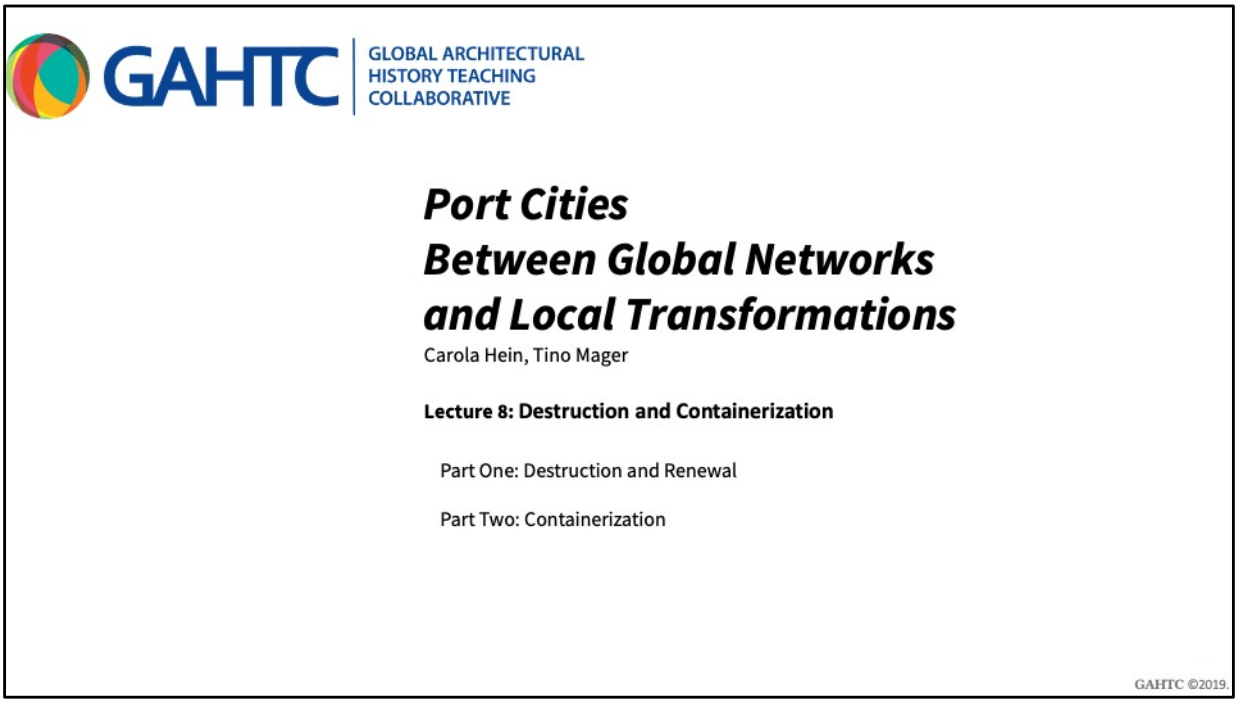
Welcome to Lecture 8 of Port Cities between global networks and local transformations. My name is Carola Hein. In this lecture, I will explore examples of destruction, rebuilding and containerization as they have affected port cities

Image source:
https://commons.wikimedia.org/wiki/File:Seagirt_Marine_Terminal,_Baltimore.jpg

Lecture Abstract:
The two world wars have had a major impact on ports and port cities. As sites of global flows and hubs of military interests, port cities have experienced extensive destruction in wars. They have also been key in reconstruction efforts and have been the focus of planning initiatives. Extensive rebuilding of port cities demonstrates the resilience of these cities. World War II rebuilding was followed shortly thereafter by containerization in the 1960s, changing ports, cities, their architecture and infrastructure extensively. Formerly lively sailor districts were soon abandoned and port related housing districts disappeared. Enormous warehouse districts stood empty waiting for new uses. The changes reached far into the hinterland of the cities. Throughput and infrastructure construction led to regional extension and new typologies such as logistics centers emerged.

Image source:
https://commons.wikimedia.org/wiki/File:Seagirt_Marine_Terminal,_Baltimore.jpg



The lecture first explores destruction and renewal before examining the impact of containerization on port cities in the 20th century.

Traditionally, the ports, some of which had grown over centuries, were inseparable parts of their cities. Water connected port and city in many ways: spatially, economically and culturally. The port areas were by no means clearly defined units within urban settlement areas. They extended in part through many urban areas and sometimes even deep into the urban area via rivers and canals. The large number of smaller boats carrying goods into urban areas gave a lively impression and connected many people with the water and the transport taking place on it.

Image source:
https://upload.wikimedia.org/wikipedia/commons/6/68/Oude_Haven_en_Maasbruggen_1939.jpg

Destruction

Hamburg (1883) Public Domain

Various types of houses and street layouts have established themselves in the port cities. Buildings combined different functions. They served as warehouses, office spaces and housing. The houses are fitted with winches and openings for loading goods. On the streets, smaller cranes, allowed to load and unload ships. The picture shows a situation in Hamburg at the end of the 19th century. Smaller boats transport goods packed in barrels and bags over canals through the city into the port.

Image source:
https://commons.wikimedia.org/wiki/File:Hamburg.1883.Holländische_Reihe.Vdz-16-300dpi.jpg

Destruction

Rotterdam WWII Bombing (1940) Public Domain

In the 20th century port cities experienced a number of changes due to political, economic and technological developments. During the Second World War many port cities suffered destruction as they served as logistics hubs, petroleum storage and refining, and military centers. During reconstruction of port and city, the emphasis was often on the rapid reestablishment of trade functions and use and not on the restoration of historical conditions.

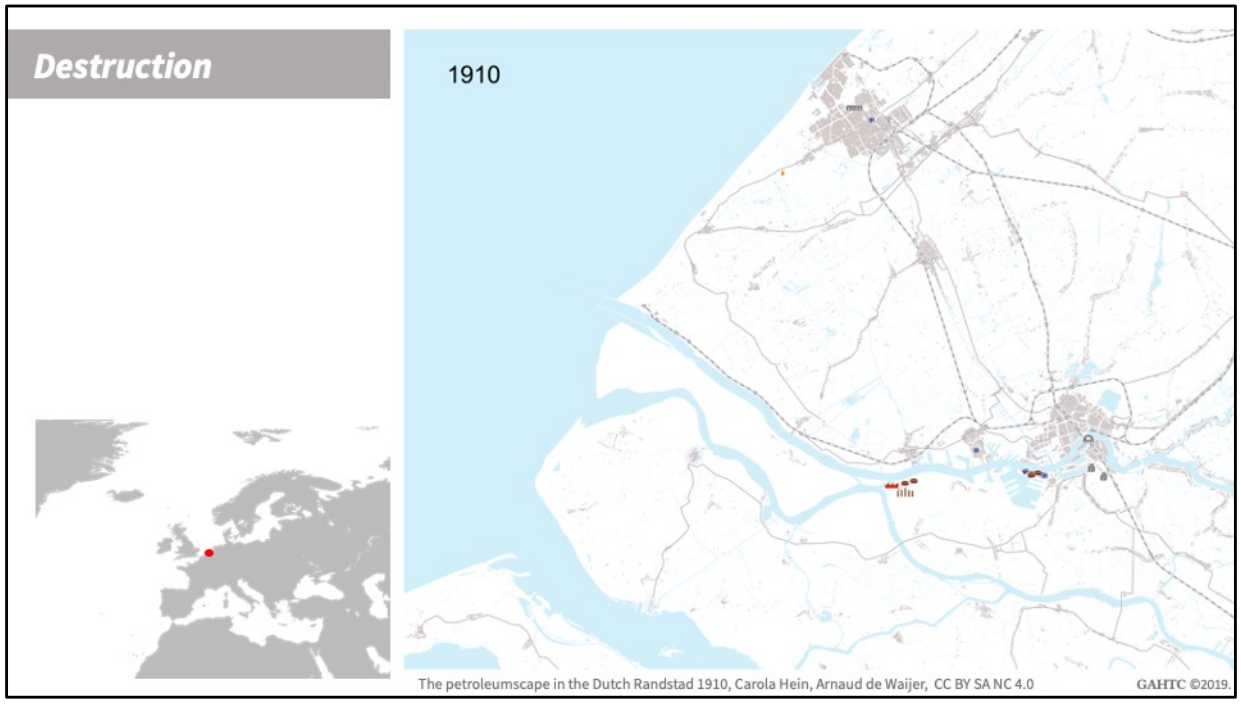
Image source:
https://upload.wikimedia.org/wikipedia/commons/9/9a/Exterieur_OVERZICHT_NA_BOMBARDEMENT_%28OORLOGSSCHADE%29_-_Rotterdam_-_20264975_-_RCE.jpg

Destruction

Construction of the Botlek Port, Rotterdam, The Netherlands (1964) CC BY 2.0

In Rotterdam, expansion and modernization were tackled after the war. On the south side of the Nieuwe Maas River a new harbour area was to be built. However, the plans were changed and adapted several times. One reason for this was that the tankers were getting bigger and bigger. While tankers of 16,000 tons were common in the Second World War, dimensions expanded rapidly after the war. When the Botlek area was built between 1954 and 1960, tankers of 65,000 tons and a draught of 12 meters were taken into account in anticipation of future developments. Once more, port structures had to consistently adapt to the growth of the ships.

Image source:
https://www.flickr.com/photos/provinciaalhistorischcentrumzuidholland/3638652634



1940

Image Source

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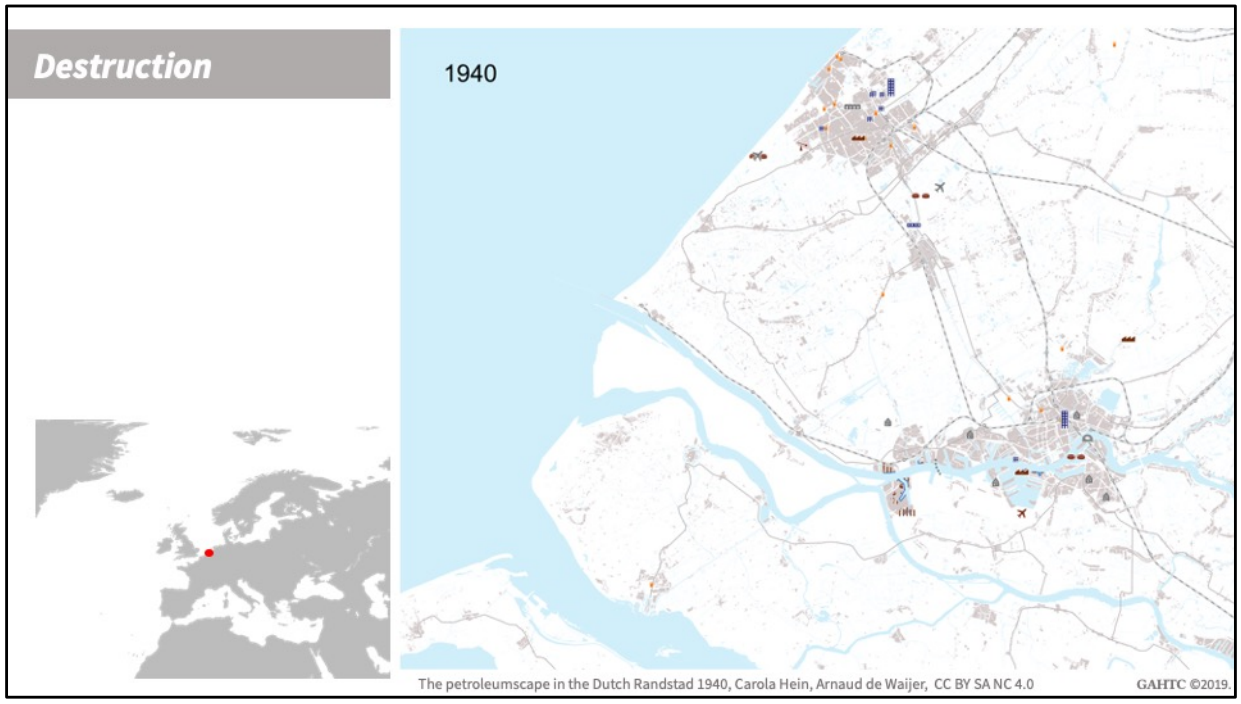

2000

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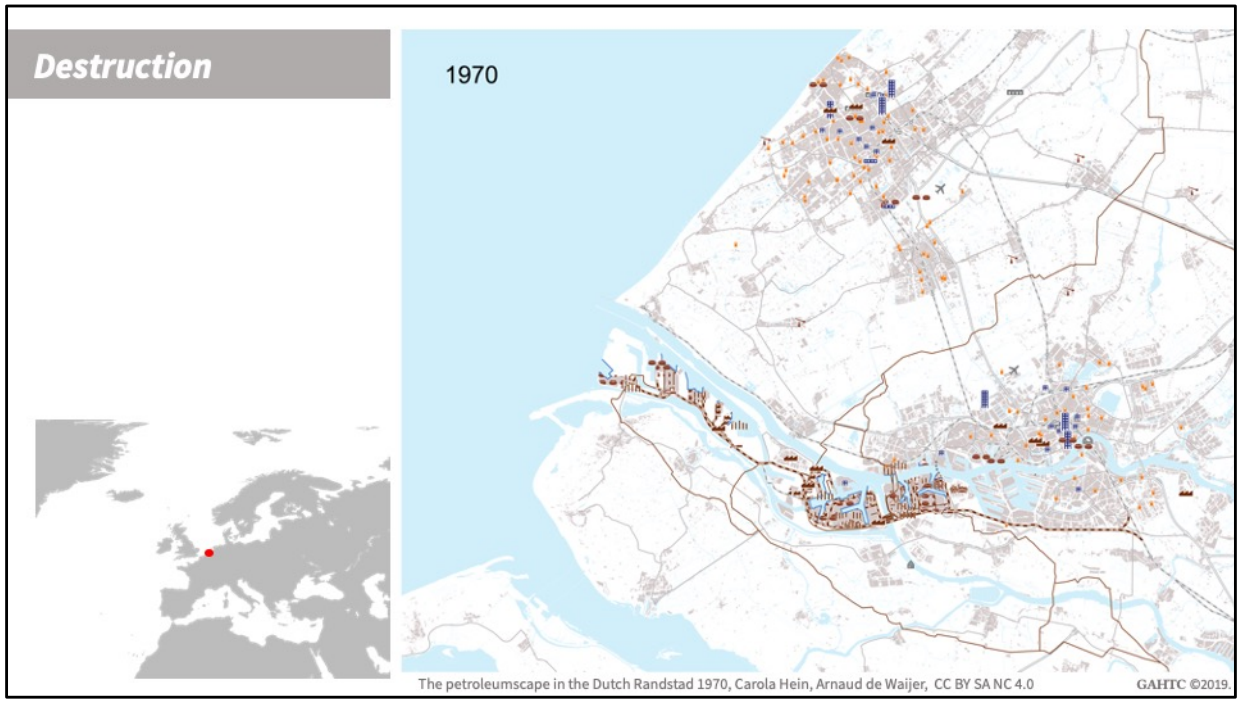

1970

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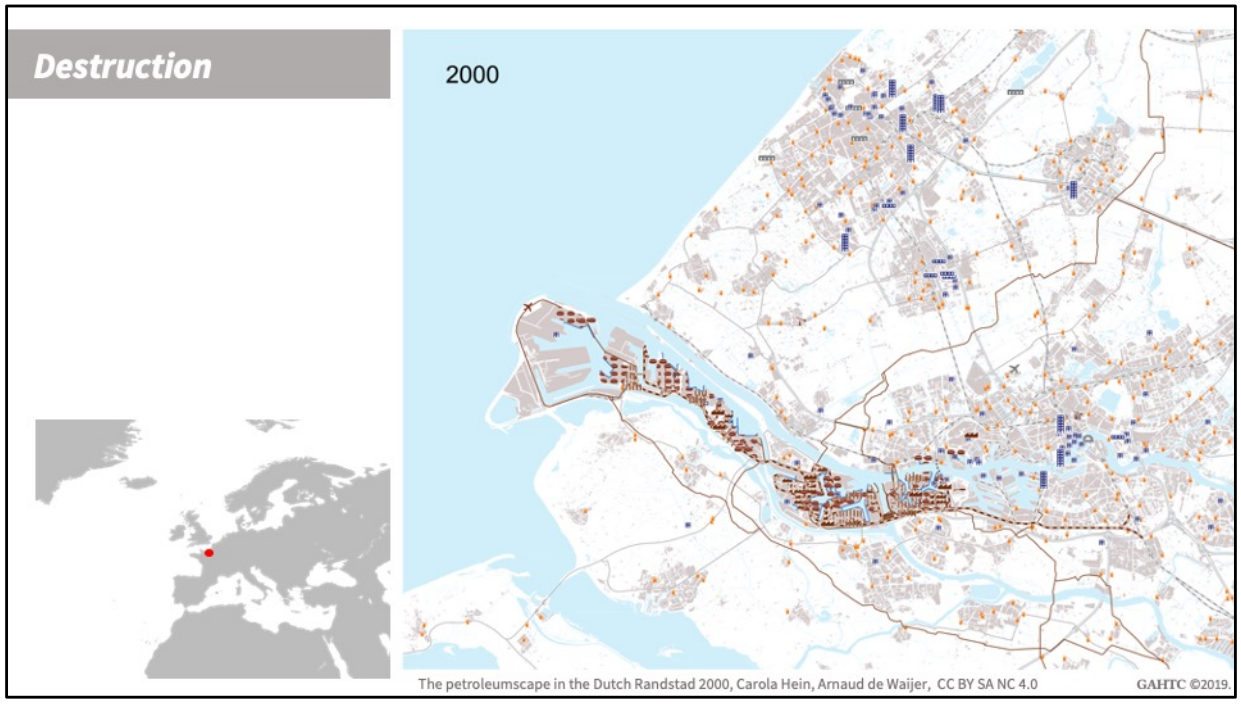


Geospatial mapping demonstrates the extent of petroleum infrastructures in the port of Rotterdam. It also illustrates the extent of petroleum's impact on urban and regional development in the area, here

Image Source

Carola Hein and Arnaud de Waijer
https://journals.sagepub.com/doi/full/10.1177/0096144217752460

Until the 1960s, large parts of the port areas retained many classic elements despite all the modernization. Warehouses and railway connections continued to dominate. The harbor basins were occupied by a large number of ships, and they were still close to the city centers. At that time, only the petroleum ports had already been relocated from the urban areas of the ports to more distant areas with better space and less proximity to residential areas. But soon everything changed.

Image source:
https://commons.wikimedia.org/wiki/File:Euromast_1960D.jpg

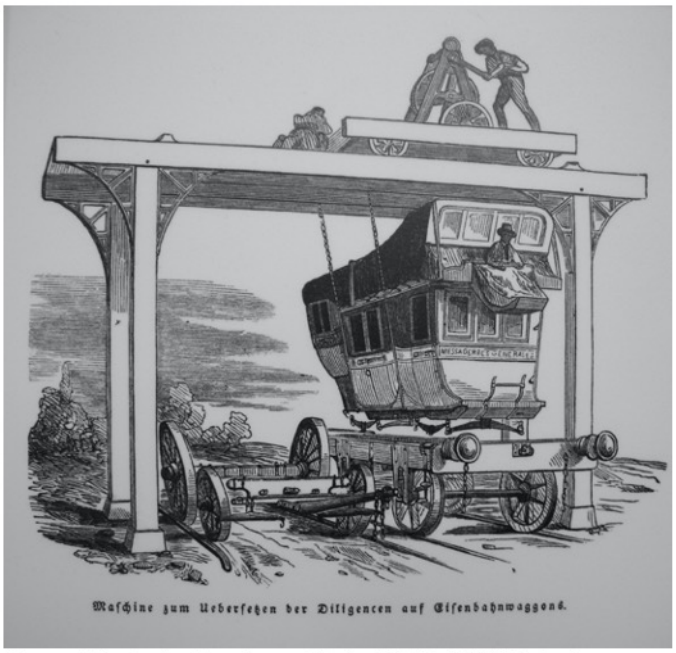
Containerization

Shipping Container (2004) KMJ, CC BY-SA 3.0

One of the most important and influential technological innovations for the transport of goods on water was the shipping container. In 1956 Malcolm McLean converted two army tankers to transport standardized containers. In April 1956, one of the ships left the Port Newark-Elizabeth Marine Terminal, New Jersey, and brought 58 containers to the Port of Houston, Texas. This was the birth of container shipping, which became standard practice in 1957 and became a global success.

Image source:
https://commons.wikimedia.org/wiki/File:Container_01_KMJ.jpg

Containerization



Stagecoach being transferred to a railway car with a simple Portainer (1844) Public domain

The ship container had many predecessors. However, these were neither standardized nor stackable and could only be transported to a limited extent. In the past, for example, it was possible to load vehicle bodies in order to adapt them to different transport conditions (city, overland, sea). Even McLeans containers could not be used worldwide at first, this only changed after the standardized dimensions of the ISO container had been defined.

Image source:
https://de.wikipedia.org/wiki/Datei:Maschine_zum_Übersetzen_der_Diligencen_auf_Eisenbahnwaggons.JPG

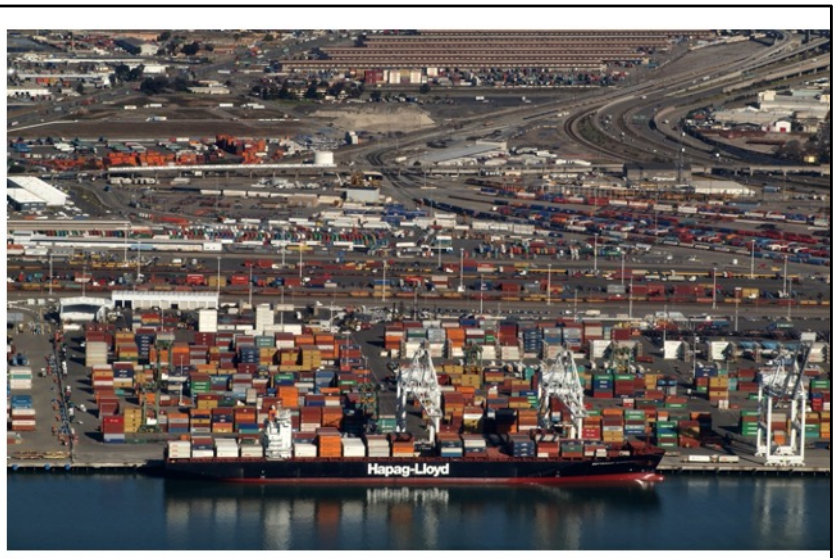
Containerization

Shipping Containers Cover the Docks at Port of Newark New Jersey (1974) Public Domain

The shipping container changed port cities in many ways. It revolutionized transport, making the delivery of goods faster and cheaper. It also changed cities and regions. Completely new port facilities became necessary, which offered space for containers and which could accommodate the loading facilities. This almost completely changed the appearance of the port. In addition, ever larger ships also changed the overall volume of traffic on the water. Many smaller ships were replaced by a few large ones.

Image source:
https://upload.wikimedia.org/wikipedia/commons/thumb/f/f5/SHIPPING_CONTAINERS_COVER_THE_DOCKS_AT_THE_PORT_OF_NEWARK_NEW_JERSEY._READY_FOR_LOADING_ONTO_SHIPS_AND_TRANSPORT_TO..._-_NARA_-_555271.jpg/1600px-SHIPPING_CONTAINERS_COVER_THE_DOCKS_AT_THE_PORT_OF_NEWARK_NEW_JERSEY._READY_FOR_LOADING_ONTO_SHIPS_AND_TRANSPORT_TO..._-_NARA_-_555271.jpg

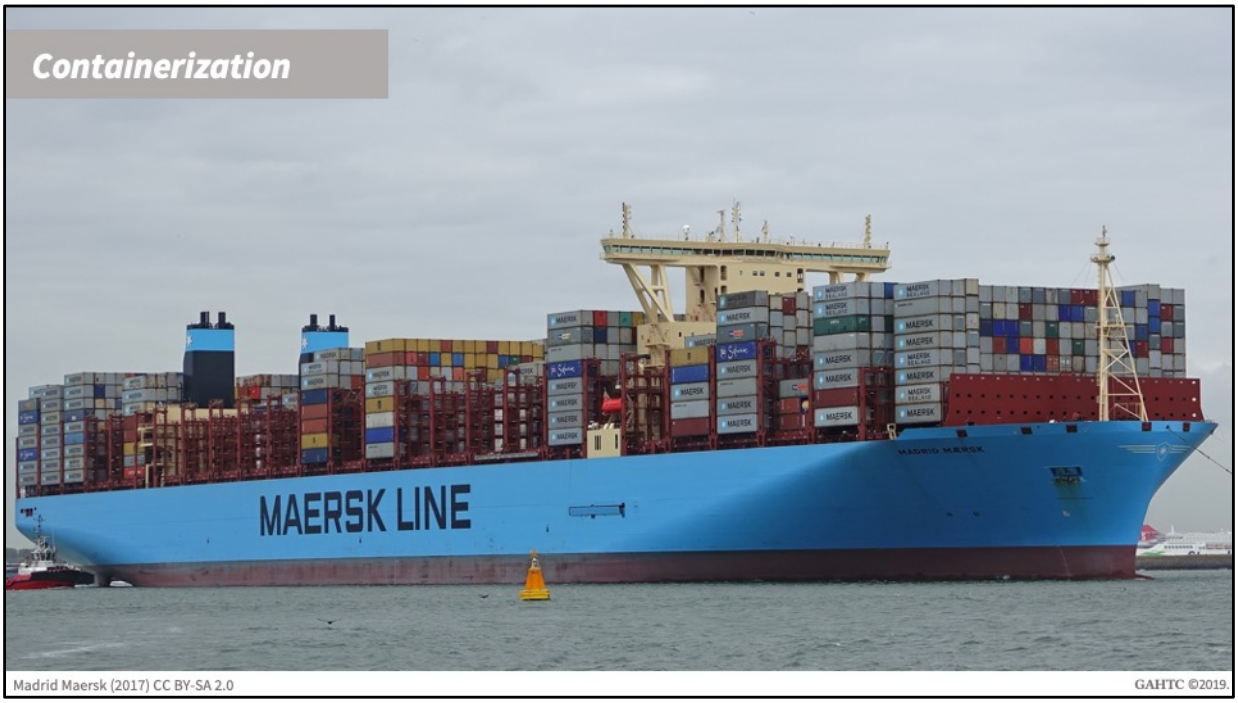
Containerization



Bethlehem-Fairfield shipyards, Baltimore (1943) Public Domain

Even though many ports and their neighboring cities had adapted to industrialization in the 19th century, the shipping container once again radically changed their structure. Where many people once worked together in close proximity, almost deserted areas emerged. Where once a multitude of different types of buildings dominated the face of the ports, there are now spacious storage areas for containers, complex infrastructure and gigantic crane installations. The port has become a pure industrial area, largely devoid of people, which represents a harsh contrast to the former port city.

Image source:
https://upload.wikimedia.org/wikipedia/commons/a/a2/Port_of_Oakland.jpg



Container ships such as the Madrid Maersk (launched 2017) have dimensions that no historic port could accommodate. The ship has a length of 400m (1312 feet) and is almost 60m (195 feet) wide. It is capable of carrying 20,568 20-foot containers, equivalent to more than 10000 semi-trailers. This also reveals the logistical capacities required to load and unload such a ship. The conversion of existing port facilities was no longer sufficient, which led to considerable expansion of many ports.

Image source:
https://commons.wikimedia.org/wiki/File:SMIT_ELBE_%26_MADRID_MAERSK_(34423705434).jpg

Containerization

Automated Guided Vehicles for container transport (2019) Pixabay License

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Whereas in the past more than 20 workers were required to unload a comparatively small cargo, the use of shipping containers significantly reduced the need for human labour. Few crane and stacker drivers were able to handle entire container ships. Today, this demand is reduced to a minimum. Container ports are largely empty of people and resemble high-security areas. Almost all work steps are fully automated and can continue day and night. In many ports, automated Guided Vehicles transport containers in the port area and cranes load them automatically onto ships or trucks. Seamen also disappeared with the classic dock worker, as very few people are on board a container freighter today. This has transformed port districts as well: they have become industrial areas that no longer convey any idea of the former cultural wealth of port areas. Port functions, such as administration, logistics, or housing are still spread out through cities, but rarely recognized as port related or as having a positive impact on nearby cities.

Image source:
https://pixabay.com/en/container-bearer-car-faucet-port-2018465/

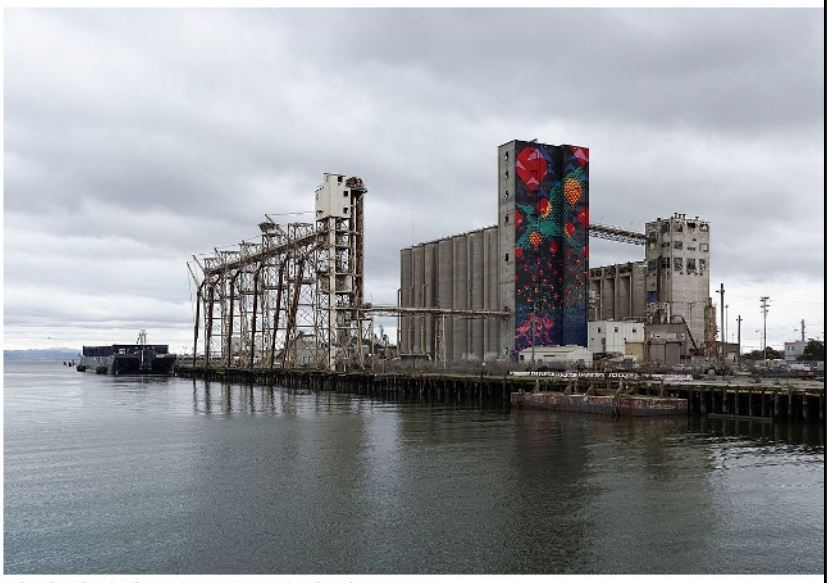
The port of Barcelona is a good example of the development of ports associated with oil and containers. The historic harbour on the right side of the picture was located in the city centre. The goods handled here could be quickly transported to the surrounding warehouses and markets. With industrialisation, the port area grew to the western edge of the city. But even the newly built quays were too small to handle containers. A new terminal was finally built south of Montjuïc Mountain. It is about the same size as the entire historic port. Further outside the city is the oil port and a completely new container terminal. To the north, a warehouse area has been created that is used purely for commercial purposes. This development can be observed in many other cities worldwide.

Image source:
https://www.google.com/maps/@41.3418029,2.1589287,10655a,35y,270h/data=!3m1!1e3

Over the past decades, the city and port have become increasingly distant from each other. A drastic example is the Yangshan Deepwater Port. Located on an artificial island several kilometres off the coast, it has practically nothing to do with the urban area of Shanghai. Nonetheless, it contributes decisively to the urbanisation of the sea. In the 21st century, commercial port facilities are likely to move further and further away from cities, which will also bring about a fundamental change in port city culture that has been taking place since the second half of the 20th century.

Image source:
https://de.wikipedia.org/wiki/Datei:Yangshan_Deepwater_Port.jpg

Containerization



Abandoned grain silos at Pier 90, San Francisco (2017) CC BY-SA 4.0

Containerization not only entailed a restructuring of existing port areas, but also the decline of some ports which were not in a position to adapt to the new conditions. At times activities shifted to new locations. For example, the port of San Francisco lost its role as an important commercial port because there was no space needed for the containers. This role has been picked up by the formerly smaller port in neighboring Oakland. Many (semi-)deserted port areas lived a shadowy existence for several decades until they finally awakened to new life with new functions (Lecture 9).

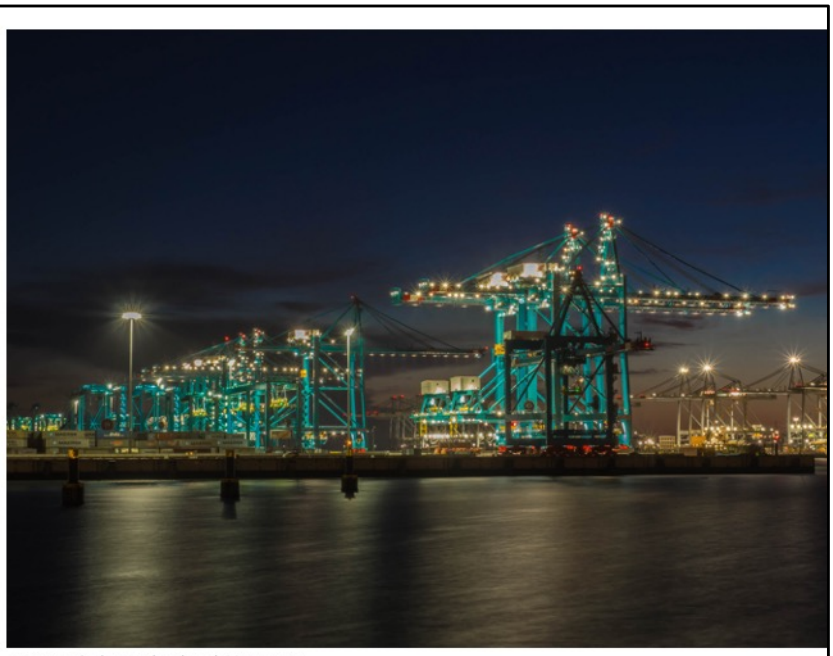
Image source:
https://commons.wikimedia.org/wiki/File:Abandoned_grain_silos_at_Pier_90,_San_Francisco.jpg

Containerization

London Docklands in the 1970's (2011) CC BY-NC-ND 2.0

The Port of London was also no longer competitive in the course of containerization. Once one of the most important transport hubs in the world, the port underwent a rapid decline in the 1970s. The Port Authority of London opened a new container terminal at the Thames estuary in 1968. Today the London docklands are redeveloped and have nothing in common with the old port district.
Image source:
https://www.flickr.com/photos/lozwilkes/6988651332

Containerization



APM Terminal Rotterdam (2015) CC BY-ND 2.0

Other port cities such as Rotterdam benefited from the introduction of containers and from petroleum-based growth. The port of Rotterdam has continued to develop out of the city and was the largest port in the world around 2000 and is the largest port of Europe. Not only strategic decisions contributed to its success, but also its favourable location in Northern Europe. On the one hand, the port has been continually expanded and adapted to new needs. On the other hand, there are excellent infrastructural connections, for example to large industrial areas in western Germany.

Image source:
https://www.flickr.com/photos/28169156@N03/16708992445

Containerization

Chinatown in Adelaide, Australia (2006) GNU FDL

With the restructuring of the ports, the port workers also disappeared, many of whom came from China. Their low wages had previously made them popular workers in ports around the world. As the charm of the port districts disappeared with the workers, the often shabby areas have been romantically glorified. Chinatowns have developed into districts that promised a touch of foreign lands and made therewith up for the loss of international seamen.

Image source:
https://commons.wikimedia.org/wiki/File:Adelaide_Chinatown.jpg

Containerization

Canning Town sugar refinery, London (1955) CC BY-SA 2.0

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One serious effect of containerization was the enormous reduction in sea transport costs. With the falling prices for the transport of goods, many production locations were relocated from the European and American port cities - and not only the port cities - to Asia. The once flourishing places of industrialization lost their competitiveness and their most important economic foothold. The increasingly vacant industrial buildings and the changing population structure also brought about profound changes in the urban fabric. The revitalization of former port and production facilities was not successful in all cities and has in most cases taken a long time.

Image source:
https://upload.wikimedia.org/wikipedia/commons/thumb/b/b2/London_Canning_Town_sugar_refinery_geograph-3068489-by-Ben-Brooksbank.jpg/1280px-London_Canning_Town_sugar_refinery_geograph-3068489-by-Ben-Brooksbank.jpg

Containerization

Apartments buildings for students, Le Havre, France (2014) CC BY-SA 4.0

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The container has revolutionised the global transport system and brought about profound spatial changes in port cities. It has contributed to the widespread disappearance of warehouses and to their relocation out of the city. However, containers are versatile and have also contributed to architecture. There are numerous container structures worldwide. Be it temporary dwellings, construction workers or refugees, or more permanent structures such as student residences or office buildings. Here, containers have proven to be an inexpensive alternative to conventional construction methods. Some results are quite appealing and make wise use of the static properties of the containers, which can also bridge several meters of free space.

Image source:
https://upload.wikimedia.org/wikipedia/commons/4/40/Apartments_buildings_for_students%2C_Le_Havre%2C_2014.jpg

Containerization

Boxpark Croydon, London, UK (2017) CC BY-SA 4.0

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Boxpark Croydon is an example of a shopping mall consisting mainly of containers. Elements of the port, which has moved further and further out of the city, return to urban areas in this way. The flexible usability and reusability of the containers can perhaps be a good inspiration for future architectural requirements.

Image source:
https://commons.wikimedia.org/wiki/File:Boxpark_Croydon_south_entrance.jpg

Containerization

Joe Slovo Park, Cape Town, South Africa (2013) CC BY-SA 3.0

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Containers also play a role in informal urbanism. The stable and practical units can be used for a wide variety of purposes and can also be combined with other building elements. In areas close to ports, the procurement of discarded containers is relatively simple and cheaper than the procurement of building materials. The windowlessness and unfavourable climatic properties of containers can often be remedied by simple means. The use of port elements in architecture and urbanization exemplifies the multiple ways in which even modern ports are related and linked to cities and landscapes.

Image source:
https://commons.wikimedia.org/wiki/File:Cellphone_Repair_Shop_built_from_Shipping_Container,_Joe_Slovo_Park,_Cape_Town,_South_Africa-3382.jpg

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