

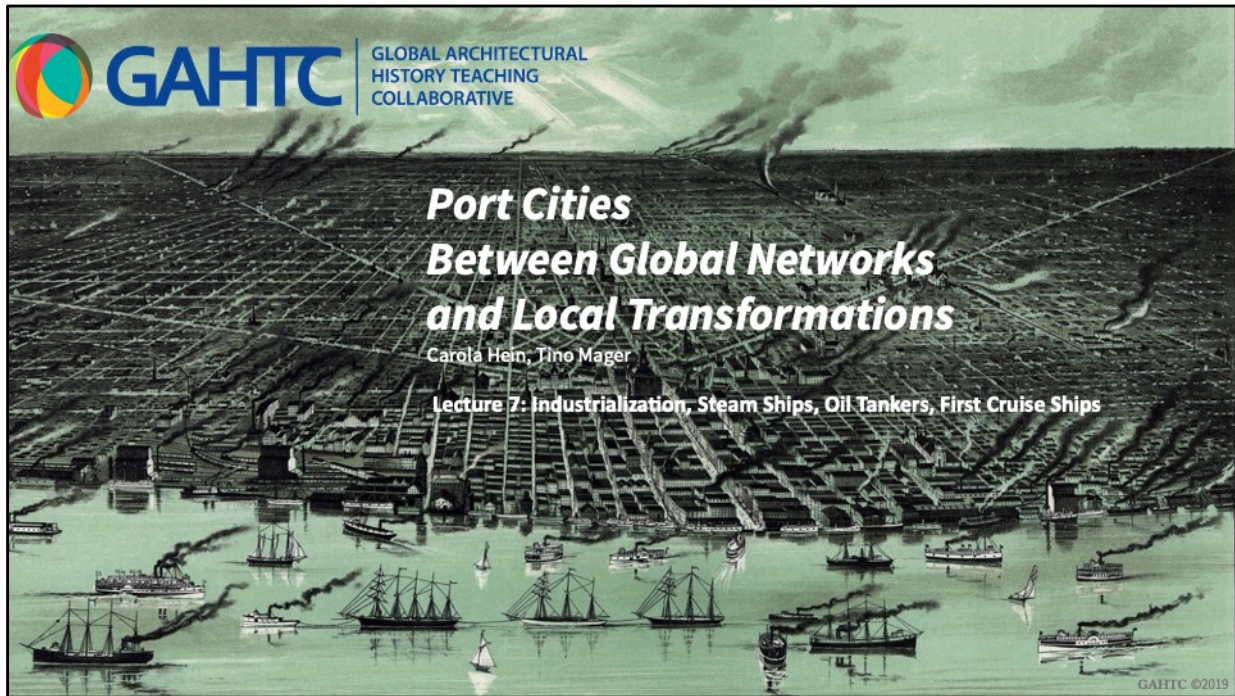
Welcome to Lecture 7 of Port Cities between global networks and local transformations. My name is Carola Hein. In this lecture, I will explore how the impact of industrialization and rapid technological innovation from the telegraph to steam ships changed ports, cities and port city architecture.

Image:

Birds eye view--showing about three miles square--of the central portion of the city of Detroit, Michigan. (Public domain)

Image source:

https://en.wikipedia.org/wiki/History_of_Detroit#/media/File:Bird%27s_eye_view_of_Detroit,_Michigan,_1889_-_._Calvert_Lithographing_Co..jpg



Lecture Abstract:

Around the world new types of harbors and docks led to the creation of monofunctional zones. The Docklands of London and the associated transformation of the City of London inspired port and city transformation around the world. The construction of waterfronts in the port cities of Asia with their trading headquarters, merchant homes, religious and leisure places, demonstrated the emergence of global trade. The construction of several canals (Suez, Panama) and adjacent cities illustrated this further. The use of ships for cruises in winter time, started a trend that is still ongoing.

Image:

Birds eye view--showing about three miles square--of the central portion of the city of Detroit, Michigan. (Public domain)

Image source:

https://en.wikipedia.org/wiki/History_of_Detroit#/media/File:Bird%27s_eye_view_of_Detroit,_Michigan,_1889_-_Calvert_Lithographing_Co..jpg



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Port Cities Between Global Networks and Local Transformations

Carola Hein, Tino Mager

Lecture 7: Industrialization, Steam Ships, Oil Tankers, First Cruise Ships

Part One: Industrialization

Part Two: Steam Ships

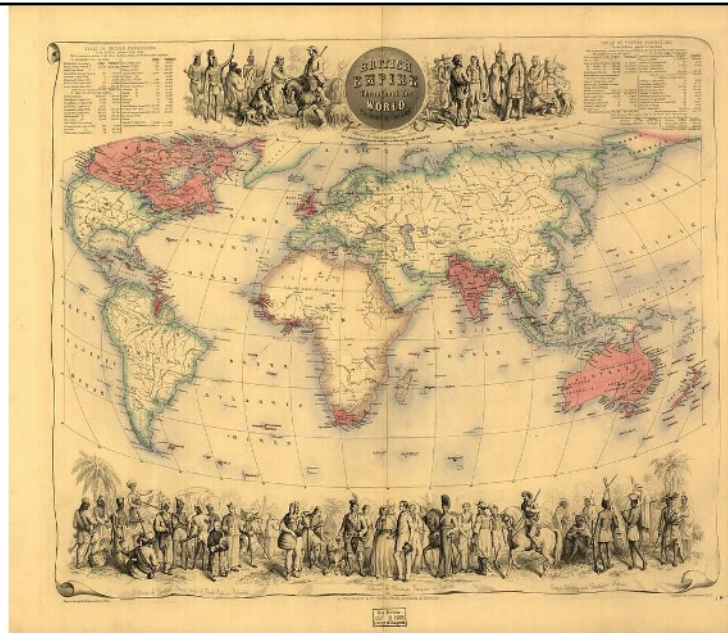
Part Three: First Cruise ships

Part Four: Oil Tankers

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We will specifically explore questions of industrialization, the impact of steam ships, the emergence of the first cruise ships and the role that oil tankers played in the transformation of port cities starting in the 19th century.

Industrialization



British Empire throughout the world, map

GAHTC ©2019

The British Empire spanned the world and shipping connected all of its parts. British port cities and notably London and Liverpool led innovation in port engineering, urban planning and architecture

Image

Bartholomew, John, 1831-1893.

A. Fullarton & Co.

<https://www.loc.gov/item/98687124/>

Industrialization



Liverpool dry docks (2018) Tino Mager

GAHTC ©2019

The Royal Albert Dock in Liverpool was a key hub in the British maritime network. Designed by Jesse Hartley and Philip Hardwick and opened in 1846, it features innovative docks and warehouses with vast open spaces. They are made of cast iron, brick, sandstone and granite and contain no wood. They were the first non-combustible warehouses. Another novelty was the possibility of loading the goods directly from the ship to the warehouses by crane. No intermediate step was necessary. The arcades allowed a complete superstructure of the mooring quay with simultaneous access to the ships. The first hydraulic cranes were used here as early as 1849.

Image source:
Tino Mager

Industrialization



Liverpool warehouses and its successors (2018) Tino Mager



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The architecture of the classic department stores that characterise Liverpool has sometimes proved to be a style-setter. Many newer buildings incorporate typical elements of the characteristic warehouses. This is a post-modern interpretation of the functional design of the Liverpool warehouses, which characterise large parts of the city.

Image source:
Tino Mager

Industrialization



Grocer's Warehouse, Manchester Castlefield (2018) Tino Mager

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Industrialisation not only brought innovations in ship propulsion and an enormous expansion in the volume of trade, but also ensured that inland towns were connected to waterways. Manchester quickly became the most important city of the industrial revolution. The huge demand for coal was met by the creation of the Bridgewater Canal in 1764. The Rochdale Canal connected Manchester with the port of Liverpool, making the city a port city. The remains of the building behind the bascule bridge are the partial reconstruction of the first British warehouse, which was equipped inside with a water-powered crane.

Image source:
Tino Mager

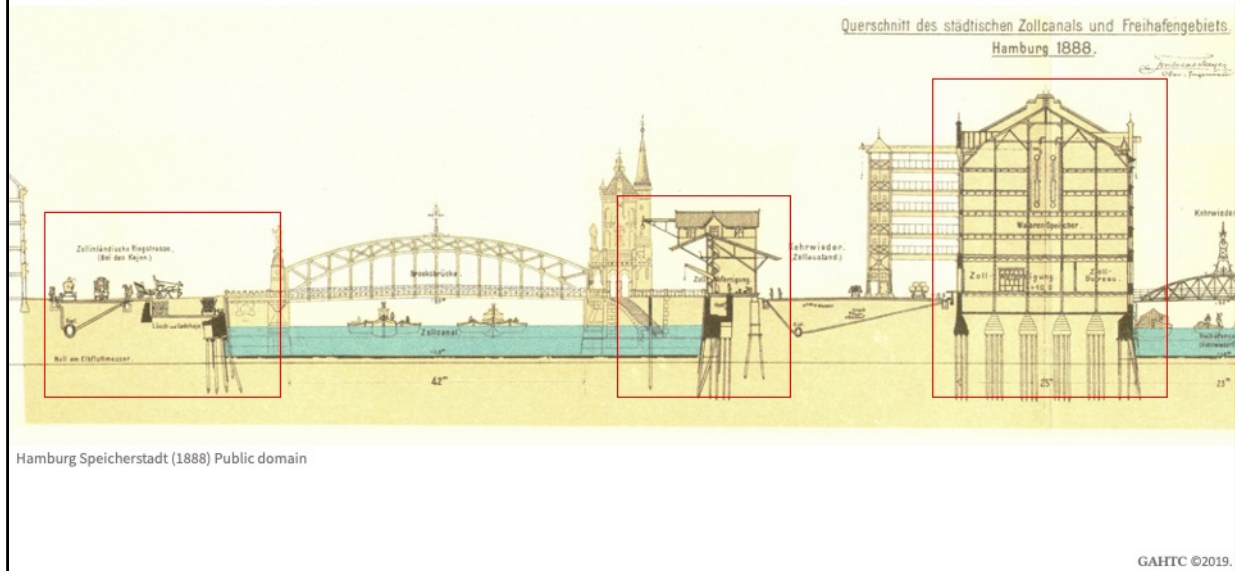


Industrialization required adaptation in port cities around the world, both in terms of port technology as well as warehousing. While London held a key position, not all cities opted for the same port technology and architecture. Hamburg notably opted to build a tidal port rather than a dockland inspired by London. Hamburg smartly used the opportunity of joining the German Empire to obtain funding for the construction of a new warehouse complex. Hamburg's Speicherstadt is the world's largest historic warehouse complex. The 1900 figure shows the warehouses and steamboats on the quay equipped with loading cranes. The warehouses have one façade facing the water, the other facing the road and rail, so that they can be optimally filled and unfilled. What is interesting is the architectonically ambitious warehouse design, which completely declined in the course of the 20th century.

Image source:

[https://commons.wikimedia.org/wiki/File:Die_Speicherstadt_in_Hamburg-Altstadt,_hier_der_Sandthorquai_\(ca._1900\).jpg](https://commons.wikimedia.org/wiki/File:Die_Speicherstadt_in_Hamburg-Altstadt,_hier_der_Sandthorquai_(ca._1900).jpg)

Industrialization



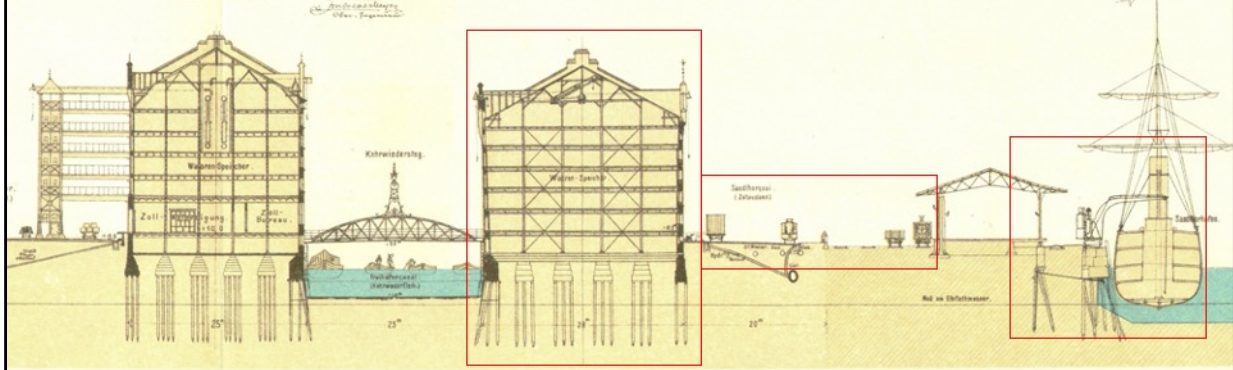
The section through the Speicherstadt allows an analytical view of essential elements and constructive details of the port facility as part of a larger infrastructure on the sea-land continuum. On the left you can see the simple unloading and loading docks. Then follows the house of customs clearance with its own loading crane. The large warehouse houses a customs station on the ground floor and storage floors on the upper floors. Hydraulic drives for cranes can be seen in its centre. Direct access to railroads was key to the rapid functioning of the development

Image source:

https://commons.wikimedia.org/wiki/File:Hamburg_Speicherstadt_1888_Querschnitt.jpg

Industrialization

Querschnitt des städtischen Zollcanals und Freihafengebiets.
Hamburg 1888.



Hamburg Speicherstadt (1888) Public domain

GAHTC ©2019

The second storage building is also mounted on underground piles, which provide stability in soft and damp soil. To the right of it, the railway facilities can be seen. The connection between shipping and rail was the most important interface in the port, allowing the rapid spread of goods into the hinterland. On the far right is the quay for the cargo ships, above which the ships were loaded and unloaded by crane.

Image source:

https://commons.wikimedia.org/wiki/File:Hamburg_Speicherstadt_1888_Querschnitt.jpg

Industrialization



Hamburg Chile House (2013) CC BY 2.0

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Increasing trade not only necessitated infrastructural adjustments but also led to the development new types of buildings, such as the Kontorhaus (a type of building designed and built for the exclusive accommodation of offices of commercial enterprises). An entire Kontorhaus district was built in Hamburg, now part of a UNESCO World Heritage site. The buildings were initially constructed according to American models and had very flexible floor plans, which housed the offices of the trading companies. The Kontorhaus allowed work, living and storage to be spatially separated. The Chile House, designed by Fritz Höger in 1922, is a world-famous icon. Its construction was financed by guano trade with Chile, giving the building its name. The Chile House is regarded as the epitome of brick expressionism and has also become a symbol of Hamburg. The building is reminiscent of a ship's bow and with its maltreated lines and the staggered stories it is reminiscent of maritime forms, but at the same time it is clearly and concisely designed.

Image source:

https://commons.wikimedia.org/wiki/File:Chilehaus_-_Hamburg.jpg

Industrialization



Steamer Traversing Suez at Port Said (n.d.) CC 3.0

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In the 19th century, waterways of far-reaching dimensions were built. One of the most important of these, the Suez Canal, opened in 1869, which was driven forward by the French lawyer and diplomat Ferdinand de Lesseps. The canal created a connection between the Mediterranean Sea and the Red Sea and made the sea route from Europe to Asia much shorter, as it made it unnecessary to circumnavigate Africa. Steamships had an advantage over sailships, as they could cross new passages such as the Suez Canal. The canal shortened travel times for goods extensively but it was unsuitable for sailing ships and gave steamboats distinct advantages. The construction of the canal changed the fate of many cities. Mediterranean cities that had decayed in the Atlantic century revived. The port city of Port Said was founded in 1859 as part of the canal construction work. The Shell company was the first to build an oil ship that was allowed to cross the canal, creating a link between Northern Europe and the Dutch colonies and their petroleum sources. Royal Dutch Shell thrived on this transport and the exploitation of oil in Egypt. The Suez Refinery was in the early 20th century the largest refinery in the world.

Image source:

https://upload.wikimedia.org/wikipedia/commons/8/8a/Port_Said%2C_Steamer_Traversing_the_Suez_Canal_%28n.d.%29_-_front_-_TIMEA.jpg

Industrialization



Street in Port Said (~1900) CC BY-SA 3.0

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Port Said is an interesting example of a newly founded port city, in a place that has no resources at all, not even drinking water, and has only gained importance through the canal. The architecture of the city is strongly colonial and Port Said was prepared for many travelers and sailors. The picture shows typical elements of everyday architecture: simple wooden buildings surrounded by industrially manufactured cast iron balconies. In Port Said there was no building material and everything had to be delivered separately. Along the unpaved streets there are many shops and a hotel for to the needs of travelers.

Image source:

https://commons.wikimedia.org/wiki/File:COLLECTIE_TROPENMUSEUM_Kade_en_winkelstraat_Port_Said_TMnr_60039406.jpg

Industrialization



Panama Canal Locks, Fender chair (c. 1938) Public Domain

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In contrast to Port Said, the (then) Colombian city of Colon was a city that existed before the construction of the canal, in this case the Panama Canal. It was built in 1850 at the end of the Panama Railroad and became a starting point for the construction of the Panama Canal. The canal, which connects the Atlantic with the Pacific, is one of the most important nautical engineering services. The construction of the canal was extremely difficult and was an economic and political disaster. It lasted from 1881 to 1914 but ultimately revolutionized world trade. Today, 68% of all cargo handled in US ports and 23% of all cargo handled in Chinese ports is transported through the Panama Canal.

Image source:

https://upload.wikimedia.org/wikipedia/commons/d/d2/Fender_chains_of_the_Miraflores_locks%2C_Panama_Canal_-_19380308.jpg

Industrialization



Map of Panama Canal area before construction of canal (1911) Public Domain

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The map shows the planned 82 km long Panama Canal, which crosses Panama and connects the Atlantic Ocean (above) with the Pacific Ocean (below). Once more, the construction of a canal became the cradle for new port cities on its sides and along the neighboring coast. As larger ships cross the Panama canal, ports along the American coast have to adjust their capacity.

Image source:

https://de.wikipedia.org/wiki/Datei:Isthmus_of_Panama_24188-050-1AC7A5DB.jpg

Industrialization



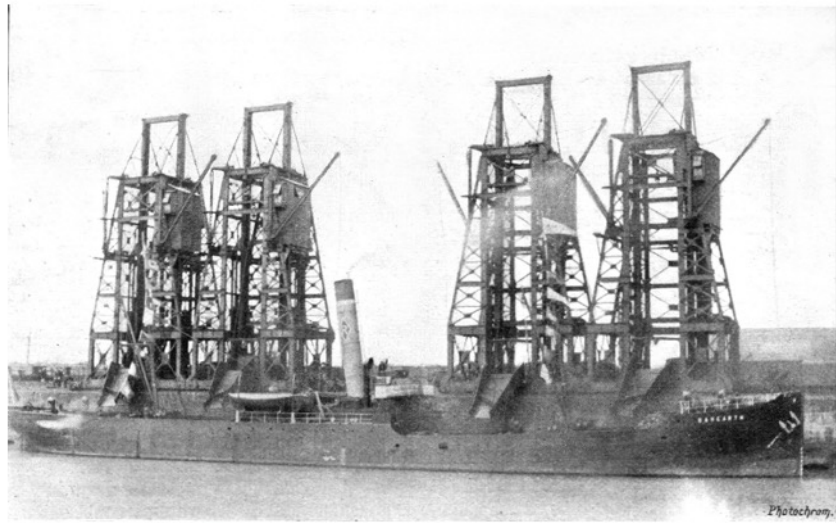
The Culebra Cut, or Gaillard Cut (1896) Public Domain

GAHTC ©2019

Coal as an energy supply revolutionized not only rail and sea transport, but also the production of goods and the construction of urban and landscape structures. The Panama Canal was realized much faster and more effectively by machines. (The gigantic enterprise of the Culebra Cut, which connects Gatun Lake with the Gulf of Panama, nevertheless lasted from 1881 to 1913.) The severing of the American continent is a vivid example of the transformative power of world trade and the desire for fast and safe connections between the world's port cities.

Image source: https://upload.wikimedia.org/wikipedia/commons/5/5b/125-French_method_of_excavation_in_Culebra_Cut.jpg

Industrialization



Coal staithes, Penarth Dock (1905) Public Domain

Photograph

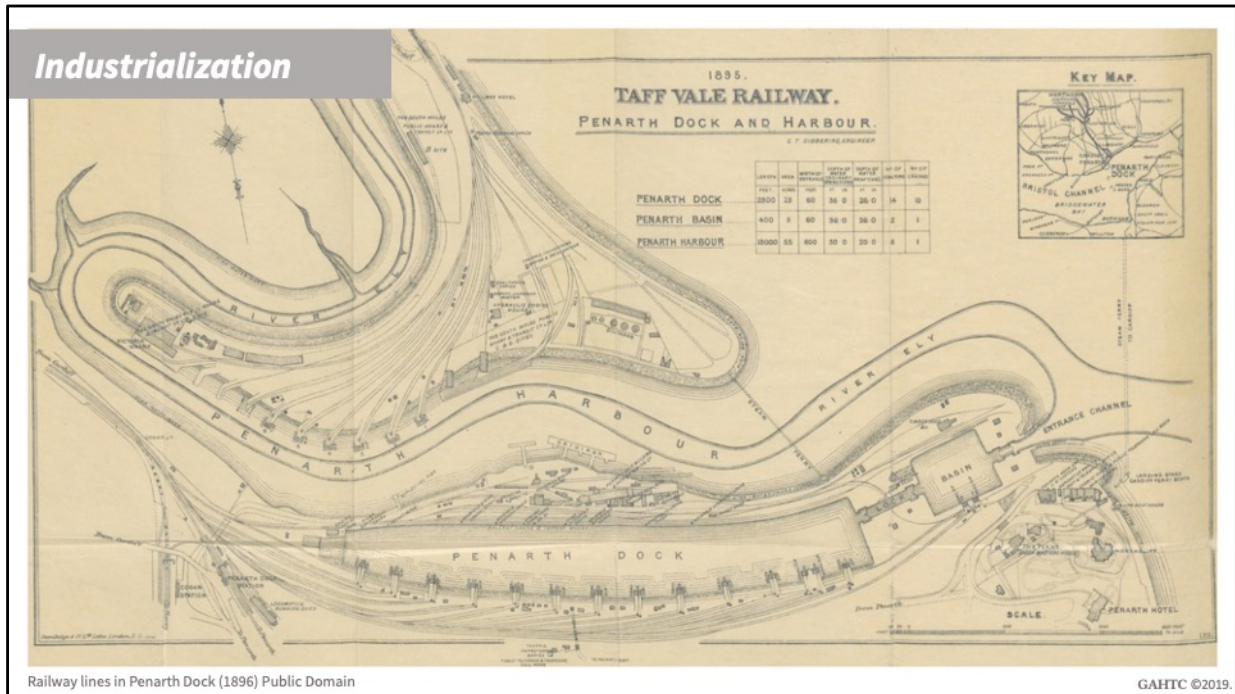
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Due to its importance as a main energy supplier, coal became an important commodity. Ports had their own coal docks where coal was handled and stored. The loading and unloading of ships required new technologies and equipment, which made it possible to quickly load countless tons of coal into and out of ships. In addition to coal as transshipment cargo, it also played an important role as fuel for the ships. Therefore, every steam ship had to be able to be loaded with coal, which required new filling stations in almost all ports.

Image source:

[https://en.wikipedia.org/wiki/File:Coal_staithes,_Penarth_Dock_\(Railway_Magazine,_100,_October_1905\).jpg](https://en.wikipedia.org/wiki/File:Coal_staithes,_Penarth_Dock_(Railway_Magazine,_100,_October_1905).jpg)

Industrialization



The plan of Penarth Dock in Wales illustrates the enormously changing infrastructure that developed in and around port cities in the 19th century. Coal not only had to be loaded into ships, but also had to be transported to the moorings. In Penarth Dock several million tons of coal were handled per year, the transport of which could not be realized without machines. The numerous rail connections to the individual ship berths, which require a high degree of organisation, are clearly visible.

Image source:

[https://en.wikipedia.org/wiki/File:BALLINGER\(1896\)_p290_TAFF_VALE_RAILWAY.jpg](https://en.wikipedia.org/wiki/File:BALLINGER(1896)_p290_TAFF_VALE_RAILWAY.jpg)

Steam Ships



Clermont replica (1909) Public domain

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The steam engine, and the industrial revolution it promoted, have changed the world, and of course maritime trade. In 1783, the Frenchman Claude François Jouffroy d'Abbans built the first steamboat. Shortly afterwards, in 1809, Robert Fulton received a patent for a modified version, which he used in liner operations between New York and Albany. The picture shows the replica of this ship. Even though it was not until the end of the 19th century that the first ocean-going ships without sails were put into service, steam-powered ships quickly opened up new possibilities.

Image source:

https://commons.wikimedia.org/wiki/File:Clermont_replica.jpg

Steam Ships



Joseph Walter: SS Great Western (1845) Public Domain

GAHTC ©2019

The industrial revolution, the colonial possessions of European powers overseas and the flourishing global trade not only required a good and smooth exchange of goods, it was also necessary to transport people safely and regularly over long maritime distances. In 1818, the Black Ball Line offered the first regular shipping service between Great Britain and the US. If the fleet still consisted of sailing ships, steam frigates were used from 1837 onwards - sailing ships with steam support.

Image source:

https://commons.wikimedia.org/wiki/File:Joseph_Walter_-_The_%27Great_Western%27_riding_a_tidal_wave,_11_December_1844.jpg

Steam Ships



The Great Britain, launched in July 1843 in Bristol, heralded a new era in ocean shipping. Revolutionary was the iron construction, the use of a ship's propeller and the main design for operation by a steam engine. It was able to cross the Atlantic in just 14 days and could carry 360 passengers.

Image source:

<https://en.wikipedia.org/wiki/File:Launch-of-the-SS-GB.jpg>

Steam Ships



RMS Lusitania in New York (1907) Public Domain

GAHTC ©2019

Towards the end of the 19th century, no more supporting sails were used and the ships took on new dimensions. The battle for the Blue Riband - an unofficial accolade to the fastest liner in regular service - accelerated technical progress. The picture shows the Lusitania (four time winner of the Blue Riband) in the port of New York.

When completed, the Lusitania was the largest ship in the world. The comparison with the sailing ship on the right in the picture shows the new dimension of the steamships and makes it clear that this was accompanied by other demands on ports and their infrastructure. The large number of horse-drawn carriages in the foreground of the picture indicates the need to move passengers to and from the port. In previous centuries this number was much lower. Port cities, which have always been places of exchange, are now also becoming places of mass migration.

Image source:

https://en.wikipedia.org/wiki/File:The_Lusitania_at_end_of_record_voyage_1907_LC-USZ62-64956.jpg

Steam Ships



Titanic's Stateroom B-59 in Old Dutch style (1912) Public Domain

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The ocean liners offered their passengers various levels of comfort, depending on their budget. In the upper classes, the interior of the ships were very similar to luxury hotels and apartments. In this sense, (interior) architecture now also travels the oceans and exerts a more direct influence on global taste development.

After the Second World War, the ships were gradually replaced by aircraft, which often shortened the travel time by many days.

Image source:

https://en.wikipedia.org/wiki/File:Titanic%27s_B_59_stateroom.jpg

Steam Ships



Holland America Lijn, Rotterdam, CC BY SA 3.0

GAHTC ©2019

With the new ship connections, new shipping lines were created, which in turn built their own office buildings and warehouses. The high number of passengers also made it necessary to stay overnight near the port. A good example of such a building is the Hotel New York in Rotterdam (The Netherlands). It served as the headquarters of the Holland-America line and also as a quarter for emigrants. Today it is an important landmark that played an influential role in the revitalisation of the former Kop van Zuid port area.

Image source:

https://commons.wikimedia.org/wiki/File:Rotterdam_hotel_newyork.jpg?uselang=de

Steam Ships



Hapag-Lloyd Headquarter in Hamburg (2012) CC BY SA 3.0

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In the 19th century several large shipping companies developed, operating worldwide shipping lines for goods and passenger traffic. The necessary infrastructure was also reflected in buildings. In addition to warehouses and loading facilities, representative company headquarters were also built, such as the headquarters (1901-1903) of Hamburg America Line. It is a so-called Kontorhaus, a building that was used exclusively for office purposes and was built in many variations in northern German port cities.

Image source:

<https://commons.wikimedia.org/wiki/File:Hapag-Lloyd.jpg>

Steam Ships



Hapag-Lloyd office in Qingdao, China (1867) CC BY SA 3.0

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With their worldwide networks, the shipping companies also developed tangible elements, including buildings for branch offices. The Hamburg America Line branch in Qingdao, China, is an example of European architectural export that can be regarded as typical of the colonial era - the export of European architectural-historical forms, in this case Neo-Renaissance, to areas far away from Europe. The work carried out inside the building also makes it clear that port cities have made a significant contribution to the worldwide standardisation of trading activities.

Image source:

https://commons.wikimedia.org/wiki/File:Bundesarchiv_Bild_137-005610,_Tsingtau,_Gebäude_der_Hamburg-Amerika-Linie.jpg

Steam Ships



GAHTC ©2019.

The Hapag company built the Ballinstadt in Hamburg as a place to host migrants before they traveled to America. The company was responsible for the return journey of the migrants if they were found to be unhealthy upon arrival.

Image source:

https://upload.wikimedia.org/wikipedia/commons/4/4f/Hamburg%2C_BallinStadt_museum_2015.jpg



The St. Pauli Landungsbrücken (St. Pauli Piers) in Hamburg are another relic of the shipping architecture of the steamboat age. The piers opened in 1909 and were used by passengers to board and disembark ocean liners. Their architecture is reminiscent of a train station and refers to the comfort and simplicity of ocean voyages. A special feature are the floating moorings, which are connected to the mainland by movable bridges. This construction took safety concerns into account: the ships equipped with coal and fire posed a fire hazard and the distance between the ships and the mainland was intended to prevent the fire from spreading to the city in the event of an accident.

Image source:

https://commons.wikimedia.org/wiki/File:2013-06-08_Projekt_Heißluftballon_DSCF7556.jpg?uselang=de

Steam Ships



Hamburg America Line Piers Hoboken, New Jersey, USA (unknown) public domain

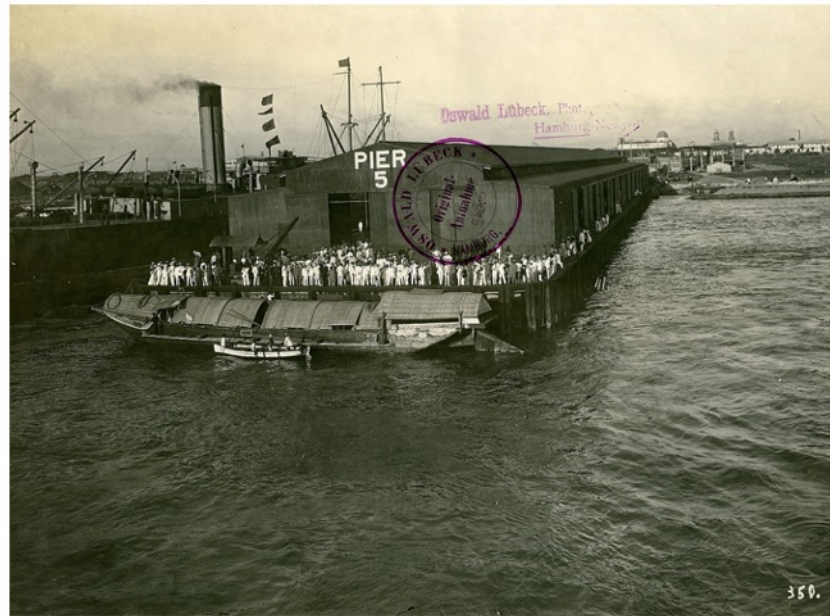
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In Hoboken, New Jersey, the piers of the Hamburg America Line were designed as so-called finger piers. While using a different technology, they are similarly turning an inviting face to the city with a station-like architecture. The piers have a representative façade and a spacious driveway. The berths are covered and there are separate entrances for passengers and goods. What is also remarkable is the density of ships on the water, a phenomenon that no longer exists today.

Image source:

https://de.wikipedia.org/wiki/Datei:Hapag_Piers_Hoboken_drawing.jpg

Steam Ships



Hamburg America Line Piers Manila, Philippines (1911) CC0

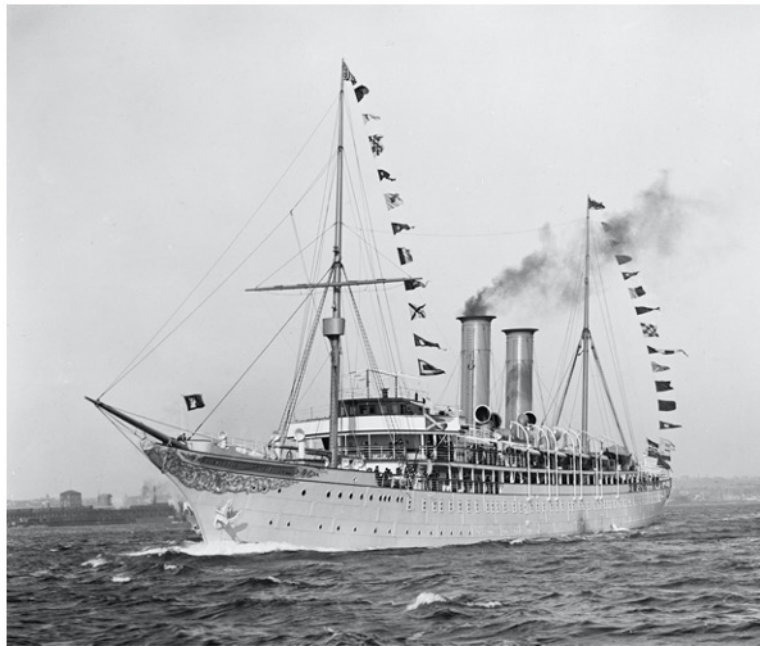
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The piers of the Hamburg America Line in Manila look very similar to those in Hoboken. This is a foretaste of the globalisation of infrastructural elements brought about by world trade and global shipping companies.

Image source:

https://www.europeana.eu/portal/en/record/2048419/item_T6OGEL4M43KQOGPVY7Q5UX67QV5FCIWG.html?l%5Bp%5D%5Bq%5D=hapag&l%5Br%5D=96&l%5Bt%5D=369&q=hapag#dclid=1547644879312&p=1

Cruise Ships



Prinzessin Victoria Luise (ca. 1905) public domain

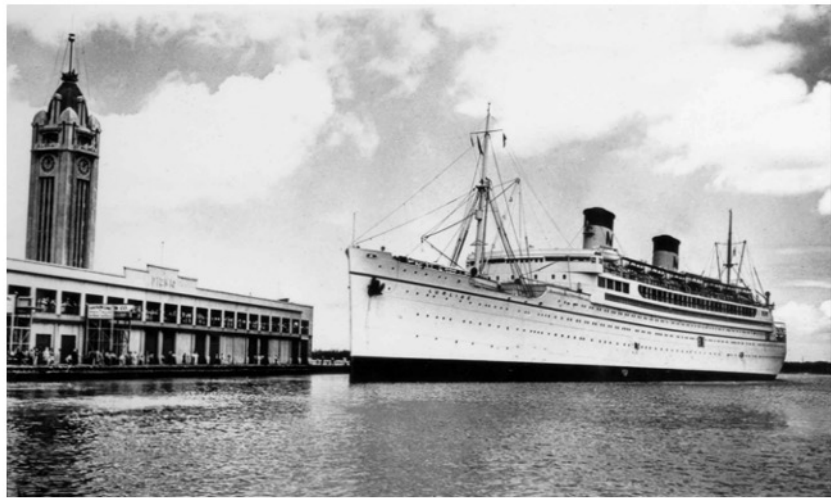
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Albert Ballin, the managing director of Hamburg America line, was dissatisfied with the situation that many ocean liners lay unused in port during the winter, when the North Atlantic passage was hardly used due to the weather. He sent the company's largest and flagship vessel, *Augusta Victoria*, on a pleasure cruise into the Mediterranean Sea and took part himself. The trip became a success and more such trips were quickly planned. A new nautical segment was born: the cruise. In 1900, *Princess Victoria Luise* launched the first purpose-built cruise ship. It was much more luxurious than the Ocean Liner and more reminiscent of a giant yacht.

Image source:

https://commons.wikimedia.org/wiki/File:Prinzessin_Victoria_Luise_LOC_det.4a15439.jpg

Cruise Ships



SS Lurline in Honolulu (ca. 1930) public domain

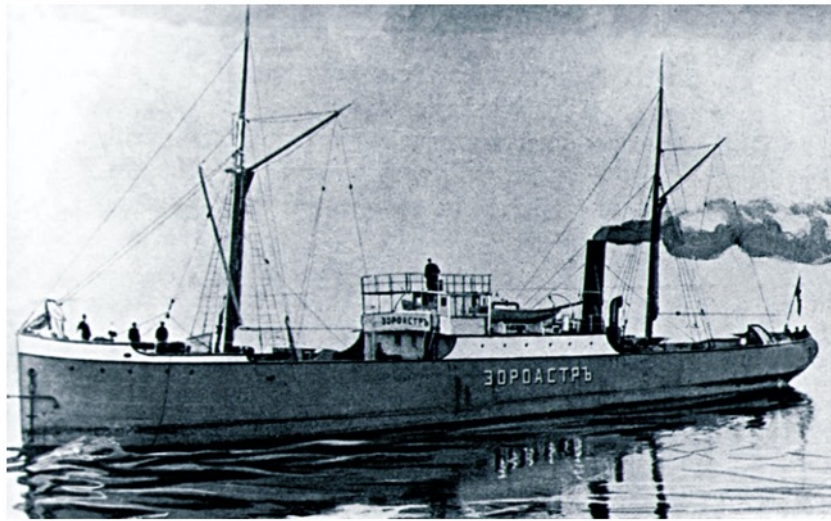
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Cruise shipping quickly proved to be a commercial success. It was able to hold its own in the second half of the 20th century, when scheduled flights were increasingly discontinued due to new air connections. Today, cruises make up the largest part of passenger transport by sea. They also have a huge impact on the neighboring cities. Cruise tourists arriving in historic cities can transform heritage sites through their sheer numbers, through their interests, and through their environmental impact. The Caribbean islands are a good example of excessive impact of cruise shipping.

Image source:

https://commons.wikimedia.org/wiki/File:Prinzessin_Victoria_Luise_LOC_det.4a15439.jpg

Oil Tankers



Zoroaster (1908) CC BY-SA 3.0

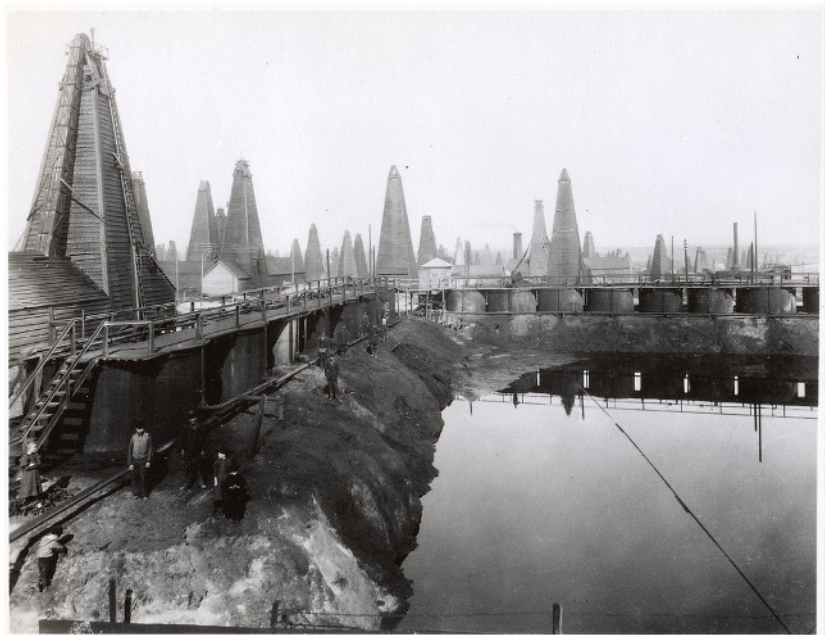
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With the exploitation of fossil fuels, oil was increasingly mined alongside coal from the middle of the 19th century. Liquid oil was easier to load into ships than coal and over the course of decades replaced coal as a means of propulsion. The possibility of transporting oil on ships initially consisted of loading oil into barrels. In 1878 the Zoroaster was built, a new type of ship: the first oil tanker. The ship was used to transport oil on the Caspian Sea.

Image source:

[https://de.wikipedia.org/wiki/Zoroaster_\(Schiff\)#/media/File:Zoroastr.jpg](https://de.wikipedia.org/wiki/Zoroaster_(Schiff)#/media/File:Zoroastr.jpg)

Oil Tankers



Baku (end 19th c.) CC BY 2.0

GAHTC ©2019

Industrially drilled oil changed shipping and port cities in multiple ways. Used as shipping fuel it made maritime transport more reliable . It alsoToday our entire built environment is characterized by oil. Crude oil is not only an important source of energy, but also a raw material for a wide variety of products, without which our present standard of living would be unthinkable. Plastics, roads, cars, chemical products, clothing, etc. are based on oil and beyond that this worldwide infrastructure has also produced commercial networks and their structural offshoots. Oil has been known since ancient times and has been used for lamps, among other things. The mass production of oil and its commercial exploitation began in the middle of the 19th century. 1846 saw the first successful oil drilling in Baku, Azerbaijan. In the USA, the commercial oil age began in 1859 in Titusville, Pennsylvania. Maritime shipping remains key to the global transport of oil even today.

Image source:

<https://www.flickr.com/photos/tekniskamuseet/6311479665>

Oil Tankers



Refineries in Baku (1900) Public Domain

GAHTC ©2019

The transport of oil required entirely new port facilities. While oil was first transported in barrels and loaded onto ships, tanker ships transported oil in bulk. Such tanker ships were allowed to cross canals, such as the Suez canal. This of course necessitated large tanks in the ports, which greatly changed their appearance. The quays, which were characterised by general cargo, were now extended with cylindrical tanks from which the oil could be pumped without having to be lifted or carried by people. This also changed the way the work was carried out in the ports.

Image source:

<https://www.romanovempire.org/media/refinery-baku-1900-850c3c>

Oil Tankers



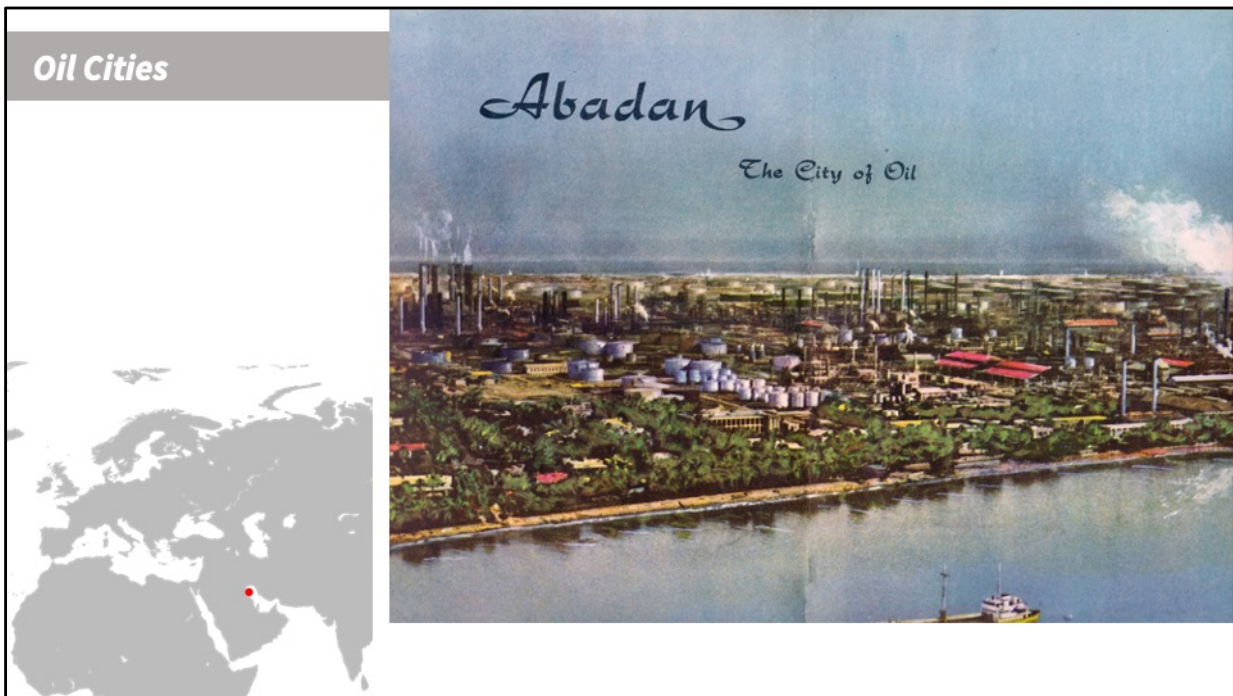
Baden aniline & soda factory BASF, Ludwigshafen, Germany (1881) CC BY 2.0

GAHTC ©2019

Even though oil can be transported in pipelines, access to water as a transport medium has proven to be favourable for many chemical companies. The industrial locations often have the dimensions of entire city districts and also shape the image of inland towns - here Ludwigshafen in Germany - which can be reached by tankers via rivers and canals. In addition to the structural infrastructure of the factories, residential areas and traffic routes became necessary, which further changed the port cities. Today, BASF is the world's largest producer of chemicals.

Image source:

https://en.wikipedia.org/wiki/File:BASF_Werk_Ludwigshafen_1881.JPG



As oil became the fuel of choice for the military and for other ships, countries needed to assure their access to petroleum. Great Britain, for example, engaged in Iran, and British Petroleum led the construction of the Abadan Refinery and the neighboring city based on garden city ideas.

Image source:

https://de.wikipedia.org/wiki/Abadan#/media/Datei:Abadan_the_city_of_Oil.jpg

Oil Tankers



Standard Oil Building, New York (2002) CC BY-NC-ND 2.0

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But oil also contributed to quite different changes. The big oil companies needed a lot of office space and built their own buildings. The Standard Oil Building in New York was built in 1885 at the southern end of Broadway. At that time the company moved from Cleveland to New York. It was expanded to its present form in 1895 and 1921-1928. The size of the building and its exclusive location reflect the wealth of Standard Oil. Comparable to the office buildings of the shipping companies, these buildings also shape the appearance of port cities outside the port area.

Image source:

<https://www.flickr.com/photos/warsze/432590514>

Oil Tankers



Seattle Freeway crossing Harbor Island (2009) Public domain

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Ultimately, the global spread of oil through ships and ports has a significant impact on our environment. Much of the infrastructure and built environment is based on oil products. Transport is largely realized with fossil fuels, and the organization of the distribution and management of oil has left its mark worldwide. Although most refineries and storage facilities are located in or near ports often far from living areas, the appearance of almost the entire world is dominated by oil and its derivatives, creating a petroleumscape (Hein) that spread from the ports into the hinterland. .

Image source:

https://commons.wikimedia.org/wiki/File:Aerial_view_of_Seattle_Freeway_crossing_Harbor_Island.jpg

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Here are a few references to conclude with