

# 2 CHAPTER

*host, habitant & programme*



The following chapter will act as introduction to the proposed host, actual location of the intervention, the suggested habitant, selection of an appropriate vessel that will permeate the host, and lastly, the election of a pragmatic response that would serve as activator.



Figure 2.1. V&A Waterfront Pier (Unknown, 2014)

# VICTORIA & ALBERT WATERFRONT

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*"The tavern of the seas - the V&A Waterfront"*

Anonymous

In order to ground the proposed intervention, a suitable host in need of spatial mediation is required. As a point of departure, it was established that it would be more feasible to **station the design permanently** at a specific location, as opposed to a mobile intervention. In divergence of mooring a possible ship merely at port, the permanent dry docking thereof was rendered more advantageous. Enlisted under the National Port Authority (NPA), the South African shoreline only has four dry-docks that would spatially permit such an intervention (refer to figure 2.2). Ensuing that Cape Town retains two dry docks, the selection of the Victoria and Albert Waterfront as setting was deemed proper.

Some of the world's most pioneering real estate developments have taken place at waterfronts where the cultural and historic **links between land and water were re-established**. Once patented as a mere idealistic vision with little to none viability to ever fully materialise, the Victoria and Albert Waterfront at present receives 22 million visitors annually, classing it as one of South Africa's leading real estate success accounts. Exceeding all expectations, the V&A Waterfront has earned its place as South Africa's most visited destination - **bringing new meaning to the romantic description of Cape Town as the 'Tavern of the Seas'** (Breen & Rigby, 1996:16). Situated at the southernmost tip of the African continent, Cape Town's stunning scenery, pleasant climate, rich heritage and striking wine lands make it a favourite amongst tourists. Affluent

accessibility and tightly abridged markets allow favourable location for business, recreation and dwelling.

With the establishment of the Dutch East India Company during 1652, the developmental history of Cape Town's Foreshore and Waterfront as a refreshment station occasioned into an array of growth. Along with extensive market research which covered aspects such as **retail demand, tourism opportunities, demand for hotel development and the state of the residential market** along Cape Town's Atlantic seaboard, the institution of the V&AW Urban Plan and Development Framework in 1989 allowed for an historic six-phase expansion project. In addition to progressive goals, the creation of rich and diverse environments appropriate for public spaces, the conservation and enhancement of elements with cultural significance and the restoration of the historic link between the harbor and the City of Cape Town were envisioned. With the sixth phase completed in 2006, additional development of the residential and commercial sector composed way for the 2020 ocean vision of the Granger Bay precinct to commence (van Zyl, 2010:8). In addition to retail and corporate substance, the adjacent districts will be activated through the implementation of a world-class marina, ocean-liner terminal and supporting facilities. Furthermore, this vision structures part of the Tourism and Hospitality Outlook of Southern Africa, where **an increase in cruise demand is envisioned** (PwC, 2014:62).

-  **QUAY SPACE**  
A stone or metal platform lying alongside or projecting into water for loading and unloading ships
-  **FLOATING DOCK**  
A submersible, floating structure used as a dry dock, having a floor/platform that can be submerged and then raised
-  **DRY/GRAVE DOCK**  
A stationary dock which can be drained of water to allow the inspection and repair of a ship's hull

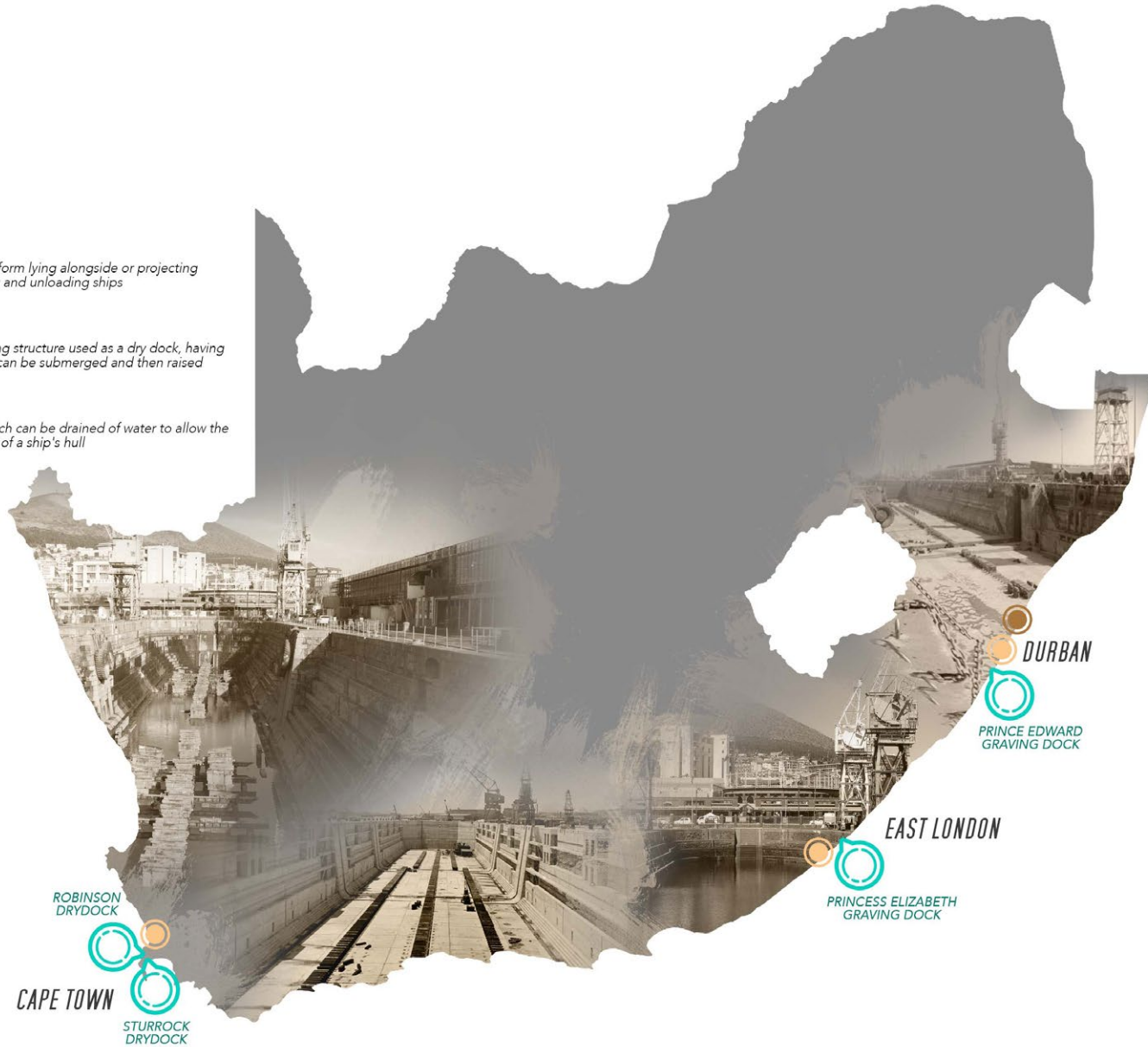
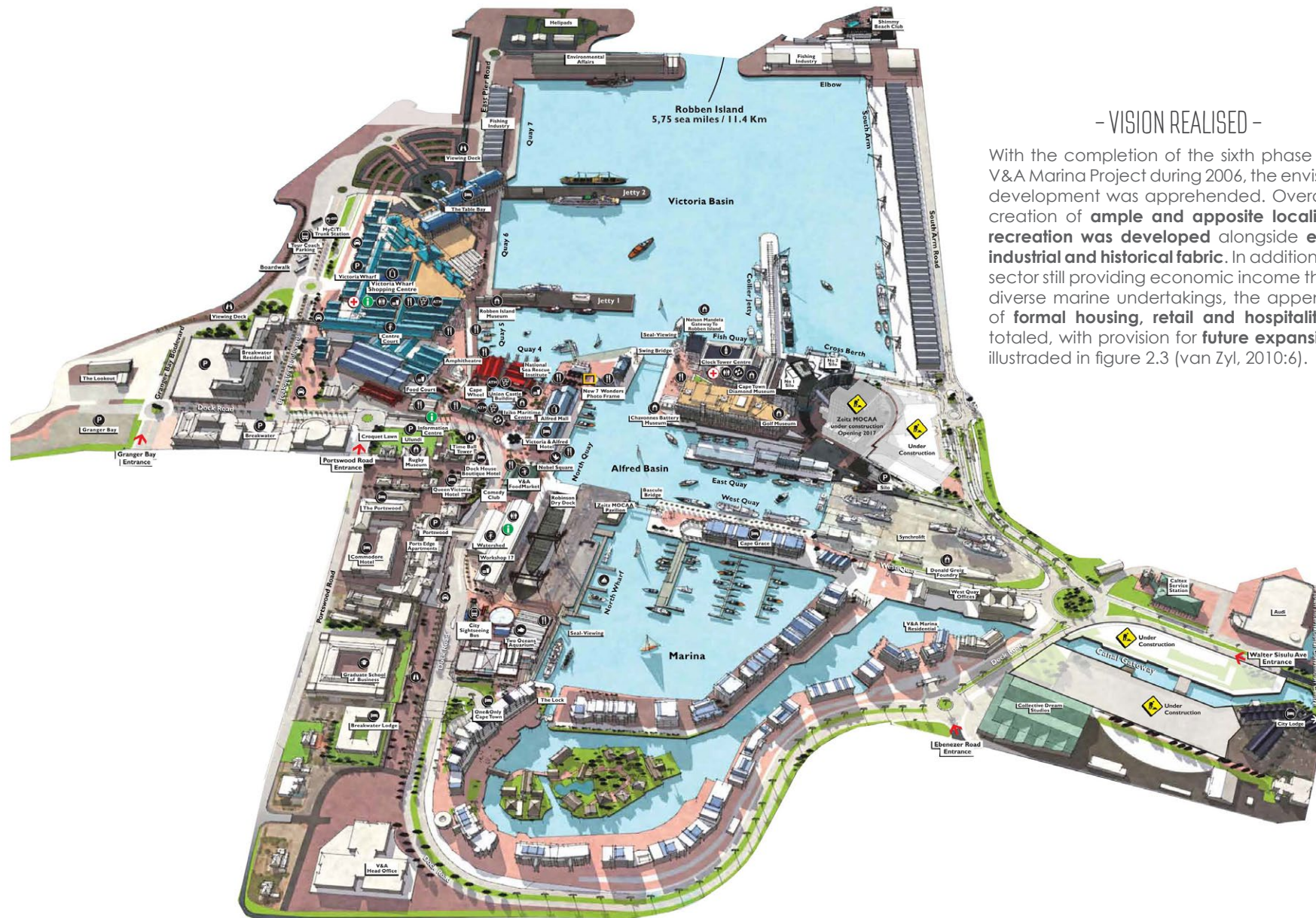


Figure 2.2. Docks Along the Coast of Southern Africa (Author, 2016)



- VISION REALISED -

With the completion of the sixth phase of the V&A Marina Project during 2006, the envisioned development was apprehended. Overall, the creation of **ample and apposite localities of recreation was developed alongside existing industrial and historical fabric**. In addition to the sector still providing economic income through diverse marine undertakings, the appendage of **formal housing, retail and hospitality** was totaled, with provision for **future expansion**, as illustrated in figure 2.3 (van Zyl, 2010:6).

Figure 2.3. The V&A Waterfront Precinct (Lancaster, 2015)

## 2.1

# ROBINSON DRY DOCK AS HOST

Situated within the Alfred Basin, the Robinson Dry-dock is considered being the oldest operating dry dock of its kind in the world and dates back early 1882 (refer to figure 2.4). Named after Governor Sir Hercules Robinson, it was used to repair over 300 ships during WWII. As it was originally built with a position for an intermediate caisson, its common use allowed for multiple dockings of two or more smaller vessels simultaneously. As technology advances, the need of an adjoining water facility was deemed redundant. The Pump House situated right adjacent to it (now housing a comedy club and food market) was used to pump the water out (SAOGA, 2013: n.p.).

Regardless of its historical significance, Robinson Dry-dock is listed under the National Port Authority (NPA) as a dock of concern, as the NPA has been attempting to run this waterfront at a profit, but to no avail. In a recent study commissioned by the provincial government of the Western Cape, conclusive findings shown that current NPA docking charges within this old dock is running at some five times the international norm. As the risk assessments of dry docking in this facility have reached a point where foreign owners are starting to balk at the notion of its deteriorating equipment, the feasibility of its continued operation has been questioned. Proposals on the modernisation of this facility has reached staggering heights, as the financial injection required is rendered implausible against the wide array of associated risks (Mackie, 2007:55).

This study suggest the **pronouncement of the dock as a site of conservation**, permitting **suitable, current and economical repurposing**, similar to the Cutty Sark and Grimshaw precedent, which is reviewed as imperial case studies on pages to follow.



Figure 2.4. Robinson Dry Dock in Service (NPA, 1882)



Figure 2.5. Robinson Dry Dock Looking Towards Dock's Head (NPA, 2014)

## - SURROUNDING CONTEXT -

The V&A Waterfront lies on the shores of Table Bay and has a dramatic physical setting, located between **two of the world's greatest urban icons - Table Mountain and Robben Island**. Surrounding the docks immediate locality is a wide array of popular commercial establishments. On its North-Eastern side lays the original dock's pump house that was converted into a theatrical establishment during the late 1900's. Adjacent to this is an old warehouse now known as Workshop 17, which

has been lucratively rehabilitated into a conference and collaboration space. Opposite workshop 17, is a **vacant docking space used during ship repairs on site**. This area permits an ideal solution to parking and acts as a connector between the immediate **dock and harbour**. Situated on the docks south-eastern façade is the world renowned Two Ocean Aquarium - a popular tourist attraction countenancing enduring activity (refer to figure 2.6 and 2.7).

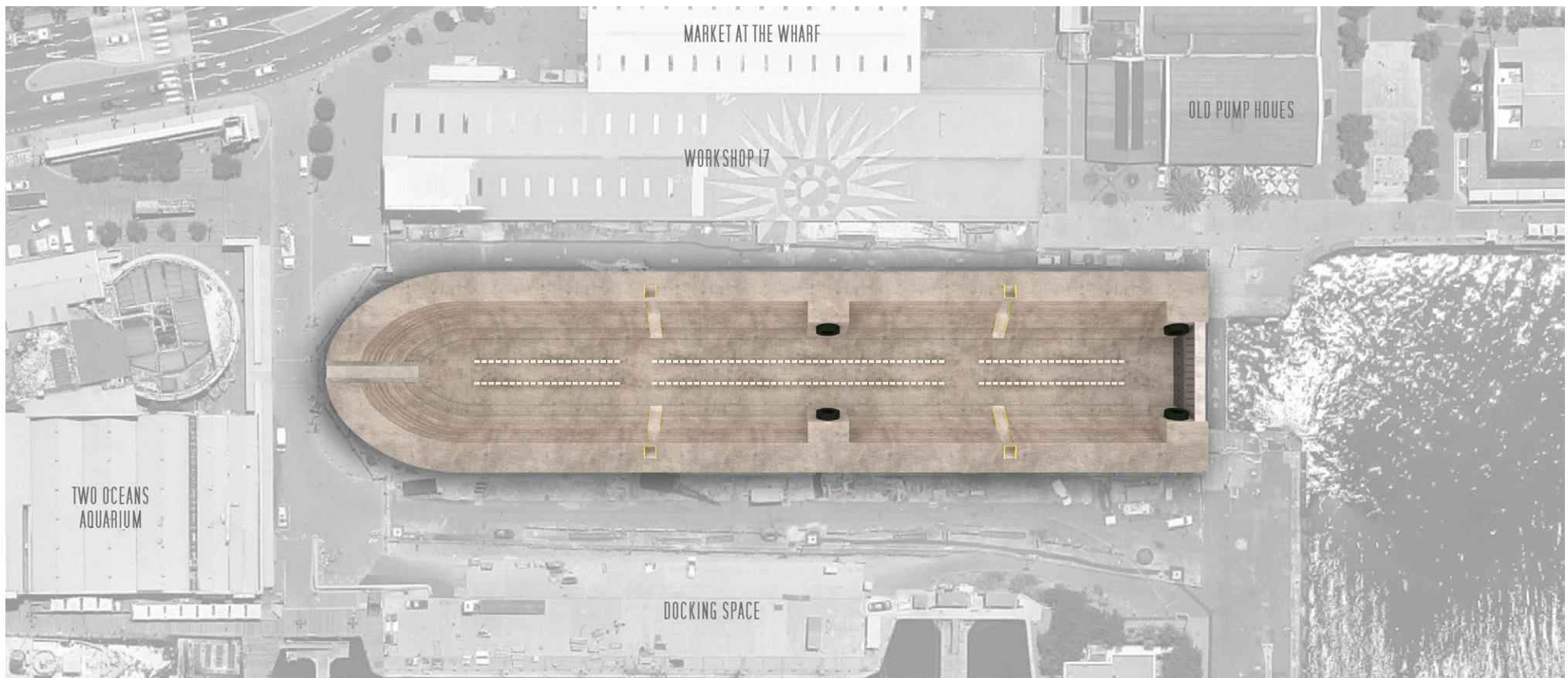
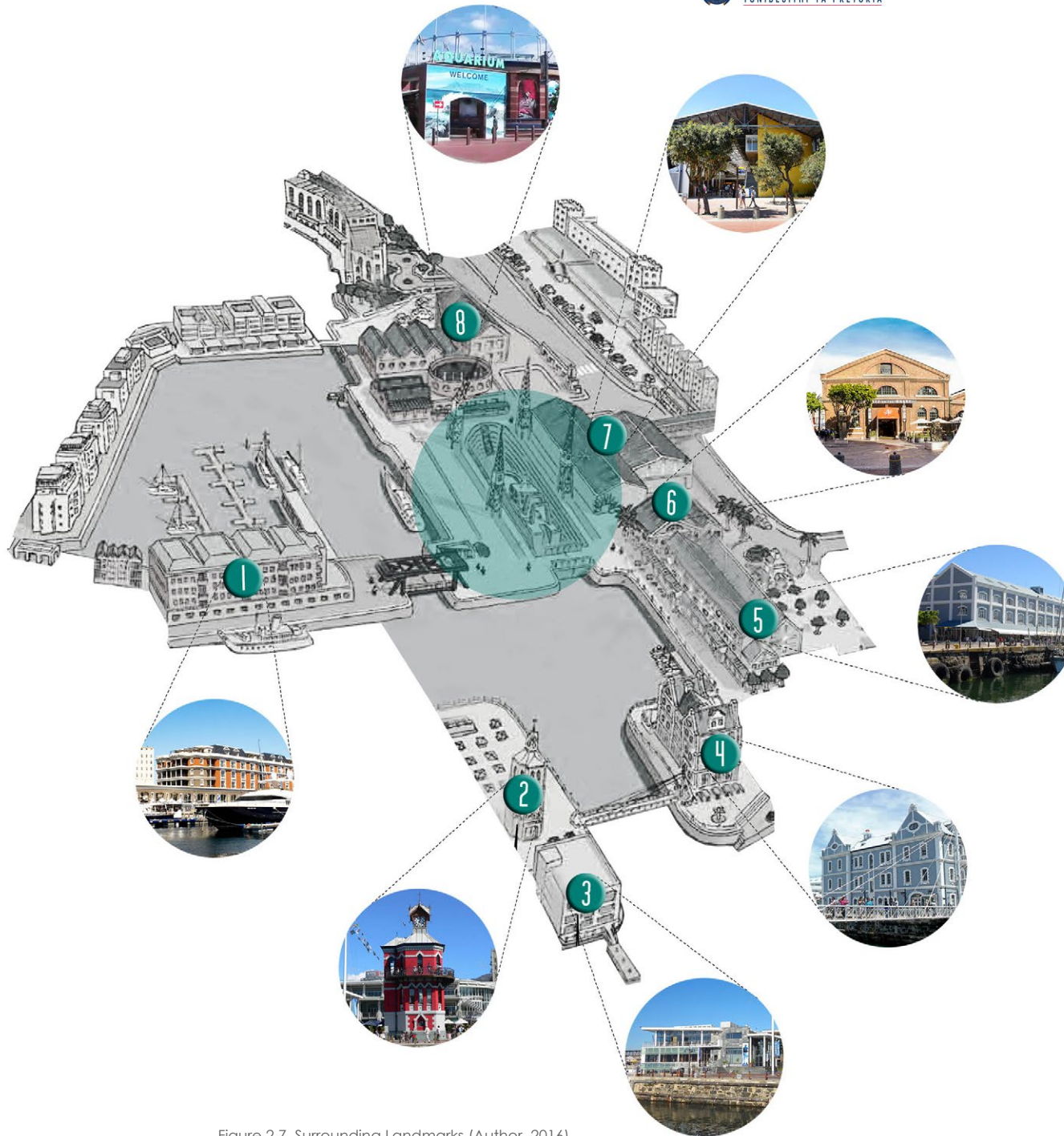


Figure 2.6. Robson Dry Dock Immediate Context (Author, 2016)





### 1 CHAVONNES BATTERY | MUSEUM: 1725

This battery was the first major defence facility built (1714 to 1725) by the Dutch East India Company after the Castle. Its purpose was to defend the anchorage in the bay; this was achieved by an overstocking of cannons and mortars.

### 2 CLOCK TOWER | HERITAGE MONUMENT: 1882

This octagonal Victorian, Gothic-style Clock Tower was built in 1883 and was the Port Captain's first office in the newly constructed harbour. It housed the tide gauge mechanism which worked by a shaft connected to the sea.

### 3 NELSON MANDELA GATEWAY | MUSEUM: 2000

The Robben Island Exhibition Centre is situated next door to the Clock Tower building, and is a very unique museum depicting the history of Robben Island and the struggle for democracy. This is the embarkation building for visitors to Robben Island.

### 4 OLD PORT'S CAPTAIN OFFICE | MUSEUM: 1904

With the rapid growth of the harbour, the Port Captain, who was housed in the Clock Tower, moved across the 'cut' into this beautiful gabled building which was built in 1904. This new location offered space to perform a demanding, important job.

### 5 VICTORIA & ALFRED HOTEL | HOTEL: 1904

Formerly the North Quay Warehouse, this building was constructed in 1904 and was originally used as a cold store. It was then converted into a warehouse and baggage store for the Union Castle Shipping Line.

### 6 MARKET ON THE WHARF | FOOD MARKET: 1902

The V&A Waterfront Food Market was founded by entrepreneur Greg Anderson in December 2012. With a passion for food, hospitality and retail he decided to take on the creation of a leading artisan retail store with a distinct market feel.

### 7 WORKSHOP 17 | COLLABORATION SPACE: 1885

Workshop17 is a hub that exists to accelerate innovation and entrepreneurship for a positive social and economic change. The space facilitates a community of passionate, innovative and interesting people, formally used as a pump house.

### 8 TWO OCEANS | AQUARIUM: 1907

The aquarium was opened on the 13 November 1995 and comprises out of the core of the Old Millwright's Building. The enchantment of this particular aquarium is due to its location, where the Indian and Atlantic ocean meet.

Figure 2.7. Surrounding Landmarks (Author, 2016)

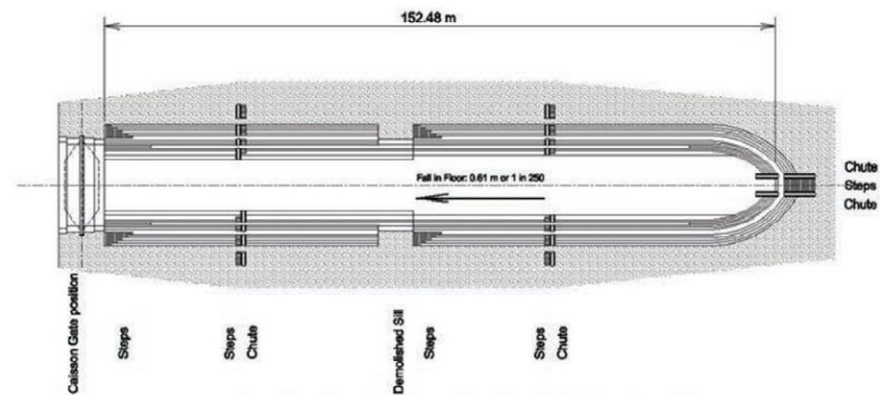
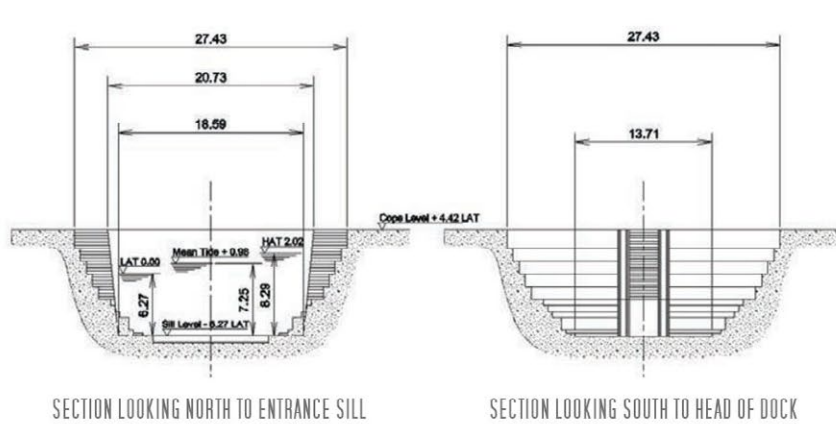
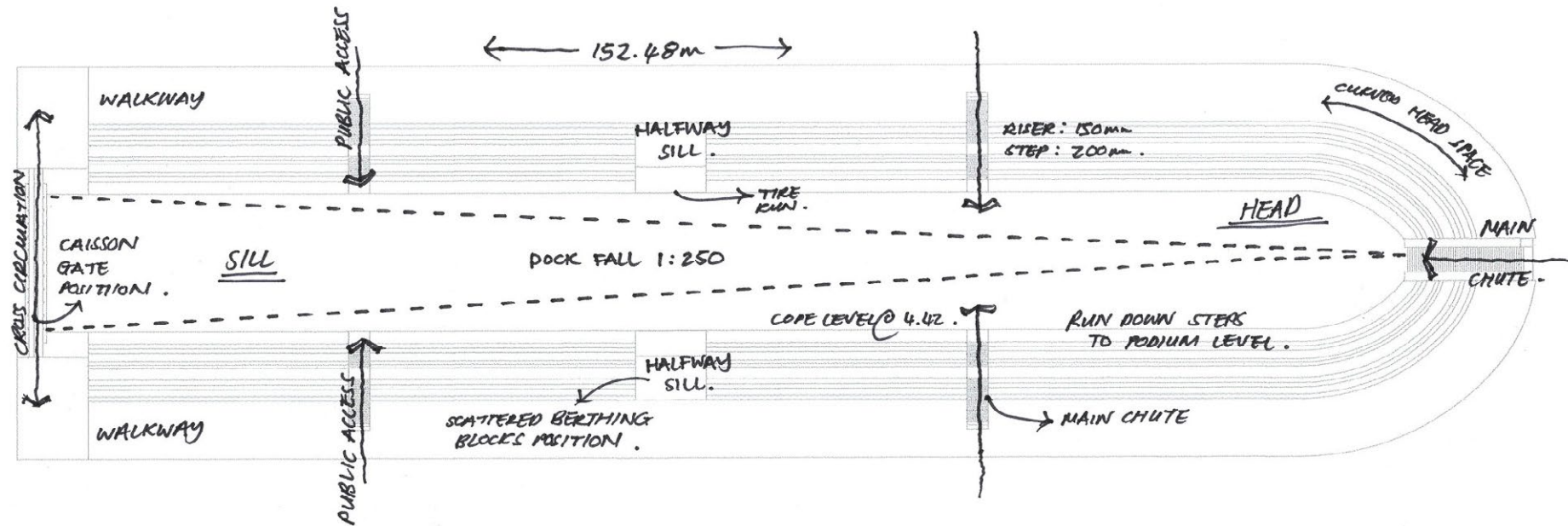


Figure 2.8. Robinson Dry Dock Technical Drawings (SAOGA, 2013)

- ANALYSING THE FOOTPRINT -

The actual dock space itself provides excellent opportunities for a spatial intervention. The dock is constructed out of **reinforced concrete** and dressed with stone masonry. Built to service two ships simultaneously, the central sill that hosted an intermediate caisson was demolished in order to accommodate larger vessels. The cross section of the dock mirrors its initial design for **wooden sailing ships** with rounded **bilges** and separate **bar keels**. The section (figure 2.8 and/or 2.9) is trapezoidal in shape with

the edges shaped by **stepped altars** to receive side shores for the lateral support of vessels. However, the function of these side shores have been replaced by a system of sliding berthing blocks that elevate the hull of the ship for maintenance. Moreover, with already present stair access shoots down to the podium, the addition of **universal access will be required**. The podium provides a virtually leveled surface, being that the current fall ratio is too little to notice in distance.

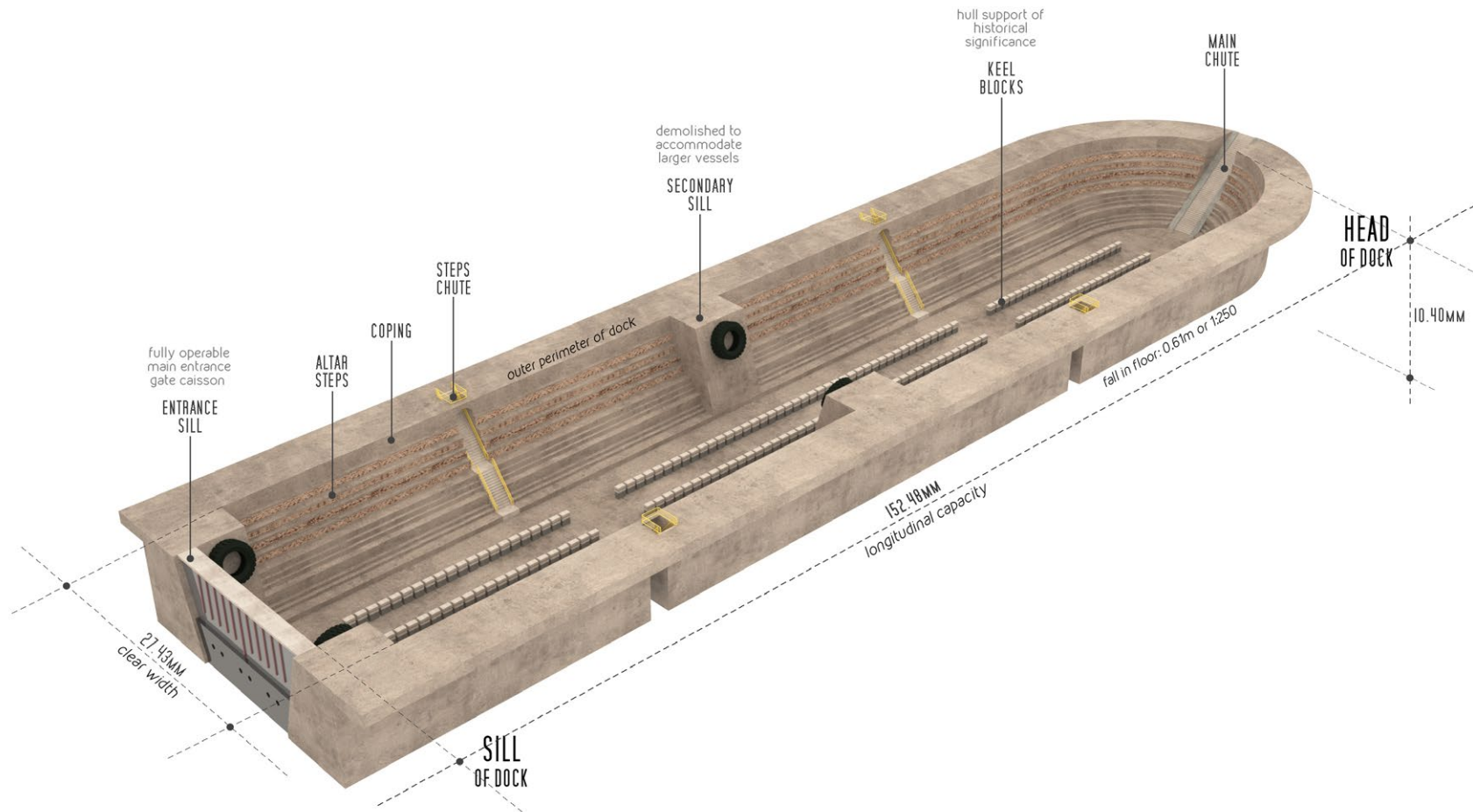


Figure 2.9. Existing Robinson Dry Dock Analysis (Author, 2016)

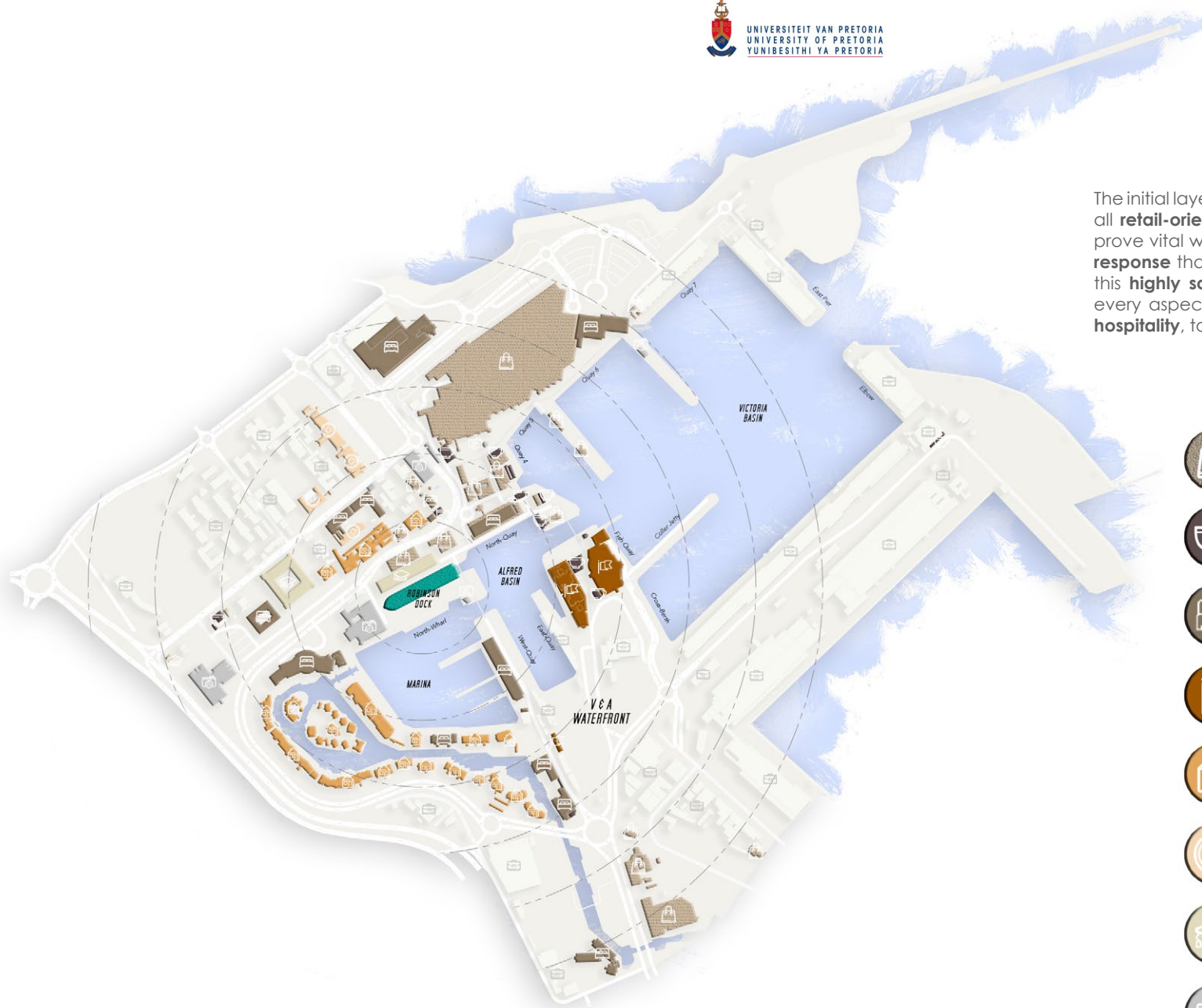
## - LAYERS OF THE V&A WATERFRONT -

In addendum to the familiarisation of a setting's reality, a strong discernment of all current facets totaling up to its current state of being must be individually surveyed. **Four distinct layers were identified** (figure 2.10) which summarises the existing character and prominence of the Victoria and Albert Waterfront. The initial layer is devoted to its **cultural facet** which is rich in a diverse **assortment of nationalities and tradition**. Secondly, a **historic** slant is quite evident. In addition to a wide selection of **recreational facilities**, the Waterfront pays homage to an **assortment of monuments,**

**museums** and expanses of historical significance. The third layer is of **economic importance** and is heightened by enduring **marine activity (fisheries and harbour) and tourism**. The final layer is reserved for **materiality**, which acknowledges the vast **contrast between the new and the existing fabric**. Per conclusion of the established notion, diagrammatic charting (refer to figure 2.11 - 2.13) was initiated in order to **illustrate the findings tangibly** and assert the feasibility of the proposed pragmatic response.



Figure 2.10. Layers of the V&A Waterfront (Author, 2016)



0 100 200 300 400 500 600  
N  
COMMERCIAL LAYER  
SCALE: N.T.S

## - RETAIL LAYER -

The initial layer is dedicated to the process of mapping out all **retail-orientated establishments**. This investigation will prove vital when aiming to **establish a unique pragmatic response** that will activate the envisioned intervention in this **highly saturated environment**. As indicated, almost every aspect of recreation is covered - from **retail and hospitality**, to **residential and office space**.



### RETAIL FACILITIES

The sale of goods to the public in relatively small quantities for use or consumption rather than for resale.



### CULINARY FACILITIES

A place where people pay to sit and eat meals that are cooked and served on the premises



### HOTELS & INNS

An establishment providing accommodation, meals, and other services for travellers and tourists, by the night.



### MUSEUM & EXHIBITION SPACE

A building in which objects of historical, scientific, artistic, or cultural interest are stored and exhibited.



### RESIDENTIAL

Property use in which private housing predominates, as opposed to public, industrial and commercial occupation



### MEDICAL FACILITIES

A public institution providing medical and surgical treatment and nursing care for sick or injured people.



### EDUCATION & COLLABORATION

A high-level educational institution in which students study for degrees and academic research is done.



### RECREATIONAL FACILITIES

A public tourist attraction where activity is done for enjoyment and recreational purposes



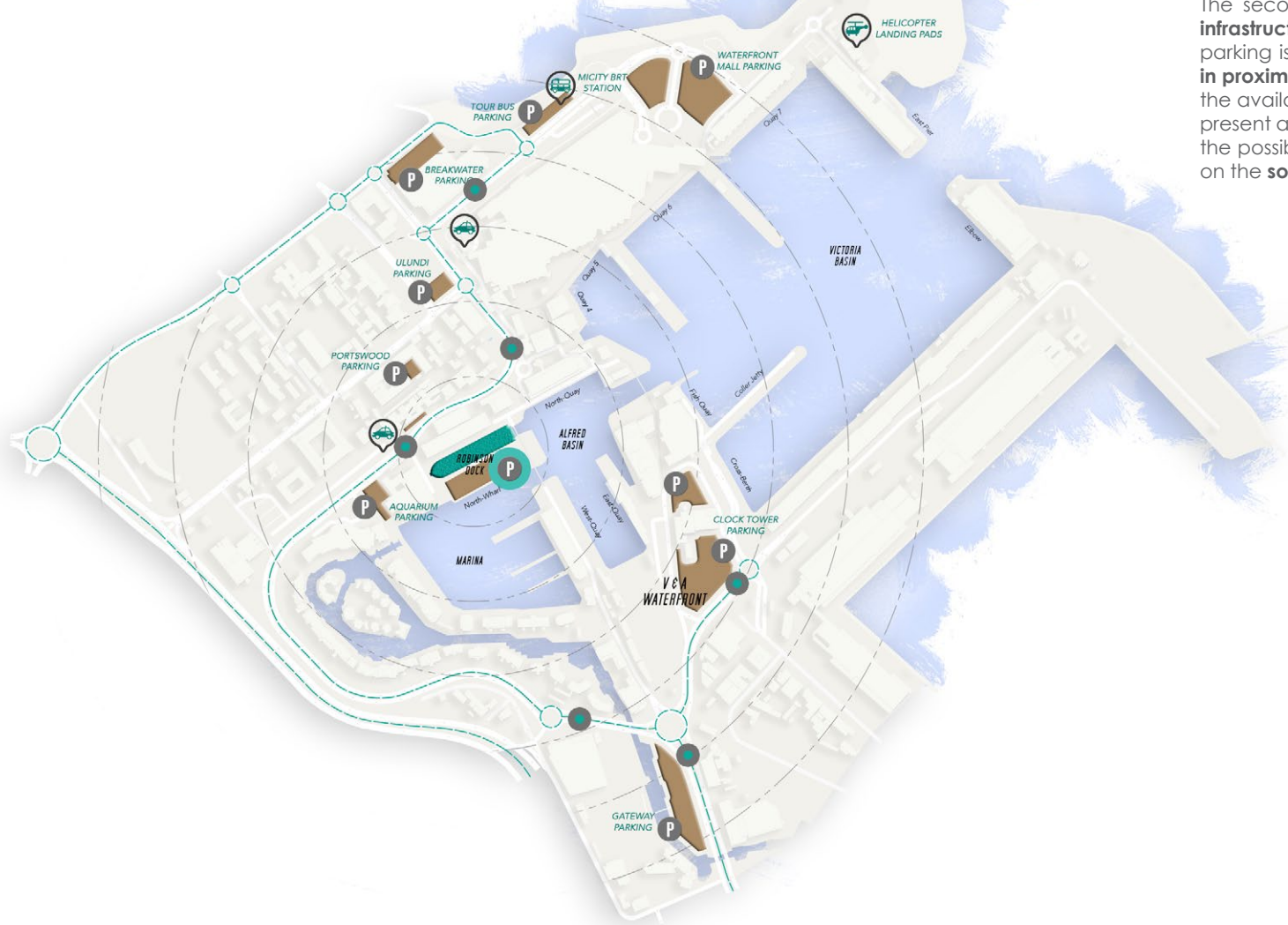
### INDUSTRIAL OFFICE FACILITIES

A commercial building for storage of goods, and used by manufacturers, importers, exporters etc.

Figure 2.11. Retail Layer of the V&A Waterfront (Author, 2016)

- TRANSPORT INFRASTRUCTURE LAYER -

The second layer is dedicated to the underlying issue of **infrastructure availability** in terms of **transportation**. Ample parking is available at selected establishments, but **limited in proximity**. **Public transportation is greatly encouraged** by the availability of the **MyCity BRT System**, with nearby routes present at the dock. In addition to sufficient public transport, the possibility subsists of converting the vacant berth space on the **south-eastern side of the dock to parking**.



-  **BUS STATION**
-  **TAXI MOTOR VEHICLE**
-  **HELICOPTER**
-  **EXISTING PARKING**  
Facility where a motor-vehicle can be left temporarily
-  **PROPOSED NEW PARKING**  
Design intervention's proposed additional parking area
-  **ROBINSON DRY DOCK**  
The identified Robinson dry dock where the intended spatial intervention will occur
-  **DEDICATED PUBLIC PARKING**  
Open-air or enclosed parking facility that permits temporary docking of vehicle to visit a site in close proximity
-  **MYCITI GREEN POINT BUS ROUTES**  
Official MyCity Bus Rapid Transit (BRT) system routes
-  **OFFICIAL MYCITI BUS STOPS**  
Dedicated stops along the official myCity bus route

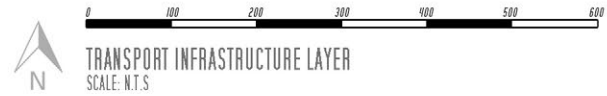
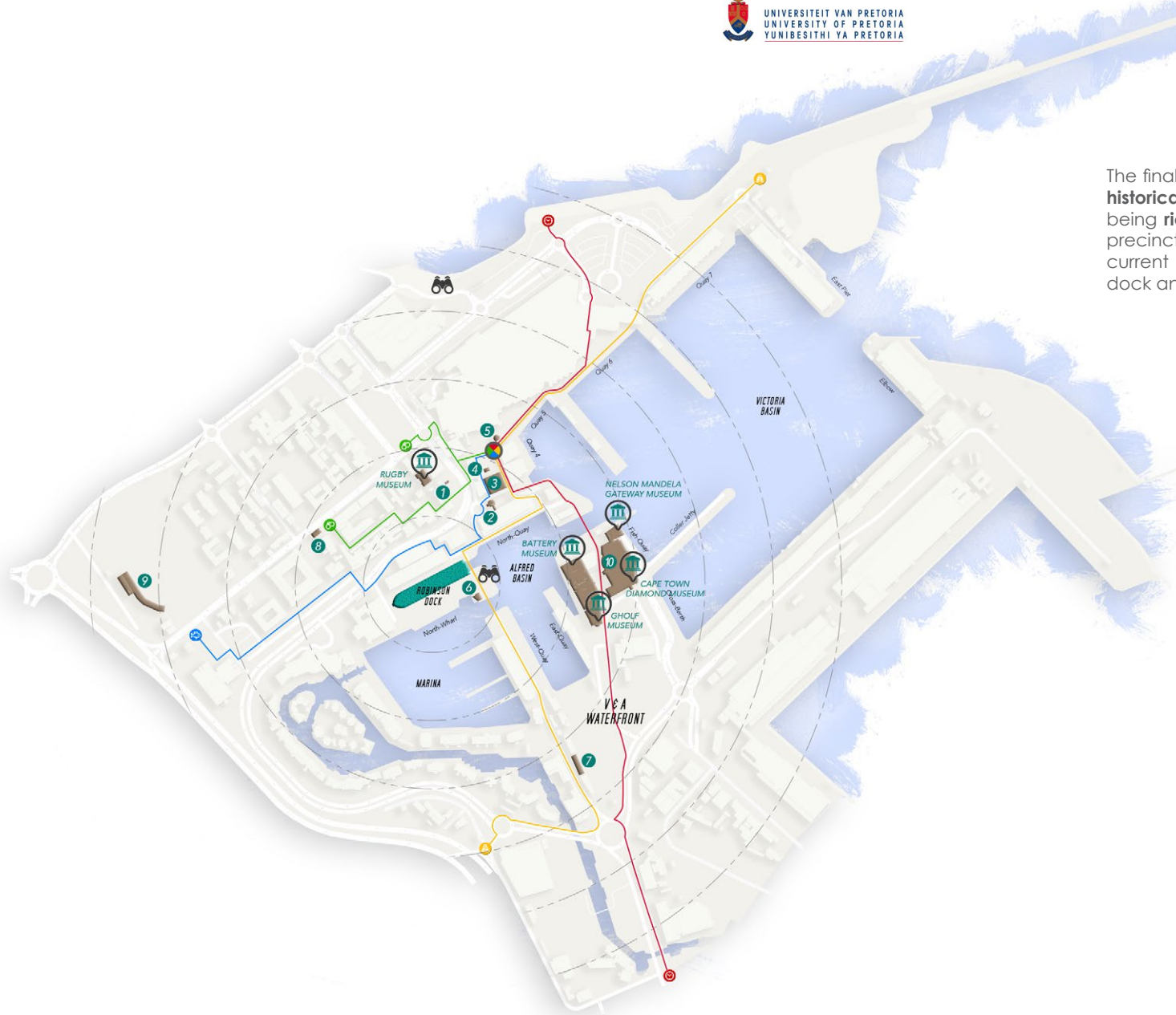


Figure 2.12. Infrastructure Layer of the V&A Waterfront (Author, 2016)

- HERITAGE LAYER -

The final layer of mapping is reserved for the allocation of **historically significant routes and monuments**. Similarly to being **rich in recreation**, heritage is also abundant in this precinct. This investigation illustrates the high availability of current museums and also the connection between the dock and the **historic routes**, specifically the **yellow track**.



- 1 TIME BALL TOWER
- 2 IZIKO MARITIME CENTRE
- 3 UNION CASTLE BUILDING
- 4 CAPE WHEEL
- 5 CAPE AMPHITHEATRE
- 6 SCHERYN PAVILION
- 7 DONALD GREIG FOUNDRY
- 8 PORTWOOD PRISON
- 9 BREAKWATER PRISON
- 10 CLOCK TOWER CENTRE

- RED ROUTE  
Clock tower route that features the Ball Tower of 1882
- BLUE ROUTE  
Fish route passing an aquarium complex and fish statue
- GREEN ROUTE  
Prison route featuring Cape Town's first historical jail
- YELLOW ROUTE  
Naval route featuring Cape Town's marine heritage



Figure 2.13. Heritage Layer of the V&A Waterfront (Author, 2016)



Figure 2.14. Danish Maritime Museum at Night (Mora, 2013)



## PROJECT SYNOPSIS

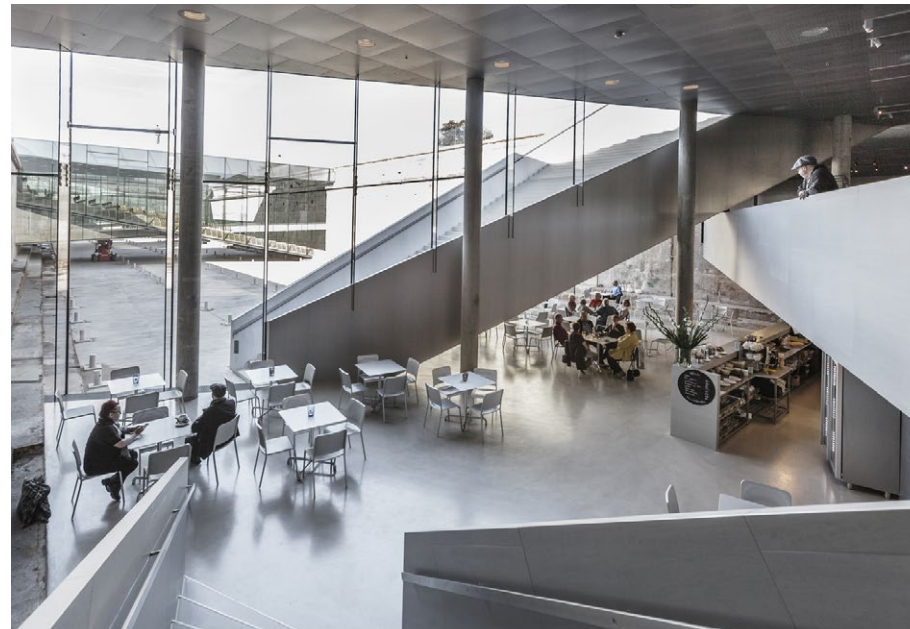
Situated amid Kronborg Castle and the Kulturhavn Kronborg Cultural centre, the Danish Maritime Museum was established in a uniquely historic context. In an attempt to bring **cultural attractions** to the Helsingør's harbour, the introduction of a subterranean museum was **positioned in and around the existing dry dock**. Encased by a two-level rectangular structure, the museum's underground galleries exhibit the account of Denmark's rich **maritime history**. Making the dock the centerpiece of the exhibition - an exposed, open-air space allows visitors to experience the scale of this shipping structure. Acting as an **urban activator**, a series of several double-level walkways distance the dry dock, providing visitors with alternative routes to various segments of the museum, both above and underground. Connected by numerous exhibition spaces, the addition of an auditorium, classrooms, offices and a café **unites the old and new both in materiality and current utilisation** (Dezeen, 2013).

## PROJECT OBJECTIVES

- The 60 year old dock must remain **untouched**. Both the existing fabric and new addition must be emphasised, but **not visually intrusive**.
- The dock must act as promenade that connects the harbour bridge, castle and new culture centre. (Kulturhavn Kronborg urban initiative)

## IMPLEMENTATION STRATEGIES

- Treat the envisioned intervention with similar design objectives that will **respect existing fabric and limit invasiveness**. (Dock remains prominent)
- Construct **various forms of accessibility** that highlight design aspects.
- Seamlessly, yet evidently incorporating the new with the existing.



precedent  
investigation

2.1

NAME OF PROJECT  
DANISH MARITIME MUSEUM

LOCATION OF PROJECT  
HELSINGØR, DENMARK

CHIEF ARCHITECT  
BIG ARCHITECTS

DATE OF COMPLETION  
2013



theory



materiality



design



programme

Figure 2.15. DMM Courtyards (Hjortshøj, 2013)

## 2.2

# SS NOMADIC AS HABITANT

In order to potentially illustrate the actual implementation of the **envisioned design**, a possible vessel in the form of the habitant must be identified. Apart from the desired tangible appearance and typography, the imperceptible historical significance of the sought after vessel must outweigh the likelihood of scrapping in order to be declared salvageable. In-depth research outlined an ideal archetype that was to be **industrial in design** and **ferrying in nature, due to scale and the desired open internal layout associated with this classification of tender vessels**. As most South African ships are either instantaneously scrapped upon decommission, too vast in scale for the identified dock or inadequate in terms of its classification, the search of an adequate vessel was extended to an international gradation. Being that all vessels are designed to be sea-bound, they are not restricted by locality - thus permitting international retrieval (Frazer-Nash Consultancy, 2009:317).

Commissioned in 1910 by the White Star Line to tender for the RMS Olympic and RMS Titanic, which due to their size was unable to dock at conventional harbors, the SS (Steam Ship) Nomadic ferried passengers, baggage, mail and supplies to and from large ocean liners moored off-shore. Built on slipway No.1, the keel of the SS Nomadic was laid down in Belfast's Harland and Wolff shipyards, where she was launched on 25 April 1911, followed by extensive sea trials that ultimately rendered her sea-worthy. The overall dimensions of the hull traversed 70m in length and 11m in width, with a gross registered tonnage of nearly 1,273 tons which could accommodate up to 1000 passengers when fully loaded.



### CARGO SHIPS

*Cargo ships are generally used to transport cargo safely from one place to another. They are crucial to international trade. Cargo ships can transport things such as food, petroleum, furniture, metals, clothes and machinery.*



### ROLL ON ROLL OFF SHIPS (ROLO)

*Most vehicles that are being transported over water internationally are done on a Roll on Roll off ship. Once the cars are aboard, they are braced to the ship's deck to keep them from moving around while ship is at sea.*



### TANKER SHIPS

*Tankers are ships that primarily carry huge quantities of liquid. They can carry a wide range of liquids such as oil, water, wine and several different chemicals that need a transport capacity of several hundred thousand tons.*



### PASSANGER & TENDER SHIPS

*Passenger ships are officially defined as ships that carry more than 12 passengers. If you own a passenger ship then you will need to abide by strict safety regulations. These ships also include cruise and tender ships.*



### FISHING VESSELS

*Fishing vessels are boats and ships designed to catch fish and marine wildlife. They are used for leisure purposes but also for commercial fishing. There are millions of fishing vessels used to catch fish around the world.*



### HIGH SPEED CRAFT

*High speed crafts are also sometimes called 'fast ferries'. They are mainly designed for civilian use as passenger ferries. High speed crafts are able to go faster because they use air pressure and powerful turbine propellers.*

Figure 2.16. Vessel Classification (Author, 2016)



Figure 2.17. SS Nomadic Setting Sail (Besirevic, 2008)

Two three-bladed propellers, each 21m in diameter, provided propulsion through two single-ended coal fired boilers permitting a maximum speed of 12 knots (22 km/h). Ruminated as a feat of industrial engineering, this vessel was primarily constructed out of mild steel with adjoining beams, watertight bulkheads and riveted hull plating framing the enclosed steel structure. Comprised out of four distinct decks, her typology as a tender vessel allowed for an open layout which consisted out of lower and upper deck passenger lounges with various hold spaces beneath deck. Divided into first and second class passenger areas, this vessel was subjected to strict forms of classism as dictated by the naval political regime of the time. **First Class passengers enjoyed the lavishly adorned areas afore of the ship, whereas second class ticketholders were permitted to upper levels aft.** A trivial area in the aft end of the lower deck was allocated for overspill of third-class passengers, should passenger capacity exceed tonnage on the **SS Traffic**.

Following similar stylistic requirements as illustrated in the deck plans to follow (figures 2.19 - 2.23), the SS Nomadic was fitted out akin to the liners she was built to serve. **Apart from being superior in construction, her onboard luxuries surpassed any tender ship of her day.** As such, special attention was directed towards internal comfort in terms of aesthetics and novel design. With cushioned **timber benches, oak marble** inlaid tables, gender-specific bathrooms with **porcelain** water fountains and a distinct buffet bar, the contained **ornate plasterwork** and **decorative joinery** predominantly in first class areas, the SS Nomadic was regarded as a trophy ship to the White Star Line fleet. Fitted out in the United Kingdom, **abundant natural light, adequate acoustic treatment, and opulent flow** allowed for a novel **hotel-like experience** on upper levels. However on lower decks, the **honesty of true sea commute was exposed through minimal comfort, no natural light and little insulation.** Regardless of these seemingly inhumane environments, these conditions were ranked superior above other methods of commute available for Lower Class at that time (Frazer-Nash Consultancy, 2009:125).

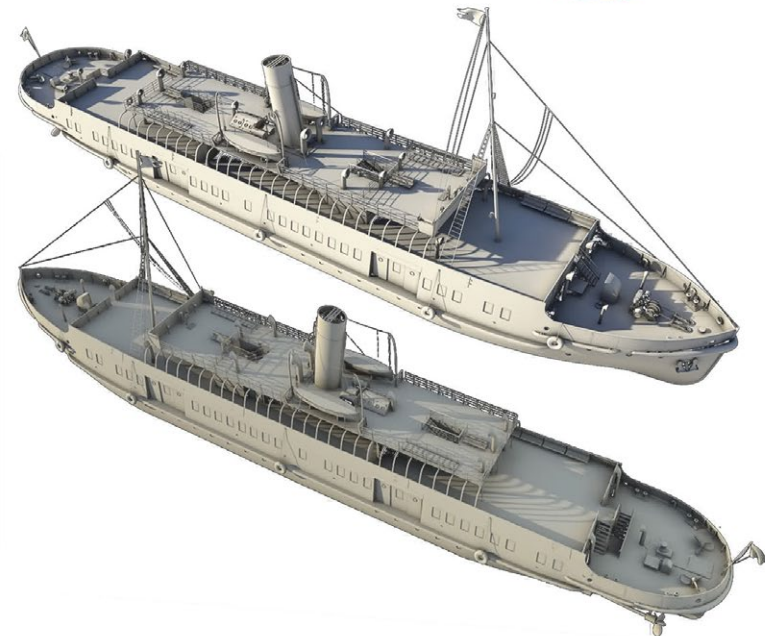
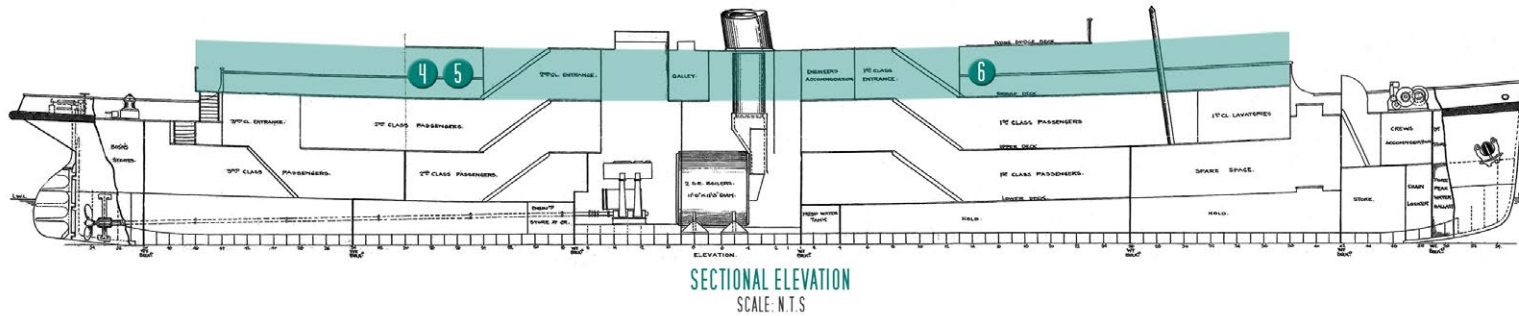
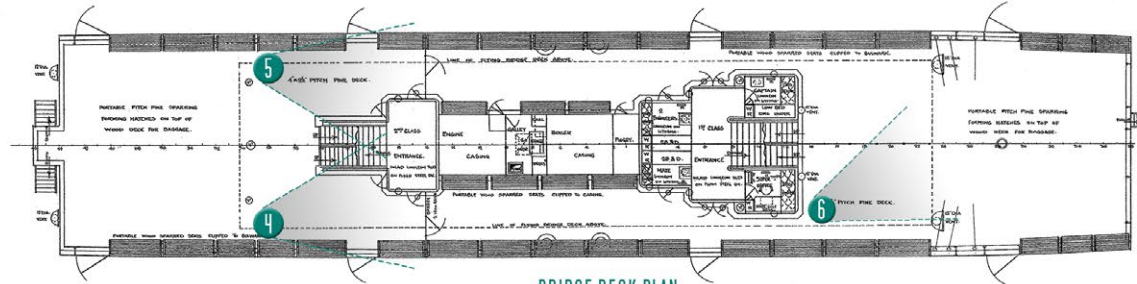


Figure 2.18. The Renovated SS Nomadic (Besirevic, 2008)



- BRIDGE DECK -

This deck provides the uppermost level of access onto the vessel, with four gates on either side which could accommodate gangways for passengers and luggage, as well as First and Second Class passenger entrances, a galley for the crew, and accommodation for the ship's officers. In its original form the bridge deck was fully enclosed with bulwarks on all sides, and included stairs at the aft end providing access down to the Third Class lounge and a ladder at the forward end for the crew.



4 covered bridge deck fore view port side



5 covered bridge deck fore view starboard side



6 covered bridge deck fore view



Figure 2.20. SS Nomadic's Bridge Deck (Berry, Hunter, McDonald, Mooney and Stanley, 2015)

- UPPER DECK -

This level contains doors and vestibules on either side, providing direct lower access onto the First and Second Class upper lounges, as well as aft decks and forecandle. Situated on either ends of the lounges, lavatories were positioned with an added saloon for First Class passengers. Additional amenities included the provision of a First Class buffet station, baggage tables and ample covered seating.

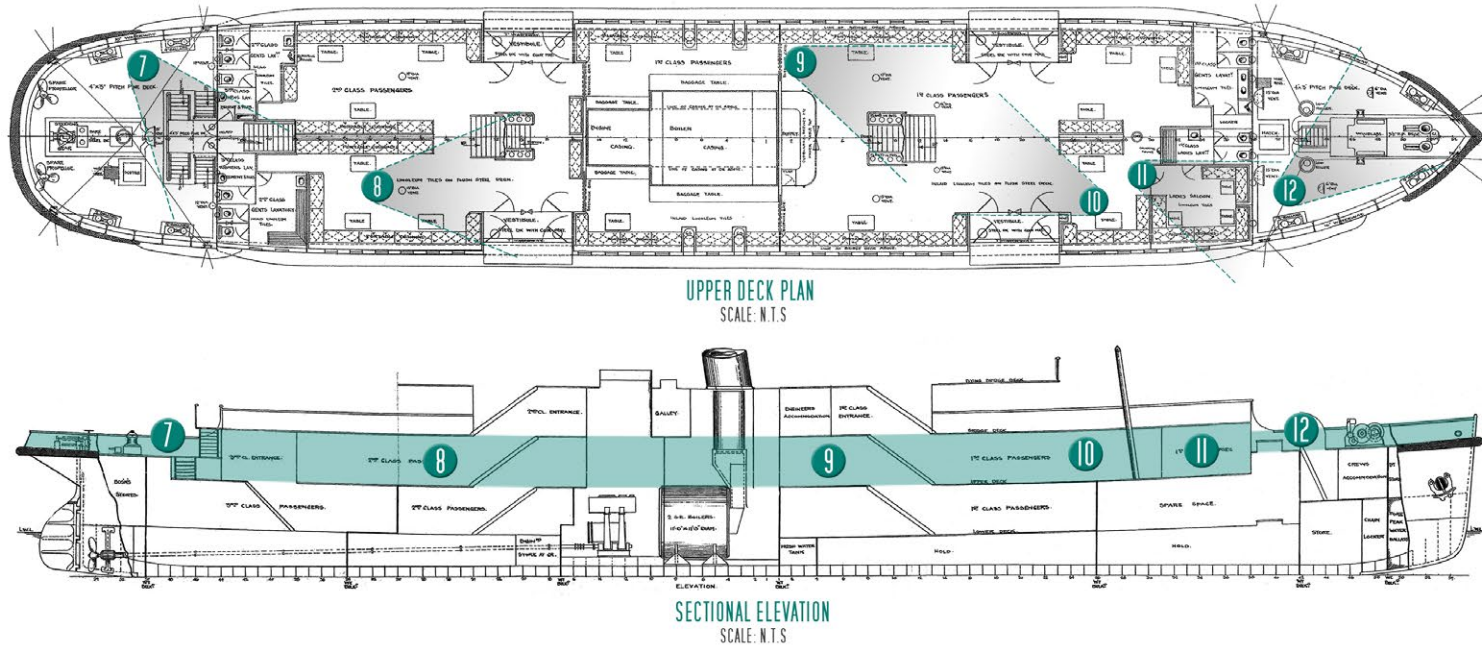
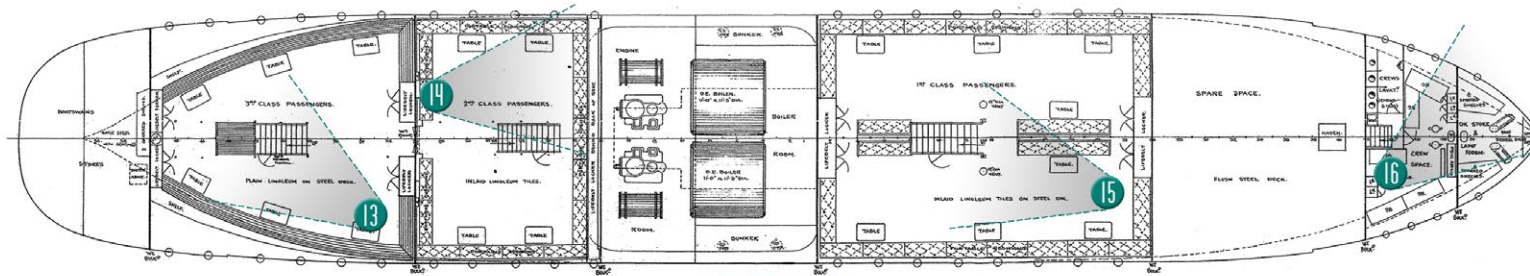


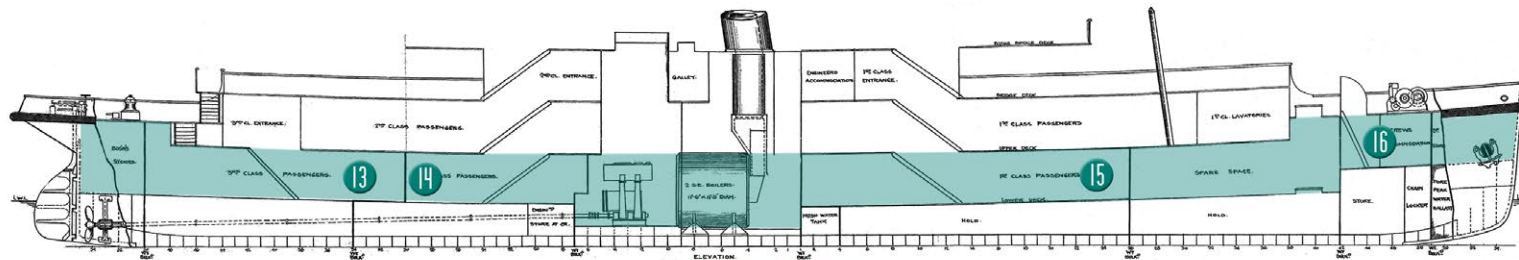
Figure 2.21. SS Nomadic's Upper Deck (Berry, Hunter, McDonald, Mooney and Stanley, 2015)

- LOWER DECK -

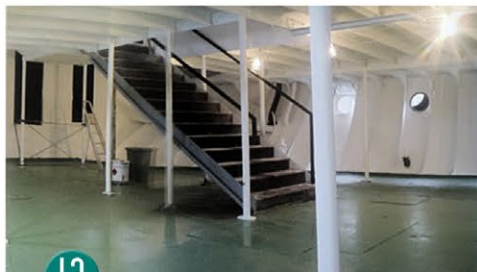
This deck contains the lower level First and Second Class lounges, as well as a Third Class lounge, the crew accommodation, the now vacant engine and boiler rooms, and some spare storage space. Additional elements of importance include the provision of built-in lifebelt lockers on either sides of the lounges, and a lamp room positioned in the forwards bow in front of the crew space.



LOWER DECK PLAN  
SCALE: N.T.S.



SECTIONAL ELEVATION  
SCALE: N.T.S.



13 third class area looking aft



14 lower second class lounge looking fore



15 lower first class lounge looking aft



16 fore full-time crew accommodation quarters

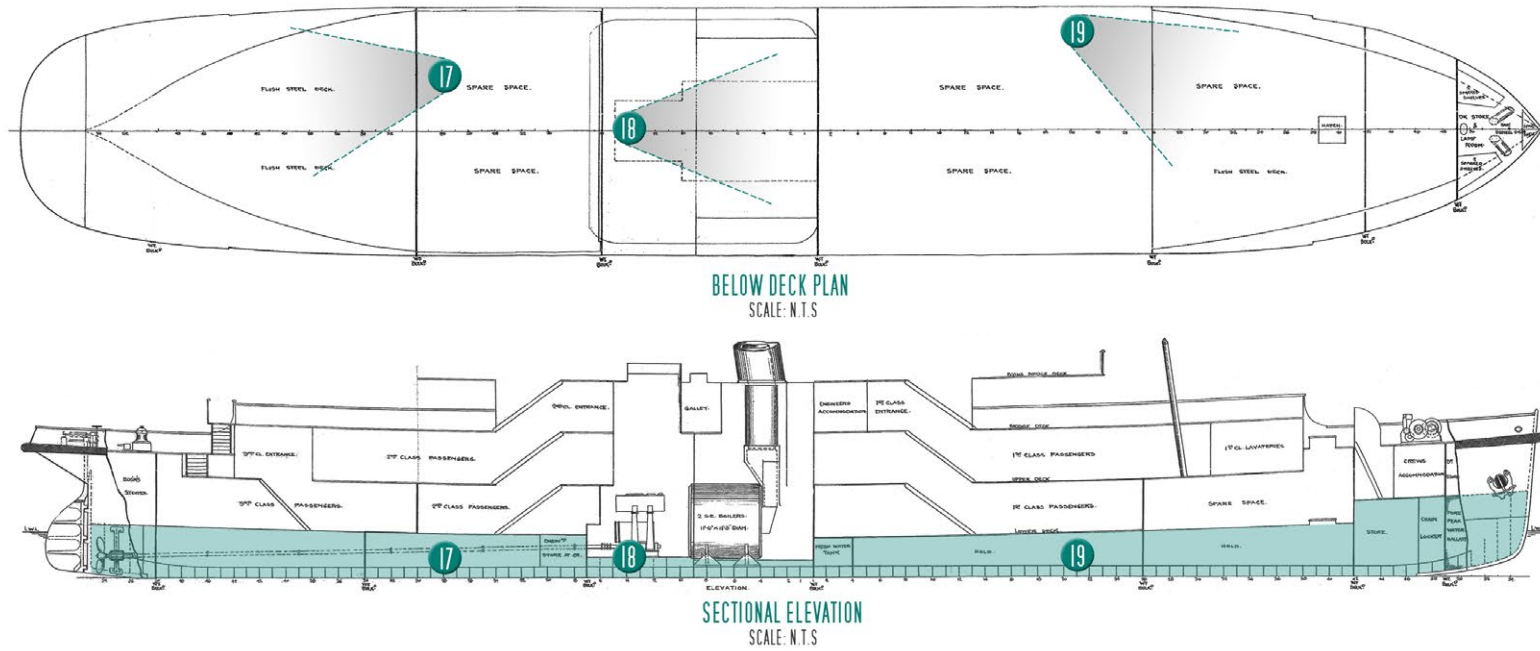


Figure 2.22. SS Nomadic's Lower Deck (Berry, Hunter, McDonald, Mooney and Stanley, 2015)



- BELOW DECK -

Also referred to as the hold, this level contains several fully functional water storage tanks, additional storage areas, and the propeller shaft spaces.



17 stern cargo hold aft view with cleared shaft space



18 empty boiler room fore view



19 bow cargo hold fore view

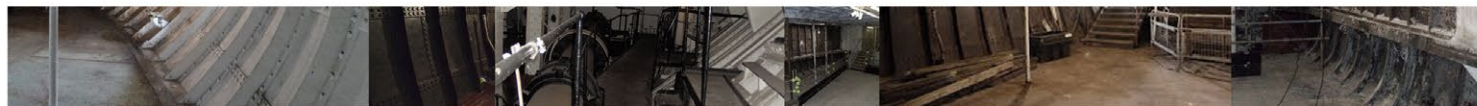


Figure 2.23. SS Nomadic's Below Deck (Berry, Hunter, McDonald, Mooney and Stanley, 2015)

## - TIMELINE OF THE SS NOMADIC -

Ever since her interval of conception, the history of the SS Nomadic was rich in proceedings. Outlining a vibrant history from maiden voyage to final act of service, her antiquity is illustrated in the timeline that follows.

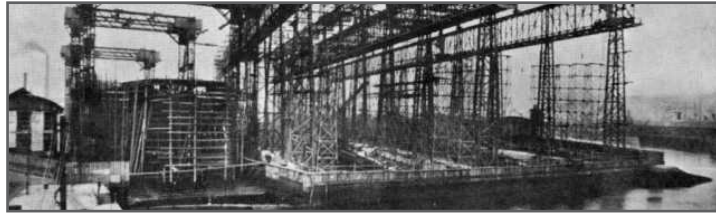


Figure 2.24. The Great Gantry of Harland & Wolff (Culture Club, 1910)



Figure 2.25. SS Nomadic in Cherbourg (Pivain, 1911)



Figure 2.26. SS Nomadic Tendering for the RMS Titanic (Cameron, 1997)

# 1910

DECEMBER 22

## A LEGEND IS BORN

*The keel of Nomadic is laid down in the Harland & Wolff shipyard in Belfast (Harland and Wolff yard number 422)*

APRIL 29

## PLACED ON WATER

*Nomadic is launched from slipway No.1 in Harland & Wolff shipyard, Belfast*

MAY 16

## TRAILS AT SEA

*Nomadic completes sea trials successfully under surveillance of Captain Edward Smith*

MAY 27

## DELIVERED TO THE WHITE STAR

*Nomadic is officially delivered to the White Star Line as a tender vessel*

MAY 31

## ON HER WAY TO CHERBOURG

*Olympic and Nomadic leave Belfast bound for Cherbourg (same day RMS Titanic is launched)*

# 1911

JUNE 14

## MAIDEN TENDER VOYAGE

*Nomadic tenders RMS Olympic when called into Cherbourg on her maiden voyage to New York*

# 1912

APRIL 10

## RMS TITANIC TENDER

*Nomadic transfers 172 first and second-class passengers to the ill fated RMS Titanic*

JUNE

## BRIDGE IS COVERED

*Due to recurring bad weather, Nomadic receives a covered flying bridge deck*



Figure 2.27. White Star Line ferry lighters SS Nomadic & SS Traffic (Haberlein, 1917)

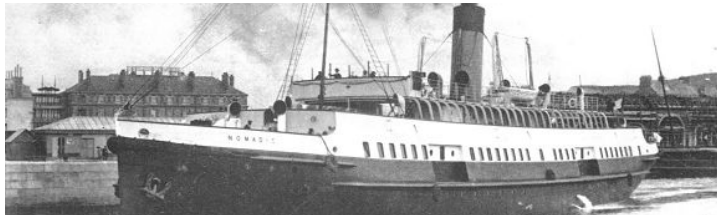


Figure 2.28. The Renovated SS Nomadic (Unknown, 1919)



Figure 2.29. SS Nomadic in Port (Unknown, 1927)



Figure 2.30. The Launch of the SS Nomadic after Repairs (Harland and Wolff, 1928)

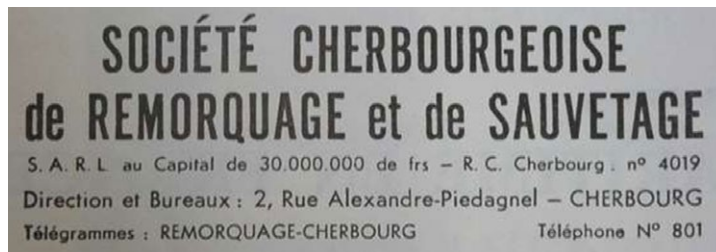


Figure 2.31. Cherbourg Company Tow and Rescue (Gruss, 1934)

1917

APRIL  
**NOMADIC GOES TO WAR**

*Nomadic is requisitioned by the French Government. Nomadic is sent to Brest to serve as a troopship for the U.S. 7th infantry division for nearly two years*

1919

AUGUST  
**THE WAR IS OVER**

*The SS Nomadic returns to commercial service tendering ships starting with Caronia of the Cunard Line*

1927

13 MARCH  
**SOLD TO CCT**

*The SS Nomadic was sold to the Compagnie Cherbourgeoise de Transbordement*

1928

NOVEMBER  
**COLLISION WITH ORINOCO LINER**

*Nomadic is involved in a collision with the Liner Orinoco with minor damage that were quickly repaired. No injuries were mentioned in either incident*

1934

UNKNOWN  
**DEEP WATER BERTH OPENED**

*Cherbourg opens a deep water berth so making all the tenders redundant*

APRIL  
**NEW ORDER, NEW NAME**

*Following the merger of White Star and the Cunard Line, she was sold again to the Société Cherbourgeoise de Suavetage et de Remorquage and re-named Ingenieur Minard.*

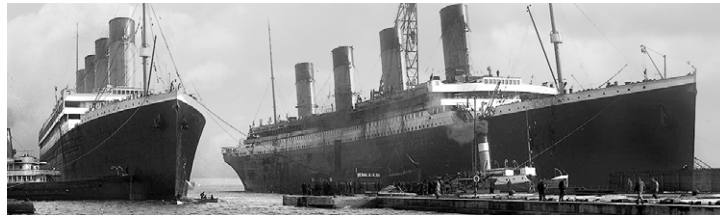


Figure 2.32. SS Nomadic in Use (Unknown, 1937)



Figure 2.33. SS Nomadic in World War II (Alamy, 1943)



Figure 2.34. RMS Queen Elizabeth & SS Nomadic in Cherbourg (Godefroy, 1966)



Figure 2.35. SS Nomadic Final Tender for RMS Queen Elizabeth (Unknown, 1968)

1936

NOVEMBER

### TENDERING FAMOUS LINERS CONTINUES

*Nomadic is dry docked in Cherbourg for essential repairs before continuing to serve some of the world's most famous liners*

JUNE 16

### ESCAPE FROM THE ARMIES

*Evacuate soldiers from the French aviation company Amiot to escape the German army*

JUNE 18

### NOMADIC RETURNS TO WAR

*Sails to Portsmouth and is requisitioned by British Government as a ferry troop ship for soldiers*

1940

JUNE - 1945

### FIVE YEAR WAR FERRY

*She spends five years as a troop ship, ferrying soldiers from Portsmouth to training camps in the Isle of Wight*

JUNE 27

### SAVED FROM SCRAPING

*Nomadic is saved from scrapping by her former owner, Cherbourg Tow & Rescue Society*

1945

JUNE - 1968

### FINAL STRETCH OF TENDERING

*For the next 23 years she continued to serve the world's great liners, including Queen Mary and Queen Elizabeth*

1968

NOVEMBER 4

### FINAL ACT OF SERVICE

*The SS Nomadic services the Cunard Liner Queen Elizabeth for the last time, after tendering for several decade*



Figure 2.36. Historic Pier of Conflans-Sainte-Honorine (Alexandrin, 1970)



Figure 2.37. SS Nomadic on the Banks of the Seine in Conflans (Unknown, 1975)



Figure 2.38. The SS Nomadic in France (Nomadic Belfast, 1998)



Figure 2.39. The Hull of the SS Nomadic (Unknown, 1999)

1969

SEPTEMBER  
**MOVE TO FRANCE**

*French businessman Roland Spinnewyn purchases Nomadic and tows her from Cherbourg to Conflans Sainte Honorine with the intention of transforming her into a floating restaurant*

1974

MID 1974  
**SOLD TO YVON VINCENT**

*Spinnewyn decides his dream is not practical and so the SS Nomadic is sold to entrepreneur, Yvon Vincent*

1977

EARLY 1977  
**BONJOUR FRANCE**

*Towed to Le Havre and up the River Seine to Paris to serve as a static function venue.*

JUNE 26  
**FROM FERRY TO EVENT HALL**

*The Nomadic was fitted with an auditorium and a dance floor.*

1977 - 1999  
**NEXT TO THE EIFFEL TOWER**

*She plays host to many events and concerts over the following 22 years. Her internal layout is changed to suit each new venture*

1999

MARCH  
**A SAFETY HAZARD**

*Closed due to health and safety regulations requiring annual inspections of her hull in dry docks*

APRIL  
**FINANCIAL IMPLICATIONS**

*The current owner is in financial difficulties and can no longer afford necessary upkeep*

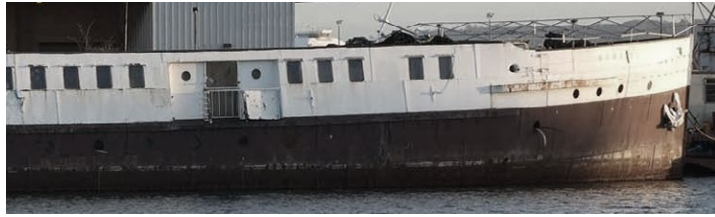


Figure 2.40. An Abandoned SS Nomadic (Unknown, 2002)

2002

LATE 2002  
**SIEZED BY AUTHORITIES**

*The Nomadic was seized by the Local Paris harbour authorities who removed some of her superstructure, in order to pass under bridges*



Figure 2.41. Repatriation of SS Normadic to Belfast (French Titanic Society, 2005)

2003

APRIL 1  
**DOWN THE RIVER SHE GOES**

*Nomadic is towed out of Paris and down the River Seine to Le Havre. On the way, her engines were removed*



Figure 2.42. Nomadic Arriving at H&W's Ship Repair Dock (Neill, 2006)

2006

JANUARY 26  
**GOING BACK HOME**

*Sold at auction to Northern Ireland and she was subsequently transported back to Belfast*

JULY 12  
**RESTORING HER TO ORIGINAL GLORY**

*Over 95 years after leaving Belfast, she finally returns home and plans for her restoration begin*



Figure 2.43. Restoration of the SS Nomadic's Hull (Wilson, 2011)

2009

AUGUST  
**DOCKED AT HAMILTON**

*Nomadic was moved to Hamilton Graving Dock, on Queen's Road, Belfast, right next to the Titanic Museum. Restoration begins shortly thereafter*

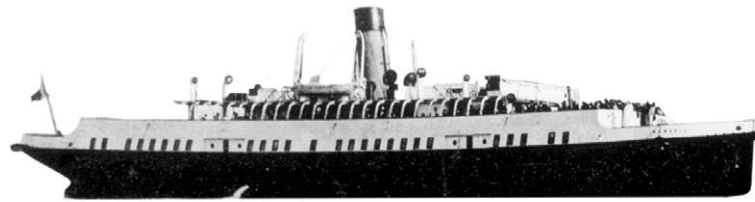


Figure 2.44. The Renovated SS Nomadic (NPS, 2012)

2012

NOVEMBER  
**RESTORATION COMPLETE**

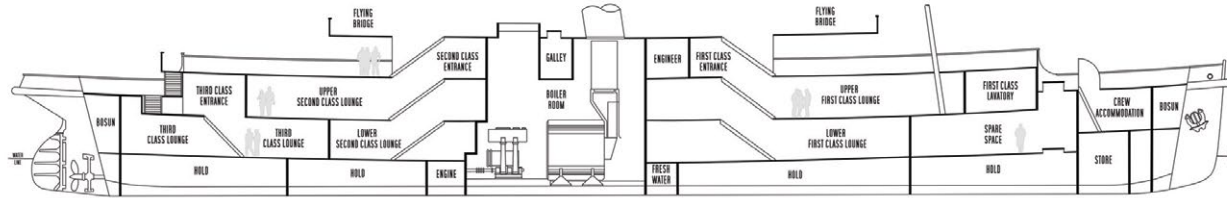
*The final phase of full restoration works to the SS Nomadic was completed with the hull being completely restored*



CLIENT  
white star line fleet

FUNCTION  
tender passenger liner

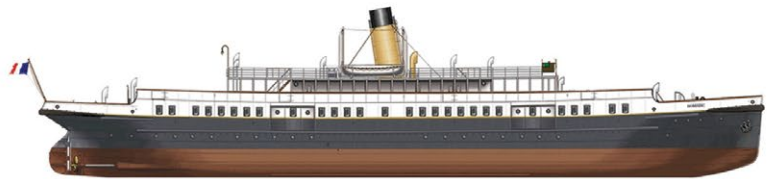
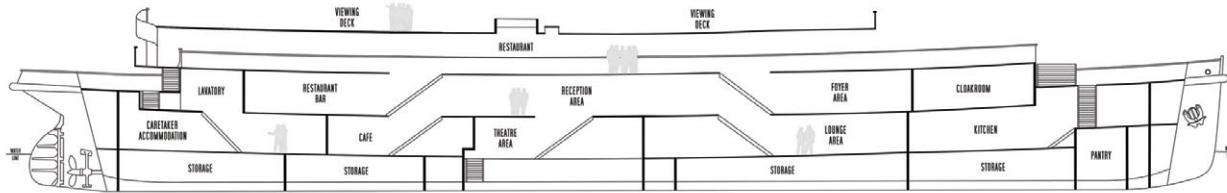
AS-BUILT  
1910



CLIENT  
yvon vincent

FUNCTION  
restaurant function venue

CONVERTED  
1974



CLIENT  
nomadic preservation society

FUNCTION  
naval spectacle

RESTORED  
2012



- LAYOUT & DECK TYPOLOGIES -

Over the past century, the occupation of the SS Nomadic was **adjusted in order to accommodate** the necessities of the relevant owners. With specific reference to figure 2.45, the vessel was initially designed to **cater as a tender boat**. The open plan layout of all decks rendered this vessel ideal for spatial intervention on an internal scale. Upon decommissioning, **all machinery and engines were removed**, permitting the vessel to be converted into a **docked restaurant and later auditorium**. The third and current configuration of the SS Nomadic necessitated the **complete restoration** of the ship to its original state. Bequeathing the **original boiler room completely vacant**, which extended from bridge deck to lower deck, a vast **double volume area** was generated. This **completed renovation and vacant spaces** allows for promising intervention to occur on land.

Figure. 2.45. Nomadic's Deck Configurations Throughout the Years (Author, 2016)



Figure 2.46. Cutty Sark Museum at Night (Grimshaw, 2012)



## PROJECT SYNOPSIS

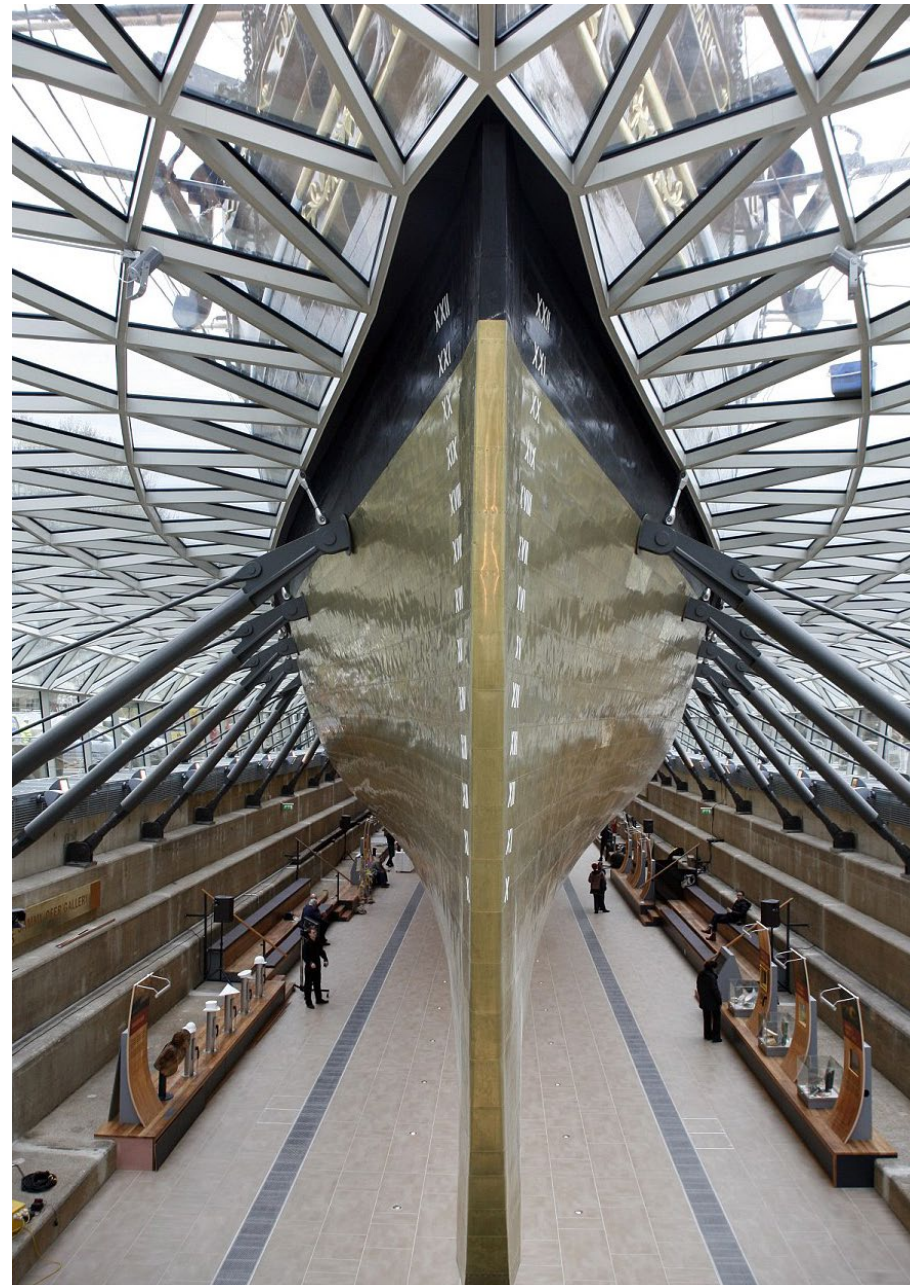
As the last surviving Tea Clipper Sailing Ship, the existence of the Cutty Sark portrays perceptible confirmation of the vast history associated with England's sea trade. After **careful restoration through a combination of electrolysis and mechanical cleaning**, the ship was **moored within a desolated dry-dock**. Cradling the historically significant and preserved hull, the addition of a **supporting structure** was embedded into the dock that allowed elevation. Furthermore, the addition of a **glass canopy** provides an **enclosed berthing interior**, which is used for conference and exhibition events (Grimshaw, 2012).

## PROJECT OBJECTIVES

- Allow for the design of a structure that **preserves a historically significant artifact** which still sanctions complete **visual accessibility**.
- Restore the current nature of the Cutty Sark to its **original condition** through immense **interior and exterior renovation**.
- Create a prominent tourism destination that will **activate the surrounding harbor**.

## IMPLEMENTATION STRATEGIES

- As the **most vital precedent investigation**, the envisioned spatial intervention will follow a **similar construct** in terms of **ship positioning and cradling**, as structural engineering knowledge is limited.
- Introduce approachability through the **implementation of accessibility** in, around and under the ship. Similarly to the Cutty Sark, the SS Nomadic has been **completely restored to its original condition** - thus not requiring renovation.
- Use general design approaches as reference.



NAME OF PROJECT  
CUTTY SARK MUSEUM

LOCATION OF PROJECT  
LONDON, UNITED KINGDOM

CHIEF ARCHITECT  
GRIMSHAW ARCHITECTS

DATE OF COMPLETION  
2012



theory



materiality



design



programme

Figure 2.47. Cutty Sark Structure (Grimshaw, 2012)

## 2.3

### PRAGMATIC RESPONSE

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Founded on the concluded context analysis, the highly saturated market restricts and dictates the envisioned programme which will act as activator within the identified host and habitant. Furthermore, prior investigation concluded that a museum as only response would not be sufficient, as most repurposed ships are subjected to these conditions with limited and lackluster outcomes. As a growing form of commerce, the craft beer industry has shown a recent increase in **demand amongst South African cultures**. Surprisingly, **no local brewing facility or beerhouse is evident within the Waterfront precinct**, other than an international franchise (Den Anker) - thus proposing to **convert the SS Nomadic partially into a native brewery**. Not only will the production of saltwater beer be the first of its kind on native soil through the utilisation of abundant resources seeking to promote Cape Town's green culture, but also provide a literal example to the actual process of beverage 'corrosion' in the form of fermentation. Given that the actual size of Robinson dock permits additional activity, the supplementary addition of a craft market was deemed appropriate in order to ensure continuous and recurring activity.

The following segments will briefly outline the process of beer making, along with reverse osmosis, which will provide **potable saltwater for brewing purposes**. Though not architecturally relevant,

the complete comprehension of these processes will act as design informant in chapters to follow.

Created by accident some thousand years ago, beer formed a strong bond with human society. Despite technological advancement, which parts ancient brewing techniques from today's **high-tech breweries, the practice in its traditional sort persists entirely unaltered**. Though primitive beers were derived from dough and cereals, this fermented beverage produced by dynasties that were completely unaware of the biochemical steps involved in the process (Pires & Branyik, 2015:2). From the raw material production and fermentation to the conditioning once kegged, **brewing beer encompasses microbial activity at every phase**. As regulated under the Reinheitsgebot, beer holds one of the oldest acts in the history of food regulation. As stipulated thereunder, the ingredients associated with the production of this alcoholic brew are limited to three primary ingredients; barley, water, and hops, with distinct variations thereof, conditional to the style desired. (Bokulich & Bamforth, 2013:157). These styles are categorised under a conspicuous taxonomy of beer styles (as illustrated in figure 2.48), each imperiled by a fairly analogous brewing process, only differing in ingredients, boiling temperatures and fermentation periods.

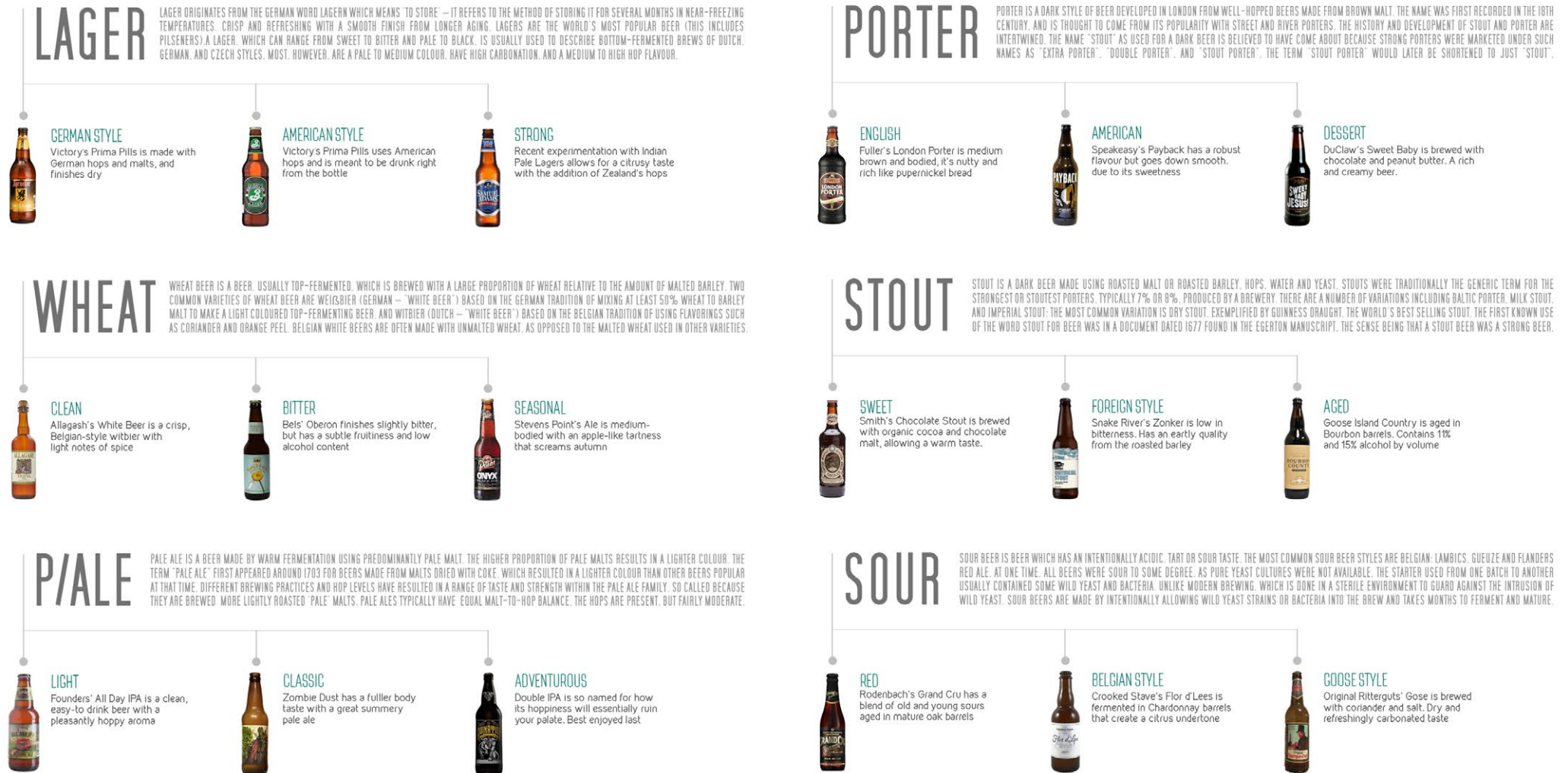


Figure 2.48. Figure. 2.23. Taxonomy of Beer (Author, 2016)



Figure 2.49. Er Boquerón Advertisement (Boqueron, 2015)

## APPEARANCE

Cloudy gold-orange. Bright white head. It teems with life as the fine-bubbled and seemingly natural carbonation lifts chunks and specks of yeast up into the glass and then releases them to drop and re-join the procession. Oddly, it has a limited head retention and next to no lacing.

## AROMA

Salt and the pulp of previously squeezed citrus fruits including lemon and grapefruit.

## FLAVOUR

The saltiness hits you, but not heavily, just slightly before the softly sweet malt and fruitiness. In the first few sips that could be either off-putting or enticing, depending on your own palate. There's a very mild tartness to it - ever so slight - which could be coming just from the yeast; and a clean salinity. A very mild bitterness helps to balance it, and it's a rather nice progression with salt followed by lemon, golden malty sweetness, and then more salt and a ghost of lemon in the lingering finish.

## MOUTHFEEL

Medium bodied on the light side, effervescent and crisp.

## OVERALL

Ahhh Barcelona. What a better summation of its aromas than this? The sea, the fruit, the underlying funkiness... 'tis Barcelona in a glass.



NAME OF PROJECT  
ER BOQUERON SALTWATER BEER

STYLE  
GOLDEN ALE

MANUFACTURERS  
XATIVA VALENCIA

FIRST BATCH  
2015



theory



materiality



design



programme

Figure 2.50. Er Boqueron Beer (Boqueron, 2015)

## BREWING PROCESS

Steps in the brewing process include malting, milling, mashing, lautering, boiling, fermenting, conditioning, filtering and packaging. As illustrated in figure 2.51, this process may vary - all depending on the desired fermented beverage wished to be brewed. For the

purpose of this study, the brewing method used for the production of a **pale ale** will be outlined. The **simple replacement of traditional fresh water** used during the lautering process with **potable saltwater**, can result into the creation of **salt pale ale beer**.

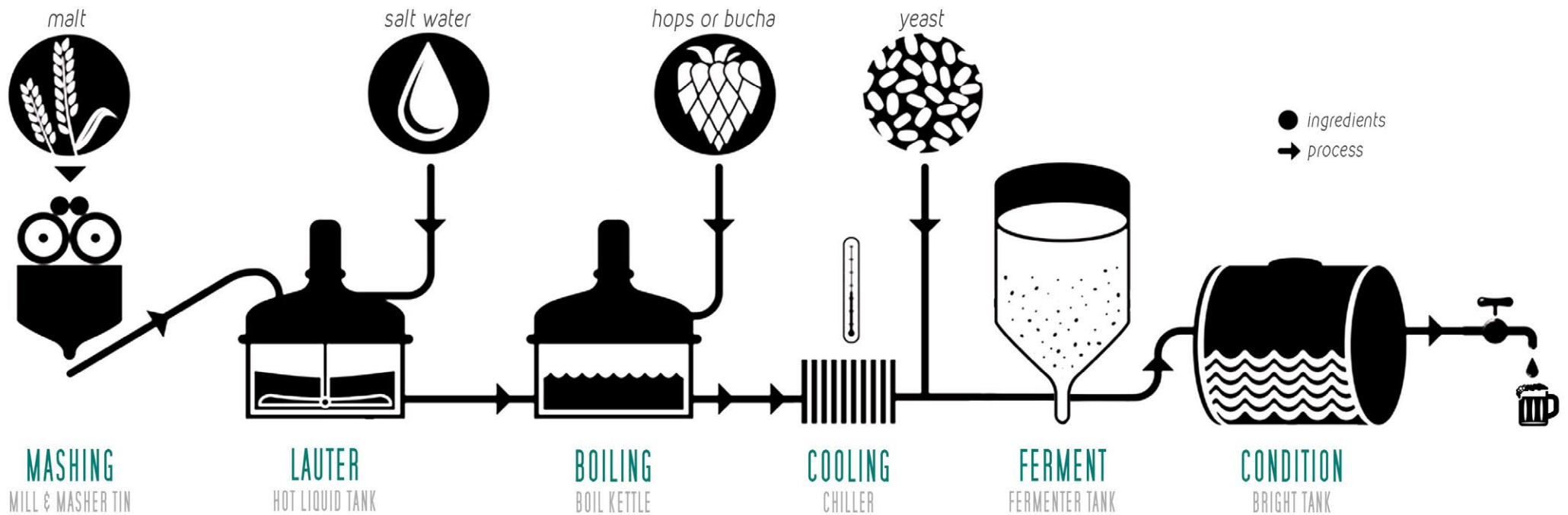
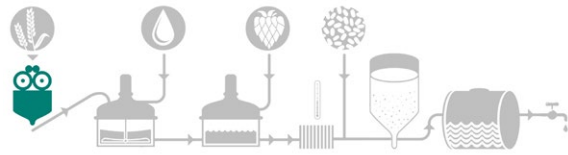


Figure 2.51. Pale Ale Brewing Process Overview (Author, 2016)



**EQUIPMENT**  
MILL & MASH TUN

**DURATION**  
2 HOURS

**TEMPERATURE**  
HOT WATER

### - MASHING & MILLING -

After careful selection of the appropriate malt, which dictates colour and flavour, the malt is coarsely crushed or milled in order to expose its starchy core, all the while keeping all husks whole. These unabridged particles will act as supplementary filtering later in the process. The crushed malt, now referred to as grist, is combined with purified water which is heated and controlled in order to allow the grist's natural malt enzymes to break the starch into sugar.

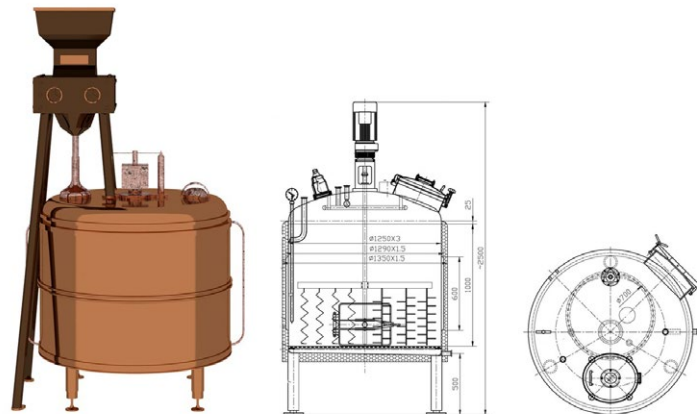
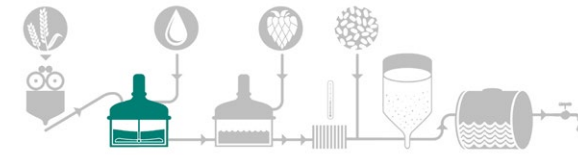


Figure 2.52. Mashing and Milling Equipment Overview (Author, 2016)



**EQUIPMENT**  
HOT LIQUOR TANK

**DURATION**  
1.5 HOURS

**TEMPERATURE**  
200 C

### - LAUTERING -

Once the malt is mashed, the grist is transferred to a straining or lautering vessel (figure 2.53) where liquid is separated from the husks. Hot water is continuously sparged or sprayed on top of the grains in order to rinse out as much of the wort (previously created sugary extract) as possible. Afterwards, the spent grain and leftover malt and extraction is collected for cattle feed and/or compost.

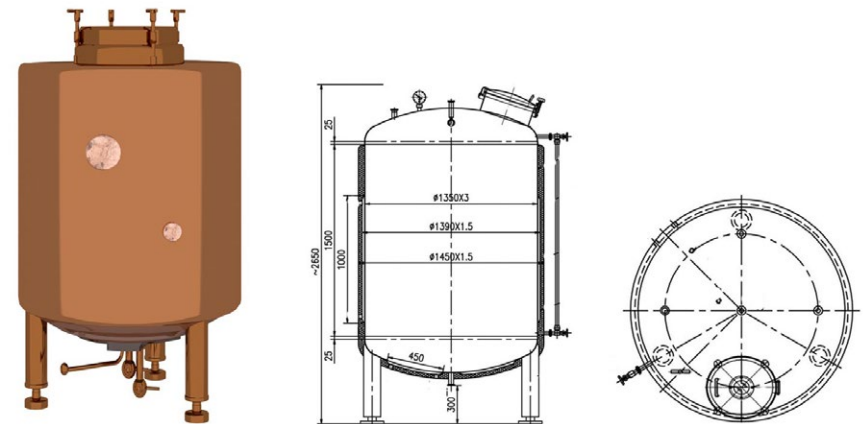
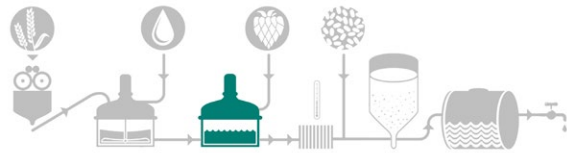


Figure 2.53. Lautering Equipment Overview (Author, 2016)



**EQUIPMENT**  
BOIL KETTLE

**DURATION**  
2 HOURS

**TEMPERATURE**  
200 C

- BOILING -

The extracted wort is collected in a stainless steel or copper kettle and boiled (figure 2.54). During the boiling process, a variation of hops is added in order to provide different multiplicities of aroma, bitterness, flavour and colour to the final product. In addition to actual taste and appearance, these pinecone-shaped female flowers act as a natural preservative in the beer. Moreover, other additives, such as tea extracts, can also be added during this process in order to enhance flavour.

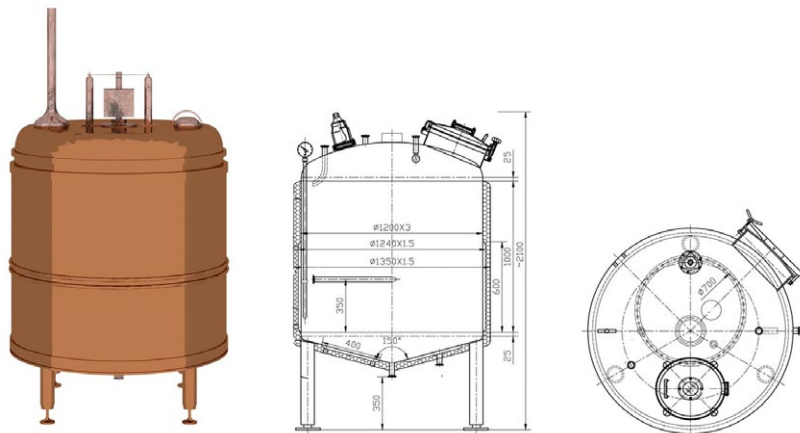
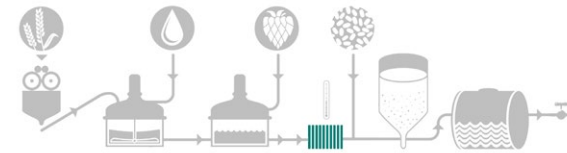


Figure 2.54. Boiling Equipment Overview (Author, 2016)



**EQUIPMENT**  
CHILLER

**DURATION**  
30 MINUTES

**TEMPERATURE**  
ROOM TEMPERATURE

- COOLING -

After the wort has been boiled and infused with the aromatic flavour of the hops, it proceeds to another vessel (figure 2.55) where the hops are then removed and the wort is clarified. The clear, hopped wort liquid is then cooled to room temperature or lowered in preparation for yeast addition. This particular step in the brewing process is only required when creating pale ale beer.

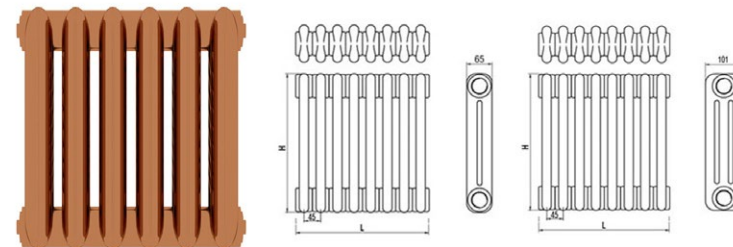


Figure 2.55. Cooling Equipment Overview (Author, 2016)





**EQUIPMENT**  
FERMENTER TANK

**DURATION**  
7 DAYS

**TEMPERATURE**  
ABOVE 20 C

- FERMENTATION -

Once cooled, yeast is added to the wort liquid in order to ferment the sugar into carbon-dioxide and ultimately alcohol. Different yeast availability ensures a variety of subtle flavour enhancements and craft personalisation. Pale Ale is fermented for seven days, after which all yeast extracts are removed. After this stage of its production, the liquid is now referred to as beer.

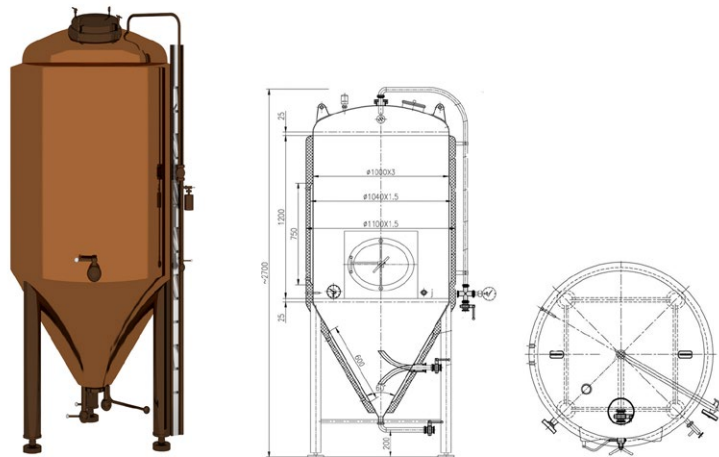
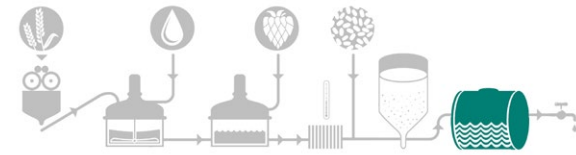


Figure 2.56. Fermentation Equipment Overview (Author, 2016)



**EQUIPMENT**  
BRIGHT TANK

**DURATION**  
1-3 WEEKS

**TEMPERATURE**  
BELOW ROOM TEMP

- CONDITION -

The final stage in production is reserved for the process of conditioning where the young beer is stored and cooled for 1 to 3 weeks in order to develop body and achieve clarity. Additional filtering may be required thereafter, depending on the yeast used during fermentation. Once conditioned, the beer can be directly tapped from the bright tank (figure 2.57) or bottled if not consumed directly on site.

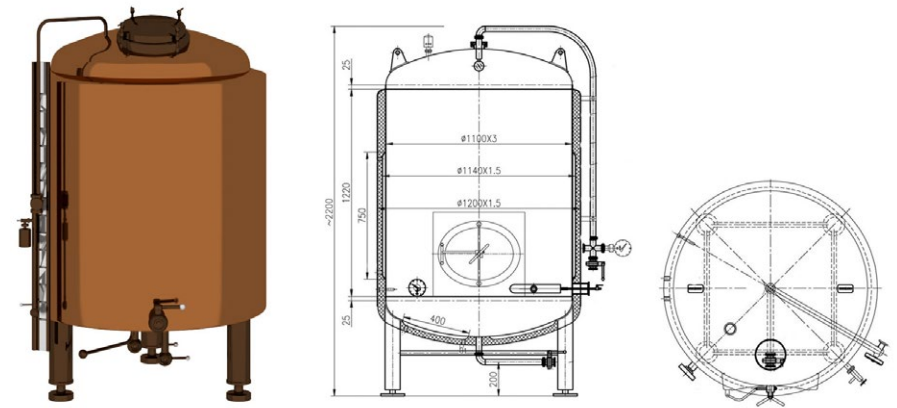


Figure 2.57. Condition Equipment Overview (Author, 2016)

## REVERSE OSMOSIS

Sea water can be economically and reliably converted into **potable water** through a process known as **seawater reverse osmosis**. Osmosis is a **naturally occurring process** where a solvent, such as water, passes through a semi-permeable barrier. This semi-permeable barrier, or a membrane, allows selective articles to pass through it, whilst restricting others. In nature, the direction of flow through the membrane is from a **less concentrated solution**, such as fresh water, to a **more concentrated solution**, such as seawater, until equilibrium is reached. **Reverse osmosis is when the opposite occurs**. By pressurising the concentrated seawater solution through the membrane to the fresh water solution (refer to figure 2.58).

The process starts (refer to figure 2.59) by extracting water from the ocean using wells located on the shoreline or by using an intake structure located in the open ocean. To protect the reverse osmosis membranes from becoming clogged by solid particles that can be suspended in the seawater, the water is filtered before passing through the membranes. This is accomplished by using multi-media filters which are tanks or vessels containing a series of layered granular materials. These materials can be zeolite, granite, sand, pebbles and/or gravel which are assembled in layers. The filters remove sand, twigs, seaweed and other particles from the seawater. In some instances, other type of membranes known as ultrafiltration and microfiltration membranes are used instead of multi-media filters to pretreat the seawater. Afterward, the filtered seawater travels to the cartridge filters which acts as a second stage of filtration. Cartridge filters used for seawater reverse osmosis, are typically made from a yarn-like synthetic material that is wound into cartridges. These remove even smaller solid particles from the seawater, such as fine sand and

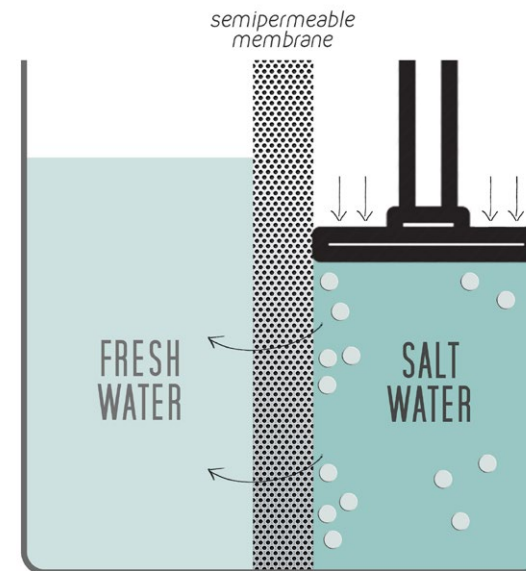


Figure 2.58. Reverse Osmosis Simplified (Author, 2016)

clay, before the water proceeds to the reverse osmosis membranes. High pressure pumps increase the pressure of the seawater up to 1000 psi. The pressure needs to be sufficiently high to overcome the naturally occurring osmotic pressure and force water from the saltwater side through the reverse osmosis membranes to the fresh water side. The salt particles in the seawater are rejected from passing through the membrane into the fresh water side and remain behind in the concentrated saltwater side.

The reverse osmosis membrane can be thought of as a number of sealed envelopes, connected at the open ends of a tube. There are spacers between each envelope which allow water to flow across the membranes. The membrane's envelopes and spacers are then wound around a tube like a roll of paper towels. The reverse osmosis membranes are then

enclosed in a fiberglass shell. The membranes are connected end to end, usually six to seven membranes together, and housed in vessels that are built to withstand pressures up to 1200 psi. As the pressurised seawater enters the pressured vessel, and flows across the membranes surface, the water molecules are forced into and through the membrane's envelope, leaving the salt molecules behind. The desalted water passes through the membrane and emerges at low pressure where it is collected in a tube and directed to one end of the pressured vessel. The concentrated salt stream that is rejected from flowing through the membrane continues to pass across the membrane's surface where it is collected separately. The concentrated salt stream is piped into an energy recovery device where up to 98% of the energy of the concentrated salt stream is transferred to an equal volume of the incoming seawater in an isobaric energy recovery

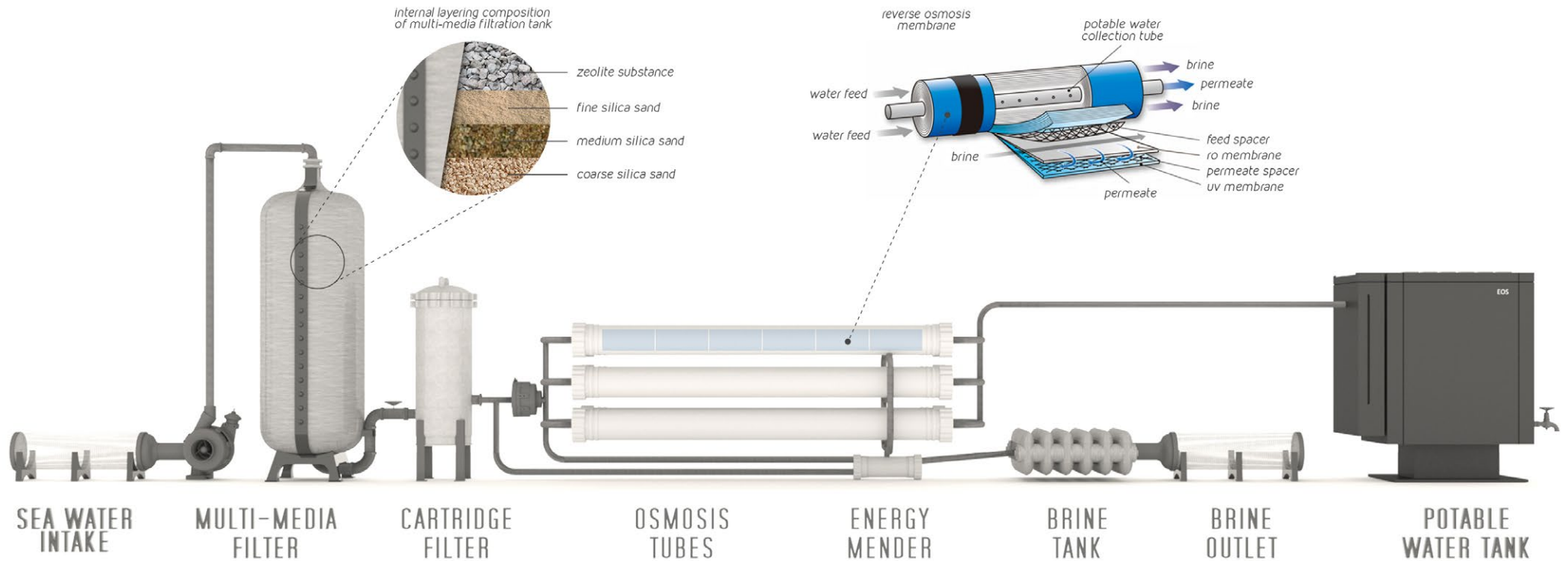


Figure 2.59. Reverse Osmosis Process (Author, 2016)

## 2.4

# TARGET MARKET & BRANDING

device. The concentrated salt stream will have about a 60% higher salinity than the incoming seawater. This concentrated salt stream is sent back to the ocean through a brine disposal well or a device known as a brine outlet. The brine outfall is situated in an area of significant ocean flow so that the salt levels are quickly returned to equilibrium with the ocean. In a properly designed brine outfall, no noticeable increase in salinity can be detected at a distance of a few meters from the discharge.

Approximately 40% of the seawater that enters the system is converted into potable water during the reverse osmosis process. This potable water can be further treated by adding chlorine and calcium carbonate ( $\text{CaCO}_3$ ) to improve the taste and bring the pH level to the neutral range if no salty aftertaste is required. However, for the specific application of this study, this unique taste is desired which will enhance the flavour of the produced craft beer. By simply **replacing the traditional fresh water** used during the production of beer with this **potable form of saltwater**, the creation of a **salt pale ale beer will be brewed** as illustrated in figure 2.60.

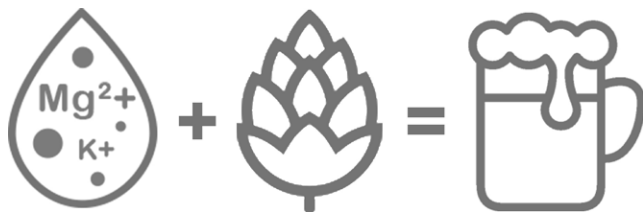


Figure 2.60. Simplified Saltwater Beer Brewing Process (Author, 2016)

Seen as a unified purpose which embodies a range of ideas and experiences, a brand is a **universal expression** of various values, **both tangible and intangible** (Murphy, 1998:2). Before the current identity was amplified, the clear identification of all possible visitors pertaining to a definite target market was to be determined.

As indicated by the Hospitality Outlook of 2014 - 2018, the Victoria and Albert Waterfront currently accounts for **both local and international clientele**. Aside from being a popular destination amongst residing **Capetonians, national and international tourists** are drawn to all variations of activities located within the Waterfront precinct. Furthermore, with the **recent addition of infrastructure and shore excursions**, cruise lines expanded their markets onto South African shores. As **major cruise lines now travel to South Africa** as a port of call on long trips, the addition of immediate tourism is increased. This notion is certified through recent statistics which indicated a growth of 0.72% in South Africa's share of global cruise visitation (PwC, 2014:64).

Given the abovementioned, the outline of **two distinct groups of trade** were established, each categorised by their locality and pertinent activities of visiting interest, followed by the appropriate **rebranding of both the host and habitant** (figure 2.62 - 2.65)



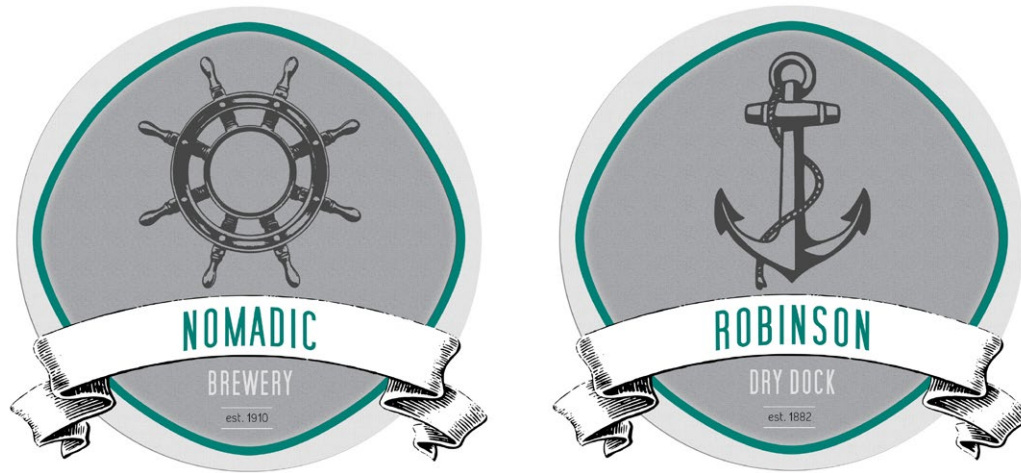


Figure 2.62. Revision 1 of Branding Design (Author, 2016)

- REVISION 1 -

The initial design called for a **simplistic branding** solution that would place emphasis on both the **historic and unique nature** of the intervention. By **contrasting** the inner seird shape with the outer circular shape, the **nature of placing the unknown** (ship & dock) with the known (on land) is accentuated. The overall combination of different stylistic elements and solid colour fill overcomplicated the envisioned notion, permitting the refinement of the logo in a second iteration.

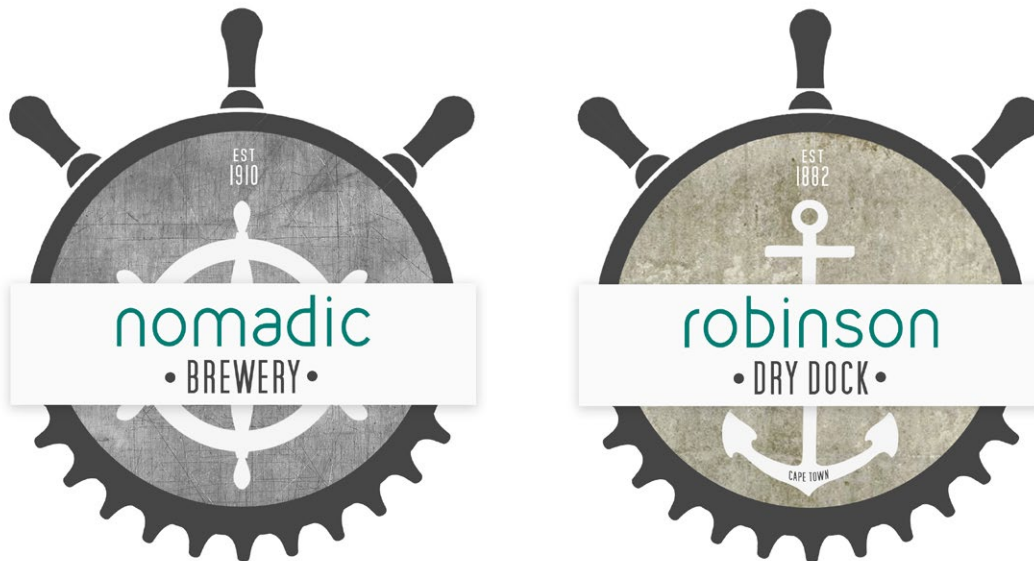


Figure 2.63. Revision 2 of Branding Design (Author, 2016)

- REVISION 2 -

The second iteration placed **emphasis on the idea of current materiality**. By replacing the solid colour fill with a textured image, the overall logo was unstiffened and **practicality was added**. The outer shape consisted out of a combination of a steering wheel and gear, aspiring to **highlight original use and imitate the physical migration** between ship and dock. Ultimately, the complete use of over-simplified iconography and contemporary fonts negatively contributed toward the envisioned historic theme wished to be provoked.

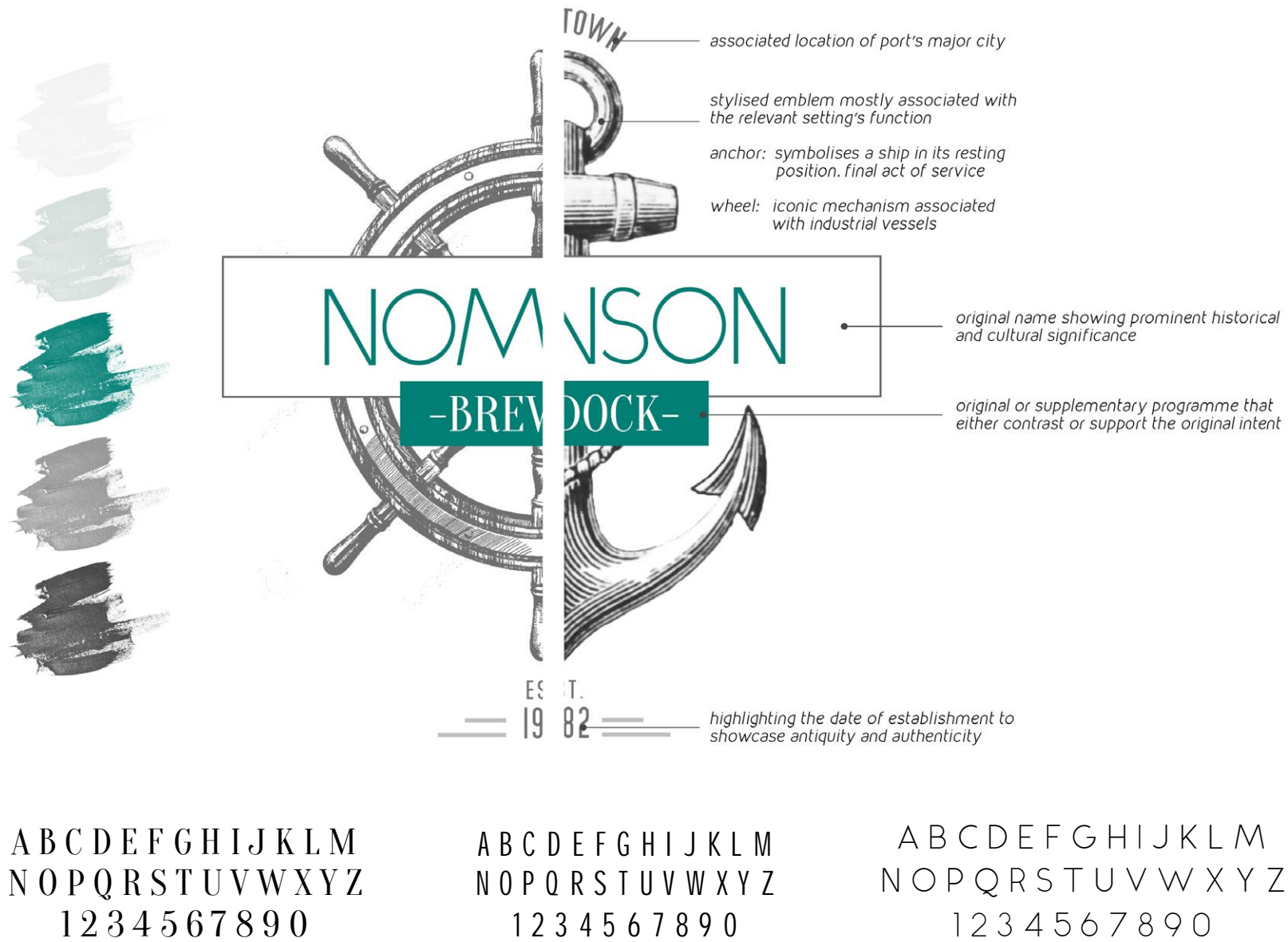


Figure 2.64. Final Identity Inspiration Palette (Author, 2016)

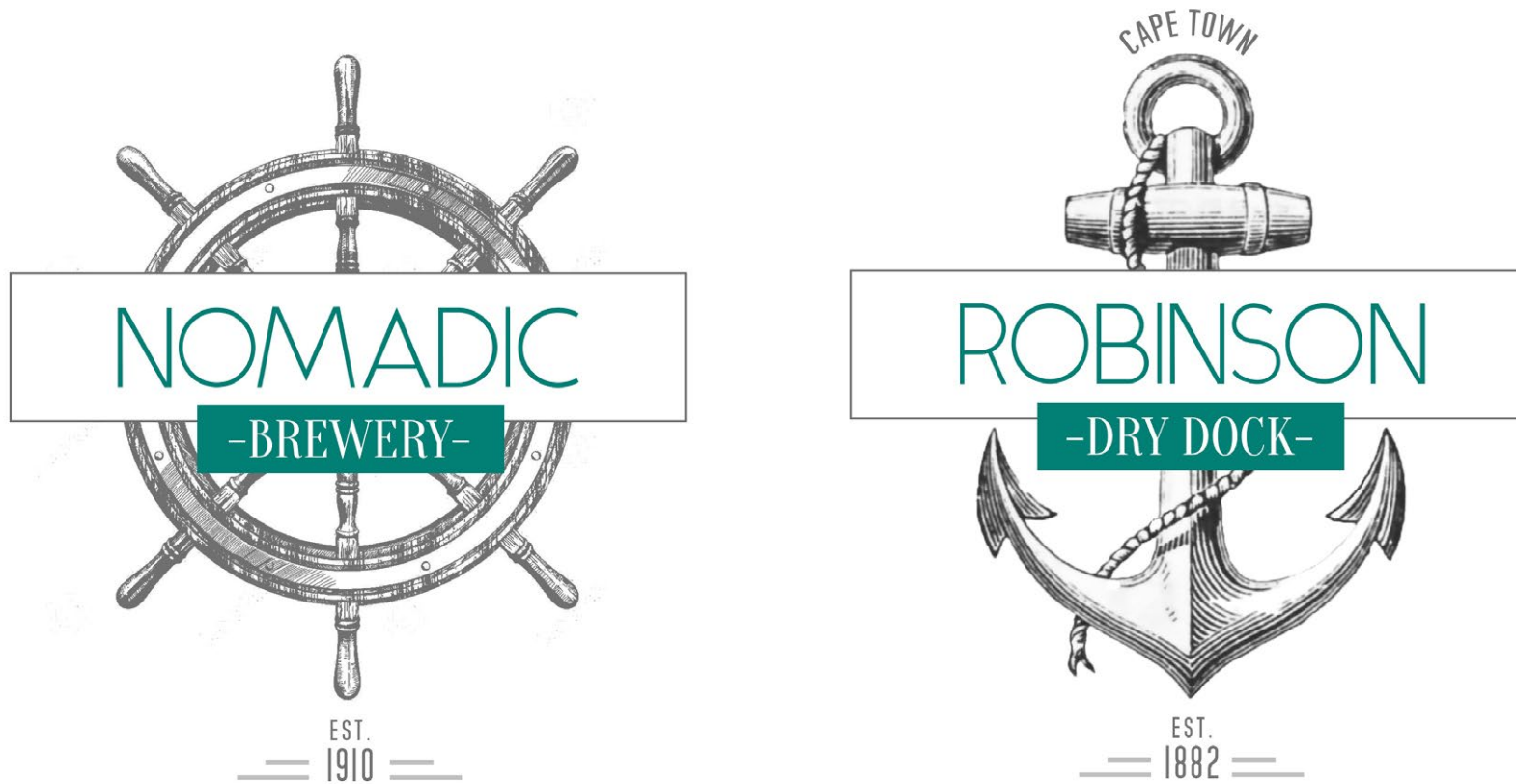


Figure 2.65. Final Revision of Branding Design (Author, 2016)



Figure 2.66. Home Brewing Ingredients (Unknown, 2015)



## 2.5

# BREWING EXPERIMENTATION

As an extension of the rebranding strategy, the **experimentation of actual home brewing proved beneficial**. As opposed to actual micro-brewing that will occur onboard on a larger scale, which requires aforementioned resources, the utilisation of a home brewing kit was employed in order to experiment with **fermentation on a smaller scale** (figure 2.69 - 2.74). As opposed to boiling with fresh water, artificial salt water was used, which was formulated under similar specifications to actual reverse osmosis. Using a contrived malt mixture, the addition of speciality hops and flavouring occurred as trialing. As a way of masking the apparent salinity, the addition of fynbos and buchu extract, both home-grown in Cape Town, was added. This coveted to emphasise the innovative crafting strategy of locality association. As per the manufacturing of a pale ale beer, the wort is fermented for one week in a controlled environment. Thereafter, bottling occurs, which permits conditioning for up to three weeks, before being ready for consumption. Replicating this form of self-experimentation certified an in-depth understanding of the brewing process, which will prove fundamental when designing the **interior layout of the brewery onboard the SS Nomadic**.

In addition to home brewing, the bottled beer permitted opportunity for the application of branding (refer to figure 2.68). Nowadays the availability of a wide array of bottle varieties permits the consideration of **functionality**. The selection of a **full body bottle**, with a **tapered bottleneck and broad shoulder** governs **ease of grip and a comfortable fill** (figure 2.67) . Though kegged in a bottle for trialing purposes, the actual brewery will **limit the consumption of glass bottles** through the employment of a 'beer tap-to-mug' approach. This forms a continuation with the previously established identity of the pragmatic response which **encourages environmental potential**.



Figure 2.67. Bottle Shape Selection (Aurthor, 2016)



Figure 2.68. Saltwater Beer Bottle Branding (Aurthor, 2016)



Figure 2.6. Gathering the Ingredients (Author, 2016)



Figure 2.70. Boiling the Hops (Author, 2016)



Figure 2.71. Straining the Wort (Author, 2016)

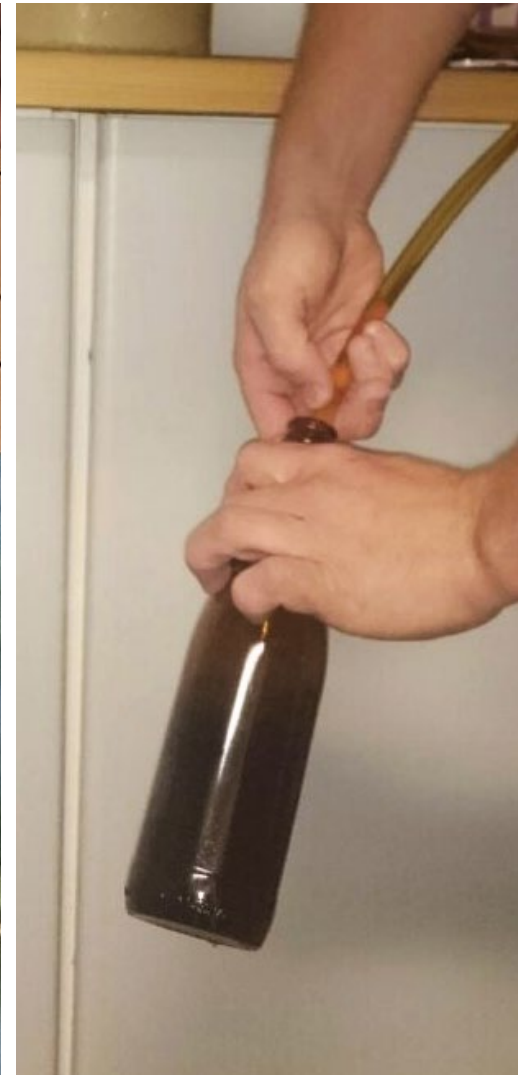


Figure 2.72. Bottling the Bucha Beer (Author, 2016)



Figure 2.73. Bottling the Saltwater Beer (Author, 2016)



Figure 2.74. Capping the Bottles (Author, 2016)

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In conclusion, this chapter introduced the host in the form of Robinson Dry Dock as locality, and the SS Nomadic as habitant. These identified artifacts consent the actual implementation of the projected design intercession which purposes to substantiate all ensuing theories. Aside from actual historic investigation, the **technical analysis of both the host and habitant was executed** in order to provide a structural understanding which highlighted possible opportunities for design. In addition to the aforesaid, the investigation of Robinson Dock's contiguous context was imperative in order to award feasibility and outline recreational significance. Furthermore, the pragmatic establishment of a brewery and craft market within a decidedly inundated environment goals to act as spatial activator which will ensure habitual trade.

Over and above the preparatory analysis, relevant precedent investigations were introduced in order to provide fundamental substance and announce the possibilities of similar spatial interventions. Along with probable **design scrutiny, the process and experimentation of brewing and reverse osmosis** was conversed in order to dictate conceivable design policies in chapters to follow.

Having been introduced to the host, habitant and programme of the proposed mediation, the investigation and enactment of all pertinent theories will ensue in chapters to come.