heritage area for the Graduation Studio of the Master Construction Management & Engineering of Eindhoven University of Technology (TU/e) and the Universiti Sains Malaysia (USM). This data will, amongst others, contain information on the (1) Government Structure, the (2) lay-out of the World Heritage Site, the (3) main stakeholders involved in heritage related Brownfield redevelopment, (4) process analysis, (5) environmental aspects and (6) strengths and weaknesses in the early stage of this process.

Furthermore, the research will provide suggestions for further research within MPPP, USM and the TU/e.
6 Policies in built heritage redevelopment

Malaysia is subjected to a three-tiered Governmental structure. The Town and Country Planning Act 1976 (act 172) was gazetted to create structure and consistency amongst the three different levels of Government burdened with Town and Country planning. At the three levels, different types of policies can be identified, from laws and legislation on Federal level to guidelines on Local level. Furthermore, procedures to obtain planning permission differ from project to project.

In this chapter, all relevant heritage redevelopment laws, guidelines and procedures are described and elaborated.

6.1 Heritage law and legislation

As mentioned in paragraph 4.2.2, Malaysia’s Federal level is responsible for the formulation and administration of National policies. To provide for the conservation and preservation of National Heritage, the National Heritage Act 2006 was gazetted, which came into effect on 1 March 2006.

One of the first articles in the National Heritage Act 2005 revolves around the appointment of a Commissioner of Heritage for the Department of National Heritage. This Commissioner is appointed to carry out certain powers and functions, as described in appendix 6.1. Broadly, this results in the fact that the Commissioner of Heritage is instated as the Department of National Heritage's face. Via this person, the Department of National Heritage serves as an advisory body to State and Local level on the subject of dealing with heritage.

George Town is inscribed into the UNESCO World Heritage List on the OUV’s. UNESCO grades George Town’s worthiness of inscription according to these OUV’s. Therefore, the Commissioner of Heritage serves as a link between the lower-hierarchical Governmental bodies and UNESCO; to advise the Governmental bodies, and inform UNESCO, about the maintenance of the OUV’s.

State authority

On State level, the Structure Plan serves as the policy on heritage related (re-)development. It serves as a foundation for the Local Planning Authority to develop and maintain the heritage guidelines.
6.2 Heritage guidelines

After various studies, as shown in appendix 6.2, MPDP created the heritage guidelines to ensure preservation, thus safeguarding of Heritage: Regulations for Conservation Areas & Heritage Buildings. This regulation provides a full statement of the State Government's policy for the identification and protection of heritage buildings, conservation areas and other elements of the historic environment. It explains the role played by the planning system in the protection of heritage.

The heritage guidelines weren't set up solely for the MPDP and other public authorities, but as well for property owners and developers to ensure well-known and recognized guidelines for developments. Although the heritage regulations aren't gazetted, thus are merely guidelines, they do grant MPDP an underpinned reference/platform for rejection of building permits and/or planning permission for a (re-)development initiative.

The heritage guidelines identify criteria for development on the following subjects:

1. Classification of heritage buildings;
2. Designation of conservation areas;
3. Heritage building control;
4. Conservation area control;
5. Advertisement control.

Since advertisement control is not worthy of note for this research, it will not be taken into account. The criteria for the first four regulations are elaborated in appendix 6.2.

6.3 Redevelopment procedures

In order to regulate development in George Town, and thus maintaining the ability to comply with the Structure Plan and the Local Plan, the MPDP Planning Department has been burdened with the responsibility to verify the compliance of development applications according to the applicable policies and regulations. They serve as the contact for the applicant and will, when relevant, distribute the necessary documents to other departments for review purposes. After reviewing, the Planning Department provides feedback to the applicant on either the granting of rejection of the application.

A wide range of procedures for permits and plan applications are existent. In this chapter the focus lays on the most relevant procedures to heritage related (re-)development: repair permit, On the Spot approval and the One Stop Center.

As the procedures' names somewhat imply, there is a time- and magnitude-wise hierarchy in the procedures. For instance, in the case of a small repair to a building, a repair permit is sufficient to receive a building permit.
Repair permit
The approval for this permit normally takes about two weeks and costs RM 5.00. A simple completed application form, accompanied by a certified copy of the land grant (signed by the land owner), is satisfactory for this application.

For more extensive (re-)development a more distinct procedure has to be passed in order to obtain planning permission. A division is made between developments that only need a building permit, and developments that need both a building permit and planning permission. Figure 6.1 in appendix 6.3.1 describes the distinction between the permits. Since, repair permits aren’t likely to be issued in Brownfield redevelopment, they will not be taken into further consideration. The following paragraphs give a complete overview of the criteria and procedures for On the Spot approval and the One Stop Center.

6.3.1 On the Spot Approval
As mentioned, On the Spot approval is one of the two possibilities for a more extensive (re-) development. Since, the duration of the On the Spot approval is much shorter, compared to the One Stop Center, a vast list of criteria has been set up to assign certain types of projects eligible for On the Spot approval. The criteria, mentioned in appendix 6.3.2, are subtracted and translated from the "Immediate Consideration" document for On the Spot approval. Projects that comply with one or more of these criteria are eligible for planning approval via On the Spot approval. The procedure for this approval is fairly simple and is described in the following figure.

![On the Spot Approval Procedure](image)

"SC : MPPS Standing Committee
Figure 6.1: On the Spot approval procedure\(^3\)

6.3.2 One Stop Center
Basically, every (re-)development, which isn’t qualified for an On the Spot approval, is required to submit an application for planning permission. Development activities that require planning permission are:

1. Operational work (earthworks);
2. Material change (significant change in the use of land or building);
3. Subdivision and amalgamation of land.

\(^3\) Source: [http://www.mppp.gov.my/121](http://www.mppp.gov.my/121)
When an applicant approaches the One Stop Center (OSC), four stages that need approval can be identified: (1) Application for land matters, (2) Application for planning permission, (3) Application for building plans, and (4) Application for earthworks plan and road and drainage plans.

The process of these four stages is divided into 10 steps and is universal for each project. However, the duration of these steps differ per projects type. Where Building Plan applications for Build then Sell, High Impact, Foreign Investment and Government Projects will be processed within four months; normal Building Plans will take up to six months. Due to the fact that the first procedure (four months) nearly only get assessed for Governmental Projects, and the focus of this research is on Private Projects, merely the second procedure (six months) will be taken into account. The diagram, as described in figure 6.2, shows the summary of the OSC process. The complete diagram is elaborated in appendix 6.4.

![Figure 6.2: OSC procedure flowchart](image-url)
Accumulating the duration stated in previous image results in a process time of about 4.5 months. This is the minimal amount of process duration. A few weeks have been included in the process structure for re-applications when plans aren't sufficient or contain facets of non-compliance to the guidelines.

6.3.3 Compliance to heritage regulations in OSC approval

Amongst the numerous checks and departments involved in an application at the OSC, three of them are concerned with compliance to the heritage guidelines: Heritage Impact Assessment (HIA), Technical Review Panel and MPPP Building Department's Heritage Unit.

Heritage Impact Assessment
Each proposal for a planning permission, which is proposed at the OSC of MPPP, should contain a Heritage Impact Assessment (HIA). The applicant who hands in the application cannot perform the HIA. A third party has to be approached to set up this assessment, in order to deliver an independent valuation. The HIA is amongst others concerned with the visual impact, impact on the streetscape and the impact on cultural heritage in the specific area. The plan may only positively affect the OUV's.

Upon arrival at the OSC, the OSC secretariat will send the HIA to the Federal Department of National Heritage, who checks the assessment and verifies compliance with the Outstanding Universal Values (OUV's) appointed by UNESCO.

Heritage Unit
Similar to the process of the HIA, the MPPP Building Department's Heritage Unit will receive the application from the OSC secretariat. Where the Federal Department of National Heritage checks the compliance according to the OUV's, the MPPP Building Department's Heritage Unit checks whether the applicant has complied with all the heritage guidelines, as shown prior in this chapter.

Technical Review Panel
The Technical Review Panel (TRP) performs the, non-chronological, last check for compliance to heritage regulations. TRP, which is set up by MPPP, is chaired by the President of the Council and has a maximum of eight members comprised of architects, urban designers, heritage and cultural experts, lawyers and other knowledgeable professionals who have no vested or direct interests in the local property sector.

The TRP, when convened to review a project application for OSC, will meet to assess the planning and building designs which have been submitted on sites within the Core Area and Buffer zone based on the criteria, as described in appendix 6.4.1, recommending changes where deemed appropriate and necessary. Additional duties include the review of existing design and conservation guidelines and assisting in the articulation of the review criteria in public awareness programs.
6.4 Incentives for redevelopment

In order to stimulate preservation of built heritage, the Government proposes incentives and makes funds available for research, restoration and redevelopment. The State Heritage Fund is the only monetary fund available at the moment. The State Government yearly contributes RM 1 million for stimulation of heritage preservation. Other incentives can be divided under two types of Government, namely the Federal (in fact ThinkCity) and the Local Government (MPPP).

6.4.1 ThinkCity

When George Town was inscribed to the UNESCO’s World Heritage List, it received a fund of RM 20 million for the Federal Government. This fund would initially be transferred to the State Heritage Fund in order for the Municipal Council of Penang Island and World Heritage Incorporated to use. Ultimately, this decision was withdrawn and the fund was allocated to a Public Limited Company named Khazanah, who became in charge of implementing and administering the fund. Figure 6.3, as shown in appendix 6.5.1, describes the Heritage Management System and the available monetary sources for funding.

Khazanah set up an organization, called ThinkCity, to put the funding into practice under the name “George Town Grants Programme”, which will have a lifespan of four years that began on 1st September 2009 and will end on 31st August 2013.

The so-called “George Town Grants Programme” is concerned with four types of funding, of which two can be applicable to heritage redevelopment. These are described in appendix 6.5.2.

6.4.2 Municipal Council (MPPP)

The heritage guidelines of the Municipal Council of Penang Island contains a list which proposes incentives to all approved heritage buildings, conservation works and new buildings within the conservation area of George Town’s inner city. This list exists of eight incentives of which the most important three are discussed below. Elaborated description of all incentives is described in appendix 6.5.3.

- Allow adaptive re-use of heritage buildings (most potential but now controversial)
  Change of use is allowed according to the MPPP guidelines
- Car parking incentives (most effective and most granted)
  When complying with the conservation regulations to the full extend and falling under building category 1 or 2, the compulsory provision of physical car park is waived completely.
- Maintenance grant (least effective)
  MPPP shall give a maintenance grant equivalent to 90% of the annual assessment rate to approved building conservation works for a period up to five years.
6.5 Governmental initiatives on sustainability

In this research, sustainability is referred to as sustaining built heritage, though it has more branches. As a part of sustainability, energy efficient building has become more present in the building industry. An example for this increasing interest in this branch of sustainability is the Roadmap towards a zero-Energy Eindhoven, where Eindhoven, The Netherlands, intends to achieve a zero-Energy status before 2045 (Eindhoven.nl, 2009).

Energy efficient building in Malaysia is of a different stature than The Netherlands. First and foremost, according to Naziren Zainul Abidin's survey (2009), the level of knowledge of the sustainability concept amongst Project Developers in Malaysia is between low and moderate. Furthermore, Naziren states that projects on sustainability in Malaysia are mostly at pioneering stage, indicating that Malaysia construction industry is still at infancy when dealing with sustainability matters. With the promotion from the Government and non-Governmental institutions on sustainability, it attempts to increase awareness on sustainability among the construction practitioners, which should improve exponentially in the near future. One of these promotions and most influential is the Green Building Index, or GBI.

6.5.1 Green Building Index

The GBI is Malaysia's industry recognized green rating tool for buildings to promote sustainability in the built environment and raise awareness amongst Developers, Architects, Engineers, Planners, Designers, Contractors and the Public about environmental issues and our responsibility to the future generations. In February 2009, Greenbuildingindex Sdn Bhd was incorporated, to administrate GBI accreditation and training of GBI Facilitators and Certifiers. The GBI accreditation goes according to a rating system that has been set up. Buildings will be awarded the GBI rating based on six key criteria, as described in appendix 6.6.1.

6.5.2 GBI implementation in Penang

The Green Building Index has yet to be certified to a building in Penang. However, the first buildings are in construction: The Light Point and Light Linear condominiums. Both condominiums are part of the first phase of the The Light project and will be built according to green standards. The project's first phase, where Light Point and Light Linear are part of, is presumed to complete in 2012.

6.5.3 Shophouses

Although the Green Building Index is still some time away from implementation, green building actually already exists in Penang. Using materials that are locally available (lime, clay stone and timber) and suited to local geology and weather conditions, the Penang shophouse, which has been around for ages, is a good example of green building. Additionally, a shophouse possesses architectural features such as air vents and airwells that help with natural ventilation and cooling, as shown in figure 3.1 in appendix 3.1.
7 Stakeholders in Brownfield redevelopment

In each type of redevelopment, a wide range of stakeholders is involved. Heritage related redevelopments in George Town form no exception; each project involves various public, private, and independent parties who sometimes struggle to come up with a development that offers mutual satisfaction. On one hand, public parties govern with the available tools as laws and legislation and try to steer and stimulate developments in a certain direction; on the other hand private parties try to meet these requirements without compromising much on the profitability. If the outcome seems to concern or affect other interested parties, e.g., interest groups or NGO's, they'll come into action to make sure their values are weight in, in the process.

All these interests lead to a fascinating display of attitudes, power and eventually actions of all stakeholders involved. In order to create a clear picture of the stakeholder-involvement, a chart will be set up, which include the most important stakeholders who can directly be involved in the redevelopment of heritage related Brownfield sites. Consequently, the Public and Semi-private parties' involvement will be further elaborated on, followed in the next chapter by an elaboration on private parties through the evaluation of three heritage related Brownfield redevelopment projects. Once the main stakeholders are discussed and analyzed, their attitudes, power and interests will be mapped.

7.1 Stakeholder chart

The following table (7.1) describes the involved stakeholders in a redevelopment process. An elaborated version is shown in appendix 7.1. Most important stakeholders, for a redevelopment process, are described in the following paragraphs.

<table>
<thead>
<tr>
<th>Public parties</th>
<th>State</th>
<th>Local</th>
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<tbody>
<tr>
<td>Federal</td>
<td></td>
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<tr>
<td>Federal Department of National Heritage</td>
<td>State Town and Country Planning Department</td>
<td>Town Planning &amp; Development Department</td>
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<td>Penang Port Sdn. Bhd.</td>
<td>Building Department</td>
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<td>Penang Development Corporation</td>
<td>Engineering Department</td>
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<td>PDC AR&amp;T Total Project Management</td>
<td>Urban Services, Public Health and Licensing Department</td>
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<tr>
<th>Semi-public parties</th>
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<tr>
<td>World Heritage Incorporated</td>
<td>Khazanah and ThinkCity</td>
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<th>Semi-private parties</th>
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<tr>
<td>Chinese Clans (Kongsi)</td>
<td>Majlis Aqama Islam Negeri Pulau Pinang</td>
<td>Hindu Endowment Board</td>
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<tr>
<th>Non Governmental Organizations</th>
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Public parties

7.2.1 Federal Government

7.2.1.1 Organization

Normally, the Federal Government isn’t involved in the operational process of an urban development or redevelopment of certain properties; except if it concerns Federal owned buildings. When a development is concerned with heritage, the Federal Government will be involved. The Department of National Heritage, which falls under the Ministry of Culture, Arts and Heritage, is responsible for the maintenance and preservation of the countries heritage. The structure of the Federal Government and this department is shown in appendix 7.2.1.

7.2.1.2 Federal involvement in heritage redevelopment

In George Town and Melaka, the Department of National Heritage is the responsible party for the conformation of UNESCO’s OUV’s and the preservation of these unique aspects; they review the HIA and maintain contact with UNESCO.

The review of the HIA is a direct involvement in heritage related redevelopments. Another, indirect involvement, is the appointment of an officer of the Department of National Heritage in the Technical Review Panel (TRP). In Penang, the President of the State appoints twelve individuals with different professions (lawyers, architects etc.) with expertise on the preservation of Heritage to the TRP; the deputy commissioner of the Department of National Heritage is personally asked to join this panel. This involvement in the committee enables the Federal Government to control the compliance of the Federal Heritage regulations.

7.2.1.3 Incentives

The Federal Government doesn’t provide direct incentives available for Heritage related redevelopments, except for Federal owned buildings. They do, however, make funds available, which are allocated under State and Local Governments and Semi-Governmental organizations.
as the MAINPP. These should serve communal interest for the reason that the money is mainly collected through taxes. Every five years the Government presents the next "Malaysian Plan"; this plan moreover contains the allocation of budgets and distributions of the available funds.

Since, ThinkCity controls the Penang heritage fund of RM 20 million, the Federal Government has no direct say in the expenditure of the fund. The board and an independent committee of ThinkCity are responsible for granting the money. Everyone can submit an application; the grant doesn't necessarily have to benefit public interest.

7.2.2 State Government

7.2.2.1 Organization

Each tier of Government is responsible for her enforcement, which can be referred back to each particular plan. For the State Government this concerns the Structure Plan. They are also concerned with the creation of the Local- and Special Area Plan; in the end the State has to endorse the plans.

The State Town and Country Planning Department (JPBD) is Penang State's foremost department, which consists of four units. Two of these units are directly involved in the screening process of proposed (re-)developments. The complete overview of Penang State Government is stated in appendix 7.2.2.

The Development Control, ICT and Bank Data Unit are always consulted when a new plan is filed. They check the compliance to the legislation and give permissions. When issues arise which needs a decision that is above the authority of the MPFP or Development Unit to make, the matter will be brought up to the State Planning Committee. The Chief Minister of Penang heads this Committee. The Corporate Planning & Appeals Board Unit of JPBD is the secretariat of this committee, and the second Unit that 'can' be involved in heritage related redevelopments.

7.2.2.2 State involvement in heritage redevelopment

The State Government's involvement as described above doesn't include direct initiations regarding development or redevelopment of buildings. The first purpose of this Government level is to work with the owners by providing them with the proper enforcement. Through policy-based initiatives they try to stimulate the redevelopment of heritage properties; this can be achieved by the use of two means: (1) guidelines and (2) enforcement.

The guidelines provide regulations and introduce incentives for dealing with heritage properties; the Municipally is in charge to control compliance and regulate the provision of the incentives. These guidelines that aren't gazetted yet, are obligatory because they are appointed as official regulations. The mentioned enforcement exists of all by-laws, legislation and plans of which the
Structure Plan is State Governments foremost plan. An example of such an initiative by enforcement means is the development of the Special Area Plan, which is not operational yet, but will include an action plan and approach for every street in the historical area.

The State’s primary concern with private developments has always been on preservation of the built heritage; only since the past few years the focus shifted more towards the cultural aspects through considering the social and economic values. The UNESCO listing enhanced this attitude; the operational guidelines of UNESCO, policy based documents, form an important drive for the State Government to consider all aspects involved in preserving the authenticity of George Town’s historical center.

Direct involvement of the State Government, in fact the State Town and Country Planning Department (JPBD), is channeled in two ways, namely through the (1) Units approached by the One Stop Center (OSC) and via the (2) Technical Review Panel (TRP).

When a heritage related plan is submitted at the OSC, it will be send simultaneously to the Development Control, ICT and Bank Data Unit and the TRP, which contains representatives of the State Government, for control on the all aspects related to preservation. Both parties have to give permission for the plans to proceed. Within the Planning Permission and Control sections (see appendix 7.2.2.2) this decision is mainly based on the gazetted Structure Plan, the TRP bases their decision principally on the visual appearance of the planned development and its effect on the surrounding area.

JPBD is furthermore involved in the committee of World Heritage Incorporated and the State Heritage Advisory Panel; these two can be an indirect way of involvement.

7.2.2.3 Incentives

The State Government has no specific fund available to provide financial incentives for heritage related redevelopments. The only incentive made available, which is stated in the heritage guidelines, is the maintenance grant. In most cases this grant is provided by MPPP, but could also be applied for at the State Government, this depends on the type of property concerned (instead of a grant based upon the annual assessment rate its based on the annual quit rent).

For heritage related incentives they refer to grants provided by ThinkCity (Khazana) and MPPP.

7.2.3 Local Government/Municipal Council Of Penang Island (MPPP)

7.2.3.1 Organization

The Municipal Council of Penang Island, or MPPP, serves as the platform for direct public inquiry. Policies and regulations, imposed by Federal and (mainly) State are enforced by MPPP. For an efficient division of duties, MPPP is divided into eight departments, where each
department is responsible for a specific duty, though still entangled with the other departments. These eight departments and their duties are stated in appendix 7.2.3.1.

Heritage Unit

The Heritage Unit is part of the Building Department and responsible for everything that revolves around heritage in Penang. For instance, when an applicant applies for planning permission, this unit checks compliance to their heritage guidelines. Furthermore, a heritage-building database using geographical information system (GIS) is set up to monitor the state of conservation. The records kept in the heritage-building inventory include the condition of the building and records proposed and actual interventions that have taken place.

7.2.3.2 Municipal involvement in heritage redevelopment

Municipal involvement in heritage redevelopment can be divided into three categories, (1) public building (re-)development, (2) via enquiry and (3) via applications for building permits and/or planning permission.

Public building (re-)development

Public (re-)developments should always be in the public’s interest and therefore, for public use, it is impossible for MPPP to initiate Private (re-)developments. Though, according to an officer of the MPPP Building department, Public (re-)developments works as a catalyst for Private development.

Enquiry

As shown, initiation of Private developments is quite impossible for MPPP, though, stimulation is a different matter. Stimulation is typically issued via an enquiry; whenever a highly dilapidated privately owned heritage building is encountered. This enquiry implies the summoning of the property owner to maintain his property. In general, the property owner will be asked to upkeep its property, which introduces a whole different challenge, since property ownership in George Town very often is acquired via legacy and in many cases the owner whom inherited the property doesn’t have the funds to upkeep the property. This challenge reduces enquiry effectiveness, given that MPPP doesn’t have the monetary resources to assist these types of property owners.

Application for building permits and/or planning permission

The third and last involvement possibility for MPPP in heritage redevelopment is in a whole other phase of development than previous stated matters. As mentioned in paragraph 6.3, developments have to go through certain development procedures to obtain building permits and/or planning permission. Several MPPP departments are involved in the check of the building plan for compliance to guidelines and issuance of building permits and planning permission.
7.2.3.3 Incentives

As stated in paragraph 5.4.2 MPPP has eight different incentives available to stimulate heritage redevelopment. However, not all incentives are very effective. In interviews with Governmental officers, it became clear that some of the incentives aren’t issued very often, simply because the incentives aren’t interesting, for instance, the maintenance grant.

Maintenance grant

The maintenance grant is instated to stimulate maintenance on buildings in Penang. The grant can be requested to receive a discount on the annual assessment from up to 90%. Converted, this is about 450 Ringgit (113 Euro, based on the exchange rate on 24 June 2010) per year. Clearly, this amount is not sufficient; yearly maintenance will cost a lot more than 450 Ringgit. For this reason, property owners ‘don’t bother’.

Adaptive re-use

Another incentive is the allowance of adaptive re-use of heritage buildings, which implies a function change in a heritage building. Although this actually could be an effective incentive, because it gives developers more freedom in their redevelopment: as of now it is rather controversial. A contracting situation occurs, since, Penang doesn’t have a gazetted Local Plan, there is and always will be a grey area on what function can be allowed in the heritage area and what function can’t, until the Local Plan is gazetted.

Fast Track

A third incentive revolves around the OSC procedure. Development plans that should go through the OSC development can apply for the Fast Track grant. The Fast Track grant gives developers permission to follow the On the Spot Approval procedure instead of the OSC procedure, which means a five and a half months time shortage. However, since the On the Spot is very quick; therefore involved departments can’t check the plans in full detail, only plans with residential functions are eligible for this incentive.

7.3 Semi-public parties

7.3.1 World Heritage Incorporated (WHI)

7.3.1.1 Organization

World Heritage Incorporated (WHI), formerly known and World Heritage Office (WHO), is a non-statutory body. It is an independent company, set up directly under the Chief Ministers Incorporated (CMI).

The main role of WHI is to manage the whole World Heritage Site (WHS). WHI aims to work together with the community and forms the link between Governmental Organizations and all stakeholders within the WHS (residents, project developers, etc.). World Heritage Incorporated is divided in six sections, which is elaborated in appendix 7.3.1.
7.3.1.2 Involvement World Heritage Incorporated in heritage redevelopment
One of WHI's functions is that of an advisory body regarding the restoration and redevelopment of heritage buildings. Many project developers visit the WHI for a consultation before they submit their building plans at MPPP. WHI gives them information on the site, inform them about the guidelines, incentives and obligatory submissions to other agencies and point out the WHS regulations and look at compliance. If everything complies, the developers obtain a signature from the WHI that confirms the consultation. This autograph ensures a short track procedure for building permit approval at MPPP.

As mentioned before, the WHI is a non-statutory body, what means that they don't have any legal instruments for the stimulation of heritage redevelopments. The WHI does have several proceedings that can be seen as instruments for stimulation, as mentioned in appendix 7.3.2.

7.3.1.3 Incentives
The WHI doesn't have its own fund. They have very limited monetary resources and find it difficult to obtain funds from for example the private sector.

7.4 Semi-private parties

7.4.1 Khoo Kongsi
The Kongsi in general play a complementary role to the Government institutions. The Kongsi's owns substantial holdings of land and buildings within the city of George Town and are thus stakeholders in the built and cultural heritage in the heritage core zone. The properties are held in trust and may not be easily sold.

7.4.1.1 Organizational structure
The Khoo Kongsi, of which the background and organizational structure is shown in appendix 7.4.1.1, exists of thirteen different branches divided under four pillars. The Board of Trustees currently counts 24 members (4 vacancies) and is responsible for every decision that has to be made regarding the Khoo Kongsi. The Board exists of administrative representatives, containing the President, Vice-President, Honorably Secretary, Honorably Treasurers and the Honorably Auditor and nineteen more Trustees. These trustees are part of six sub-committees of four members each, which are set up to manage different estates, with each Trustee performing a different task.

In Mintzberg's (1983) grouping of organizations, five types of organizations are distinct, which is issued in this research to provide an additional layout of the organizational structure. The Khoo Kongsi, which has a strong strategic apex with direct supervision and very little formalization and standardization, can be regarded as a 'simple structure'. The board of trustees, acting as the strategic apex (administrative representatives), middle line (head of sub-committees) and operating core (committee members), is an autonomous body and are basically responsible for
all decisions made. They don’t possess a direct technostructure with analysts and specialists but depend on consultancy formed outside the organization. With a small amount of support staff, work is distributed under the members of the board (committee members) but mainly outsourced to specialists as architects and contractors. Figure 7.1 shows the organizational design of the Khoo Kongsi, the shaded area indicates the part with special power in decision making to its relative size in the organization.

![Organizational design Khoo Kongsi](image)

Figure 7.1: Organizational design Khoo Kongsi

7.4.1.2 Redevelopments
The present assets of the Khoo Kongsi include more than 200 residential properties and shophouses in George Town, over 30,000 units in Thean Teik Estate (Bandar Baru, Air Itam) and plantations and landed properties elsewhere; it is one of the richest Clan associations in the northern Peninsular of Malaysia.

Of the total amount of Khoo Kongsi owned pre-war properties in George Town 80 residential properties reside around the Temple; the other 140 estates are dispersed over town. Canon Square is the courtyard where the Temple stands and 24 shophouses are located. Eight shophouses already have been restored, the remaining sixteen houses are vacant and deteriorated; they are next on the agenda for redevelopment. The honorably secretary of the Khoo Kongsi states “the remaining 140 properties, mainly shophouses, are well occupied with almost no vacancies. These properties are in a reasonable state with no major constructive defaults. No essential redevelopment is needed, some minor restoration takes place where needed”. 

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The Khoo Kongsi makes use of the income generated from the real estate investments and plantations, and spends it on ancestral worship and the maintenance of the residential property and shophouses. Clansmen have priority in renting these properties when available (during World War II, many Kongsi houses were left behind by clansmen and were rented to non-clansmen) but the majority is presently let or sold to non-clansmen.

**Primary process**

When properties are vacant, start to deteriorate or show other defects, the sub-committee in charge of that particular property briefs the Board of Trustees. The Board discusses the case in the Board-meeting and decides which next steps should be taken.

When the Board decides the property should be redeveloped, the sub-committee is given the task start the process. The committee, existing of four members, is lead by a chief supervisor who is responsible for the progress of the project. First, Engineers are appointed to analyze the property and make a calculation of the necessary work. This will be reported back to the Board of Trustees who decides, with the advise of consultants, whether or not to continue.

Once approved, an Architect is selected to work out the plans and start the redevelopment. The Architect is responsible for the compliance to all rules and regulations and more or less manages the project. With the reliance on the advice of consultants, the Khoo Kongsi acts as the principle developer; they arrange tenders to attract a contractor. The scheme of such a process is displayed in appendix 7.4.1.2.

For certain (re-)developments, a joint venture with experienced developers will be set up. The responsibility for the progress of the project then merely lies in the hands of those developers; once completed, the property will be sold and the revenue will be split amongst the two initiators.
Facilitating process
The Board of Trustees is responsible for facilitating the process of the redevelopment. They gather every two weeks in the form of a Board meeting and discuss the progress of the projects and make the necessary decisions. The chief supervisor of each project has the important function to mediate between the Board and the executing parties.

If the Khoo Kongsi participates in a joint venture, decisions should be made in coherence with the board of the concerned developer. Board meetings between this two parties form the platform for discussion and decisions.

Because Kongsi are autonomous and quite closed organizations, extensive information collection is complicated. The foregoing elaboration on the process is primarily based on interviews conducted with clansmen of the Kongsi.
7.4.2 Majlis Agama Islam Negeri Pulau Pinang (MAINPP)

One of the undertakings for economic and social well-being of Muslims is Waqf. A Waqf is a religious endowment in Islamic Law, usually comprising of land or buildings, to serve the Muslim community. Information on MAINPP's background and land statistics can be found in appendix 7.4.2.1 and 7.4.2.2.

7.4.2.1 Organizational structure

MAINPP consist out of six Holdings, which are basically the equivalent of departments, where each is responsible for their own expertise. Further down the hierarchical ladder, every holding is divided into Divisions. Figure 7.9 in appendix 7.4.2.2 personates the organizational structure on Holdings and Division level within MAINPP and shows the position of the interviewee within the organization. Since this research, to some extent, revolves around Waqf redevelopment and therefore the Waqf Holding is most worthy of note, other Holdings will not be issued in this paragraph.

The Waqf Holding consists out of three Divisions: Land matters, Property Management and Cash Waqf. Each of these Divisions is responsible for different matters:

1) Land Matters is concerned with land and acts as a landowner;
2) Property Management is concerned with building management, building maintenance, rent collecting and general property management;
3) Cash Waqf is concerned with new ideas on how to generate revenue/income. One example is income in the form of cash donations, instead of land donations.

Furthermore, the Committee consists of 10 officers from different (external) departments and the Board consists of 15 State Government officers.

When issuing Mintzberg's (1983) grouping of organizations, MAINPP shows the most resemblance to 'the professional bureaucracy', with a developed but small middle line of managers, a separation in departments and divisions and the less hierarchical and centralized structure with expertise as the main power. The MAINPP Board, acting as the strategic apex, is not that powerful and is mainly concerned with handling disturbances in the structure. The head of the each department has distinctive powers and is in charge supporting the vertical information flow, dividing the work in divisions and propagate the standards to the operating core. The technostructure is very small and without importance. The operating core becomes more important in the organization and is usually supported by a very elaborate support staff. Figure 7.3 shows the organizational design of MAINPP, the shaded area indicates the part with special power in decision making to its relative size in the organization.
7.4.2.2 Redevelopments
MAINPP has several channels for revenue generation, one of which is rent. These channels are accessed to, amongst others, (re-)develop Waqf properties. The chart in appendix 7.4.2.3 explains the revenue and expenditure cycle of Waqf property development.

The (re-)development of Waqf properties is a process that is planned years ahead. In the so-called, 6 year Development Plan, MAINPP describes the properties that are up for (re-)development, how these properties will be managed and how much funding is needed for development. In the coming month (July 2010), this plan receives a definite status, but still remains in non-disclosure status.

Primary process
The (re-)development of Waqf properties concerns, not only, several Holdings and Divisions within MAINPP but also, external departments from Governmental Agencies and Private parties, as shown in appendix 7.4.2.4.

Initiation of Waqf (re-)development is in hands of the Land Matters Division. Since, this department acts as a land owner they are in control of what happens with the land and decide which plots are up for redevelopment. When decided which land can be developed, a proposition is send to the Development and Investment Holding. This results in a brainstorm, where the Development and Investment Holding, together with the Property Management
Committee, propose a redevelopment plan. This redevelopment plan consists of ideas about the type of development, possible function change, etc.

After a definite proposal has been set up, the proposal is send to the Board for approval. Subsequent to this approval, the design phase starts.

An architect and external consultant are contracted to do the actual design of this redevelopment. This design complies with the policies and heritage guidelines (if applicable). The completed design results in a plan to submit at the One Stop Center for planning permission. Simultaneously with the application at the One Stop Center, the tendering starts.

Decision making process
The following figure (7.4) represents the decision-making scheme. A textual explanation is given in appendix 7.4.2.5.

Facilitating process
As stated, the Land Matters Division acts as a landowner in the redevelopment process. This gives the Division a substantial amount of power over the redevelopment. Up until proposal, they facilitate the redevelopment.
After the Development and Investment Holding approve the proposal, they are responsible for the project's facilitating process. The next step towards the design phase differs. In this phase, the two possible methods of design (joint venture or external contracting) have an eminent consequence for the division of responsibility. Since joint ventures are rare, these will not be discussed.

When an architect and consultant are contracted for the design, the Development and Investment Holding stay in charge. They will stay in charge during the entire development process.

7.5 Private parties

Since, the property market in George Town is market-driven, Private parties become active and form important stakeholders in the redevelopment of heritage buildings. Next to this, Private ownership has been identified as most reoccurring in George Town’s Brownfields, whereby Private initiatives are most influential in Brownfield redevelopment. Since, Private parties are not generic bodies and redevelopment processes are nearly never similar from one Private redevelopment to another, it is impossible to generate a clear overview by exploring a single redevelopment. To this extent, the Private redevelopment sub case will be studied using three redevelopments.

Given that, Private Developers are quite reticent and experts in the field of research advised not to incorporate Private Developers (because of bias information). The data collection will be in the form of interviews with the architects of each of the three developments.

Similar to the traditional method of development in The Netherlands, the architect in Malaysia is still the Project Manager. The architect is the party whom has control over the project, in the case of client's approval, and has an overview over the complete (re-)development. Therefore, the architect is, next to the property owner, a highly influential stakeholder in the redevelopment and most interesting for this research. In the following chapter, the three Private redevelopment projects are elaborated.
8 Heritage related Private redevelopment projects

In order to analyze the early phase of the general process of heritage related Brownfields, principal stakeholders of three recently executed redevelopment projects are approached and questioned. Amongst others architects, contractors and owners/developers are contacted to provide essential information on financial matters, underwent procedures, implementation of energy-efficient systems and most important of all: experienced challenges. These challenges that occurred during the redevelopment are discussed in a following chapter.

8.1 Background

All recently executed redevelopment projects, all heritage related and formerly considered as a Brownfield, reside in the core zone of George Town’s World Heritage Site. The early phase of the following projects are subject to research:

- Straits Collection (Stewart lane)
- White Waterways (Beach street/Church street)
- Logan Building (Beach street/Union street/Union street)

As the figures above (8.1-8.3) show, two of the three projects were still under construction during the course of this research. These two projects, White Waterways and the Logan Building, are located in the Bank-district in the Northeast corner of George Town while the Straits Collection is situated on the Westside of the WHS core zone.

All buildings are constructed during the 19th century and have significant heritage value. Through the years the properties had multiple owners. White Waterways is owned by Robert Kuch (Malaysia’s wealthiest person) since 1994, who is the third owner of the estate, the Logan Building has been in possession of the OCBC Bank for decades and the Straits Collection is recently bought (2008) and restored by the two owners of a resort named Bon Ton.
8.2 Procedures
As discussed in paragraph 6.3, the magnitude and type of work of an individual project determines the need for either a repair permit, building permit, or a building permit in combination with planning permission; the last being the most extensive and time consuming procedure. Out of the three discussed projects, White Waterways, Logan Building and Bon Ton, only one, White Waterways, had to apply for planning permission and therefore the One Stop Center procedure was applicable. The other two projects were eligible for the On the Spot approval, which only takes 2 weeks.

8.3 Financial
In order to purchase and redevelop the property on Stewart Lane, Bon Ton made use of credit provided by a bank. The other two redevelopments were completely privately financed, since a bank owns the Logan Building and a sub-company of Robert Kuok, named Kembang Development, that possesses enough financial resources, redevelops White Waterways.

None of the selected projects received further financial support. Not all owners/architects seemed to be familiar with the incentives stated in the heritage guidelines or didn’t find it necessary to request them. They all stated not to have received any other type of financial incentive from the Government. Only one party was acquainted with the “Grants Programme” of ThinkCity; however, they didn’t submit a proposal.

8.4 Sustainability
For none of these projects sustainability, as in energy-efficient building, is implemented. Since these buildings are heritage buildings, the first and foremost reason for the hold-off of energy-efficient initiatives is related to the conflict with the heritage guidelines. As an example, solar panels generally are mounted on the roof; however, by applying these solar panels the streetscape will change. This is in direct contrast with the heritage guidelines and the sustainment of the OUV’s.

Furthermore, as explained in paragraph 6.5, the technology on sustainability is not that advanced in Malaysia. Penang has yet to award the first Green Building Index certificate.
9.1 Stakeholder analysis

One of the most important aspects in stimulation of sustainable Brownfield redevelopment is the knowledge of the stakeholders involved in the redevelopment projects. Next to identification, it is important to understand the relations between the different stakeholders and the individual stakeholder's power and interest. The comprehension of these facets is essential in stimulation efforts, since the process stimulator can use this information to approach the most influential stakeholder in order to kick-start the redevelopment process. The approach to this stakeholder analysis can be found in appendix 8.1.

9.1.1 Priority stakeholders

Not every stakeholder adds value or is of high importance in a heritage Brownfield redevelopment process. To ensure that every interview has meaning and importance for the stakeholder analysis, a list has been created of priority-stakeholders in the Brownfield redevelopment process, using the researchers' knowledge with assistance of experts. The list shown in appendix 8.2 is the result of this collaboration. Consultants aren't stated as priority stakeholders, since this group is very diverse and thus can't be acknowledged as consultants in general. Though, architects, next to being the project manager, often function as consultants in heritage related Private redevelopment.

9.1.2 Questionnaire

The questionnaire, which together with the characteristics can be found in appendix 8.3 and 8.4, served as a platform for the stakeholder analysis and as a foundation for the Power/Interest grid. 16 experts in the field of built heritage redevelopment participated, which made it able to create a clear overview on the priority stakeholders involved. Amongst the interviewees were:

- Architects (5)
- Governmental officers (5)
- Non Governmental Organization officers (2)
- Consultants (3)
- Contractors (1)

The results of these interviews are elaborated in percentage charts, which can be found in appendix 8.5. These results serve as a foundation for the Power/Interest grid.
9.1.3 Power/interest grid

**Stakeholders**

1. Federal Government (Department of National Heritage)
2. State Government (LPBDO)
3. Local Government (MPPPA)
4. World Heritage Incorporated (WHI)
5. Tourist
6. NGO's (CHAT, FHT, etc.)
7. Chinese Clans (Kongs)
8. Muslim Endowment Board (MANAPA)
9. Property owner/Developer
10. Architect

**Attitude of Stakeholder**

- Negative
- Neutral
- Positive

**Importance of Stakeholder**

- Unknown
- Little / No Importance
- Some Importance
- Significant Importance

Figure 9.1: Power/interest grid
The Power/Interest grid is used to identify the most influential stakeholder in a sustainable Brownfield redevelopment process. The top three is as follows:

1. Local Government (MPPP);
2. Property owner/developer;
3. Architect.

Remarkable is MPPP’s “neutral” attitude towards the redevelopment of built heritage, as they are identified as most important. An explanation for this occurrence can be redirected to the fact that the analysis is based on the perception of the interviewees on the priority stakeholders. In other words, the interviewees perceive MPPP’s attitude as “neutral”. This is most likely due to the long procedure time, where projects are delayed. Furthermore, the Power/Interest grid shows a significant importance of World Heritage Incorporated. This party has a great amount of interest in built heritage redevelopment, though it doesn’t have the right tools to secure their interest.

Another issue is ThinkCity’s lack of (perceived) power in built heritage redevelopment. ThinkCity controls the Federal fund for built heritage redevelopment and thus should have great power. The shortage on publicity can be one of the reasons why the interviewees perceive ThinkCity’s low power in built heritage redevelopment.

9.2 Early phase process analysis

9.2.1 Primary process

The process of an early phase Brownfield redevelopment in George Town is rather dependable on the type of land/property ownership. The three identified ownership types each have their own characteristics and thus differ somewhat between them. Therefore, in the primary, decision-making and facilitating analysis, a distinction will be made between the types of ownership.

Not unlike every other project, the initiation of a Brownfield redevelopment starts with an idea, which is universal for each type of ownership. This idea kick-starts the initiation-phase, which is the first of four phases that where identified:

<table>
<thead>
<tr>
<th>Development phases</th>
<th>Initiation</th>
<th>Neatibility</th>
<th>Design</th>
<th>Application and Toccar</th>
</tr>
</thead>
</table>

Figure 9.2: Development phases in early phase Brownfield redevelopment

Subsequent to the idea, in the case of Private development, ownership has to be obtained. In some cases the property ownership is obtained by purchasing the asset, in other cases the property already is owned. In George Town, 64 percent of the properties
are tenant-owned, which implicates that the contract with the tenants has to be terminated. Many of the residents in George Town have lived in the same property for many years, in a lot of cases since or even before the Rent Control Act, 1966. Terminating these contracts as such is not done overnight. Tenants will either be compensated by reduction on rent collection, or by a reasonable amount of time notice.

To check the feasibility, an architect is contracted to create reports on dilapidation, heritage, structural fitness, etc. In the case of Kongsi and Waqf and some Private developments, a consultant is contracted to assist the architect in his duties and consult the owner on technical details.

The heritage guidelines should be incorporated into the design, which forms as a basis for the application at the OSC and therefore compliances to the heritage guidelines should speed up the process.

After the design is created by the architect, in some cases in cooperation with a consultant, and confirmed by the owner, the building permit or planning permission procedure will commence. Often, in the case of heritage buildings, there is no need for planning permission, since this procedure is mainly for considerable redevelopment projects and options for redevelopment of heritage buildings are limited, due to the heritage guidelines. Though. In the case of White Waterways, where some of the structure was changed, a One Stop Center procedure was required.

The On the Spot procedure seems to cause little delay, in contrast to the One Stop Center, which is pointed out as somewhat difficult to comply too, according to several stakeholders. Given that the OSC procedure can take up to six months, officially, the tendering is initiated almost simultaneously to reduce time loss. After six months, both procedures should be completed and construction can commence.

**9.2.2 Decision-making process**

Similar to the distinction between private and semi-private in the primary process, the decision making process differs between the type of ownerships and therefore is camouflaged.

**9.2.2.1 Private**

Earlier analysis showed that 40% of the private properties in Penang are owned by only seventeen owners, thus Private developments are mostly initiated by influential Private parties and thus self-financed. Therefore, decision-making is the responsibility of the owner itself. The contracted architects assist the owner/client with technical difficulties and have a certain amount of decision-making power for highly technical problems, though every mayor money-concerning decision is directed to the owner.
9.2.2.2 Semi-private

As stated in paragraph 7.4.1 and 7.4.2, the decision-making process for semi-privately owned redevelopment projects are mostly within the organization itself. On higher level, board or committee, the entities' representatives make decisions on go/no-go moments. Furthermore, they are usually in control of contracting the architect, consultant and ultimately the contractor.

9.2.3 Facilitating process

The facilitating process is not a real issue in this research, since it does not implicate much difficulties or challenges that can be improved by Local Government. In addition, the facilitating process for Waqf and Kongsi is described in paragraph 7.4.1.2 and 7.4.2.2. As such, this paragraph will only focus briefly on Private developments.

In Malaysia, unlike in The Netherlands, the architect is much more like the traditional architect, where he is not solely responsible for the design but also acts as a project manager. The architect is in charge of the facilitating process and therefore, amongst other duties, sets up meetings with all involved stakeholders. Furthermore, they serve as the link between the client's (property owner's) wishes and the execution of these wishes during construction.

9.3 PEST analysis

9.3.1 PEST tool

As discussed in paragraph 4.1.4.1, social, economical and environmental aspects are recognized as a range of benefits, which can be achieved through the redevelopment of Brownfields. The social and economical aspects are being analyzed in this chapter, together with the political and technical features of sustainable Brownfield redevelopment in George Town, in the form of a PEST analysis. This analysis is an essential element in the process description of redeveloping heritage related Brownfields and provides the outline of the environment of the specific area. In order to review important aspects, related to this process, a PEST analysis is used. The tool itself is elaborated in appendix 9.1.

9.3.2 Application on sustainable Brownfield redevelopment in George Town, Penang

The PEST analysis is particularly designed for market assessments, organizational change and strategic planning. It is preeminentaly a marketing tool. It can also be used from an individual perspective to look at what will be delivered and on which manner. This last feature will be used for the research and makes it broader applicable and usable for not only marketing reasons. Different types of redevelopments and different types of ownerships are investigated. This analysis of ownerships (Waqf, Kongsi and Private) and Private redevelopments contributes to the larger picture: a PEST analysis of sustainable Brownfield redevelopment of the Heritage Core zone of George Town.
A framework is used as the basis for exploring the factors and recording the information filtered from the interviews and available information. This framework, shown in table 9.1, is based on the basic assumptions/factors of the four PEST elements, modified to comply with the sustainable Brownfield redevelopment process. Appendix 9.2 gives a textual explanation on the factors of each of the four elements of PEST.

![PEST Analysis Framework](image)

Table 9.1: PEST analysis framework: factors for sustainable Brownfield redevelopment in George Town, Penang

Note: this framework is the keyword-summary of the factors described in appendix 9.2. It is highly recommended to explore these factors, since it describes the actual relation between PEST and Brownfield redevelopment in George Town. Essential findings are elaborated in the conclusion.

### 8.3.3 PEST and SWOT

PEST and SWOT analysis are two separate tools, though with an important overlap for which one can complement the other. The PEST analysis can be seen as complementary tool that provides essential information for further analysis and will be used as input for the general SWOT analysis. The SWOT analysis will be discussed in chapter 11.
10 Challenges

During the course of this research, as was intended, several challenges have been identified. Later on in this report, these challenges will form the basis for the recommendation, in order to recommend the Local Government of Penang on how to stimulate Private developments in the heritage core zone of George Town. All challenges originate from interviews with experts, stakeholders in the Brownfield redevelopment process and the researchers' observations. As shown in the following figure, challenges faced in sustainable Brownfield redevelopment can be divided into three groups: preservation (used instead of developmental), regulatory and financial.

![Diagram of challenges]

Figure 10.1: Challenges in Sustainable Brownfield redevelopment

The following chapters describe the challenges faced for each of the three groups.

10.1 Preservation

10.1.1 Awareness

At the moment, there is a discussion going on about the method of redevelopment: is it better to redevelop heritage buildings back into the original state or to adjust it to represent the current era? To answer this question, there has to be an understanding about what heritage is and frankly, that mentality is lacking, according to an officer within MPPP. There is not enough understanding of what the heritage guidelines really represent, as to which parts of the guidelines are very important for preservation of heritage and which are of subordinate value. Long lasting discussion with Private parties on subjects that reflect matters of subordinate value can, when this knowledge is present, be avoided.

Autonomous bodies, such as Khoo Kongsi, are not proactive in the redevelopment of heritage. The value of heritage preservation seems to be subordinated to redevelopment into commercial functions. Furthermore, Government has next to none influence in their decision making.
10.2 Regulatory

10.2.1 One Stop Center

The challenge that nearly all stakeholders involved seem to agree on is the long procedure time for the One Stop Center. For the entire procedure, theoretically, six months is calculated, though in practice the procedure can take much longer than this. Although, the six months include a few weeks for application adjustment when the plan doesn’t comply with the guidelines, these weeks don’t seem to be of appropriate length. Hypothetically, it would be possible to go through the OSC procedure in only 2 to 3 months, but only if the plan is spotless and complies with every available guideline within Local, State and Federal Government. In a conversation with an expert, this turns out to be next to impossible and never happens.

10.2.2 Conflict in guidelines

One of the main reasons for the OSC procedure not to go smoothly the first time around is because of the guidelines. The major bottleneck in application at the OSC for a heritage building is to comply with both heritage guidelines and fire department (Bomba) guidelines. The challenge that occurs here is that the fire department only has one set of guidelines. To them it doesn’t matter if a building is heritage or non-heritage; a building is a building and has to be safe for the public to use. However, if a developer wishes to comply with both guidelines, it will run into such a challenge. Historically, the heritage buildings, like shophouses, are built with the knowledge that was present at that time. To adapt the building to the present era with currently used safety guidelines, regarding fire safety, would mean demolishing a large part of the building, which is in direct contrast to the heritage guidelines. The heritage guidelines state that the building should be restored into its original state, while using the original materials.

10.2.3 Heritage guidelines

According to stakeholders involved, the heritage guidelines are quite clear in the sense that, if a person has knowledge on heritage, it is rather easy to extract what is meant by the guidelines. However if knowledge of heritage is lacking, to comply is of a different stature. One of the currently occurring challenges revolves around the use of original materials. The heritage guidelines prescribe the reuse of original materials, though many of these materials aren’t locally available; for instance cast iron. Materials like these have to be imported which, because of the tax on import, can become very costly. For this reason, contractors are searching for usable alternatives but with every application where an alternative material use is put forward, a whole new discussion, on which materials are tolerable and which aren’t, arises. This is very time consuming for both parties, Private and Public.

10.2.4 Compliance

Compliance, or rather non-compliance, is a hurdle that often leads to discussions, stagnations and higher costs. For instance, non-compliance to the heritage guidelines will result in a visit
from the Council Enforcement Team to the construction site, which will shut down construction until compliance to guidelines has occurred. Next to this, several projects have been identified that were granted planning permission whilst, afterwards turned out, they seemed not to comply with several regulations and guidelines. Another case filed for a repair permit, which is meant for small repairs, but turned out to completely redevelop the heritage building. An important factor in this situation is the absence of a gazetted Local Plan, Special Area Plan and heritage guidelines. When these regulations are gazetted, a backbone is created which enforces compliance. Furthermore, original materials that are prescribed for heritage redevelopments not always are used during construction, for instance: cement instead of lime plaster.

10.3 Financial

10.3.1 Financial incapability of the property owners
Due to the Rent Control Act, the large amount of tenant-owned properties and the low rent, a lot of property owners are financially incapable of up keeping their own property, let alone redevelopment of their property.

10.3.2 MPPP
At Local level, eight incentives should help stimulation of redevelopment, though in practice this is hardly the case. Three incentives actually have the potential, but at the moment are too uninteresting: fast track procedure, maintenance grant and adaptive re-use allowance. As explained in paragraph 7.2.3.3, these incentives are fairly ineffective because they are, respectively, either with too much boundaries, not equal to the extra costs or controversial. Therefore, most Private developers don’t issue these incentives.

10.3.3 ThinkCity
The Federal fund, meant for heritage redevelopment/maintenance, is under the reign of a company called ThinkCity, which is part of Khazanah, a Public Limited Company. This makes the fund part of a semi-private organization and therefore not only able to request for Public but also Private parties.

ThinkCity has set up a so-called “George Town Grants Programme” that is open for every application, Private or Public. The challenge that arises here is that Federal Government doesn’t have control over the fund and even this level of Government has to apply for the grant like every other party. Next to this inefficient process, the awareness for the ThinkCity grant is not eminent. Out of the three primary stakeholders in the Private redevelopment process that were interviewed for this research, only one knew about the ThinkCity grant but thought the program procedure took too long and therefore didn’t apply.
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11 Strengths, Weaknesses, Opportunities and Threats

A SWOT analysis is a planning tool used to understand the Strengths, Weaknesses, Opportunities, and Threats involved in a project or in a business. It involves stating the objective of the business or project and identifying the internal and external factors that are either supportive or unfavorable to achieving that objective; it can be useful for understanding an organization or situation and decision-making for all sorts of situations. Since, this SWOT is used to analyze a process instead of a project, the factors are identified as direct and indirect.

Table 11.1: SWOT analysis framework for sustainable Brownfield redevelopment in George Town, Penang
In this research it doesn’t concern a project or business, but a process. The objective of this SWOT is to identify the direct and indirect positive/negative factors of the early process of sustainable Brownfield redevelopment in George Town’s historical center. This information, derived from the previous analysis that in fact represents a summary of the findings, can contribute to a better understanding of the current situation of the stated process and formulate opportunities regarding stimulating heritage related Brownfield redevelopment in Penang. The framework of table 11.1 contains the SWOT analysis.
12 Validation and Valuation

12.1 Validation

Through the course of this research, six elements are identified to be vital for the possibility to implement the findings into practice and therefore required validation. (1) The Governmental structure of Malaysia is different from The Netherlands. Scientific papers, Governmental documents, and meetings with Governmental officers were issued to form an overview of the structure. Via meetings with Governmental officers, acquired information was validated, and new data was collected. (2) Data on policies, which are applicable to Town and Country Planning and heritage redevelopment, is collected via the same route as the Governmental structure. Meetings with Governmental officers validated the findings. (3) The extensive list of stakeholders is derived from literature and meetings with experts in the field of heritage redevelopment. These experts validated the complete list during the meetings. (4) The process structure of Private redevelopments is investigated via depth interviews with an influential stakeholder of each redevelopment. The interviewees checked the elaborated version of the interview and validated the findings. (5) The stakeholder analysis required intensive knowledge on the current redevelopment process and the parties involved. 16 experts were utilized via a questionnaire to create a valid overview of stakeholders' involvement. (6) As a result of the analysis, several challenges in the heritage related redevelopment process have been identified. An MPPP officer, who is in direct contact with several stakeholders in the process, verified these challenges together with the conclusions.

12.2 Valuation

One of the most important questions that require answering is, does this research assist in stimulating Private redevelopments in the heritage core zone of George Town? To answer this question, first there is a need to understand the limitations.

Limitations: did the research reveal every challenge that Private parties face?
The answer to this question is most likely no. The amount of depth interviews that were conducted for this research revealed a large part of the challenges that are faced by Private parties, which assisted in gaining a broad overview of the redevelopment process. Though, some information isn't openly shared, like corruption/non-compliance.

Value: what is the value of this research?
Through this research, several value additions have occurred. First and foremost, MPPP is handed a study wherein important challenges in the heritage redevelopment process have been identified and solution for these challenges are proposed. This research serves as an objective
backbone where process changes, which would increase Private initiatives in heritage redevelopments, can be argued and projected on.

Furthermore, this research served as a pilot project for collaboration between Universiti Sains Malaysia and Eindhoven University of Technology. Due to the success of this first pilot, the willingness for a multilateral agreement (MoU) between both universities has increased significantly.

To conclude, collaboration between USM and MPPP is an underused effort with vast potential. MPPP has multiple research questions that need answering but not enough monetary motivation. Utilizing USM students works in favor of both parties, since students have the chance to take on a real-life challenge and MPPP doesn’t need as much monetary motivation as when a company is utilized. This research helped stimulate this collaboration.

Implementation
By converting the challenges into concrete recommendations and suggestions, a clear overview of steps to be taken, for stimulation of Private initiatives in the heritage core zone of George Town, is created. These recommendations can be found in chapter 14.

12.3 Evaluation
Throughout the course of this research the main objective has shifted several times, due to unknowns. Cultural aspects, such as hesitant Private Developers and close-tongued semi-Private/Public parties, were unknown before the research commenced in Malaysia. Investigation on these aspects and the plausibility of the research objective, on forehand, would have improved the depth of the research. The change in objectives was time-consuming, which could have been better used on an additional case to create more body for the recommendations.

In addition, resulting from the time-consuming objective changes, a longer process-time would have been accommodating. More time could be spent on the actual implementation possibilities of the recommendations.
13 Résumé

In order to provide a structured and consistent product, this résumé will discuss the five sub questions. The 'Theoretical Framework' earlier in this report, elaborates on the first three sub questions and preludes the more pragmatic approach of the research. The obtained information from various meetings and conducted interviews contributed to a broader elaboration on the current situation regarding sustainable Brownfield redevelopment in George Town and formed input for the performed analysis.

1. What are the characteristics of a Brownfield?
The used Brownfield definition is an adjusted version of the generally accepted description of a Brownfield by Alker et al., which is made applicable to the current situation in George Town historical center. A visual analysis contributed to an overview of determined Brownfields and their characteristics in the core area, which counts 22 buildings, 13 plots and 7 combinations of both. 15 of the total of 42 Brownfields were in a poor condition, 12 cases could be stated as fair.

The results from the analysis, together with information from recent studies, emphasize the assumed necessity for Brownfield redevelopment in George Town.

2. What is Sustainable development?
The determined Brownfield buildings all contain a significant heritage value, since they are listed on the UNESCO World Heritage List, and therefore can be considered as sustainable when redeveloped. The Malaysian Government recently introduced the Green Building Index (GBI) that stimulates sustainable development through the provision of GBI accreditation. This initiative isn't directly applicable (yet) to heritage related Brownfield redevelopments in George Town, since for example energy efficiency matters conflict with the heritage guidelines.

Though, shophouses, which represent the majority of the identified Brownfield buildings, are pre-eminent examples of 'green buildings'. These types of buildings are moreover built up from materials that are locally available (lime, clay stone and timber) and suited to local geology and weather conditions.
3. How is Malaysia Governed?
A three-tiered Government governs Malaysia. The Federal Department of National Heritage is responsible for the preservation of all built and cultural heritage and acts as the main Federal party regarding built heritage redevelopment. At state and municipal level, respectively the State Department of Town and Country Planning and the Heritage Unit are concerned with this type of redevelopment.

All tiers together use a wide range of laws and regulations to control urban development. The enforcement regarding heritage preservation of the UNESCO site is still considered as premature, vital plans aren’t gazetted yet and the heritage guidelines (regulations) aren’t always completely adaptable and often conflict with other departments’ regulations. The building plan and planning permission procedures are well structured recently in the One Stop Center; these procedures though still consume a lot of time.

4. How is the current sustainable Brownfield redevelopment process structured in George Town and why do stagnations occur?
All stakeholders involved in the sustainable Brownfield redevelopment process of George Town are analyzed. The analysis showed that the three most influential parties are respectively the (1) Local Government, the (2) Property owner/developer and the (3) Architect. Most interesting is the perceived attitude of the most influential party, the Local Government (MPPP), which is rated on neutral. This perception of the interviewees most likely has something to do with the relatively long procedure times and less efficient incentives.

The process of early phase sustainable Brownfield redevelopment in George Town is analyzed on primary, decision-making and facilitating aspects. The foremost phases where challenges were identified are the ‘design’ and ‘application’ phase in which the developer usually integrates the heritage guidelines and submit the plans at the One Stop Center. In Private development the owner predominately makes the decisions during the early phase; the architect is the main party for assistance regarding technical aspects. In semi-private developments it are also the owners (like Waqf and Kongs) who are the key decision makers.

The PEST analysis discussed the environmental aspects that influence the sustainable Brownfield redevelopments in George Town. Main political issues are the change of power in State and Local Authorities and the affect on mainly the subsidy division. Furthermore, compliance to the existing enforcement is an existing challenge next to deficient amount of awareness under owners/developers of heritage buildings. The most important economical
aspect is the financial incapability of the property owners for redevelopment. The monetary resources are often insufficient, as a result from the Rent Control Act (tenant occupied) or the fact that they inherited the building, which becomes in fact their only asset (owner occupied).

A considerable socio-cultural aspect is the existence of Endowment Boards and Chinese clans who own significant amount of properties in the heritage core zone; they are autonomous bodies that manage the properties and sustain the specific communities. Probably one of the largest socio-cultural challenges that arise with the redevelopment of heritage buildings is the threat to the cultural heritage. Both the tangible- (built) as the intangible (cultural) heritage are important values for the UNESCO World Heritage Site inscription; preservation of one type of heritage conflicts with the preservation of the other. Technical aspects showed the difficulties between the implementations of energy-efficient systems and the preservation of the original heritage value. To date, no initiatives were undertaken with the foremost reason that these initiatives are not compatible with the heritage guidelines.

The challenges, as discussed in a preceding chapter, are divided in the three categories; challenges regarding (1) preservation, (2) regulatory and (3) financial. Most important confronts are already cited in previously stated sub questions. These are the major causes for stagnations in a heritage related Brownfield redevelopment.

The SWOT analysis emphasizes the strengths, weaknesses, opportunities and threats regarding the early process of sustainable Brownfield redevelopment in George Town, filtered from the performed analysis. The largest strength, above all, is the preservation of the heritage value of the buildings, against the imperative weakness of the enforcement and the presence of less efficient incentives.

Large opportunities are, amongst others, the creation of more awareness of heritage value under the inhabitants and the strict enforcement of the Local Plan and Special Area Plan. The predominant counterpart is the threat of the loss of cultural heritage in the process when redeveloping the property in other functions.
5. Which instruments do Governmental Organizations hold to stimulate a sustainable Brownfield redevelopment in George Town?

The enforcement, concerned with the redevelopment in George Town’s heritage center is considered as the principal instrument for Governmental Organizations for stimulation; it comprises various laws, bylaws, legislation and plans. The discussed heritage guidelines, which are the principal regulations in this area, contain various incentives that the Local Government uses to stimulate redevelopment in the heritage center. Eight incentives should help the stimulation of redevelopment, though in practice this is hardly the case and most private developers don’t issue these incentives.

The findings show a good basis of the early phase of the sustainable Brownfield redevelopment process. Despite this sound base, improvements can be made to work more efficient; this can be achieved through dealing with the discussed challenges.

Using these insights, answers to the sub questions and the performed analyses, a proposal can be made to deal with these challenges. The conclusions and recommendations that follow will reflect on and answer the main question. The conclusions focus on how the Governmental Organizations in Penang can stimulate sustainable redevelopment of George Town’s heritage related Brownfield sites. The recommendations elaborate on the stimuli provided in the conclusions and offer measures and actions.
14 Conclusion and Recommendations

14.1 Conclusion

In the résumé, an overview of the answers to the five sub-questions is given to serve as a base for answering the main question: how can Governmental Organizations in Penang stimulate the sustainable redevelopment of George Town’s heritage related Brownfield sites?

In order to stimulate sustainable Brownfield redevelopment in George Town, certain steps are required to be taken. Concerning the preservation of built heritage, Governmental Organizations should create more awareness on its value and acknowledge successful redevelopments. In relation to the regulatory system, there is a necessity to shorten the OSC procedure time, improve coherence between MPPP departments, revise the heritage guidelines and provide stricter enforcement. The Penang Government should first and foremost offer effective monetary incentives as a financial stimulant to redevelop heritage related Brownfield sites.

Resulting from the sustainable Brownfield redevelopment process analyses, a series of recommendations for process improvement are developed. The recommendations are mainly directed towards MPPP and offer measures and actions in order to stimulate Private redevelopment in the heritage core zone.

14.2 Recommendations for process improvement

14.2.1 Preservation

Acknowledgement

Multiple successful cases of heritage redevelopment are known, though acknowledgement seems to be lacking. By recognizing successful preservation redevelopment via, for instance, granting certificates to the building and involved parties, heritage redevelopment becomes something promotable for heritage certificate companies and therefore interesting for Private parties. Furthermore, certificates for architects whom are perceived to have sufficient heritage knowledge are a method for stimulation. Architects that have successfully completed a heritage redevelopment, whilst complying with every law/regulation and guideline, receive such a certificate and are approved to call themselves a heritage Architect.

Since World Heritage Incorporated is the organization that serves as a link between Public and Private, regarding heritage in George Town, they are the ideal designee for the issuance and promotion of these certificates.
Awareness

The awareness on heritage is of an insufficient level amongst inhabitants of George Town. The inhabitants don't seem to realize the potential and value of built heritage. Furthermore, too many applications for planning permission interfere with the sustenance of the three OUV's, most likely because knowledge on the three OUV's is lacking. To overcome these hurdles, education on heritage is essential. There is definite need for awareness of heritage and its value. On a different note, in order to preserve the cultural heritage, Governmental Organizations should make an effort in stimulating and assisting the existing owners/residents to maintain and preserve their property to keep both the tangible and intangible heritage intact.

Art-Ed is a non-profit arts education organization, based in Penang. One of their focuses is on heritage education. By stimulating this form of organizations and education, awareness can rapidly be increased.

14.2.2 Regulatory

OSC procedure shortening

In order for redevelopment to become more appealing, the OSC procedure is in need of shortening and simplification. Simplified application checklists for applications are desired, since a lot of Private Developers come to World Heritage Incorporated for assistance with the application checklist. Furthermore, the presently issued OSC procedure, which in theory should take up to six months, can be shortened by usage of GIS systems. GIS is more than capable of checking for compliance to laws/regulations and guidelines on applications for building permits and/or planning permission. Through the input of all available laws/regulations and guidelines, on which applications for planning permission are checked for compliance, applications can be checked automatically. Automating this procedure drastically reduces the procedure time, decreases the workload for involved MPPP officers and eliminates the need for distribution of multiple copies of building plans within MPPP (since applications can be handed in on diskette/CD).

The first step towards implementation of a GIS system for compliance checks on planning application is by far the most time-consuming. Initially, MPPP requires expanding their use of GIS from database to a full-on tool where up to date information about whole Pulau Penang (with George Town as a priority) in terms of buildings and land is present. JPBD at State level is already working with such a system, thus collaboration between both JPBD and MPPP's OSC/Building department is essential.

Since GIS is developed to be applicable for implementation of laws/regulations and guidelines, this should be the second step. Every law/regulation and guideline applicable to Town and Country Planning should be implemented in the GIS system, from maximum building height to land use. Only then, applications can be fully checked on compliance.
A document is required where applicants can check how to deliver their data. For instance, the building plan should be in Shape file version x.x and can be handed in on CD or diskette.

By doing so, applicants can hand in their application and are able to receive instant information on their plan, whether it complies or not: and if not, why doesn't it comply. This drastically shortens the procedure time and work pressure at the OSC.

Hand in hand with the GIS system, simplified checklists for planning application should be created. World Heritage Incorporated noticed that several project developers didn't understand the existing checklist. WHI has started with editing the checklists, which is a good first step.

Coherence between MPPP departments
The enhancement of coherence between MPPP departments is essential for process improvement. Developing parties, within heritage redevelopment, increasingly notice the grey areas that occur when complying with heritage guidelines and fire safety guidelines. Fire safety guidelines are universal for each redevelopment, though heritage redevelopments require a different approach. Fire safety guidelines for heritage buildings are needed to eliminate the grey areas and improve the simplification of application for building permits and/or planning permission.

A study needs to be performed on the guidelines for fire safety for specifically heritage buildings. The heritage guidelines need to be taken into consideration when contemplating about the fire safety heritage guidelines.

Heritage guidelines
The heritage guidelines require a check on material use. Often it is the case that materials are prescribed by the heritage guidelines that aren't locally available. This unavailability increases construction costs, since materials need to be imported. In some cases, the unavailability of a type of material presents a discussion on alternative materials. Since there is no clear guideline on which alternative materials are approved and which are not, these discussions occur often, which causes a mayor delay.

Two possibilities are conceivable to overcome these challenges. On one hand, taxes on import of scarce materials drive up the price; abolition of these taxes for certain redevelopments will help reduce the costs and secure the use of original materials. On the other hand, a search for alternative materials, where original materials are too scarce or expensive, increases the visibility of heritage redevelopment.

Furthermore, energy-efficient initiatives conflict with the heritage guidelines. To overcome this challenge, it is recommendable to investigate which initiatives are conflicting and which are not. The initiatives that do not conflict should be implemented in the heritage guidelines.
Stricten enforcement

Strict enforcement of laws and regulations is necessary to assist MPPP in reducing the ongoing disputes with Private entities on the heritage guidelines. To be exact, the situation in Pulau Penang, where the Local Plan and Special Area Plan are not gazetted, creates a series of grey areas. When these grey areas occur, MPPP officers don't have the tool to fall back on. Next to the Structure Plan, there is no backbone to base decisions regarding spatial planning on and what types of redevelopments should be or shouldn't be allowed. By gazetting and enforcing the Local Plan, Special Area Plan (of George Town, heritage center) and the heritage guidelines, a clear and uniform view on heritage redevelopment throughout the three tiers of Government will be generated and disputes about tolerable or intolerable banding of the rules can be redirected to the previously mentioned laws/by-laws.

Since MPPP is not entitled to gazette one of these plans/guidelines, Federal Government is burdened with this undertaking. However, before the Local Plan and Special Area Plan can be gazetted, they need to be definite. These undertakings lie, respectively, at State and Local Government.

14.2.3 Financial Incentives

As mentioned earlier in the document, the presently known monetary incentives aren't fully successful in stimulating heritage redevelopment, mainly because most incentives do not weigh up to the extra costs. To really stimulate redevelopment, these incentives should be examined for effectiveness and possibly transformed into new monetary incentives. They should at least, cover a large part of the extra costs that heritage redevelopment entails. Only by doing so, redevelopment of heritage will become more viable and thus more interesting for Private parties to invest in.

The theoretical framework didn't elaborate on types of incentives. Though, in order to give an insight in possibilities, several widely used examples in Brownfield redevelopment literature (Adams et al., 1999, Alberini et al., 2005, Bacot et al., 2006, Meyer et al., 2000, Sherman, 2003, Sounperandian et al., 2006, Thornton et al., 2006, Wernstedt et al., 2006, Yousefi, 2007) will be proposed. The significance of application and the possibility of implementation are subjects for further research, this recommendation solely stresses internationally adapted incentives that may find its use in George Town:

- Grants
  - Grant for acquisition and renovation
  - Repayable grants and matching grant (as ThinkCity provides)
- Loans
  - Loan guarantees
  - Soft loans
Conclusion and Recommendations

- Subsidies
  - Hiring experts (heritage knowledge)
  - Original materials
- Tax concessions/credits/rebates
  - Federal income tax deduction
  - Property tax abatement
- Tax penalties
  - Vacant land tax ('extra' tax on vacant land; can also used for vacant buildings)
  - Greenfield levy (extra charge on Greenfield development in contrary to concessions on a Brownfield development)

One of the main problems associated with implementing brownfield-related policies and programs is that Local Governments, who are largely in charge of these sites and thus must absorb the costs initially, do not have access to the financial resources to provide the incentives mentioned above. Consequently, The Federal Government should play a greater role because, successful implementation of these recommendations is highly dependable on monetary support.

14.3 Recommendations for further research

In addition to the recommendations for process improvement, this research creates possibilities for further research and collaboration between several parties. Next to unbridled efforts of both Universities, this research assisted in creating a bridge between the Universiti Sains Malaysia and Eindhoven University of Technology. The research’s outcome results in recommendations on several research topics for further research, which can help to sustain this collaboration. As an addition, this research was one of the first collaborations between MPPP and USM for research questions. This altogether, is taken into account for the following recommendations on further research:

Research topics on Brownfield redevelopment

- Extension to this research: Identification of key drivers for Private Developers;
- Implementation plan for stimulation recommendations;
- Comparison between Brownfield redevelopment in Penang and Malaka (a brief introduction to this research topic is given in appendix 4);
- GIS implementation for MPPP’s One Stop Center procedure;
- Stimulation of non-heritage related Brownfields (Infill development) in Penang.
Research topics on sustainability

- Effect of existing redevelopment process and implementation of recommendations in respect to cultural heritage;

- Implementation of energy-efficient initiatives in heritage related Brownfield redevelopment in coherence with the heritage guidelines.

Collaboration

- Bilateral Mutual Agreement (MoU) should be signed between USM and TU/e
  - Opportunities for Malaysian students to study in The Netherlands and vice versa.

- Collaboration between USM and MPPP should be stimulated
  - Utilize students from USM to perform research for MPPP.
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15 March, 2010
  dr. Mohammad Amir Fawzi Bahauddin (1st supervisor USM)
  Introduction

16 March, 2010
  dr. Mohammad Amir Fawzi Bahauddin (1st supervisor USM)
  Mrs. Asiah Md. Ali (Accounts Officer, MPPP)
  Ms. Rashidah Jalaludin (Projects Officer, MPPP)
  Introduction to council representatives
16 March, 2010
dr. Mohammed Amir Fawzi Bahaudin (1st supervisor USM)
mr. Tan Lin Hai (Head of Heritage Unit, Building Department MPPP)
Ms. dr. Nor Zarifah Mallie (2nd supervisor USM)
*Introduction to mr. Tan Lin Hai*

17 March, 2010
prof. dr. Mahyuddin Ramli (Dean, School of HBP)
prof. dr. Abu Hassan Abu Bakar (Deputy Dean, School of HBP)
*Introduction to the Dean and Deputy Dean, School of HBP*

23 March, 2010
dr. Mohammed Amir Fawzi Bahaudin (1st supervisor USM)
dr. Ahmad Himy Bin Abdul Hamid (Senior lecturer Building Technology)
*Progress report and introduction to dr. Himy*

24 March, 2010
dr. Linariza Haron (Lecturer Construction Management USM)
*Discussion of Brownfields in Penang*

30 March, 2010
dr. Mohammed Amir Fawzi Bahaudin (1st supervisor USM)
*Progress report*

31 March, 2010
mr. Louis (Employee World Heritage Incorporated)
*Data collection on heritage in Penang*

07 April, 2010
Dr. Kauser Hj. Ali (Lecturer USM)
*Meeting on Waqf*

07 April, 2010
dr. Ad dan Otter (1st supervisor TU/e)
dr. Han, Q (2nd supervisor TU/e)
*Progress report*

08 April, 2010
dr. Nurwati Badaruzaman (Lecturer USM)
*Introduction to our research*

14 April, 2010
dr. Mohammed Amir Fawzi Bahaudin (1st supervisor USM)
*Progress report*

14 April, 2010
Mr. Abdul Ghaper Othman (Lecturer USM)
*Meeting on GIS and Land use maps*

15 April, 2010
mr. Tan Lin Hai (Head of Heritage Unit, Building Department MPPP)
*Research proposal in corporation with MPPP and USM*

16 April, 2010
Mr. Fakhruddin Bin Abd Rahma (Division chief Waqf, MAINPP)
*Waqf redevelopment methods and structure*
22 April, 2010  dr. Ad den Otter (1st supervisor TU/e)
Proposal adjustment

29 April, 2010  mr. Tan Lin Hai (Head of Heritage Unit, Building Department MPPP)
Progress report

03 May, 2010  Mr. Meneor Sudin (Director Urban Planning Department MPPM Melaka)
Heritage policies in Melaka

04 May, 2010  Mr. Zainuddin Bin Ahamad (Director of State Town and Planning)
Involvement State Government in Brownfield redevelopment

05 May, 2010  Mrs. Neo Siew Yen (Ass. Director State Town and Planning, Penang)
Phone conversation: Introduction to our research

06 May, 2010  dr. Ad den Otter (1st supervisor TU/e)
dr. Han, Q (2nd supervisor TU/e)
Progress report

07 May, 2010  dr. Mohammed Amir Fawzi Bahauadin (1st supervisor USM)
Ms. dr. Nor Zainah Meliki (2nd supervisor USM)
Progress report

10 May, 2010  Mr. Eneik Osman (Heritage expert World Heritage Inc.)
Informative meeting on heritage

19 May, 2010  Mr. Lawrence Cheah (Head of Tourism, Khoo Kongsi)
Informative meeting on the Khoo Kongsi

19 May, 2010  Mrs. Janet Pilai (Heritage expert for Penang Heritage Trust)
Informative meeting on redevelopment projects

20 May, 2010  dr. Ad den Otter (1st supervisor TU/e)
dr. Han, Q (2nd supervisor TU/e)
Progress report

06 May, 2010  dr. Mohammed Amir Fawzi Bahauadin (1st supervisor USM)
Ms. dr. Nor Zainah Meliki (2nd supervisor USM)
dr. Ad den Otter (1st supervisor TU/e)
dr. Han, Q (2nd supervisor TU/e)
Skype meeting
21 May, 2010
mr. Tan Lin Hai (Head of Heritage Unit, Building Department MPPP)
Progress report

21 May, 2010
Mr. Kang Pin (Ass. Architect for Logan Building, Y Architects)
Mr. Cheah (Head of Development, TCL Construction)
First meeting and formal introduction

21 May, 2010
Mr. Munirzam Bin Abdul Aziz (Head of OSC, MPPP)
Information about the plan application process at OSC

21 May, 2010
Mrs. Alison Fraser (Co-owner Ron Tan)
Interview on redevelopment

25 May, 2010
dr. Mohammed Amir Fawzi Bahaudin (1st supervisor USM)
Progress report

25 May, 2010
Mr. Zainuddin bin Ahamad (Director of State Town and Planning)
Mr. Rosli bin Haron (Assistant City Planning, JPDB)
Transfer of valuable information on land use in Penang

26 May, 2010
Prof. dr. A Ghafar Ahmad (Deputy Commissioner of Heritage, Federal)
Federal perspective on heritage redevelopment

List of interviews

Public Parties
Prof. dr. A Ghafar Ahmad (Deputy Commissioner of Heritage)
Department of National Heritage (see appendix 7.2.1.3, figure 7.1)

Ms. Neoh Siew Yin (Amelia) (Assistant Director Corporate Planning &
Appeals Board Department)
State Town and Planning Department (see appendix 7.2.2.2, figure 7.2)

"Undisclosed" (Architect)
MPPP, Building Department; Heritage Unit (see appendix 7.2.3.2, figure 7.4)

Mr. Mansor Sulin (Director)
Urban Planning Department, Municipality Melaka

Semi-Public Parties
Ms. Malinunah Mohd Sharif (General Manager)
George Town World Heritage incorporated (see appendix 7.3.1, figure 7.6)

Semi-private parties
Mr. Fakhrudin bin Abd Panna (Division chief Waqf)
MAINP (see appendix 7.4.2.2, figure 7.9)
Mr. Khoo Boo Hong (Honorary Secretary)
Trustees of Leong San Tong Khoo Kongsi (see appendix 7.4.1, figure 7.7)

Private parties

Mr. Cheah Keat Loe (Director)
Seriousbiz Enterprise (Contractor)

Mr. Keng Pin (Architect Logan Building)
Y-Architects

"Undisclosed" (Architect)
Laurence Loh Architects (LLA)
### Glossary

#### Definitions

<table>
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<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Brownfield</strong></td>
<td>Any land or premises in an urban area which has previously been used or developed and is not currently fully in use. It may be partially occupied, vacant or derelict.</td>
</tr>
<tr>
<td><strong>Greenfield</strong></td>
<td>Undeveloped land in a city or rural area, either currently used for agriculture or landscape design or left to naturally evolve.</td>
</tr>
<tr>
<td><strong>Dilapidation</strong></td>
<td>To fall in ruin of decay.</td>
</tr>
<tr>
<td><strong>Gazette</strong></td>
<td>The official journal published by the Malaysian Government; containing Legal and State notices.</td>
</tr>
<tr>
<td><strong>Gazetted</strong></td>
<td>Announcement or publishing in a Gazette. Only a Gazetted policy has Legal powers.</td>
</tr>
<tr>
<td><strong>Kongsi</strong></td>
<td>Generally &quot;Kongsi&quot; refers to an autonomous organization of shared interests among its members; it can be a business company, a secret society, or an association based upon blood ties or geographical affinity. At the same time &quot;Kongsi&quot; refers to the buildings, such as temples, of the organization.</td>
</tr>
<tr>
<td><strong>MAINPP</strong></td>
<td>Majlis Agama Islam Negeri Pulau Pinang, Muslim Endowment Board.</td>
</tr>
<tr>
<td><strong>MBMB</strong></td>
<td>MBMB stands for Majlis Bandaraya Melaka Bersejarah, which means Melaka Historical City Council.</td>
</tr>
<tr>
<td><strong>Middle line</strong></td>
<td>All employees who delegate the work to the operating core in concordance with the lines drawn by the strategic apex. The purpose of the middle line managers work is to manage the unit for which he has been given responsibility.</td>
</tr>
<tr>
<td><strong>MPPP</strong></td>
<td>MPPP stands for Majlis Perbandaran Pulau Pinang, which means Municipal Council of Penang Island.</td>
</tr>
<tr>
<td><strong>Mukim</strong></td>
<td>A subdivision of a daerah (district). The equivalent of the word 'mukim' in English would be 'sub-district'.</td>
</tr>
</tbody>
</table>
Operating core

All employees who directly work producing products.

Shariah

The Arabic word for Islamic law, which consists of Muslim rules.

Strategic apex

The organization's head with the top managers and directors. They act as the head of the organization, conceiving visions and strategic goals.

Support staff

Several groups of people in the organization, with the primary purpose to support the rest of the organization by ensuring them the optimal settings for doing their work.

Technostructure

The organization's analysts and specialists who define which techniques and tools should be used by the operating core (standardization).

Waqf

An inalienable religious endowment in Islamic law, typically denoting a building or plot of land for Muslim religious or charitable purposes.

Governmental Departments and Institutions

*Jabatan Penilaian & Perkhidmatan Harta*  
Department of Valuation and Property Services

*Jabatan Pertanian*  
Department of Agriculture

*JAS*  
Department of Environment

*JBPM*  
Department of Fire and Rescue

*JKR*  
Department: Federal Public Works Department

*JMG*  
Department: Minerals and Geo-science

*JPBD*  
Department of Town and Country Planning

*JPP*  
Department of Industrial Relations

*JPS*  
Department of Irrigation and Drainage

*PBA*  
Water supply corporation

*PTD/PTG*  
Institute of Diplomacy and Foreign Relations

*TNB*  
Tenaga Nasional Berhad is the main energy provider in Malaysia.