











Architecture of Territory
ETH Zurich
FCL Future Cities Laboratory

Hinterland
Singapore, Indonesia, Malaysia
Project 1, part 1

Asst. Prof. Milica Topalovic
Martin Knüsel
Marcel Jäggi

BATAM INDUSTRIAL ISLAND

by
Livio De Maria
Stephanie Schenk

p.16

Fields of Gravity

Crossing of the Gap (p.18)
Magnet of Migration (p.26)
Differences (p.30)

p.32

Productive Sites

Traditional and Small Scale Production (p.34)
Shipyards (p.40)
Industrial Parks (p.48)

p.50

Construction of a Hinterland

p.58

"One Location Global Markets"

Urban Plan of the Industrial Park (p.60)
Creating conditions for Global Manufacturing (p.72)
Infineon: Portrait of a Global Player (p.76)

p.82

Conclusion

This document is an intermediary research result, designed for non-commercial use. Do not copy, translate, publish, licence or sell the material presented in this work without our consent.



Batam is located on the south of Singapore separated only by the Singapore Straits, one of the most important shipping lanes in the world. The strait is the main shipping channel between the Indian Ocean and the Pacific Ocean linking major Asian economies such as China, Japan and South Korea with the western world. More than 72'000 vessels pass through the strait every year, carrying about one-quarter of the world's traded goods.

The Indonesian Riau Archipelago consists of a total of 1248 islands that are divided in to three municipalities Karimun, Bintan and Batam. With a distance of only 20 kilometers, Batam is one of the closest Indonesian island to Singapore. Batam is the largest city in the Riau Island Province and consists more than 370 islands. It has been developing rapidly, attracting many international firms and factories, followed by large migration inflows from people from all over Indonesia. Many young Indonesians come to Batam looking for work, mainly in the industry sector. Both Karimun and Bintan have a population of around 200'000 people, however Batam stands out with 1.3 million inhabitants.

Through its early economic efforts since the 70's and its early trading agreements to achieve a cooperation with Singapore, Batam now holds the most industrial companies in the Riau province. According to the research focus on productive hinterlands of Singapore, the geographical focus within our work has been set on Batam.

Fields of Gravity

Since the beginning of its extensive industrialization, Batam's identity has been strongly influenced by its dependency on Singapore as well as its political affiliation to Jakarta. Recognizing Singapore not only as a hub, but also as a doorway to global markets, Batam and Indonesia's government have been developing various forms of Special Economic Zones in the last 40 years in order to profit from its relative location.

Batam's character has been affected by its fast growth and conflictive aspiration to meet the needs and interests of both Jakarta and Singapore. This bipolarity is visible on different levels, like in Batam's local government, who has two planning authorities, which obscures their fields of responsibility. Also the retrieval of an its own identity remains difficult due to the constantly changing body of residents, which depends on the current

economy driven mainly by Singapore. All this gives Batam a particular character, which differs from the rest of Indonesia.



Crossing the Gap

Crossing the mere 20 kilometres that separate Singapore from Batam allows travellers to enter completely different worlds.

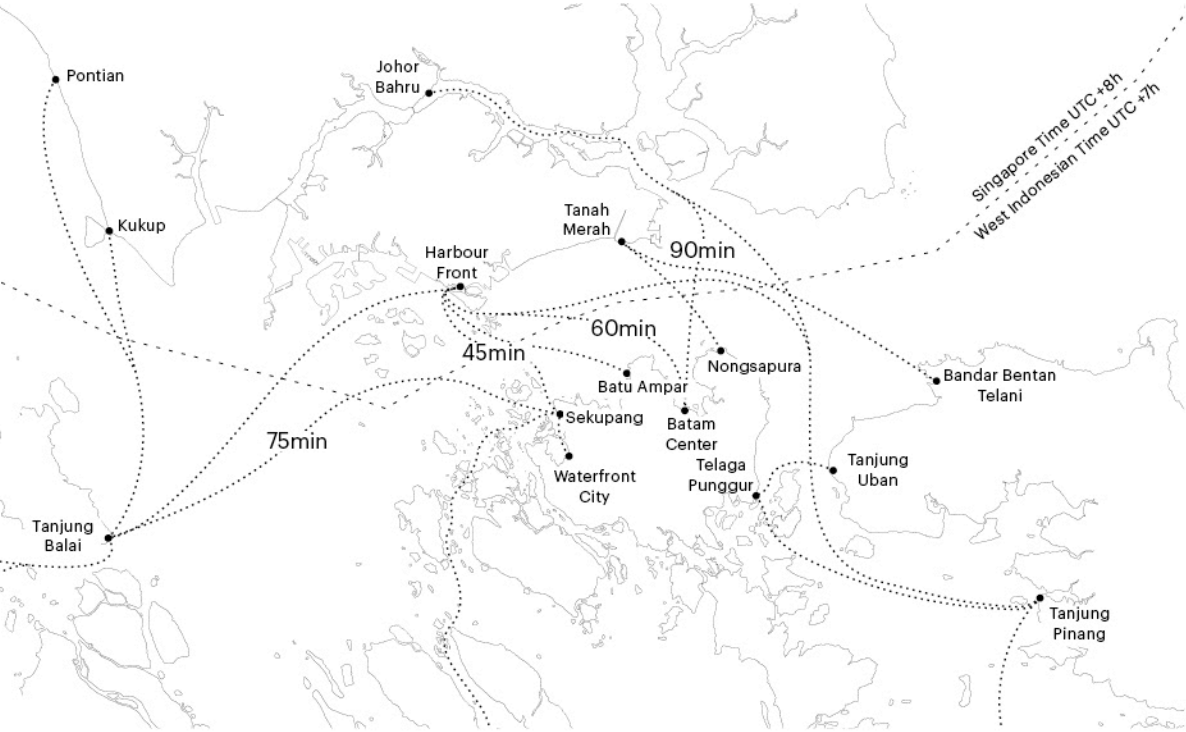
Leaving the Singapore Harbour Front Ferry Terminal, travellers arrive at one of Batam’s three International Ferry Terminals after a one-hour ferry ride. The short journey takes you across a time zone, one hour back in time, and into a significantly different environment. While Singapore is extreme humid, Batam is dryer and more breezy.

As the majority of Batam is associated to the Muslim faith, the streetscape is also quite different than Singapore with most women wearing the hijab. Batam’s population

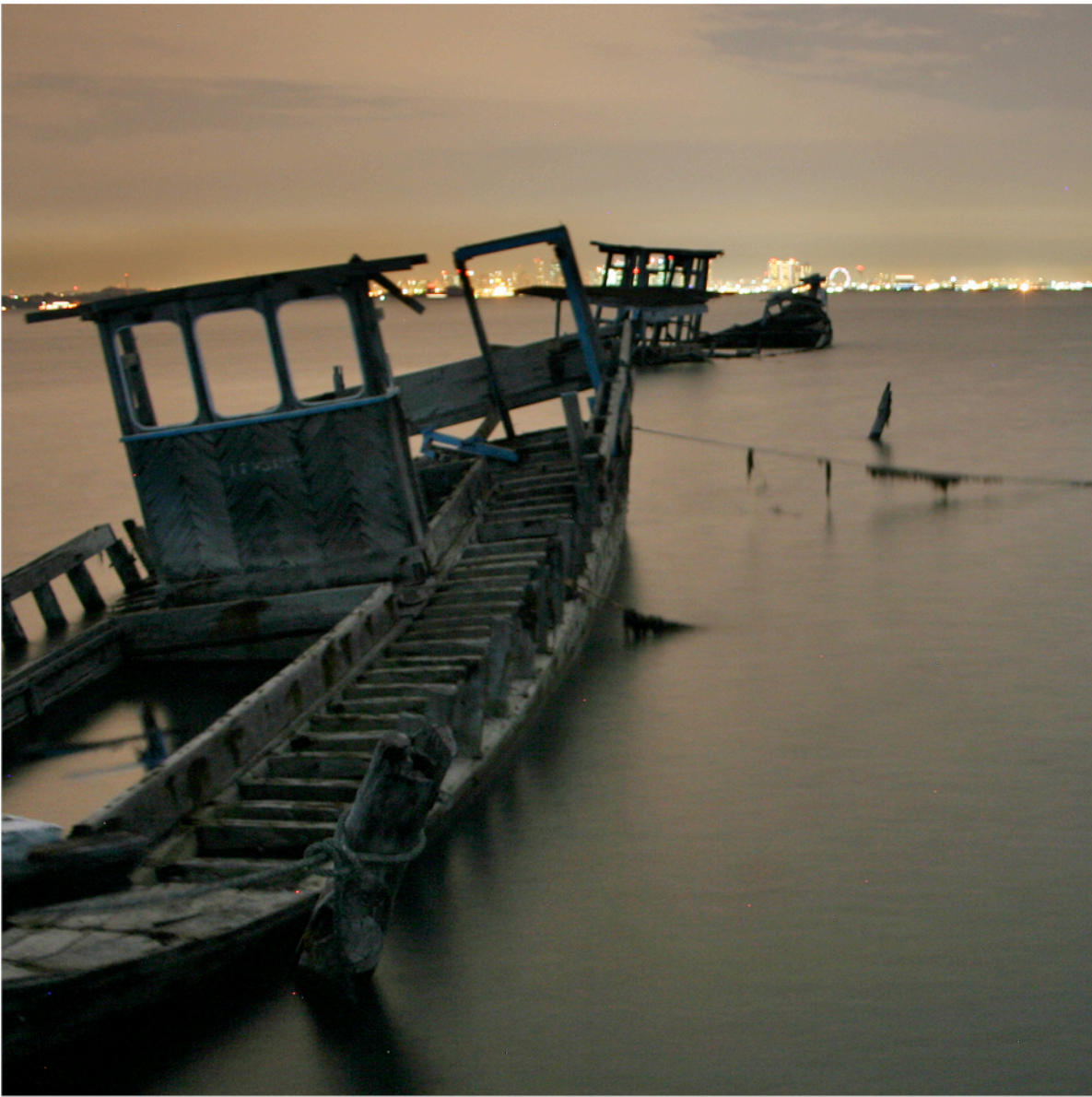
mainly has ethnic Malay roots, while the majority in Singapore has Chinese roots.

The fast economic development of Singapore results in huge price differences in every sector compared to Batam. This attracts many Singaporeans to the Indonesian archipelago for shopping sprees on weekends.

The hectic traffic is dominated by motorcycles. As a visitor, the only way to get around is by taxi since foreigners would have problems trying to figure out the unwritten traffic laws and a street system with no marked street names. Taxis in Batam do not have meters. Instead, fares are negotiated before the beginning of the ride.



Ferry lines between Singapore, Johor and Riau.



A nightly view from Pulau Belakang Padang, north east of Batam, over the Strait towards Singapore.

The Shiny World

Easily visible at night, Singapore gleams into the night, perhaps more than any other islands of the archipelago.

The city-state has become known as an international and booming hub, with extremely high land prices, reputed international schools and for its economic dominance. Despite its geographic proximity, Singapore

remains out of reach for most Indonesians as a result of the economic disparity between the high-income city-state and Batam, which remains a transitional economy. On the other hand, numerous visitors from Singapore make use of the cheap labor, shopping facilities and sex tourism in Batam, despite common fears of becoming a victim of robbery.



Check in 30min before leaving
Harbour Front, Singapore

15'
Waiting Hall

30'
Ferry boarding



45'
Passing Sentosa coastline



55'
Looking back



70'
Crossing the Strait



95'
Entering Batam's main harbour



40'
Departure



50'
Singapore skyline



60'
Along a world trading route

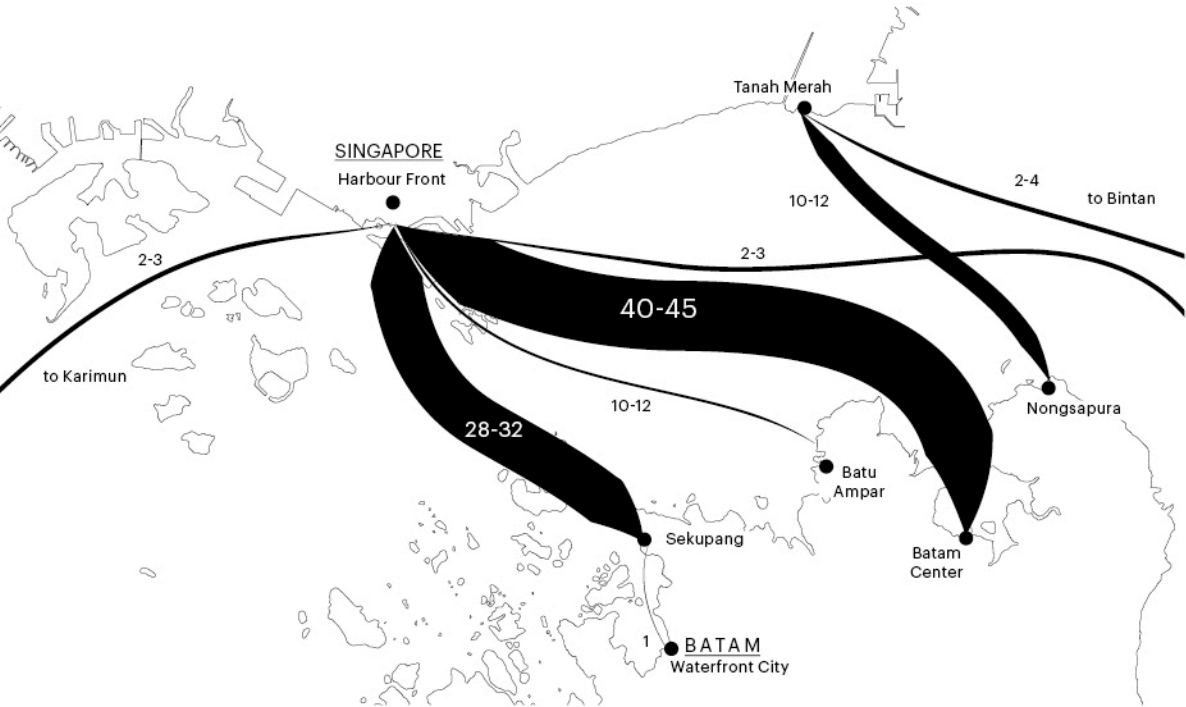


85'
Batam in sight



100'
Arrival at Batam Center

110'
Customs



Ferry Connections

Between Singapore and Batam

Singapore's main passenger seaport is Harbour Front, where six providers offer ferries bound to Karimun, Bintan and Batam. With ferries departing every 10 to 20 minutes, around 90 to 110 ferries leave Harbour Front for Batam each day. One ferry can hold between 200 and 250 passenger, potentially carrying over 600'000 travellers from Singapore to Batam per year.

Crossing the border is made easy and affordable. An adult two-way ticket costs 34 S\$ and for frequent passengers there are special offers. For example text messages booking or e-cards shorten the boarding time by allowing you to directly enter to pre-immigration gate and boarding gate. On the other hand, the waiting times at the immigration for infrequent travellers can be long.

Batam has four main seaports, each accessible from Singapore and designed for different functions.

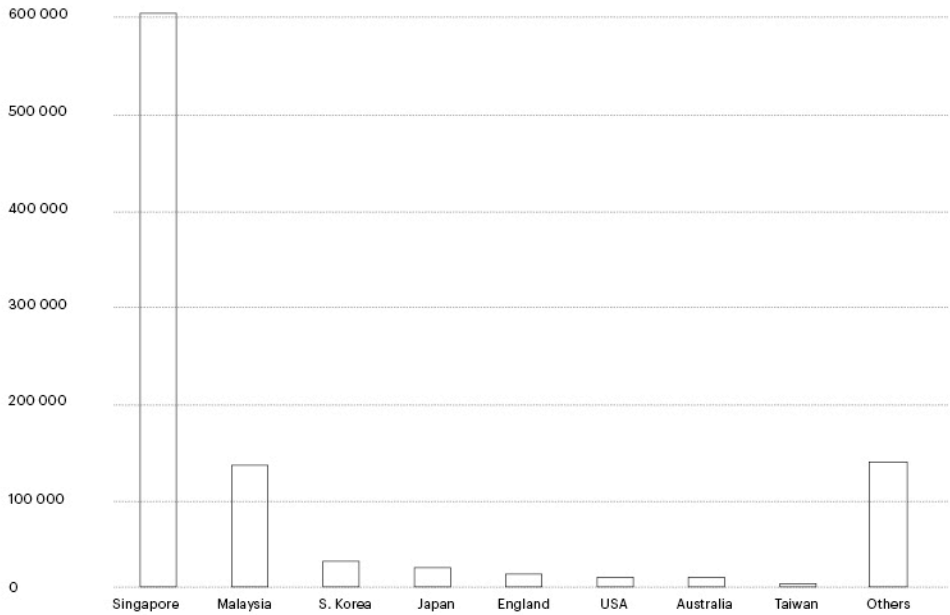
Sekupang is the domestic port. From here ferries head to Karimun and to different ports in Sumatra.

Penguin ferries offers the fastest connection between Singapore and Batam as its vessels can reach Batu Ampar in 45 minutes, which is the main freight port. Most goods and raw material coming and going to Singapore pass through this seaport. This explains why this port is so well connected with industrial parks and factories as many community businessmen make use of this ferry route.

Port Nongsapura is located in the most northern point of Batam and is surrounded by large golf courses and beach resorts. Its main users are tourists. Ferry crossings to Singapore increase by up to 10 per day on weekends at this port.

Another form of tourism is found at Batam Center. On weekends many tourist come to Batam for cheap shopping and other leisure activities such as sex tourism. Accordingly, ferries leave Singapore every 10 minutes. A direct connection by footbridge offers a convenient access between the ferry terminal and the city's largest mall.

Foreign Visitors by Nation (2009)



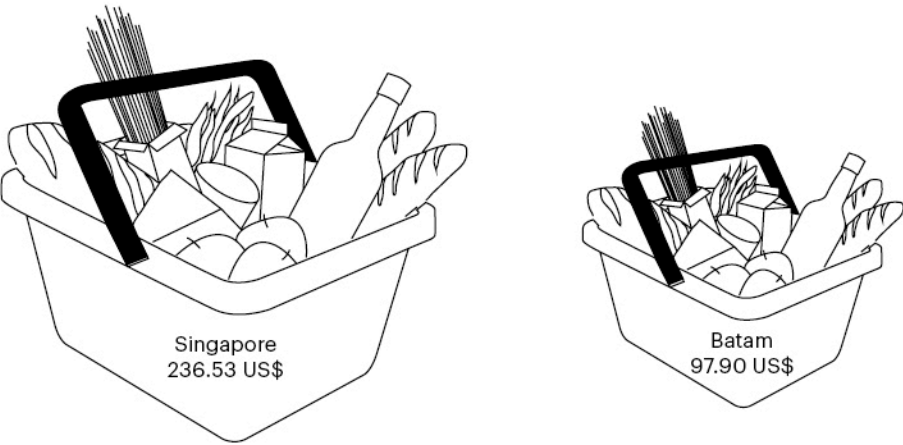
Visa

Travellers must have a valid passport to enter Indonesia. Most visitors must purchase a visa for either seven days for 10 US\$ or 30 days for 25 US\$, with the possibility to extend once for another 30 days. Not all nationalities are required a visa. For example Singaporeans and Malays are exempt from this requirement. This in combination with the general low prices in Indonesia attracts many Singaporeans and Malays to visit Batam on weekends for shopping and recreation.

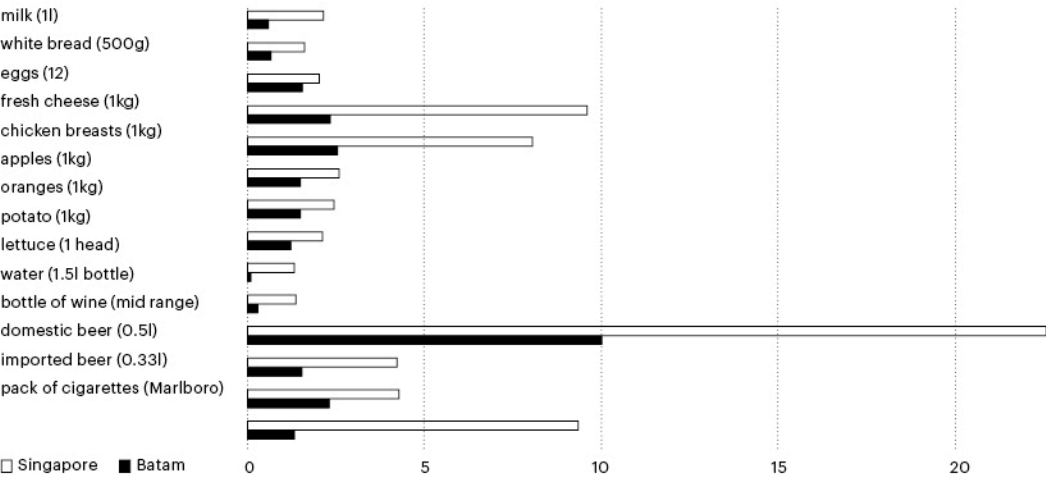
Countries with no Visa Requirement:

- Brunei Darussalam
- Chile
- Hong Kong
- Macau
- Malaysia
- Morocco
- Peru
- Philippines
- Singapore
- Thailand
- Vietnam

Monthly Costs for Food per Person



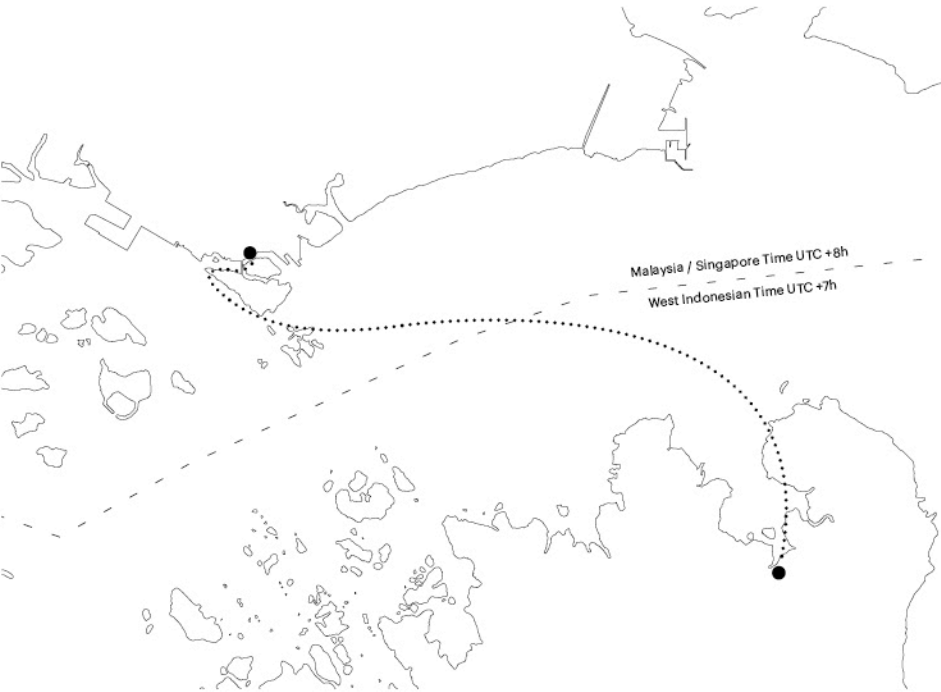
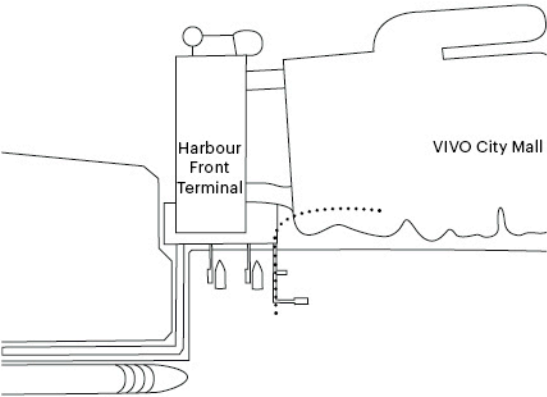
Prices for Market Products on Both Sides of the Strait (in US\$)



Shopping Tourism

Many Singaporeans go to Batam for shopping, especially on weekends. The price difference alone makes it a worthy journey. A Singaporean needs more than twice as much money each month for food than somebody living in Batam. Many market products and especially addictive substances such as wine and cigarettes are less than half the price in Batam compared with Singapore. This is because of the high taxes in Singapore. Clothing, accessories and services like beauty treatments are also much more affordable in Batam.

In order to manage the big tourist flow on weekends, the frequency of ferry rides is increased. The island's largest mall is conveniently located across the ferry terminal and fitted to meet the needs and expectations of the Singaporean clientele by offering many international brands and restaurants, such as the only Starbucks in Batam.



Singaporean Standards
Batam's Mega Mall, located in Batam Center. The ferry terminal is conveniently connected by a footbridge with the mall, which fits the Singaporean standards.



Magnet of Migration

Batam was designated as an industrial zone over forty years ago. The rising economy led to an increasing demand for cheap labour, making Batam a magnet for people from different parts of Indonesia seeking work opportunities.

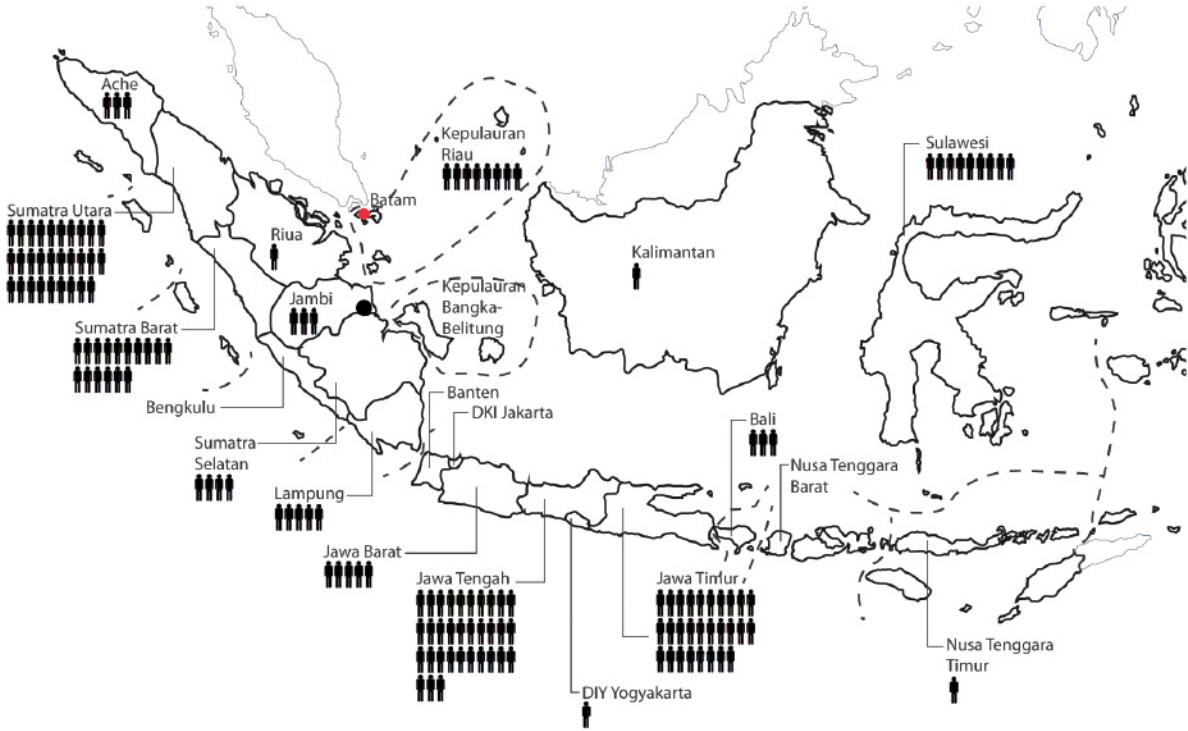
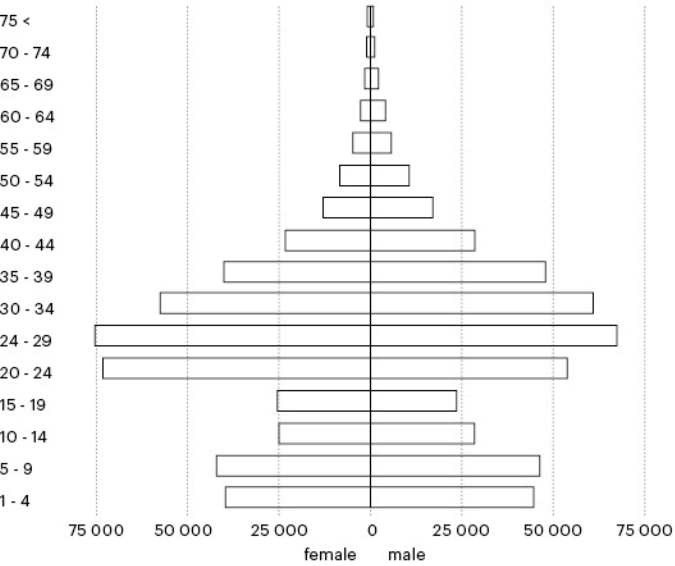
With a population growth rate of 9 per cent in the last 10 years (two per cent is attributed to natural increase), Batam has the highest rate of population growth in Indonesia. Since 1971, the population has increased from 6'000 to 1.3 million.

Two principal phenomenon have contributed to the immigration waves in Batam. For one Batam's industries recruit new workers from schools all over Indonesia. A two year contract is generally offered, which includes housing arrangements, salary and transportation back to the hometown.

In other cases many families follow friends or other family members already working in Batam with the hope to find work, settle down and start a new life. Batam's industry mostly requests young woman and fit men, which explains the relatively young population body, with a

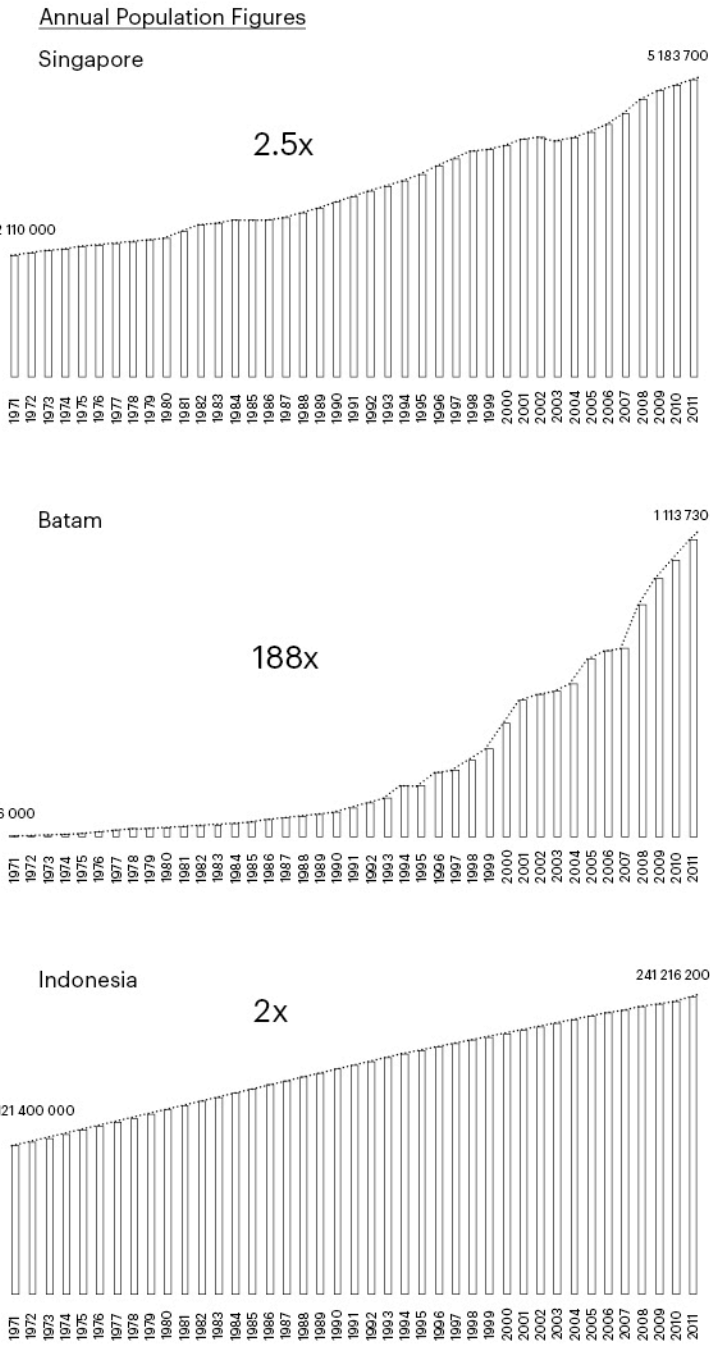
median age of 20 years. The production of electronic devices is Batam's leading industrial sector. This sector demands high levels of concentration and fine motor skills. For these requirements female workers with good eyesight are usually preferred. Here most woman work on short-term contracts before returning back home or switch companies every couple years. Another major industry sector is shipbuilding, which hires large numbers of men. Here short-term contracts are also standard. The duration of the contract depends on the amount of work and the particular shipyard's standards.

Batam Population Pyramid (2008)



Origins of the Population of Batam

A map from the project "Tropical Town" (by Stephen Cairns et al.) – a work looking at the inhabitants of different housing types in Batam – can give a rough idea of the places of origin of Batam's population. It shows that the majority is originally from Sumatra and Java.



Population Growth in Singapore, Batam & Indonesia

Before the potential of Batam as an industrial production site was recognized, around 6'000 people populated the island's traditional villages. As soon as the strategic importance given by its proximity to Singapore was discovered and first attempts were made to develop industries, the population started growing. In the 1980s a law was introduced that allowed private companies to manage

industrial estates on Batam. As a response to the sudden demand of labour force the population grew rapidly. Another significant increase appeared in recent years since the Free Trade Zone was expanded to the whole BBK in 2007. Over the last 40 years, the population has increased by 188 folds.



Portrait of an Immigrated Family

Ratih (35), is a housewife and runs a small kiosk from her house. She came from South Java to Batam four years ago with her entire family. Her brother worked in the Batamindo Industrial Park for two years and today is employed at a shipyard.

Also in the picture, Ratih's husband Banyu (39), who repairs houses in the kampung. Her mother Mawar (57), daughter Ria (9) and son Lemah (2).

Differences

Singapore has a wider diversity in terms of religion compared to Indonesia and Batam, where the majority is Muslim. There is, however, a greater mix of ethnicity in Indonesia than in Singapore where the population is dominated by people of Chinese origins. In Batam and Indonesia a mix is found of Malay, Chinese, Javanese, Madurese and diverse indigenous Indonesian ethnicities.

Batam's GDP per capita is higher than that of Indonesia, yet, it remains significantly lower than in Singapore. In Singapore the average age is 38 years old, which marks the existence of an ageing problem. While in Batam, important migration flows of young workers have flooded the island with a thriving population with a median age of

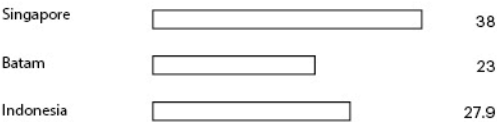
only 23. Batam's average income is higher than in the rest of Indonesia, but still very low in comparison to Singapore.

Due to Singapore's high population density, firms are forced to relocate their production sites to surrounding areas such as Batam. As a result, extensive demand for labour force has encouraged migration in Batam and elevated the population density.

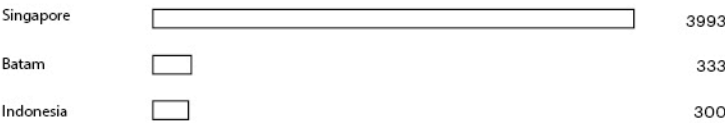
GDP in US\$



Median Age



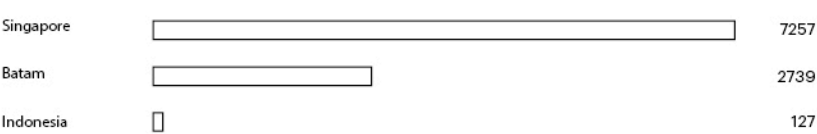
Average Income in US\$



Population



Population per km²



Religions

- Islam
- Protestant
- Buddhism
- Catholic
- Hinduism
- Taoism
- No Religion
- Others

Ethnicities

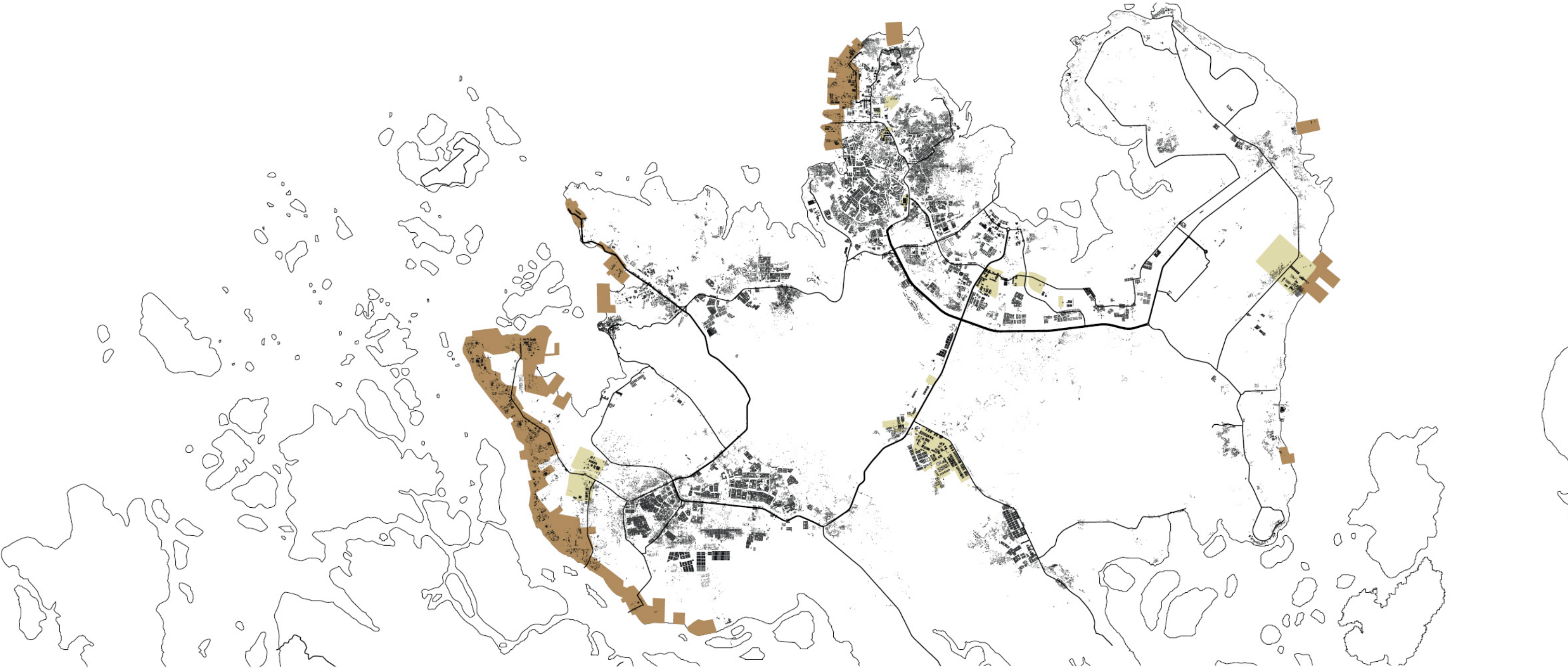
- Chinese
- Malay
- Indian
- Javanese
- Madurese
- Div. indigenous Indonesian Ethnicities
- Lights

Productive Sites

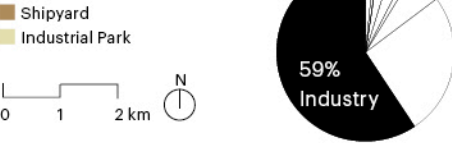
Looking at Batam's economic structure it can be observed that 59 per cent of the economy derives from industries. The economy is divided across three main sectors: shipyards, industrial parks and small scale and traditional production. Each of these sectors has its own characteristics and influence on the island. An important impulse for Batam's economy is the industrial parks. Strategically located inland, they nonetheless re-

main close and well connected to the main seaports as well as the airport. Along the coastline two conditions can be observed. On the one hand there are traditional kampongs, on the other hand, the shipyards. While both are highly dependent on the water, they each make a totally different use of it. The traditional villagers depend on fishing and small hand-crafts. More intense labour is found in the shipyards, where

the coast is re-formed according to their needs – a process called "cut and fill" – in order to build and repair ships. This is clearly noticeable in the angular appearing coastline.



Industrial Sites (2009)



Traditional and Small Scale Production

A glance over the map shows that the Kampongs are roughly located along the north and the south coastlines of Batam Island and its surrounding islands. It is interesting to notice that when visiting the Kampongs, a different atmosphere in the northern and southern villages can be experienced. It seems to be that the northern Kampongs are more vivid with bars and restaurants than their southern counterpart. This contrast is likely to be a result of the urbanization of the Straits.

Before the industry boom the traditional trade was fishing, which is still practiced today, though threatened due to the degrading water quality.

The kampongs on the small islands are well connected to each other by private boats and internally organized boat ferries guarantying the connection to Batam island. Also the villages on Batam island are well connected to the main city districts and work possibilities. The most used mode of transportation remains the motorcycle, which is sometimes used by entire families at once.

Electricity is usually provided by the government for twelve hours a day starting at noon. If this is not the case, the villages have their own generators running on diesel.



Existing Kampongs in the district of Batam



Kampong Tanjung Riau
Google satellite image

What is a Kampong?

In its original use, the Indonesian word "kampong" means "village", usually the home village or birthplace of an individual. "Kampong" should not be confused with "slum", since most Kampongs actually contain a mix of lower, lower-middle class and middle class families living in mostly permanent dwellings. Kampongs are mostly located along the coastline since the traditional trade is fishing. This dependence and close relationship to the water is clearly shown by the approachability of the housing. The stilt houses are arranged along simple wooden piers, which reach out into the water like arms, coming from a single path going along

the coastline. Moving around within the Kampong is mostly done by boat, motorcycles or on foot; no cars can be found. Only few houses, mostly schools, places of worship and wash stalls are located onshore. Fish processing factories, fish farms and illegal wood trading are mostly operating in this form of Kampong.

Another form of Kampong appears inland, where small factories such as tofu and tempeh (traditional soya cheese) and other forms of handcrafts can be found. Most housings are built on a single story and arranged along dirt roads. Scooters are the preferred mode of transportation as the use of cars remains infrequent.



Footbridge, 2012
Kasu Island

Kampong
The wooden boardwalk connects the stilt houses with the main land. Boats are the main transportation between the island and the stilt houses on water. Electricity is a new feature in the Kampongs and is either provided by the government or privately owned generators.



Traditional Shipbuilding
Boats are very important for transportation between the islands and within the Kampongs. In Batam's province many traditional shipbuilding companies can be found. Wooden boats are built out of illegal timber cut down on surrounding islands. Traditionally the boats are between 10 and 15 meters long. First the boat's body is produced by the shipbuilding company, then another firm builds the motor in, which is selected by the customer. Around 3 to 6 boats are finished each year per firm with 10 workers. The boat bodies are sold for around 300 Mio. Rupiah (31 000 US\$), to Singapore, Indonesia and Malaysia. Depending on the ability of the worker, each can earn between 1 to 3 Mio. Rupiah (100 to 300 US\$) per month.



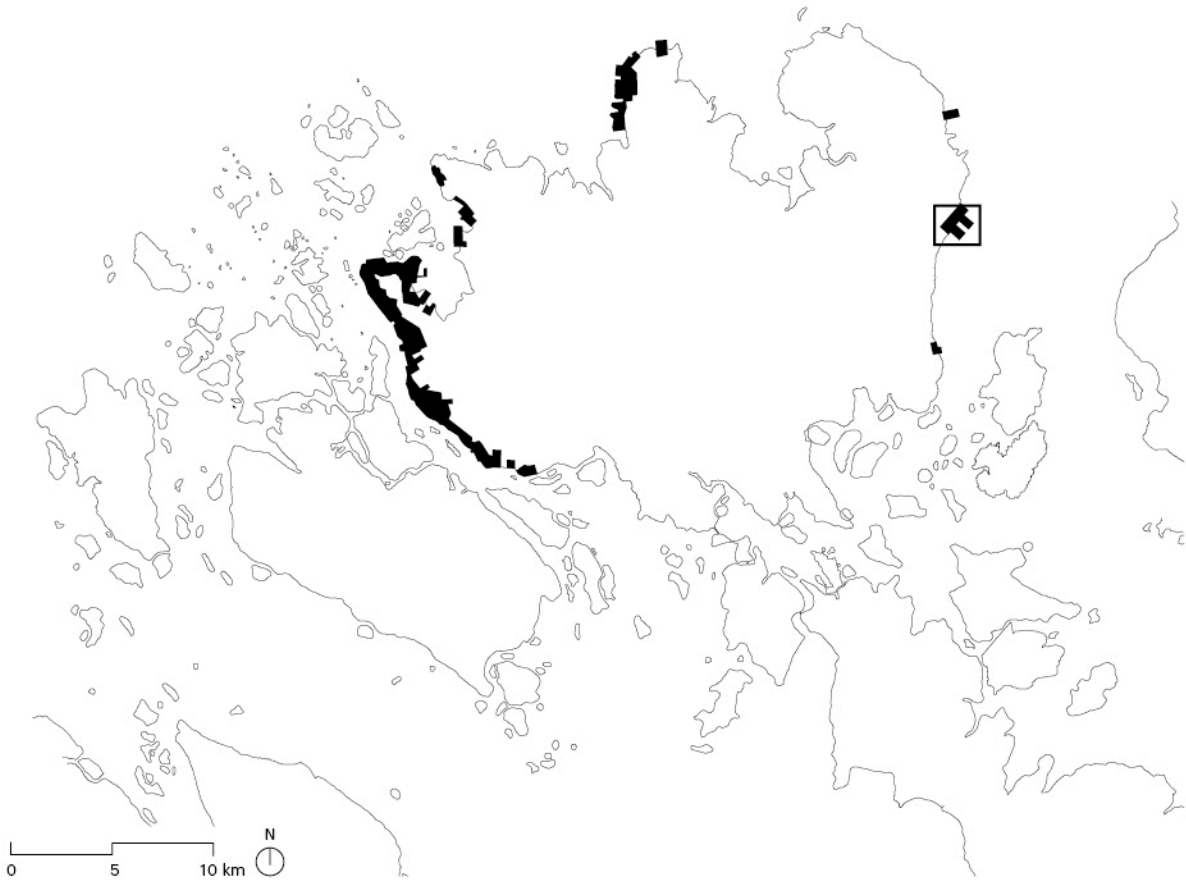
Tempeh Production
Kampong Tua Belian
Soy is found in many typical Indonesian dishes in forms of tofu and tempeh (soy cheese), which is produced on small sites in inland Kampongs. Soybeans are shipped from Malaysia to Batam, where they are processed in small dwellings. Every day round 550kg of soybeans are chopped, cooked and put aside to rest for two days, by five employees of Batam's biggest soy cheese producer. It provides the whole of Batam with tofu and tempeh. Here a worker earns a salary of 1.5 million Rupiah (155 US\$) per month.

Shipyards

Driving in a boat along the coast of Batam Island, you can experience an impressive landscape of ships and hear the hammering and welding of the shipbuilders.

Over 58 shipyards build, converse and repair ships in Batam. Most shipyards are located on the west coast, where they are protected by small islands from currents coming from the Strait of Malacca. Here the coastline is built up very densely.

The shallow water – only 10 meters in depth – and large swamp can only accommodate ships up to 160 meters in length. Complex efforts to carry out land reclamation and desludging are carried out, which affect the environment. Ideal shipyards are reclaimed so that more workspace with more edges for ships to dock and deeper waters can be reached. The surrounding of the artificial shipyard must be desludged every 2 to 3 months.



Shipyards in Batam



Kabil Industrial Estate
Google satellite image

What is a Shipyard?

Shipyards and dockyards are places where ships are repaired, disassembled and built. These can include yachts, military vessels, cruise liners or other cargo or passenger ships. Dockyards are generally associated with maintenance and basing activities whereas shipyards designate the space for the initial construction. The terms, however, are used interchangeably, in part because the evolution of dockyards and shipyards has often caused them to change or merge roles.



Drydocks Shipyard, 2012
Batam West Coast

Occupation of the Coastline
Traveling by boat along the coast of Batam Island, an impressive skyline of ships can be observed and the hammering and welding of shipbuilders can clearly be heard.



Plan of the Nexus Shipyard, 2012
Google satellite image

Plan of a Shipyard
Nexus is located on the east coast of Batam and is owned by the Beng Kuang Group, a Singapore based company with vast experiences in the marine, offshore and oil & gas industries. The Being Kuang Group has several shipyards in Singapore and Batam. As Singapore provides the knowledge and Batam the cheap labour and benefits of the Free Trade Zones, the company allows both of its shipyards to be used complementarily.

In 1998 seven hectares of land were rented and five years later the plot was extended through a "cut and fill" process to thirty-two hectares.

Raw material, such as steel is imported from China, but due to the shallow water around Batam the steel must be loaded onto smaller vessels in Singapore. This steel (2) is then cut out (4, 5), bent and moulded in

particular workshops (6). Single parts are assembled in the middle of the lot (7) until the basic body is floatable. From here it goes from the slipway into the water. While floating in the water (9) the boat is built together piece by piece.

Today around 315 workers are employed at Nexus in Batam. Nexus makes use of so-called worker pools, where workers are hired depending on the amount of work that needs to be done. Their contract ends with the completion of the job.



1



2



3



4



5



6



7



8



9

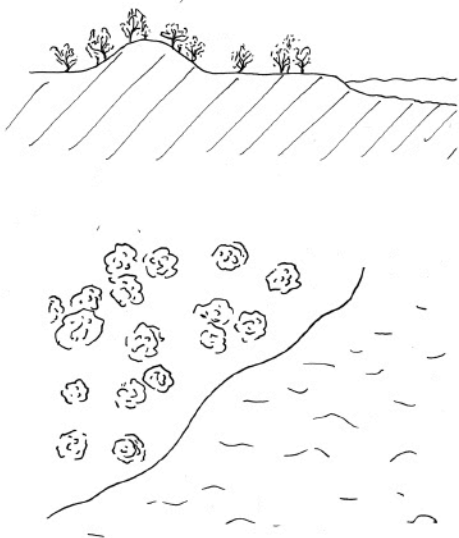
Nexus Shipyard



Import to Singapore
For its large deliveries from China, Nexus has to send the steel imports, transported on huge carriers over to Singapore where the loads are transhipped to smaller carriers that are able to access the shallow water of Batam's shorelines.

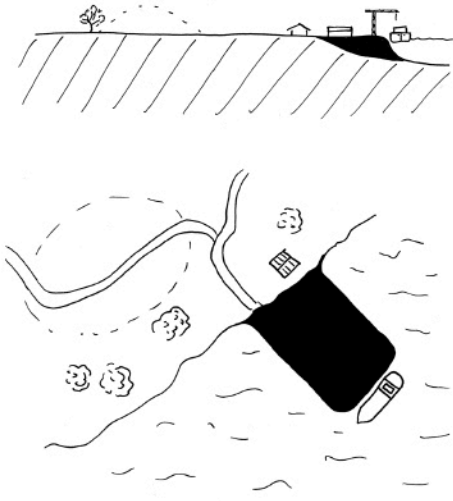


Cut
Large areas of land are constantly being re-claimed along the coastlines of the Riau islands for shipyard building, real estate developments (such as Costarina) and for the general expansion of territory (new streets, etc.).
To satisfy the demand of soil, a strategy was developed called "cut and fill". This approach causes an enormous impact on the environment and influences the visual appearance of the landscape. Throughout the island, hills are being slowly flattened out as their soil is being used as infill. It seems that the strategy of cut and fill is being carried out throughout the island, every elevation is being cut, leaving exposed significant patches of bright red earth as evidence of the operation.



Fill
Investors buy plots of land on the waterfront in order to build shipyards.
Batam's land belongs to BIDA. This agency decides where soil can be removed. In this case, they cut and sell soil by cubic meter, for the price of 3000 Rupiah (0.32US\$) per unit. The investor is responsible for the filling process. When the land reclamation is completed, the area created through infill is easily recognizable thanks to the distinct redness of the added soil.

Transformation of the Landscape
As a consequence of the 'cut & fill' practice, Batam's landscape (and many others of the Riau Archipelago islands) is being transformed immensely. The redness of the soil is left exposed following cut and fill programmes, and has come to reshape the landscape of Batam.



Industrial Parks

Over the years, 26 industrial estates and 1'274 multinational companies in nine different business sectors have settled in Batam. Industry is the biggest production sector in Batam. Many different products are manufactured, from sports equipment to plastic, with electronics as the leading sector. This sector tends to prefer to hire women workers due to their fine motor skills.

Batam's government provides good infrastructure to support the island's industrial parks. The industrial estates are mostly located along Batam's main road connecting Batu Ampar seaport and Hang Nadim airport. The size of

the industrial parks varies, from small areas of 9 x 25 meters to large plots of up to 420 hectares.

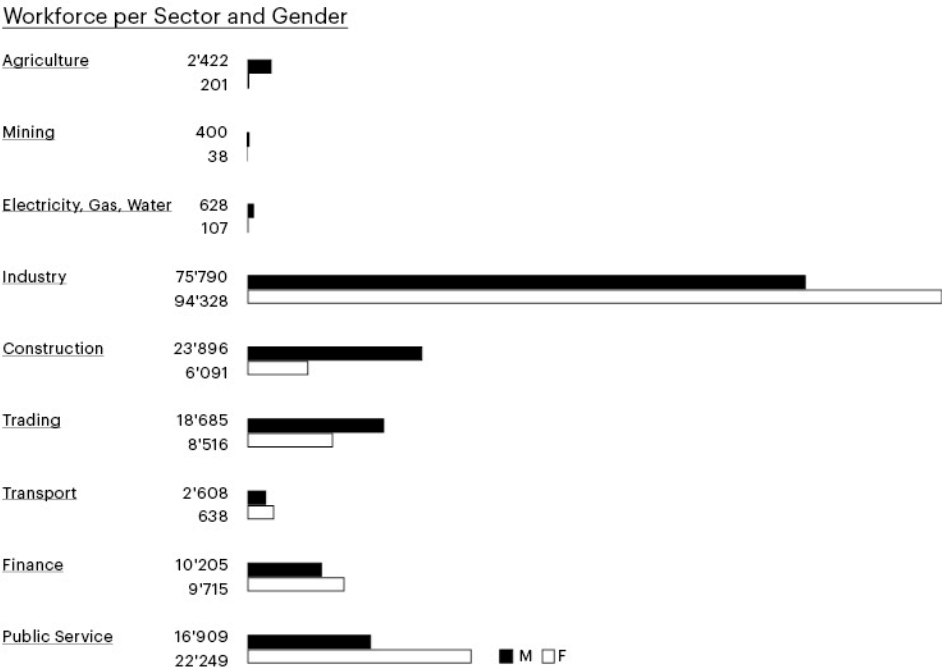
Batamindo is the oldest industrial estate in Batam, which was founded in 1989 in collaboration with Singapore. The industrial park located in the heart of the island led to Batam's success story and remains is a showpiece for other industrial parks today.



Kara and CAMMO Industrial Park
Google satellite image

What is an Industrial Park?
An industrial park (or also known as industrial estate) is an area zoned and planned for the purpose of industrial development. Industrial parks are usually located outside the main residential area of a city and normally well connected with transportation routes. These parks may contain oil refineries, ports, warehouses, distribution centres, chemical plants, plastics manufacturers or food and beverage processors, to name just a few examples. Some industrial parks offer tax incentives for businesses to locate there, such as tax increment financing.

Gender Based Production
The production of electronic devices is Batam's leading industrial sector. This sector demands high levels of concentration and fine motor skills. For these requirements female workers with good eyesight are most suitable.



Construction of a Hinterland

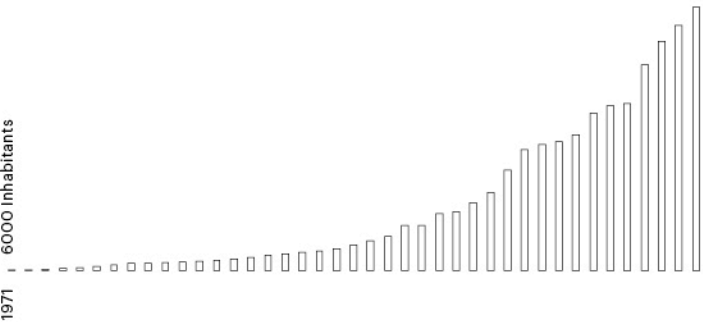
"Batam was previously nothing. Shall I tell you why Batam exists, and whose idea it was? It was the idea of Mister Soeharto (Indonesia's second President). Pak Harto was once the commander of troops against a militia force in Malaysia (during the celebrated confrontation-konfrontasi Indonesia had with Malay and British forces from 1962 to 1966). He was a young man and he was a commander, and he was instructed to prepare all of his troops for a clash against the Singapore militia and the British. And as a young man, as the commander, he was maybe at that time a one-star general, or maybe two-star, I don't know ya, but he made

his headquarters on the island of Batam because Batam is so close to Singapore. So there he was watching, and he saw the movement of all of the ships [in the Strait of Singapore] and he could see that he could look right down to Singapore. And Batam was nothing at that time, and he came there, didn't show anything to the British or anybody, he showed nothing to the people over there, and then he said 'My goodness, this is a very strategic place.' And he planned from there how he could destroy and attack Singapore and whatever during this confrontation - [which was] not with Singapore because Singapore was not yet there [it

did not officially exist as the Republic of Singapore]. [The confrontation] was against the British. And at that time he didn't know that he would someday be a president [of The Republic of Indonesia]. And so I mention all of this, I tell you this, because I know the story from Soeharto. He told me the story..." Bachharrudin Jusuf Habibie, President of Indonesia 1998-1999.

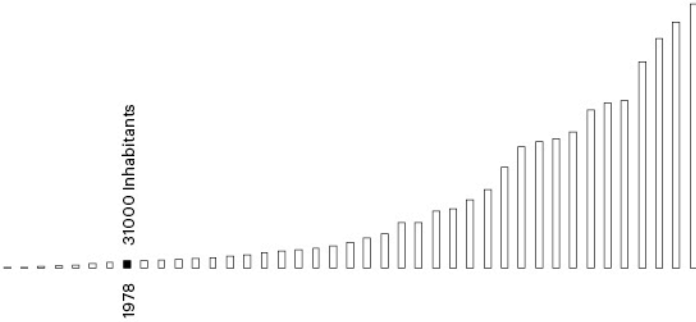


Overflight over Batam's
urbanised center Nagoya,
2012



Balloon Theory
The development of Batam dates back to 1970s. Initially, Batam was developed to compete with Singapore. Over the years, the Indonesian authority observed that it would be more beneficial to develop Batam’s industrial potential so as to complement Singapore’s distinctive and performing economy and existing infrastructures. The former aide to former President Suharto and his successor, Dr Habibie have put forward the ‘balloon theory’ of development for Batam. They suggested that Singapore is like a balloon filling up with air. If the air does not find a second balloon, the first balloon will burst. Indonesia can benefit from Singapore’s ‘excessive growth’ due to its proximity to Singapore and can be positioned as an extension of Singapore’s production base.

Sekupang, 1959



From the Oil Period (1971) to a Center of Industry, Commerce and Tourism (1978)
In 1971 Batam Island was designated as an industrial zone by the Indonesian presidential decree. To facilitate the industrial development, the Batam Industrial Development Authority (BIDA) was established. In support of the industrialization plan, the state-owned oil company, Pertamina, was a key player in starting activities ranging from infrastructure, light manufacturing, industrial real estates, gas and chemicals industries to offshore drilling. The 1976-1978 period was the consolidation phase focusing on the strengthening and maintenance of existing structures, infrastructure and assets amidst Pertamina’s crisis.
In another presidential decree in November 1978, Batam Island was declared as a bonded zone to support the development of export oriented industries. At the end of 1970s, a master development plan was devised for Batam Island to be developed as an industrial, commercial, and tourism center in Indonesia.

First factory of Citra Tubindo, 1984





Left: Lee Kuan Yew (Prime Minister of Singapore) signing the consortium to build the Batamindo Industrial Park, 1989.



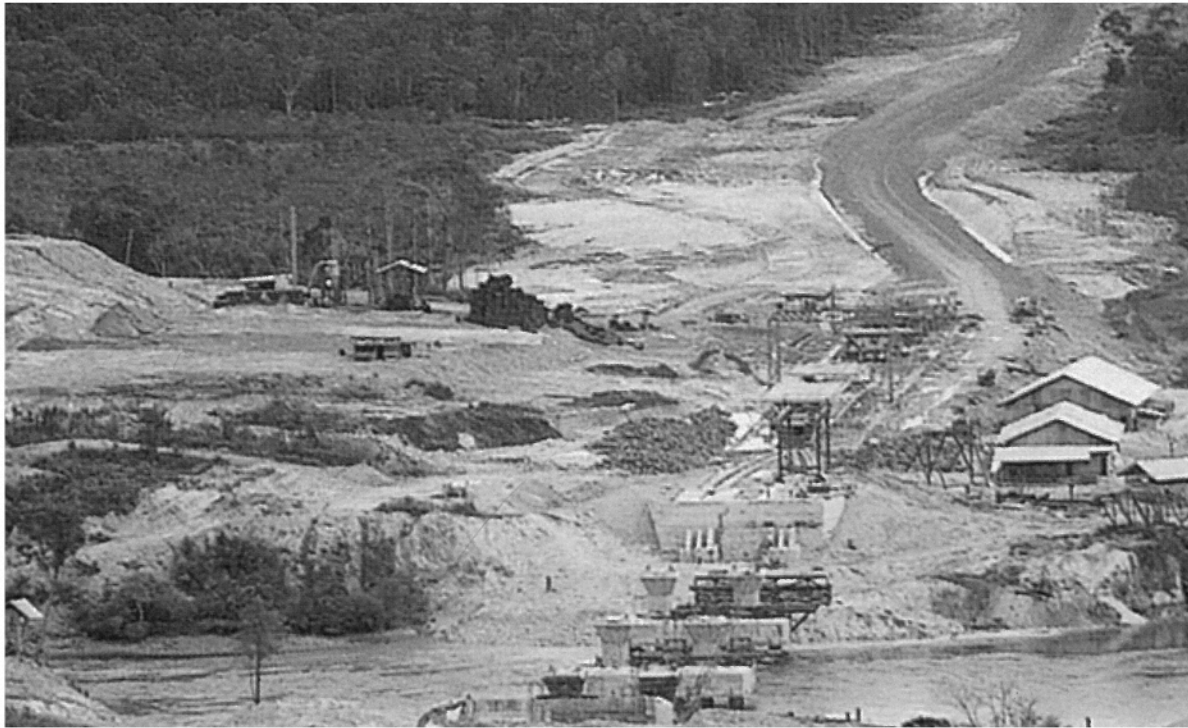
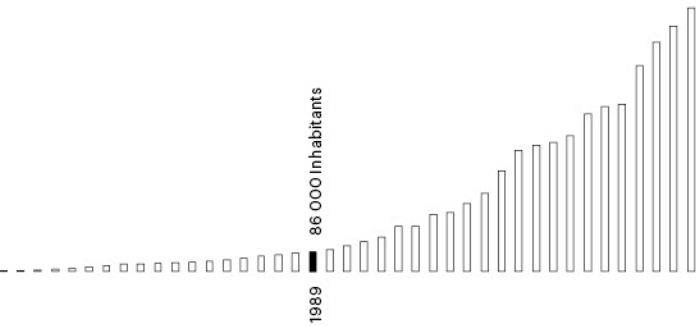
Right: laying the first stone in Batamindo, 28.2.1990



Batamindo, 1989
On October 29 1989, the law on the management of industrial estates by private companies was passed. That move received favourable comments from private enterprises as well as political leaders in Singapore.

Singapore's companies that are affiliated with its government partnered with private Indonesian enterprise to develop Batam's Industrial Park (Batamindo), an industrial estate to take advantage of its status as a duty-free export processing zone (EPZ), and of the business generated when industries move over from Singapore.

In 1990, Singapore and Indonesia signed an agreement to cooperate in the development of the Riau Province and the promotion and protection of investment between the two countries. The 1990 agreement also includes provisions to simplify exit and entry procedures; to simplify tax systems to facilitate investment; to promote the tourism industry; to cooperate in water supply, transportation and infrastructure development and maintenance.

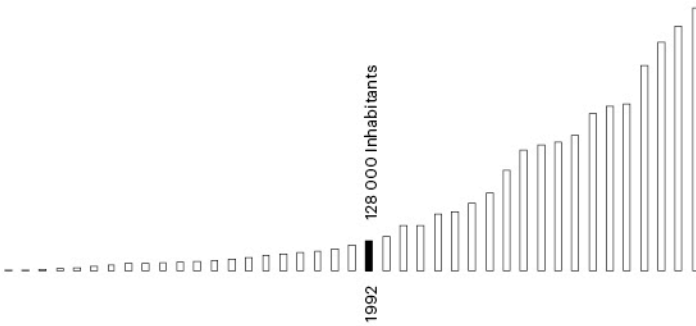


Construction of one of the six Trans-Barelang Bridges, 1995



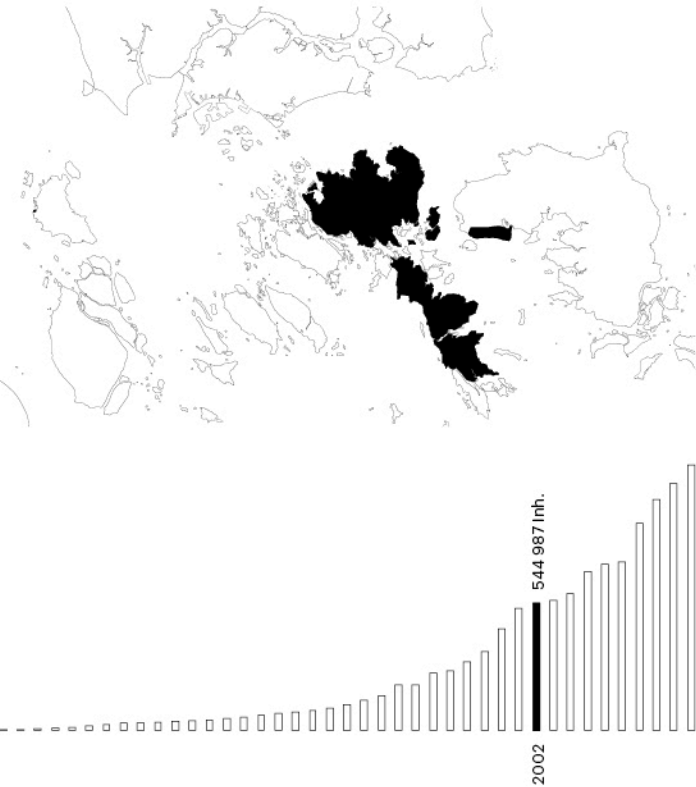
Expanding the Special Economic Zone
Batam islands have been declared a Bonded Zone in 1992. From then on, goods could be imported into a bonded zone and then re-exported without tariffs, unless the goods are to be sent into the regular customs territory of Indonesia. Bonded zones are intended for the processing of goods and materials, including their design, engineering, sorting, initial inspections and packaging.

Companies in bonded zones must export at least two-thirds of their production, excluding components, which may be sold on the domestic market if such sales do not exceed 50% of realised export value. The advantages of a bonded zone include permission for foreign nationals to own 100% of their businesses and an exemption on import duties of spare parts and material for production purposes. A drawback on duties and surcharges is available on imports into the Indonesian customs zone that are subsequently shipped to bonded zones for later export.





Batam Center, location of the administrative offices of BIDA and Bappeda

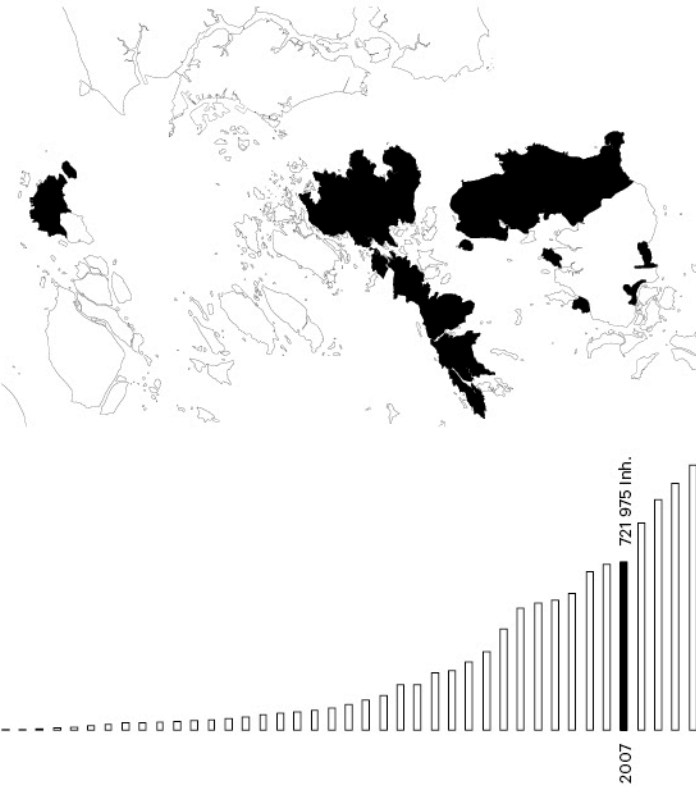


'Bonded Zone Plus'
In 1999 Batam was declared a self-governing city. This triggered many discussions concerning responsibilities between two authorities: BIDA established in Jakarta in 1971 and the newly formed Bappeda.

Batam's status has been upgraded from 'Bonded Zone Plus' in 2002, downgraded to 'Bonded Zone' in 2004, and restored to 'Bonded Zone Plus' in 2005. In July 2005, the status of the Batam Industrial Bonded zone, together with Bintan's Industrial Estate and Karimun's Industrial Cooperation zone, have been upgraded to 'Bonded Zone Plus' to give investors more legal certainty. The Minister of Finance confirmed Batam's status as a 'Bonded Zone Plus' and issued a package of reforms to improve the island's investment climate. The package simplifies customs procedures, liberalizes the import of used capital goods, reduces some taxes and allows for the movement of goods between bonded zones. It stopped short of making Batam an entirely free-trade area.



The Barelang Bridge: the island's emblem and symbol of progress



The Free Trade Zone Today
The signing of Framework Agreement 5 between Singapore and Indonesia on Economic Cooperation in the islands of Batam, Bintan and Karimun (BBK) was done on 25 June 2006. A key feature of the agreement was that Singapore would assist the development of the three islands as a Special Economic Zone (SEZ). (...) Batam was granted a Free Trade Zone status while Bintan and Karimun were granted enclave status. (...) BBK was officially designated as FTZs for 70 years, and would be run by a new supervisory council and each zone by a separate management body (Toh & Ng, 2009). The status abolishes import taxes, customs and exempts duties, value-added tax and luxury-goods sales taxes. The move was part of a government plan to establish eight special economic zones (SEZs) in partnership with the government of Singapore. A Special Economic Zones law, which the parliament was considering in early 2008, will stipulate separate business incentives involving tax holidays or land-ownership issues.

Batamindo

"One Location Global Markets"

The Batamindo Industrial Park is located in the heart of Batam and is the pioneer industrial park with an area of 320 hectares. It is located in a natural reserve and in proximity to two important water reservoirs. This artificial conglomerate originated from an economic cooperation agreement in 1989 between the Indonesian and Singaporean governments, more precisely a joint venture between PT. Batamindo investment corp. (sub Salim group, Indonesian) and

Batamindo management (Singaporean with governmental participation) was signed. This cooperation shows the different role allocations very clearly. Firms located in Singapore have growth restrictions, therefore Singapore must find ways to remain attractive to foreign investors and offer them alternative areas to expand. Singapore brings its management and technical expertise to Batam, but also serves as a distribution hub

and allows Batam's global market access. Batam on the other hand offers Singapore competitively priced labour and land. The park is strategically connected by Batam's main road with the main cargo port Batu Ampar used for delivery of raw materials and the airport Hang Nadim, which is important for the transportation of electronic devices. Both destinations are reachable in 15 minutes by road.



Park Model
Batamindo, 2012



Urban Plan of the Industrial Park

On this platform 74 companies manufacture products that are later sent all over the world. This production cluster is surrounded by a natural reserve and somehow appears as a foreign body clearly outlined by its fence. A rather large

settlement with both illegal and legal housing has developed along the main road near the entrance to the park. Also noticeable are small dwellings clinging to the south part of Batamindo.



Batamindo Industrial Park, 2010
Google satellite image



Productive Capsule

The industrial park is economically autonomous; it is a productive capsule.

The infrastructure is planned to provide the park and its tenants a high-level of independence from the remaining of the island. The industrial estate includes roadwork, a town centre, water supplies and distribution, telecommunication facilities, drainage and sewage system, residential quarters for workers along with commercial, recreational and medical buildings. Nevertheless this artificial conglomerate is in interdependency with other structures, primarily on social levels. Thus both illegal and legal housing appears around the park, which compensates for some of the missing infrastructure for the inhabitants living in the dormitories, which are located quite far from the town centre.

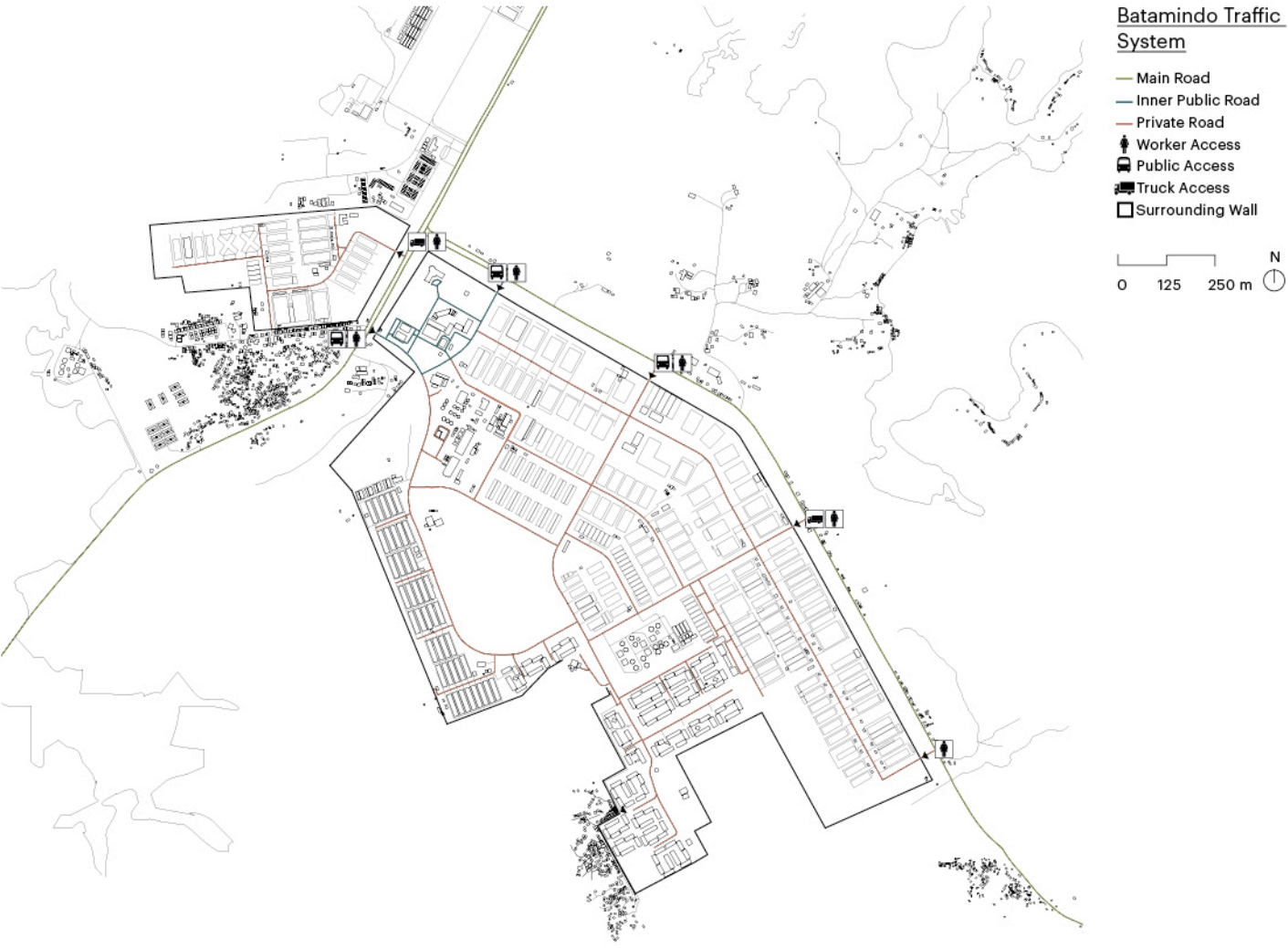


Manufacturing Spectrum

Over 74 multinational companies manufacture their products in 11 different sectors. Batamindo is a place of assembly since high technology pieces are produced elsewhere and are then sent Batam via Singapore. Products are assembled and finalized before being once again sent out via Singapore to other markets.

The majority of the firms located in Batamindo produce electronics. In this field the production process can be split up very between high-tech production and labour-intensive assembly work.

Batamindo provides a brochure with four factory types with ground floors sizes of 1800 - 3000 square meters, which facilitates the set-up up new facilities. Due to the free trade agreement, foreign landownership is allowed.



Permeability

The park has five gates, which all have different functions. All gates are open to the workers, but not all for visitors. The two gates and roads by the town centre are open to the public, but in order to enter into the park, you must use the internally organized green mini buses. One particular gate is for delivery. The workers can go in and out as they please, however the gates close at 10 pm for all visitors.



Segregation of Housing Types
The Batamindo Industrial parks provide housing for its workers and the management. The managers’ housing is located in the south link country club. With these resort-style bungalows and executive apartments accommodations, other features such as night golfing, tennis courts are also offered. On the other hand around 150 buildings located in the park’s grounds are designed to accommodate the workers. These come with a set of specific conditions. Only singles are allowed to live in the gender-segregated apartments. Around eight to ten people live in one sparely furnished apartment.

These dormitories are very popular among young women from other parts of Indonesia working on short-term contracts. Here they can relate with other workers going through the same experience and share memories of their home. So these dormitories also have a social supporting function. In the past years, dormitories have been knocked down to make more room for factory buildings, since the park area is limited.





- 1. courtyard of a dormitory block
- 2. 4-member-household kitchen
- 3. TV and ventilation in the living room

Workers' Housing
The dormitories provided by Batamindo are four stories high and divided into apartments designed for eight to ten people. The floor plans are reduced to a minimum and generally have only one bedroom furnished with four bunk beds, a living room, a kitchen and a washroom. Personal belongings are sparse. The workers in Batamindo cherish these dormitories for their affordable prices and because they make it easy to connect with other workers.



2.

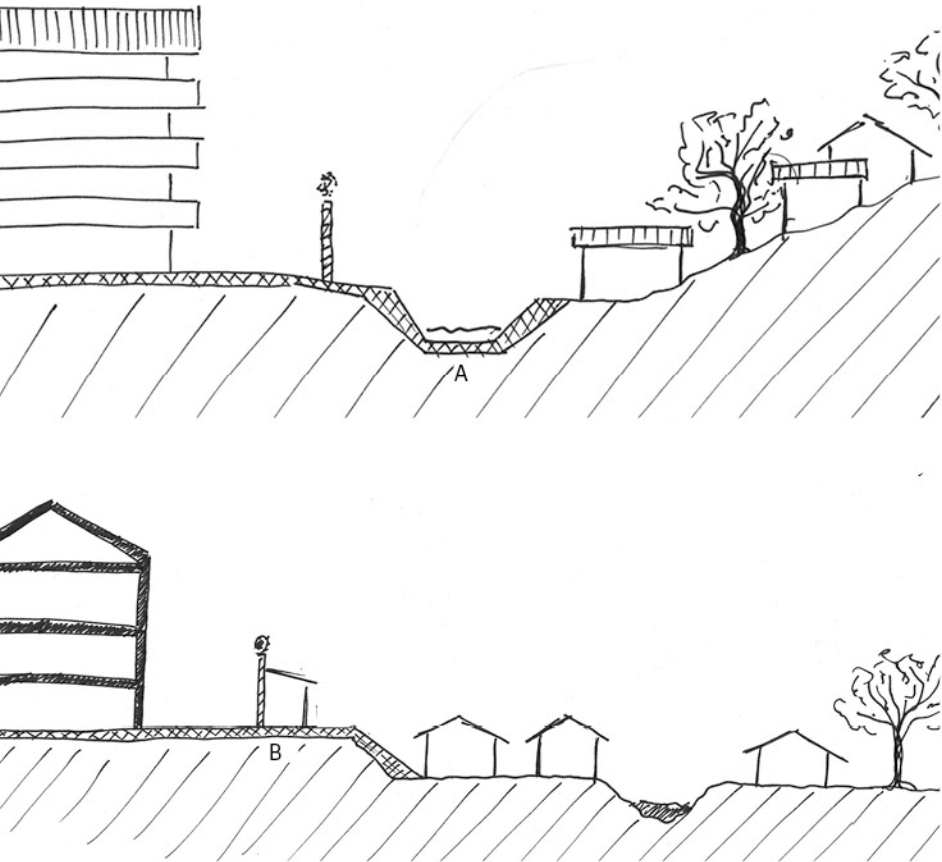


3.



Portrait of Batamindo Workers, 2012
Batamindo Dormitories

Recruited in School
The two young women Soreia (21) & Nairi (23), both work for CIBA Vision in Batamindo. Sorei was recruited from high school in Jakarta and Nairi came to Batamindo following a friend's recommendation. Both young women work on short-term two-year contracts, which include compensation for their travels back home. They earn a minimum wage of 1.4 million Rupiah (150 US\$) per month. Both young women are glad to be able to work in Batamindo as this allows them to put money aside for a better future and to support their family back home.



Sections showing how the Kampong is built on Batamindos' foundation

Kampong Selayang

The informal settlement Kampong Selayang is docked on to the south tip of Batamanido's walls like a parasite. The village is interdependent with the industrial estate in many ways. It profits from Batamindo's channelled sewage system (A) and fundament so that the dwelling structure is directly built onto the extended concrete (B). Even its electricity is tapped from Batamindo. The only way to enter the kampong is through a 1.2 metre wide gate (1) built into Batamindo's fence, since it is completely embedded in the natural reserve.

The market (2) is right by the entrance, with many different food stands and small shops, meeting the needs of the people living in the dormitories, since the park's town centre is beyond walking distance.

Also a church (3) and a Muslim school with a mosque (4) can be found in the Kam-

pong. The Islamic school supports and educates young woman working in the park and the church community also provides housing in the village for their students. In this kampong the housing sprawls into the woods and are connected by dirt roads.

Over 500 households (5) have been set up here, with an especially high rate of families since Batamindo's dormitories reserved for singles only are out of bound. In these families most men work in shipyards and the women work in Batamindo. Since they have settled down with their family, they rotate companies periodically as they are hired based on short-term contracts.



Urban Plan of Kampong Selayang

- A Sewage system
- B Extended concrete

- 1 Gate
- 2 Market
- 3 Church
- 4 Muslim school and Mosque
- 5 Houses



Pasar Rakyat
In English "pasar rakyat" means people's market. The kampongs serves different needs that cannot be fulfilled within the organized park structure, such as stalls repairing worker's clothes or food markets. Many signs are hung up around the entrance gate announcing the different church services.

A great example of how the industrial park and the kampong benefit from each other is the portrait of Revianita. She runs a small sewing shop in the market where she mostly repairs workers' clothes from the park.

Revianita and her husband came to Batam from Sumatra four years ago (1998). He works in a shipyard and her daughter works for Venturindo in Batamindo.



Gate to the Village at
Kampong Selezang, 2012
Batamindo



A Walk Through
The market is located by the entrance and has many different food stands and small shops selling a wide range of goods, from mobile phones, fresh vegetables, tools, to stalls offering house repair services. Since the market is built inside Bataminodo's foundation, the street is paved. The market street is a preferred hangout since the food courts offered by the park are out of walking distance.

Once in a while motorcycles make their way through the market's narrow street where all traffic is forced to pass through. Housings are scattered into the woods and connected by narrow dirt roads. When the rain comes, these paths are flooded and very slippery. The houses are all well maintained and homely, with small decorated porches.



2.



3.

1.
Market street
2.
View towards the dormitories over the roofs of the market
3.
Housing scattered in the woods

Creating Conditions for Global Manufacturing

The establishment of Special Economic Zones sets the basis for Batam's growing attractiveness as an industrial manufacturing hub providing tax incentives and other assets for importing and exporting companies. The law for the management of industrial estates by private companies passed in 1989 has made these location accessible to foreign investors.

The foundation of the Industrial Park Batamindo is a joint venture by Indonesian and Singaporean partners realized to combine the advantages of global management. This provides the highest quality conditions for production through the provision of cheap labour force and cheaply

priced land. All this is located just a few kilometres away from a hub with premium global connections, which assures the success of this venture.

In order to facilitate foreign private investments, a 'one stop service' was established to accelerate all kinds of administrative clarifications and interactions with authorities. Factories can be ready for production only three months after the signing of the initial contract thanks to this simple and efficient set up process.



Origin of the 74 Batamindo tenants



- 1 Alteco Chiminal Indonesia, PT

2 Birotika Semesta (DHL Express), PT

3 Casio Electronics Indonesia, PT

4 CIBA Vision Batam, PT

5 Daihan Labtech, PT

6 Eminent Plastics Batam Indonesia, PT

7 E-tech Manufacturing Indonesia, PT

8 Epson Batam, PT Scanner Assembly

9 Epson Toyocom Indonesia

10 ESG Panatec, PT

11 Esqarada / BSW, PT

12 Evox Rifa Indonesia, PT

13 Exas Batam, PT

14 EX Batam Indonesia, PT

15 Fluid Sciences Batam, PT

16 Foster Electric Indonesia, PT

17 Fujitec Indonesia, PT

18 Heng Huat Plastic Industries Ind, PT

19 HLN Batam, PT

20 Hymold Batam, PT

21 Honfoong Plastic Industries, PT

22 Infineon Technologies Batam, PT

23 JMS Batam, PT

24 Japan Servo Batam, PT

25 Leo Industries Batam, PT

26 Minamoto Indonesia, PT

27 Nactec Batam, PT

28 Nagano Drilube Indonesia, PT

29 Nissin Kogyo Batam, PT

30 Noble Batam, PT

31 NOK Asia Batam, PT

32 NOK Precision Component, PT

33 NXP Semiconductors, PT

34 Panasonic Battery Batam(PBB), PT
- 35 Panasonic Shikoku Electronics Batam(PSECB), PT

36 Patlite Indonesia, PT

37 PCI Electronic International, PT

38 Perkin Elmer Batam, PT

39 Petrolog Harapan Abadi Semesta, PT

40 Philips Industries Batam, PT

41 Polestar Plastic Batam, PT

42 Primo Micropones Indonesia, PT

43 Risis Indonesia, PT

44 Rubycon Indonesia, PT

45 Sanipak Indonesia, PT

46 Sanmina-SCI Batam, PT

47 Sansyu Precision Batam, PT

49 Sanwa Engineering Batam, PT

50 Sanyo Precision Batam, PT

51 Scheineder Electric Manufacturing, PT

52 Shimano Batam, PT

53 Shin-Etsu Magnetics Indonesia, PT

54 Siemens Hearing Instruments, PT

61 Surya Teknologi Batam, PT

62 Takamori Indonesia, PT

63 TEAC Electronics Indonesia, PT

64 TEC Indonesia, PT DOT Printers Head,

65 Teckwah Paper Products Indonesia, PT

66 Thomson Batam, PT

67 Top Foam, PT

68 Tunas Karya Indoswasta, PT

69 Unisem, PT

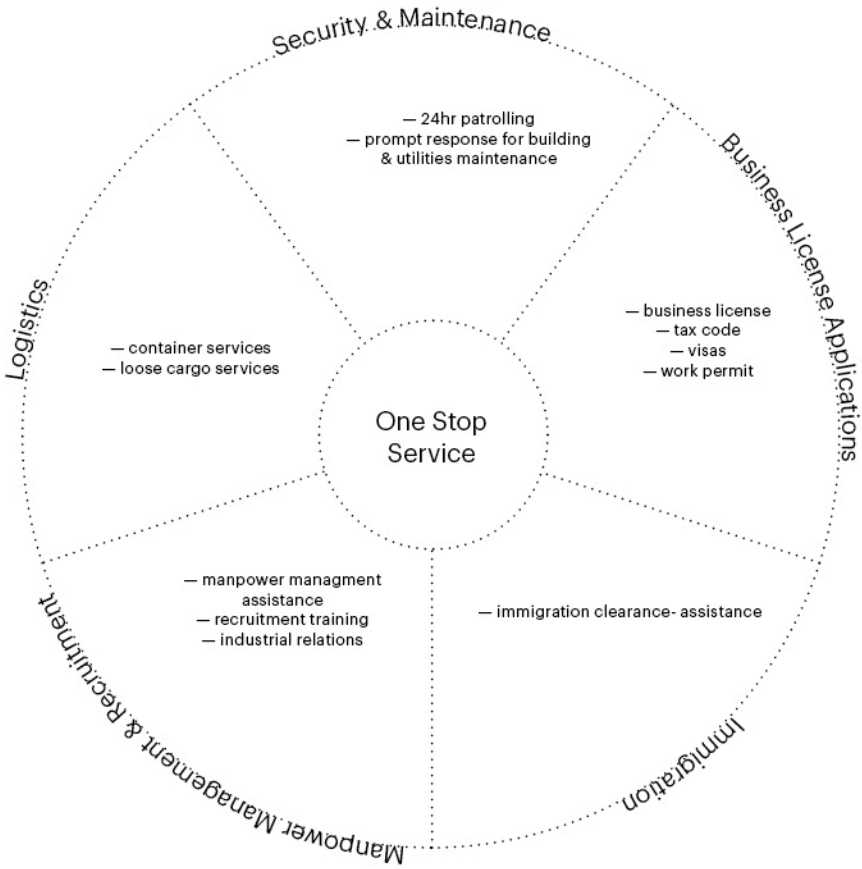
70 Uwatec Batam, PT

71 Varta Microbattery Indonesia,PT

72 Wireforms Batam Indonesia, PT

73 Yeakin Plastic Industry, PT

74 Yokogawa Manufacturing Batam, PT



One Stop Service

Batamindo's management offers a so-called "one-stop service". This is an integrated service by the 'under one-roof policy' designed to simplify investment licenses and permits, which facilitates investments and the set up of industrial facilities in Batam. This service extends at different levels in the operation, such as security and maintenance, business license applications, immigration, manpower management as well as recruitment and logistics.

Main Shareholders

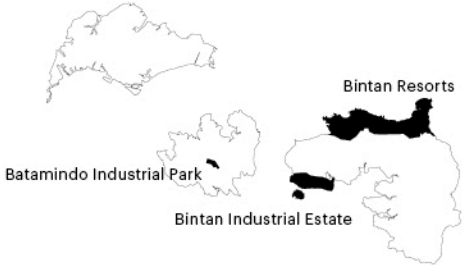
Salim
Indonesian

Sembcorp
Singaporean

Ascendas
Singaporean

Parallax
Singaporean

Gallant Venture



Industry and Line of Business

Utilities

Industrial Parks

Resort Operations

Property Development

Revenue Streams

Power
Water
Telecommunication
Waste Management

Rental
Service Charges
Other Services

Rental and Service charges
Ferry Terminal Fee
Ferry
Other Services

Development and Sale of Land and Property

Groups and companies carrying out business

PT Bintan Resort Cakrawata (PT BRC)

PT Batamindo Investment Cakrawala (PT BIE)

PT Bintan Inti Industrial Estate (PT BIIE)

PT Batam Bintan Telekomunikasi (PT BBT)

PT Batamindo Investment Cakrawala (PT BIC)

PT Bintan Inti Industrial Estate (PT BIE)

PT Batamindo Executive Village (PT BEV)

PT Bintan Resort Cakrawala (PT BRC)

Bintan Resort Ferries Private Limited (BRF)

PT Surya Bangunperitwi (PT SBP)

PT Buana Megawisatama (PT BMW)

PT Bintan Resort (PT BRC)

What is Gallant Venture?

"Gallant Venture Ltd. is an investment holding company with focus on regional growth opportunities. We are a commercial development and management group in Riau Archipelago and an integrated master planner for industrial parks and resorts in Batam and Bintan. Since the early 1990s, we have operated in four key areas; utilities, industrial parks, resort operations and property developments. In 2004, our operating revenues totalled approximately S\$202.0 million while our total assets were valued at approximately S\$1.5 billion. Our principal shareholders include the Salim Group, the Parallax Group, SembCorp Industries Ltd and the Ascendas Group.

Our businesses take advantage of the strategic proximity of Singapore and the

close economic cooperation between the Singapore and Indonesian governments to promote investment in the Riau Province. Headquartered in Singapore, our location is one of our key assets given Singapore's reputation for multinational management due to its infrastructure, proven legal system and good corporate governance environment. Our investment portfolio is a good mix between stable cash flow in the utility and industrial park businesses, promising growth potential in the resort and property development businesses in Bintan, and strong balance sheet with low gearing."

(www.gallantventure.com)



Tai Sin
POWER, CONTROL & INSTRUMENTATION CABLES

SNI ◇ LMKO ◇ PSB

PT. SRI BATAM RAYA

GUCCI EMPORIUM ARMANI
NIKE
OLYMPIA

LENSA SINGLE VISION
Rp. 75.000

TERMASUK LENS
Rp. 240.000

LENSA PROGRESSIVE
Rp. 270.000

Rp. 80.000 Rp. 37.000

OPTIK MELAWAI

OPTIK MELAWAI

SAMSUNG

ARTHA KENCANA

CO
COLLECTION

SAMSUNG

SCHEME
Pioneer Electric

VISALUX

PIONEER elect

KEDAI KOPI
BAHAGIA

Tiger
Beer

KARTINI
KEDAI KOPI BAHAGIA
LENSA PROGRESSIVE

Infineon:Portrait of a Global Player

Looking for a tenant in Batamindo that makes use of the park's many locational advantages, Infineon proved to be the perfect find and offered to give us an insight in its complex production process and global distribution.

Infineon is a German semiconductor company headquartered in Munich and employs over 26'000 people worldwide. In the 2011 fiscal year (ending September 2011), the company reported sales of 3.997 billion Euros. "Infineon Technologies focuses on the three central chal-

lenges facing modern society: Energy Efficiency, Mobility and Security and offers semi-conductors and system solutions for automotive and industrial electronics and chip card and security applications.

Infineon's products stand out for their reliability, their quality excellence and their innovative and leading-edge technology in analogue and mixed signal, RF and power as well as embedded control." (from www.infineon.com)

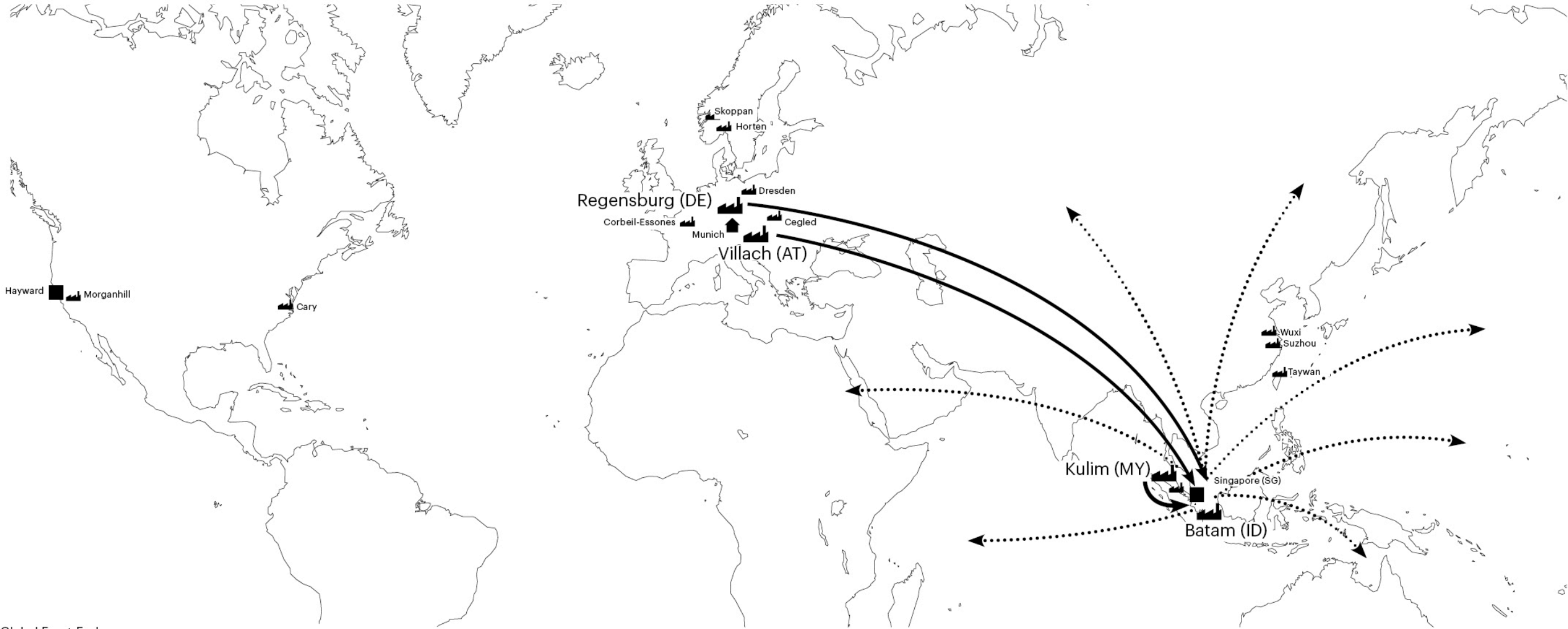
A Model of Global Production

The microchip production process is divided into two steps: front-end and back-end. Due to the different technical requirements the two steps can be carried out in different locations.

The front-end step, in which silicon wafers are fabricated is very demanding from a technical point and special facilities are required. In the more labour intensive back-end process, the semiconductor chips are

put together with different components to form mountable microchips.

The back-end production used to be set-up in Singapore and was moved to Batamindo in 1996. This decision was made with the help of Singapore's toll, which also advises firms located in Singapore. This strategic decision combines Batamindo's locational advantages of cheap production and proximity to Singapore as a global distribution hub.



Global Front-End Production

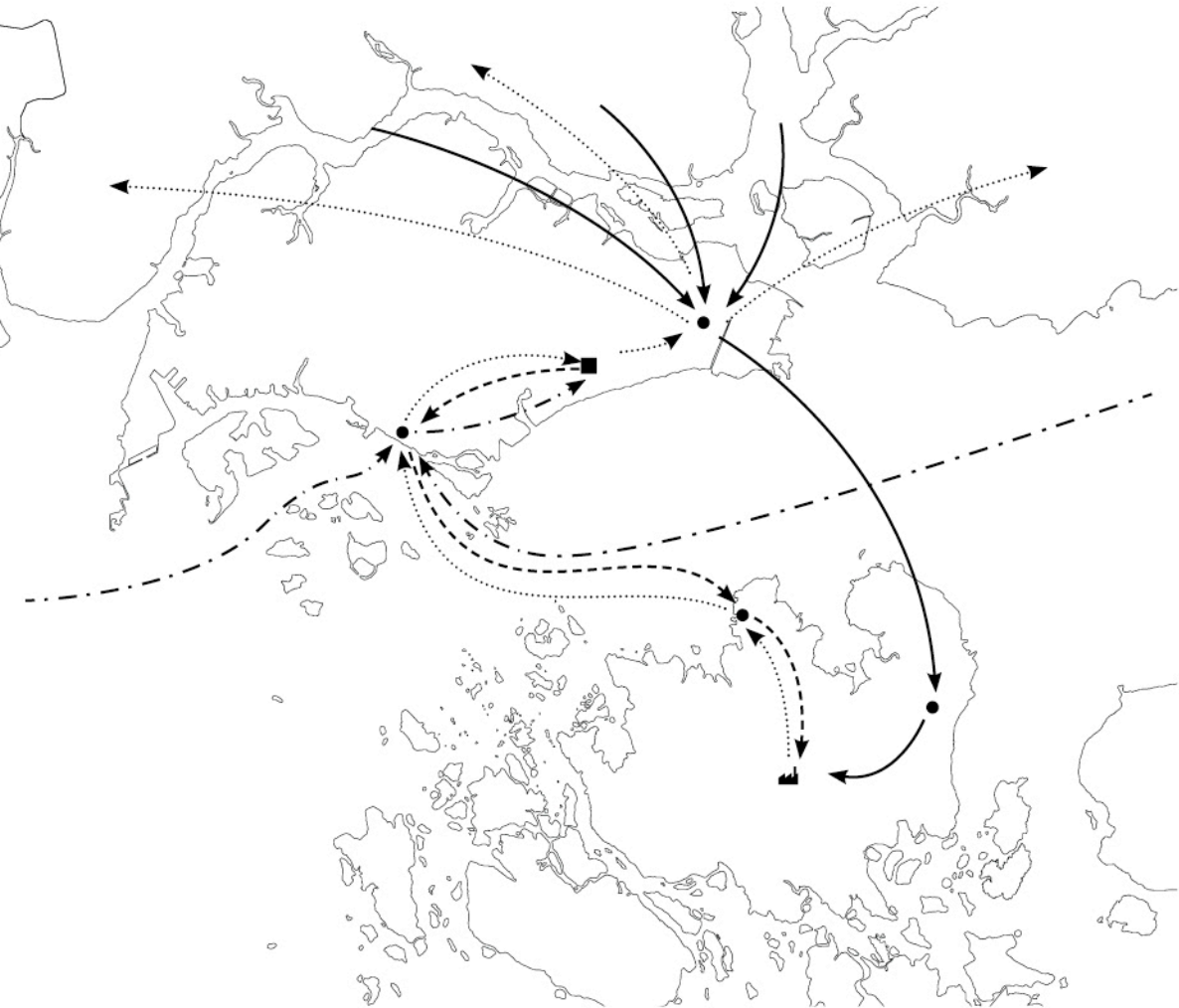
→ Delivery to Batam over Singapore

→ Distribution from Singapore

■ Infineon headquarter (Munich)

■ Infineon distribution center

■ Infineon production sites



Back-End Steps

- ➔ Front-end delivery to Batam
- ➔ Material from independent suppliers
- ➔ Container transport to Batamindo
- ➔ Finished products Distribution Center
- ➔ Singapore
- ➔ Factory Batamindo

Linking Singapore and Batam in the Production and Distribution Chain
Infineon's distribution centre in Singapore is responsible for the supply to its Asian customers.

The front-end process of the microchips finalized in Batamindo is carried out in Regensburg, Villach and Kulim. The wafers are flown (—) to Singapore and then directly transferred to Batam's Hang Nadim airport.

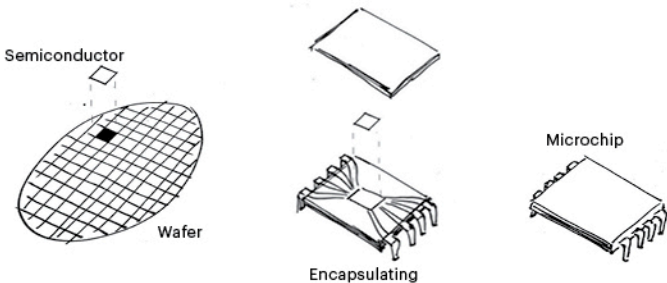
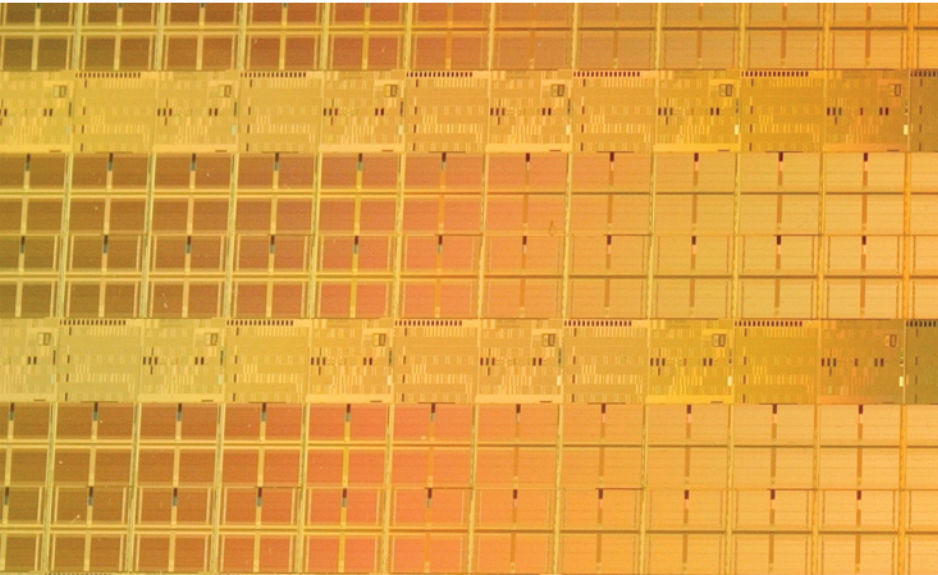
In parallel, other raw materials needed for the back-end production in Batamindo are shipped by independent suppliers to Singapore using large container sea vessels (---). The deliveries are divided into small pallets according to the need of individual firms.



Boat customized for a single container, Batu Ampar, 2012

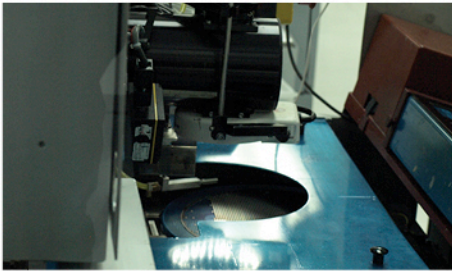
Container Shipping

Raw materials find their ways to the Infineon's distribution center. Here everything is repacked for the production of specific microchips and loaded into a single container for Batamindo (—). A small boat fitted to carry one container travels from Singapore's harbor to Batu Ampar in Batam. From here the container is loaded onto a truck and driven to Batamindo. Good road infrastructure allows the transfer from the port to Batamindo in only 15 minutes.



Front-End Product: The Wafer

Simply said, a wafer is a thin disc of semiconductors, which is the base material for microchips. The semiconductor consists of material with electrical conductivity for a conductor and an insulator. Silicon is the main material used to produce semiconductors, which is accumulated with argon and melted so that pure silicon is gained. The silicon rolling is cut into thin slices and the newly formed disc undergoes many micro fabrication process steps such as deposition of various materials and photolithographic patterning; a process that uses light to transfer a geometric pattern. In other words information is printed, as a result, a pattern or design becomes visible.

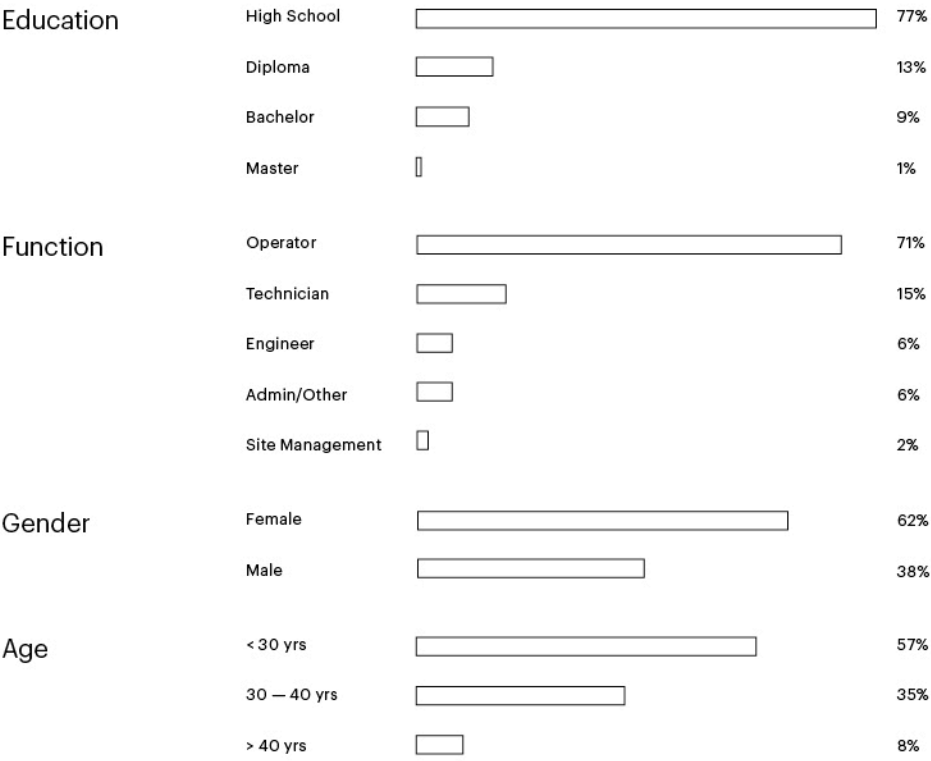


Production

Since the wafer surface is extremely fragile the whole workspace must be kept perfectly clean so that no particles get in contact and ruin the chips. Workers must wear a full body suit with mouth masks and air brush their whole body holding their hands up before entering the room.

As a first step in the back-end process, rectangles are cut out using a diamond blade. The small pieces are placed on copper and wires are bonded, brazed and than finally encapsulated. After a series of testing the microchips are marked, scanned and packed.

Boxes are then loaded into a container and driven to Batu Ampar. From here they are carried to Singapore by wooden ships. The finished product is either picked up by the customer directly from the warehouse or flown out.



Employees

It is typical for electronic industries to have more female than male employees. The same is true at Infineon. Most young women work as operators. Around a third of the workers live in the dormitories provided by the park.

Infineon is a 24-hour, seven days a week operation, divided into three eight hour shifts per day.

Infineon trains its employees through various classes and seminars. All these efforts are reflected in the low affiliation rate of six per cent, compared to other firms where rates of fifteen to twenty per cent can be observed.

Today, other functions such as technician, site management and top management are still dominated by men, which will most likely change due to the high women

quota. The lack of higher educated workforce is a growing problem in Batam. Infineon's site management, for instance, is mostly run by Malays, Filipinos and Singaporeans. The top managers of Infineon's Batamindo industries usually work in Batam during the week, but live with their families in Singapore because of the higher living standards and international schools.

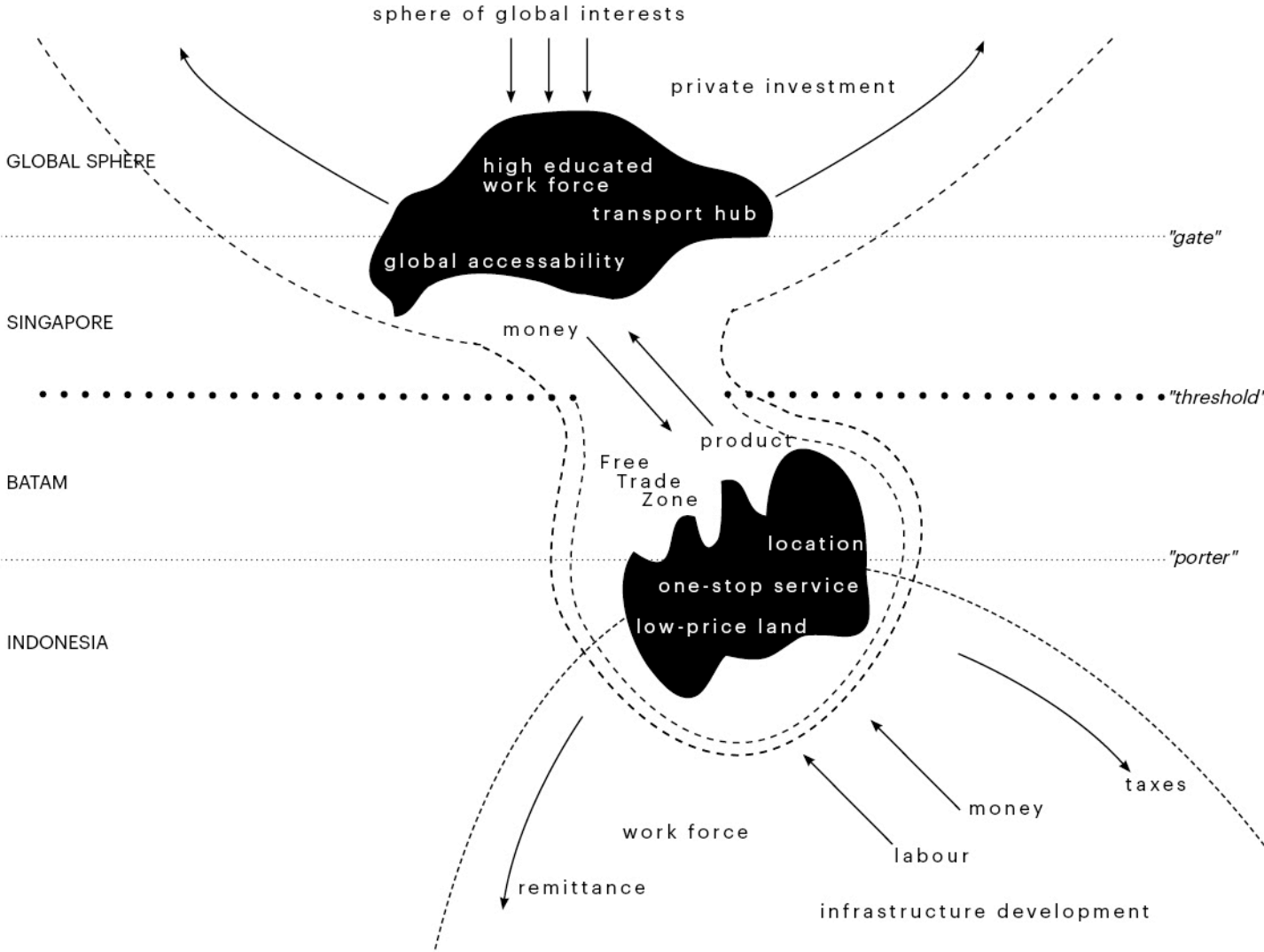
Conclusion

An ocean of social, economical and cultural differences separates Batam from Singapore. These disparities, however, have allowed waves of opportunities to brush from one shoreline to the other. As a result of the cooperation between Singapore and Indonesia, special economic agreements have been set up so that this gap of differences can be overcome and capitalized upon. Through this new constellation Batam

Values being exchanged				
labour	land	investment	regulatory framework	distribution
managerial level		investment in production		
managerial level		investment in facilities & services	Free Trade Zone	
			influence since 1999	
predominantly low skilled labour		investment in infrastructure through BIFZA & FTZ	Free Trade Zone	

has occupied a new role in relation to the rest of Indonesia to become a great point of interest. As a 'porter' towards Singapore, Batam has achieved accessibility to the global market for Indonesia. Simultaneously, it has accommodated Singapore's now world-renown market. These new conditions have shifted Batam's dependencies from Jakarta to Singapore in many ways. From another point of view this bridging of the threshold

does not only decrease Singapore's land scarcity problem due to the city-state's extremely high population density, but also serves the interests of investors worldwide for low price land and cheap labour in a global-gated location. All in all Batam seems to have much more potential than only being a hinterland. Due to the condition that has been created on the island, two completely different worlds of interests come to equal terms on this very Island.



Sources

Books

Syamsul Bahrum, H. PhD (2008). *Indigenous People in a dependent Economy. A case study of the socioeconomic impacts of regional development on the indigenous people in the islands of Batam, Province of Riau-Indonesia (1998-2001)*. Batam Link Publisher, Batam Indonesia.

The Bali Burnati Center for the Arts (2011). *Batam and the Riau Island*. Gianyar, Bali, Indonesia.

Wong, Poh Kam and Ng, Kwan Kee (2009). *Batam Bintan and Karimun - Past History and Current Development Towards Being A SEZ*. National University of Singapore, Singapore.

Maps

p.29: Stephen Cairns et al. (2012). *The Tropical Town*. Project Booklet, Future Cities Laboratory, Singapore.

Statistics

p.22: Batam Fast, www.batamfast.com

p.24: www.numbeo.com

p.26: Office of civil records Batam (2008). 'Batam Population'.

p.23, 27, 30-34, 41: Bifza Batam (2010). *Batam in Figures*. www.bpbatam.go.id

p.28, 30, 31: www.wikipedia.org

p.31: Google public data

p.58, 81: Batamindo Industrial Park Management (2012)

Interviews

Azril Aprian Syah, Bappeda Batam.

'Bobbie' Rahmat Kurniawan, Bappeda Batam.

Wan Darussalam, Chairman Bappeda Batam.

Andy Hauw, Batamindo Industiral Park Manager.

Farida Li, General Manager VJB.

Nada Fasa Soraya, Chairwomen KADIN Batam.

Hans-Martin Stech, CFO Infineon Southeast Asia.

Thomas Wevelsiep, Director Infineon Batamindo.

Jürgen Potoradi, Director Infineon Batamindo.

Suri Teo, Admin Manager Nexus Engineering.

Hanung Nugroho, Student.

Raith, Kampung inhabitant.

Soraya, Dormitory inhabitant.

Names unknown, owners of the Tofu production and the traditional shipyard.

Internet

www.gallantventure.com

www.infineon.com

www.bpbatam.go.id

Image Credits

p.52, 54, 55: Edi Sutrisno (2010). *Batam Doe-loe & Kini*. Batam Link Publisher, Batam, Indonesia.

p.53: The Bali Burnati Center for the Arts (2011). *Batam and the Riau Island*. Gianyar, Bali, Indonesia.

p.56: www.ngobrolaja.com

p.57: Tita Dewi. www.ssl.panoramio.com

p.80: www.download.intel.com

p.80: www.presseagentur.com

Acknowledgements

Thanks to Milica Topalovic, our Professor. The participation in this project was a unique possibilty, not only to get an understanding of urban territories but also for having a unforgettable time in Southeast Asia.

Also to the assistants Marcel Jaeggi and Martin Knuesel who made a big effort in supporting the whole team of students during the semester. Thank you for the pleasant teamwork.

Special thanks go to Bappeda Batam, especially Bobbie Rahmat Kurinawan. He showed us the many beautiful sides of this facinating island. We appreciated his support in every way.

Thanks to the management of Infineon Technologies, esp. Hans Martin Stech, Thomas Wevelsiep and Juergen Potoradi, for giving lots of background information about their business structures and for having the great possibility to get an insight in the globally linked manufacturing processes.

Magnus Nickl for his support to get in contact with Infineon Technologies, and all the other fellow students, namely Giulia Luraschi, Martin Garcia and Karl Wruck, who made these long working hours and nightly sessions more than pleasant. We had hell of a time!

Thank you, Mom and Dad, for everything.