

Deferred Development

Infrastructures of Extraction

Borders & Territories
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January 2022

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Abstract

This paper looks at the concept of extraction of raw materials, labour and communities, as it applies to the Balochistan province of Pakistan, with an emphasis on the port city of Gwadar. Extraction and its spatial consequences are explored with reference to the situation on the ground in Gwadar. Looking at Gwadar through the lense of statecraft finds it to be a zone/ free zone, but it is also simultaneously an extractive zone. This has spatial and demographic consequences, one of which is the imposition of consecutive master plans which aim to establish this zone. It is found that these plans have a recurrently deferred nature that leaves gaps between the planned infrastructure, the realised infrastructure and the already existing locality. These liminal gaps, of a temporal nature, can be places of opportunity to address the spatial and demographic consequences.

Key words

Gwadar, Extraction, Neo-Colonialism, Extrastatecraft

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1 Preface

The natural world does not allow for the creation of something out of nothing, everything that grows, produces, accumulates... takes from somewhere else. The same is true for human activities, large scale production means large scale extraction of some thing(s) from somewhere. In nature, those sources are replenished at a certain rate, as is the inherent balance that exists in the natural world that maintains ecosystems. When humans produce, accumulate and grow things on a large scale, such replenishment is not a given. The implication of an ever-growing global market is therefore that there is an ever increasing level of extraction of the earth's resources. This extraction takes its toll on the planet, its environment and landscapes, the same way it expends the physical and mental capacities of the people involved. This paper looks at the unnoticed, and often side-lined, perspectives of local inhabitants, as well as the effects on the ecology of extractive activities and compares these findings to the situation in Gwadar, Pakistan. The situation of the local people and their urban context is investigated in the face of master plan fueled extractive infrastructure implementation, through and adjacent to their spaces of daily life. What are the consequences of extraction in the context of Gwadar? Looking at theory regarding the constructs that perpetuate the development of special zones, resource extraction and labor importation/exploitation this paper aims

to put into perspective the resulting situation Gwadar finds itself in. Following this, the question of what spatial opportunities may arise in such a context, is discussed.

1.1 What is extraction?

To be alive means to be involved in an extractive process; animals consume oxygen and organic materials, plants consume sunlight and water¹, this is a reality of life which must consume to grow and maintain itself. So, extraction is unavoidable? Although this is true, there is a large difference in scale involved in these types of extraction. Life extracts for self preservation, this is enough for life to stay living, but not much more than that, at least not more by any orders of magnitude². The scale of extraction for economics however is much larger, and it intends to keep growing. The capitalist economy is never satisfied with what it has, its nature is to indefinitely grow profits by extracting any surplus value³ that is available in the resources and labor capacity that there is access to.

Contemporary extractive processes have a legacy based in colonialism. The extractive process takes, for the purpose of enrichment of the taker. The appropriation of space, and by extension the resources found within that space were the basis of colonialism where external powers appropriated native lands and resources for the sole benefit of that external power. "Colonial ... regimes normalized an

¹"Green plants use the energy of sunlight to convert water (H_2O) and carbon dioxide (CO_2) to carbohydrates (sugars and starches), other organic (carbon-containing compounds, and molecular oxygen (O_2) ... Living organisms that require oxygen reverse this process: they consume carbohydrates and other organic materials, using oxygen synthesized by plants to form water, carbon dioxide, and energy *Metabolism* (n.d.)."

²For example, a person may be able to eat much more than they need to stay alive, however the amount they consume does not increase exponentially.

³"**Surplus value**, Marxian economic concept that professed to explain the instability of the capitalist system. Adhering to David Ricardo's labour theory of value, Karl Marx held that human labour was the source of economic value. The capitalist pays his workers less than the value their labour has added to the goods, usually only enough to maintain the worker at a subsistence level. Of the total worth of the worker's labour, however, this compensation, in Marxian theory, accounts for only a mere portion, equivalent to the worker's means of subsistence. The remainder is 'surplus labour,' and the value it produces is 'surplus value.' To make a profit, Marx argued, the capitalist appropriates this surplus value, thereby exploiting the labourer *Surplus value* (2016)"

extractive planetary view that continues to facilitate capitalist expansion, especially upon resource-rich Indigenous territories (Gómez-Barris, 2017, p. 6).” These territories were subject to, and today continue to be subject to, forms of extraction if they are able to provide the resources.

The extraction of resources; raw materials such as ores and minerals, fresh water and lumber are forms of extraction. The more devastating forms of extraction being those that are not sustainable, i.e. extraction of a material resource in a way that it will not only be depleted, but also cause irreversible damage. Overfishing and large-scale logging that results in deforestation are examples of extraction that are by definition unsustainable.

In colonial times, people were the subject of extraction in several ways. These include through the involuntary extraction of their labor, and through involuntary displacements. “Historically, the extractive view rendered Native populations invisible, which legally rendered the settlement of foreign populations onto communal properties, and facilitated the taking of those territories’ resources (Gómez-Barris, 2017, p. 6).” In the present day, native populations are yet again rendered invisible from the view of economic powers that perceive space as a source of enrichment and power. Indigenous people are displaced in favor of large scale economic and/or infrastructural projects. Extraction, as a form of neo-colonialism, often results in indigenous people losing their lands, livelihoods and disrupting everyday life.

one who publishes it wants to present. In modern mapping, swathes of land are easily rastered into sections and marked arbitrarily, irrespective of any local communities that may live there and whichever commons, such as resources and public spaces they may depend on. “The appropriation of space that lies at the core of modern mapping replicates the appropriation of the commons that establishes private property as well as the colonial conquest with its global geography of genocide and extraction (Mezzadra & Neilson, 2013, p. 35).” The map is used as the tool by the extracting entities that makes it possible to displace people and appropriate their commons efficiently from a top-down perspective. “If ... colonialism and extractive capitalism reorganized space and time, then vertical seeing normalized violent removal (Gómez-Barris, 2017, p. 6).”

1.2 Mapping

Mapping is one of the tools used in extraction. (Mezzadra & Neilson, 2013, p. 35) describe the way mapping appropriates space quoting Thongchai Winichakul: “a map appropriates a spatial object by its own method of abstraction into a new sign system.” A map shows the perspective that the

2 The Zone

Within the process of extraction, the point of extraction is the first major space. The next spaces are where the extracted, the resources and by extension the labor that was involved in the process, enters the economic system. These are the nodes where these extracted resources are accumulated, processed to varying extents, traded and shipped to their next destinations. To facilitate the entry of the resources into the economy, special zones come into play.

The free zone is a space where special economic regulations apply to attract production and export. “Free ports have handled global trade for centuries, but the mid-twentieth-century development of Export Processing Zone, or EPZ, as a more formalized economic and administrative instrument, marks the beginning of the modern zone (Easterling, 2014, p. 21).” “As container shipping became the global standard, wherever a plane could land or a truck could travel, new diasporic centers of global trade could develop ... yet, as it opened its door to manufacturing and to new populations of workers, the zone also began to develop its own peculiar form of urbanity (Easterling, 2014, p. 25).” This urbanity is usually a rigid top-down master-plan that is limited in the extent that it considers the context that it is placed in.

2.1 The Zone as an Extractive construct

The zone uses special legal and economic constructs to extract wealth. As Easterling (2014) describes, the zone is a tool of *extrastatecraft*⁴, a tool that uses private, non-state, entities as a means of achieving the state’s economic goals. Although the borders of a zone may or may not

have a physical wall, the real border is non-physical. (Mezzadra & Neilson, 2013, p.8) “separate the border from the wall, showing how the regulatory functions and symbolic power of the border test the barrier between sovereignty and more flexible forms of global governance in ways that provide a prism through which to track the transformation of capital”. “The zone authority frequently has the power, in individual deals, to grant exception from any law (Easterling, 2014, p.27).” Describing the zone in this way shows that it is a manifestation of statecraft that amplifies extraction. The zone has special rules that allow for a more favorable environment for the extractive activities to occur. Not only does the zone provide a space for extracted resources to be stored, traded and sold under special status, i.e. not taxed under regulations of the state proper, but it can also lead to further exploitative extraction of labor as the deregulated nature often means that the workers are not protected by any national labor laws.

2.1.1 Extraction of the local communities

Other than being an engine of extraction, the zone itself is also created by a more physical, spatial extraction. The zone is created by mapping out proposed developments⁵ which Easterling (2014) describes as cut and paste. This new form is imposed onto an area that is already something else, whatever this ‘else’ is will be carved out and extracted. The indigenous urban/natural order of space is extracted and replaced with a zone. A zone which is the same “abstracted and formulaic (Easterling, 2014, p. 25)” form as other zones all over the world.

⁴*Extrastatecraft* is a term coined by Easterling (2014) that describes activities of statecraft using assets, people, or resources beyond that which explicitly belong to the state.

⁵This is mapping being used as a tool of extraction as described in Section 1.2.

3 Gwadar becoming an Extractive Zone

Gwadar is a port city located on the Arabian Sea coast near the Gulf of Oman. The city, located on a sandy isthmus between a hammer head peninsula and the mainland as can be seen in Figure 1, is part of the Pakistani Republics' Balochistan Province. This isthmus is flanked by two inland bays, the east bay and the west bay. The hammerhead is a remnant of a larger Pleistocene sedimentary formation (Naseem et al., 2011, p.1833) along the entire Makran coast, parallel to the Makran subduction zone located in the Arabian Sea further south.



Figure 1: “Aerial view of Gwadar... to the left is Paddi Zirr ... to the right is Demi Zirr Bjoertvedt (2016).” (West Bay and East Bay)

3.1 The people

Gwadar has a unique identity, it has strong Arabian influences both by proximity to Oman and time under their rule. The fishermen of Gwadar are descendants of those who came by the sea during the days of Omani rule. The main economic activities of Gwadars' locals are that of the fishermen and builders of boats. Their lives and livelihoods are bound to the waters. (Awan, 2016, p. 319)

Being part of the greater Balochistan region, a place where the Baloch ethnic group lives, means that the Baloch identity is a relevant factor in the politics of Gwadar. There are more than 130 Baloch tribes throughout Balochistan, some of them are more opposed to Pakistans federal government than others. This has lead to Gwadar being subject to the Baloch separatist activities that have been going on throughout Balochistan. The issue of Baloch separatism is a major recurring issue in the society of Pakistan and its politics.

3.2 The Port and CPEC

Pakistani ambitions for a deep sea port are not new. The Pakistani Republic purchased Gwadar from Oman in 1958 for £3 million following a 1954 survey that determined that Gwadar is suitable to host a deep sea port Rizvi (2008). It has the potential to be well connected to, and would provide a short route from Central Asia's oil and gas reserves, allowing them to be shipped via maritime trade routes (Anwar, 2010, p. 97). Construction did not materialize until 2001 however, and faced many issues: natural, financial and political. China which was already involved in funding Gwadar port, became more involved with their signing of the China-Pakistan Economic Corridor (CPEC) agreement in 2015 with Pakistans Sharif government (2013-2017). Per the agreement, China invests and constructs infrastructure in Pakistan with the aim of creating an economic corridor from Kashgar, in China, to Gwadar⁶. This corridor would link the new silk road with the string of pearls, a network of Chinese owned and run naval facilities spanning from China to East Africa. In 2013 Gwadar

⁶The New Silk Road a.k.a Belt and Road Initiative (BRI) is a infrastructure project being undertaken by the Chinese government in which they invest in transportation infrastructure in different countries to their west to create a reliable overland trade route to the west. The string of pearls is a network of Chinese maritime facilities along the Indian ocean stretching from mainland China all the way to the Horn of Africa. CPEC would provide an overland link between these two networks. It also gives China direct access, via partner Pakistan, to the Indian Ocean without having to pass through the Strait of Malacca, and navigate around the Indian subcontinent, which the string of pearls does.

Port came under the ownership of China Overseas Port Holding Limited which is a Chinese state-owned entity⁷, thus making Gwadar port de-facto property of the Chinese state.



Figure 2: Coal in Chamalang, Balochistan DiscoverBalochistan (2018)

3.3 Extraction in Balochistan

Balochistan province of Pakistan is a resource rich and logistically relevant location⁸. Being a territory of Pakistan, its resources are being consumed by Pakistan, however, the Pakistanis are not the only ones eating their pie, other countries are involved in the extraction of Balochistan. Grabbing a big slice for

themselves is China, who is involved in the extraction of Balochistan for their greater economic strategy on several levels. China is developing its designs together with Pakistan under **CPEC**. China is interested in, among other things, the coal reserves of Balochistan.

Another aspect that can not be overlooked is the sentiment of the Baloch. Some see both Pakistani and Chinese extraction as taking the resources of their native land from them.

Other than the Pakistani and the Chinese governments, there are other entities involved in the extraction of the people and resources in Balochistan. Many privately owned mines in Balochistan employ the cheap labor of undocumented Afghan seasonal workers who cross into Pakistan to make a living in precarious conditions, often in poorly constructed mines. In addition to that, various militant groups and their alleged sponsors participate in human extraction. Some of these are Pakistan based Baloch separatist militant organizations who operate against Pakistani government interest⁹, others are Islamist militant organizations that operate out of Pakistan, cross-border, against Iranian interest¹⁰. The militant groups, and by extension their sponsors, use the youth of Balochistan, both by form of extraction of their labor as militants and otherwise, and by the deaths that result from their activities.

3.4 Extraction in Gwadar

As illustrated in Figure 3, much of the regional extraction networks culminate at the Gwadar port. Resources that are to be shipped to China, and elsewhere, are shipped via the port. The port itself has been constructed by a process of extraction of material, sand from the

seabed or in other words an extraction of the shrimp habitat, and manual labor from workers who themselves have been sourced from various places under zone laws. The construction of this port has also replaced much of what used to be located in and around where the port now finds itself¹¹. That is, both as physical material, and as the neighborhoods which

⁷AFP (2013)

⁸In Appendix B.1 an overview of the different resources in and around Balochistan, Pakistan including: coal, chromite, barite, copper, sulphur, limestone, marble, onyx, iron, quartzite, and natural gas

⁹Allegedly funded by India to put pressure on Pakistan.

¹⁰Allegedly funded by Saudi Arabia to put pressure on Iran.

¹¹This process is illustrated consecutively through Figures 45, 46 and 47 in Appendix B.3.

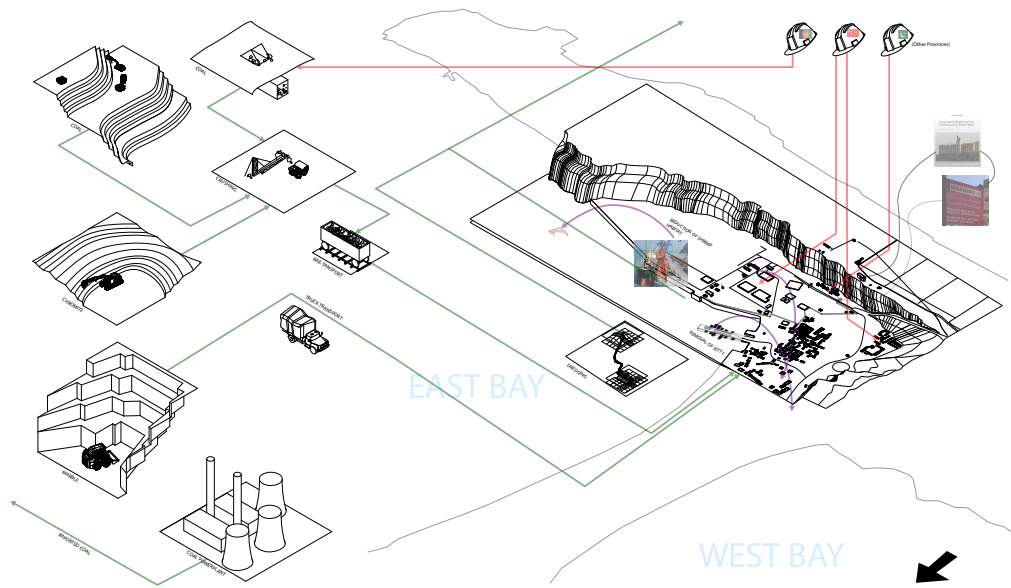


Figure 3: Extractive activities in Gwadar and in other areas of Balochistan that involve Gwadar.

have been wholly or partially removed to make room for infrastructure. In effect, this is the extraction of the local urban networks, that had formed in the decennia to centuries prior to the development of the port. Just as extraction has scarred the landscapes with open strip mines in northern Balochistan province, Gwadar is having its existing space and identity stripped.



Figure 4: Photos of Gwadar Port construction in 2019 Awan (2019).

3.5 Gwadar as Zone

Little is known about Gwadar outside of Pakistan, and to those that would make a zone out of Gwadar, it is visible only as an investment opportunity or as a node via which to receive resources (Awan, 2016, p. 318). Consistent with that perspective, whatever localities already exist in Gwadar are seen as a backwater, and as Easterling describes, zones were made “even in inland areas, borderlands, and backwaters that would never have sponsored the cosmopolitanism typically associated with global trade (Easterling, 2014, p. 25)”.

Historically Gwadar was already a relevant free port of the Arabian Sea. Not only was it never really a backwater, but it already did have its own economy with its own relations to other nearby cities such as Chahbahar in Iran and Karachi in the neighboring Sindh province of Pakistan. This is one of the key issues. Gwadar is already is a place with an identity, not a blank slate onto which a new identity can be imposed.

The masterplanning that has been going on in Gwadar in recent years

aims to turn it into a zone/ free zone modelled in Figure 5, and this would be an attempt to give it that new identity. That's because zones are "constructed according to a formula-an infrastructural technology ... the most prevalent formula replicates Shenzhen or Dubai anywhere in the world with a drumbeat of generic skyscrapers. Computer-generated videos that fly through shining skylines have become a standard signal of aspirations to enter the global marketplace (Easterling, 2014, p. 10)." This would make the top-down ambitions for Gwadar a textbook example of the implementation of a zone, considering the nature of the masterplan and how it has been marketed. (Awan, 2016, p. 320-321)



Figure 5: Model of the Gwadar Freezone at the Zaver Pearl Continental Hotel in Gwadar Awan (2019).

What the people of Gwadar know as their home is being extracted and replaced with this formula fed cookie cutter masterplan that is identical to zones of extra-statecraft throughout the entire world.

4 Gwadar as an extractive zone

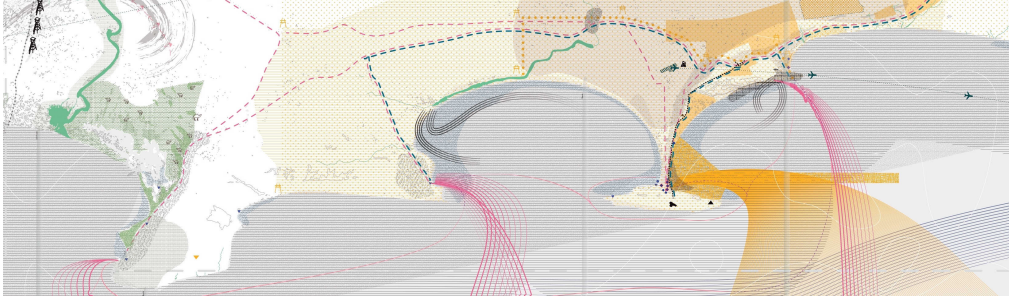


Figure 6: Territorialisations of Gwadar and the surrounding areas. Infrastructure and trade flows are shown in relation to Gwadar. From the Gwadar Territories Map (Group Work).

As per section 3.5, Gwadar is a zone, and per section 3.4, different kinds of extraction take place in Gwadar. Therefore we can refer to Gwadar with the term *extractive zone*. In (Gómez-Barris, 2017, p. xvi), the term “refers to the colonial paradigm, worldview, and technologies that mark out regions of ‘high biodiversity’ in order to reduce life to capitalist resource conversion.”

Although Gwadar has been a location of extractive activity as far back as it was inhabited, it was not an extractive zone then. The first fishermen extracted the bays of its fish for sustenance. Over the years this local economy grew to a point that the fish is shipped to other cities and other countries. Gwadar has been a town and harbor for the fisher folk over these years.

As a territory of Oman, and later early Pakistan, the town of Gwadar was not an extractive zone yet either, it was a town in a unique and strategic location. It was not a maritime trade zone, being geographically separated from the larger cities of the region. The activities were not yet a zone, an “abstracted and formulaic instrument now distinct from the maritime spaces that had previously

shaped trade (Easterling, 2014, p. 25)”. However Gwadar now is in the process of becoming such a zone.

What makes Gwadar unique from the average zone is its proximity to the extractive activities. Usually, a zone is constructed in a logistically strategic position, however in the case of Gwadar, the natural environment plays an important role. This natural environment is also one of the things that is being extracted. Therefore Gwadar is not just an area of extraction and also not just a zone, but an extractive-zone in that sense.

Looking at the situation from the perspective of statecraft, Gwadar has legally been extracted from Pakistan. Not the entirety of the Gwadar district, however much of the infrastructure is under direct control of China with the port entirely belonging to China. This leaves the locals in a limbo between being citizens of Pakistan and being under de-facto jurisdiction of China. Legally the free zone is outside of Pakistani jurisdiction and with China controlling the infrastructure, and the port, this means that to some degree China is able to decide what the law in Gwadar is.

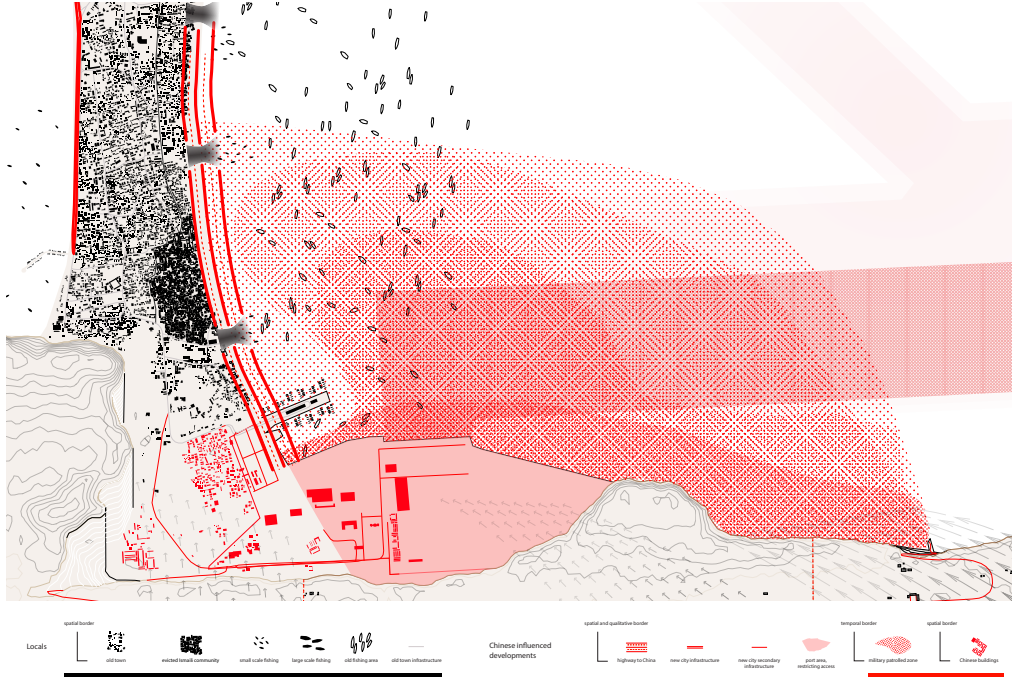


Figure 7: Map of physical and tacit borders in Gwadar. In red the extractive infrastructure and territories that it creates, which are de-facto extractions from the local domain. From the Gwadar Borders Map (Group Work).

4.1 Submerged Perspectives

The local communities of areas of extraction can be seen as the primary victims of the extractive process, or at least the primary human victims. It is their lands and livelihoods that are being extracted and degraded. Their perspective is often not rendered as significantly relevant by the extractive mentality of the extracting entities¹². *Submerged perspectives* as described by Gómez-Barris (2017) are the “local knowledge that reside” in the extractive zones (Gómez-Barris, 2017, p. 11). This knowledge is that of the local/indigenous people of what has become an *extractive zone*. “Local knowledge begets tradition.” “The rituals which orient people ... begin in a place-specific way.” (Sennett, 2018, p. 179) These submerged perspectives,

through the existence of their rituals and traditions that are place-specific, challenge the extractivist regimes that have colonised their localities with an infrastructure of extraction. “Perceiving these submerged perspectives opens up the decolonial potential that already exists” (Gómez-Barris, 2017, p. 138).



Figure 8: Closeup of the port area in the model shown in Figure 5 Awan (2019).

¹²For example, in the model of the port Masterplan shown in Figure 8 we can see that everything to the west of the expressway is portrayed as empty with only meager suggestions of local buildings visible in the top left of the photograph, however this is far from the reality of that area, this reality is that a whole local neighborhood is located there as shown in Figure 49 in Appendix B.3 which is a map of that same area during a corresponding point in time. The model is an example of how mapping is used as a tool of extraction as per section 1.2.

Bringing these perspectives to the surface and making them a visible part of the overall narrative, in a place with extractive processes in play, should thus help in mending the wounds caused by the narrative that is solely from the extractors perspective.

In Gwadar, the local perspectives are not only submerged under the perspective of the extractor, but are also pawns in a high-stakes game of extra statecraft.



Figure 9: Gwadar Port Traffic Sadiqrizwan (2009)

4.1.1 Extractive infrastructure

Correa (2016) writes about resource extraction infrastructure in South America where “for the extraction, processing, and global distribution of natural materials ... an extensive series of projects ... conceived in direct relation to the extraction industries but with total inattentiveness to the needs of the settlements they traverse” were produced (Correa, 2016, p. 141). This infrastructure can disrupt the lives and livelihoods of the local people. Roads through the amazon forest which have been paved for the purpose of extracting wood is one such infrastructure that creates a disruption for the indigenous tribes¹³ that live there. These nomadic tribes were going about their lives, isolated from the urban world, until these roads cut across their lands. It is “essential for the designers of infrastructure to introduce

with the road a set of complementary environmental management strategies that can more effectively mitigate the clash between road and forest (Correa, 2016, p. 144).”

In a similar way, as shown in Figure 7, the under-construction East Bay Expressway, an extractive infrastructure of the Gwadar Zone, will be a destabilizing factor in the livelihoods of the local fishermen. Their lives and livelihoods are on the water, where they spend their weeks fishing. The coastal expressway will be a barrier between them and the East Bay of Gwadar which is where the best fishing areas are. Their access to the East Bay will be reduced to three tunnels¹⁴ under this highway.

It is a question to what extent these three tunnels under the Gwadar Expressway ‘mitigates the clash’ between local fishing activities and the infrastructure of the global port. It certainly does introduce a border that was not there before.

4.1.2 Cannibalization of the local economy

The master-planning of Gwadar results in a pattern of zoning that is favorable for the extractive activities. Mezzadra & Neilson (2013) quoting James D. Sidaway, write about how in some African countries the “links between resource-extraction enclaves, chronic warfare, and predatory states” destroys national economic spaces replacing them with global economic spaces (Mezzadra & Neilson, 2013, p. 238). Gwadar is becoming such a global economic space, as what was previously a space for locals’ hopes and ambitions to take root and formulate, is being annexed by global trade ambitions under the Chinese.

¹³“75 percent of logging in the Amazon happens on a fifty-kilometer band along paved highways ... the new road has had a catalytic affect in creating a second Peruvian gold rush, with accompanying environmental perils. The highway is ... destabilizing the nomadic lifestyles of several Amazonian tribes”(Correa, 2016, p. 144)

¹⁴These tunnels are also shown in Figure 7.

5 Clash vs Symbiosis

(Ferguson, 2006, p. 15-16) talks about the existence of an official economy and a shadow economy, in the context of Africa. The shadow tends to be larger than what it is supposed to be the shadow of. The same is true in Gwadar where the local *shadow* economic activities are still much larger and resilient than the official economic activities of the port which have been struggling to gain any traction, and might be considered the actual shadow. Especially considering that ships with empty containers and no real reason to be there have allegedly been docking at the port just for show. Yet it is the local shadow economic activities of Gwadar that tend to be looked on negatively and problematically, in the gaze of “those who invest in special economic zones, or those who are interested in the flow of oil (Awan, 2016, p. 318)”. As (Ferguson, 2006, p. 7) writes, referencing Anna Tsing, “how short is the path linking the meanings and fantasies of words and images with what likes to imagine itself as the “real” world of global investment and capital flows”.

As mentioned earlier, Gwadar is in the process of becoming a zone, and it is already the host of an old town, in no way empty and ready to be built from zero. The process of Gwadar becoming an extractive zone therefore requires the extraction of parts of the old Gwadar. This is a major spatial consequence for Gwadar.

The global ambitions fueling the transition of Gwadar into an extractive zone are by nature indifferent to the plight of the indigenous people or locals of Gwadar. The result is Gwadar being in a state of development that is violent towards the existing and has the purpose of extraction rather than improving the existing. The extraction that is happening in Gwadar is the carving out of local spaces by means of appropriation by the global economic perspectives, but also Gwadar is becoming the critical link in a system of resource extraction for the province of

Balochistan. In the current trajectory, a symbiosis between the local economy of the people of Gwadar, and the global extractive economic activities of the port thus does not look likely. Rather the two will clash until only one is left.

6 Development Deferred

As explained in section 5 the local urban and the global infrastructure clashes, resulting in the gradual erosion of the local urban spaces. An in-between space exists between what is left of the local urban domain and the extractive infrastructure zones that have been implemented. This space shifts as more infrastructure is built. Not everything that is planned is built, at least not any time soon. Many projects within the masterplan are started but then development halts, or stops outright, or gets delayed extensively. Looking at the history of the master-planning, we can see that at each phase, much of the development has been deferred¹⁵. As development is continuously deferred, as it has been over the past decades, certain in-between spaces form. Gwadar is full of these temporal in-betweens, they have different atmospheres and some of these are more ambiguous than others. These can be spaces of clashes or harmony depending on how they are treated.

A design question arises as to how we can work in these spaces to prevent clashes and to treat these gaps as opportunities. These spaces are within a context that is changing over time as the infrastructure develops, but also find themselves the non static political atmosphere. They are temporal spaces with an unknown and possibly limited time of existence in between the infrastructure development as it encroaches on the existing urban fabric and natural environment. Similarly, another in-between, this time not directly spatial, is the identity of Gwadar which is in a limbo between the image of a 'big successful economic free zone' and its historical image as fishing town. As the existing identity of Gwadar is under threat, this has led to social struggles and violence which in turn does have spatial consequences through an introduction of both tacit and physical borders.

¹⁵See Appendix B.2, Figure 43



Figure 10: Modelling the atmosphere of the in-between zone. Made as part of the Modi Operandi workshop.

Could these gaps be used as a space to protect the local economy or local communities? Could they be used as a space of rapprochement between the local people and those who are involved in building the infrastructures of extraction? Is it possible to make such a space, that different groups of people of different economic situations, different ethnicities speaking different languages could come together? If so, it would be using the spatial consequences of the extractive activities as a tool to bridge the spatial and social borders that have been introduced by those same activities.



Figure 11: Abstraction model of Gwadar at the point where the beach meets the rocks and the port. Made as part of the Modi Operandi workshop.

Further Reading

Method:

Geostories, Ghosn & Jazairy (2019).

Handbook of Tyranny, Deutinger (2017).

Gwadar:

Conflicting Material Imaginaries, Awan & Hussain (2020).

Acknowledgments

I would like to thank my mentors Dr. Nishat Awan, Oscar Rommens and Mauro Parravicini for their guidance and patience through the course of my graduation project.

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Appendices

Appendix A Architectural Intervention

In this appendix, the core concepts of the Architectural Design project, *Deferred Development*, developed in-part as a result of the preceding theory paper of the same name, are described. It includes the most important diagrams and concepts to explain the why and how of the resultant design proposal.

A.1 Design Question

The design proposal is an architectural intervention in one of the in-between spaces/gaps that come forth as described in section 6. The chosen gap (Figure 12), which is the area where the former Gwadar mini port was located, will have various elements of the masterplan potentially cross through it over time as the masterplan implementation progresses.

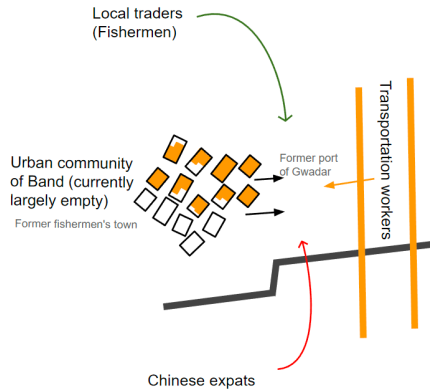


Figure 12: The different flows of people that come together in this location, or 'gap' as per section 6.

A.1.1 Designing for Political Uncertainty

A challenge is to design in such a way that plans for potential infrastructure that might be implemented in the future in and around the design, however the design

should also work should such infrastructure not be implemented.

A.1.2 Designing for Interaction

Furthermore, the chosen area should function as a place where those involved in extractive activities (truckers bringing in resources to be shipped out and Chinese expats) and the local people of Gwadar can come together and find common ground. As explained in section 3.1, the local people of Gwadar are unique when compared to the Baloch people from the rest of Balochistan. The workers coming to work on the construction of the port are likely to be from other parts of Pakistan, as are the truck drivers.

A.1.3 Designing for Gradual Growth

Finally, in an aspect that is perhaps best described as resilience or flexibility, the design should by its nature be such that it is flexible to adapt and change over time, and primarily grow. Therefore there should be a structural logic that provides that possibility of expansion as opportunities for growth occur variably over time.

A.2 Method

A.2.1 Scenario Thinking

To manage the aspect of uncertainty about the future in the design(process), scenarios were used as a method. Working through an idea of certain scenarios allows the potential future situation to be rationalised and interpreted for the purpose of design.

A.2.2 Interaction Through Local Participation

The concept of local participation is an important factor in this architectural

intervention. Not only is the intervention intended to be used by the local community, but they shall also participate in the construction and to an extent the design of the space. In the context of this project, we extend the concept of local to those living in and around the area, be it temporary (Chinese expats), or the native people of Gwadar. The only groups of people that the project is intended for who are seen as temporary in the context of this project are the truckers and crews who come by the expressway and stay temporarily, and thus experience the space of the architectural intervention as visitors.

Participation through Play

What if through design, people of different backgrounds could be encouraged to play together.

Successfully designing a space that encourages play requires a level of subtlety. If the way in which the space is intended for used is not flexible, it will fail as a space of play, the space should encourage the participants to imagine their own uses. A designer can not impose play, they can only design the grounds for play (Nguyen, 2020, p. 77). The playgrounds designed by Aldo van Eyck in Amsterdam, for the children of the post-war period for instance, were unique in that they provided structures for play, but without a fixed function in mind. Such design activates the imagination and achieves meaning from the interaction with its users. (Nguyen, 2020, p. 55-57)(Sendra & Sennett, 2020, p. 83) The playgrounds were not walled or physically enclosed in any way. The children perceive its extents through through what Richard Sennett considers one of his *Five Open Forms*; the membrane. (Sennett, 2018, p. 223-224)

It is the intention to provide space for play, in this case, a space for board games that is the first step in future interactions between the Chinese expats and the Pakistani people. It is a space designed for tables where specifically, Carrom and Mahjong games can be played. The former is a game popular in the Indian subcontinent, whereas the latter

is a Chinese game. Through exposing each other to games popular to their own people, this provides the opportunity for them to teach each other their games and interact through play.

Participation through Entrepreneurial and Economic activities

To encourage the participation of local businesses and encourage entrepreneurial activities, the market space will be open for the local people to come and sell food, handcrafts and any other items or services that they are able to. The market provides space for temporary as well as more permanent establishment of shops and stalls.

Participation through co-production

Through involving the local people in the building process, it will encourage them to take ownership of this space. Richard Sennetts, encourages the participation of the community through co-production in the planning and design process (Sennett, 2018, p. 242-263). One such way is to design incomplete forms and structures intentionally such as the example he provides of the housing project by Alejandro Arivena in Iquique, Chile (Sennett, 2018, p. 249), in which the technical amenities and main structure is provided, while leaving the form open and allowing the inhabitants to finish/close the forms how they want to. Yasmeen Lari involves the local people in her designs for shelters by the choice of materials. Through the use of sun dried mud-brick and lime mortar, as well as bamboo, the barrier to participation in construction and/or decoration is lower than if it were concrete. According to Lari, the use of “traditional methods and materials” helps in “unleashing the community’s extraordinary reserves of indigenous knowledge” (Nanavati, 2018, p. 64). Through the participation of the locals and use of local knowledge it, to an extent, helps bring to the surface the *submerged perspectives* as described in section 4.1. Although in the case of

Gwadar, that knowledge is not exactly local to Gwadar, but it can become so.

A.2.3 Bazaar as Method

What spatial forms negotiate an interaction with different milieus in a neutral setting? What form will connect the existing neighborhood as well as the infrastructure of the port?

A Bazaar is where things are made, traded, repaired, but this goes beyond the physical as it is a place where knowledge and power are traded and negotiated as well. It is a space negotiated between those who are visiting temporarily and those that work/live there. (Sanaan Bensi, 2018, p. 244) “as an architectural entity the bazaar is territorial; it is both a process and product, an entity in a constant becoming. It is an intermediate which

takes form by and give form to various territorial regimes, and operates between various scales (Sanaan Bensi, 2018, p. 243)”

Bazaars are a part of the city. In the present day, the view of “the Bazaar has been reduced to its physical and functional attributes as an object (Sanaan Bensi, 2018, p. 250)”, however this view is problematic and may lead to inaccurate presumptions/conclusions about how they work, followed by failed designs. Designers have to learn to control the tendency to over prescribe functions or uses to the design of space, leaving room for play, à la section A.2.2.

The bazaar should not be regarded as an architectural object in this regard but as a method. The Bazaar is “a way of exploring and experimenting the nature of an architectural product (Sanaan Bensi, 2018, p. 249).”



Figure 13: (c. 2040) Basic shape of the design concept imposed onto the final stage of infrastructural development (Figure 49) of the Gwadar Zone.

A.2.4 Function

The chosen program of the architecture should be one that provides a space for the interaction between the different groups of people. Throughout the process the idea of a multi functional design was settled on, it can not easily be categorised as any existing conventional building typology. The two main functions of the overall design being that of a market and that of a truck hotel. These functions would intersect at certain points to create unique spaces of interaction. The truck hotel would be a place where the truckers can rest, sleep, eat, maintain their trucks, and it would be adjacent to the market which is a place that local economic activity can be promoted, and a place that invites all people in the area to come participate, including the Chinese expats. Gwadar already has a local market further north in the heart of the city, however the market we are making would provide a different kind of space that would more easily be a place where the Chinese expats can visit and feel safe as opposed to the narrow streets of the real local market of Gwadar which can be seen as located firmly within the local domain. The new market however, will be located on the periphery

of the local domain, as well as the free-zone domain (the domain of extractive work and Chinese expats), and also the expressway which is part of the free-zone domain but brings with it many different temporary visitors, mainly Baloch and other Pakistani truckers, it is at a crossroads of these different territories within Gwadar.

The existing market elsewhere in Gwadar, which at first instance might be seen as competing with what we are designing, is actually a very different kind of market and will still continue to serve its purpose for the locals of Gwadar and others. The proposed new market however is a place that will be populated by the constant influx of trucker teams and be one of the few places, if not only place, that Chinese expats could frequent outside of the strictly Chinese expatriate housing schemes and Free-Zone area, where they may feel safe or welcome to an extent. These two groups of people would be available at this market, and thus an economic opportunity arises for the locals to take part in the market.

Markets are forms with a high degree of porosity. Many intersecting, merging and converging paths that are opportunities for different types of interaction to occur.



Figure 14: The floor plan showing the different flows. Green for the local people of Gwadar and red for those involved in the port, extractive activities and global trade. Dashed implies a pedestrian walking whereas the smooth lines imply vehicular traffic. The brown lines are where they come together in the context of the market or location where neither group is the primary axis of entry to the shared space.

A.3 Design

A.3.1 Plan

The resulting design is an architectural structure that connects the different groups of people. It sits between the infrastructure of the port (the expressway on the right side of Figure 14) and the local buildings of the Mollah Band Neighborhood (left side of Figure 14).

As shown in Figure 14 the traffic flows of the different groups of people are an essential part of the resultant form. The form provides for a physical connection across the *gap*¹⁶, that that form sits in. Another leading aspect of the design are the phases that it is designed for. Through scenario thinking¹⁷, the need to be adaptable is addressed through designing a system of architecture rather than a design fixed in time. From the first phase (Figure 15) through to the potential last phase (Figure 16) the logic of the flows from Figure 14 are maintained.

The design of the plan utilises *open*

forms as described by Sennett, spaces that can be used for different purposes depending on the user, time of day, or any other factors. There are also spaces where forms are left un-finished and open to the participation of the user to complete the work. This concept is also championed by Yasmeen Lari who sees participation and participatory design as a way to empower the locals. For this a key factor is also the materials that will be used which will be discussed in Section A.3.3 (Sennett, 2018; Sendra & Sennett, 2020, p. 205-241; p. 23-35). There should be some level of resistance to navigating through and using the spaces. As Sennett describes it, spaces that are entirely friction free do not inspire creativity. Not every potential use can and should be planned for specifically anyway as this reduces the flexibility and resilience of the design. (Sennett, 2018, p. 152-158) Rather the design should incorporate certain conditions that allow for the unplanned to take place. (Sendra & Sennett, 2020, p. 81-85)

¹⁶As described in Section 6

¹⁷As described in Section A.2.1



Figure 15: Floor Plan: The initial structure in the beginning phases. Corresponding with the situation at the site around 2021 as shown in Figure 47.

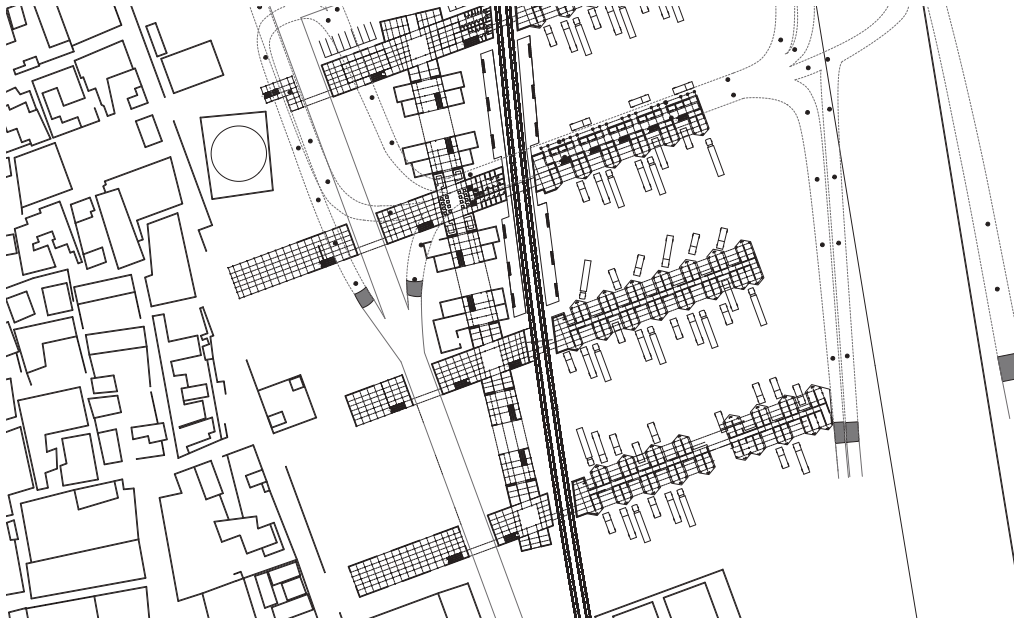


Figure 16: Floor Plan: The final phase, should infrastructural development complete fully as per the master planning. Corresponding with the situation at the site around 2040 as shown in Figure 49.

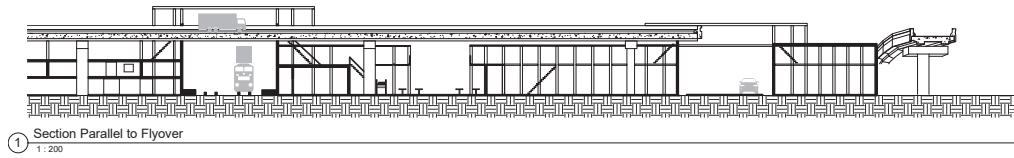


Figure 17: Section Parallel to the flyover in the final phase (Mapped in Figure 16).

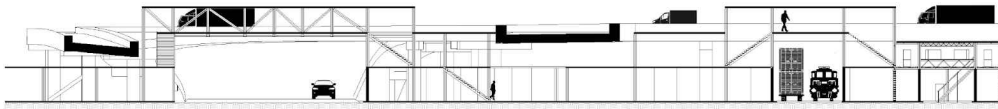


Figure 18: Section Parallel to the flyover in the final phase (Mapped in Figure 16).

Games area

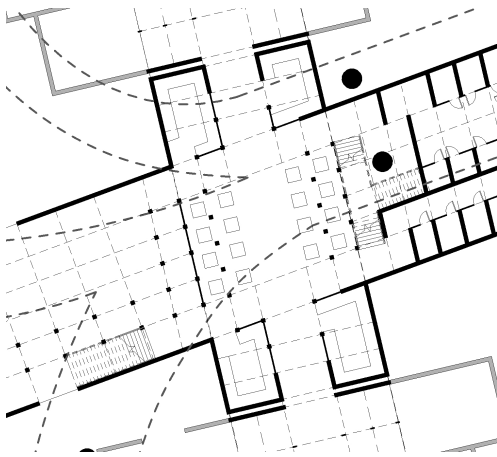


Figure 19: Floor plan of the games area. Fragment taken from Figure 16.

The two main axis are of the market and of the truck hotels. The intersections of these axes concurrently are places where the walking routes of the different groups of people intersect as shown in Figure 14 and have been left as square shaped

open courtyards. Figure 19 shows one of these intersecting points up close. In this place it is the intention to provide spaces for the playing of the games as described in section A.2.2 (*Participation through Play*). The tables lined across the sides of this courtyard are of a size that is appropriate for the playing of both Carrom and Mahjong. The space is also visible in the section in Figure 17.

Market

The market area is a place where the local people of Gwadar can come to participate and interact with the Chinese expats and truckers. It is an opportunity for interaction through entrepreneurial activities as described in section ?? and also a place where co-production, as described in section A.2.2 can take place. The space along the market axis is intentionally left open so that local people can come and appropriate that space in their own way to open their own shops or stalls as is suggested in Figures 21 and 22.

Market Fragment

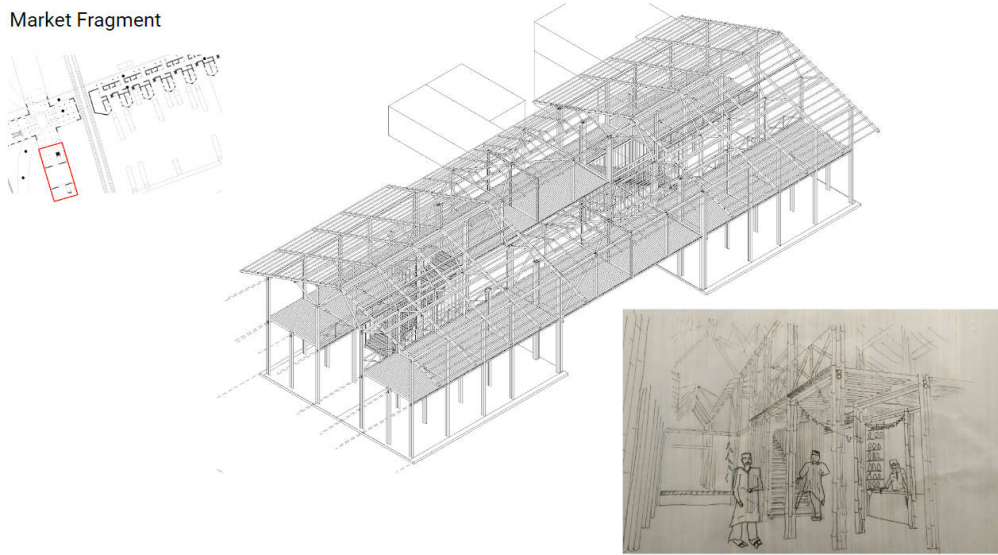


Figure 20: Fragment of the market

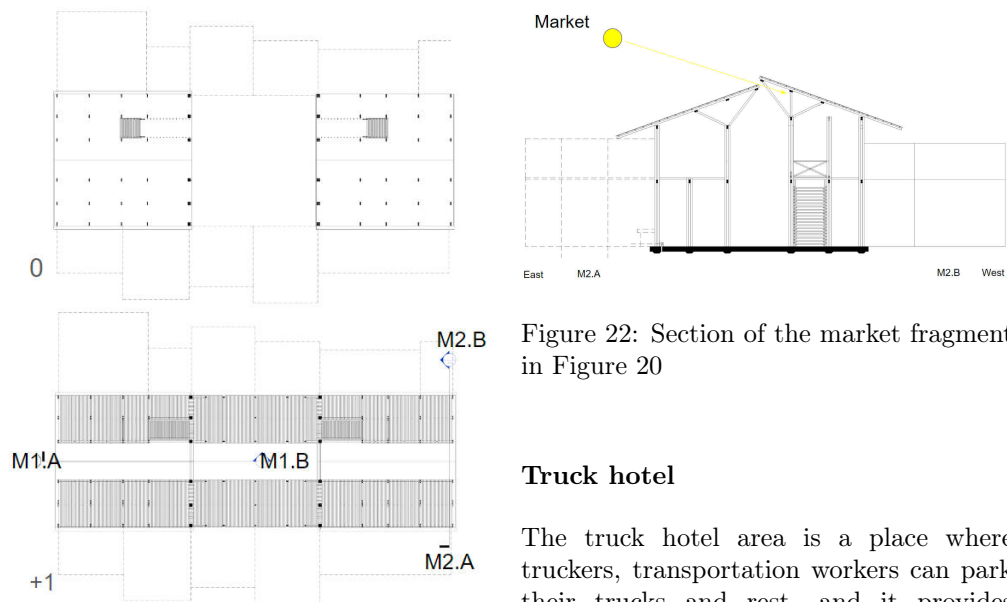


Figure 21: Floorplan of the market fragment in Figure 20

Figure 22: Section of the market fragment in Figure 20

Truck hotel

The truck hotel area is a place where truckers, transportation workers can park their trucks and rest, and it provides a constant influx of people that can participate in the aforementioned games area and market.

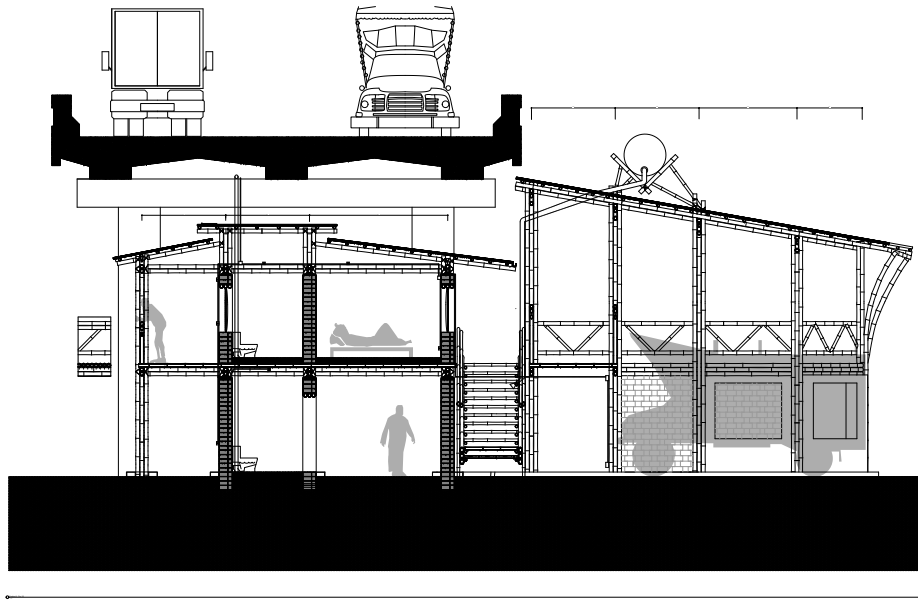


Figure 23: Structural Section of the Truck Hotel Area that is partially under the flyover. (1:5) detail level. Zoom in to see full details or alternatively see Appendix A.3.2 for a selection of zoomed in extractions from this section.

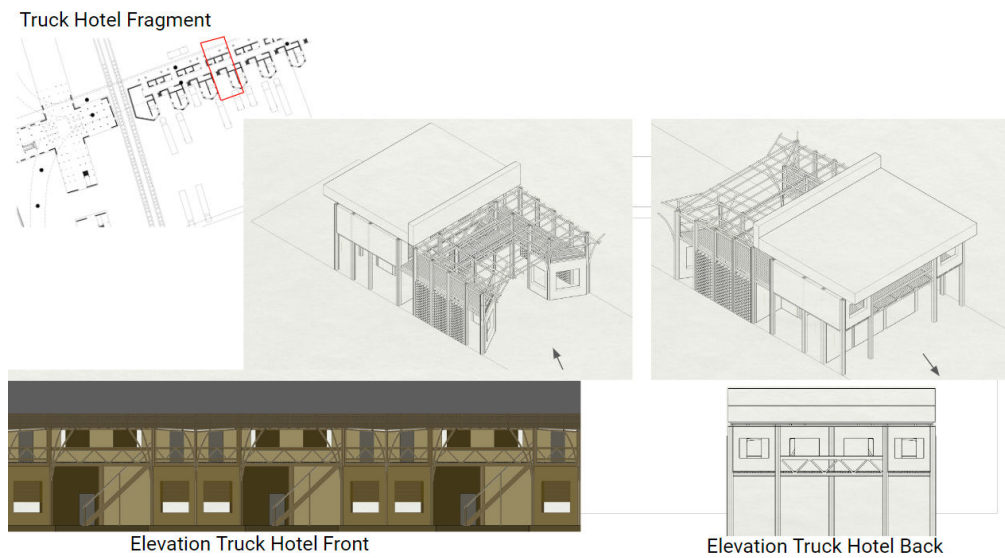


Figure 24: 3D fragments and elevation views of the Truck Hotel Area that is partially under the flyover.

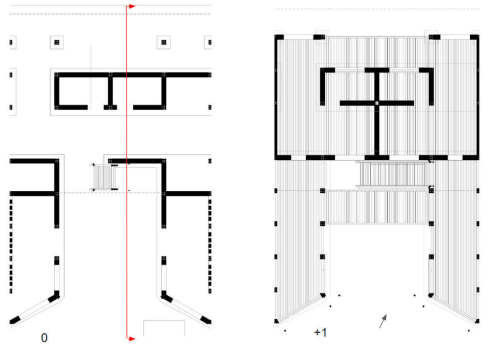


Figure 25: Floorplan of the Truck Hotel
Area that is partially under the flyover.

A.3.2 Phasing

From the first phase in Figure 15 to the last phase in 16 the project will go through changes over time in response to the variables and the unknown over time as described in section A.1.

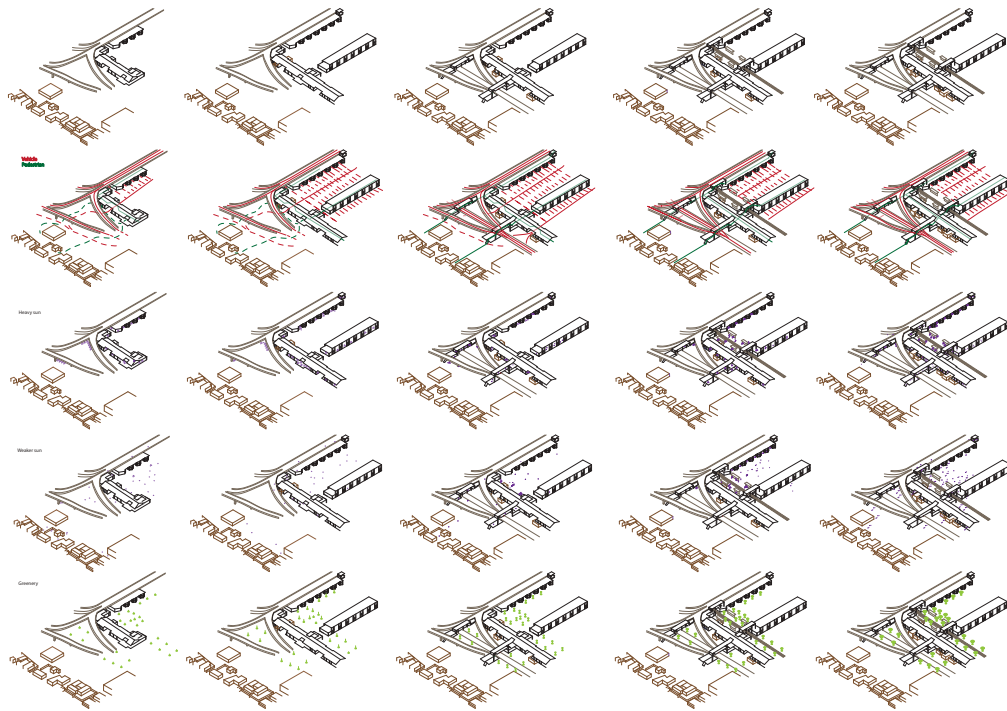


Figure 26: Phasing Matrix: Phases of development and potential utilisation throughout.
(Axonometry)

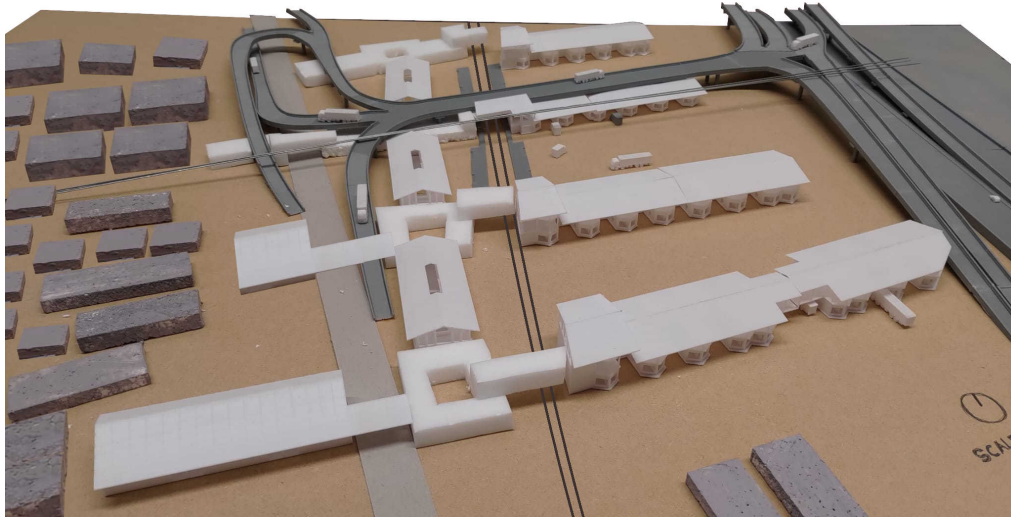


Figure 27: Interactive model where elements can be added/removed to simulate different phases.



Figure 28: The pieces of the model shown in Figure 27 being transported to the faculty for presentation.

A.3.3 Materials and Construction

Mud and bamboo are sustainable building materials, they are available locally in Balochistan (Mengal & Mahar,

2018; *Pakistan Case Study Bamboo Construction: Low Carbon and Disaster Resilient Alternative*, 2020, p. 5; p. 3).

Bamboo

Bamboo is widely used in Pakistan. It is grown around the area of the Indus River Basin, and has the potential to be grown further south in Karachi, Sindh (Wagemann & Ramage, 2019, p. 4). The native species *Bambusa bamboo* is cultivated and used for construction purposes in Pakistan¹⁸ (Wagemann & Ramage, 2019, p. 5). “Bamboo grown for 3-4 years is used as structural support ... for construction purposes (Wagemann & Ramage, 2019, p. 4)” As such, the perception of bamboo in Pakistan varies. Some see it as an alternative to timber through its use in structures like scaffolding and ladders, however there is also an association by others that bamboo is a material of the past and belongs in rural areas. Limited knowledge of “techniques in the cutting, treatment and building process results in bad-quality material, which discourages people from using” bamboo (Wagemann & Ramage, 2019, p. 8).

¹⁸Due to there always being a risk of flooding in Pakistan, there is a demand for bamboo because post-flood shelters are made from bamboo. Demand spikes following floods. (Wagemann & Ramage, 2019, p. 8)



Figure 29: A bamboo shelter designed by Yasmeen Lari *Heritage Foundation of Pakistan* (2020)

Bamboo has a risk of fungus and infestation by insects which is a risk factor that degrades and weakens the bamboos structural properties over time; treating the bamboo in boric acid/ borax solution is a way to address this but requires technical knowledge (*Pakistan Case Study Bamboo Construction: Low Carbon and Disaster Resilient Alternative*, 2020, p. 5). The Heritage Foundation of Pakistan addresses these issues.

Heritage Foundation Pakistan

The Heritage Foundation Pakistan (HFP), which was founded in 1980 by Architect Yasmeen Lari and historian Suhail Zaheer Lari as a architectural documentation and conservation organization, has broadened its scope to designing, building and rebuilding homes in economically disadvantaged local communities that have been impacted by floods and earthquakes. As part of these efforts, Yasmeen Lari

employs traditional methods which the locals, including women, can participate in. The designs are derived from the vernacular tradition of Sindh, but employ novel techniques (Nanavati, 2018, p. 63-64).

The HFP design, as the example pictured in Figure 29, is “made of bamboo, covered with mud plaster on the first floor, built on stilts” and have a “circular plan” (Wagemann & Ramage, 2019, p. 6). They use sun-dried mud brick, but also a lime mixture as mortar and bamboo as structural support instead of the traditional wood (Nanavati, 2018, p. 65). The risk of fungus and insect infestation is addressed by again using lime to protect the bamboo (*Pakistan Case Study Bamboo Construction: Low Carbon and Disaster Resilient Alternative*, 2020, p. 5).



Figure 30: Modelling a bamboo joint that can be made without power tools by the local people themselves. This fragment was developed based on the techniques observed in the works of Yasmeen Lari. It is a fragment taken from a section from the left side of the detail section in Figure 23.

As Yasmeen Lari has stated, given that the materials used are mud and lime, and also thatch for the roofs, it allows the local women to participate in the process in a way that would not have been as easy with materials such as concrete. The materials have a low barrier to entry and anyone of the community can participate in the process of creating the structures in and around their communities Variawa & Lari (2013).

Local Participation through Material Choice

HFP initiatives encourage “the streamlining of indigenous, locally produced material, there has been a significant economic regeneration within the select communities” that HFP has worked in (*Pakistan Case Study Bamboo Construction: Low Carbon and Disaster Resilient Alternative*, 2020, p. 3). The construction “actively involves the people and ensures that the women are able to continue to contribute in home-making, making each structure personalized” (*Pakistan Case Study Bamboo Construction: Low Carbon and Disaster Resilient Alternative*, 2020, p. 3).

Bamboo joinery concepts

This section shows further research into bamboo usage and methods as discussed in Section A.3.3. Based on the usage of joints observed in the works of Yasmeen Lari, further possible joints, and joint systems, were extrapolated. It was determined that this would be necessary through experimenting with possible joints such as shown in Figure 31. A different approach to joints and stability was needed for such a large scale project as compared to the smaller, single unit-sized scale of the reference works of Yasmeen Lari such as the project in Figure 29.



Figure 31: Rudimentary test model to explore the interaction between the flyover and bamboo structure underneath; supported by an overturned orange crate.

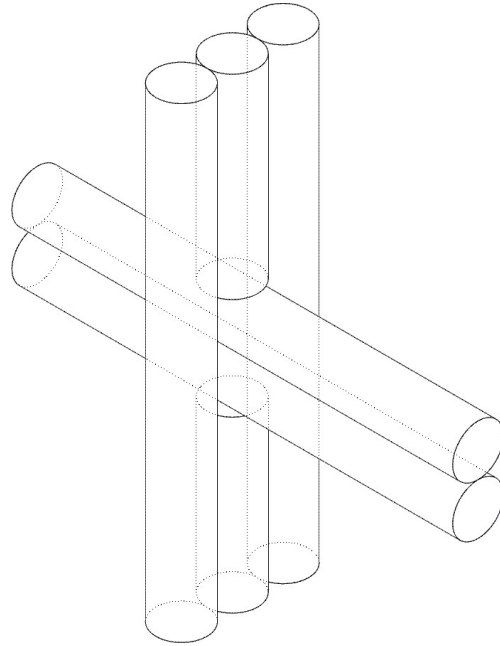


Figure 32: A 'standard' bamboo joint as observed in works of Yasmeen Lari such as Figure 29. Sufficient to support a structure of at least one floor. Works well as an end piece but can only be expanded in one direction and can not be repeated indefinitely due to needing a central point at the other end to stabilise, works well for the small scale concentric plans such as Figure 29.

Figures 33 through 36 show the extrapolations for a more 'heavy-duty' system that will support more floors and weight than the standard joint. Figure 34 and 36 are also consecutively heavier duty joints that allow for the creation of a non-Cartesian structural pattern for buildings that should have stability in the floor plane without needing any additional stabilising elements.

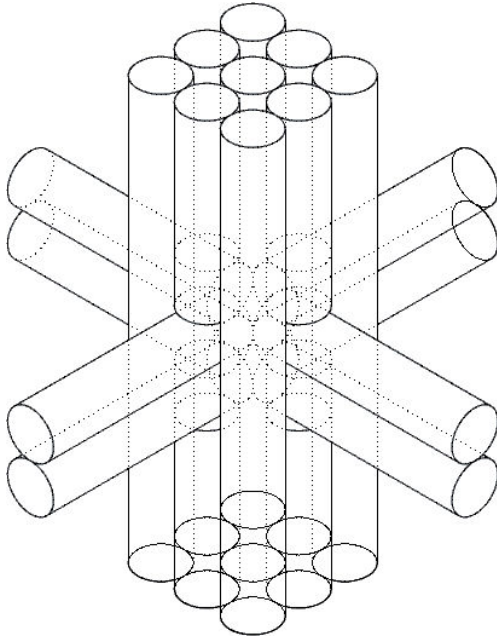


Figure 33: Join based on a 3x3 profile. Possibility to expanded indefinitely in a Cartesian grid and support heavier loads.

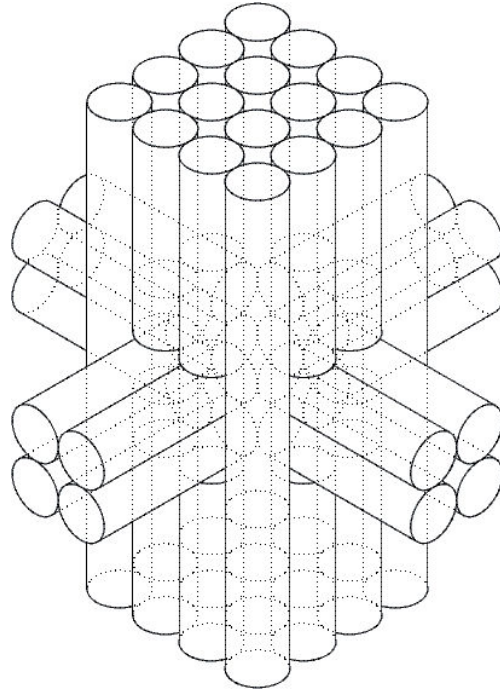


Figure 35: Bamboo joint based on a grid of 4x4.

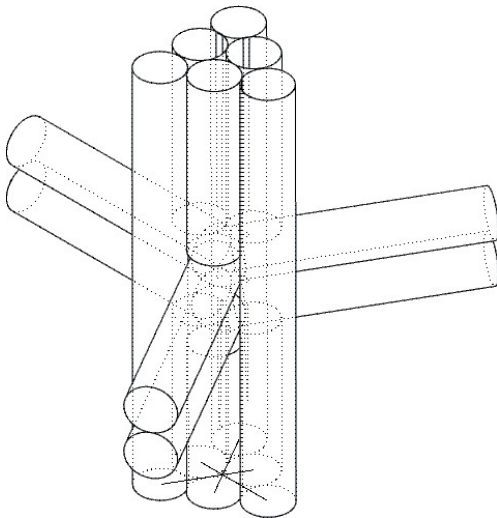


Figure 34: Bamboo joint based on a triangular profile of 3x3x3, can be expanded indefinitely in a grid formation and uses less material than Figure 33.

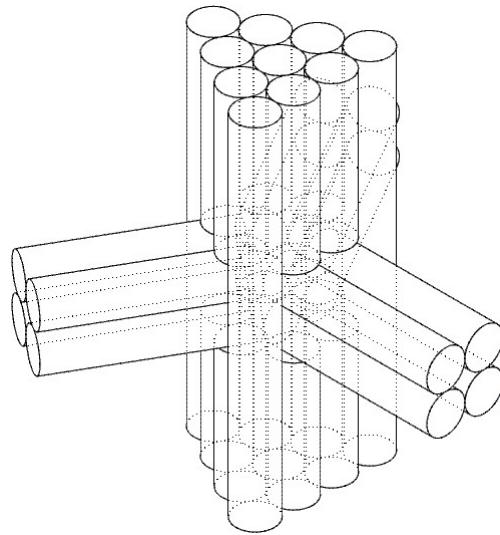


Figure 36: Bamboo joint based on a triangular profile of 4x4x4.

Details

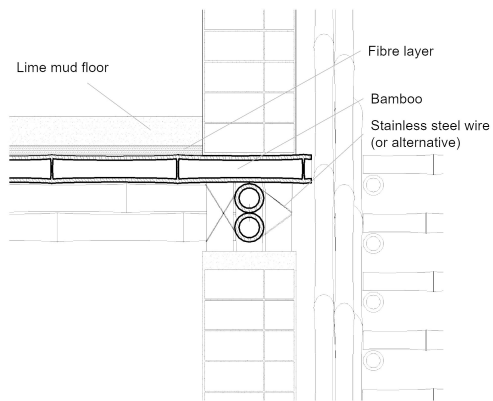


Figure 37: Right facade detail extracted from the section in Figure 23

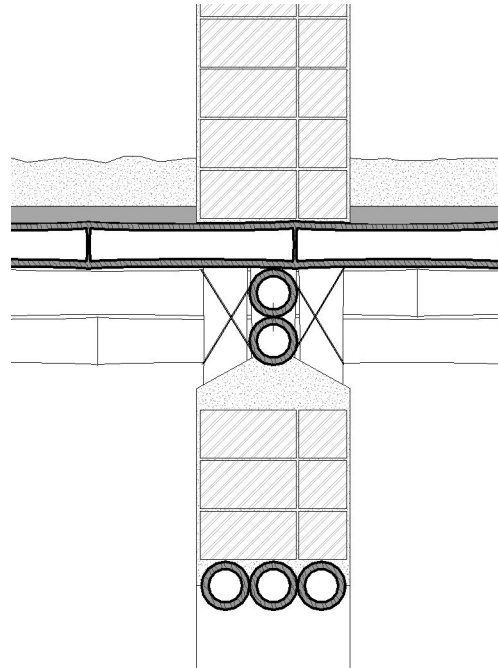


Figure 39: Central window/doorway detail extracted from the section in Figure 23

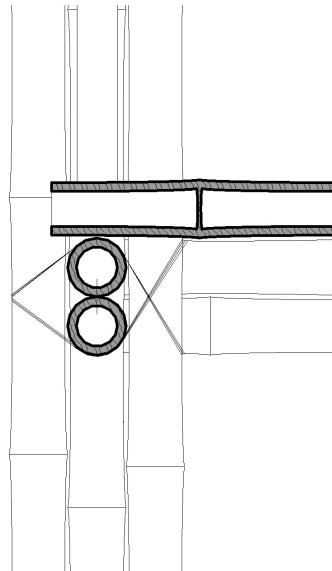


Figure 38: Left facade detail extracted from the section in Figure 23

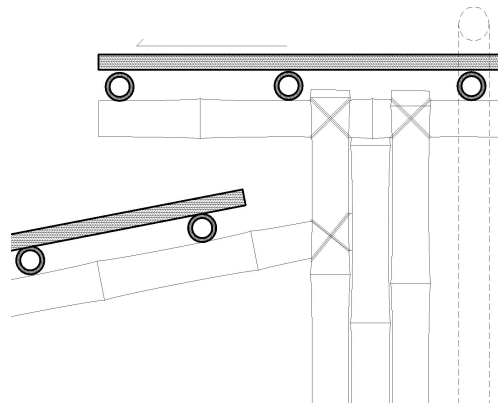


Figure 40: Roof detail extracted from the section in Figure 23

Appendix B Research Supplement

B.1 Locations and Events in Balochistan

Mapping was used as a research method to develop a better understanding of the situation in Gwadar and the rest of Balochistan Province. Different relevant location data was gathered and mapped, such as natural resources and dams, but also border checkpoints, military bases and activities of the various insurgency groups. Figure 41 shows a screen capture of the map showing the natural resources.

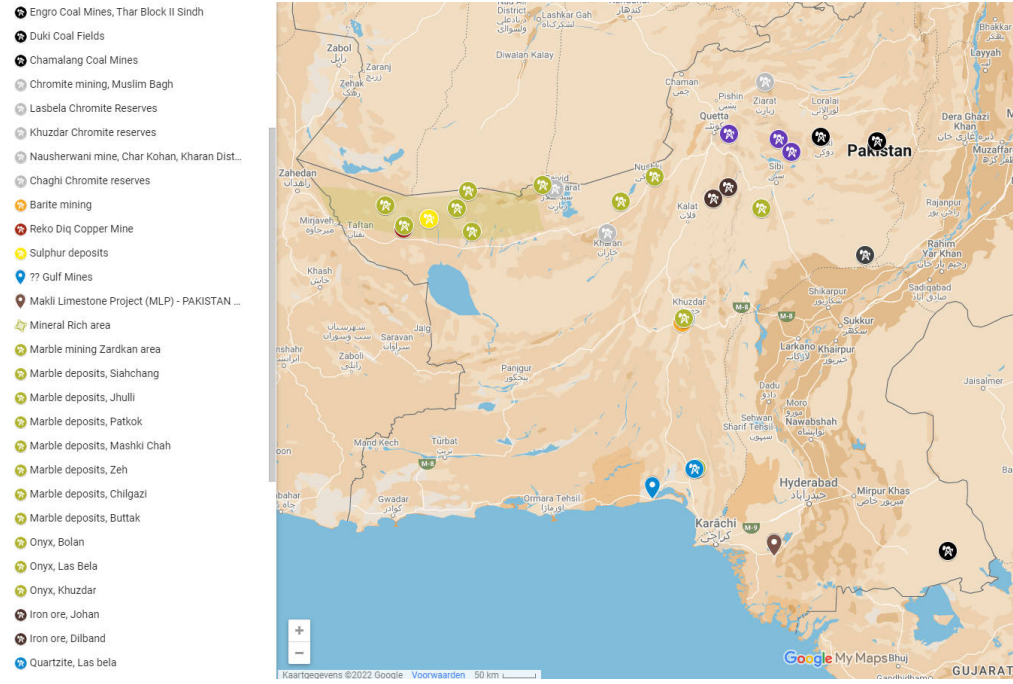


Figure 41: Picture of the interactive research map showing the resources of Balochistan, Pakistan. The interactive research map is available to view in more detail here: https://www.google.com/maps/d/edit?mid=1FjG_yQtqYwDKPuriwyxIOBScDg90kMkh&usp=sharing

B.2 Gwadar Masterplan Development Analysis

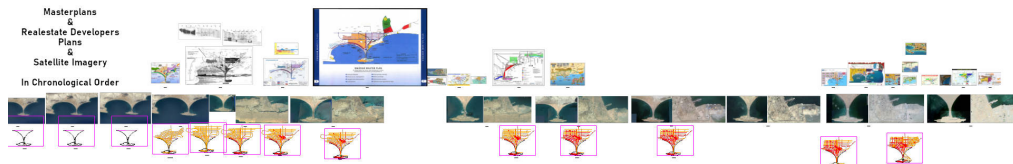


Figure 42: Chronological timeline of the Gwadar master-plans published over the years in relation to historical satellite imagery. The result can be seen in Figure 43.

Figure 43: 1984 - 2020, What was planned v.s. what was actually built of the consecutive masterplans over the years. (Animated, view PDF in AdobeAcrobat or other compatible viewer.) Legend in Figure 44.

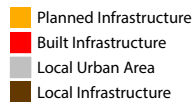


Figure 44: Legend for Figure 43.

B.3 Detailed Phases and Extrapolation into Future

The following maps show in more detail a specific area of Gwadar. This is the area where the port meets Mohalla Band, an exiting local neighborhood that is still standing to an extent. It is also the area where the fisherman's jetty is located, and is thus the most important point for Gwadars local fishing economy. This series of maps, consecutively from Figure 45, to Figure 49, show the situation over time, in more detail. The series starts from the past to the present¹⁹, and then extrapolates the situation into the future²⁰.

This is also the area that the chosen in-between zone exists over time, chosen for the develop the architectural project/intervention.

¹⁹Supported by the results of the timeline research; Appendix B.2: Figure 42

²⁰Utilising the conclusions drawn from the analysis of the consecutive master-plans; Appendix B.2: Figure 43.

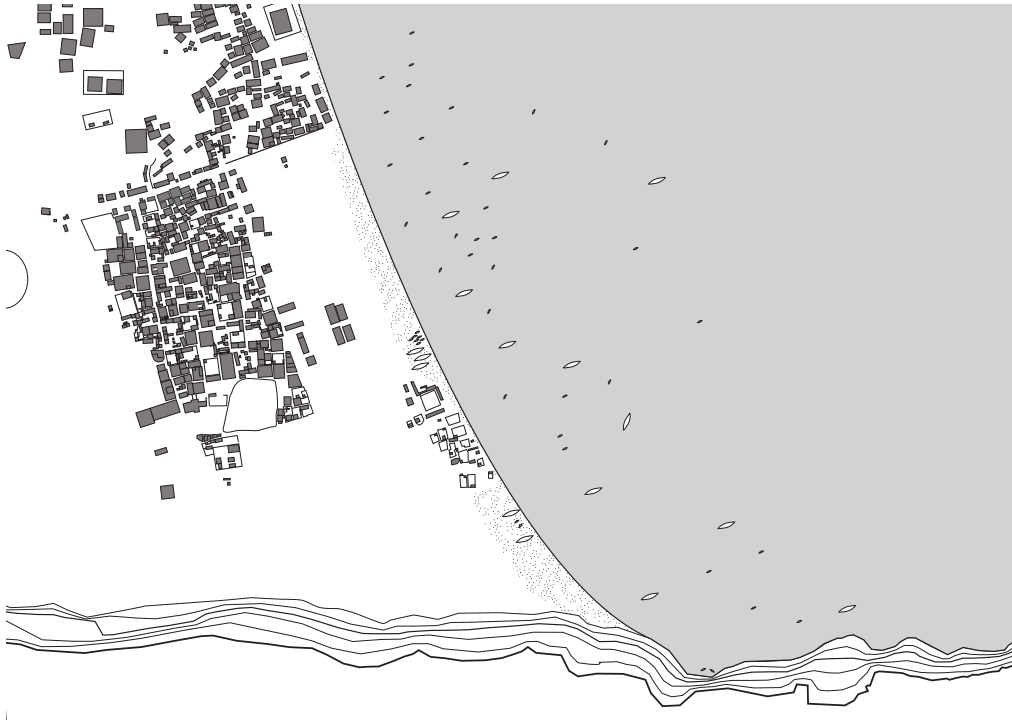


Figure 45: (c. **1980**) The situation as it was before any port construction took place. The East Bay, the prime fishing area of Gwadar, and thus the fishers villages are located near the beaches of the East Bay.



Figure 46: (c. **2005**) A jetty has been constructed for the fishermen to more easily dock their boats and offload caught fish. The fish market is also located on this jetty as well. The southern end of the East Bay has been filled in as the first phase of port construction. The fish habitats directly in that area are thus gone. The southernmost fisherman's village is now no longer on the beach but is blocked in by the filled in port. New roads have been built that access the port around Mohalla Band.



Figure 47: (c. **2021**) The East Bay Expressway is as good as completed, introducing a border between the fishermens jetty and the rest of Gwadar. The expressway is also a new physical border cutting off the entire coast from the Gwadar urban areas. Local buildings have been demolished including the southernmost fisherman's village which is gone entirely. The port is now filled in more with roads and pavement. This phase corresponds roughly in time with the first phase floor-plan of the design that was developed, shown in Figure 15.



Figure 48: (c. **2030**) The ship repair docks of the Gwadar port are added and the fisherman's jetty has thus been removed entirely. The port roads and buildings are further developed.



Figure 49: (c. **2040**) In this last phase, the railroad developed under CPEC that spans Pakistan is linked to the Gwadar port. This phase corresponds in time with the final phase floor-plan of the design that was developed, shown in Figure 16.

Appendix C Reflection

The design process of this project was uniquely integrated with research and the context of the location for this project; Gwadar.

Theoretical Concepts

The first phase of theoretical research centered around the concept of extraction, both literal and social, and how that can be related to the situation that has occurred and is occurring in Gwadar. This concerned both the direct environmental and social impact of the extraction and the infrastructure that is implemented as an agent of this extractive activity. This concept was explored in more detail in a standalone theoretical essay. Concepts Applied to Gwadar Following this, in what became a clear second phase of the research, the idea of the extractive infrastructure as applies to Gwadar more specifically was explored. Through an analysis of the historical and currently valid master plans of Gwadar through the years, the concept arose of the in-between spaces. These in-between spaces are the still empty and functionally undetermined spaces in the eyes of the master planning, that exist between the infrastructure of the master plan and the local urban grid. Goal of the Project The scope of this project was to intervene in these in-between zones, the goal being to make use of these in-between zone(s) to address the local issues identified in Gwadar, related back to issues in the footprint of the larger impact of extraction as is being taken place in Gwadar. The main areas set to be addressed as per the graduation plan are: the context of physical extraction, the temporality of the space in the identified gaps, the demographic context and how to mitigate social clashes.

How the Goal was Approached

As for the question of whether my approach did or did not work to address these areas, the answer would depend on to what extent and in what way it was expected that these issues should be addressed. However the answer that my approach has brought is an experiment that addresses the given context. The experimental nature was required as a way to extrapolate and bring more definition to the chosen area to create an architectural intervention. A more detailed story needed to be told of what was possible in one of these chosen in-between zones, and that required a bit more extrapolation of the given situation. This, in combination with a series of variables that determine the future of the location, was reason to implement the method of scenario thinking. In the beginning it did not take long to come to a good decision about what the physical intervention should be but the idea to design some kind of market space was a recurring idea that was determined to be a good way to deal with negotiating between the different milieus and demography's. However, the question of how to give form to this market, was difficult. Different approaches of analyzing the space and parceling it in certain sizes provided no good results. This approach did not lead to a spatial design, however in retrospect it did help with identifying the important axis that the design should follow. Referring back to the modelling exercises and extracting the essence of each of the models helped with determining what the design should do spatially. The models helped with thinking about how, spatially, this zone in between the infrastructure and local town can negotiate with all of its adjacent entities. Without having determined a form for what to design yet, it was decided that a secondary program was necessary. This program being that of a parking lot for trucks. What eventually yielded in the spatial result was the experimentation of the chosen program with the spatial goals set from these models. This design would be made from waste material from the extractive processes identified in the earlier phase of general research, however the process ended up leading elsewhere.

After looking into different potential sources of this waste material while also looking at the vernacular tradition and the associated materials it was decided to move forward with the vernacular materials instead. Following this different possibilities of the design were experimented with within the scope of these materials, but also within the scope of the changing form of the gap due to the changing infrastructural development. The eventual design resulted from reverse designing from the peak infrastructural development to present day. In the end, it was determined that this backwards designing was the most coherent way to address the whole idea of what the project is. This was not out of principle, but out of the nature of the idea its self; being increasing complexity as more things are added over time. The final phase being the most complex. Had the most complex phase been any other phase then this method would not have worked and the designing would have needed to take place from whatever point was most complex in that situation.

Did the Approach Work?

Whether the approach worked or not I believe is not the right question. The right question would be what does the approach, i.e. the resulting design, do. The final design does address all the concepts at every level in some way, perhaps too many as it was quite a struggle to coherently bring its entirety to presentation, however that is beside the point. The design's main goal of bridging the infrastructure and mitigating the bordering caused by the infrastructure is addressed; physically, and visually. However, at the same time more borders have been introduced by way of the intervention its self. This was not the intent but it is what has happened. Some of these newly introduced borders do work in favor of the goal of the project but some do not necessarily. The other goal of bringing people together was addressed in the overall narrative of the design, however do these new borders also create places that could cause conflict between people? In the end the approach, I would say, has succeeded in presenting a scenario of a situation.

Ethical dilemmas

While researching and formulating a design, it was a dilemma where to place my own role as an architect in the project. I was presenting a project that is developing over time though interventions of the local people, in a context where there is much top down infrastructural development that is not in favor of them. In the end I had to develop a hybrid identity of what my role in the project was. Not in order of importance; one role as the designer of the interventions in the given space, implementing the given program; and another role as the one setting up the space for the design to take place. However these two roles did have overlaps as setting up the space did require some designing. The ethical dilemma is that there is a conflict of interest because both roles are enacted by myself. I had to act in such a way that I am not creating favorable circumstances for the designer as the one setting up the space for the design to take place in. For me this was difficult to deal with while it was still an unidentified issue in the process but after coming to the realization that I am not just designing the main design but also a context and a story, it became easier to move forward as this allowed me to let go of many things as it was determined that this conflict of interest was what was keeping me undecided on some aspects.

Appendix D Graduation Plan

Graduation Plan: All tracks

Submit your Graduation Plan to the Board of Examiners (Examencommissie-BK@tudelft.nl), Mentors and Delegate of the Board of Examiners one week before P2 at the latest.

The graduation plan consists of at least the following data/segments:

Personal information	
Name	Deniz Tichelaar
Student number	4288092

Studio		
Name / Theme	Borders & Territories	
Main mentor	Nishat Awan	Research and Design
Second mentor	Mauro Parravicini	Building Technology
Third mentor	Oscar Rommens	Research and Design
Argumentation of choice of the studio	I'm interested in the historical, cultural and political background of global relations. This studio allows me to combine those interests with my interest in (spatial)design.	

Graduation project	
Title of the graduation project	Deferred Development
Goal	
Location:	Gwadar, Balochistan Province, Pakistan
The posed problem,	Extractive infrastructure of the Gwadar free zone negatively affects the lives and livelihoods of the local people of Gwadar.
research questions and	What opportunities arise in the in-between zone between extractive infrastructural development and the receding domains of the local people of Gwadar?
design assignment in which these result.	Spatial design, interventions, recontextualization of the in-between zones.
How can we spatially intervene in the in-between zones that exist between the encroaching extractive infrastructural development, and the receding local communities that exist in Gwadar? Is it possible to make use of these in-between spaces of deferred development for the local community?	

The extractive infrastructure that is being developed in Gwadar such as the port and the coastal highway to get to that port, are located on sites that have been appropriated from the local community of Gwadar. These infrastructures impact their daily lives. The local community live adjacent to an ever encroaching infrastructure that is planned. Years of changing masterplans for the Gwadar Free Zone have continually imposed a spatial construct on the existing urban community of Gwadar. This results in an explicit and in some places implicit in-between zone where the two touch. In some places there are gaps between these two, gaps with opportunities that can be temporary or longer term.

These gaps pose an opportunity for intervention. This intervention can aim to lower tensions between the local community and the effects of infrastructural development, softening the border. This intervention could address the living conditions of, for example, the workers who's labor is physically constructing the new urban reality of Gwadar. Or the living conditions of the local workers such as the fishermen of Gwadar who are in a long process of being displaced from their preferred living location. It could also aim to use the gaps as an opportunity to reclaim some public space for the local community.

These interventions are made on the backdrop of social tensions in Gwadar. An issue of identity exists between the perspective of the locals and the external entities, which are the Chinese and Pakistani governments, who are undertaking the development of Gwadar. The identity of the local people of Gwadar clashes with these plans for Gwadar. These tensions lead to physical confrontation between the government workers, i.e. military, and the locals. The locals see 'their' Gwadar as being taken over by multiple entities: the state (Pakistan), foreigners, non-Gwadari workers who are facilitating the extraction and Chinese interests. Even more so because the port is owned by China who is increasingly setting up its security assets in the region with military barracks in Gwadar planned. Within this context the intervention can also try to de-escalate these existing tensions through spatial interventions that mediate between different interests.

Process

Method description

Literature Research

The method of literature research has been used and will continue to be referred to for the theoretical backing of the project. This theoretical research has been compiled into a theoretical paper which can and will serve as a reference for in further stages of the development of the design assignment.

Mapping Exercises

For the site and region a method of mapping analysis has been done. As the Gwadar group we have made two large research maps, one on the scale of what we determined to be the relevant region in which Gwadar finds itself, and one showing the most relevant portion of the Gwadar municipality.

In the large scale map territories are formed by the local trade, global trade, ecology (mangroves, rivers, weather phenomena), the social background (separatist attacks), regional transportation connections (airports, highways) and cross-border power lines.

The map suggests the border zone and Gwadar together form a territory which is part of a larger region that is the cross-border Makran coast.

In the smaller scale map, the local effects of the phenomena that were described in the large map are shown. The clash between the small scale local economy and the large scale global economic ambitions happen all across Gwadar causing borders.

The infrastructure of the port, the geological/geophysical phenomena (mountains, islands and mud volcanos shown in section) and the sea form borders.

Extraction Research

Relevant extraction in Gwadar and the larger region:

Physical extraction; movement of material from one space to another.

- Resource extraction in Balochistan Province.
- Minerals and ores.
- Water extraction; dams.
- Fishing

Material extraction for construction.

- Sand: By Chinese dredgers. Used for port construction and may end up in China; it is a scarce resource and China is first in the world in the amount of construction sand they use.

Movement of People

- Displacement of people from development areas to elsewhere.
- Construction workers from other provinces of Pakistan to Gwadar.
- Engineers from China.

Modelling Exercises

Several modelling exercises which consisted of three themes: site, form and program, were undertaken.

Through the site model we can see that the area is quite surrounded, firstly by nature; the sea and geological formations (the hammerhead cliffs). Secondly the infrastructure of the port is surrounding a large portion of what is left. This results in an area that is almost completely surrounded by areas that are not accessible or have some kind of barrier to their access.

Through the form model which is of a smaller scale, assemblage was used as a method. It shows the consequences of a disruptive system imposed on an existing urban framework. This disruptive system being the infrastructural developments. The model tells the narrative of how the urban community must adapt to this new

situation and must incorporate it into a new dual framework. The infrastructure and the urban community fuses and works together.

The program model was done by a method of atmosphere and tectonics expression. This model shows how the two frameworks, one of the existing city and one of the new infrastructure which is a rigid repetitive grid, have some kind of connection and it is interesting to think about what form this meeting zone can take.

Design Project development

I will look at the changes over time as development continues in Gwadar. What spaces or gaps appear between the developed infrastructure and the local community?

These result in four main areas that we can consider as a method for designing.

1. The physical extraction that is happening and the reason for the extractive infrastructure being there is one of these. The overall view (diagram), which shows outside extractive activities and their extension as infrastructure in Gwadar explains these activities. How does the spatial intervention react considering its context of being in 'the in-between'. The elements included in the understanding of this method would be the physically present infrastructure such as a road or a building that has been placed or is planned under the master plan as well as elements of the local community which are still intact and adjacent to this infrastructure.

2. The second is the temporality of these spaces. There is an unknown time dimension due to development continually being deferred. It is not known exactly how long certain gaps in the in-between will exist. The changing circumstances in the gap that it is embedded in can be considered by different spatial scenarios. These scenarios will consider certain stages of infrastructural development.

3. Thirdly the demographic context, and by extension the social situation, can be used as a method for designing. Demographic changes that the extractive activities bring can be a method of looking at what type of spatial intervention could be relevant to address these demographic changes.

4. The social situation and its implications on the local people is also a method for designing. What kind of design can mitigate the social clashes that occur between people?

Literature and general practical preference

The zone as described by Easterling (2014) is a cut and paste form of development; an "abstracted and formulaic instrument (Easterling, 2014, p. 25)." Easterling describes the theory of Export Processing Zones and how they are spaces under special status and exempt from laws in the mainland in order to achieve the state's economic goals. She describes these kinds of tactics as 'Extrastatecraft' i.e. a statecraft outside of the state.

Gomez-Barris (2017) describes her concept of 'submerged perspectives' in extractive zones as the "local knowledge that resides" in these areas (Gomez-Barris, 2017, p. 11). The perspectives of the local people which are often overlooked by the large scale extractive perspective that is the entity pushing for the development of extractive infrastructures.

Gomez-Barris (2017) and Easterling (2014) are two of the main references that I intend to consult within the process of developing the design. A further elaboration of this can be seen in the 'Theory Paper' for this course. In it I look at what ways Gwadar is an extractive zone, referring to both the theory of zones by Easterling (2014) and theory on Extractive Zones by M. Gomez-Barris (2017).

Geostories is a good reference to use for the development of spatial scenarios through drawings. There are many different scenarios undertaken in the book. For example, the section 'Towers on Wire' addresses the gaps caused by deforestation in Cambodia. The scenario proposes tensile structured towers in these gaps with different towers having different purposes relating to the context which the gaps are found in. Some towers are ecological conduits to protect species, some are helping plants regrow and some are recreational areas among other functions proposed (Ghosn & Jazairy, 2019, p. 42-47).

A brief history of Scenarios by Renata Tyszczyk is a useful essay to refer to with the method of design by scenario. "Improvising for the Unforeseen Tyszczyk (2019)"; the unforeseen is what the scenario design method is a useful tool for dealing with.

Another useful reference could be the projects referred to by Sennett (2018) and his theory. An example of his concept of boundary is an extreme case where in Sao Paulo, Brazil a favela borders a luxurious apartment complex with a hard border placed between the two. Or how the gap created by a highway is dealt with to address social issues by "the insertion of a grocery store underneath the highway, which then served both black Harlem and the mostly white Colombia University community Sennett (2018)." This is an example of how gaps can be used to address social issues between different demographics.

Then his chapter named "Five open forms (Sennett p. 205-241)" introduces some theoretical concepts that can be useful in addressing, the gaps/ the in-between. This theory is in the context of urban design in modern cities. One of the elements of the, in his opinion, ethical city is the 'membrane'. He talks about different levels of porosity in the boundaries and examples of them (Sennett p. 205-241)" This can be

useful in the process of designing in the context of the infrastructure in Gwadar forming borders i.e. how we could perhaps soften those borders.

Then the section on unfinished forms, "The Unfinished and the Unfinishable (Sennett p. 230-231)" can be useful to deal with the design in the context of temporality and the 'unknown time dimension'. Perhaps partially finished spatial forms, as described by Sennett (2018) would be a way to deal with this.

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Mezzadra, S., & Neilson, B. (2013). *Border as method*. University of Bologna.

Sennett, R. (2018). *Building and dwelling: Ethics for the city*. Farrar, Straus and Giroux.

Tyszczyk, R. (2019). A Brief History of Scenarios. In: [Culture and Climate Change: Scenarios] Eds. Butler, R., Smith, J., and Tyszczyk, R. Shed, Cambridge

1. What is the relation between your graduation (project) topic, the studio topic (if applicable), your master track (A,U,BT,LA,MBE), and your master programme (MSc AUBS)?
2. What is the relevance of your graduation work in the larger social, professional and scientific framework.

1. The graduation project is a spatial design project within the scope of the effects of extractive infrastructure. It is a relevant topic in the context of the studio due to the geopolitical and economic forces that create extractive infrastructure. Gwadar is a linking point in the New Silk Road project. The infrastructure to facilitate these plans create borders through those

local communities and produce specific territorial formations, which is the theme of the studio overall i.e. Borders & Territories.

2. It is relevant in the scope of environment and sustainability. Gwadar has an ecosystem that needs to be protected. This is not only because of species that are under threat, such as the sea turtle (Kaspi) which has its breeding grounds there, but also because the ecosystem is what maintains the abundance and the variety of species of fish that the local fishermen depend on for their livelihoods. Also in reference to infrastructure and the development of Gwadar as a Zone, as described by Easterling (2014), it is important to realize that such large scale infrastructure projects and proposals for new urban centers of such a scale as is proposed in the Gwadar zone do not seem to be sustainable. So over all within the scope of the larger social and professional framework it is important to reveal the impact and ethics of such zones.