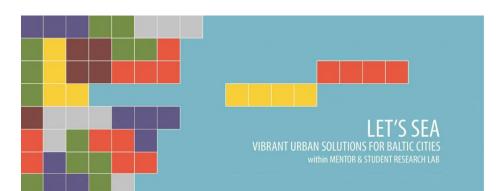




MENTOR & STUDENT RESEARCH LAB Towards wiser cities and better living 2014 - Urban Transformations

Common initiative of International Society of City and Regional Planners (ISOCARP) and the members of Gdańsk University of Technology student research club, Urban Revolution Laboratory LEM-ur. Side Event held for the 50th ISOCARP Congress.

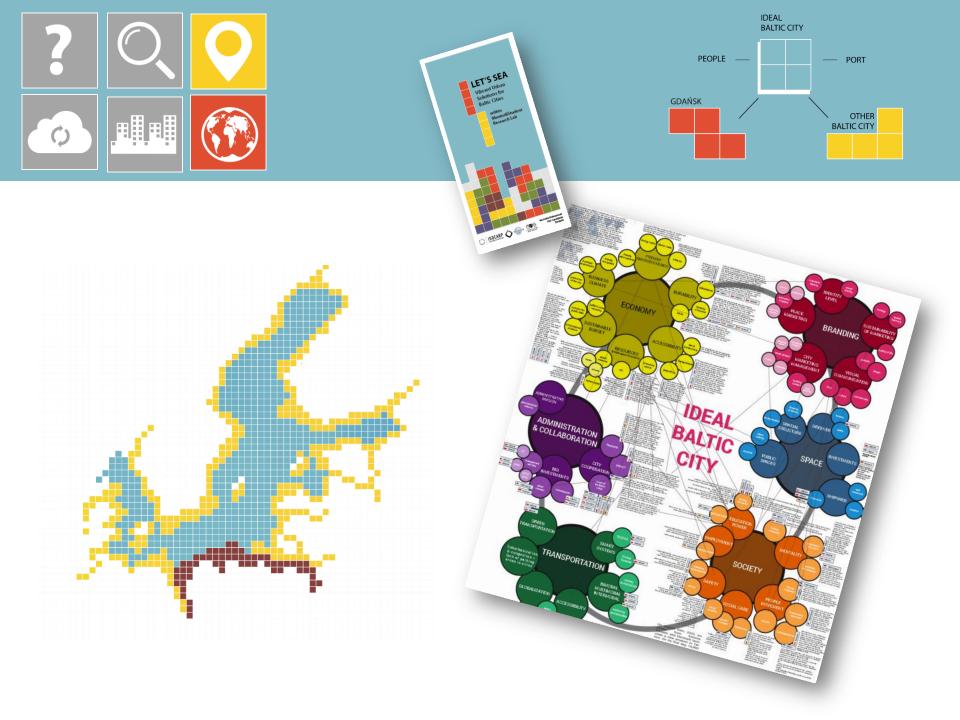


The MSRL research is focused on the Baltic Sea Region (BSR) as а multidimensional urban phenomenon with Gdansk acting as a hub for the research teams. The idea of the MSRL is to promote the collaboration of professionals and graduate and PhD students by bringing together the mentor(s) with a local research sharing experiences team and proposing strategic recommendations strengthen sustainable urban to development initiatives for BSR at the international, regional and local levels.















Martina van Lierop (Germany)



Pedro Ressano Garcia (Portugal)



Giorgio Gasco (Italy, Turkey)



Irina Shmeleva (Russia)

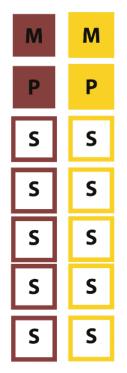


Othman Al-Mashhadani (Iraq)







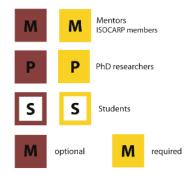


Mentors (ISOCARP members)& PhD researchers professional and research experience

PhD researchers & Group coordinators research project coordination

PhD researchers & Students research team

### Actors







**Tasks** 

Μ

MSRL team.

young researchers.

1. Specify your research from the

- It should be relevant to the Baltic Sea

Region context but you are encouraged

- It is possible to join the research with your own team of (PhD) students or

colleagues to team up with the local

2. Supervise a team of your own

3. Support the (PhD) student team with your skills and knowledge.

2. Managing the communication between the mentor and the

3. Supporting with your knowledge

1. Actively involved in international

2. Actively involved in training activities and meetings.

3. Cooperation both with mentors

4. Responsibility for all work of each

proposed core themes.

# Μ

**Benefits** 

1. Chance to lead and shape an urban or architectural focused research under your guidance and of your own design.

2. Opportunity to guide a dedicated team of PhD candidates and students who value your academic and professional input.

3. Participate in preparation of the report that addresses the relevant issues for the host city (Gdansk) and the Baltic Region.

The first MSRL report was published and distributed online. Printed copies were published and distributed during the ISOCARP Congress in Rotterdam in 2015.



Ρ

1. Leading the group of students. 1. Conducting scientific research internationally.

2. Publication of the results.

3. Mastering methodology application.

4. Mastering teaching methods.

4. Effective cooperative learning. Assist with mentors and coordintaros.

research group.

and ideas.

S

research work.

and participants.

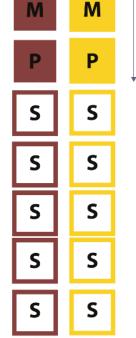
member of the group.



1. International work with support of practicing urbanists and architects.

2. Extensive knowledge of designing process with high prospect for publishing internationally.

3. Obtaining and gathering research and professional skills.





PhD researchers & Group coordinators research project coordination

Mentors

ISOCARP members

PhD researchers

Μ

Students

PhD researchers & Students research team

M

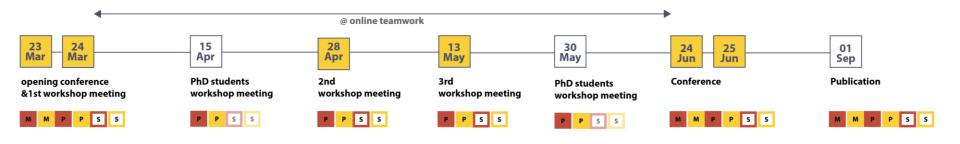
S

optional

Actors























1. Finding multifunctional spatial solutions to render Baltic cities and communities more sustainable through the concept of **ecosystem services** – theory and methodology

#### 3.2 ECOSYSTEM SERVICES DESCRIBED

#### 3.2.1 PROVISIONING SERVICES

Provisioning services are all the material and energetic outputs from ecosystems (MA, 2003; European Environment Agency (EEA), 2011). These include biotic and abiotic outputs such as wood, fresh water, and crops. In general, mineral resources such as oil, gas, or gold are not taken into account. The resulting products and goods are tangible, and can often be directly consumed, used, PROVISIONING S exchanged or traded (EEA. 2011).

#### FOOD

This includes food products obtained from plants, animals and microbes (MA, 2003). Food production takes place in any environment, and many environments have been and are still currently altered to provide food resources. Within the ecosystem services concept, the focus, however, lies less on intensive food production systems, and more on food production within the natural abilities of an environment. This can include activities like fishing, hunting, berry-picking or mushroom-picking. FOOD One of the major challenges is to bring food production in balance with other ecosystem service:

#### RAW MATERIALS

Raw materials can be derived plants, animals, and microbes, and be used for the manufacturing of her products (MA, 2003; EEA, 2011). Materials can be used for construction such as wood, reed and straw, or for textiles such as jute, hemo, leather, and silk, or even for ornamental use like flowers. shells and feathers. Materials can be gathered from every ecosystem. Important though is to balance **RAW MATERIALS** this ecosystem services with other services.

PROVISION

**REGULATING SERVICES** 

#### FRESH WATER

Fresh water is a natural resource which is one of the best known goods ecosystems provide to people. Fresh water is essential for human well-being and a connecting element for different ecosystems. Ecosystems provide storage and purification of fresh water. Water is stored in streams, rivers, lakes, glaciers, and groundwater aquifers, while ecosystems as wetlands act as purifiers. Provision of fresh water is nowadays severely under pressure due to pollution, climate change, and WATER nsumption of water resources. Ensuring replenishment of aquifers, flow and storage, and purification (notability) will be major tasks for future provision of fresh water.

#### MEDICINAL RESOURCES

The importance of environmental health to human health has been made apparent in the Millennium Ecosystem Assessment (2005). This includes the provision of many medicines in traditional as well as modern medicine, food additives, pharmaceuticals, biocides (MA, 2003). People have since long used natural materials for curing different diseases, and still discoveries are made that moves medicine forward. The largest threat however is the destruction of ecosystems, over-consumption MEDICINA and destructive harvesting (Ahmad, Ahmad Malik and Shakya, 2013) as well as the extinction of species before their abilities to cure diseases can be discovered (Barata et al., 2016).

#### 3.2.2 REGULATING SERVICES

Regulating services are the "benefits from the regulation of ecosystem processes" (MA, 2003). Ecosystems, and in particular ecological processes, control and alter biotic and abiotic factors which are important for the people's environment (EEA, 2011). These benefits have indirect use value (TEEB, 2010) which means they are not consumed, but influence "the performance of individuals, communities and populations and their activities" (EEA, 2011).

#### **4.1 GREENING OF URBAN STRUCTURE**

#### 4.1.1 URBAN AGRICULTURE

Urban agriculture concerns the production of food and materials with concept supports sustainable development of cities as it contributes to the (Deelstra and Girardet, 2000). Urban agriculture spaces can vary in size They may serve only the local community, or it might concern an urban fai residents (Mougeot, 1991). There are numerous examples of community of by organised groups of people. Sometimes these places serve certai neighbours, but they can also be open to everyone who is willing to parti

In Poland and many other countries, the idea of urban agriculture cannot idea. In many cities, allotment gardens are very common; there are ab gardens in Poland (Centrum Badania Opinii Społecznej, 2012). The Polis exist already for more than 120 years (PZD, n.d.), and they are still very research study held in 2012, around 17% of adult Polish people are en (Centrum Badania Opinii Społecznej, 2012). Most of these allotment gara and not accessible to a greater public. Furthermore, cities are no long allotments despite the trend of urban agriculture. New places, therefore,

Urban agriculture gardens appear nowadays in disused areas, within rooftops. Crops may be sown in planters or directly in the soil dependin quality of soil. As contaminated soil can be unhealthy in cultivating edi to check soil qualities, especially in cities. Next to food and material pro help to improve microclimate, water management, nutrient recycling, th minimise waste in cities. In addition, urban gardening offers recreation, m and can raise the environmental awareness of city inhabitants (Deelstra a





#### 4.2.9 CONSTRUCTED WETLANDS

Constructed wetlands are man-made shallow ponds or canals which are planted with water and swamp plants. The aim of a constructed wetland is to improve the water quality through the wetland vegetation, soil and their associated microbial assemblages (National Risk Management Research Laboratory, 1999). Constructed wetlands are eco-friendly solution, which help to remove nitrogen (up to 90%), have metals (up to 80%) and phosphorus (up to 100%). This solution can also minimize the number of bacteria in the water (Jurries, 2003). It also provides habitat for wildlife (National Risk Management Research Laboratory, 1999). This solution is usually less expensive than traditional wastewater treatment options. Moreover, it has low maintenance costs (U.S. Environmental Protection Agency, 2004). However, the efficiency is delay 1 to 2 seasons until vegetation will be well established. Constructed wetlands can be used to treat various kinds of wastewater such as urban run-off, municipal, industrial, agricultural and acid mine drainage (National Risk Management Research Laboratory, 1999). Yet, they need to be design on uplands, and outside floodplains and floodways, in order to avoid damage to natural aquatic resources (U.S. Environmental Protection Agency, 2004). The constructed wetland should be created as a long and relatively narrow depression. Jurries (2003) recommends to use a length to width ratio of 5:1, but minimum ratio is 2:1 as the long length extends the filtration time. Wetland plants should be chosen according to be treated wastewater and preferably three to eight different plants should be used (Jurries, 2003), yet the wetland can also be allowed to grow naturally (U.S. Environmental Protection Agency, 2004).

#### Ecosystem services:



ig. 4.2.9 Constructed wetlands at Providence Estate, nvale, Victoria, Australia. urce: Programmed Property Services

ig. 4.1.1. Urban Agriculture "Miasto Ogród", Warszawa. ce: Anna Janu

42 Finding Design and Planning Solutions to Render Baltic Oties and Communities More Sustainable Through the Concept of Ecosystem Services – Theory and Methodolog

12. Berline Design and Plan



## 2. Baltic Sea climate fever. Creative solutions for waterfront cities in the context of **climate change**

#### 1.2. GOTHENBURG

The city of Gothenburg is located on the Swedish west coast. The city is today the second largest city in Sweden, with about 510 000 inhabitants, but its origins date back to 1623. The city centre has a classical European character, specified by a dense mid-rise structure with modicum vegetation.



The history of Gothenburg begins with the foundation of the heavily fortified town in 1621, during the Thirty Years' War, when Sweden was once-again in armed conflict with Denmark-Norway. Ir this period the configuration of Sweden's borders made Gothenburg strategically critical as the only Swedish gateway to the North Sea and Atlantic, situated on the west coast in a very narrow strip of Swedish territory between Danish Halland in the south and Norwegian Bohuslän in the north. Once Sweden had annexed Skåne in 1658, Gothenburg expanded as a trading centre. Boom-time came in the 18th century, when merchant companies like the Swedish East India Company made huge amounts of wealth. From the 19th century, ship building was a major part of the city's economy, until the industry totally collapsed in the 1980s. Volvo's first car wheeled out of Gothenburg in 1927. It's now one of Sweden's largest companies and it's estimated that a guarter of the city relies

el wil nd the

city will ion and sidence stter in suld be which where

#### 1.4. TRICITY

Applomeration called the Tricity consist of cities Gdańsk, Gdynia and Sopot. They are located on the Bay of Gdansk, partly on lowland coastal strip and partly on higher moraine hills. Location of Gdansk is special because of its eastern part is situated on the depressed areas of the Vistula delta. Tricity has a fairly good road, rail, air and sea links with many European cities. This is the area of high landscape and natural value



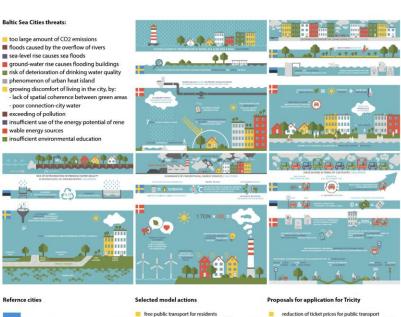
Tricity is a metropolitan area in Poland consisting of three cities in Pomerania: Gdańsk, Gdynia and Sopot, as well as minor towns nearby them. Urban structure of the area is a compact unit for urban development, which boundaries set only administrative divisions and urban fabric of the city is continuous. Tricity is located in northern Poland, in the Gulf of Gdansk and Puck Bay in Pomerani Voivodeship. The dominant role due to the size (nearly 63.5 % of the Tricity) and the number of inhabitants (approx. 62%) of the city is in the structure of the Tricity Gdańsk, which is also the seat of the Pomeranian government. Since 28 March 2007 Tricity, as an urban and coherent area, was formally recognized as an urban center under the Carl of Tricity. The oldest references that relate to Gdansk (year 997), next one of the oldest cities from Triciti is Sopot (1283). Sopot is the smallest city form out of them. Third city which forms the region of Tricity is Gdynia and the first references concern a village called Gdina from 1253. However, as a city of Gdynia, it started its intensive development only in the twentieth century. Gdynia acquired city rights on March 4 1926. During World War II and the occupation by Nazi, population in Gdynia significantly changed the ethnic structure of inhabitants, because of the massive deportation of the Polish population from the city and populating it by German people. Gdynia again returned Poland in 1945 and in the same year began the development of the port city.

In the twenty-first century, the shape and directions of development of the Tricity will be determined mainly by the National Policy Municipal harmonized with the directions of the development of the European Union - the community to which belongs Poland. At the local level increasing influence on local politics in each city of the Tricity should have, established in the form of Association (2011), Metropolitan Area Gdańsk -Gdynia- Sopot, which main goal is to strengthen cooperation and to achieve harmonious development of the whole metropolitan area around Gdansk. The composition of the Association 2015 consists of all three cities or that co-creating Tricity: Gdańsk, Gdynia and

One of the most important climate change impacts for region of Gdansk, Sopot and Gdynia are

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 opening the city to the water through the comprehensive urban planning reducing car traffic through park&ride system and paid parking zones in the city center weden, Gothenburg

- program "Electricity" promotion of hybrid and electric vehicles new strategies for the prevention of floods
- Lackarebäck ultrafilter treatment and purification of water
- the use of reverse valves in drain outlets to prevent backflow of water while raising
- unified system of green neighborhoods.
- which aims to reduce the temp. and increase shading Cloudburst Projects" - - investments that are
- designed to absorb rainwater

- organizing the public areas at waterfronts especially in Gdansk, where these areas are unused construction of Park&Ride system at the most
- frequented railway stations like PKM
- introducing hybrid or electric vehicle in public transpo-
- rtation promotion and financing of ecological transport finding a new way for obtaining the drinking water
- continuation of the process of introducing hybrid or electric vehicle transportation.
- modernisation of the flood gates system on storm . water drainage in Gdansk
- creating of system of connection between the green areas in the whole Tricity, not only in individual cities
- preparation of the draft Green Zones located throughout the city

56 Research title Research title Research title Research title

19. Baltic Sea Cities threats

Source: own elaboration

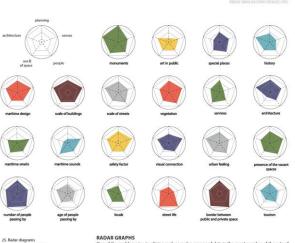
Estonia, Tallin

Denmark, Copnehager



4. **Re-articulation** of Baltic coastal districts' **identities** from perception to practice. The case of the northern urban edge of Gdansk

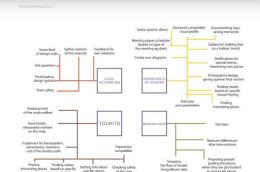




Source: own construction

One of the problems in visualianing such complex groups of data is the great number of the arts of the datas of impacts on the parameters, which makes the matrix way difficult to randle Beause of that, it is difficult to analyse the elements of identity and to decide, which parameters to choose to the datas of the d

The variety of shapes also helps to investigate how parameters correlate with the different elements of the identity and to find those, that are responsible for the aspects that are important at this stage of study. Thanks to that features the radar diagram can be easily used as the "guide" not only through



specific approxil, histoprosing ubgichts and objective elements of different status, in a way that the privates cit who show them was achieved for privating a specific matrix fusing in mold the way. complex character of the identity, it is coursal to understand the way it works. The contracted on the application her do approximate allows the informations is a specific matrix factor and the specific mass of the application her do approximate allows the information is a specific matrix factor and the specific mass of the application her code for future development. Therefore the better the gathered information is organized, the more appropriate and implementatic codes can be independent.



3. Cities rising from the ashes. The identity of baltic region cities destroyed during II world war in context of **proccess of rebuild**, architecture and urban design, guidelines for middle



HAMBURG THE CITY WHICH PROTECTS ITS SPIRIT

#### THE HISTORY OF HAMBURG

Hamburg is a city with a long maritime tradition, which history began already in 9th century as a mission settlement In 1241, the city formed with Lübeck the first formal alliance, which was a prototype of Hanse. In the agreement, both of them committed themselves to protect together trade routes on sea and land, especially in the lawless territory between the Elbe and Trave rivers. The league, joined later by other trade cities, dominated commercial activity in northern Europe from the 13th to the 15th century.

The city of Hamburg was damaged several times during its history, including the "Great Fire" in 1842, which lasted 4 days and destroyed about quarter of the inner city However, the biggest wound was destruction, caused by allied **bombing** in 1943, which turned into ashes about half of the city and changed the image of some places for years. During the rebuilding process the main goal was to protect the history and 'the spirit of the place, but without reconstructing the actual urban tissue.

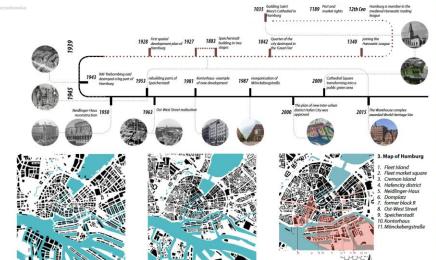
began already before World War II. In 1928, the first spatial development plan was created by German Academy of Urban and Spatial Planning, Settlements were supposed to be located around system of communication axis starting from the centre of the city and creating nearby empty areas of natural landscape. The concept came back later after 1955.



Legal urban planning for Hamburg

#### OBSERVATIONS

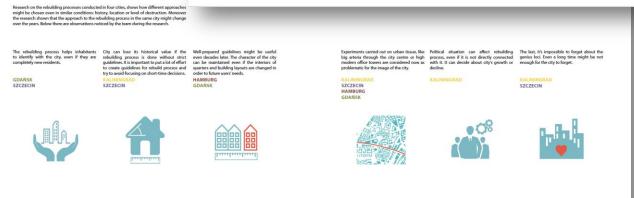
CONCLUSIONS



16. Research this Research this Research title Research title Research

#### APPROACH TOWARDS REBUILDING PROCESS

Although right after war damage building housing estates was the most urgent need, preserving an urban image was not less important. Fritz Schumacher, a city's building director from 1909 to 1933, in his speech in 1945, noticed: "Already the next generation will only know from books, how Hamburg's towers and cityscapes looked like. This is fortunate, because it is useless to mourn about something irretrievable, but it is a disaster if the "spirit of the place", which was in irretrievable, is no longer kept in the heart of creators" (Schwarzkopf, Schipporeit, 2012). In the first years there was a variety of concepts on "recovery of the image of the city", but the main goal of the Monument Preservation Office was to keep "the character of the city". Main churches and all buildings, which had any historical value were then chosen to preserve. In 1948, planning law was also updated. It regulated some features of the new developments, like the height of eaves, the finishing of the facade made of plaster or natural stone and the shape of the roof, which should form a "visible pitched roof". Those rules were introduced for example in reconstruction of Neidlinger-Haus, which is situated near the main square. Another relevant aspect for preserving the cityscape was preserving the crown of the city, which meant important points of view on the skyline, especially church towers and a tower of the city hall (Schwarzkopf, Schipporeit, 2012). Almost all building projects after 1945 had to respect this requirement, and it is an important concern also nowadays. In years 1945 65, the approach towards rebuilding was influenced by the modernistic idea of "segmented and scattered city" On the ruins left by bombing, a big arteria called Ost-West Street was created. New buildings in area around this development were formed as solitary structures, surrounded by immense free space. Some of them began to interfere with the skyline because of their height. Since 60s of 20th century, precast elements for building flats were used. It resulted in a rapid construction and aging buildings, which often lack well organized public spaces. Some new office districts, like City-Nord, were created outside the city centre and took over the pressure from the historical part. It protected the downtown silhouette and at the same time allowed the city to develop. An important place was also Speicherstadt - a Warehouse district, located in the port of Hamburg. It was destroyed in about 50% during allied bombing. Most of the objects were rebuilt in a modern way, with introducing new functions like offices and only referring to gothicizing, brick, historical architecture.



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5. **Multicultural** coastal cities: what are the differences in **culture of urban planning** management? Comparison analysis of Gdansk and Gdynia

MULTICULTURAL COASTAL CITIES: WHAT ARE THE DIFFERENCES IN CULTURE OF URBAN PLANNING MANAGEMENT COMPARISON AWALYSIS OF COANSK AND COTVINA

e goal of this book





More information at

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Contact us

msrl@isocarp.org

# Ready for MSRL 3.0 ?

