UPCYCLING WILD PIGEON'S FIELD IN A POST-HYDROCARBON BRUNEI

*An Exploration of Architecture
Reacting to Social Changes
Through Narratives*

by
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Abstract

The hydrocarbon industry has immensely influenced and moulded the societal structure of the inhabitants of modern day Brunei. Nonetheless, the dependency on this commodity will eventually cease, shifting the future social structure and leaving questions on plausible resolutions towards treatments on the existing sites, '*non-buildings*' and infrastructures of the industry.

Infrastructures and '*non-buildings*' are typically subjected to the process of dismantling, removal, deep sea dumping and abandonment. It has been observed that in recent times, alternate methods are offered within the architectural profession. Through the application of adaptive reuse architecture, warehouses, factories and even '*non-building*' are repurposed, where its industrial heritage and cultural value are highly recognised and considered necessary to retain.

Focusing on specified onshore oilfields in Brunei, this thesis seeks an exploration into a methodology of regenerating a site and offering spaces that evoke a '*sense of belonging*' or

cultural identity. Through architectural discourse on *memory* and *semiotics*, local narratives are put forward and explored as an extension to cultural identity.

This methodology is further explored through the application of John Hejduk's concept of *languages* and *masques*. It proposes an imaginative practise into visual experiments for an exploration on the effect of reusing hydrocarbon infrastructure as architectural spaces.

As Brunei shifts towards a new epoch, studies on current socioeconomic structure are critical to recognise where the structure is leaning towards to as it cannot simply change overnight.

Preface

Changes in societal structure are often depicted with bleak dystopian outcomes that lead to disorientation and disconnectedness to one's immediate surroundings. The relationship between society, architecture and time has always been a personal muse, thus steering my curiosity into an exploration on the future of my birthplace, Brunei and a speculation of a post-hydrocarbon social environment and how it will affect its relationship with architecture. This thesis provided an opportunity, through architectural discourse and other fields' to learn and gain new knowledge.

Acknowledgements

The completion of this thesis marks a milestone in my life. The memorable experience will be cherished.

Special thanks to my supervisor, Mrs. Daniele Abreu e Lima for the two wonderful years. I am forever grateful for the countless knowledge you have bestowed, your patience, guidance, encouragement and most importantly, your friendship.

My parents, my inspiration. Thank you for the continuous support, opportunity and advice in my life decisions.

Last but not least, Liyana, thank you for your strength, patience and endless support. On to the next chapter of our lives.

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“The (same) three tasks recur across cultures and epochs: to shelter what is precious, to yield what is valuable, and to dispose of what is harmful.”

(Macfarlane, 2019, P. 8)

INTRODUCTION

1.1	21 st century Brunei
1.2	{a} History of Brunei
1.3	{oil + gas} + environment
1.4	Problem statement
1.5	Research site
1.6	Aims + Objectives
1.7	Research methods
1.8	Thesis structure

Figure 1.1 Map of Brunei in relation to the Southeast Asia region

1.1

21st century Brunei

Brunei Darussalam is located in the coastal region of the northern part of Borneo island. (Figure 1.1) It is a relatively small nation with a total land area of 5,765 km² with 161 km of coastline that it shares with the South China Sea. Furthermore, it shares a 381 km border with one of the two states of Eastern Malaysia, Sarawak. It has 500 km² of territorial waters and 200 nautical mile of exclusive economic zone. Its climate is tropical, with a wet and dry season separated by two transitional period – the Northeast Monsoon and the Southeast Monsoon. The capital city of Brunei is Bandar Seri Begawan.

Consisting of two unconnected land mass, Brunei is further divided into four districts, namely: Brunei-muara, Tutong, Belait and Temburong (Figure 1.2). Albeit a recent development, expected to be completed in the early part of 2020, Temburong will be connected to the other three districts via a long-distance bridge that spans over the Brunei Bay (Hj Abu Bakar, 2019) (Figure 1.3). Each district is further divided into subdistricts, locally known

as *mukim*. Each subdistricts is further divided into villages, locally known as *kampong*.

Most of the development of Brunei is within the coastal region where the land is relatively flatter than the inner region. The inner region consists of hilly tropical forest rich in biodiversity. More than 50% of the forest are under the protection of the country's government.

The population of Brunei is 442,400 (Department of Economic Planning and Statistic Brunei 2018 Data) where 51% are male and 49% female. Ethnic groups of the population include Malay with 65.7%, Chinese with 10.3% and others (predominantly immigrant workers) with 24% (Central Intelligence Agency Data).

The official religion of the country is Islam where 78.8% of the total population are Muslims. Other religions practised include Christianity, Buddhism and other indigenous beliefs.

The official language is Malay or *Bahasa Melayu*. The English language is commonly used as well

Figure 1.2 Map of Brunei

and a few Chinese dialects.

It is estimated that 75% of the total population lives in the urban area. The majority of the population lives in the Brunei-Muara district with a total population of 307,700. Belait district has 73,200, Tutong district has 51,300 and Temburong has 10,900.

The country is governed by an absolute monarch. The current ruler is the 29th sultan of Brunei, Sultan Haji Hassanal Bolkiah Mu'izzaddin Waddaulah, who has held this position for over 50 years. He is currently incumbent in numerous positions, which include various ministerial posts, as well chancellor to local tertiary institutions.

Since independence from the British in 1984, the country primarily practises a legal system based on English common law. In 2014, the ruler announced the implementation and enforcement of the Sharia Penal code via phases. The final phase, announced on the 3rd April 2019 (Liang, 2019) was met with criticism (Nichols, 2019).

Aside from being known as the first country that has implemented full Sharia Law in the Southeast Asia region, Brunei is also known to have extensive reserves of oil and gas fields. The industry accounts for more than 65% of the country's GDP (Gross Domestic Product) and over 95% of the country's exports.

Figure 1.3 Photography of the construction of Temburong Bridge

Aside from oil and gas, Brunei's GDP benefits from other industries, notably construction, agriculture, aquaculture and more recently, tourism (Khidir, 2018). Brunei has recently expressed interest in diversifying its economy through Foreign Direct Investment (FDI) (Mingmei, 2019). Downstream manufacturing products from hydrocarbons, such as fertilisers (Azney, 2018), and *halal* manufacturing (Bandial, 2019) are being explored.

With high income received from oil and gas, Brunei does not incur any income tax from its citizens. Moreover, the population receives subsidies from the government for "high quality healthcare and education" and "heavily subsidised retail prices on petrol, diesel, electricity, rice and sugar" (Lawrey, 2010, p.14).

Brunei is a country that embraces its traditions, culture and religion passionately. This is evident in its built environment where religious and traditional centres are built lavishly. The architecture produced is predominantly Islamic architecture that is fused with vernacular architecture, specifically, large overhanging roofs to suit the wet climate. Contemporary architecture with glass facades, though rare, can also be found. Figure 1.5 shows examples of the architecture of Brunei.

SUBSIDISE

BENEFITS

Figure 1.4 (right) A pictorial diagram indicating social benefits

Figure 1.5 (below)
A collection of photographs showing Brunei's built environment

1.2

{a} History of Brunei

Early evidence

7th to 14th century

Depending on where the author is based, literature on the history of Brunei differs. Local authors would depict the inception of the nation from the age of the first Muslim ruler, erasing pre-Islam Brunei (de Vienne and Lanier, 2015). Historical events for this research were gathered from literature by Saunders (2003), de Vienne and Lanier (2015) and Bowman (2000).

History can be a place where the precious is sheltered, the valuable yielded and the harmful disposed. On this note, this history of Brunei was surmised via multiple sources but should not be taken at face value. It should not also be ignored as it has shaped the society of Bruneians of this generation.

The earliest record of traces of civilisation found in Borneo can be found through transliteration of early Chinese records based on reports of envoys, merchants and travellers. Reports include trading with Po'li or Po'ni or Fo-ni, a kingdom found in North Borneo. Coins used during 8th century China were found in Brunei.

North Borneo has been known as a transit point for traders between China and Indonesia and was known for camphor.

Some historians suggests that Brunei was *Vijayapura*, a buddhist kingdom, part of the Majapahit empire. According to *Negarakertagama*, a Javanese court poem, *Burungeng* (Brunei) is a tributary state of Majapahit.

Early sultanate 15th to 19th century

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As discussed in Bowman's book (2000, p. 410), the explorer Antonio Pigafetta described Brunei from his voyage in his book, *The Voyage of Magellan* (1525). It reads:

The king again sent three very ornamented prahus, which came playing pipes and drums and cymbals, and going around their ships, their crew saluted us with their cloth caps, which hardly covered the tops of their heads. We saluted them, firing the bombards without stones... They said their king was well pleased that we should make provisions here of wood and water, and that we might traffic at our pleasure with the islanders.

European presence 19th to 20th century

Due to lack of agriculture and mineral production Brunei was not of interest to the colonising nation during this period.

Brunei went into further decline with the introduction of James Brooke, the 'White Rajah' of Sarawak. Brooke came into power after he helped the Sultan of Brunei quash rebels in Sarawak on which he was made Governor of Sarawak as a reward. By 1842, Brooke gained Sarawak's independence from Brunei and turned to colonise Brunei's other territories.

In 1846, a rebellion broke out which saw Brunei ceding Labuan to the British. In 1864, Brunei leased present day Sabah to America Trading Company, but it was later taken over by North Borneo Chartered Company, under the British.

Succeeding his father, Charles Brooke continued to absorb Brunei's territories into Sarawak, which forced Brunei's hand into seeking assistance from the British, with whom they held a close relationship. By 17th September 1888, an agreement was made with the British to

grant them as protectorate to the nation, controlling all affairs except for religion and customs.

In 1906, a treaty was signed between the British and Brunei for assistance and protection. Malcom Steward Hannibal McArthur became the first British Resident in Brunei and oversaw economic and governmental reforms that became the foundation for the modernisation of Brunei.

Figure 1.6 (above) Brunei, 1883 (Saunders, 2003)

Figure 1.7 (below) Brunei, capital of Borneo Proper, 1857 (Saunders, 2003)

Figure 1.8 (above) Sultan Hashim of Brunei receiving Vice-admiral and British naval officers in 1888 (Saunders, 2003)

Figure 1.9 (below) The Sultan's barge, 1887 (Saunders, 2003)

Towards independence

1906 - 1977

Brunei discovered oil in 1929, which marked a lifeline for a nation that used to practise the system of taxation, which became redundant to loss of land.

During World War II, the country was occupied by the Japanese, which considered Brunei as one of its prefectures. By the end of the war, the Sultan took over the administration sector of Brunei, which paved the way for Brunei's independence. By 1956, pro-independence Partai Rakyat Brunei (PRB) was formed.

Three years later, a written constitution was drawn up and resulted in the withdrawal of the Resident; however, the British still controlled Brunei's defence, internal security and foreign affairs.

PRB won by a landslide on 31st August 1962 and gained full independence. This however, was met with disagreement between the Party and the ruling power. The Sultan wanted to maintain his relationship with the British and banned PRB. By December, with the help of Communist North

Communist North Kalimantan National Army, a rebellion broke out but was quelled immediately by Highlanders and Gurkhas of the British Army in four days. The nation declared a state of emergency. The declaration has not been lifted since.

The Treaty of Friendship and Cooperation was drawn up between the British and Brunei in 1979, which would pave a clearer path for independence over the next five years.

Independence onwards

1984 - 2000s

Brunei gained its independence on the 1st January 1984 and saw the lucrative oil and gas industry as a driving force for its development. The largest company in the nation, Brunei Shell Petroleum (BSP) co-owned by the government and Shell Group holds a 50-50 share between the two.

Since its independence, important governmental positions were reserved and held by members of the royal family, which saw a major disruption in the country's progress. The Sultan's youngest brother was made Finance Minister, who handled the country's vast wealth. Due to mismanagement and misuse, the country suffered setbacks into its early development progress.

1.3

(oil + gas) + environmental

In late 1926, F.F. Marriot, in those days the British Malay Petroleum Company Field Superintendent and T.G. Cochrane, the General Manager of Sarawak Oilfields Limited, cycled along the beach from Kuala Belait to visit a Swiss geophysicist working on a gravity survey in the Lumut area. They had a rest near the mouth of Sungai Seria where Cochrane suddenly smelled oil. According to the story, he later discussed this with the geophysicist in Lumut and instructed him to extend his gravity survey to the south (Harper, 1975).

Brunei's relation with oil and gas goes back to the year 1899, when the first exploration was made near the capital (Saunders, 2003, p.116). Since the discovery of oil in Seria in 1929, advancement in technologies has allowed further exploration seawards (Brunei Shell Petroleum, n.d.). Today, the nation's reserve comes from two onshore oilfield and twenty offshore oil and gas field (Brunei Shell Petroleum, n.d.).

One of the concerns in the oil and gas industry is

the impact it has on the environment, especially once the infrastructure is considered redundant. The process of removal and disposal usually involves dismantling and decommissioning through methods that are normally regulated by government agencies to their preference. Issues such as ecological impacts and finances play a major part in their decision.

Since oil was discovered offshore in 1963, BSP has removed 30 redundant infrastructures. Between 1975 and 1984, these infrastructures were removed and disposed via two methods. The first is by bringing the infrastructure onshore for scrapping. The second is by deep water dumping in international waters after bringing the topsides onshore (Twomey, 2011, p.3).

In 1985, the Fisheries Department of the Ministry of Primary Industry and Resources launched an Artificial Reef Program in pursuit of enhancing local fish productivity (IMSA Amsterdam, 2013, p.10). Artificial reefs using tyres were placed at Two Fathom Rock – 7 km north of the

Brunei-muara district (Silvestre et al, 1992, p.76).

Further studies concluded that underwater structures associated with oil infrastructure could potentially harbour diverse species of fish. This practise is commonly known as rig-to-reef (RtR). IMSA Amsterdam (2013) describes RtR “a type of artificial reefing, using materials of offshore oil and gas structures.”

In 1988, BSP disposed of two obsolete offshore oil platforms by transporting the infrastructure and “placing on the seabed northwest of Two Fathom Rock” (Twomey, 2011, p.3). Five more were transported in 1994. The most recent one was instigated in 2004 (Bull, 2018, p.286). The rigs were placed in depths between 16m to 60m.

Local scientists continue to monitor the progress of the RtR programme. Reports made five years ago suggest “extensive population of both soft and hard corals on the sunken platforms with associated fish species from small forms to large, juveniles to adults, and

transient to resident” (Bull, 2018, p.286). The area was also made available to recreational divers as a diving spot (IMSA Amsterdam, 2013, p.10).

Figure 1.10 Location of oil rig wreck

Figure 1.11 Location of oil and gas fields in Brunei

1.4

Problem Statement

Oil and gas are non-renewable commodities that, sooner or later, Brunei will one day face the inevitable that it has exhausted its availability. Another alternative scenario was posited by Lawrey (2010), where he stipulates that “as the field ages, the ease of extraction decreases”, hence, resulting in “the increased cost of extraction”, which leads to the reserves having no economic value. There is no clear notion on which circumstance Brunei will eventually head to, but the impact it will cause to a hydrocarbon dependent country will be substantial.

The nation's socio-economic structure of today is influenced by factors that are bound to these natural resources (de Vienne and Lanier, 2015, p.285). Similar to any other commodities, one of those factors is that, they are at the mercy of the movement of supply and demand (Lawrey, 2010, p.16). In this century alone, the world has experienced two oil crises where prices have dropped substantially (Baffes et al, 2015). The inconsistency and drop in value have hindered Brunei's progress, socially and economically in this century (IMF, 2019, p.4).

While efforts have been made to diversify the economy (IMF, 2019, p.14) in recent years, stagnant growth suggests policies need to be reviewed and refined further. Due to stagnation, Brunei is already facing the need to address the issue of a high unemployment rate, especially amongst the youth (IMF, 2019, p.29). The report warns of risks that the nation will face if this is prolonged, such as “skill attrition, depreciated human capital, outward migration of skilled labour, and an increase in social and political resistance to reforms.” If this does indeed persist, societal structure will evolve, and architecture will need to evolve as well to facilitate the newly formed society.

Another issue of change that needs to be addressed will be the build environment that suits the socio-economic development of the future era. Once extracting and processing oil and gas is no longer required, what will become of the infrastructures? Will they continue to practise RtR for the offshore oil and gas facilities? Will that be financially viable or will they just abandon the platforms and let it be

a permanent seascape for South China Sea?

While the offshore oil and gas platforms have their proper procedures in place for removal and disposal, what about the onshore infrastructure? In this world where monetary concerns occupy a major role in decision making, do the silos, refineries, pipe racks, pumping jacks and such face abandonment until time and nature consume them?

The oil and gas industry in the area has created other human activities that have thrived by working alongside it in the immediate area. When it has served its purpose, will people migrate from the area or can it be regenerated through architecture?

This is hardly a new interjection where architecture intersects into the world of oil and gas. There are a number of precedent cases all around the world where architecture plays a major role in regenerating obsolete onshore oil and gas infrastructure. While most of these projects are instigated in the developed world,

this thesis serves as an opportunity to explore and analyse methods in addressing redundant onshore oil and gas infrastructure in the context of a young nation.

Thus this leads to my research question:

How can the **onshore oil and gas infrastructure** be readapted / repurposed through creating a space that evokes a **sense of belonging** and **security** to the future urban landscape of Brunei Darussalam?

1.5

Site Research

Brunei Darussalam has only two onshore oil fields namely *Rasau* oil field and *Seria* oil field (Figure 1.9). Both of the oil fields are located in the *Belait* district and operations are run by Brunei Shell Petroleum (BSP).

Figure 1.12 Location for the two onshore oil fields in Brunei

Rasau oil field was discovered in 1979. It is located on the western bank of the Belait River. Although the main town of *Belait* district, *Belait* town, sits on the eastern bank of the Belait River, the oil fields has no immediate relationship with any urban environment. The view of the oil field from the town is obscured by the dense tropical jungle that surrounds the oil field.

The closest human settlement is a village named *Kampung Sungai Teraban*, a small cluster of residential houses that sits north of the oil field at a considerable distance. Furthermore, access to the area is limited through the use of personal vehicles. Access from town will require the driver to drive across Belait River via Rasau Bridge, where all user are required to pay a toll.

Figure 1.13 (below) Site Analysis for *Rasau* oil field

On the other hand, *Seria* oil field is located in *Seria* town itself (Figure 1.14). The immediate surroundings include commercial, religious, residential and industrial sectors of the town. The area is the location in which crude oil was first discovered and commercialized in this nation. Aside from the tanks and refineries, pumping jacks can be found around the area,

blending in with the urban environment (Figure 1.15).

According to BSP's document, the future of the area "will be to reduce the operating expenditure and maximise the use of the existing facilities. This can be achieved both from the identification of new development opportunities

Figure 1.14 (below) Site Analysis for *Seria* oil field

and by identification of new exploration and appraisal opportunities” (Sandal, 1996). While the company’s vision that they seek will hopefully lead them to more oil production, an opportunity beckons instead to identify, explore and appraise the area where oil production has ceased.

On this note the *Seria* oil field was preferred to *Rasau* oil field for this thesis on the basis of its historical and present importance with the nation and immediate environment, socially and economically. Moreover, with difficulty in accessing *Rasau*, the area has created a more disengaging area that promotes exclusivity.

Figure 1.15 Industrial infrastructure blending with the urban

1.6

Aims + Objectives

1

Repurpose the onshore hydrocarbon facilities + site

aims
objectives

Understand the nature and purpose of existing facilities by gathering information and analysing.

Gather information and analysing the site and surrounding area.

Create and provide a space that can offer opportunities and activities that can benefit the new societal structure.

2

Provide a space that is ecologically conscious

aims
objectives

Understand the limitation of creating a space that is ecologically conscious.

Gather information on how onshore oil and gas infrastructure can be re-use through precedents and theories.

Create a framework that can offer beneficial ecological implications to the site and immediate area.

3

Evoke a sense of belonging + security

aims
objectives

Gather information and analyse the socio-economic structure through current events to understand the path Brunei is heading towards.

Analyse societal information through theories on semiotics, memory and atmosphere.

Create an architectural framework that is culturally sensitive and acknowledges the traditional and historical significance.

1.7

Research Methods

This research partook of an exploratory view on the reinterpretation of various theoretical essays on the concept of 'sense of belonging' through semiotics, space and atmosphere through the cultural norm of Brunei, socially and economically.

Theories on *memory* found in essays by Juhanni Pallasma, Neil Leach and Christian Nolberg-Schulz in regards to the material and mental world were the forefront of this proposal. Narratives that I considered unique to the social context of Brunei were gathered and scrutinise through qualitative and quantitative analysis.

Limitations in information were met on various occasions, particularly in the attempt to gather detailed information on typologies of onshore infrastructure in Brunei. Thus, a visual methodology was proposed via John Hejduk's concepts of '*languages*' and '*masque*'. These conceptual methods provides an imaginative view into an alternate nation that makes use of repurposing onshore infrastructures into the build environment.

Case studies on various reuse and adaptive architecture of recent times provide insights into professional views and practises in the subject of regenerating a '*non-building*', warehouses and factories. The ideology of materials, forms and functionality of these projects was brought into this research.

A pragmatic and digital approach was undertaken in gathering information for the site, although, approaches were met with limitation due to insufficient and outdated data.

1.8

Thesis Structure

chapter two

LITERATURE REVIEW

2.1	Introduction
2.2	Sense of Belonging
2.3	Atmosphere / Memory / Space
2.4	+ Semiotics
2.5	Reuse Architecture

2.1

Introduction

In this chapter, four theoretical bases will be discussed in order to form the foundation for the development of the research thesis. The first is a discussion on what '*sense of belonging*' means in relation to the field of architecture and beyond. The second is a discussion on the concept of *Atmosphere, Space and Memory*. The third is *semiotics* in architecture and the fourth is *reuse* architecture.

2.2

Sense of belonging

The term '*sense of belonging*' has been coined in discourses in various fields, including architecture, over the years, which categorically places the terminology in a close relation to the human behaviour of *identification*. In the architectural field, essays by Pallasma (2012) and Leach (2003) termed it as *cultural identity* that is deemed necessary for the human to "become '*friends*' with a particular environment" (Nolberg-Schulz, 1980, p.21).

Changes in social environment of a place are often associated as a form of intrusion into personal well-being, which leads to disorientation. However, May (2011) argues that *identification* are fluid in nature and continuously evolves and often does not change abruptly.

The normative of *identification* of a particular place, as suggested by Leach, is created through series of performatives that are deemed acceptable towards a majority (2003, p.77).

2.3

Atmosphere / Memory / Space

The concept of 'sense of belonging' and its association with *memory* are highly placed amongst discourses by Juhanni Pallasma. In his article, Pallasma (2015, p.72) suggests that "an embodied memory has an essential role as the basis of remembering a space or place", a similarity to the theme foretold by Calvino in *Invisible Cities* (1978) .

Marcel Proust's *In Search Of Lost Time* (2003) depicted memory as a form of repetition that correlates itself with objects of the *material* world. Pallasma (2014 and 2015) postulates similar notion where we are constantly living and re-living through the fusion of the *mental* world and the *material* world.

He further theorises on the link between our ability to experience atmospheric spaces with "our capacity to project imaginatively" (Pallasma, 2014, p.27) with novels. Stories are arguably represented in different forms across different cultures.

2.4

+ Semiotics

Venturi, Scott and Izenour's *Learning from Las Vegas* (1977) depicted an ideology of an environment that manifested itself from nothing through the social and temporal context that embraces the form of communication and the vernacular. Similar ideology has been observed as experiencing similar notions in recent times such as Dubai and China.

The other form of semiotics that I considered critically correlates with the previous sub-chapter on the subject of memory. The infamous '*madeline and tea*' moment in Proust's novel (2003) was observed to consider the possibility of innate objects triggering memory – a repetition through the initiation of semiotics to our senses.

2.5

Reuse architecture

Brunei's main resources: the hydrocarbon industry has shaped the societal structure of this generation. The time will arrive when it is no longer bound and it will undoubtedly cause a shift into the real-world practises of the built environment. The world of the present is observed to obey a system that wastes resources in the name of development. In the hindsight, it is slowly shifting towards a pro-environmental conscious stance.

Vale and Vale's book *Time To Eat The Dog?* (2009) offers alternatives into methods on how the built environment and the personal could counteract wastage. Furthermore, Grogolewski's *Resource Salvation* (2017) provides methodologies on the ideology of reuse using technologies and innovations.

Figure 3.1 Map showing location of selected case studies

chapter three

CASE STUDIES

3.1	Introduction
3.2	Silo 468
3.3	Gasholders
3.4	Alila Yangshou Hotel
3.5	Zeitz MOCAA

3.1

Introduction

Projects on rejuvenation of industrial sites can be found across the world, which my research covered extensively. This research will showcase four of those projects that I consider exemplary to my research.

Two of the projects chosen are closely related to hydrocarbon infrastructure while the rest are projects on repurposing an industrial building. Critically analysing, each project contributed exclusive knowledge that was brought forward into this research such as semiotics, materials, nature, forms and functionality.

3.2

Silo 468

Silo 468 is a combination of a public space and a light art installation. Converted from an oil silo, the architect describes its function as “to draw focus to unknown district and creates a landmark and a marketing device for the city” (archdaily, 2012, para.3).

Lights emitted, via 1280 LED fitted inside the silo behind cut-outs, can be viewed from afar and constantly change colour and pattern, in accordance with external parameters. Internally, the walls are painted red, which refers “to the former use of the silo as a container of energy (archdaily, 2012, para.4). The play of semiotics of the internals and externals using technology and colour offers a plausible methodology into bringing redundant infrastructure back into life.

Figure 3.2 Site location of Silo 468

Figure 3.3 - 3.6 Visuals of Silo 468

3.3

Gasholders

Making use of redundant gasholders' structure, 145 high-end apartments were constructed in Kings Cross, London. The usage of its historic frames, albeit for aesthetic reason rather than structural (Wilson, 2018), recreates the historic skyline of the once industrial location (RIBA, n.d.). The union of old and new materials highlights the importance of both generational periods.

Time is further highlighted through the use of the material brass detailing in certain areas. The material used pays homage to traditional watch movements, which use similar material (Wilson, 2018), as intended by the architect.

Figure 3.7 Site location of Gasholders

Figure 3.8 Gasholders' structure before redevelopment

Figure 3.9 Architect's sketches

Figure 3.10 - 3.14 Visuals and plan of Silo 468

3.4

Alila Yangshou Hotel

A sugar mill, built in the 1960s, has been transformed into a hotel. The mill's masonry structure and facade were restored while its form takes precedent from the additional buildings built around the site. Furthermore, hollowed concrete block and wood-formed cast-in-place concrete were used in the construction of the newer building to blend with the mill's masonry.

The hollowed concrete block facade provides transparency between the internal and external. It helps block and protect the inhabitants from the exterior but also, provides frames with dynamic views of the natural surroundings.

Figure 3.15 Site location of hotel

Figure 3.16 - 3.20 Collection of visuals of the hotel

Figure 3.21 - 3.24 Site plan and visuals of hotel

3.5

Zietz MOCAA

Disused since 1990, the historic Grain Silo Complex of Cape Town has been readapted and reused as a museum dedicated to contemporary art for Africa. Unique internal spaces were created by 'carving' the cellular structure of the forty-two tubes that pack the building using hydraulic breakers and industrial wire-saw (Halpern, 2017).

The building sheds its former yellow paint and reveals the raw material of concrete, as if art and architecture are the true form of agriculture. The museum attracts people from all over. Hence, this cultural institution generates mutual responses to its man-made and natural surroundings.

Figure 3.25 Site location of MOCAA

Figure 3.26 - 3.30 Elevation and visuals of MOCAA

Figure 3.31 - 3.36 Visuals and plan of MOCAA

Figure 4.1

Image of a rendition of MIB

chapter four

FICTION OR NONFICTION

- 4.1 a commonization of Brunei
- 4.2 Malay / *Melayu*
- 4.3 Islam
- 4.4 Monarch / *Beraja*
- 4.5 Design Experimentation 01
- 4.6 Self Critique

**“We live simultaneously in material
and mental worlds that are constantly
fused.”**

(Pallasmaa, 2014, P. 278)

4.1

a commonization of Brunei

This chapter begins with efforts to determine what is the nation's identity, or rather, more specifically, the cultural identity for Brunei or what Pallasmaa considers as the "sense of rootedness and belonging" (Pallasmaa, 2012, p.18) that this thesis seeks to find out. To synthesise the ideas, customs and social behavior of a whole nation into a singular frame of thought seems like an impossible task. A nation constitutes multitudes different ethnicities with personal beliefs, thoughts and experiences.

Analysing the history of Brunei was crucial to understanding what the nation's current socio-economic structure is and how it came to be. Looking back into the middle of the 20th century, a time when political parties were permitted, it was evident that nationalistic ideas were already in place where groups desired a change within the political system by voting for independence. Independence would mean that they get to carve out their own identity, but unfortunately efforts were quelled by members of the royal family. Perhaps the latter felt fear that this would result in their demise within the

system, but the decision taken would eventually see the monarch carve the nation's identity instead through the phenomenon of national ideology.

Creating a national ideology was common during the period when colonised nations within the immediate region gained their independence from their colonial counterpart. Nations in this region were made up of different ethnicities, cultures and beliefs. National ideology was perceived as a way to indoctrinate the people in order to create a more controllable nation, stability, unity and patriotism to a newly formed independent country.

It is debatable on whether national ideology strengthened a country positively or negatively. Appiah (2018) suggests it creates stereotyping and promotes discrimination and segregation amongst members of a society who does not associate themselves with the national belief. On the other hand, Harari (2018) and Diamond (2019), argues it provides a platform to unite smaller communities into larger communities

and overcome problems in that which smaller communities would not be able to solve. Nonetheless, they exist and form arguably a part of the cultural norm of the practising nation.

Under President Sukarno in 1945, Indonesia introduced their iteration of national ideology called *Pancasila* (Diamond, 2019, p.189). Malaysia followed suit with their *Rukunegara*, in 1970, thirteen years after their independence (Ahmad, 2014, p.242). Brunei has their own iteration called Melayu Islam Beraja, or MIB (de Vienne and Lanier, 2015, p.262). The foundation for this concept of MIB was first launched in the 1950s by Sultan Omar Ali Saifuddien II and was eventually formalised “by a doctrinal corpus in the early 1970s” (de Vienne and Lanier, 2015, p.262).

The ideology was ultimately decreed during the reading of the Proclamation of Independence by His Majesty Sultan Haji Hassanal Bolkiah. He proclaimed that “... henceforth from now, [Brunei] will forever be a sovereign, democratic and independent nation of Malay Islam Monarchy...”. He considers the country to be a ‘non-secular’ state, a state for the ethnic group of ‘Malay’, governed by the ruling monarch. Furthermore, the monarch, by the right of the National Constitution 1959 (Rev. 2008), is also the “head of the official religion” (Article 3(2)). In accordance with Islam, this means he is considered to be “Allah’s vice-regent on earth”

(*khalifah*) and the “leader of believers” (*Ulil Amri*) (Muller, n.d., para.2).

Abdul Umar Aziz, a former chairman of the National Council for MIB, describes MIB as “simply a revival of Brunei’s socio-political heritage, a cultural concept inherent within the Bruneian socio-political consciousness. It is the culmination of over 700 years of our socio-political, cultural and economic history” (Umar, 2013, p.93). Similar to any other culture, this suggests a continuum of a culture that has evolved in the fabric of time. In the case that a national identity is carved for them, it is also capable of evolving through the will of the Sultan.

After the introduction, Brunei soon has continued to increase institutionalising MIB through various channels. In 1986, an MIB Concept Committee was formed, which later transformed into the MIB Supreme Council (Muller, n.d. para.5). By the 1990s, the ideology was further emphasised into the national education curriculum and government workplace.

The Academy of Brunei Studies (Akademi Pengajian Brunei) was established in 1990 at the University of Brunei Darussalam, to “undertook responsibility for teaching the obligatory undergraduate course in MIB” (Reid, 2001, p.313). Though Reid identifies MIB as a module

taught only within tertiary education, this in fact, is not not entirely accurate. MIB makes its way into “three levels: schools, higher education and the public. MIB classes in schools, colleges and university are obligatory; no citizen can graduate without passing the MIB modules” (Muller, n.d.). Hence, the ideology were easily conveyed to the youth who are seen as the future of the country.

Broadcasting to adults occurred in the workplace. Within workplaces especially in the government sector and Government-Linked Companies (GLC), it is common practise for administrators and supervisors to organise “sessions of indoctrination... in which Bruneians must participate if they wish to advance in their careers” (de Vienne and Lanier, 2015, p.276).

MIB has spread throughout the everyday aspect of Brunei social affairs. Even architecture is not immune to it. I recall attending a seminar in 2013 titled, ‘Brunei Architecture and its connection to MIB’. It was instigated by the government to encourage and promote MIB through architecture. The government advocates architectural policies prioritising “MIB architecture and that forms that were in conflict with the national philosophy would be rejected. There will also be strategies to realise MIB architecture as the national norm, especially to symbolise the eminence of Islam.” (Haris, 2013). It was the day when architecture was seized by ideologists who tries and manifest MIB into an

object of symbolism.

It is impossible to know how many people agree or disagree with the indoctrination of the national ideology. It is evidently clear that this philosophy has been extensively promoted and ingrained into everyday human life to an extent where everyone in the nation has an indication of its existence and presence. Thus, MIB is the unique cultural distinction that makes itself common in Brunei.

Consequently, how can architecture intervene with Brunei’s exclusive cultural identity of MIB in order to create spaces that evokes a sense of belonging? Is it simply the case of following authoritarian orders through the provisions of a list of the ‘dos and don’ts’? Is it merely an aesthetic practise where “islamic elements should be within the design, along with Malay and adat istiadat (ceremonial customs)” (Haris, 2013) Is the local architecture heading towards a banal uniformity of characteristic through the use of symbolism for the visual sensory? To quote Pallasmaa, architecture is “not merely a visual quality, as it is assumed” (Pallasmaa, 2014, p.19).

Pallasmaa postulates that “the judgement of environmental character is a complex fusion of countless factors, which are immediately and synthetically grasped as an overall atmosphere, feeling, mood or ambiance”, in which, “projects a

temporal process, as it fuses perception, memory and imagination" (Pallasmaa, 2014, p.19). In phenomenology, atmosphere is an "overarching perceptual sensory, and emotive impression of a space, setting, or social situation" (Pallasmaa, 2014, p.20). Architecture is never just about visual pleasure. To reduce a space or place to just forms and symbols would mean architecture has failed to acknowledge other human traits that humanity possesses.

Pallasmaa further theorises that "we live simultaneously in material and mental worlds that are constantly fused. When reading a great novel, we constantly construct the settings and situations of the story..." (Pallasmaa, 2014, p.27). When reading, we perceive and project the world in our imagination. As we continue to read, memory is triggered which acts as a link that gives us the sense of orientation and time that provides the structure for the novel. Memory, moreover, is a powerful human trait that provides humanity a bridge to link the past to the present. That bridge is the 'tea and madeleine' that took Proust back to the Sunday mornings at Combray (Proust, 2005, p.52-56). This led me on an analytical investigation to find out the 'tea and madeleine' of the population of Brunei.

To be clear, the act of eating, as Proust proposes, is not the only probable way that causes memory to be initiated, because humans have other senses. The combination of other

forms of action will result in another forms of reaction of the other human senses, which triggers other human traits such as emotions and moods (Pallasmaa, 2014). Proust could have just been looking at the 'tea and madeleine' and his visual senses could very well initiate other memories. All our senses play a major role in recreating memories amongst other traits as postulated by Pallasmaa (2014). It is all in the matter of how we perceive these senses and what a "forceful impact (it has) on our emotions and moods" (Pallasmaa, 2014, p.20).

According to de Vienne and Lanier's findings, education in Brunei is a recent phenomenon where historically, the "Sultanate's culture remained largely oral until the arrival of the British" (2015, p. 220). This would suggest literatures and novels were not accustomed to the Bruneian culture. This is not to say stories and teachings did not exist. They are in the form of oral narrative that were commonly passed down from generations to generations. The most common inherited narratives are stories in the form of myths, legends and folktales. These stories were meant to entertain, but in most cases, provide life lessons, thus cultivating listeners into a cultural norm. Today, these stories continue to exist through narratives as well as in books, in writing and illustrations.

One can presuppose that listeners or readers of these stories would also *construct the settings*

and situations of the story at the suggestion of the storyteller's word (Pallasmaa, 2014, p.27). In addition, analysing these stories provides an insight into the cultural norm of the past. In a sense, readers and listeners have transported themselves back into the past through their imagination. Or, rather the past has been transported into the future through their imagination. Either way, these stories are that 'bridge'.

Stories are aplenty and they all are unique for they have their own settings. If our mind does indeed "create the urban or landscape settings as well as buildings, spaces and rooms and feel their ambience..." (Pallasmaa, 2014, p.30), then unquestionably our mind would also create the objects, the protagonist, the colour and such as well from these stories. By gathering and deconstructing these stories and analysing their contents, it is possible to create a database of categories for how these stories are structured. Contents in stories were grouped as per Figure 4.3 – traits one may find in this material world. By doing so, it is plausible to highlight a character from a category and create an atmosphere through architecture.

Using local stories of myth, legend and folktales, however, will not simply impress the MIB enthusiasts as this does not represent the current cultural identity. Hence, I propose to create a database from the accumulation of

stories that are in relation to the three major themes of MIB - the people (Malay), the religion (Islam) and the monarch. An atmosphere thus is created through highlighting traits of a category from each database and combining them.

My intention is not to necessarily bow to the imposed setting of national identity in Brunei, but to use instead vernacular knowledge to find characteristics of Brunei cultural identity. The use of the triad major themes; – Malay, Islam and Monarchy, – is actually just a way to group the vernacular data, but the findings would probably offer a better viewing of Brunei's culture than the simple official classification.

Figure 4.2
Categories of the material world found in the collected stories

4.2

malay / melayu

The people, or more specifically the Malays, represent “the grouping of indigenous groups of the Melayu race. It contains Malays, Bruneis, Totong, Belait, Kedayan, Dusun, Bisayah and Murut. This division of communities is to avoid the mistakes found in the 1960 census, since many indigenous communities acknowledged themselves Malay because they follow the Islamic religion” (Reid, 2001, p.313).

4.2.1

sources used

The initial stage of my research was to gather and analyse literature that is related to Brunei. It led me to a thesis from the School of Humanities, Languages and Social Science of Griffith University, Queensland, Australia.

The thesis titled *Culture, Tradition and the Series of Bruneian Folklore* by Nur Qistin Muhammad Harunthmarin, was published in 2017. Her work includes a digital copy of the collection of stories foretold by various Bruneian story tellers and published into a series of literatures - *The Series of Bruneian Folklore*.

These series of stories were in the Malay language and translated by the author and edited by her supervisors, Dr. Stephanie Green and Dr. Sue Lovell. The original titles and translated titles are listed on the following two pages.

ORIGIN OF RICE
 THE MERMAID'S TALE
 THE TALE OF TORTOISE ISLAND
 SI RANGGAU
 ELDEST AND YOUNGEST
 THE MOSQUITO KING
 THE KAYONG PEOPLE
 MARRIED TO BARBALAN
 ELF PRINCESS AND THE KALINDAHOU GHOST
 THE BANANA HEART PRINCESS
 THE STOVE SPIRIT
 THE GIANT'S CURSE
 RADIN'S POISONOUS WELL
 VENGEANCE OF THE FOREST SPIRIT

TRANSLATED TITLE

ORIGINAL TITLE

14

1. ASAL USUL PADI (Pg Damit, 1989)
2. TITISAN AYER MATA DUYONG (Mohammad, 1988)
3. KISAH PULAU LABI-LABI (Nordin, 1986)
4. SI RANGGAU (Haji Tengah, 1983)
5. SULONG DAN BUNGSU (A. Tengah, 1983)
6. RAJA RANGIT (Pg Damit, 1981)
7. ORANG KAYONG (Saifudin, 1981)
8. BERISTERIKAN BARBALAN (Safiuddin, 1981)
9. PUTERI BUNIAN DENGAN HANTU KALINDAHOU (Sheikh Abdul Rahman, 1990)
10. PUTERI TUNGKUL PISANG (Ahmad, 1995)
11. HANTU TAMBAK (Haji Md. Ali, 2001)
12. SUMPAH ORANG TINGGI (Haji Mohammad Ali, 2010)
13. TELAGA RADIN BISA (Haji Md Hassan, n.d.)
14. DENDAM HANTU RIMBA (Wong, n.d.)

Figure 4.3
Illustrations from series of folklore

4.2.2

Keywords collection

The stories gathered in regards to the 'Malay' (people) culture are represented in Figure 4.4. In addition, the quantitative data analysis of vernacular stories selected in this research led to the following keywords as per typologies initially identified.

Figure 4.4
Diagram showing keywords and quantitative data of
Malay culture

4.3

Islam

Islam was introduced into Brunei centuries before it was proclaimed to be the official state religion. The exact dates were highly contested between local and foreign historians. Nonetheless, as per decree by the ruler, His Majesty Sultan Haji Hassanah Bolkiah Mu'izzaddin Waddaulah in his reading of the Proclamation of Independence, Islam will be the official religion of the state – specifically Islam in accordance to the belief of the *Ahli Sunnah Waljamaah* of the *Shafi'e* sect.

4.3.1

sources used

The Qu'ran, the holy book for Muslims, is written in the old Arabic dialect. There are a hundred and fourteen *surah* (chapters). In the age of digitalisation, the holy book can easily be accessed through the internet via various websites. Furthermore, specific websites provide translations into various languages to provide viewers and readers with further understanding to the text it contains.

Two websites were used for the collection of data to minimize discrepancies in translating. Both websites provide an English translation of the Qu'ran text. The two websites are quran.com and corpus.quran.com/translation.

Titles of the *surah* (chapters) taken from the Qu'ran selected for this research are listed on the following two pages.

THE OPENING
 THE CALF, THE COW
 THE FAMILY OF IMRAN
 THE WOMAN
 THE TABLE SPREAD
 THE CATTLE
 THE HEIGHTS
 THE SPOILS OF WAR
 THE REPENTANCE
 J O N A H
 H U D
 J O S E P H
 THE THUNDER
 A B R A H A M
 THE ROCKY TRACT
 THE BEE
 THE NIGHT JOURNEY
 THE CAVE
 M A R Y
 T A - H A

THE PROPHETS
 THE PILGRIMAGE
 THE BELIEVERS
 THE LIGHT
 THE CRITERION
 THE POETS
 THE ANTS
 THE STORIES
 THE SPIDERS
 THE ROMANS
 L U Q M A N
 THE PROSTRATION
 THE COMBINED FORCES
 S H E B A
 O R I G I N A T O R
 Y A S I N
 THOSE WHO SET THE RANKS
 THE LETTER "SAAD"
 THE TROOPS
 THE FORGIVER

EXPLAINED IN DETAIL
 THE CONSULTATION
 THE ORNAMENTS OF GOLD
 THE SMOKE
 THE CROUCHING
 THE WIND-CURVED SANDHILL
 M U H A M M A D
 THE VICTORY
 THE ROOMS
 THE LETTER "QAF"
 THE WINNOWING WINDS
 THE MOUNT
 THE STAR
 THE MOON
 THE BENEFICENT
 THE INEVITABLE
 THE IRON
 THE PLEADING WOMAN
 THE EXILE
 SHE THAT IS TO BE EXAMINED

60 +

THE RANKS
 THE CONGREGATION, FRIDAY
 THE HYPOCRITES
 THE MUTUAL DISILLUSION
 THE DIVORCE
 THE PROHIBITION
 THE SOVEREIGNTY
 THE PEN
 THE REALITY
 THE ASCENDING STAIRWAY
 N O A H
 THE JINN
 THE ENSHROUDED ONE
 THE CLOAKED ONE
 THE RESURRECTION
 THE MAN
 THE EMISSARIES
 THE TIDINGS
 THOSE WHO DRAG FORTH
 HE FROWNED

THE OVERTHROWING
 THE CLEAVING
 THE DEFRAUDING
 THE SUNDERING
 THE MANSIONS OF THE STAR
 THE NIGHTCOMMER
 THE MOST HIGH
 THE OVERWHELMING
 THE DAWN
 THE CITY
 THE SUN
 THE NIGHT
 THE MORNING HOURS
 THE RELIEF
 THE FIG
 THE CLOT
 THE POWER
 THE CLEAR PROOF
 THE EARTHQUAKE
 THE COURSER

114

THE CALAMITY
 THE RIVALRY IN THE WORLD
 INCREASE
 THE DECLINING DAY
 THE ELEPHANT
 Q U R A S Y H
 THE SMALL KINDESSES
 THE ABUNDANCE
 THE DISBELIEVERS
 THE DEVINCE SUPOORT
 THE PALM FIBRE
 THE SINCERITY
 THE DAYBREAK
 THE MANKIND

54

4.3.2

Keywords collection

As represented in Figure 4.5, the quantitative data analysis of the *surah* (chapters) selected in this research led to the following keywords as per typologies initially identified.

Figure 4.5
Diagram showing keywords and quantitative data of
Islamic culture

4.4

monarchy / *beraja*

The monarchy proclaims that the “Sultan is the ruler and patron to the people, who holds the trust from Allah (god) in the exercise of supreme authority to rule the nation” (Zain, 2013).

Monarchy or *Beraja* is the last theme of the national philosophy. The hierarchical nature of the theme of reflects the societal structure of Brunei. The people (*Malay*) precede religion, and religion precedes the Monarch (*Beraja*).

4.4.1

sources used

As the head of state, the monarch holds responsibility for controlling and shaping the society. A stable society creates means of progression, for a monarch cannot run a nation by himself. As one method of achieving stabilisation, media and journals are monitored.

Even though the ruler has no control of what is being written outside the country, the ruler has absolute control of what is being written and published within. Other means of communication are also within their control such as digital data and multimedia. Information that is considered to be threatening faces censoring. In worse cases, the communicator will be charged with an act of treason.

Stories collected for this sub-chapter are a collection of myths, legends and historical events depicted by travellers and historians glorifying the monarch that are readily available in literature both printed and digital.

Most of the stories found in the internet are taken from the webpage bruneiresources.blogspot.com and bruneiresources.com. Both webpages are run by Rozan Yunos, a retired civil servant and publisher of a number of literatures in the field of history, myths and legends.

In a country where information is controlled, it can be argued that if the webpage is still accessible it means that the controller of society wishes it so. Hypothetically, does it not also mean that everything that was written in the literature transcends into words that, indirectly, belong to the controller as well?

The stories chosen are linked either directly or indirectly to the monarch. The list is shown on the following two pages.

16

LEGEND OF SULTAN BOLKIAH	(Omar,	2018)
SI TANGGANG / JONG BATU	(Yunos,	2016)
AWANG SEMAUN	(Yunos,	2018)
GOLDEN MOUNTAIN AND THE WEEPING RICE	(Omar,	2012)
PIGAFETTA'S CHRONICLE	(Yunos,	2011)
TALES OF BANANAS, TIGERS AND DRAGONS	(Yunos,	2011)
THE MIRROR ISLAND AND CIVIL WAR	(Yunos,	2008)
MYSTERIOUS GRAVE	(Yunos,	n.d.)
THE TALE OF UNFILIAL SON	(Yunos,	2011)
TALES OF LUMUT LUNTING PILONG PILONGAN	(Yunos,	2007)
COURT OF THE SULTAN OF BRUNI	(Marryat,	1848)
B R U N I	(Marryat,	1848)
SANG AJI	(Yunos,	2007)
BOXER CODEX	(Yunos,	2008)
JOURNEY OF JUAN SEBASTIAN DEL CANO	(Yunos,	2016)
SHARIF ALI	(Yunos,	2016)

4.4.2

Keywords collection

Similar to the two other major group themes, the quantitative research led to the findings of the following keywords as per typologies initially identified - Figure 4.6.

Figure 4.6
Diagram showing keywords and quantitative data of
Monarch culture

4.5

Design Experimentation 01

The first design experimentation was conducted after all the data were collected, arranged and analysed. A subject was then chosen from each data sets, combined and represented in the form of a *parti* model. Instead of choosing a word from each wheel that appears the most, I chose to select the keywords based on qualitative analysis. I read all the stories and selected a word that represented the majority of the themes the stories refer to. After selecting one keyword for each wheel, the keywords were treated as of equal value for the elaboration of the *parti* models.

A *parti* model was preferred for this exercise as a medium of design representation. A *parti* model provides a platform to showcase a representation of the national philosophy in an abstract manner.

A series of *parti* models were created for this design experiment using paper and wood as the main medium. Three of these *parti* models were selected to showcase in this thesis.

Figure 4.7
Diagram of the conceptual *parti* model

4.5.1

parti model 01

rice, banana and purple

The first Malay Islam Monarch *parti* model is a representation of the combination of rice (Malay), banana (Islam) and the colour purple (Monarchy). This is represented in Figure 4.9 - 4.13. The conceptual idea for this model is based on the difference of visuals that the plantations of rice and banana often depict. A rice plantation or field is one that is non-obtrusive visually while the banana is often visually obstructive. The colour purple was used to represent this *parti* model.

Figure 4.8 - 4.12
Pictures of *parti* model 01 and illustrations

4.5.2

parti model 02

fish, cattle and water

The second MIB parti model is a representation of the combination of fish (Malay), cattle (Islam) and water (Monarchy). This is represented in Figures 4.14 - 4.18. The conceptual idea for this model is based on how the two creatures, fish and cattle, act accordingly when water is present. One side represents a school of fishes that swim in close proximity, creating a streamline pattern. The other side represents cattle, scattered around a field, their natural habitat. A river cuts through the field providing a source of water for the cattle. The cattle create a linear pattern, following the length of the river.

Figure 4.13 - 4.16
Pictures of *parti* model 02 and illustrations

4.5.3

parti model 03

moon, Ka'abah and gold

The third iteration for an MIB parti model is a representation of the combination of moon (Malay), Ka'abah (Islam) and the colour gold (Monarchy). This is represented in Figures 4.19 - 4.24. The conceptual idea for this model is to show and represent the moon phase through the use of the colour gold. Blocks in the shape of the Ka'abah were chosen where each side represent a moon phase. Two blocks were required to represents the common eight moon phase. The moon phases are commonly known as the full moon, waxing gibbous, first quarter, waxing crescent, new moon, waning crescent, three quarter and waning gibbous. Each side of the block can either be fully covered (denoting the full moon), to fully uncovered (denoting the new moon) or partially covered (denoting the other phases of the moon).

Figure 4.17 - 4.20
Pictures of *parti* model 03 and illustrations

4.6

Self-critique

During the May review, a reviewer provided his insights on the risk of using national ideology as a driver for designing. The reviewer's opinion suggests that using national ideologies often leads to discrimination and segregation amongst the minority. He further reiterated to look into examples of precedents of nations using *volksgeist*, which was commonly used in Eastern European nations, especially the former Habsburg Empire. Furthermore, a book was recommended by the reviewer, titled *The Lie that Binds: Rethinking Identity* by Kwame Anthony Appiah, which the reviewer believed would be of value to my work.

Just as the title suggest, Appiah offers his view on how we perceive identity in this generation. He critiques and deconstructs different types of group identities that he termed 'lies' through classification of what he calls the five C's: creed, country, colour, class and culture. He describes these groups identities as being transient and, in a sense, arbitrary.

Furthermore, Appiah iterates (and reiterates in

each chapter) that a group of identity evolves over time and from each individual to each individual. To view them as fixed is mistaken (Appiah, 2018, p.25). Each chapter includes historical episodes and reminders, through examples, to contemplate on how a particular kind of group identity is more malleable than one might suppose. While these five classifications do intersect with each other, as this research pertains to nations, I will highlight issues and ideas brought through in this particular classification only - *Country*.

Appiah defines nations as "a group of people who think of themselves as sharing ancestry and also care about the fact that they have that supposed ancestry in common" (2018, p.76). I find this definition to be rather questionable. What about nations that have established themselves through the papal bull of Doctrine of Discovery (Rodriguez et al, 2019, p. 57) during the 15th and 16th century such as the United States of America? Does Appiah suggest the Native American of today thinks and care about the official shared ancestry of gaining

independence from the British on 4th of July?

Definition aside, Appiah understands the complexity of national identification as boundaries consistently shift over the centuries and the assimilation of cultures for which Trieste was used as his prime example. He did bring forth an example of a modern state that used national ideology that he is fond of. Singapore created an ideology that the nation refers to as 'CMIO system' (Chinese, Malay, Indian and others) as a way to assimilate the multi-ethnic citizens that were residing when independence was gained.

Although the national language is Malay, the system promoted the use of English language (their colonial language) as the "language of government" to ensure fairness and to "strengthen the nation's capacity for effective participation in global trade, the lifeblood of a port city" (Appiah, 2018, p.93).

Initially, Singapore faced issues then later stabilised. It was only then the previous head of

state, Lee Kwan Yew, became less "focused on sales and aspirations and more on policy." (Appiah, 2018, p.97). These examples he provides on Singapore do not convey the risk of using national ideology as the reviewer has suggested. It is, in fact, the opposite, although it is worth noting that Brunei's ideology is not similar to Singapore. Thus, its fate is not predestined to be Singapore-esque but should be seen akin to Appiah's interpretation of Robert Burns's poem, titled "Robert Bruce's March to Bannockburn", simply a project. (Appiah, 2018, p.104).

Appiah added a final 'C' in this book, a coda, which, in my opinion, was rather anti-climactic. After a lengthy critique and deconstructing of each of the five 'C's, Appiah does not provide any clear insights or arguments into an alternative social reality of identities nor a reconstruction of it. In his coda, he indicated that these identities that he classified "can all become forms of confinement, conceptual mistakes underwriting moral ones. But they can also give contours to our freedom as working-class and LGBTQ and

national and religious identities have done in struggles all around the world” (Appiah, 2018, p.218). This conflicting text underlines my ambivalence towards this book for this text suggests that having identities is a means for humans to socially evolve through learning from one another. Should we even bother to dismiss or redefine these ‘lies’ that bind? Perhaps, it is just empathy that should be added to the mix. To be fair, Appiah did emphasise his intention publishing this book in which he wrote “my aim is to start conversations, not to end them” (Appiah, 2018, p.223).

One of the more disconcerting risks of nationalism that I did find was put forward by Harari (2018). He described that a “problem starts when benign patriotism morphs into chauvinistic ultra-nationalism. Instead of believing that my nation is unique...I might begin feeling that my nation is supreme...” (Harari, 2018, p.112). He further explains this has led to war on an unprecedented scale but rather optimistically, also resulted in modern nations building massive systems of healthcare,

education and welfare (Harari, 2018, p.112). While this was the norm pre-World War II, the invention of nuclear warheads has deterred any possible large scale wars from occurring. Fear has evolved previous nationalistic ideas into a new form, a different kind of identity that has a limited value. Immense risk would be a country that has both nuclear technology and promotes ultra-nationalistic ideas. Brunei instigating wars is highly far-fetched for they have neither.

Furthermore, the world has more pressing issues that require a global ‘commitment’ that I consider will partake of reshaping every national identity of the future for they are ever-malleable. Issues such as ecological changes, technological disruption, nuclear war (Harari, 2018, p.114-122) and pandemic impose “existential threats that no nation can solve on its own” (Harari, 2018, p.124). Harari proposes a system similar to the European Union whose constitution says “while remaining proud of own national identities and history, the people of Europe are determined to transcend their former

divisions and, united even more closely, to forge a common destiny” (Harari, 2018, p.124). A global union is critical in tackling these crises and issues, but will it be effective enough if countries involved include those that do not have strong sense of national identity? If a nation is not capable of rallying up its own people to a common commitment, it would be very risky and difficult to propose and commit to a global issue.

On the subject of crises, Diamond discusses the importance of having a strong sense of national identity in his book *Upheaval How Nations Cope with Crises and Change*. He traces how six countries have survived defining catastrophes which includes the Soviet attempt to invade Finland, the forced opening of Japan, Chile’s brutal Pinochet regime, Germany post world war, Indonesia’s internal unrest and Australia’s search for an identity. Diamond claims that “national identity has been an important contributor to crisis resolution for all of our older countries. A sense of national identity held Meiji Japanese and Finns together, and gave those

countries the courage to resist powerful external threats” (Diamond, 2019, p.432).

Indonesia, on the other hand, “experienced secession movements and rebellions” and was identified to have weaker national identity (Diamond, 2019, p.432). Diamond pointed out that the causation of this was due to the “fact that Indonesia didn’t come into existence as an independent country until 1949, and wasn’t effectively unified even as a colony until around 1910” (2019, p.432). Diamond is aware of stronger bonds in recent times where, similarly to Singapore, the nation adopted the national language of ‘Bahasa Indonesia’ , as well as “emphasising the five-point framework of *Pancasila*...” (2019, p.214). He further adds that the growth of democracy and involvement of citizens in the nation’s development have contributed to stabilisation.

It would seem that nations of the Malay world (Singapore, Indonesia, Malaysia and Brunei) have followed similar paths by using national ideologies to create a stable and unified national

identity. All of these countries were once colonies of a European power and have only gained their independence less than a hundred years ago. As newly formed countries that constitute multiple ethnicities, perhaps the best thing to do first was to create a common commitment through the phenomenon of national ideologies to unite the people.

Putting the national matters aside, I would like to focus and reflect back on the design approach. There are a couple of issues I wish to address in this regard.

The first issue relates to the stories gathered and the messages they bring to this generation. As previously mentioned, these stories were meant to entertain as well as give life lessons. Some of these stories are still relevant in this day and age; in the case of the story, *The Golden Mountain and the Weeping Rice* (Omar, 2012), it teaches one to always respect food and avoid wastage.

However, as identity continues to evolve, so

does society and the stigma generated over time, such as issues of feminism – not to the story-tellers fault as feminism had yet to exist when these stories were made. Women mentioned in stories such as “Married to Barbalan” (Saifudin, 1981), “The Stove Spirit” (Md. Ali, 2008), “The Mermaid’s Tears” (Muhammad, 1988) and “The Banana Heart Princess” (Ahmad, 1995), are portrayed to possess supernatural ability and each story ends in death of these women. Females in these stories, as well as others, are depicted as second-class citizens in society and males are always the provider.

In this day and age, a scrutinization of these stories is a hindrance towards the progress of females and promotes chauvinistic traits amongst the male readers. Furthermore, in a period where humans are socially aware, other social stigmas might arise in the future that could also potentially impose discriminatory traits. My intention was never to deconstruct these stories in a manner to investigate the social stigma it possesses in this current age,

but rather, to conduct a qualitative analysis of the contents found in the stories. To dismiss any of these stories would have implied that I have dismissed a section of the historical culture of Brunei.

The second issue that I wish to highlight is in regards to the generative nature of this design methodology. While it does seem feasible to generate a number of combinations and reinterpret it through *Parti* models, it does require a certain degree of description and explanation to further emphasise the design created. It would be interesting to explore this design methodology through other mediums. In this day and age, a scrutinization of these stories is an approach that could possibly offer a better form of communication – in turn, creating a more universal experience.

Figure 5.1 Aerial view of design experimentation 02 (5.4.1)

chapter five

SOCIETY'S MASQUE

5.1	Introduction
5.2	Re {use + adapt}
5.3	Language of Hydrocarbon
5.4	Design Experimentation 02
5.5	Design Review

5.1

Introduction

Brunei removes and disposes of redundant offshore oil and gas infrastructures through the enactment of the procedure RtR (rig-to-reef). Whilst it was understood that not all materials could be salvaged and readapted, these specific materials and infrastructures that have been repurposed were proven to have beneficial outcomes for nature's ecosystem – in this instance, the sea and its biodiversity (Bull, 2018). This section of this research serves as an effort to understand and conduct qualitative studies on the possibility of repurposing onshore oil and gas infrastructure in Brunei for the built environment that evokes a '*sense of belonging*'.

5.2

Re {use + adapt}

The initial proposition was to initiate qualitative research through formal gathering of information on the existing oil and gas facilities in the area. Due to lack of access to information, this research was limited to just efforts to identify the typology of these infrastructures through images found in the form of photographs, illustrations and maps of the area. It was then cross-referenced with literature that provides a more detailed description of the particular infrastructure of a similar typology.

This pragmatic approach offered discrepancies as typologies of infrastructure between selected literature and existing infrastructures found in the area were not concluded to match. The typology may be similar, but in terms of build, the existing infrastructure may differ in terms of technology, materials, sizes and shapes.

Due to the limitation in this approach, an alternate proposition was proposed, as put forth by Balkema and Slager (2004), based on creative investigation and artistic work with processes of reflection and documentation to gain new

recognitions, insights and knowledge. The route taken for this section may have diverted but the purpose still remains – to explore whether Brunei’s onshore oil and gas infrastructure can be readapted and evoke a ‘sense of belonging’.

This methodology, given rise through John Hejduk’s life work, relies on imagination rather than “concepts, logical thinking and transparent argumentation” (Søberg, 2012, p.113). Hejduk argues that a building cannot be created without “building a new repertoire of characters of stories of language and it’s all parallel. It’s not just building per se. It’s building worlds” (Hejduk & Shapiro, 2009, p.75).

This world imagined is a reflection of the social structure of the existing Brunei, albeit reimaged in an alternate hierarchical social structure. As described in previous chapters, the oil and gas industry are interrelated with the existing social structure of the inhabitants. The industry acts as the catalyst that progresses the country and provides the inhabitants access to adequate healthcare, education, modern

dwelling and infrastructures. However, credit given is lacklustre in comparison to other human elements that they consider important to protect and promote such as religion and the culmination of centuries of local socio-political and culture (Umar, 2013).

This is further evidenced in Brunei’s architectural public spaces, as per indicated in Chapter 1, composed during this generation of profiteering from oil and gas. Islamic architecture dominates the country’s public spaces via government intervention. This, understandably, indicates the importance of religion to the nation, as well as a showcase of human characteristics of faith, pride and ego. The idea of glorifying an architectural typology that originates hundreds of miles away from Brunei, I feel is just another form of colonialism.

The nation’s progress, development and concretisation of the created national ideology is arguably only made possible with the existence of the hydrocarbon industry. The inhabitants welcome the stability and safety it

5.3

Language of hydrocarbon

provides while willingly investing in time, lives and money into the system it adheres to. This world I reimagined is inspired by these individuals and the society it generates. It is an alternate Brunei where the importance of the hydrocarbon industry, socially and economically, supersedes the current inhabitants' official social structure of MIB for they fear more of a world without it.

This world craves the need to objectify the hydrocarbon into the everyday built environment. Similar to the current climate of the proposed architectural ideology in Brunei (Haris, 2013), this world I reimagined is a world where hydrocarbon infrastructures and elements are promoted and utilised to symbolise the eminence of this commodity. This is to justify and serve as a reflection of its importance to the local inhabitants – socially and economically.

Hejduk argues that languages or characters must take form to facilitate the inception of constructing this imagined world (Hejduk & Shapiro, 2009). Taking precedents from Hejduk's works, the language of hydrocarbon were conceived through the processes of collecting and repeating, conducted as a "visual theory, arising from comparison and analogy, but also as a memory chart" (Søberg, 2012, p.116). A method to instigate the relevance and importance of memory.

The onshore infrastructures, at its core, can be classified as merely objects of the material world (Pallasma, 2014). They are instruments part of the wide complexity of processes that makes up the oil and gas industry. These instruments, nonetheless, plays an important role in providing characters, or in this case languages, to the urban fabric of *Seria Town*.

To adopt Rowe's text on memories, these infrastructures "emphasise(ing) the particular, the personal, and the curious" (1976, p.80). Each beholder need not require to have any level of

understanding of the specificity of these infrastructures, for these objects that are visually accessible, will be embedded in the mental world of every beholder. Thus, as per discussed in the previous chapter, they belong to the viewers memory.

Oil and gas infrastructures may differ from region to region, era to era, practitioner to practitioner, my research has led to an understanding that to operate such industry, it does require instruments of similar typology - the basics. The catalogue created for this research is not necessarily an exact copy of the objects found in *Seria Town*, but rather similar typology. Earlier analytical research of the designated site via digital maps and images deduced that silos, refineries, pipe racks and pumping jacks are present on site.

The creation of inventory of typical onshore oil and gas infrastructures is not of scientific analysis but rather to formalise an understanding of the language of these infrastructure. In addition, the catalogue of

images and texts found in Figure 5.2, is presented as a representation for readers and viewers to fully grasps the ethos of the language of hydrocarbon as put forward in order to build this imagined world. As postulated by Sørberg, "as when we recall past moments and experiences, ... through such repetition we also in some sense (re-)create what is recalled and represented by our imagination" (2012, p.118).

This design experimentation conducted was partake in precedent to Hejduk's work *The Silent Witness and Other Poems* (1980) and *Victims* (1986).

transport
curve
bends
stainless steel
liquid
gas
solid
storage
pump
jack
concrete
nodding
donkey
pipe
rack
bore
demerization
fractional
cooling
coking
well
platform
cracking
crane
walking
beam
extraction
distillation

Figure 5.2
A Series of oil infrastructure forming the basis of oil language

5.4

Design experimentation 02

The language of hydrocarbon (Figure 5.2) indicates these texts and images found in the onshore oil and gas infrastructure's vocabulary, in its 'stable forms', but not necessarily in a rigid and logical way. Echoing poststructuralist thinkers such as Roland Barthes, Gilles Deleuze and Jacques Derrida, these 'stable forms' and meanings, through the play of signification and decomposition of meaning, have the ability to change.

The design experimentation conducted in this section involves the processes of defragmentation, distortion and manipulation of these so called 'stable forms'. Subsequently, inspired by John Hejduk's *The Berlin Masque* (1980), these defragmented, distorted and manipulated forms were utilised as a form of mask.

In this particular work, Hejduk states that:

So completes the masque which in a way composed into a masque in our time, for as it was necessary for the highly rational-pragmatic city of 15th century Venice to create masques, masks, masses for its time in order to function, it would appear that we of our time must create masque (programs ???) for our times (1983, p.51).

Masking is to become someone else. Mask provides an opportunity to "blur(s) the identity of the person wearing it by establishing a new character, new relations, new patterns of thought and behaviour" (Søberg, 2012, p.125). Furthermore, masking presents an opportunity to create the reimagining world of Brunei – more importantly, an opportunity to (re)apply or repurpose the onshore oil and gas infrastructure into the human built ecosystem.

This research offers three 'mask-inspired' design representations in the form of illustration. To further emphasise the design created as a 'sense of belonging' for this reimagined Brunei, the basis of design experimentation 01 was brought forward into this design experimentation.

The *parti* models, created in the previous chapter, are masked by the language of hydrocarbon, thus resulting in a world familiar, but not quite, to the individuals of Brunei – a Brunei where the eminence of hydrocarbon takes root into every individual's mind. The objectification of the languages it holds, highlights the individual's devotion and faith.

5.4.1

rice, banana and purple

Figure 5.3 - 5.4 An imaginative view of the creation of space through language of oil

The first design experimentation sees the utilisation of pipes, pumping jacks and frames to create spaces that evoke 'a sense of belonging'. These spaces consist of rows of columns and undulating frames that offer shadings and open spaces for activities to be conducted.

A glass structure, rectangular in shape, runs through the centre, which provides internal spaces. Glass offers visual permeability for inhabitants as well as a connection between the internal and external. The pumping jack, deconstructed and used as columns, rises into the sky and dominates the skyline.

Figure 5.5 - 5.6 An imaginative view of the creation of space using the oil language

5.4.2

fish, cattle and river

Figure 5.3 - 5.4 An imaginative view of the creation of space through language of oil

The second design experimentation sees the utilisation of cranes, silo frames and pipes to create spaces that evoke 'a sense of belonging'. Fish are represented as a close cluster of cranes carrying tubular shaped forms constructed by pipes and formed by the silo frames. Cattle are represented by a singular crane.

The cranes form a core structure with communal spaces that connect to individual spaces located in the suspended tubular form. The individual spaces are suspended in the area as a means of protection from the external threats.

Figure 5.9 - 5.11 An imaginative view of the creation of space using the language of oil

5.4.3

moon, Kaa'bah and gold

Figure 5.11 - 5.12 An imaginative view of the creation of space through language of oil

The third design experimentation sees the utilisation of cooling towers, frames and tanks to create spaces that evoke 'a sense of belonging'. The tanks and frames are arranged to create the cuboid shape of the Kaabah. The tanks are arranged along the frames and painted gold accordingly to represent moon phases.

The cuboid forms are suspended along the core, in this instance, the cooling towers which also provide communal spaces. Each individual tank represents individual spaces to be utilised by inhabitants.

Figure 5.13 - 5.14 An imaginative view of the creation of space using the language of oil

5.5

Design review

The design experimentations, conducted through a series of processes as per Hejduk's methodologies and ethos, were observed to have provided a viable opportunity to readapt or repurpose the onshore oil and gas infrastructures into the vernacular. While not all of the language created in Figure 5.2 were utilised, the process of deconstructing, defragmenting and dismantling these images and texts was found to consist, conclusively, of multiple layers of meanings and usage that can potentially be used to re-signify.

Furthermore, Hejduk's methodologies, which were implemented in this design experimentation, provided an understanding into the relationship between the individuals of Brunei and their social and cultural normative. The present individuals embrace the traditions and cultures for which they seek to ensure continuity. Yet cultures are malleable (May, 2011) for they will absorb anything that improves their well-being. As such, they seek the continuity of the culture of hydrocarbon, for they have yet to find another that can improve their

well-being.

The reimagined world of Brunei, found in the design experimentations, underlines and reflects the aggressiveness of the language of hydrocarbon. The representations show these reconfigured infrastructures as extremely dominant aesthetically in relation to their surrounding environment. Moreover, when the oil industry is no longer available to benefit the socio-economic structure of Brunei, the re-adaptation of these infrastructures could potentially just recite unpleasant memories, thus becoming a distraction which could potentially hinder the nation from progressing.

In addition, repurposing infrastructures will require time and financial implications to undergo processes such as decommissioning, dismantling, cleansing and even testing for durability and usability. As previously mentioned, there is no available information on the existing onshore oil and gas infrastructure in Seria Town. However, being the first oil field in Brunei in 1929 suggests that this century old oil

Brunei in 1929 suggests that this century old oil field carries infrastructures that could be at their final life cycle when oil and gas are no longer feasible to extract.

Other methodologies, through the developments of innovations and technologies, provide alternatives for repurposing redundant infrastructures. Materials of these infrastructures, primarily metals and concrete, can be recovered, recycled and combined with new materials.

For instance, demolished concrete structures are collected and crushed into fine concrete (Recycled Concrete Aggregate - RCA) and reused as a constituent for concrete (Oksri-Nelfia, Mahieux, Amiri et al, 2016).

Metals too are recovered and melted down in furnaces, a process commonly known as smelting, poured in casters and further combined with new metals and reformed into a new object (Bulei, Todor & Kiss, 2018).

Figure 6.1
AERIAL VIEW - PART OF SERIA

chapter six

WILD PIGEON'S FIELD

6.1	Introduction
6.2	Profile
6.3	Site Location
6.4	Site Proposal

6.1

Introduction

This chapter will focus on analytical research on *Seria* Town and its immediate surroundings through three sub-chapters: initially, a profile description of *Seria*, including its history, followed by a site analysis and a site proposal. The limitations of my research on this site will be highlighted as well.

Figure 6.2 (right) Map showing the location of Seria Oil Field

6.2

Profile

History

Seria oil field is located within the confinement of Seria town of Mukim Seria (Figure 6.2). Before the discovery of oil, the area was locally known as *Padang Berawa* (Wild Pigeon's Field). It was described as a "small and insignificant fishing hamlet" (Sidhu, 2017, p.287). *Padang Berawa* was not the whole of Mukim Seria as it is now, but just a small area between the two rivers, Sungai Seria and Sungai Bera.

During the course of my research, literature on historical events of Seria kept sourcing back to the same book titled *The Discovery and Development of the Seria Oilfield* by G.C. Harper, published in 1975, reprinted in 1990. It was unfortunate that I could not obtain the book, but snippets of the contents were found in other literature that provided an invaluable insight into what the area used to be like.

One of the snippets was found in an article published in the journal SEJARAH: Journal of the Department of History, which reads:

With the exception of river banks and a strip of sand along the sea, the whole of Padang Berawa is a swamp. Walking there means really climbing and jumping over naked roots, and struggling and cutting through air roots of mangroves of more than man's height... Another great difficulty is the lack of drinking water. The water hidden in the depth of the roots is muddy, dark red and has a sour taste... Boiling does not alter its bad taste... Not even the Dayaks are able to use it... During the rainy season, and especially after a heavy rainfall, the whole of Padang Berawa are is submerged by water... (Sidhu, 2017, p.151).

A small town soon developed in Seria by the late 1930s (Sidhu, 2017, p.287) and was gazetted as a municipal in 1936. However, the town was destroyed due to heavy bombing during World War II. During the period, Brunei was occupied by the Japanese where ten thousand troops of the Kawaguchi Detachment came ashore into Brunei

Present

and took the country without any resistance (Saunders, 2003, p.121). They landed via Kuala Belait, west of Seria, on the 16th December 1941. According to Bowman (2000, p.412), the British “destroyed oil fields and port installations to deny Japan oil facilities.” He further reported that the Japanese reacted by digging new wells and developing a new naval base. After the war, Seria was soon rebuilt and by the 1950s, a new feature was introduced to the town with the installation of ‘nodding donkey’ oil pumps (Sidhu, 2017, p.287).

In addition, Seria was one of the three centres targeted by rebels during the Brunei Revolt of 1962, which occurred on the 8th December. The rebels, who took the Seria Police Station and hostages, were cleared by the Highlanders and Gurkhas of the British Army in Kuala Belait and Seria on the 10th and 11th December (Saunders, 2003, p.150).

Today, Seria has transformed from a swampy region into a town with an estimated population of 28,300 (The Commonwealth, n.d.). Aside from the oil and gas industry, the town now provides commerce, residential areas, industry, education centres, religious centres and recreational centres. The headquarters for the country’s leading oil production company, Brunei Shell Petroleum, can be found here. Moreover, it is home to the British Forces Brunei (BFB), the last remaining British military base in the Far East (Tossini, 2017), where they have been stationed since the events of 1962, the Brunei Revolt (Kaija Larke, 2015).

Mukim Seria is cut through by the main access way, the Seria by-pass, a dual carriage road that links with the country’s main highway that runs along the coast of Brunei. A much older and smaller carriage road, Jalan Tengah, can be found running in parallel to the Seria by-pass, albeit closer to the coastline of Mukim Seria. The road links to the country’s main highway as well.

Figure 6.3 Map showing Mukim Seria and its water environment

degree of development within the area. The northern sector is mostly developed while the southern is undeveloped, made up of mostly peat swamp forest (Figure 6.4). The Forestry Department of Brunei describes peat swamp undecomposed and partly decomposed organic matter that has raised the peaty soil into a dome of which the top is above the normal flood level" (Forestry Department, n.d.). Furthermore, they find that the peat swamp here is the most extensive, which expands all the way to the Baram basin, located over the borders in Sarawak.

Peat swamp forests in Southeast Asia, regarded by locals as wasteland, are "quickly disappearing as a result of logging, fire, and conversion to agriculture and industry" (Rosa, Wijedasa & Corlett, 2011, p.49). Moreover, Rosa et al (2011) found that their importance has been relatively underappreciated over the past decades.

Only in recent times, through discoveries and studies, have researchers found that the ecosystem possesses a unique environment that is critical to the well-being of the planet. In an article by David Chandler (MIT, 2017), it was found that tropical peat swamp forests of Southeast Asia provide "a significant "sink" that helped remove carbon dioxide from the atmosphere". Unfortunately they are "disappearing fast", which could potentially release the carbons that they hold into the

atmosphere and accelerate global warming.

An article by the Institute of Biodiversity and Environmental Research (IBER) 2019 claims that the amount of carbon stored in the Southeast Asian peatlands is ten times more than the biomass in tropical Amazonia. The destruction would undoubtedly be catastrophic. As per article by Leng, Ahmed and Jalloh (2017), the ecosystem is vulnerable to climate change (temperature, precipitation, atmospheric composition, fire and haze). The article concludes that efforts should be made to minimise negative effects it can potentially cause.

Interest in the ecology has recently exploded amongst researchers and scholars due to its natural ability to store carbon and the under-explored biodiversity that it contains (Rosa et al, 2011). Efforts to conserve, restore and produce a sustainable management of the peatlands in Brunei are on-going between government agencies, the education sector and communities, both locally and internationally (IBER, 2019, para.6).

Digital maps of the area do not denote any topographical information; hence, it is assumed to be relatively flat within the developed area. A map extracted from the webpage *Maps of the World* indicates Mukim Seria is within the range of five to ten meters above sea level (Figure 6.6).

SOUTH CHINA SEA

Figure 6.3

Map of Mukim Seria

Figure 6.5 Map showing the type of forest in Belait district
Readapt - (Marsden & Anderson, 1984)

Figure 6.6 Partial map indicating the ground level of proposed area

6.3

Site location

The onshore infrastructure in Seria was found to be expansive. Thus, a site location was designated for the purpose of this thesis as per Figure 6.7. The site was chosen for its environmental context, a juxtaposition between the human environment and the natural environment. The northeastern part of the site was discovered to have been used for disposing oilfield waste due to lack of locally available resources for treatment from 1982 to 1996 (Sungai Bera holding, 2005, p.35). Works for remediation started in 2000 and completed in 2003. Reports suggest the area is now completely restored and “revegetated with local native grasses, trees and wildflowers” (Sungai Bera holding, 2005, p.36) as well as the return of wildlife.

Figure 6.7 Site analysis and proposed area

6.4

Site proposal

The designated site is located northeast of the town centre, within the boundary sector of *Pekan Seria Kawasan II* (Seria Town Area II) and *Kampong Sungai Bera*. At the present, it is only accessible via the main internal road of Jalan Tengah, which links *Mukim Seria* to *Mukim Kuala Belait* to the east, and *Mukim Liang* to the west. The location chosen is currently occupied by a section of the Seria Crude Oil Terminal (SCOT), as well as other minute structures. The area is inaccessible to the public. As highlighted in previous subchapter, the area west of the SCOT is a restored area with young flora and fauna. This thesis proposes an accessible site that is in line with the nation's future plans and social structure, as will be highlighted in the next chapter.

Figure 6.8 Site development proposal

Figure 7.1 Map showing proposed site and immediate surroundings

chapter seven

GENERATING PROGRAMME

7.1	Introduction
7.2	Readapt
7.3	Initial Proposal
7.4	Programming the buildings

7.1

Introduction

Brunei is a young nation that has realised in recent times that the country should diversify its economic portfolio. Whilst efforts are made in moving other industrial sectors and development forward, Brunei is committed to ensure its pristine nature is not sacrificed. In fact, they have been notions of embracement, enhancement, maintenance and conservation for the natural surrounding (IBER, 2009). The tank farms found in SCOT are used to store the current commodities. This thesis proposes a future where this area will store another crucial commodity, knowledge and provide spaces that accommodate societal well-being.

7.2

Readapt

Brunei's future of a post-hydrocarbon dependency will see changes to the current socio-economic structure. The future is unknown and all one can do is assume and depict the changes it may bring upon individuals or communities. In her article, May postulated, change does not simply happen beyond recognition overnight. She further considers that "change tends to be constant and incremental and is introduced piecemeal into our lives" (May, 2011, p.374). On this note, this subchapter includes findings of my research on changes that I consider critical that will foresee the future of the nation's socio-economic structure.

(socio) - Economic Structure

Brunei's economic portfolio has not diversified beyond oil and gas in this modern age. It would be naive to think that Brunei is not capable of changing its course for it has two key factors that I consider advantageous to the nation: time and current investment.

Inconsistency in oil and gas prices provokes concerns for a country that is entirely dependant on it; it also reminds local communities of the problems it faces and ensures risks of complacency are minimised. In 2010, The Centre for Strategic and Policy Studies (CSPS) published their first journal, themed *Economic Diversification*, which highlights "key issues faced in Brunei in confronting both globalisation and the need for Brunei to promote a vibrant, non-oil and gas economy" (CSPS, 2010, p.vi).

Although the nation's effort to diversify its economy has been "propagated as early as the 1960s when the NDP2 (National Development Plan 2) was commissioned" (Hashim, 2010, p.50), it has been observed that the state, especially in the past decade, is making forward strides through policy-making in hope to attract Foreign Direct Investments (FDI) and collobarators. Nations such as South Korea, Japan, Costa Rica, but more notably, an emerging global economic powerhouse, China (Storey, 2018 & Kumpoh, 2017) have been keen participants.

In 2013, China, under President Xi Jinping, announced two ideas. The first was announced in Kazakhstan – a Silk Road Economic Belt. Subsequently, in Indonesia, a 21st Century Maritime Silk Road (Aoyama, 2017) was announced. This concept is more commonly now known as the One Belt One Road (OBOR) initiative or the Belt and Road Initiative (BRI).

OBOR is an "economic and foreign policy, which uses the ancient Silk Roads and their success as a matrix for Chinese long-term plans for the future" (Frankopan, 2016, p.15). Aoyama describes that the aim is to "create an economic and political sphere of influence" (Aoyama, 2017, p.7) globally, which "provides focus and direction for cooperation, and that any nation that wishes to participate can do so" (Aoyama, 2017, p.7). It was promised one trillion US dollars for "infrastructure investments, mainly in the form of loans" (Frankopan, 2016, p.15) for a multitude of assorted projects.

Aoyama (2017) listed six international economic corridors and two routes for the Maritime Silk Road that make up President Xi's OBOR (Figure 7.1). The initiative sees involvements between seventy-eight countries as of 2020 (Seth, 2020, para.1), which includes Brunei. Brunei's diplomatic relations began in 1991, much earlier before the establishment of IBOR. The relationship only began to take fruition over the turn of the century. The nation recently witnessed the involvement of the Chinese

companies, both state owned and private, on large-scale infrastructure projects (Storey, 2018). The largest FDI project, a petrochemical complex, joint venture project, began in 2013, between the governments of Brunei and Zhejiang Hengyi Group, a private Chinese enterprise (Wong, 2017).

In 2014, a new economic corridor was established, called the Brunei-Guangxi Economic Corridor (Figure 7.2), with the signing of an agreement between Brunei and Guangxi

Zhuang Autonomous Region found in south central China (Storey, 2018, p.4). The initiative resulted in “joint ventures between the Brunei government and the Guangxi Beibu Group to take over the management of the Muara Container Terminal” and the proposed construction of “an adjacent industrial park” (Storey, 2018, p.4). Other projects under the agreement include Nanning-Brunei agricultural park, the Yuling-Brunei medicine park (Storey, 2018), as well as land development for rice farming and aquaculture (Bandial, 2018, para.7).

Figure 7.2 Map showing extent of OBOR / BRI
readapted from HKTDC/research

With the presence of China continues to grow in the early 2010s, Bank of China Hong Kong Limited (BOCHK), owned by Bank of China Group - one of largest bank in the world, opened its first branch in the nation and began operation in December 2016 (Kumpoh, 2017, p.123).

The Heads of State of Brunei and China further strengthened their bilateral relationship via a series of signed Memorandums of Understanding (MOU) for further collaborations. The first was signed in September 2017, during

the Sultan's state visit to China. The other was signed in November 2018, during President Xi's state visit to Brunei. (Storey, 2018). Brunei's close collaboration with China signals where Brunei's economy is leaning towards.

Brunei is a clear supporter of President Xi's OBOR. This is further evident gathered from the nation's nature of response to China's claims towards the South China Sea. Disputes about the territories and boundaries have escalated between China and the surrounding nations:

Figure 7.3 Brunei - Guangxi Economic Corridor and proposed connectivity. Readapted from BGEC

Philippines, Vietnam and Malaysia. China has long claimed sovereign over areas in the South China Sea based on their 1953 “atlases produced on the mainland of China” (Gao & Jia, 2013, p.103). The map shows the highly disputed nine dash line (an evolution from the 1947 eleven dash line map) that overlaps with surrounding nations’ maritime borders (Figure 7.3).

Amongst the nations that are contesting China over their claims, Brunei has been relatively silent even though the map “cuts into a huge swathe of Brunei’s rectangular 200 nautical mile (nm) exclusive economic zone (EEZ)” (Storey, 2018, p.5). If the “fifth and sixth dash are joined together, the line comes within approximately 35 miles of Brunei’s coast where most of the country’s vital offshore energy is located” (Storey, 2018, p.5). According to Frankopan’s findings, “half of the world’s merchant fleet (by tonnage) passes through the South China Sea each year” where it accounts for “40 per cent of all China’s trade, a third of India’s trade goods by value, almost a quarter of that of Brazil as well of UK, Italy and Germany” (Frankopan, 2016, p.110). In short, it is a crossroad of the global economy. As Brunei continues to venture with China economically and politically, staying silent on China’s claims seems like an economical move.

Brunei founded the Brunei Investment Agency (BIA) in 1983 (de Vienne and Lanier, 2015,

p.127). The government-owned investment organisation holds and manages the country’s general reserve fund and its external assets. While there is no data available on how much it is worth due to their strict policy of secrecy, reports by U.S. Department of State suggest that funds are “viewed positively and managed well” (2018 Investment Climate Statements: Brunei, n.d.). Income generated by BIA constitutes around 30% of the nation’s GDP (de Vienne and Lanier, 2015, p.285), and it is expected to rise.

Socio - (economic) Structure

May suggests that “social change cannot be predicted because it is the combined result of individual people reacting to new situations” (2011, p.367). However, it is fair to deduce that the ideology of MIB will still be propagated to the public as a platform to preserve traditions and culture as long as the monarch wishes it so.

Nevertheless, the society is not merely MIB orientated as May would argue that “society is made of how people relate to their material environment as well as to more abstract or symbolic notions such as ‘society’, traditions and value” (2011, p.366). Furthermore, sociology literature by Simmel (1950) and Elias (2001) proposes that to understand individuals and society, we should be thinking of the relationships between them, rather than separately for they cannot exist without the

other. One cannot predict the social changes as argued by May. Nonetheless, this thesis will seek to explore plausible changes to individuals in Brunei through May's sociological approaches using pre-existing social structures (May, 2011, p.367) which, together, she terms 'belonging'.

As put forward by May (2011), she suggest on the focus on the everyday in which Burkitt (2004) describes as an area where formal and informal spheres of activity and thought intersect. Moreover, focusing on such allows one to view

social change through results from ordinary activities and not simply from extraordinary events (De Certeau, 1984). Individuals in Brunei participate in numerous activities but are bound and limited to the state ideology.

Being an Islamic state, Brunei allows activities for the citizens that are in line with the state ideology that it practises. One of these activities that has gained traction in recent years is activities that promotes well-being, physically and mentally, through the form of various

Figure 7.4 Map showing China's nine dash line + surrounding nation's maritime boundary. Readapted from BBC, 2018

7.3

Initial proposal

exercise. Aside from public facilities, new businesses began to emerge to create safe spaces with facilities to conduct specific exercises (Othman, 2018, The Scoop, 2020 & Mohamad, 2018). Social bonds are formed amongst individuals through sharing similar interests.

Not every exercise or activity practised in Brunei is provided with a safe space. This is especially true for cyclists who conduct their activities on the road. Roads in the nation were never designed to accommodate pedestrians and cyclists where the norm of movement is primarily personal vehicles. It was reported that sixty-five percent of local cyclists feel unsafe using the road and there have been calls for dedicated bike lanes (Wasil, 2019).

The identified site is repurposed and regenerated by proposing spaces that are inclusive and advantageous in response to the re-adaptation of the socio-economic structure of the nation's future. Three buildings are proposed: a national library to collect, display and protect knowledge in regards to the country, a visitor centre with lecture theatres to promote the forests of Brunei and an aquatic centre. The coastline will be opened up to the public with a promenade running alongside it. Furthermore, green spaces are proposed that include playgrounds and sports facilities. The site can be fully experienced by walking, jogging and cycling to promote a healthier lifestyle. Mangrove forests are grown within the site for researchers and visitors to study and experience while providing protection to river banks and oxidising the fresh water (forest department, n.d.) for local biodiversity to thrive.

Figure 7.5 Initial proposed usage of space

Figure 7.6 Connectivity of spaces by foot and bicycles

7.4

Programming the buildings

This section highlights programmes generated for the three proposed buildings. Programmes generated take precedence from other similar typologies of buildings that carry similar activities while taking into account the socio-economic structure of Brunei.

Each building is connected via pathways accessible by foot and cycling. To further enhance the experience and promote a consideration of cycling as a cultural norm of movement into society, the design of the buildings will consider ease of accessibility into the building, as well as individual spaces.

Figure 7.7 (right) Diagram indicating programme generated for national library

Figure 7.9 (right) Diagram indicating programme generated for aquatic centre

Figure 8.1 Proposed Library / Archive

chapter eight

DESIGN DEVELOPMENT 01

- 8.1 Introduction
- 8.2 Spatial Arrangement - Library/Arhive
- 8.3 Cycling Architecture
- 8.4 Sketches - 3D Modelling
- 8.5 Initial Design
- 8.6 Design Review

8.1

Introduction

The initial design intent was to regenerate the site through the proposition of three buildings that contribute spaces for society to take advantage of with a surrounding area that is ecologically beneficial to the biodiversity of Brunei. However, due to time constraints this research will focus on the national library / archive, along with the proposed surroundings within the designated area. The focus in this section is research on spatial arrangements, form, function and pro-cycling built environment.

8.2

Spatial arrangement

Precedent studies on libraries and archives from around the world were deduced to include spaces that house collections of books, artefacts, periodicals and even films and music. Furthermore, staff, including security are an integral part of the functionality of a library that require their own individual private spaces.

Moreover, issues such as sound levels generated from specific functional spaces are considered to ensure planning of the library is carefully undertaken (Figure 8.3 - 8.4). Other considerations undertaken are the connectivity between functional spaces (Figure 8.5).

Figure 8.2
Elaborated and final programme for national library

Figure 8.3
Planning arrangement for sound level and public / private

PLANNING OF SPACES

Figure 8.4
Planning arrangement for sound level and private / public - vertical

CONNECTIVITY PLANNING

Figure 8.5
Planning through connectivity

8.3

Cycling architecture

Cycling is perceived as a form of exercise, a cleaner and cheaper mode of transportation and one that promotes social bonding (Bruntlett and Bruntlett, 2018). It is enacted in a horizontal movement where inclination is welcomed amongst seasoned cyclists. The designated area stretches 1 kilometer across, a modest distance for cyclists.

To increase the distances for cycling in this area, this research proposes pathways that run horizontally and vertically. The double helix design of the 'Denmark Pavilion' by BIG architects was appropriated into the conceptual design simply for its space-saving design.

Cycling gradient

Cycling along an inclination requires effort and energy that could lead to discomfort and fatigue. A chart was created to understand gradients and their effect on cyclists (as adapted from de Reef, 2013).

Figure 8.6
Gradients for cycling

precedent study 01

The bicycle path that runs along straight ramps connects different levels of the building. The uncovered pathways, used for jogging as well, take too much space but offer openness to the sports facilities and residents.

Figure 8.7 - 8.11

Section and visual of pro-cycling building

precedent study 02

This bridge offers multiple access points with its circular shape. The bridge, suspended by the central structure provides uninterrupted space under it.

Figure 8.12 - 8.17

Detail and visual of cycling bridge

precedent study 03

The double helix design of this pavilion provides a space saving solution for bicycle paths vertically and horizontally.

Figure 8.18 - 8.21
Visual of Pavilion

Cycling accessibility concepts

Figure 8.22 Concept for root route

Figure 8.23 Concept for cycling route cutting through

Figure 8.24 - 8.27
Early concept of cycling architecture

PLAN

ISOMETRIC

ELEVATION

PLAN

ISOMETRIC

ELEVATION

Figure 8.28 - 8.30
Double helix design from different shapes

8.4

Conceptual forms

Different forms were conceptualised for the library via phases of this research using 3D-modelling. Although none were chosen as a final design, the forms generated provided an understanding of their relationships with the generated programme.

The forms created reflect aspects of my research in which I considered it to be a necessity to intervene and provide illustration to have a better understanding towards the aim of this research. Analysing this imagery further assisted in my design decision.

stack + shift

stack + twist

stack + modular

stack + fractured

Figure 8.31 - 8.34
Conceptual forms for library

Provide outside spaces through shifting the blocks. Each block can be assigned with a specific programme.

Organic form and does not blend in with rigid existing buildings that surround it.

Inspired by design experiment 02, the grid-like form offers connectivity between the internal and external.

Fracturing the silos and rearranging them as per the illustration will create problems in available usage of space.

stack + _____

The forms created is to explore the verticality of the building. Scaling the object vertically suggests progress in the context of Brunei where buildings are primarily medium height.

horizontality

stack + angled

Silos are manipulated to create multiple blocks of spaces. The concepts offers opportunity to place generated programme.

organic + sculpted

Form generated as an organic form that blends creates lack of contrast with its surrounding, which offers disharmony.

sliced + pull

Silo is sliced and tilted to form and offer spaces in a horizontal manner that are accessible.

stretched + twisted

The form provides an open path vertically, which is not suited to the climate environment of Brunei.

Figure 8.35 - 8.38
Conceptual forms for library

8.5

Initial design

As argued earlier, none of the existing infrastructure will be reused due to the age of the existing structure, which suggests fragility and lack of durability. This thesis proposes, rather, using the existing language of the infrastructure as a means to create a conceptual new building. In this instance, the silo and tank were manipulated to create a more fluid space that focuses on connectivity and exploration.

Figure 8.39 (below) Site location of Library
Figure 8.40 (right) Form concept

Figure 8.41
Elevations of building

Figure 8.42

Ground floor plan

1.	100p Lecture Theatre	10.	Office Room	19.	Play Area
2.	50p Lecture Theatre	11.	Processing space	20.	Ramp (Circulation)
3.	Entrance	12.	Staff Pantry	21.	Sitting Area
4.	Exhibition Area - Lobby	13.	Cafe	22.	Lift
5.	Exhibition Area	14.	Restaurant	23.	Toilets
6.	Garden / Sitting Area	15.	Kitchen		
7.	Entrance to Cycling Tower	16.	Reception / Cloak Room		
8.	Meeting Room (Staff Block)	17.	Book Shop		
9.	Office Area (Staff Block)	18.	Library (Main Collection)		

Figure 8.43

Basement floor plan

1.	Entrance to Archive Area	10.	Ramp (Circulation)
2.	Waiting Area	11.	Archive Display
3.	Study Rooms	12.	Mechanical Rooms
4.	Storage Rooms	13.	Lifts
5.	Reception	14.	Toilets
6.	Server Room		
7.	Office Room		
8.	Exhibition Sitting Area		
9.	Exhibition Area		

Figure 8.44

Second floor plan

1.	Cafe	10.	Cycling Tower (Circulation)
2.	Study Rooms	11.	Ramp (Circulation)
3.	Book Collections	12.	Staff Block
4.	Sitting Area	13.	Lifts
5.	Group Study Rooms	14.	Toilets
6.	Computer Area		
7.	Book Area		
8.	Break Area		
9.	Staircase		

Figure 8.45

Third floor plan

1.	Meeting Area	10.	Cycling Tower (Circulation)
2.	Study Rooms	11.	Ramp (Circulation)
3.	Book Collections	12.	Staff Block
4.	Sitting Area	13.	Lifts
5.	Group Study Rooms	14.	Toilets
6.	Computer Area		
7.	Book Area		
8.	Computer Area		
9.	Staircase		

Figure 8.46

Tower floor plan

1. Restaurant
2. Viewing area
3. Lift
4. Kitchen
5. Toilet
6. Cycling Tower (Circulation)
7. Bicycle storage area

Figure 8.47

Perspective of Library/Archive

Figure 8.48 (Above) Timber louvers of the library

Figure 8.49 (below) Aerial view of the library

Figure 8.50 (Above) Entrance courtyard of library

Figure 8.51 (below) Surrounding area of the library

Figure 8.52 (Above) First floor of cycling tower

Figure 8.53 (below) Internal view of the cycling tower

Figure 8.54 (Above) Exposed structure of cycling tower

Figure 8.55 (below) View of internal of cycling tower

Figure 8.56 (Above) Main library hall

Figure 8.57 (below) Main library hall - corridor

Figure 8.58 (Above) Ramp in main library

Figure 8.59 (below) Speakers area on the third floor

8.6

Design review

The design showcases a curved concrete building that houses the library and archive while also providing other functions such as exhibition halls, lecture theatres, cafes and restaurants. The building are clad with tinted glass with aluminium frames to minimise heat and light. Its transparency creates a sense of connection between the inside and outside surrounding. With the use of timber as louvers or sunscreens surrounding the glass facade, the building hopes to form a harmonious relationship with the natural surrounding.

Books are sensitive to light, which is why the opening in the roof was considered to be non-essential and resulting in unnecessary natural light filtering into the building. Possible solutions on offer are to remove completely the opening, minimise the openings or provide sunscreens.

The cycling tower, using steel frames and concrete, ensures cycling in the region can be experienced differently in the Brunei context and creates a longer route in the area. The openness

of the tower provides natural air and light, although it is worth noting that wind speed does increase as we get higher, which is problematic to light-weight cyclists. The double helix design of the tower ensures cyclists can travel in different directional spaces and not clash.

The spaces generated suit the speculated socio-economic development of the nation's future. The library and archive hold and protect commodities that matter most whilst providing spaces where people can meet, exchange and generate ideas. The tower rising 400 meters into the sky, calls everyone to the area and signifies that changes can be overbearing, but are the only way forward.

Figure 8.60 (right) The main library

Figure 9.1 View of library from visitor centre

chapter nine

DESIGN DEVELOPMENT 02

9.1

Upcycling the site

9.1

Upcycling the site

The design is enhanced through the inclusion of a path, designated for cyclists and pedestrians, which links the site with Seria Town and Kuala Belait to the west and Mukim Liang to the east. Running parallel with Jalan Tengah, the path is elevated above ground level so as to ensure safety for users and minimise any alteration to Jalan Tengah.

A circular or ring path acts a point of intersection that allows cyclists and pedestrians to travel to multiple destinations within the site. The first path slopes into the proposed site and joins the wide open pathway, which either leads straight towards the beach and promenade or towards the library, cycling tower or visitor centre.

Alternately, the second path cuts through the forest where cyclists and pedestrians can either head straight towards the promenade or explore the forest from an elevated perspective.

The promenade runs along the beach that includes a pier where visitors can experience the

sea in an elevated manner. Located just off the promenade, a rest area can be found that provides services such as toilets, changing rooms and a cafe.

Open green spaces surround the site ensuring visitors are not far from nature. Previous proposals such as sports facilities and playgrounds should still be included, which could potentially fit into pockets of areas within the green open spaces.

Due to time constraint, details on other proposed buildings and amenities are kept at a minimum. Instead, images generated offer glimpses of the plausible future of the site and put forth a starting conversation for readers and viewers.

Figure 9.2 Developed site plan

1.	Entrance to area	8.	Green spaces
2.	Open carpark	9.	Beach
3.	Bicycle / pedestrian lane	10.	Promenade
4.	Main road (Jalan Tengah)	11.	Rest area
5.	Ring path	12.	Pier
6.	Visitor Centre	13.	Bicycle / pedestrian path - forest
7.	Library / Archive building and Cycling Tower		

Figure 9.3 (above) Developed site plan

Figure 9.4 (below) View from across the main road

Figure 9.5 View of promenade and library

Figure 9.5
View of bicycle path in the forest

Figure 9.7 View of library from the ring path

Figure 10.1 Conceptual modelling

CONCLUSION

10.1

Conclusion

This thesis sought out methods to readapt or repurpose the onshore infrastructure in Brunei through creating spaces that evokes a sense of belonging and security to the future urban landscape of Brunei.

Through the application of architectural discourse on memory and semiotics, local narratives are extended as a form of cultural identity allowing architectural intervention. Through this methodology, national ideology was reinterpreted and identified an alternate form of vernacular that differs from the suggested 'MIB architecture' as promoted by local authorities. Nevertheless, time was considered an issue that continues to evolve social standings, and some of these narratives were found to showcase social discrimination towards females. The methodology could be improved through subjective means and by allowing qualitative studies on each narrative, although, time consumption would be an issue.

The methodology was further explored through Hejduk's concept of languages and masques,

which offered an insight into the plausible approach of reusing hydrocarbon's infrastructure as architectural elements. Findings in these experimentations were surmised to be visually aggressive and dominant. Furthermore, the integrity of the infrastructure found in the elected and surrounding site was deduced to be ambiguous as age comes into factor. This thesis suggests alternative methods that are considered to be environmentally conscious through a process of recycling materials such as concrete, and smelting and reforging metal elements.

The socio-economic environment of the nation, scrutinised via May's (2011) theory on everyday life, indicates a tenable view of the future environment. The close relation with China can prove fruitful, though critics on the subject of OBOR will provide warning to the nation (Frankopan, 2016). As per May's essay, the social experiences of everyday constitute the core of the ethos of society. The improvement of well-being through the form of exercise is well-received.

Analytical studies on the site and its surrounding area lead to awareness of the on-going efforts of conservation and research of the critical peat swamp forest that acts as a carbon sink.

The programme generated for this thesis reflects the qualitative research on the local socio-economic environment. The site was surmised to benefit through a complete transformation after undergoing necessary site remedial procedures. The regeneration opens up the site to the public and provides spaces and buildings that set the theme of '*sense of belonging*'.

The library and archive building were explored and designed in this thesis where connectivity of spaces are explored through the mode of cycling and pedestrian movement. The building holds, protects and showcases local knowledge where community members can meet and express ideas, conduct meetings and visit exhibitions.

Brunei's post-hydrocarbon days offer opportunities where a site once occupied by

infrastructure and 'non-building' can offer spaces that are beneficial to the society. The presupposed socio-economic environment may very well change its course in the future but this thesis marks a starting point for exploring the possibility and methodology of providing spaces that evoke a 'sense of belonging' for Brunei.

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