

PLAN



ISOCARP
Knowledge for Better Cities

Issue 5 November 2017

Bodø

New Airport ... New Smart and Green City?

Urban Planning in the High North

Recycling Sites, Reinventing Cities

Bringing Nature into the City



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Illustrations

Paul Lecroart and Arunava Sarkar: 56 - 61
All other illustrations were supplied by the respective
organisations or authors of the text.

Editor's note

Sofia Morgado, Editor



As wise as an Editors' note should be, we cannot help but express genuine amazement at what each of the UPATs' members experienced in such a short, yet diversified and plentiful, stay in

Bodø, Norway. And that is the reason why this edition of PLAN seeks to reflect such a wide span of experiences and contributions both by the team's members, and also the kindest hostesses, whilst institutional, that one could ever dream of. The mission drew extensive attention from the media, with newspapers and television providing a great chance to discuss pivotal issues around the future of a city, and the ways it could make sustainable and responsible decisions.

Interviews, by Martin Dubbeling, with representatives of different stakeholders, from the Mayor and County Council President, to the Commander of Airforce Base Bodø, frame the complexities Bodø is facing before such a challenging future. The views of the Rector of Nord University, and an interview with the Head of Urban Planning at Bodø Kommune showcase opportunities the territory and socioeconomic fabric offer, and might competitively develop. These views pair with the article on the Character and Urban Quality of Bodø, by Jonas Bjørklund and Mats Marthinussen.

In a different manner, contributing guests and UPAT team members introduced contextual dimensions, either directly related to the city (Nilsen/Jakobsen) or the Norwegian City Planning (Jensen/Felberg). Refer-

ences from other European cities, known by the way challenges were addressed successfully, provided an international zest that suited well the (also international) character of Bodø (Bilbao, Paris and Lyon, Lisbon were presented by UPAT team members, Juan Alvaro Alayo, Paul Lecroart and Sofia Morgado respectively).

Diverse in backgrounds, approach and results, the UPAT Team members expressed themselves accordingly, and through different lenses. From a strategic and phased planning perspective (A pathway towards New Airport - Next Bodø, by Arunava Sarkar and Paul Lecroart) to specific exploration of how public space could be improved (Bringing Bodø to life, by Andrea Mathieson and Mercedes Beaudoin), the indispensable involvement of people was also considered (Pop-up planning, by Mercedes Beaudoin and Frode Traeen). Last, but not least environmental concerns, especially in such a quasi-pristine landscape were also taken into consideration (A sustainable city with an abundance of water & energy, by Faye Beaman).

As cities can only be such when lively and welcoming, a considerable range of leisure activities are mandatory for a complete portrait of Bodø. The most representative include: Hiking around Bodø, by Andreas P. Lorentzen, Column: Biking in the High North, by Daniel Bjarmann-Simonsen and Local beers and ales in Nordland, by Kristoffer Larsen Seivåg. The world class Stormen Library and Concert Hall, could not but to be included as well as an outstanding architectural intervention, a vivid urban facility and extraordinary infrastructure in the context of music and recording.

Inside you will find some great articles and eye catching pictures by several authors (including our resourceful Team Leader, Elizabeth Reynolds), inviting you to visit Bodø in the near future.

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Contributors



Faye Beaman

Faye is a civil engineer and Associate at Arup Group. Faye specialises in water engineering and provides technical input to infrastructure projects daily. She has worked internationally over the past ten years on projects from the United Kingdom to Australia, with a recent interest in shaping cities.



Daniel Bjarmann-Simonsen

Daniel is the head of the 'New Airport - Smart City' development at Bodø Municipality. Daniel has studied organisational management, communication management, political science, labour law, and history. He has a background in politics, journalism, publishing, and public administration. Daniel considers himself a potato - he can be used for everything.

Martin Dubbeling

Martin is a senior consultant active in the fields of urban planning and design, landscape architecture, and the environment in the Netherlands and abroad. Presently he is the ISOCARP President-Elect and he was Vice President Urban Planning Advisory Teams (UPATs), responsible for this UPAT workshop. Martin has organised UPAT workshops in Singapore, Perm, Shantou, Nanjing, the West Bank, Gaza, and most recently in Wuhan and Bodø.



Jonas Bjørklund

Jonas is an architect and urban planner at the Municipality of Bodø. He received a Masters in Architecture from Bergen School of Architecture in 2008 and a Bachelors in Art History from University of Bergen in 2001. Jonas is the chairman of Bodø Housing- and City Planning Association. Currently, he is working on zoning and master planning Bodø's city centre.



Paul Lecroart

Paul is a senior urban planner at the Urban Planning Agency for the Paris Region, advising different levels of government on spatial strategies, landscape and public-space projects, as well as major urban transformations. Paul has employed his planning experience in New York, Cali, Liverpool, Tehran, Erevan, Moscow, Rabat, Johannesburg, Tripoli, Vitoria, Changzhou, and Montréal.



Mats Marthinussen

Mats is an urban planner at Bodø Municipality. Mats completed a degree in urban and regional planning from Norwegian University of Life Sciences in 2014. His current concentration is zoning and master planning Bodø.



Sofia Morgado

Sofia is an architect and a senior scholar at the Faculty of Architecture, University of Lisbon. Since 1997, Sofia lectures urban design studios, contemporary urbanism, and metropolitan studies. She is actively involved in both international and national networks and research. As such, she has also been the Chair of the Scientific Committee of ISOCARP.



Andrea Marthinsen

Andrea is a graduate of the Norwegian University of Science and Technology. Andrea is currently working in Ramboll's Architecture and Planning team, and used her skills to work with Mercedes on the urban design concepts to bring some of Bodø's public spaces back to life through improved links to green and blue resources.



Mercedes Beaudoin

Mercedes received her MSc in Urban and Regional Planning from the University of Central Florida. Mercedes has worked as Research Analyst at the Metropolitan Research Centre at the University of Utah and also in the public sector. Currently she lives in Odense, Denmark where she has worked in the Municipal urban planning department. She is an ISOCARP Young Planning Professional and participated in workshops in the Netherlands, Poland, and China.



Frode Traeen

Frode is founder of Traeen Management AS, a company that helps organisations reach goals beyond their expectations. The company's ambition is to make a significant contribution towards a sustainable future, with focus on innovation of management and planning systems. Frode is both a board member in the Norwegian Forum for Municipal Planning and an Associate Professor at the University of Bergen.

Arunava Sarkar

Arunava is an architect specialising in urban development projects. Based out of Dubai, he has worked on greenfield townships, urban regeneration projects, TOD hubs, retail destinations, and institutional campuses in India, the United Kingdom, and the Gulf Cooperation Council. Arunava's work focuses on the relationship between settlement structure, built form, and energy. His passions include sketching, cartography, and urban exploration.

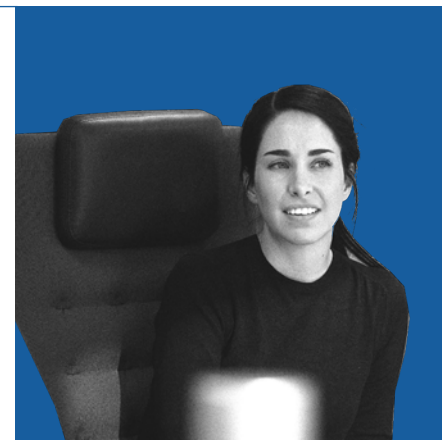


Kristoffer Larsen Seivåg

Kristoffer is a spatial planner in the municipality of Bodø, Norway. Kristoffer addresses spatial planning issues at the zoning plan and master plan levels. Currently, he is the project leader of the municipal master plan for the 'New Airport - Smart City' in Bodø.

Karoline Nilssen

Karoline is currently Marketing Director for Hundholmen Byutvikling, a local property developer, but in her previous role with Bodø Kommune promoted their Smart City initiative. Along with Kristoffer and Daniel, Karoline provided invaluable contextual information on development in Bodø and worked pro-actively as an extension to the ISOCARP / HPF team.



Juan Alvaro Alayo

Juan is an architect and urbanist. Juan has worked in the Planning Group of Arup in London, where he was the Development Planning Director of Bilbao Ría 2000. In this position, Juan was responsible for planning new development opportunities and integrating key transport infrastructures within dense urban environments. Nowadays, he works as an independent consultant and provides advice on international strategic urban projects.

Elizabeth Reynolds

Elizabeth is a Chartered Urban Planner and Director of Urben, an East London studio focused on planning, design, and problem solving for urban environments. Originally from Melbourne in Australia, Elizabeth loves exploring art and architecture in new cities. She is currently writing a book titled *Underground Urbanism* about the overlooked but important places beneath our cities.



Andreas P. Lorentzen

Andreas is a Technical resource Geologist, currently studying for a Master's degree in Urban Planning at the Norwegian University of Science and Technology. In addition to bringing a unique professional perspective to the team, Andreas' skills with photography and computer generated illustration were a great asset in communicating the team's ideas.

The HPF/ISOCARP UPAT team visiting Air Force Base Bodø

26th May 2017.

From left to right: Lieutenant Colonel Henning Hansen Homb (Commander Air Force Base Bodø), Juan Alvaro Alayo, Rolf Kåre Jensen (CEO Bodø Kommune), Kristoffer Larsen Seivåg (Bodø Kommune), Andrea Marthinsen, Martin Dubbeling (ISOCARP Vice President UPATs), Mercedes Beaudoin, Frode Traeen, Faye Beaman, Ida Pinnerød (Mayor Bodø Kommune), Paul Lecroart, Andreas P. Lorentzen, Stephan Skjelvan (Bodø Kommune), Annelise Bolland (Bodø Kommune), Karoline Nilssen (Bodø Kommune), Daniel Bjarmann-Simonsen (Bodø Kommune), Sofia Morgado (Rapporteur), Elizabeth Reynolds (Team Leader), Arunava Sarkar.





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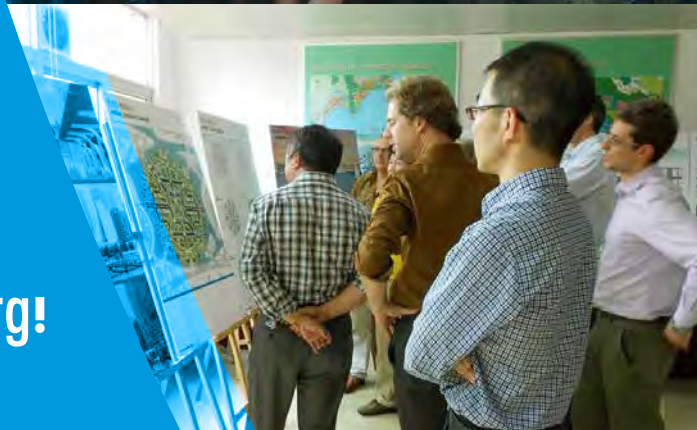
Network opportunities
for international
planning professionals,
academics and
practitioners

Workshops, seminars,
congresses and training
programs

Collaborations with UNESCO,
UN-Habitat and UNDP

Our motto is
'Knowledge for Better Cities'

Meet and join us at www.isocarp.org!



Introductory remarks

Martin Dubbeling, Vice President UPATs

The city of Bodø is the administration centre and largest city in the County of Nordland, with 50,000 citizens. Bodø is experiencing a rapid growth in the population and is now transforming into a modern Norwegian city. Bodø is the location of an important and combined Air Force Base and a busy and regional civilian airport. In the next 10 years Air Force Base Bodø will be partially dismantled and its military services will be moved to Trondheim. The civilian airport will be completely renewed and expanded to enable future growth of both the airport, and its many related activities, as well as for Bodø's future urban development.

The Municipality of Bodø has addressed up these changes and developments to develop the "New Airport - Next City - Smart Bodø" concept. The Municipality realized that replacing and rebuilding the Bodø Airport is a once in a century opportunity that any city should embrace, making adventurous steps to (almost) reinvent Bodø and prepare the city for a new future. A joint team of HPF (Habitat Professionals Forum) & ISOCARP has assisted the city of Bodø in the visioning and implementation process for the future urban development of Bodø and provided professional assessment of the Smart Bodø concept.

This joint Urban Planning and Advisory Team (UPAT) assess how the new airport and the future expansion of Bodø could be connected and integrated in the best possible way with the existing city.

The Urban Planning Advisory Team (UPAT) programme is a service that ISOCARP, the International Society of City and Regional Planners, provides to cities and regions worldwide. Since 2004 ISOCARP has organised 26 UPAT workshops in countries including Singapore and several cities in China, Mexico and USA, the Middle East as well as Russia, Spain, Austria, the Netherlands, Switzerland and recently in Norway. UPAT teams are made up of between around seven planning and design professionals who are brought together from around the world for an intensive week of devising creative solutions and strategic advice in response to specific urban challenges.

The teams comprise a Team Leader and a Team Rapporteur, plus two to four senior planners, two young planning professionals and the Vice President UPATs – all with a broad range of skills and experiences. The strength of ISOCARP's approach lies in the diversity of each team, with a context and perspective that is entirely exclusive to a certain location and point in time. Bringing together ISOCARP members and local professionals creates an alchemy that leads to creative and robust urban strategies. Over the course of their visit to the host city, the team will have undertaken field investigations, spoken to local counterparts and community stakeholders, hosted design sessions and presented their interim findings. Following the UPAT workshop professional publications conclude the research and suggested urban response then presents the final results at a dedicated seminar at the ISOCARP annual congress.

The results of the UPAT team visiting Bodø between 28th of May and 03rd of June 2017 are reflected in this Plan Magazine. Previous editions of PLAN Magazine described the results of other UPAT workshops in the Middle East and China.

I thank the Bodø UPAT Team and representatives of the Bodø Kommune for their efforts in the preparing and hosting the workshop and for their contributions in the production of this Magazine.



Bodø

1,823,000

Number of passengers
travelling to/from Bodø per
annum by AIR



400,000

Number of passengers
travelling to/from Bodø per
annum by SEA



250,000

Number of passengers
travelling to/from Bodø per
annum by BUS/COACH



220,000

Number of passengers
travelling to/from Bodø per
annum by RAIL



Bodø

Oslo



Other Land

71.1%

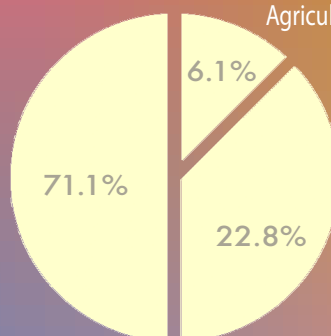
Agricultural

6.1%

Managed Forests

22.8%

Land Distribution



Facts & Figures



Arctic Circle

Bodø, located just north of the Arctic Circle, is the largest urban area and city in Nordland county, and the second-largest in North Norway.



Population

51,022

Winter Darkness



July
13.6°C

Average
4.6°C

January
-2.1°C



Midnight Sun

Most Important Trades



Natural Wonders



Saltstraumen, the strongest tidal current in the world, 400m cubic metres of water passes through the strait over six hours

Highest mountain: Lurfjelltind 1,284 m. ASL



Largest island: Landegode (30 km²)

Impressions of the team

Sofia Morgado & Elizabeth Reynolds

From the sea approach over islands of snow-capped peaks, to the 15 minute-walk from the airport, through a picturesque neighbourhood to the centre of town, many of our Urban Planning Advisory Team members found Bodø very different to other cities they have worked in, lived in, or visited.

For residents of larger cities, the ambient noise level was strikingly low and the city felt peaceful, punctuated occasionally by the roar of a jet from the airbase that shares the airport runway. Once in the centre of the city, shops and services are accessible, taking only a few moments to reach on foot. Yet when the weather turns (as it frequently does) to strong wind and rain, it can discourage walking even a short distance.

We were fortunate to visit Bodø in early summer, but a storm on the first evening gave a taste of winter life. Urban design has a role to play in counteracting the effects of winter, when the nights are long and piles of snow line the streets. New advances in lighting technology offer the potential to provide brighter, more energy efficient LED lights in a range of programmable colours to create a more positive atmosphere, to improve perceptions of mood and compensate for a biological need for light. Lighting could take the shape of urban art with seamless technologies embedded to provide news, amusement, dynamics and shelter.

Our ideas to introduce more bike lanes found support from local commuters, but more important were ideas to make bike lanes more comfortable in winter. Ideas such as wind breaks



Planning begins at breakfast and continues well into the midnight sun...





and de-icing for cycle lanes were discussed as possible ways to reduce the challenges associated with cycling in winter. Lighting and other public realm improvements could help make the city centre of Bodø more cosy and multifunctional, creating a new Arctic street typology.

The people of Bodø are used to the challenges of living in a beautiful but sometimes harsh natural environment. Previous generations of residents have

certainly overcome many hardships, making them proud people who are reliant upon their own abilities. We thoroughly enjoyed meeting and working alongside the people of Bodø, who we found to be innovative, ambitious, collaborative, down to earth and open to new ideas. One of our team mates commented that it was a land of the midnight sun and full of loving people, a kind city where the Mayor welcomed and enjoyed dinner with us.

It is attributes like these that will help the city manage growing pains such as the transition associated with relocation of the airbase. These qualities, and the efforts by Bodø Kommune to reshape the future of their city, help set the scene for more ISOCARP members to visit Bodø for the 2018 Congress, which should act as an excellent platform for the continued exchange of ideas on how to build on the strengths of this small, but special city.

New Airport - Smart Bodø

A double interview with Ida Pinnerød and Tomas Norvoll

Martin Dubbeling and Morten Alexander Mossin

Ida Pinnerød, Mayor of Bodø, and Tomas Norvoll, County Council President of Nordland, welcomed the joined team of Habitat Professionals Forum and ISOCARP. In their speeches to the UPAT team they both talked about their motives and mission to work for and to invest in the future of a Smart Bodø.

1 What are your thoughts and concerns when building for the future in an Arctic setting?

Mayor Ida Pinnerød: In the Arctic, we share common, and unique, positions and possibilities for further development. Even though we keep on being tested by harsh living conditions and climate change, our part of the world still remains as the most peaceful part of the globe as what we call the High North arena of hope. We have a great responsibility for the future of our Arctic region. When we build the communities of the future, we must do it in a smart way. How we live, move and meet each other will prove even more important when facing the big challenges in regards to climate change. We must think smart and innovative when we develop the pre-existing strategic natural advantages we have, and create new jobs in for example industry, energy and seafood.

However, we must also be smart when we develop the future for our elderly, such as implementing the use of welfare technology and adapted housing. In addition, to create a learning environment to help our children become even smarter than us, we need to exploit new technology and knowledge to the fullest extent.





In Bodø, thinking smart in everything we do is one of our most important approaches when progressing into the future and that is why we develop Bodø based on the smart city concept.

2 **What are your thoughts on the current developments taking place in Bodø?**

County Council President Tomas Norvoll: Let me start by once again thanking the UPAT-team and ISOSCARP for choosing to come to Bodø and giving us their expert views on Bodø's potential, and also congratulate Bodø on a job well done so far. I must honestly say that the spirit of the Bodø society makes me proud. The successful Indian real estate developer Kushal Pal Singh said "In urbanization, you think big because you are thinking decades ahead." Looking at both the scale and the ambitions of the new Bodø city project we can certainly say that Bodø is thinking big. Last year was the year for urban agendas. In May, the EU adopted their Urban Agenda for the EU, and in September world leaders adopted the New Urban Agenda. Last, but not least, in Nordland we adopted a regional plan for our 10 cities.

In Norway, there is an on-going debate of what will be the next big driver in our economy after the oil. With

all the urban agendas and by looking at Bodø the last week one could think that city planners are the new oil. Urban Areas of all sizes will be engines of the economy, which boost growth, create jobs for their citizens and enhance their competitiveness in a globalized economy. At present, 73% of all jobs and 80% of people aged 25-64 with a tertiary education are based in European cities, towns and suburbs. 73% is a lot. In order to address the increasingly complex challenges of sustainable urbanization it is important that Bodø cooperate with regional and national authorities, civil society, businesses and knowledge institutions. And that is exactly what Bodø is doing in their new city project.

3 **Do you have any suggestions on how Bodø should use this newly gained international attention?**

County Council President Tomas Norvoll: Bodø is the regional capital of Nordland. It is therefore important that Bodø serve as an engine of prosperity and a centre for cultural and social well being for their surroundings. Bodø is slowly growing, but an unstoppable development takes place. Both public services and private enterprises will experience growth in the years to come. Our new city project has drawn atten-

tion from all over the world. That is why we are here today. The project will influence Bodø's development for many years, but also the region. Therefore, I look forward to the conclusions and recommendations of the joined UPAT team of Habitat Professionals Forum and ISOCARP.

4 **What would you say is your role and responsibility as Mayor of Bodø in this process?**

Mayor Ida Pinnerød: My most important mission as mayor is to create good lives and societies for the people living in my municipality. However, our responsibility as politicians goes beyond that of individuals. We also have the great responsibility to take care of our communities. How can we manage the Arctic in line with the expectations of the people, while also responding to the expectations of the global society? These are some of the questions we have asked the UPAT team, and I look forward to receive your advice for our city. Also, I hope this week has inspired the UPAT team in gaining a good start for global dialogue for smart development in the Arctic. In the end, it is all about our common dream for the Arctic, the people living here, caring for the nature, and our Arctic fellowship.

A snapshot of Bodø

One asset of the city is its compactness with easy access to mountains, Lofoten islands and waterfront: this must preserved

There are lots of natural resources, including tourist attractions waiting to be tapped, but not destroyed by over-development

Sincere hospitality, good food & music made us feel welcome

Bodø has a beautiful bountiful setting, but the climate the people there must have some for survival!



Historic events
have produced an
interesting mix of
architecture



The local community
were willing to engage
with the project and
share their ideas

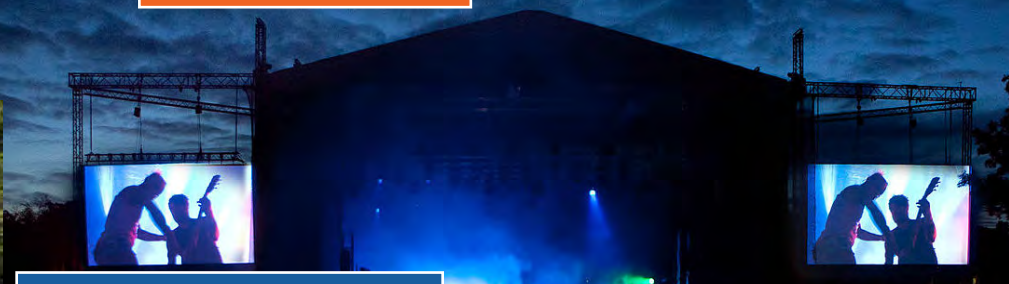


The airport isn't just
close to the city, it is
a part of it

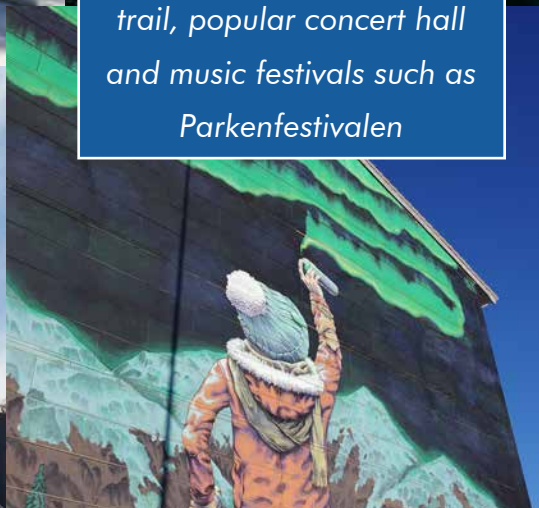
There is an emerging
pioneer spirit in the
north of Norway that
makes many things
possible



tiful and
t a harsh
le living
e secrets



The city lacks the critical
mass typically needed to
have a good cultural life
and vibrant public spaces,
but there are niche areas of
interest including a street art
trail, popular concert hall
and music festivals such as
Parkenfestivalen



Many parts of the city centre
turn their back to the harbour
and could benefit from improved
street design for pedestrians

The Future of Bodø Airport

Avinor

Bodø Airport is situated immediately north of the Arctic Circle, and is the fifth largest airport in Norway. In 2016 the airport had 1.8 million passengers and 44,000 civil aircraft movements. The airport has delivered economic profits from its operations since 2011 and generated 222 million Norwegian kroner (28,233,502 USD; 23,955,118 EURO) in revenue in 2016. A total of 1,300 staff work at the Bodø Airport when all services and bases are counted.

The airport has been located in Bodø, the second largest city of the region, for more than 60 years. The airport occupies almost 1,400 acres, which is close to three times the size of Monaco. Bodø Airport is located only 1,000m from the city centre. There are very few, if any, airports of similar size anywhere in the world that are located this close to a large community.

The first landing strip in Bodø was originally built as a base for the British Air Force via a community effort of volunteers in May of 1940. Later, the runway was moved to a more suitable location, as well as being lengthened. The first commercial passenger operation took place on the day of the official opening, 12 May 1952, by a Dakota DC-3 from Scandinavian Airlines System (SAS). Initially, the civil air traffic was modest. In 1960 only 30,000 passengers made their journey through the airport. In 1984 the number of passengers increased to 690,000 and in 1994 the number passed 1 million for the first time. In 2017, more than 1.8 million passengers will use Bodø airport.

Today, the airport boasts a 3,842m long runway of which 2,974m can be

used by civilian aircraft. This makes the airport accessible for most large passenger and cargo aircraft, and is important in its role as a regional air traffic hub in the north of Europe. At this moment, the airport connects 15 local, regional, and national airports within Norway as well as several international charter destinations.

New Air Defence Strategy, New Possibilities

Since 1969 a number of different committees have looked into aircraft noise problems and options for relocating the airport. The Norwegian Royal Air Force has operated an air base at the airport since 1952. In 2012, the Norwegian Parliament (the Storting) adopted a new long-term plan for the Norwegian Armed Forces.

This plan included the decision to close down Air Force Base before 2022. In the first round these discussions, the Ministry decided Avinor take over the responsibility for rescue and firefighting services as well airside operations, which were tasks that of the Air Force since 1952. Avinor assumed the responsibility for these services in 2016. In parallel, a process had been set in motion by the local authorities to look into potential future uses of the large land area the Air Force would vacate. Studies to look into different options were commissioned. These concluded that relocating the civilian airport to the Air Force Base would have a very positive cost-benefit ratio. The main benefit was that the relocation would reduce transport distances for citizens because of the development of new areas for businesses and housing closer to the city centre.

View from the current passenger terminal towards the airbase and mountains



A New Airport for Bodø

The preliminary studies concluded that moving the airport 900 meters to the south would allow for the development of a “new” Bodø on the land area now being occupied by the existing airport and associated civil and military facilities. It was acknowledged that an attractive compact city close to the centre as well as the airport, would stimulate further development of the city and the region. The decision to relocate the airport, following the withdrawal of the Air Defence Force, would create a favourable situation for the development of the Bodø community. The collective value of the project for the Bodø community was considered very positive, and fulfilled the public criteria for development of cities in Norway.

For Avinor and the aviation community, a modern and efficient new airport is expected to meet all regulatory requirements, reduce aircraft noise impact, and offer excellent operational conditions for aircraft operations. The proposed runway is proposed to include 2,600 meters of paved surface in both directions.

On behalf of the Ministry, Avinor has carried out further review of the prerequisites for establishing a new airport including investment cost, timeline, and the portion of Avinor’s contribution to financing the project. The cost of a new airport was estimated between 4.5 - 5.0 billion NOK (2016 values; 571 - 635 million USD). Avinor’s contribution to the financing was estimated at a level of 1.5 billion NOK (190 million USD). These costs are considered uncertain, as further studies will determine the final project costs. Avinor estimates that the new airport can be operational sometime between 2024-2026.

The land area that will be available for development as a result of moving the airport is estimated to increase in value due to its attractiveness. The Ministry has assessed that this will contribute considerably to financing the new airport. The Norwegian Defence Estates Agency has developed a collective state property strategy for the land areas. Their study shows a possible model for sharing the funding between Avinor,



Jets preparing to take off while passenger planes come in to land

assets from increased value of the land areas, and an external funding source.

A new airport in Bodø was proposed to the Norwegian Parliament during the first half of 2017 as part of the National Transport Plan for the 2018–2029 period. The Parliament adopted the proposal and agreed to the State participating in financing the project together with local authorities and Avinor. The Parliament declared it will include a construction of a new airport in Bodø in the National Transport Plan for the period 2018-2029 with a public funding of 2.2 billion NOK to cover the “external funding” requirement. The decision is contingent upon passing an extensive quality review of the plans that leaves no significant unresolved issues, as well as the airport being acquiring an operating license by the relevant authority.

Avinor will have the overall responsibility for the development and construction of the new airport. A project director will lead the project and set up an appropriate organisation with inter-

nal and external resources. The project director and his staff will have the overall responsibility to manage the project to reach the targets set by the Avinor governing board. The project director will also be responsible for external communications with airlines, airport service companies, local authorities, and neighbours, as well as internal communications.

Even though some important milestones have been reached on the path toward a new airport, many challenges remain. Some challenges include preparing the land where the new airport will be built by removing or decontaminating extensive pollution in the ground from the long-term air base activity, as well as decommissioning or removing air base infrastructure. Furthermore, the community zoning plan regulations and impact assessment is needed to ensure that all costs and important issues are included in the final project plan. The future conditions for a number of aviation businesses in the airport today must also be considered. Following the Parliament’s decision, Avinor has been tasked by the Ministry to present a final and complete plan for the airport development including costs and timeline before mid-2019. The final plan will subsequently be subject to the Parliament’s approval on the project targets.

An Incubator for Airport Innovation

Avinor consider the New City - New Airport project to be unique with the potential to be at the forefront of new technology, innovation, and research on an international scale. Aviation is, in itself, a huge global industry and interlinks with a yet larger number of associated business areas. Being part of this industrial community can result in innovation facilitated and developed by the new airport project which would then gain international attention and thereby spurring further opportunities for local businesses and other involved parties.

Air traffic control (ATC) at the new airport will be using the latest technologies and be operated, not from a traditional control tower, but from a remote

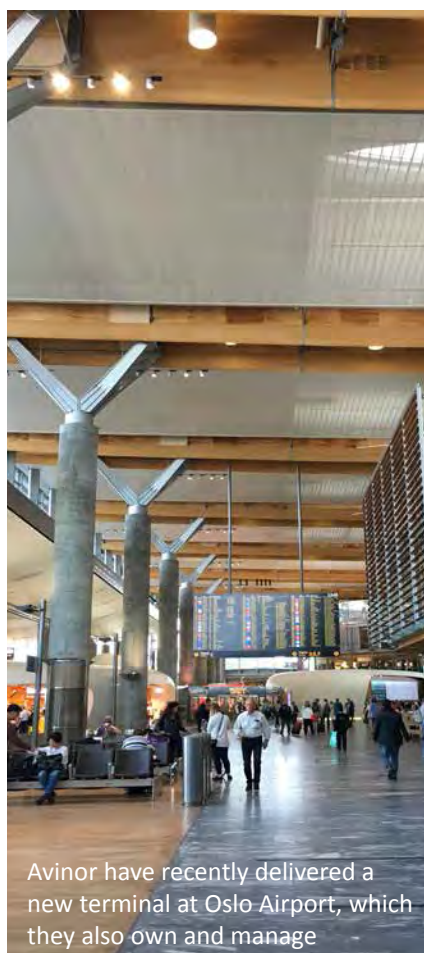


View of the city as you come in to land at Bodø Airport

location equipped for remote ATC services to operate the new Bodø airport as well as other airports in Norway. This new remote tower will be located at the current airport.

Avinor is also involved in the development of autonomous vehicles for snow removal, automated passenger logistics, and remote surveillance of technical facilities and security-controlled areas. For the new airport, Avinor will make use of such new technologies and innovative solutions that can offer efficient operations, reduce environmental and climate impact, and reduce capital investments while improving passenger experiences.

Building the new airport is in line with the strategic objectives of Avinor and supported by the Norwegian Parliament. The project will contribute significantly to further development for the city of Bodø as well as the region for many decades to come.



Avinor have recently delivered a new terminal at Oslo Airport, which they also own and manage

About Avinor

Avinor is responsible for the 45 state-owned airports and air navigation services for both civilians and the military in Norway. This network links Norway together - and links Norway to the world. Avinor is a driving force in environmental aviation work and in reducing greenhouse gas emissions from Norwegian aviation. The company has a leading role in developing and delivering biofuel for aircrafts. Every year Avinor contributes to safe and efficient travel for around 50 million passengers. Avinor employs more than 3,000 people who are responsible for planning, developing, and operating airports and air navigation services in Norway. Avinor is funded by aviation fees and commercial sales at the airports.

Avinor's strategic plan for 2014-2020 defines four overarching objectives for operations:

- **Society:** Avinor shall help to strengthen the competitiveness of the country and the region, and at the same time take active responsibility for the environmental and social consequences of its operations.
- **Customers:** Avinor shall deliver excellent services with a high level of safety, operational stability, and efficiency.
- **Finance:** Avinor shall secure a satisfactory return on invested capital, and safeguard the organisation's investment and financing capacity through a balanced capital structure.
- **People, learning & Development:** Avinor shall be a strong, cohesive and customer-focused group.

Safety has the highest priority in Avinor. In 2016, 50.8 million passengers travelled from Avinor's airports, an increase of 1.6% over 2015. International traffic rose by 2.6% compared with the previous year, while domestic traffic increased by 1.2%.



Aerial view of Air Base Bodø



Concept for a new Bodø airport

Air Force Base Bodø

An interview with Henning Hansen Homb

Martin Dubbeling

Lieutenant Colonel Henning Hansen Homb is the Commander of the Air Force Base Bodø. He personally gave the joined team of Habitat Professionals Forum and ISOCARP a tour of the Air Force Base in the middle of the Arctic Challenge Exercise in which 12 NATO Countries participated.

1 Military planes and fighter jets and civilian aviation are using the same airstrip in Bodø. During exercises and operations it can be quite busy. Is Bodø a complicated airport?

Bodø airport and Air Force Base (AFB) Bodø have existed since the 1950s. During all these years, the same runway has been used for both civilian and military aviation, while the operational areas (taxiways, stands, hangars etc.) have been separate. Until 2016 the armed forces had the responsibility to run the airport. However, due to the reorganization of the Royal Norwegian Air Force, with a forthcoming closing of AFB Bodø by the end of 2021, the responsibility was handed over to the civilian aviation authorities (AVINOR) in 2016.

AFB Bodø used to be the largest military airbase in the RNoAF (Royal Norwegian Air Force). During the Cold War it housed two fighter squadrons, a transport aircraft squadron, and both transport and Search and Rescue (SAR)



helicopters. Now it consists of one fighter squadron, flying F-16s, and a detachment of SAR helicopters. Therefore, the extent of daily military air operations is now much smaller than it used to be. Still, at least every second year we host large air exercises, flying up to 30-35 fighter aircraft twice a day out of AFB Bodø, usually for a 2-week period.

We have an excellent cooperation with the civilian air traffic controllers. Their organization consists of highly experienced personnel. The cooperation has been at such an excellent level for decades. Even though the number of civilian flights is high during rush hours, we have never experienced any problems, such as delays on civilian flights due to military activity.

2 Air Force Base Bodø will be moved to Trondheim and partially dismantled. Is this the end of military use of the airport or will Bodø still have a partially military function in the future?

By the end of 2021 all fighter aircraft activity will come to an end in Bodø. At that time, the F-35 is to fully replace the F-16 in the inventory of the RNoAF. The F-35 will operate from a main base at Ørland outside Trondheim, with a forward operating base at Evenes, between Harstad and Narvik north of the Lofoten islands.

Still, the SAR helicopter detachment, operated by the RNoAF, will have its

base in Bodø. Whether or not the armed forces are to keep any infrastructure at the new airport in Bodø for military purposes, such as support for allied reinforcements, is a question that has to be addressed to the Ministry of Defence. However, my impression is that this matter is still being discussed.

As the leading officer, you know the air force base quite well. It was built in the Cold War and contains a lot of buildings and structures. Do you see parts of this as military heritage? What would you recommend to keep intact for future generations?

The military airbase in Bodø consists of a lot of buildings and structures, such as large hangars, smaller shelters (which usually house one fighter aircraft each), operational bunkers, fuel installations etc. Most of this infrastructure was built as early as the 1950s, to house the [at that time] new air force base, in the context of Cold War between NATO and the Warsaw pact countries. From my point of view, most of this has a strongly lim-

ited value as military heritage. What many consider a valuable installation for museum purposes is a mountain facility that during the Cold War used to house one of the fighter squadrons. This mountain facility (named "Anlegg 96"), comprising approximately 8.000 m², was supposed to withstand a nuclear attack.

It had its own power supply and water supply, technical facilities for maintenance of the fighter aircraft, and ability to store 20+ fighter aircraft inside the facility. 331 Squadron left the facility in 1996, and since then it has not been maintained. Today, it is only used for storage purposes, and needs extensive repair and maintenance work before it could be used for museum purposes. Additionally, it could be of interest to keep an alert facility, which is located nearby "Anlegg 96". This is a smaller installation, comprising two 1st generation aircraft shelters (also built in the 1950s), and a small residence for the pilots and flight technicians who were on watch as Quick Reaction Alert (QRA), which mission was to be on a 15 minute alert 24/7. The 331 Squadron, operating F-16s in Bodø today, still has the QRA role on behalf of NATO until the F-35 takes over this role, planned for Jan 1st, 2022, manning a 15 minute alert from quarters at AFB Bodø.



Air Force Base (AFB) Bodø

Empowering people. Powering innovation: Nord University and Smart Bodø

Professor Bjørn Olsen, Rector of Nord University

New airport – New city is Bodø's answer to the challenges of sustaining and reinforcing economic and human development in our region. The fate of Bodø, the region, and Nord University are inherently bound. We face many of the same challenges, and we can benefit from shared opportunities.

One such challenge is the flight of young people from the region. How do we retain Bodø's brainpower and recruit bright young minds? Innovation and creating capital are other areas in which we can turn challenges into opportunities for our mutual benefit.

Overall, Nord University's engagement in the Smart Bodø project really embodies our vision of providing local solutions to global challenges. This is a great opportunity: to challenge our own creative power; to pursue a symbiosis of research, education, innovation and development and, ultimately, to realise our shared vision for a sustainable future.

Brainpower in Bodø

Bodø is home to Nord University's main campus, which is situated 12km from the city centre. The student population in Bodø is currently just over 6,000, of which international students comprise around 10 percent.

The challenges that Nordland and Bodø face – regional urbanization, an ageing population, low levels of education, few expert jobs, and a gender imbalance that favours men – are also relevant for Nord University. One important aspect is the recruitment and retention of bright young minds. Our

new, green, high-tech, zero-emission city is worth nothing without the population and industry to sustain it.

Young people are the future of our institution and our region. They represent our future leaders, labour power, brainpower, innovators, entrepreneurs and families. However, "brain-drain" and low education levels in Nordland persist, with the gap between national and regional levels widening steadily.

“

We do find [...] that the university effect seems to be related to increasing the supply of skilled graduates who raise productivity in the firms they work in. We also find that universities boost innovation. ”

(Valero, Anna and John Van Reenen (2016). The more universities in a country, the faster its economic growth. LSE Business Review.)

From 2001 to 2017, the overall populations of Nordland and Nord-Trøndelag increased, while the young adult population (18 years) decreased significantly. Projections show that this trend will have a significant, negative impact on the young adult population in Nordland and Nord-Trøndelag by 2030. The university recruits regionally to a large degree. The flight of young adults from the region represents a threat to the university's robustness. Retention of young adults is also one prerequisite for the long-term success of Smart Bodø.

The challenge of retaining and educating young people is an issue that Nord University and Smart Bodø can solve together, for the mutual benefit of the institution, the city and the region. For instance, investment in Smart Bodø raises the city's profile nationally and internationally, increasing the city's attractiveness as a destination for study. This enables the university to recruit more widely. Current figures show that three of four graduates settle in the region after finishing their studies at Nord University. Some of these graduates will form the future labour force in the region's hospitals, schools and government, while others will go on to roles in business and industry.

Nord University aims to ensure that graduates enter the community with an education that enables them to tackle local challenges in innovative ways and produce universal solutions to global issues. Where better to release Nord University graduates, than into the innovation-receptive arena of the new Smart City?

Creating Capital

Good access to raw materials and low levels of innovation have historically defined our regional industries. Nordland is rich in natural resources, with access to oceans, mountains, arable soil, forest and people. Agriculture and fisheries have formed a part of the educational and economic landscape in Nordland since the late 1800s. Today, however, there persist low levels of local conversion and investment by which the value of these natural resources is realized for the benefit of the region. Nord University

aims to create productive partnerships with business and industry and contribute new knowledge in order to change this pattern. The university has three strategic focus areas that define this mission – health, welfare and education, innovation and entrepreneurship, and blue-green growth. Smart Bodø creates a new arena for exploring innovative approaches – a massive field laboratory if you will – at the same as city development creates demand for new knowledge and technology. It is important that the Smart Bodø project utilizes the university's knowledge base in order to aid innovation, and ultimately ensure conversion of raw materials into capital at the local level. Bodø Kommune has highlighted that "the most obvious growth potential lies in knowledge-based work, in development of the marine sector and in tourism."¹ That Bodø Kommune has also identified "co-creation in cooperation with universities, research communities and local government"² is positive. Bodø Kommune has also identified that a part of the Smart City project comprises promoting Nord as Norway's "blue university"³. The university, which has robust research communities within aquaculture and biosciences, would clearly benefit from this form of reinforcement.

In turn, the university can contribute expertise in areas such as logistics, environment and climate research, societal security and emergency planning, resource management, and knowl-

edge-based business development. The university also possesses broad national and international networks, which represent sources of both productive partnerships and funding. Nord University is also gearing for better cooperation with business and industry. New strategic measures include the development of the Council for Cooperation with Business and Industry (Råd for samarbeid med næringslivet in Norwegian), and a regional value creation forum.

The significance of the university's continued growth should not be underestimated. Nord University is not only a partner in the Smart Bodø project – it is a prerequisite. However, the fact remains that the university itself lies well outside the new city's limits. Thirty years ago, Bodø established a new "city centre", in Mørkved, where the university is currently located.

At that time, the focus was on creating a learning and teaching environment where students, educators and researchers would work and live in close proximity to one and other. This proximity and the compact nature of campus Bodø has been one of its hallmarks. The question that arises with the advent of Smart Bodø is the significance of the physical distance between the New City – Smart Bodø, and the university in Mørkved. There is also the question of whether the distance is only physical, but whether it is also cultural.

Certainly, involving the university in the Smart Bodø project constitutes a big step to closing any cultural gap between city and university. New and strengthened partnerships between university, city and business and industry will also be important. However, would the university also benefit from closing the physical gap? Should the university form the hub of the new city? These questions remain unanswered. What is clear is that Smart Bodø presents an important and exciting opportunity for Nord University, both in terms of research and development potential, and in terms of beneficial regional growth.

References:

¹Handlingsplan til Strategisk Næringsplan 2017 – 2021 (Action plan for business and industry strategy 2017-2021)

²Ibid

³Ibid

Nord University

Nord University was established on January 1 2016 after restructuring in Norway's higher education sector. It is Norway's youngest university. Nord University manages nine study locations in northern and central Norway, from Vesterålen in the north to Stjørdal in the south. Today, the university has a total of 12,000 students and 1,200 staff.

Pictured below: Dr. Reid Hole, Vice Rector of Nord University



Urban Planning in the Arctic - An interview with Annelise Bolland

Martin Dubbeling



The Head of the Urban Planning Department of Bodø has a background in environmental and agricultural sciences. Before starting as an urban planner in Bodø she worked for the Nordland County. Since 2011 Annelise Bolland has leading the fast growing planning department.

1 Bodø is a relatively small city with big challenges in the next decades. Replacing a regional airport, a port and building a new city brings opportunities and requires capacity and experience. How are you going to manage this?

By attracting the right people. We have recently employed two new urban planners, so we are now a team of twelve, and soon we will employ three more. We have big and complicated projects ahead of us. The sooner we have our team complete and in operation, the better. We focus on young planners, as they come from university full with clever ideas and new thinking. This is what we need now. In an early stage we give them responsibilities so that they can develop themselves quickly.

2 Bodø has the distinct character of an Arctic Port City with open connections to the ocean that is situated between islands, fjords, mountains, forests and lakes. Does this reflect the main identity and quality of Bodø?

Not completely. Bodø is indeed a city in the middle of nature with sharp differences between the short, bright summers and very cold, harsh winters.

The city lies within the arctic circle, but I am hesitant to call Bodø an arctic city as we far from the area where it is snowing all year round and where drifting icebergs can sink our ships. There are no polar bears here either! Bodø is a green and compact city with active, easy going and happy people. We do our very best to plan and build an infrastructure that enables them to walk and to bike to work and to school and that gives them easy access to the natural environment of Bodø.

3 You mentioned the sharp differences between the short summers and harsh winters. Do you think that planning a Nordic city like Bodø is different than in other cities in more moderate climates?

Here on the coast in the High North we are exposed to the elements and fast changing circumstances. The weather can dramatically change within a couple of hours, from a clear day to a snow blizzard. That is why we focus on planning a compact city with all services in close proximity. On the other hand we need to make sure that we maintain ample open and green spaces for recreation in summer and winter, near and in residential areas. In the last few years we have really started to notice that climate is changing. Winters are becoming slightly less cold, with less permanent snow, but with more rain. Instead of solid snow and ice we have more icy slurry in the streets in winter. This may change the way we design our public space.

4 Society and the economy are gradually changing into more open, responsive, and interactive systems. Does this change the planning of cities or the way that cities are planned?

First of all, the pace at which urban developments take place has increased considerably. Not so long ago we could develop land use plans for housing, offices and industries and wait for parties to step in and develop what needed to be built. Nowadays there is much more focus on liveability, urban quality and quality of life in much more mixed urban environments. This enables us to have more interaction and engagement with our inhabitants, investors, entrepreneurs and the owners and operators of shops, restaurants and hotels. We as planners are there to help them to solve problems while having an eye on the greater picture, which is a strong and liveable city for a vital community.

5 Bodø wants to become a leading Smart City that uses internet technology for the benefit of its citizens. Will it also change the way that citizens use the city and urban spaces?

The concept of smart cities is much broader than the use of technology only. It is first of all doing the right things for the citizens and making our cities green and inclusive for children and the elderly. It is our task to create an environment in which people are happy. If internet technology can contribute to this, we should not hesitate to make use of it. Like most Norwegian cities, Bodø still has a long way to go when it comes to implementing clean energy technologies. We have an abundance of hydropower, but we could and should do much more in reducing energy consumption and diversifying our sustainable energy sources with solar and tidal power. We are situated in the arctic circle, yet we still have the most light hours of the country. Also, I believe that Bodø could be a testing ground for many initiatives in smart and sustainable technologies. I am particularly interested to see how self-driving vehicles operate in winter circumstances.

6 In 2014 the Stormen Library and Concert Hall were opened and in 2016 Bodø was selected as the most attractive town in Norway. Do you see a direct relation between investing in culture and becoming an appealing and competitive city?

Ten years ago Bodø had the image of an ugly and boring harbour city with a downtown area where almost nothing happened. The city made some brave decisions to change this. We started to improve public spaces, build houses and apartments, hotels, and the library and concert hall in the centre. At the same time we restricted building in the surrounding mountains and in important open green spaces. The combination of these policies turned out to be a much bigger success than we ever dreamed to expect. The library has been adopted as the new living room of Bodø with 450.000 visitors each year - which is not bad for a city of 52.000 inhabitants. Our music festivals and concerts attract many visitors from outside Bodø and even from far outside the region. This certainly leaves a mark and contributes to a better and more favourable image of Bodø.



Bodø's new waterfront Library and Concert Hall

Character and urban quality of Bodø

Mats Marthinussen and Jonas Bjørklund of Bodø Kommune

1816 - The town that settled bold and open

The town that settled bold and open, is the title and first phrase of the Bodø anthem. This is certainly true, and it took all of Bodø's first decade to shore up enough momentum to grow into anything resembling a town. In the first 50 years nothing seemed to stick, and the town was nearly abandoned until the fisheries brought a measure of wealth and ensured a permanent urban population. The small town was laid out with a square grid and blocks of small wooden houses, hugging the coastline dependent on fishery and trade.

Around the turn of the century, the massive breakwater was built, forming the inner harbour. The project included the quay for coastal steamers and passenger vessels, which boosted the

trade and connectivity, and brought tourists and opportunities.

The break water is arguably one of the most important building projects in the history of Bodø, and is still loved by the locals, especially as a place to stroll and to experience the elements.

Bodø 1.0

Bodø continued to grow during the following decades. Boosted by the Stockfish trade and cannery, it slowly crept up from the shore to the foot of the plains.

Surrounded by marshes and farmland, it was a compact little town, made of bright coloured wooden houses in a narrow street grid, with larger structures like the warehouses along Sjøgata, the hospital, the prominent church, schools and commercial buildings.

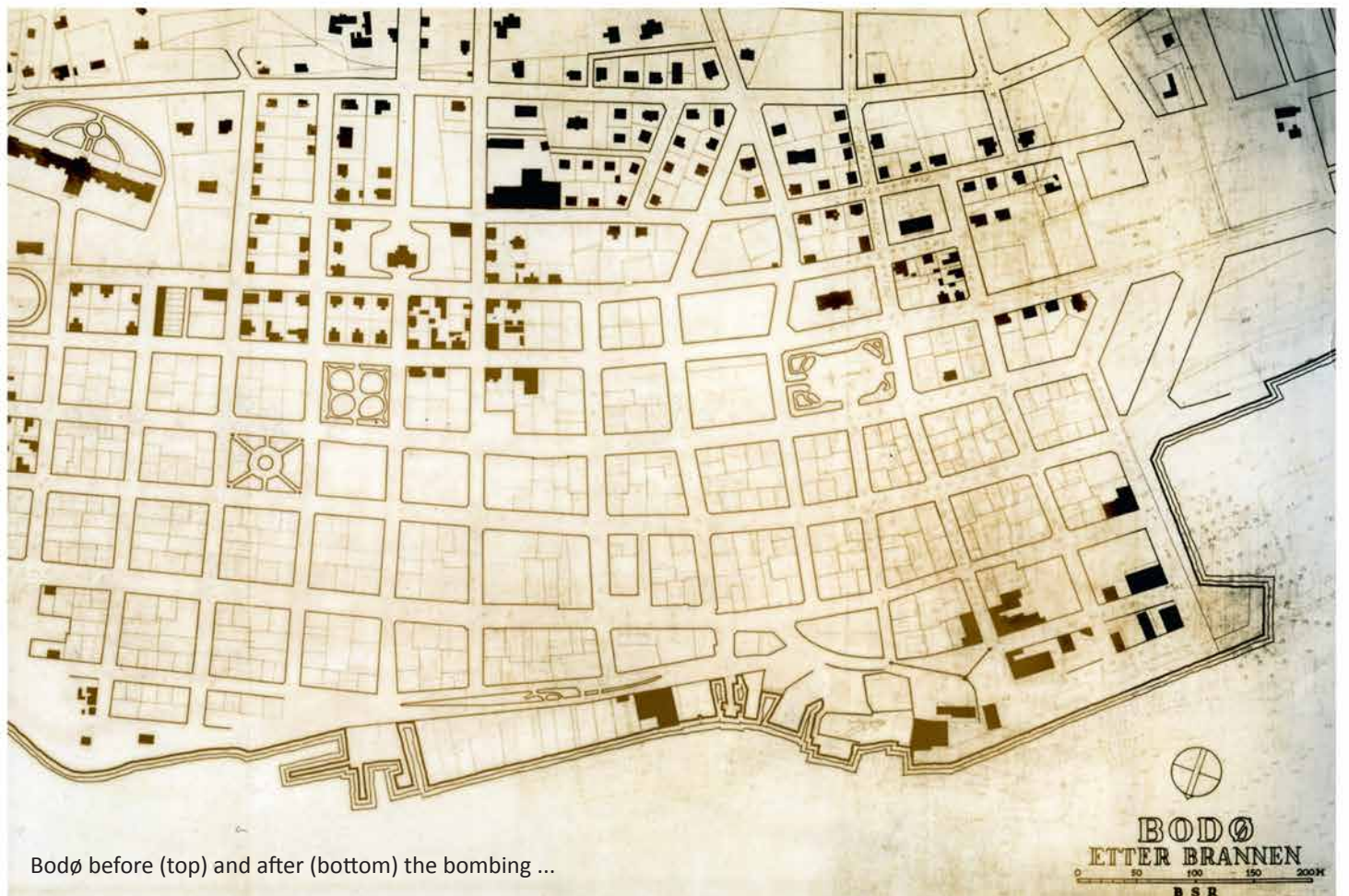
The population of this fledgling town was around 6000 people. Then the second world war came, and this "Bodø one" was flattened by German bombers, demolishing 80% of the structures in a largely evacuated town.

Rebuilding began quickly, with the first new houses arriving during the war as help from neighbouring Sweden. Today, this area of housing, which still remains, is famously known as the Swedish Quarter. The around 100 units were placed outside of the fire zone, on green fields, and served as the first planned town expansion.

It also included multi-family units, and a relative high density. However, at the end of the war there was a dire need for housing, not just in Bodø but in some 20 places all around Norway. A national committee of planners started working on the scheme called BSR, or regulation of the burned places.



The Breakwater and inner harbor around 1935



Bodø before (top) and after (bottom) the bombing ...

Rebuilding

The plans for rebuilding were carried out as soon as possible, but hampered by shortages of materials. The BSR town plan derived from the pre-existing town plans, but widened the blocks by 20 %, adjusted the position of the main streets and opened vistas to the majestic surrounding mountains through the main axes. As for the buildings, the plan devised an increase of one floor, for a total of 3 stories in the most central districts. The plan was made elastic for gradually growth, and also increased the potential commercial floor area by 40 %.

The urban centre was to be built in non-flammable materials, while the outer districts allowed for wooden houses, mainly row-houses and single family units. The housing association built mainly multi-family units, providing housing and better amenities for a growing population. The typical urban building on the other hand, was zoned for retail on ground floor, offices or dwellings on first floor and additional dwellings on second floor. As for the

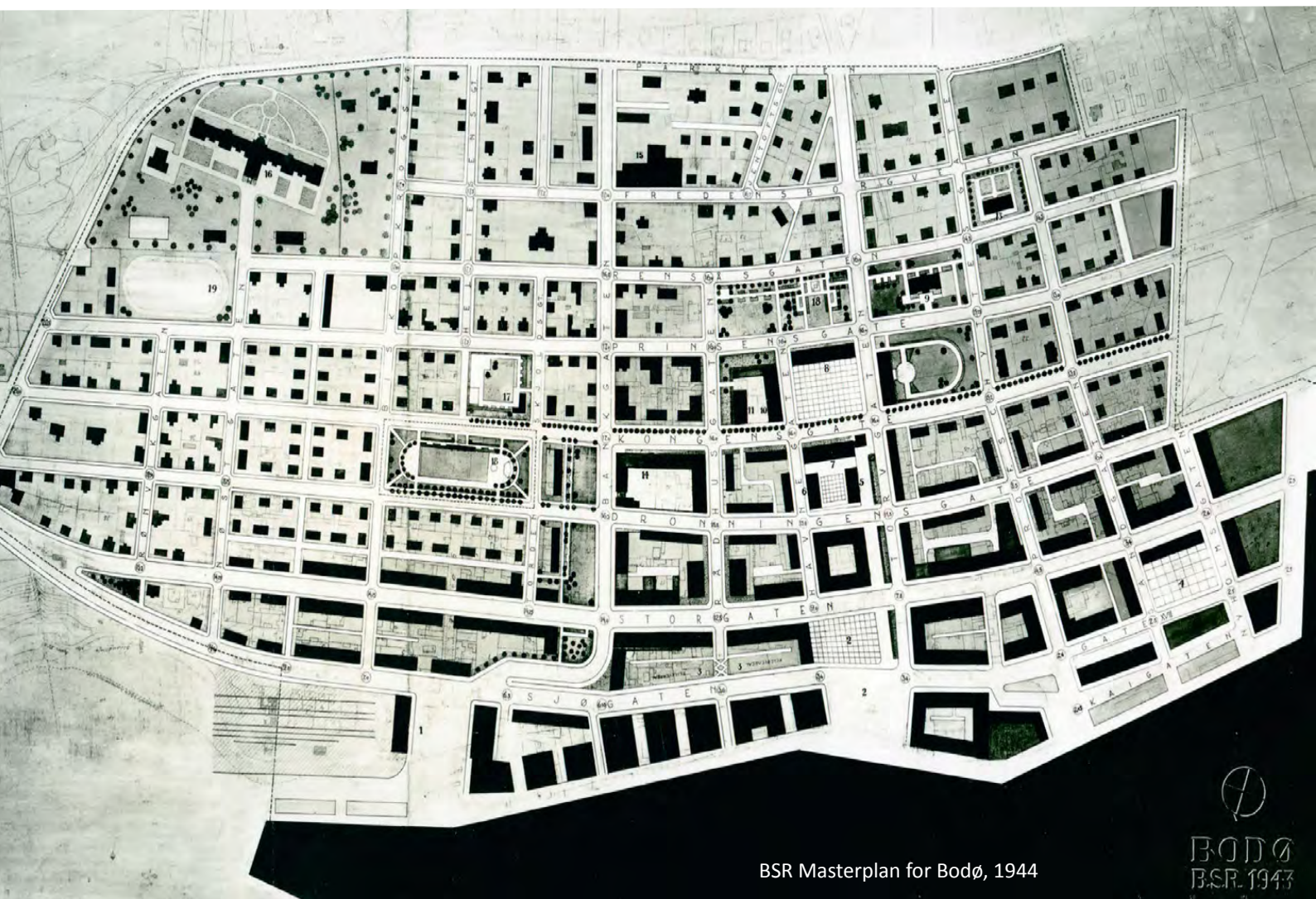
architecture, the typical reconstruction building was clean-cut volumes made of plastered masonry, and very low on ornaments and detail. The plaster had different primary colours and slate covered roofs. The monumental buildings like the Town hall, the cathedral, the post and telegraph building, the bank, the Grand Hotel and so forth were all built during this reconstruction phase. In the early 1960s the town leaders heralded the reconstruction was officially over.

Sprawl

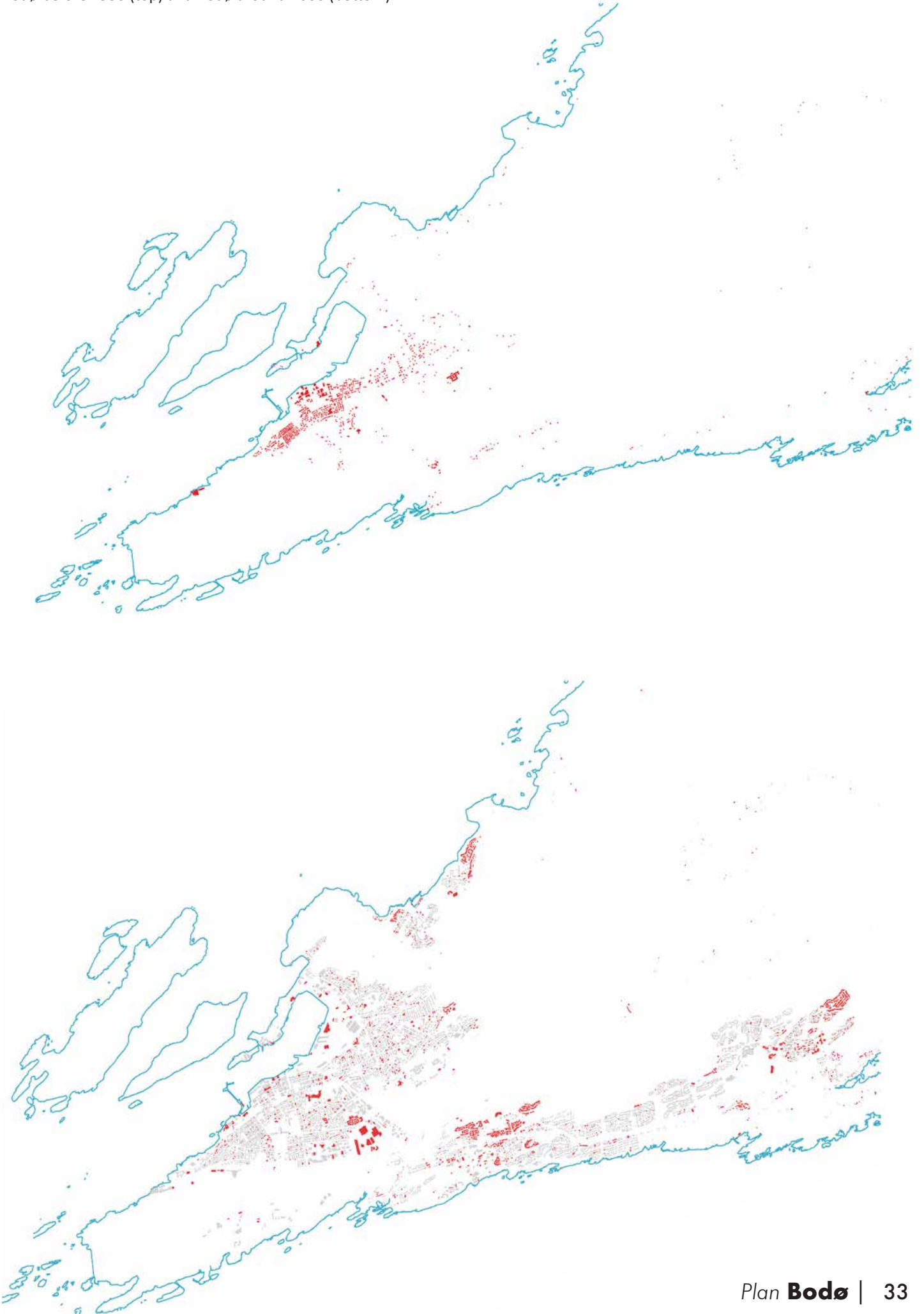
A new issue shortly emerged. The new NATO airbase seized the lion's share of the peninsula, and the plans of extending the harbour in the north-east meant the town had little room to grow. There was a prevailing notion that the town was "full" and the planners looked for new areas for expansion. The options were limited though, as the sea, the farmland, the mountains and the airport restrictions offered few alternatives. Bodø merged with the neighbouring municipalities and started to grow rapidly outwards,

mostly to the east but also to the north. Mørkved was chosen as site for the university some 10km from town centre, and developed into a suburb at the end of the strip of built-up area to the east. The expansion slowly ground to a halt in the 2000s, as new developments tended towards densification of existing areas.

As the main housing development took place along the corridors to the east and north, town centre was primarily a commercial hub and held most of the workplaces. The SAS hotel built in the 70s close to inner harbour rose above the town with its 13 stories. Most of the retail was located in the centre, and the shorelines held industry, mostly related to fishery and other maritime activities. The north east harbour developed as a large landfill project, and joined with the terminus for the railroad. During all these years, the airport and especially the airbase had a significant presence in town centre. The noise from the fighters was ever present, but somehow accepted as a background ambience, the soundtrack of Bodø.



Bodø before 1950 (top) and Bodø around 2000 (bottom)



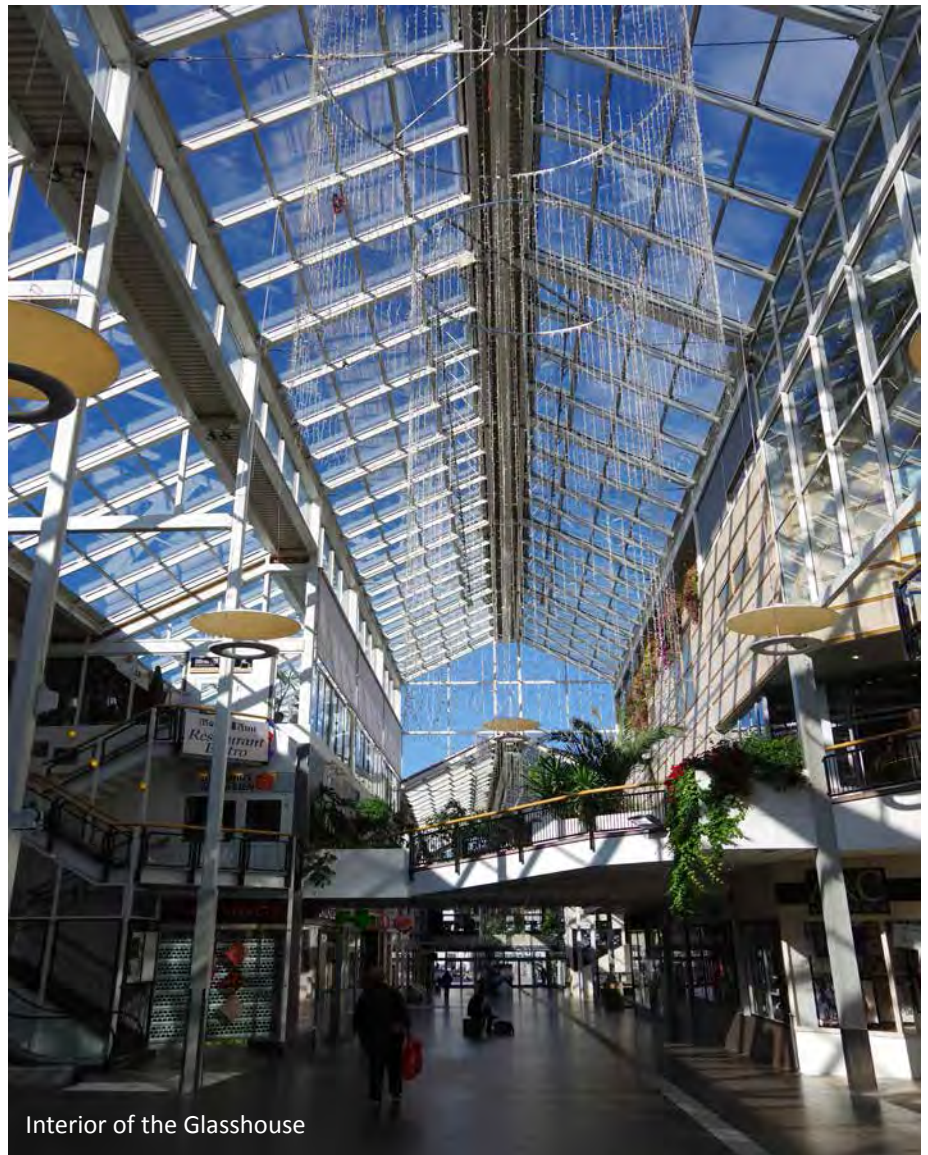
The Malls and the Glasshouse

During the nineties and 2000s the big box- retail area was established just north of the centre. This included one of the largest shopping malls in northern Norway, and posed a threat for the inner centre retail. This was obviously debated, but none the less it strengthened Bodø's position as the regional shopping destination. During this period many of the shopkeepers moved their business from the traditional street locations to the malls, causing some concern for the town dwellers and property holders.

Meanwhile, in the town centre, our famous glass house was put up over the central part of Main Street, spanning two blocks in length. As a public realm it is open 24 hours a day, and accommodates some 70 shops and restaurants. The glass house was and still is vital for the town life, providing shelter for the occasional wind and the elements all year round.

In the last ten years, the planning focus has shifted gradually from expansion and towards revitalizing and re-developing the centre. A zoning plan from 2008 allowed for three new plots for high-rise buildings, dramatically changing the townscape. One of these plots has been built - holding the tallest building in northern Norway - the 17 story Scandic Havet Hotel. Two more high-rises are being planned with the same height, which corresponds to the restriction area surrounding the airport.

One other very important event was the decision to build a new library and concert hall on the two remaining plots after the bombing, which were being used as parking lots. The result as we know it is Stormen, a world class concert hall and a celebrated library, pulling half a million visitors last year. The architecture is a subtle tribute to the clear and spartan features of the reconstruction architecture, and the project includes the refurbishment of adjoining urban spaces. This in turn has led to an increase in restaurants and bars, shopping and town life.



Interior of the Glasshouse

A third and important decision was to open up for new housing projects in the inner centre, which was previously reserved for commerce and retail. From 2014 until today over 1000 new units have been built or planned, with the potential to double the number of inhabitants in the inner centre. This will certainly add to the vibrancy of the town life, and make the town active and diverse, and is serving as a counterweight to the sprawl of the former decades. While celebrating our 200 years anniversary, Bodø was awarded the prestigious prize "Norwegian city of the year" from the government in 2016, in part due to the above mentioned factors, but also because of the new city – new airport project.

New City - New Airport

In 2012 the Bodø community was delivered the devastating message that the airforce base was to be moved to the Trondheim area to the south. This meant that hundreds of jobs would disappear, and it was a major setback for the aviation cluster. However, thinking positively, it was recognised that it could also bring new opportunities.

The air force base occupies roughly the same area as the entire town centre, but is divided from it by the airfield. Additionally, the current noise and land use restrictions from the airport makes it hard to utilize the area for any meaningful urban purposes. However, it was known that the old airstrip has been crumbling for years, and is in dire need of repair - even to function adequately as a civilian airport.



Stormen Library, DRDH architects, 2014

Therefore a plan was formulated to re-establish the airport approximately 900 meters to the south, in the area previously occupied by the airforce base, and then to start a new urban development on the former airport area, which is directly on the edge of the existing town centre.

This plan, known as 'New City - New Airport', has recently been granted state funding in the form of a decision to build the new airport, and the planning of the potential new urban district is in the early stages.

This brings us to where we are today – a small, but confident arctic town with the tools and opportunities to shape its own future.



Future Possibilities?

Destination Bodø

Visit Bodø and Bodø Municipality

You will not find a more impressive entrance than the one you see through the plane window while landing in Bodø. Fjords, mountains, glaciers, a stunning coastline, and crystal-clear waters as far as the eye can see. The scenic region has a lot to offer, and there are several fantastic places around the city that offer unique opportunities for business travellers.

In Bodø you will find wondrous arctic experiences, magical surroundings and mouth-watering culinary delights, the boundless natural resources that surround the city help to create unforgettable adventures for all who visit.

Bodø offers a vibrant city on the edge of the great outdoors that is graced with the dazzling midnight sun in summer and the enchanting northern lights in winter. Throughout the year, the city hosts music festivals and concerts, as well as a lively city centre with restaurants, shops, central harbour fronts that lead to memorable excursions.

Municipal Strategy

Globally, there are new trends that are affecting local development. The rate of change is fast and Bodø has all the prerequisites for following and meeting those trends.

Through active city business development, Bodø has good traditions of closely interacting between all relevant environments in Bodø. Over time, our methods for partnership among business, public management, development, and politics have given great results and growth. Therefore, Bodø will build on local cultural methods for co-creation. There are examples where co-creation has given concrete results; the project “New City-New Airport” is one such success story.

Bodø municipality is an active facilitator for businesses and development environments that realize their potential for increased employment and value creation. The companies themselves will have to take responsibility for their own business development,

innovation, and competitiveness. Bodø Municipality will, on the other hand, carry out major urban development projects that provide opportunities for business development and exciting establishments.

These are some of the possibilities that Bodø Municipality will build on to meet an increasing national and international competition for local business development. The projects “New City-New Airport” and “Smart City” not only represents new opportunities, but also brands Bodø as an especially attractive municipality for establishing businesses.

The ambition for Bodø’s Strategic Business plan 2017-2027 is high. We want all business development in Bodø to be solidified on a foundation of smart solutions, forward-thinking technologies, and green sustainable choices and solutions.

Bodø is the county capital of Nordland, as well as a centre in a dynamic and value-creating region called Salten.



Bodø Harbour & Waterfront

Nordland County's economy works well despite weak business cycles in Europe and a decline in the Norwegian petroleum industry. According to Index Nordland 2016, Nordland's economy is likely to strengthen in the coming years.

By 2015, there were nearly 28,000 employed people in Bodø, of which 57% were in the private sector. There is a high degree of employment opportunities in Bodø and Nordland, but the main challenge is access to new employees and relevant expertise. Urbanisation and relocation to the cities are northern European trends, which are also driving forces of development in Bodø. With increased growth, Bodø is dependent on employees relocating to the city, not only from other countries but also young people with high educations from other parts of the country.

Through a number of on-going development projects, there are opportunities within almost every industry in Bodø to create a future-oriented municipality with exciting jobs and unique recruitment opportunities. In 2016, Bodø won the prize as being Norway's Most Attractive City by the Ministry of Local Government and Modernisation. Bodø aspires to become one of the smartest cities in Europe, and is actively working to gain status as one of Europe's 100 lighthouse towns. There is also an on-going process to become the European Capitals of Culture.

Bodø is a resource-strong region, especially in regard to ocean space, tourism, and minerals. Ideas from the new smart city approach are expected to increase new opportunities for jobs.

Bodø will need several requirements to

achieve significant employment growth in both private and public sectors in years to come. However, development will not occur on its own. Continued cooperation and innovative goals will be required to further heighten both the city of Bodø and its surrounding region.

Destination Bodø

Getting to Bodø is easy and there are several options. You can travel here by air from the north, south, east, or west. The airport is located only one kilometre away from the city centre, and is just a ten minutes' walk. You can also arrive on the northbound or southbound Hurtigruten (the Norwegian Coastal Voyage) and continue your journey by water in the beautiful region of Nordland by express boat or ferry. You can drive here along the picturesque Kystriksveien (the Coastal Route) which is Norway's longest National Tourist Route called Helgelandskysten. You can also arrive by train via the Saltpjellet mountain range where you cross the Arctic Circle. Our own Polar Express has its final stop in Bodø, which is the railway terminal in Northern Norway.

Here you'll find some of Norway's and Europe's most famous attractions: Experience the world's strongest maelstrom - Saltstraumen. During a 6-hour period, this maelstrom pushes 400 million cubicm of seawater through a 150-metre-wide and 31-metre-deep channel, which creates whirlpools up to tenm in diameter and fivem in depth when the current is at its strongest.

A couple of hours drive from Bodø, you will find the Svartisen Glacier – the

largest glacier in Northern Scandinavia. Located in the beautiful National Park, it includes underground caves, marble formations, steep peaks, and waterfalls.

The old Kjerringøy trading post is a stunning landscape, and is one of Norway's most important cultural heritage monuments from the 19th century. This living history museum gives you a unique insight into the coastal culture of Northern Norway.

Not far from the city centre, you'll find the Norwegian Aviation Museum. It is Scandinavia's largest and one of the most modern in Europe. Furthermore, the Salten Region is home to the largest colony of European Sea Eagles in the world.

All the biggest hotel chains are represented in the city centre, but Bodø also offers smaller, more intimate boutique hotels. One can enjoy local delicacies at the many restaurants located in the city centre. You can dine on a beautiful beach with white table cloths with the best local food imaginable or in a lavvo tent under the open sky and a bonfire. At the National Aviation Museum, the stage is set for an unforgettable evening of eating options. Don't forget to try to the tastings on a private island just a short ferry ride from the city centre where the biggest seafood buffet awaits you.

The people living north of the Arctic Circle are very friendly and open-minded. You will find it easy to communicate with the locals, especially since English is spoken as a second language.

European Sea Eagle off the coast of Bodø



From Bilbao to Bodø

Juan Alvaro Alayo

When I tell people that there are more things in common between Bodø and Bilbao than meet the eye, they tend to struggle. To be fair, it is not that easy to see the similarities, because many of them are taking place in different decades.

Take for instance the more noticeable one, which is that both cities invested similar amounts of money, over 100 million Euros, in cultural infrastructural assets that have had an impact well beyond their price tag, have put both cities on the cultural map and are very much loved by their citizens and visitors. We are talking, of course, about the Guggenheim Museum in Bilbao and the Stormen complex in Bodø, the first one opened in 1997 and the second one in 2014, nearly two decades later.

But whilst these great works of architecture stand out in their respective urban settings, close to the water and difficult to miss, there are other similarities that are not necessarily visible, but potentially more fundamental in the development path of both cities. This article aims to point out some of these parallels between the two cities and to draw some experiences from Bilbao, which has already undergone a successful urban transformation, in case they can be of help to Bodø.

Crisis as an opportunity

In my view, the more significant coincidence between the two cities is that when they found themselves in the middle of an existential crisis, they decided to turn it into an opportunity to transform themselves.



In the case of Bilbao, the crisis was mainly caused by the sudden Industrial decline of the late 70s, that many other cities faced in Europe and America, which impacted very heavily on the economy of the region. But the socio-economic impact was compounded by other events that significantly complicated the situation: with Franco's death in 1975 Spain underwent a delicate process of transition from dictatorship to democracy that took years to settle, this coincided with the most virulent period of terrorist activity by ETA and, if that were not enough, in 1983 Bilbao suffered devastating floods.

The crisis in Bodø was of a different kind. The decision to relocate the Air Force base away from the City, in a few years, may not have been as brutal as

the events in Bilbao, but it had the potential to make a big hole in the identity, the social fabric and the economy of the City. What is important is that, after the initial shocks, both cities decided they were going to make an opportunity out of a crisis. They reacted to the external events and took control of their future in their own hands. This may sound like an almost logical and typical reaction, but it is not. In fact, it is quite rare, there are many more cities around the world not really facing their respective crises, and just muddling along, than cities that have used them as opportunities for transformation.

And why is that? Because to be able to turn a crisis into an opportunity, one must be ready to look at oneself critically, as if through the eyes of someone else. And after that, accept that real change is needed. But change tends to be tough and uncomfortable and we avoid it as much as we can. Which is why it is more frequent to find an accommodating attitude, in which people, and cities, gradually adapt to a deteriorated situation.

On this point I would like share three experiences and take-aways from Bilbao:

1 - The importance of a shared vision

How did Bilbao manage to implement such significant City change? The textbook explanation would be that Bilbao undertook a detailed and critical diagnosis, drew up a comprehensive strategic plan and followed it through with sustained investment and effort for more than two decades.

But while all these were necessary steps, they were not enough. The successful undertaking of something as large, long-term and complex as a City Transformation project needs something else. It needs to have a shared vision. Because it is that shared vision what will generate the conviction and determination that are necessary to achieve something like that.

As behavioural economists have found, committing to doing things jointly is an important tool to overcome the resistance to change and the temptation to continue doing things the same way - and this is something that Bodø, in common with Bilbao, is also pursuing. With engagement from all sectors of society, it is creating a shared vision with the power to enthuse not only locals, but also those of us fortunate to take some small part in the process.

2 - The role of public land

Another important similarity between Bodø and Bilbao is the significant role of public lands in facilitating the transformation. In the case of Bilbao, large amounts of land previously used by state owned industry or infrastructure were left idle or underutilised after the crisis. In the case of Bodø, the removal of the Air Base will liberate a large tract of land, right next to the Town Centre and the relocated airport. This releasing of large amounts of public



land allows long term planning and a controlled phasing of the development. It also means that any uplift in added land value that is generated by the planning of these liberated lands can be captured by the public sector, rather than private land owners, for use to the benefit of the city. In the case of these large-scale schemes that can be significant.

This could be seen in Bilbao with “BILBAO Ría 2000”, the publicly owned urban regeneration company responsible for transforming some of the key areas of Bilbao, which in a period of around 20 years invested in public infrastructure over one billion Euros that had been generated by the change in land use of the redeveloped lands.

3 - Celebrate the Waterfront

There could be an additional common point between Bilbao and Bodø, depending how Bodø decides to plan its future urban development. One of the most attractive and appreciated features of the Bilbao transformation is that, after decades of giving it's back to the river, with the banks occupied by industry and heavy infrastructure, the demise of industrial plants and the relocation of the port activities to the external harbour allowed for the waterfront to be recovered as a central part of the city. The Guggenheim Museum takes full advantage of this, with its location right by the water edge.

Will Bodø take advantage of the amazing waterfront it already has?

The Guggenheim Museum at Bilbao Waterfront



High North Cuisine

Elizabeth Reynolds

In recent years, many global hospitality trends have been strongly influenced by Scandinavia. From the restrained and natural aesthetic of Scandinavian furniture; or the concept of Hygge (a special feeling or moment that is cosy or charming), attention has been placed on the cultural, aesthetic and natural resources of Scandinavian countries and new Nordic cuisine is an important part of this cultural influence. Predominantly originating from Denmark, New Nordic cuisine is typified by locally grown, seasonal produce prepared in a way that celebrates the individual elements and is environmentally sustainable. Nowhere was this more evident than with the international critical acclaim for the multi-award winning Noma restaurant in Copenhagen; even its name is a portmanteau of the two Danish words "nordisk" (Nordic) and "mad" (food).

Building on this grass roots movement, the Nordic Council (of Denmark, Finland, Iceland, Sweden and Norway) launched the New Nordic Food Programme in 2004 with a ten-point manifesto to strengthen the environmental and cultural resources of Nordic countries through food.

We were fortunate enough to try some excellent local Nordic cuisine during our visit to Bodø. Restaurants including Bjork, Hundholmen Brygghus, Bryggerikaia, and NYT seemed part of this enthusiasm and renewed sense of pride in local produce. Here we provide the recipe for Tørrfisk Fiskesuppe, a local dish we hope you can recreate at home.

Recipe for Stockfish Stew

Stockfish (or Tørrfisk in Norwegian) is a well-known local delicacy, and proud export from the Lofoten Islands. Essentially Stockfish is an air-dried cod, but in Bodø, Lofoten and the surrounding area it is often served as a fish stew (fiske-suppe) – perfect for warming up on a winter evening.

Preparation

The preparation of this recipe begins quite some-time before the kitchen! Between February and May each year, cod from the waters around Lofoten is dehydrated on open air wooden racks (or "stocks"). The fish is then dried indoors for a further 12 months, retaining its nutrition and protein, but removing excess moisture. The fish are then sorted and packed before being sent to fishmongers and restaurants not just in Norway, but as far away as Brasil!

Once you have brought your dried Stockfish, it is often necessary to rehydrate the portions by soaking in cold water for 2 -3 days (changing the water each day). Once softened the fish can be cut into portions, and the skin removed.

Ingredients

- 6 tbsp. unsalted butter
- 4 cloves garlic, chopped
- 2 stalks celery, chopped
- 1 small onion, chopped
- 1 green bell pepper, seeded and chopped
- 1 small leek, sliced 1/4" thick
- salt and black pepper, to taste
- 2 medium carrots, sliced 1/4" thick
- 1 large parsnip, peeled and chopped
- 1 small celeriac, peeled and chopped
- 4 medium new potatoes, peeled and cut into 1" pieces
- 3 cups fish stock
- 2 cups milk
- 1 cup heavy cream
- 1 1/2 tbsp. Worcestershire sauce
- 2 lb. boneless, skinless cod fillet, cut into 2" pieces
- 1/3 cup dill, chopped, plus more for garnish
- 1/4 cup parsley leaves, chopped
- Juice of 1 lemon
- Crusty bread, for serving



Instructions

Heat butter in a 6-qt. saucepan over medium-high heat. Add garlic, celery, onions, peppers, and leeks, and season with salt and pepper. Cook, stirring, until soft, 8-10 minutes. Add carrots, parsnips, celeriac, potatoes, stock, milk, cream, and Worcestershire; bring to a boil. Reduce heat to medium, and cook, stirring occasionally, until vegetables are tender, about 25 minutes. Add cod, and continue to cook, stirring gently, until fish is cooked through, 6-8 minutes. Stir in dill, parsley, lemon juice, and salt and pepper. Serve with bread.

Recipe and information courtesy of the Norwegian Seafood Council (<https://cod.fromnorway.com/norwegian-cod/stockfish/>), and article by Christopher Hall in Saveur magazine (<https://www.saveur.com/article/Travels/Saveur-100-Norway>)

Bringing Bodø to Life

Mercedes Beaudoin and Andrea Marthinsen

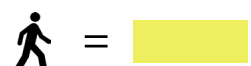
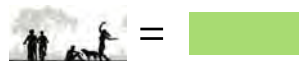
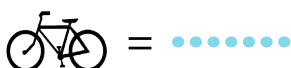
Looking back on our time spent in Bodø we enjoyed ourselves immensely. The people were friendly and fun, the food scene was bursting with innovation and creativity, and the nature is a dream. The city itself, however, is hard to write about. To help us discern mixed feelings about Bodø, Jane Jacobs' *Downtown is for People* (Fortune Classic, 1958) was re-read. Throughout this article, Jacobs' quotes are used to paint a picture of Bodø's missed opportunities and its potential.

Cities are clusters of knowledge, culture, and social activity. To make a city vibrant, it takes a determined, vibrant

population. Bodø has such a population and is surrounded by vivacious natural beauty, yet, it is difficult to notice either considering the core urban landscape reads as dull. In fact, it is mostly designed in shades of gray and is largely void of human interaction. To put our initial impressions into the words of Jane Jacobs, "here is no hint of individuality or whim or surprise, no hint that here is a city with a tradition and flavor all its own." Of course, after a week of observations, presentations, and analyses, we had no doubt Bodø has enormous potential to change that image and find their flavor in the years to come.

During our stay in Bodø, we conducted an impromptu public gathering where we interacted with the citizens, city planners, and other community stakeholders. We wanted to know how they describe or identify Bodø, how they used the city, and what they thought were important elements to consider when planning the future of Bodø. The results were clear: they wanted to improve their quality life. While the quality of life is relatively good in Bodø, and the city has many natural and man-made assets, it is difficult to navigate them in the city's current conditions. Indeed, it seems the citizens are estranged from these assets.

Map of the city centre of Bodø with suggested locations of cycle paths, enhanced pedestrian main road, and green/recreational space connected via pedestrian-oriented design elements



Most planners and city officials often think revitalizing a city consists of implementing a large-scale project that changes a city's skyline. However, in the case of Bodø, as in the case with other cities, it is the broader-used elements of a city that must be considered. Parks and streets are public spaces that are utilized daily. Jacobs believes, "the street works harder than any other part of [a city]. It is the nervous system; it communicates the flavour, the feel, the sights." Some say it is how streets interact with parks that bring true liveability to a city. Thus, this article discusses enhancing and connecting the existing properties of downtown Bodø to bring the city back to life.

Connecting Green and Recreational Spaces

For centuries, adding green and recreational spaces into a city has been touted as a sure-fire way to give it life. All of the green in Image 1 depicts parks and recreational areas. The opaque green are areas identified during our visit that should be considered potential recreational or leisure areas. The transparent green shapes are lacklustre clusters of existing park space that should be enlarged, made more dynamic, and better connected to each other via greenways, vegetated landscapes, or other natural elements such as green walls and vine canopies.

Transforming Small Spaces

In Transforming Small Spaces, Jacobs states, "A sense of place is built up, in the end, from many little things too, some so small people take them for granted, and yet the lack of them takes the flavour out of the city". As Jacobs indicates, all space in a city is precious. While walking around Bodø, our team recognized several small, neglected spaces, that could be transformed into new "third places."

One particular spot on Sjøgata, a space you would walk by without a second glance, could be transformed into a pocket park. Pocket parks are small parks, accessible to the public and typically created on vacant irregular spaces of land within a city. The

famous Paley Park in New York City, for example, could be an inspiration for this urban nook. Paley Park's design provides a quiet oasis in the middle of an urban jungle. Zion & Breene Associates planned each detail of the park to mitigate city noise and create a peaceful environment for people to take a break from their day-to-day routine. With a soothing water element that drowns out noise, and with plenty of seating, Paley park provides a space for people to enjoy the heart of their city again.

Further down on Sjøgata, there is another alcove that has the potential to bring a lot of life and joy to the citizens of Bodø. Currently, a parking lot of payment and a food stand occupy a majority of this centrally located area. The current design encourages car use, and not much else. In Bodø's plans, this area is supposed to be a green space. As seen in our collage-rendering, we propose incorporating grass and open space for families to play and have picnics. A water feature could provide serenity, a focal point, and remind people of water's



Vine canopy over street in Spain



influence throughout the city's history. It should be noted, we preserved the sea-eagle mural because it represents the region's unique ecosystem and species, as well as its ability to add a much-needed pop of color to the city.

Encourage Cycling

In the words of Jane Jacobs, "There is no magic in simply removing cars from downtown... the removal of the cars is important only because of the great opportunities it opens... the whole point is to make the streets

more surprising, more compact, more variegated, and busier than before." Cities of all sizes should provide the infrastructure for multiple forms of transportation—specifically, sustainable infrastructure. Bicycling may be more common in Denmark, but Norwegian cities should be designed to provide the option for those who are interested. Having distinguished bike lanes, signage, and air pumps are essential to increase daily bicycle use and to ensure public safety. Our collage design for Sjøgata, bottom right, encompasses these elements, as well as a public

bike repair station. Another consideration for Bodø is to start a bike-share program for those who do not own a bike and for visitors.

In addition to revitalizing the streets in city centre with bike lanes, Bodø should consider connect the of the city with its natural and cultural sites for cyclists. For example, Bodø's historic site, Nyholms Fort, is a must-see destination that sits across the water from city centre. Yet, the distance seems much further when one has to travel around the harbour's industrial sector by car.



A parking lot on Sjøgata and its park potential





Sjøgata, a central street in Bodø and its cycling potential



To encourage citizens and tourists to visit and see its skyline view, we suggest the construction of a pedestrian/bicycle bridge that connects the heart of the city to Nyholms Fort.

Creating such a bridge would make the journey just as memorable as the site itself. Several case studies for such a project are in Copenhagen, a city world-renown for its cycle infrastructure including pedestrian/cycle bridges.

Nurturing Access to the Ocean

Not all public space in a city needs to fit the traditional mould of a park. The city's natural landscape can be an inspiration and should play a role in its design. Another missed opportunity in Bodø is the lack of a multifunctional recreational space that connects citizens to the sea. We suggest that the linear green-space along the water could be transformed into a multi-use route for residents - maybe an alterna-

tive route to work, somewhere for exercise, or just as a cosy place to sit and chat with friends. Such a space could also provide visitors to the city with a promenade to absorb Norway's natural beauty including the midnight sun in the summer and the northern lights in the winter. Many cities around the world have these types of promenading spaces - the Highline Park in New York is the often cited example, and the Riverwalk in Chicago is a more recent scheme which aims to reconnect people with the water. However, in-



A boardwalk for all in Aker Brygge, Oslo, Norway

spiration can be found much closer to home - Aker Brygge in Oslo hosts such a boardwalk that fulfils all of the above functions in addition to encouraging shopping, dining, and entertainment.

Conclusions

"Every [city] can capitalize on its own peculiar combinations of past and present, climate and topography, or accidents of growth," Jacobs claimed. Bodø is a cosy city that has history, natural beauty, and an abundance of resources.

Yet, with all these benefits, the city lacks charm and sustained liveability for all. The image of Bodø Harbour, below, provides an example of Bodø's problem: one first notices the charming red buildings along harbour and the stylized buildings peering onto the glistening water, but then you notice there is a giant empty parking lot in the forefront of the picture. It is the same issue that plagues many cities around the world: precious city-space is being occupied by grey, lifeless land uses. Retrofitting such spaces throughout Bodø into more sustainable, human-centric de-

signed areas would provide ecological, economical, and social benefits. Bodø holds a tremendous amount of potential, and we look forward to seeing how it grows.



The journey to The World's Smartest City has begun

Cool planning in the green, smart city in the arctic.

The current airport and the need for a new runway triggered one of the greatest projects of urban development in the history of Norway. The construction of a new airport will liberate an area equivalent to 800 football fields of "blank space" for innovative and sustainable urban development. The new city will strengthen Bodø's position as an intermodal hub for transportation, and create and test solutions for environmental and people friendly cities of the future. The journey to "The World's Smartest City" has begun.

The 50 000 inhabitants in Bodø are surrounded by the Norwegian Sea and picturesque mountains connected to the rest of the region, Europe and the world by railway, harbour, roads and the airport.

Welcome to Bodø!

**54th ISOCARP
CONGRESS 2018**

1-5 Oct. Bodø, Norway



Urban Planning in Norway

An interview with Prof. Rolf H. Jensen and Knut Felberg

Martin Dubbeling

Rolf H. Jensen, emeritus professor at the University of Trondheim, and Knut Felberg, Head of Urban Planning and Development of the city of Kristiansand, are long standing members of ISOCARP. As urban planners they are actively involved in planning cities and consulting in urban development in Norway. As planning professionals, they have showed great interest in the ambitions and developments in Bodø.

Norway is a vast country, with a little more than 5 million inhabitants. Oslo, the capital city, has near 670.000 inhabitants. The three other bigger cities, Bergen, Trondheim and Stavanger have around 270.000, 180.000 and 130.000 inhabitants respectively and are situated in the southern part of Norway. The city of Bodø, with around 50.000 inhabitants, is one of the many smaller and isolated cities in Norway, literally a dot on the map in the High North of Norway.



Prof. Rolf H. Jensen

1 All Norwegian regions and cities are connected by an impressive infrastructure of roads, tunnels, bridges, harbours and airports. How do these cities get this organised and financed?

Prof. Rolf H. Jensen: All Norwegian big and small cities belong to a municipality and the municipalities have their own responsibilities and are in principle self-supporting in the way they want to develop their city or cities and in the way they serve and support their inhabitants. This can differ from municipality to municipality. In Norway urban planning and development is a municipal task. But when it comes to vital infrastructure of national and regional importance, like major roads and airports, universities and hospitals the 19 counties and specialized national agencies step in, contributes or take full responsibility.



2

Many Norwegian cities are car-dominated and need an upgrade to become more attractive cities. The city of Oslo started to ban cars from the city centre. Will this set an example for other cities?

Prof. Rolf H. Jensen: Many cities have already seen that limitations on the use of cars in the city are necessary due to safety, liveability and sustainability. The scale in Oslo, however, is somewhat unique. Oslo is growing and new residential areas are coming up in previous harbour or industrial areas, close to the centre. Oslo has also a good public transport system. Generally speaking, however, Norwegians have an "anti-urban" culture and prefer to live in smaller towns like Bodø, in the suburbs and the countryside, close to nature. This unfortunately also makes us car dependent.

Knut Felberg: In Kristiansand urban planning is not a technical discipline implemented by an isolated group of people. In our planning department, everything comes together. From heritage and culture to roads and infrastructure as well as social well-being and education. When combined wisely, everything can contribute to city centres that are attractive, safe, enjoyable, unique, green, and meaningful and provide added value to our citizens and visitors. City centres are very important as they mirror the sole and character of its inhabitants.

3

Bodø has the reputation of a rising star when it comes to urban development. The city wants to do it all by themselves, attracting young planning professionals. Is this standard in Norway?

Knut Felberg: Bodø is well known as the gateway to Lofoten with a strong position in the High North as a centre of tourism, transportation, education and services for the Northern part of Norway. Bodø lies far away from the bigger Norwegian cities. Driving from Oslo, in the southern part of Norway, to Bodø, takes me 16 hours by car. While in the same time I easily can drive from Oslo to Paris, Zurich or Munich. This is just to illustrate that Bodø has no other choice than to plan and

develop the city all by itself. Moving, redeveloping and building a new airport and harbour at the same time is a very complex and long lasting process. This is very intense and can be very hectic as long-term investments and radical changes in the urban fabric of the city are inevitable. It requires a very good and advanced communication and strong cooperation between the politicians in charge, the Bodø municipal organisation as a whole and the inhabitants of Bodø.

A Sustainable City with Abundant Water and Energy

Faye Beaman

As cities grow, pressure on vital resources such as water and energy increases. A sustainable city is a city that looks to ensure effective and efficient use of its current resources, whilst planning for the future and maintaining and increasing current liveability. Making cities sustainable needs a much broader approach than developing grand projects or implementing policies.

Sustainable cities encompass a broad range of aims. For example a water resilient city is well prepared to overcome the challenges associated with both too little, as well as too much, water. It protects its citizens against disasters such as flooding and drought, while ensuring that water-related services continue uninterrupted. A sustainable city should also utilise renewable resources and promote energy efficiency.

It is critical when considering sustainability that we need to create cities that meet the fundamental needs of citizens, and are also liveable and resilient.

Supply and Demand

Clean usable water is an extremely valuable resource that is essential to the health of a city's citizens and economy. Within Bodø the water supply is sourced from a recently renewed reservoir, finished approximately 10 years ago. This reservoir is now located approximately 30km from the city centre, after it was relocated from the previous supply lake on Junker Mountain due to insufficient capacity and vulnerability of the water source in this location. The current reservoir can deliver water

for ~100,000 inhabitants, which is the projected growth of Bodø for the next 50-100 years. As the population prognosis for 2065 is ~90,000, any water related issues in Bodø are not currently ones of security or supply. The current reservoir is also protected from Bodø's varied climate, as it is placed sub surface to avoid any temperature related issues.

In Bodø, average water consumption is in the order of 193 litres per person per day, which is marginally more than the national average in Norway, 190 litres. When comparing to water consumption figures in the rest of Europe, Norway is among the highest consumers with the UK averaging 150 litres. However, European figures are dwarfed in comparison to North American water consumption figures with the USA averaging 341 litres per person per year.

Renewable energy for sustainability is also important. As with its current water supply, the energy supply for Bodø is currently in abundance. Predominantly sourced from a sustainable hydro-electric supply, the average electricity consumption in Bodø is in the order of ~20,000kWh per household per year. This is not abnormal for Norway, as the average electricity consumption of detached houses in Norway in 2012 was ~20,000kWh. Contributing to this energy usage is predominantly domestic heating (radiant floors etc.) and hot water heating. In contrast extreme electricity consumers, such as Canada and the USA, only consume just less than 12,000kWh per household per year, with others such as the UK consuming ~5,000kWh.

With resources in abundance, security of supply is not at the forefront of mind. However, just because water and energy supply currently exceed demand, does excessive consumptions of resources, such as energy, promote the idea of a sustainable Bodø?

Resilience and Innovation

Being a sustainable city is often synonymous with being a resilient and innovative city. For Bodø, from an energy perspective this raises questions like: Could energy consumption be more efficient and electricity be put to better use? and What could these better uses be? For example, reducing the use of electricity for the heating of Norwegian households could make power available for other end users such as industry, electric cars and power exports to other countries. At the same time for many residential units it would be economically advantageous to make their electricity consumption more efficient.

Regards water, a water resilient city for Bodø means ensuring a resilient and adaptive approach to climate change. As the "Gateway to the Arctic" it is paramount that Bodø should prepare itself for climate change. This includes ensuring drainage systems can cope with increases in capacity, as precipitation is predicted to rise by up to 14-15% by 2025 (spring, middle Norway predictions). It also means protecting existing coastal developments against sea level rise, alongside ensuring that measures are in place to safeguard future developments. This comes as projected sea-level changes for Norway, based on a high-end scenario of 6°C global warming and an emerging collapse for

Temporary winter ice rink, Bristol UK



being a global attraction. Bodø also sits within a county which is underpinned by a water industry, with every tenth farmed salmon in the world coming from Nordland. Its water industry is also a big influencing factor on the local educational offering, with Bio-sciences and Aquaculture being one of five faculties at Nord University. Water has been, and will continue to be integral to Bodø's industry, education and tourism, and the new spatial plans proposed during the UPAT workshop serve to only further echo this, focusing on a "New City on the Bay" versus a "New City by the Airport". Although this brings with it challenges, notably those mentioned in relation to climate change and liveability, it provides the opportunity to connect with the extraordinarily beautiful landscape of sea and mountains. It also promotes smart growth, as instead of expanding the city fabric onto land that could be saved, the harbour offers opportunity for sustainability increasing the density of the inner city.

Innovation in the use of water and energy will also underpin approaches to

some areas of the Antarctic ice sheets, varies between 0.25 and 0.85m (min/max ± 0.45 m). Ensuring liveability and safety of citizens in increasingly harsh conditions will also be key. Ideas were tabled at public consultation, during the UPAT visit, which included: tunnels to shield cyclists from wind and rain, homes within greenhouses to create micro climates, and sheltered shopping areas for citizens. Designing public spaces for an arctic city with an abundance of water also gives rise to opportunities including the creation of sustainable urban water features, such as rivers and pools. Some of which could be multi-functional during various seasons, such as pools in summer that are ice skating rinks in winter.

A resilient city is also a reflective one, and water in Bodø is integral to its history and culture. It is a city on the sea, with an attractive waterfront harbour and outlook, providing a desirable place where people are drawn to live and work. It is a city where naturally occurring water phenomenon strengthen its tourism offering, with the world's strongest tides at Saltstraumen



resilience. For example innovative asset management can prolong usage of existing infrastructure, delaying the need for upgrades and reducing cost. For proposed projects innovative solutions are already being considered for water resources with the proposed new airport development planning to heat its runway, ensuring it is operational during all seasons. Snow and ice will be prohibited from accumulating in colder weather by a series of buried heated water pipes.

Regards alternative uses for its abundance of energy, Norway is currently the leader in deploying electric vehicles successfully in its car market. Almost a third of cars sold in 2016 in the country were electric and Bodø's ambition is to make all public service cars electric, helping Bodø towards its target of a zero-emission community. As well as leading the way in deploying electric vehicles, electric aircraft is becoming a reality and opens up the vision of a fossil fuel free aviation future. Norway, and specifically Bodø, could be at the forefront of this innovation, cutting carbon emissions further.

These resourceful approaches of recognizing and developing alternative ways to use water and energy contribute to Bodø's robustness and preparedness for an uncertain future. The smart principles of the "New Airport – Next Bodø" vision also serve to show that this city can be a vibrant urban hub and demonstrate flexibility, connectivity and critical foresight through innovative practises.

Bodø faces a number of potential challenges in the future, yet it is already being resilient through reflective and resourceful practises, and engaging in innovative and smart approaches that will only strengthen its stance as a sustainable city.

Roombeek The Brook, Enschede, The Netherlands



Granary Square, Kings Cross, London UK

Recycling Sites, Reinventing Cities: Experiences in Paris, Lyon, and other cities

Paul Lecroart

Two of the main recommendations from the urban planning advisory team (UPAT) for Bodø's "New Airport/New City" project are (1) How to use the land freed by the closure of the NATO Airforce Base and (2) How to help unlock the huge urban development potential offered by the reconversion of the currently logistic-oriented Inner Harbour area into a mix of urban uses. Indeed waterfront areas have a high urban value: Not only do they provide opportunities for reconnecting water and nature with the city, but they offer prime land for all sorts of urban functions and uses.

In the last 30 years, many European cities have succeeded in taking advantage of port relocation to reclaim waterfronts that were previously cut off from the city by large infrastructure and industry.

We all know about Amsterdam's IJ-Banks, Barcelona's harbour and beachfront, Paris's Seine River Banks, or even perhaps Lyon Confluence. But this is also happening in many smaller cities such as Saint-Nazaire (City-Port) in France or Malmö (Western Harbour) in Sweden. These major urban transformations are long term processes that create incremental value, can survive different economic cycles, and respond to changing urban needs within the framework of a firm and innovative spatial vision.

Recycling Sites

Many cities are also facing the challenges related to recycling former airport sites. Being flat, open, and accessible by road, airports offer many

opportunities such as: agro-urban uses, open-air leisure and events, business parks, or even housing developments. However, because of their sheer size, out-of-city location, open landscape and single purpose design, these sites can be awkward to reconvert. The city of Berlin has had to accept a citizens' referendum not to develop the Tempelhof Airport and to keep it as an open-air landscape park. In the UK, the city of Cambridge decided last year to postpone redevelopment of its former airport until

after 2031. The city of Metz, France is currently studying the potential outcomes of transforming a 350-hectare Airforce Base that closed in 2012 into a mix-use "active landscape" project. However, south of Paris, local authorities have approved the 'Base' project, which transforms an ex-Airforce base into a curious combination of a large event park with organic agriculture, a security-defence hi-tech hub (including the regional drone research cluster), and a biotech-medical information technology centre.

Lyon Confluence Project
Nautical Plaza



Lyon Confluence Project
New shared use bridge

Creative redevelopment in Lyon

The Lyon Confluence urban development is one of the key drivers of the city's overall development. Fifteen years ago, this 150-hectare peninsula between Rhône and Saône rivers was occupied by industrial activities, poor quality housing, and the wholesale market. In 2003, the vision was to make it the modern extension of the city centre, adding contemporary architecture to the Lyon UNESCO World Heritage Site with new strategic functions.

On behalf of the metropolitan authority, a multi-actor public development agency (Lyon Confluence) is in charge of preparing the area masterplans with the public and stakeholders, setting up design competitions, buying the land or signing agreements with landowners, building the physical and social infrastructure, selling the building rights, and finally, monitoring all these changes over time. The project was divided into two phases to focus action and avoid dispersing investment.

An interesting feature in the project is that, like many French urban redevelopments, it relies on the zone d'aménagement concerté (concerted development area) framework. This concept means that the costs and benefits of the transformation are mutualised: public space development, social housing, and social facilities are paid for by the higher end market housing and office developments. This allows to build a balanced district with a mix of uses, functions, and people. It also fosters long-term attention to the structural features of the area, rather than to the buildings that may change over time. For example, the connection to the wider landscape (views corridors), the streets, public space network which includes a waterfront park, an entirely new dock ("nautical plaza"), and a tramway boulevard connecting the area with the rest of the city.

The project is being designed as an innovative laboratory for a smart, low emission, car-free, eco-friendly district. These characteristics make the project an active part of many international ur-



ban R&D programs such as Concerto, WWF Sustainable Districts, 'Smarter Together', and 'Lyon Living Lab' (2016-2020). Reusing old warehouses, Hotel 71, the European creative hub, and the Lieu Totem of Lyon French Tech, Halle au Sucre and Musée des Confluences have become major cultural and digital transformers of the area and the city. The Bodø Inner Harbour and Ny Holmen offer that sort of potential too.

Temporary Use Experiments in Paris

Since the early 1980s, the Greater Paris Region has transformed over 1000 hectares of industrial riverfront along the Seine. The focus of this transformation is to open up the city to the water with new multi-use parks and plazas surrounded by new mix-use, medium-rise development. After testing temporary pedestrianisation ("Paris Plage"), Paris is converting the expressways on the riverbanks into active landscaped promenades with lots of sport or leisure activity, both on land and on the water (e.g., floating cafés,

concert halls, swimming pool, marina, etc.). Logistic sites for the transport of goods by barge (Paris is the 2nd largest river port in Europe) and utilities, such as cement plants or garbage incinerators, are planned to remain in the core of the region so that they are gradually redesigned to be compatible with housing and other urban functions.

A new trend in the Greater Paris Region is creating temporary uses that give life to brownfield sites. Since 2012, an urban experiment called Les Grands Voisins is taking place on the site of the now disused hospital of Saint-Vincent de Paul. By 2022, this area is to become a new mix-use district with 600 housing units. In the meantime, the site is an open lab for testing new uses based on emerging social, cultural, and environmental needs. The former land owner, Hospitals of Paris, granted temporary management of the area to non-profit organisations with the task of organising initiatives and opening the site to the public. Today, over 500 socially vulnerable people live there while getting help be re-included into society, and over 300 people work on

the site which hosts a business incubator, cafés, arts & crafts studios, community workshops, gardening classes, kid games, concerts, and summer performances. This kind of initiative may be interesting to test new uses in Bodø's Inner Harbour area and experiment with solutions for an inclusive and "green" regeneration.

To capture this innovation spirit, planning authorities in the Paris Region have been creating new instruments to capitalise on the collaboration of the emerging milieu of creative entrepreneurial urban activists with the traditional urban development players. Inspired by workshops conducted by IAU on the German International Architecture Exhibitions (IBAs) in the Ruhr and Hamburg, the Paris Metropole association of governments launched a pioneering 'Call for Metropolitan Initiatives' in 2010. This has been followed by 'Reinventing Paris,' a call for innovative projects on 23 publicly-owned sites in Paris which was launched by Mayor Anne Hidalgo in 2014, and 'Lets Invent the Metropole' which was set up by the newly elected Metropole du Grand Paris President on 59 sites in the heart of the metropolitan area in 2016.

These exciting initiatives are based on the idea of matching together publicly-owned under-used sites with a wide range of innovative private and non-profit players to find fresh permanent solutions to the challenges public authorities face such as: metropolitan liveability, adapting to changing life-work patterns, regenerating out of market brownfield sites, providing fine grain mix-uses, city greening, producing organic and local food or energy, social cohesion, and public participation.

All our cities are indeed experiencing a paradigm shift in which the software of a city (i.e., citizens, business participation, temporary uses, and experimental design) get combined with the hardware (i.e., planning and development approaches). This may offer food for thought to embed the "New City - New Airport" in the economic, social, and cultural fabric of Bodø.



Les Gands Voisins Planning Workshop on the future of St Vincent de Paul Credit Elena Manente (YWC)



Les Grands Voisins. Welcoming the neighbours. Credit Les Grands Voisins DR

A pathway towards “New City - New Airport”

Paul Lecroart & Arunava Sarkar

The “New City - New Airport” project ushers in a unique opportunity for Bodø. The decision to shift the NATO airbase unlocks around 360 hectare of land close to the city centre: this is a very large area for a city the size of Bodø and international experience shows that too much available land can be a threat to a balanced acceptable development, just as too little can be. It will need to be managed very carefully. The city itself is experiencing a steady population growth, which along with the airport shift is expected

to trigger a whole new range of developments which can potentially boost Bodø’s status as the “Gateway to the Arctic”. The development process is expected to be complex as it involves major infrastructure components like the airport, port, railways, multi-modal transportation systems and potentially a new logistics hub. In order to conceptualise the strategic vision of “New Airport - Next Bodø” as a key determinant of the city’s future, the project needs to be positioned in a wider urban context.

Bodø in its context

Bodø enjoys a unique geographic advantage which has shaped its spatial pattern and lifestyle. Set amidst a stunning, natural backdrop of mountains, forests and sea, Bodø is blessed with a natural harbour with panoramic views all across. The city has a compact core with the suburbs sprawling outwards towards the North and East along the highways. Bodømarka the mountain park is right in the centre, with fjords on both sides. Islands of Hartøya and

Airport and airbase land shown over Bodø city centre



the Ny Holmen give a landscape scale to the harbour, reminiscent of cities like Cape Town or Rio.

As a regional centre of Nordland County, Bodø city centre houses important administrative, commercial, transportation and logistical functions. Bodø also aspires to be a regional hub, a “Gateway to the Arctic” with a unique combination of sea, air, rail and road connections, for business, retail, culture, sport, tourism and quality living. Bodø Kommune has recently initiated revitalization projects which aims to position Bodø as an attractive destination with a vibrant urban life. With these new projects the city centre has emerged as an attractive destination which anchors these aspirations. New cultural projects, hospitality, retail, F&B opportunities and quality housing has reinforced this centrality, especially around the inner harbour. It is important to continue the momentum and explore further opportunities in the harbour, especially around Ny Holmen where unsuitable logistic and industrial functions can make way for high quality waterfront developments

with fascinating views on the Bodø’ centre and on the wider landscape. At a strategic level, a focus on the Inner city Harbour in the short term achieves multiple objectives of easing the immediate pressure of redeveloping the Airport land, avoiding further sprawl, building upon the natural assets of Bodø and giving back to its people public access to a great urban waterscape.

New City - New Airport - New Approach?

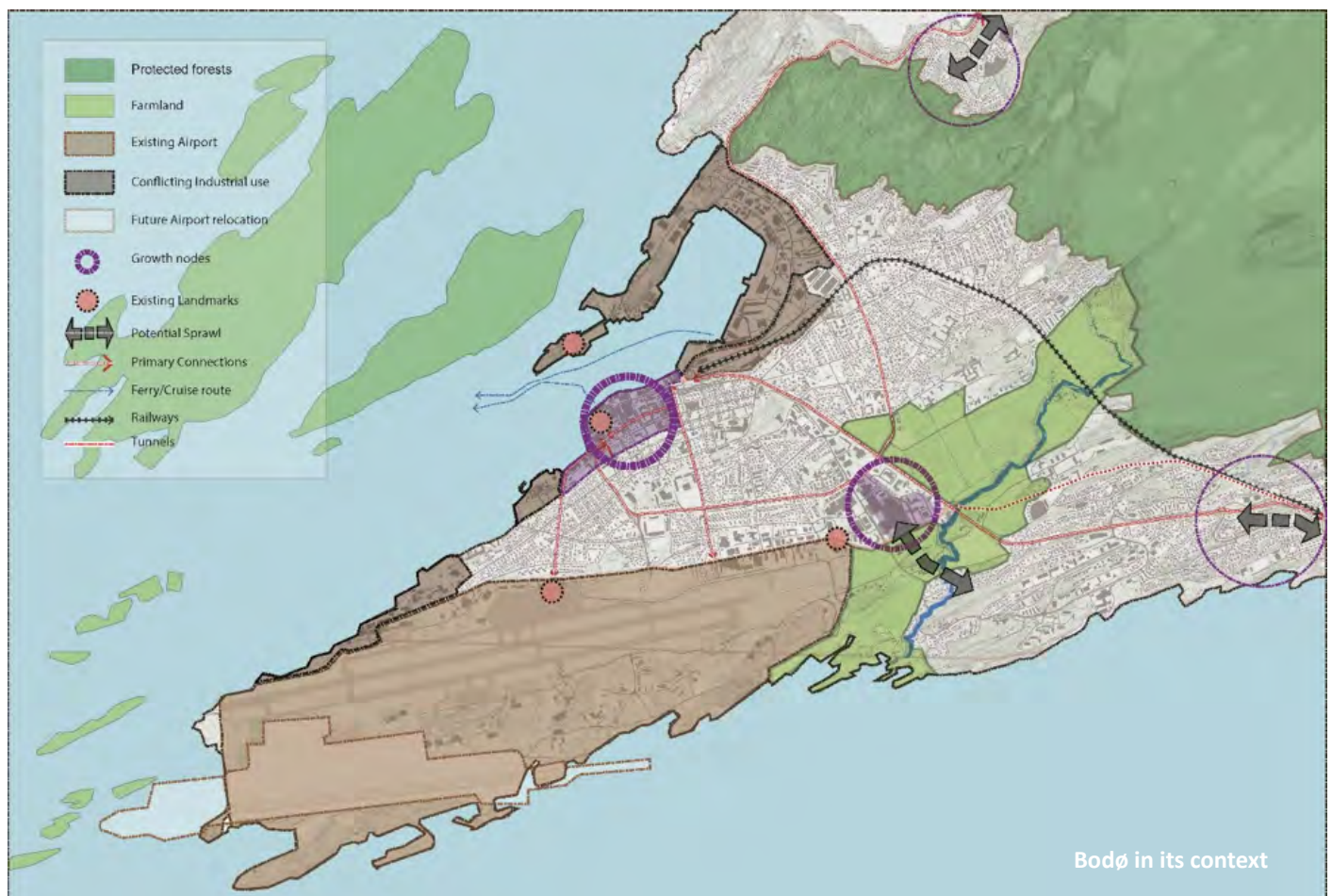
Due to its unique setting and urban structure the future Bodø (part of) lies nascent in the revitalization of the Inner harbour which has multiple assets favouring intense mix-use redevelopment, including housing. This transformation strategy will not only unlock precious inner city land but also support the New Airport redevelopment which can then potentially bring in new uses and future economic avenues for the city. A new logistics-cum-processing hub associated with port, airport, highway and railway connections can

project Bodø as a key node in the global salmon trade. The new heavy freight complex and concurrent industrial activities will not only catalyse a hi-tech business hub next to the airport but also allow the inner harbour land to be utilised for more appropriately. New innovation clusters for aeronautics, sea resources industries and smart tech industries or a new University extension are amongst the many possibilities that can assist in creating new economic base for the city.

Considering that the phasing out of the military activity would be a long process (legacy functions can potentially extend beyond 2025) and the quantum of land released to be much larger than the existing city centre, the transformation needs to be managed in phases with a vision to optimise land utilisation for the present and future needs of Bodø.

Phase I : 2015-2025

The first phase primarily focuses on initiating the redevelopment of the



Guiding Principles

1. Smart Identity

Establish Bodø as the center of the “High North” with a strong focus on livability and a creating a vibrant compact city. Prioritize Inner city densification around Ny Holmen East harbor and establish a new waterfront along the West harbor. Create a “Gateway to the Arctic”.

2. Smart Growth

A long term Phasing strategy 2015-2050 for the decommissioned airport aimed at decontamination, land preservation and managing efficient land use changes. Future growth should be clustered as self-sufficient mixed use compact nodes. Urban sprawl along the highway corridors should be contained through densification strategies.

3. Smart Economy

Creating new growth clusters for a green hi tech economy along with a new logistics hub with processing zone augmented by airport, seaport, rail and highway connections.

4. Smart Green Links

Reinforcing connections with the land- and seascapes making best use of existing natural assets which should be preserved, enhanced and open for people to enjoy.

inner city harbour, shifting the airport to the south and related land management. The Airport Development Programme (I) establishes the new airport, the terminal building, temporary access roads and a small logistics port to handle construction activity for the new port & airport. This phase will lay the foundation of a new West Harbour associated with the New Airport Terminal. It is envisaged to accommodate both recreational and logistics activity and will be part of the new “Gateway of the Arctic” project. The industries in the inner harbour (East Harbour) could be gradually shifted to a new harbour (West Harbour) location towards the west of the new airport thus freeing up land for housing, hospitality and mixed use redevelopment. A harbour-front promenade and an urban beach take place at the edge of the water.

The city centre intensification strategy should continue during this phase through key projects including a possible destination hotel in Ny Holmen peninsula associated with a heritage park and the possibility of a cultural re-use of the dramatic former herring oil factory. A quantum of new medium density housing created during this phase which is expected to trigger further regeneration of the East Harbour. Medium density housing development within pockets of industrial land around the West Harbour should also be encouraged. This waterfront strategy will potentially initiate a process to endow Bodø with an indefinable harbour district, distinct in its setting and character.

An open space strategy connecting the Stormen Konserthus with the new West Harbour will open up new vistas, string together new housing developments, improve access to the water and contribute to the quality of this urban waterfront extension. A battery powered shuttle pod service can be established to connect the new airport with the city centre which can potentially extend to Ny Holmen at a later date.

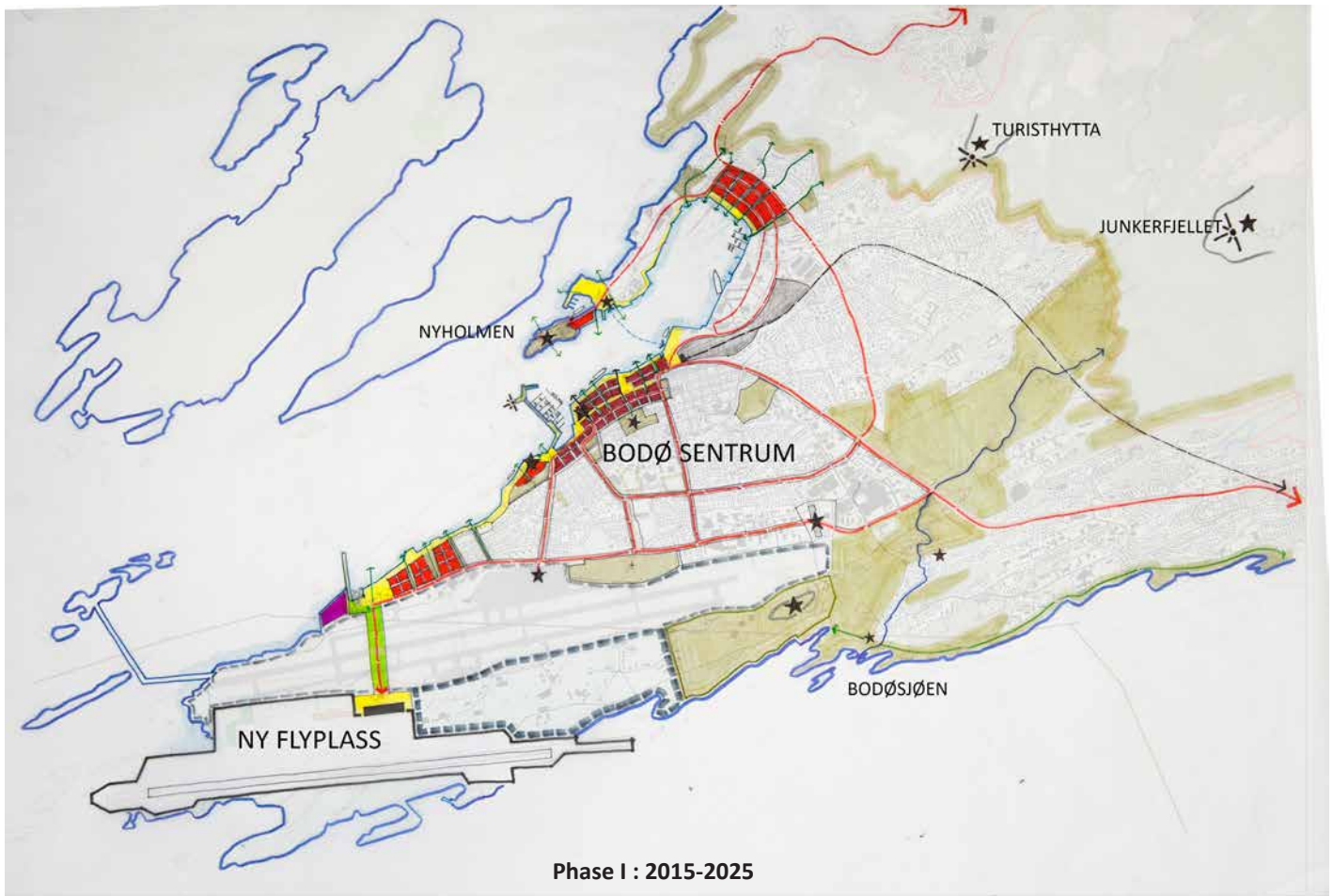
While the new airport is expected to be fully operational by 2025, NATO might retain some Legacy functions occupying part of the new airport which will be out of bound for any immedi-

ate use. However a substantial amount of land will be released which needs to be for decontaminated before it can be put to use in the next phases. Opening up part of the former airbase to the public as a heritage and nature park, well connected to Bodøsjøen historic site and Bodømarka open space, could initiate some new recreational, historic and ecological potential for the city.

Phase II 2025-2035

The intermediate phase completes the projects initiated in the first phase and gives shape to a compact city centre especially around Ny Holmen peninsula, the East Harbour and the West Harbour. A new waterfront promenade connects these assets, linking the West Harbour with the cultural destinations of Ny Holmen through the city centre and the East Harbour. The Ny Holmen peninsula regeneration, now complete with its new hospitality, recreational and housing projects is expected to reinforce the image of Bodø as an attractive cultural hub. The relocation of the main heavy ferry- and rail logistic activities to the West Harbour means that the East Harbour can be redeveloped as an extension of the city centre opening on the water with a new park and marina with a possible leisure or cultural landmark as an anchor. The potential area to be redeveloped in Inner Harbour is around 70 hectares –more than the current city centre.

In tune with the objective to improve walkability in the city centre, the cruise terminal should be relocated to the West Harbour, at least for the larger cruise ships, along with hotels, housing, a possible marina and a major cultural landmark. By this time, the temporary road between the New Airport Terminal, the new Cruise Terminal and the City centre will have made way to a large avenue opening on the water, providing an exciting “Bodø Experience” to the first-time visitor. This is expected to improve the attractiveness of the new West Harbour and offer potential for convention facilities. Smaller ferries would continue to operate out of the existing facility in the city centre with a potential connection to the hotel in Ny Holmen.



The Airport Development Programme (II) firmly anchors the Sea-Air-Rail Logistic's Hub around the West Harbour. Assisted by a new highway and a strategic railway connection the West Harbour can potentially assist in positioning Bodø as the "Arctic Gateway". A Fish Processing and Distribution Centre can be established as part of this phase to enable Bodø move up the value chain. A part of the decontaminated airport land can be utilised to set up an initial Airport Smart City centre Hub specialising in innovative technologies. While the size and nature of these developments will depend on the market dynamics, they should be clustered around the West Harbour where infrastructure and logistics would already be available.

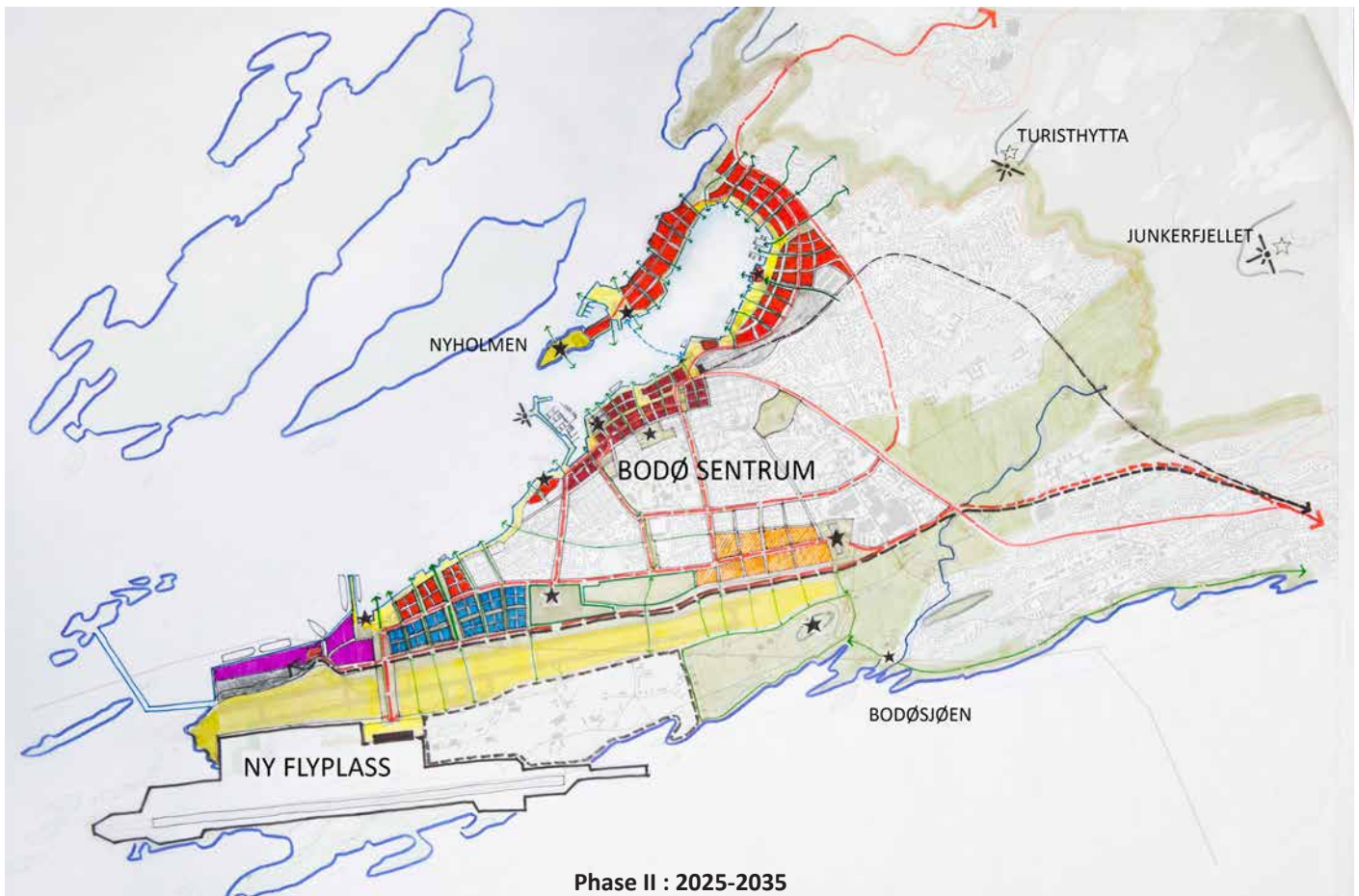
Land preservation is key during this phase in order to arrest sprawl around the airport. The transformation process should be guided by a Comprehensive land management strategy starting with the establishment of a Land bank. An immediate plausible strategy would be to create a Temporary Aviation Park

for recreation, open air events, urban agriculture and community activities till further growth clusters are envisaged –Berlin's Tempelhof Freiheit may serve a reference. The Aviation Park would reinforce the key idea of bringing nature back to the city and open up new hiking/biking trails connecting the city centre, waterfront promenade with the larger nature trails across Junkerfjellet. The scale of the site could also offer the possibility of testing life-scale smart sustainable technologies.

A "Cold War Museum 96" is proposed on the eastern end of the Aviation Park which can make use of the striking landscape and link back to the Norwegian Aviation Museum. Incidentally, this area is rich in Iron Age archaeology and can be associated with the Bodøsjøen Heritage Site. Bodin church is also a cultural asset for the area. There is a potential to create a modest tourist hub around these features and should be explored further, combined with the water edge bike- and foot-path.

Phase III 2035-2050

Bodø's long term future hinges upon the efficient utilisation of the Airport site. The population growth is projected at a robust 1.15% and Bodø is expected to reach a population of 75,000 by 2065. The city centre intensification project, when complete in the East and West Harbour, would be enough to absorb this population growth. Any further development on the Airport land should be guided by a clear vision, identity and global positioning of Bodø. There are numerous possibilities; Bodø as a "Gateway to the Arctic", a key logistics port, an established cultural and tourism hub, a Smart city with Hi tech Knowledge industries and innovative businesses or even a new university town. Irrespective of the nature of development, the planning prerogative for the Airport Development Programme (III) should to establish a series of high intensity mixed use growth nodes supported by efficient and smart mobility systems.



As the city travels towards the south, a possible consolidation of the retail functions around Stormyrveien (City Nord) could be expected. This might transfer some of the future developmental load towards a restructured area designed as a mix-use car-free sub city centre with housing around and on top. This shift of gravity should be integrated into the Airport Development Programme (III).

Bodø should judiciously utilise the airport land for its immediate growth and sustainable future. The growth pattern should strengthen identity of Bodø as a city connected to its natural assets. Further sprawl should be arrested along the Eastern and Northern highways and especially around the Stormyrveien where the Rønvikjordene ecological zone offer the key potential to bring nature back to the city. The Aviation Park is expected to be reconfigured to accommodate growth pressures but should continue to be the critical hinge in the overall open space framework for Bodø.

Further exploration is required to understand strategic positioning of Bodø as an attractive destination of the "High

North". Bodø has substantial strengths including existing administrative, cultural, trading connections, specialised industries like aquaculture/ aviation, natural assets, tourism and above all, proud residents who are passionate about their strong historical/ cultural associations. Unlocking the airport site offers a rare opportunity to build upon these strengths and discover a new future for Bodø.

Immediate action: New Bodø Starts Today

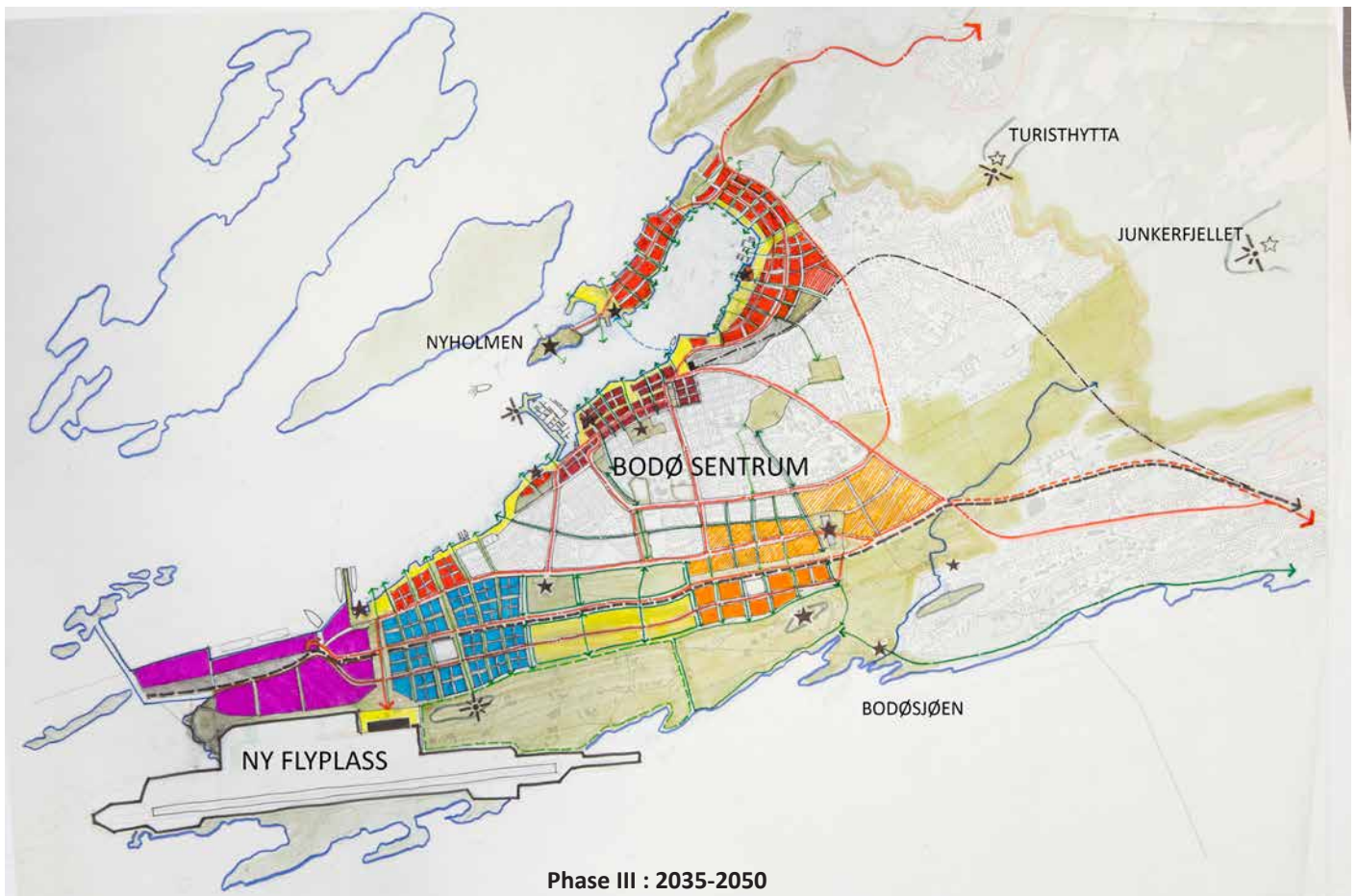
In order to achieve the short term objectives (before 2020) of inner city densification Bodø Kommune should launch an "Inner Harbour Study" in order to assess the existing land use, land ownership, economic and social needs, urban potential and constraints. As an immediate step, conservative measures should be undertaken to secure future redevelopment of the Inner Harbour involving strict control of land use and density changes, strategic private land public acquisition. The current Temporary uses in the Inner Harbour such as food trucks, beach-style cafés, boathouses, skate-park or sum-

mer concerts, combined with cheap landscape improvements and pedestrian and bike signage could make the area more sexy than today.

Considering the "New Airport - Next Bodø" is in the initial stages, Bodø Kommune can engage with the international, national and local communities to explore visioning exercises through further workshops involving focused study groups. Organizing an International WaterCity Masterplan Competition for the Bodø Central-Inner Harbour Area should generate enough interest to kick start the entire transformation process.

Airport restructuring is a complex process and specialist technical consultants should be engaged to manage the process. Development on the land adjacent to the airport should be closely monitored to avoid any inconsistency with the projected long term development patterns.

A process of research and discussion on the idea of (a) new joint urban redevelopment instrument(s) to manage the global transformation process of "New Airport - Next Bodø" should



be initiated soon. Finding the right ways to bring together a wide range of potential stakeholders (Kommune, Avianor, Ministry of Defence, NATO, County, Port Authority, land owners, land users, developers, local communities). An independent entity should be established to access the present and future growth of Bodø, look at a global strategic positing, laydown the organizational framework, regulatory

processes, enable transformation, initiate critical projects and manage the impacts of long term transformation. The interdependence between the different components of the Bodø jigsaw puzzle (moving the airbase, building a new airport and road access, creating a new port, relocating logistic and industrial activities, redeveloping new uses on freed land, etc.) will require careful planning.

The New Airport, New Port and New Rail Connection combined will create a powerful driver for the development of the city. But as importantly these large new infrastructures will unlock a strategic potential for the city's future growth: the Inner Harbour. Bodø's story is about the water. The Water City project is about writing a new chapter of the story.

East harbour - a commercially important place with a mix of uses, scales, and forms with limited public access



Pop-up Potential for a Smart-Bodø

Mercedes Beaudoin

Pop-up projects—the small-scale, temporary interventions of urban spaces—have spread around the globe from New York to Paris, and now, Bodø. During the Urban Planning Advisory Team's (UPAT) stay in the cosy northern city, a last-minute pop-up event transformed the bland pedestrian path outside the Stormen Konserthus into a lively, interactive community-engagement spectacle.

Frode Traeen, one of the Norwegian members of the UPAT, partnered with

the municipality of Bodø to organize the event in less than 24 hours. "I wanted to demonstrate that a pop-up event does not require a lot of time and planning, but can provide something valuable. I wanted to show how informal activities, like this one, connects people and promotes action while increasing urban planning communication within a community."

The atmosphere of the corridor was revamped by the placements of potted plants, carpets, and the musical

soundscapes of a DJ. Participants of all ages were provided coffee and ice cream, as well as tables with maps of Bodø and toys to generate new ideas about the future of the city. Many people were interacting and participants staying for more than an hour, casually talking about their city's future.

Though the concept of pop-up planning is still relatively new to Bodø, the general idea has quite a long history in Scandinavia. In fact, one of the most successfully employed pop-up projects

UPAT Pop-up Planning Event in front of Stormen Konserthus





Children enjoying planning and ice cream at the UPAT Pop-Up Planning Event

was in Copenhagen during the 1960s. The now famous pedestrian-friendly city closed off car traffic on Strøget Street over the Christmas holiday season as an experiment. While the public opposed the idea before it was implemented, the now permanently pedestrian-only street is one of the most popular tourist attractions in the city and one of the longest pedestrian shopping streets in Europe.

The original opposition for the closure is a common story line in planning transformation history: people could not envision how such an alteration could be successful or how it could better their lives. Thus, this Danish example proves pop-up planning is essentially experimentation. These temporary experiments allow citizens, small businesses, and the city government to personally experience how shifting the use of an urban site can affect their quality of life, the economy, and the environment.

As Bodø is undergoing some short- and long-term planning issues (e.g., the Air Force Base moving out of Bodø

and attempting to redefine their identity (e.g., Smart City Bodø), it might behoove the city to consider integrating pop-up planning experiments into their planning strategy. For example, Bodø could consider hosting a Park(ing) Day event given the city's amount of empty parking lots. In Bodø, Park(ing) Day could become an annual event where artists, designers, and citizens transform parking places into temporary public parks and help advance the dialogue of how cities use public space.

Traeen adds, "We are approaching a time in history when self-driven cars will be tested in Bodø. This mode of transportation requires less paved roads and less parking lots than normal cars. Thus, very soon the city will face the question 'what to do with unnecessary road infrastructure?' I believe that by applying tactical urbanism techniques we might come up with unexpected answers which can change our perception of second use of spaces."

The Park(ing) Day project began in 2005 when an art and design studio converted a single metered parking

POP-UP PLANNING BENEFITS

Provides local ideas for addressing local planning challenges

Builds public support for an idea by having citizens actively participate in space-making process

Can increase cross-sectoral governance

Provides new aesthetic stimuli

An integrative approach to instigating change

Short-term commitment and realistic expectations

Low-risks (low cost), with possibly a high reward

Develop social capital between citizens

15 POP-UP PLANNING IDEAS

1. Transform parking lots into parks.
2. Plant-a-tree day.
3. Transform vacant land into community gardens.
4. Community-made murals on buildings, streets, footpaths, benches, rubbish bins, or electrical boxes.
5. Food truck nights or weekends.
6. Set up weekly farmers and flea markets. Remember to invite local entrepreneurs!
7. Designate areas monthly to street theatre and speaker's corner.
8. Create free little libraries around the city.
9. Start groups to "Yarn-bomb" areas to add color and whimsy to the city by knitting brightly coloured wool.
10. Turn alleys into public art exhibitions and studio in the summer.
11. Have children of all ages create pop up play grounds and dog parks.
12. Organise a local car-free day.
13. Pop-up cooking lessons.
14. Screen movies outside (or in a public building in the winters). Remember the popcorn!
15. Throw street parties!



Strøget Street, Copenhagen

space into a temporary public park in downtown San Francisco. Now, every third Friday in September, Park(ing) Day is celebrated in cities around the world. These cities use this type of event to identify specific community needs and values. Similar events can stimulate the senses of a community members and create feelings of discovery in an otherwise familiar environment. Furthermore, such events can be organised by a cross-sectoral organization to include the values of the citizens, the government, local businesses, non-profits, and universities.

Though planners and policymakers are continuously working to improve the public realm in cities, the task can seem daunting. The cost of making improvements in cities can be prohibitive and there is often a lack of resources allocated for this task in municipal budgets. However, many of these tactical urbanism interventions are organised by citizens and cost nothing more than paint. For example, a citizen in Portland, Oregon wanted to add more colour to his neighbourhood and af-

ter negotiating with the city started a non-profit that creates intersection murals based on the feedback of the local community.

The Portland example is perfect in showing how pop-up projects effect citizen engagement in the planning process. "Pop-up projects change how citizens see their role in developing their communities and helps them become more active participants of everyday city life. Most of the changes made from tactical urbanism strategies are human scale and their engagement in that human-scale shift makes people feel part of the larger planning process," states Traeen.

While Portland's pop-up intersection paintings were a bottom-up initiative, not all pop-up projects have to be. In fact, Traeen suggests, that even though "pop up events are born in situations where there is a demand for change and the local government is acting too slowly to provide it, the combination of municipal and civilian events have the potential to be more successful." Furthermore, in some circumstances, pop-

Painted intersection based on community input - Trøget Street, Copenhagen



up activities may not be sanctioned by the government. Thus, it's important to understand each communities' policies prior to planning an event.

Urban planners have long known that the urban form is slow to adapt and evolve to community needs, but pop-up urban events are one strategy to quickly respond to changing political and social environments. Pop-up ur-

ban planning gives cities the freedom to experiment with projects, allowing innovative ideas temporarily without pricey commitments. "It's important that pop-up interventions are low risk so that different stakeholders can test interventions in the city. Thus, if it works in a small scale, it's likely a similar intervention could be successful on a larger scale," Traeen says.

By embracing pop-up planning, Bodø could potentially discover a great tool to make long-term changes to their urban landscape. Traeen claims, "that applying tactical urbanism techniques in Bodø could provide a huge potential for the city, especially as we are close to the Municipality 3.0 paradigm. The new paradigm is characterized by the municipalities increased involvement with its inhabitants, to mobilize their resources towards their common goals."



Lessons from Lisbon?

Sofia Morgado

The 21st century inaugurated with a harsh financial conjuncture. Born in the US and later spreading into the EURO zone and beyond. Other circumstances at both the geopolitical and security levels, and also the productive and economic systems (e.g. 4th Industrial revolution) have also been pulling the current century into a rather different condition than the post-industrial effects in main harbour cities around the world. It will not be the tourist gaze under the post-industrial large-scale umbrella anymore (in the aftermath of the oil crisis, from 70's on, cities such as London, Hamburg, Rotterdam, Lisbon as well), but an observation to everyday life spaces, in a local and convivial fashion.

Cities are now becoming fluid organisms in urban fabrics that whilst maintaining their pre-existence conditions may easily adjust to new configurations in the economic and social realms.

What is Bodø looking for?

A comprehensive planning approach would prove its interest as time will go by. Specially if considering (1) environment and clean energies, (2) the pre-existing city and heritage values, the reconversion of a pivotal fighter base for NATO into a different infrastructure, probably more flexible and open to the public; (3) new opportunities to take a leading role in a rarefied urban area, which the Arctic is; (4) finding up-to-date economy sources within the "smart city" approach which means activating the University and amplifying its effects onto the city by developing a start-up ecosystem specialised in very particular features that

allow competitiveness internationally speaking; (5) find ways to redesign the public realm by resorting to soft mobility and not-too-invasive features such as paving for secure use, reorganise parking, lighten up the city interrelating seamless technologies (e.g. for public transportation) with amusement and liveability.

What is there in Lisbon that may contribute to finding parallels in Bodø?

Besides being a major success in the touristic field, Lisbon means also heritage, cultural values, urban modernity and design innovation, cosmopolitan and down to hearth urban lifestyles, To Portugal where the main industry laid on real-estate and public works, the heavy austerity measures imposed by the troika (ECB, FMI, EU) since 2011 and a low-spirited political environment led to a fragilised Portugal. This would be mostly noticed in the difficulty to accede to elementary resources as health and education. Larger cities would experience mass drain-brain, the lowest job rate ever, loss of family homes. Projects and public works – buildings, routes, welfare facilities – just froze undone in the landscapes as dystopian leftovers from an unknown war.

By that time, the current Head of Planning Department/Lisbon Council, went to a presentation on the undergoing revision of the Master Plan to Lisbon, at the Faculty of Architecture, ULisboa. Amongst many questions, a student asked something like: «why do the Department keeps on planning without any perspective of funding, thus real

implementation? »« This is the time to do so, while promoters don't put pressure on their own interests. We may plan ahead, concentrate in fundamental needs and be prepared for the right opportunity. » In 2012 the Master Plan for the City of Lisbon came into force introducing some novelties. The Plan won the 3rd Award of ISOCARP in 2013. Several others would follow, including for the lower budget used with the highest result to the citizens.

This new plan had finally lost the appearance of a rigid modern land-use management blueprint, favouring instead the identification of areas according to their urban qualities - modernistic, heritage, opportunities. News tools were used. The interactive collaborative platform used by professionals and citizens is seen as unique in its wide span of contents (Lisboa Interactiva, Lxi available at: <http://lxi2.cm-lisboa.pt/lxi/> Câmara Municipal de Lisboa)

The Open Space System, until then a separate virtual Ecological Network, became concrete with urban farming reorganised, parks, gardens, simple walking space within the fabric of the city. Cars lost importance to soft mobility – electric vehicles, bicycle lanes, restrictions to access to the centre - public transportation, lower emission vehicles. Public space would be improved having as a focus sustainable design for all.

As a very steeped city, pavements were refurbished for a wider range of human abilities with hand rails, subtle differences in the rugosity of paving stones, public free lifts were opened

in building also rearranged for new co-working spaces and communal activities (e.d. Castle Hill and Mouraria). Bringing back to the city young families and companies had been long sought of goals, as the city had already lost over 40% of inhabitants and companies headquarters to other municipalities in the Metropolitan Area of Lisbon, in the 90's. A new strategy towards lowering the housing expenditure is being explored.

In Lisbon, public participation, even though in a preliminary way, made its entrance in 2008 and invited people not only to discussing the city but to living in the city as well. New Programs like BIP ZIP or A Plaza to each Neighbourhood became simple tools with small budgets, that could be promoted by the community together with the Council or other stakeholders. Introduced in 2008, the Participatory

Budget was acknowledged as good practice in various categories by the UN, OECD, Eurocities. The Start-ups begun to be implemented in former neglected areas, with high connectivity and even heritage value (e.g. Beato Convent, Marvila). Painfully but steadily, the country re-emerged, being finally bailed out with success by the International Monetary Fund (IMF), the European Financial Stabilisation Mechanism (EFSM), and the European Financial Stability Facility (EFSF). Renewed confidence brought major events, such as Web summit, with impact in economy.

Lisbon won the Startup Europe Awards 2016 (Câmara Municipal de Lisboa, s.d.), being acknowledged as a new landmark in the start-ups' ecosystems with a first reference by Startup Genome Ranking (Startup Genome, 2017).

As time went by, in Lisbon, a slow plaiting of new plain granite or limestone paving helped pumping people into the streets and set in which were once symbolic places, several under military or other restrictions, now revived to everyone. As income was scarce, the streets and gardens begun to be revived in new ways: as if they were beaches, holiday resorts, family gathers. Once hidden treasures were then offered to everyone such as the beautiful Torel Garden and Fountain, which became a free urban beach for everyone.

Monumental places were brought to life with imaginative light and laser projections by night. Terreiro do Paço (or Praça do Comércio) finally became ours to live in. Safety, hospitality, beauty did the rest in what tourism, sanctuary and 'next city to live' is concerned.

Christmas Multimedia Light Show in Comercio Square, Lisbon



Culture in a Cold Climate

Elizabeth Reynolds

When people from outside of Norway are asked to think of cities that are cultural destinations or feature iconic architecture, a city north of the Arctic Circle is perhaps unlikely to spring to mind. However, in Bodø we have both. The story of how it got them is an interesting one. The former Mayor of Bodø, Odd-Tore Fygle had lobbied for the creation of a “Kulturhus” in the city for many years, but the journey to realising it began in 2008 when an international design competition was held to prepare a culture-led masterplan for the city centre.

International Interest

A total of 93 practices from around the world entered the competition, one of which was the London-based architecture practice DRDH. Practice co-founder Daniel Rosbottom says the masterplan contest presented a choice: to regenerate or consolidate. Regeneration suggested an iconic statement of some kind on a plot on the far side of the harbour, where Bodø begins to fray. This was a popular approach among contestants swayed by the popular appeal of the landmark silhouette. Yet DRDH was rightly concerned that any gains would be compromised by the longer walks to and from the site – forcing people to brave the cold winter weathers. Consolidation on the other hand – developing a defiantly urban plot at the city centre’s edge – appealed to the architect. DRDH divined an opportunity: to add to the grid, to enhance its presence, with two inter-dependent monumental structures addressing the harbour and town. This approach impressed the judges too, and DRDH were placed joint first in the competition.



Stormen Library with Concert Hall behind

This qualified them to join a shortlist of six practices invited to submit proposals to deliver the two key elements of the cultural masterplan - a new library and concert hall. It was their subsequent winning submission to this second competition became the landmark project cultural project we see today - Stormen.

Two Buildings, One Facility

The scheme comprises two buildings: a 6,300m² library and an 11,200m² three-auditorium concert hall. The project took five years to realise, and while the initial reaction to the scheme was mixed, any early criticism of the buildings’ style has given way to pride – with 20% of the city’s population attending the opening event, and last year alone the library had visitor numbers higher than the entire population of Bodø, which goes to show how much they enjoy regularly using the facility.

The concert hall and library are each constructed in white concrete and feature large windows that create a visual connection with the harbour and the street. Stormen is very much seen as a marker for the future of Bodø. The newly-formed Arctic Philharmonic Orchestra is based there, and culturally, it represents Norway’s commitment to the wider polar region.

Externally, both buildings display a commonality in materials, their façades constructed from pre-cast concrete, with an aggregate of local white stone. The building forms also relate, with roofs and towers speaking to one another, and with the library establishing a horizon across which the Concert Hall surveys the dramatic landscape of sea and mountains. Internally however the buildings offer quite different characters.

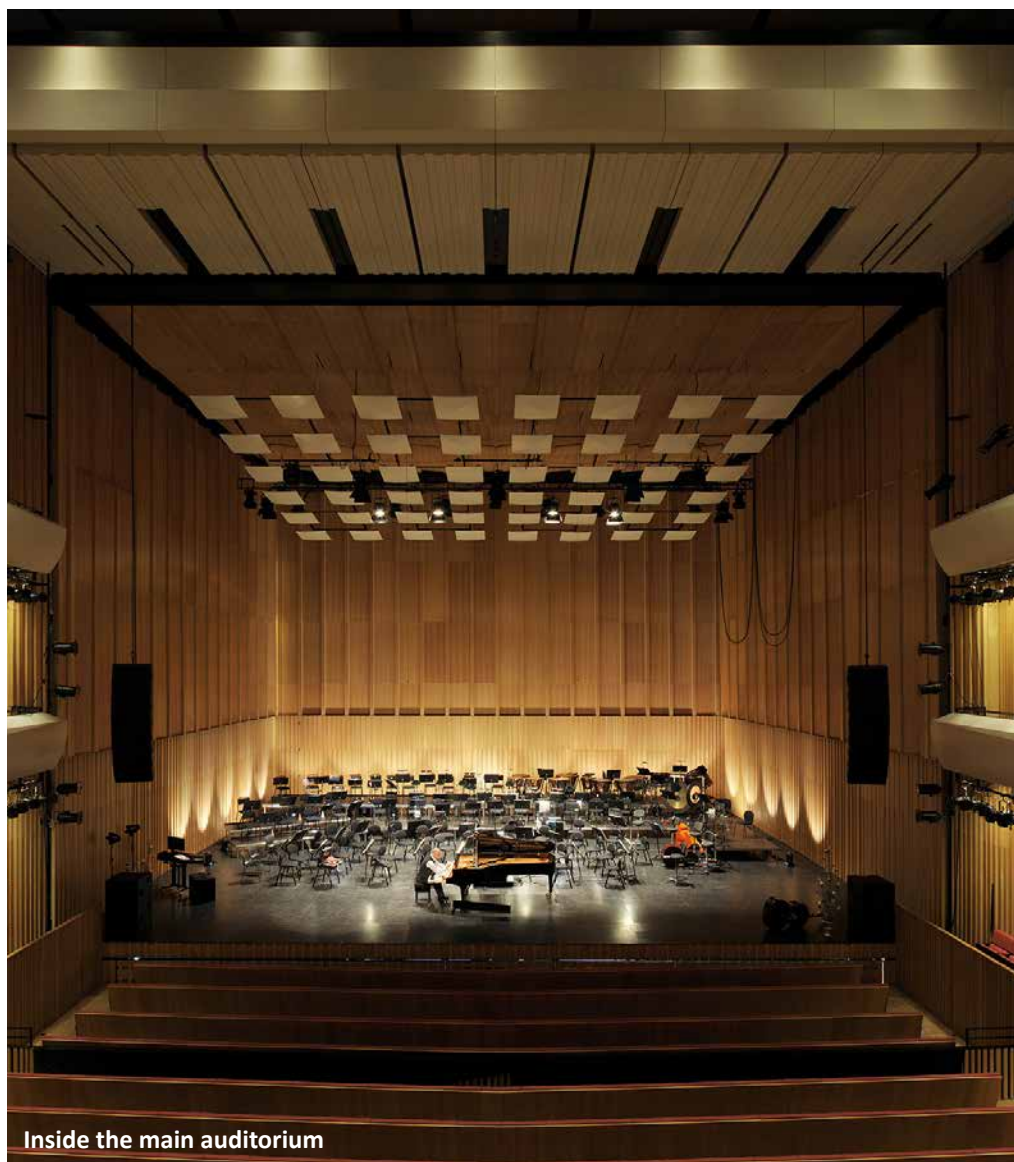
The Concert Hall has three auditoriums compactly placed from east to west across the site. In the centre is the 920 seat main auditorium and the fly tower; with two smaller performance spaces situated below it, at lower ground level. The main auditorium offers a new typology that embodies the visual and acoustic qualities necessary for a concert hall, alongside the technical and performance characteristics of a theatre. Supporting functions wrap around and over these performance spaces. A sequence of generously proportioned public rooms connect the auditoria around the two sides of the building that face onto the principal streets, while back-of-house facilities wrap around the opposing sides.

In contrast, the principal spaces of the Library describe an open internal landscape, which focuses upon the main reading space with its glazed elevation to the harbour. The building includes a number of other community functions including a flexible performance space, a gallery, a multifunction room and a café. These are defined as a series of rooms that face the city streets. The building is open to both the city and the harbour, with entrances connected by an internal street. The childrens library, at the top of the building, is more intimate, nestled beneath an inverted roof form and focused around an external play court.

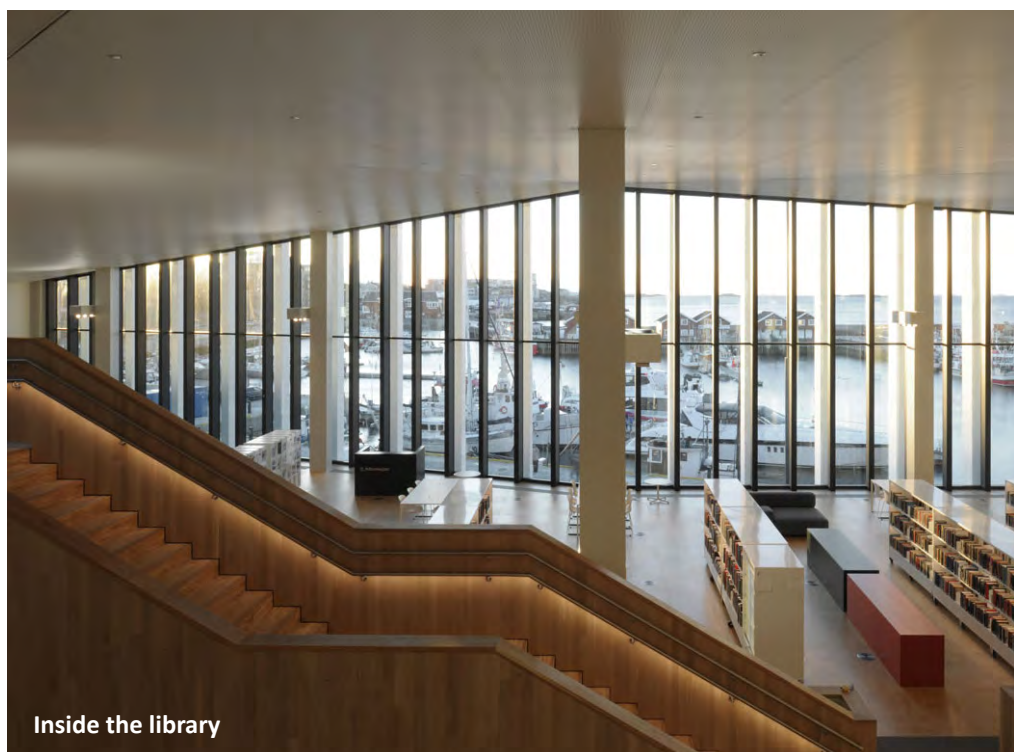
However, despite these individual identities, they are also clearly a deliberate pair - 'living rooms' for the whole of Bodø to use and enjoy.



Internal navigation



Inside the main auditorium



Inside the library

A Smart City – North of The Arctic Circle

Karoline Nilssen, Bodø Kommune

The world is paying close attention as the creation of a new, smarter, and more environmentally friendly city takes place just north of the Arctic Circle. It is history that has made Bodø, with its 50,000 inhabitants, unique. The settlement reaches back to the Stone Age, but its city status was not granted until 1816. The city's growth then progressed with great success in the herring fishing trade during the second half of the 1800s, its residents making the most of its waterside location. However, it was its proximity to the landmass of the Soviet Union, rather than the Ocean, which gave Bodø its greatest economic and population boost.

A Cold War Catalyst

During the Cold War which followed the Warsaw Pact, Bodø's Air Force Base became a strategic NATO outpost in the north and was subject to a massive physical development. In practice, the peninsula on which Bodø is located was divided into two parts: half city, half air station.

The turning point came recently when the Norwegian Parliament decided to close down the air station and move it southward to Ørland located outside Trondheim. All of a sudden, there will

be large areas of land available on the peninsula. On June 20th 2017, Bodø was given the green light from the Parliament for the project Ny By - Ny Flyplass (New City - New Airport) as part of The National Transport Plan.

Everything is Possible

This is where the smart city concept enters the picture. When one is going to move the runway, and in practice build an entirely new city, it is imperative to find provident, sustainable, and environmentally friendly solutions. What initially started with a somewhat unilateral focus on moving the runway 2km southwest has become so much more.



"After a while, we discovered that freeing up 3,600 acres for city development next to the existing city is something unique," says project manager Daniel Bjarmann Simonsen. "Thus, we want this area to become a playground for research, development, and innovation. And the best part is – we are experiencing that local, national, and international actors are on board." Whether it is about space travel, intelligent streetlights, driverless buses, advanced welfare technology, or zero emission, the inhabitants of Bodø, will be the project's central focus.

Humans First

"It is human needs and desires that drive societal development, not economical or technological issues. Technology would in that regard be a mean for reaching a goal, not the goal itself," Mayor Ida Maria Pinnerød says.

Her philosophy is backed by international expertise. The man behind the transformation of Bilbao, architect and city planner Juan Alajo, says "The best thing Bodø can do, is to generate a magic that makes people want to live there. Everything else – and then I'm talking about economy, infrastructure, all of it – is secondary." Furthermore adding "my nephews and nieces, do not look at the world as divided by geographical borders. They go where they want. Bodø has to make sure enough people want to come and live here.

Improved Quality of Life

What is a smart city really?

In an international context, there is no definition of what a smart city is. The project manager for the Smart Bodø programme in Bodø, Marianne Bahr Simonsen, explains: "We are going to improve the inhabitants' quality of life by using technology in order to make services more efficient, and to meet their complex needs. [The] plan [will] make the city more human friendly and environmentally friendly. Bodø is already off to a good start. Within Norway, the city is held in high regard for providing smart solutions in the field of welfare technology. Some of those initiatives are explained here.

A Completely New Day

Sørgjerdet Collective Housing is a co-operative housing company located in Bodø. Today, Sørgjerdet has 12 residents with both somatic and psychiatric disorders which require close and comprehensive follow-up. Sørgjerdet Collective Housing has helped Bodø become a leader of welfare technologies. By phasing in welfare technology, Sørgjerdet has created "an environment where employees are increasingly able to follow each resident's development, which also gives the job an increased level of professional content," says Department Manager Stian Brennberg at Sørgjerdet Collective Housing. The transition from in-

stitution to collective housing has also improved the residents' quality of life. Now residents have the opportunity to be part of a community, while at the same time have the freedom to withdraw to their own apartment whenever they want. Sørgjerdet Collective Housing has already come up with a long list of measures for creating a better life for those in need of extra care:

Mobile devices for employees to help monitor what is happening at all times on the premises - for example Epilepsy alarms that are triggered by seizures can automatically alert staff. Lifecare eRoom is an electronic patient room on a tablet that is used to store and update information about the user, his or her active measures, and relevant procedures. Improved personal safety alarm for employees where the location of the person triggering the alarm is displayed on the monitor.

Home care services' technological development has revolutionized the everyday for both employees in the municipality and those in need of care in Bodø. "Ten years ago, I would have found myself in a nursing home," says Brith Elinor Hongset (78). Now she can enjoy herself in her apartment, in spite of having been through an extensive surgery which required medicinal follow-up. Today, when nurse Ellen Synnøve Pedersen visits, she can complete a number of tasks which in the past required hospitalization.

Smartphones

The work has also become easier thanks to digital development work. Now we have most relevant data on a smartphone, which makes reporting increasingly precise and efficient as it can be done from the home of each individual user. It also makes it much easier for new employees to obtain an as good as possible overview of the needs of the user they are visiting at the time, says Pedersen.

Different models are being prepared as Bodø sets its aim on a smart future. Some of the projects and activities will be entirely municipal. Other projects will be collaborations between the municipality and other actors. It is only the imagination that limits what can be included in the Smart City project. The municipality has already started digitalizing building proceedings, which will make it significantly easier for inhabitants and developers to execute all the steps in the building process.

Children and youth is another area subject to heavy focus in Bodø. The Department of Primary and Lower Secondary Education has implemented programming for all students to have an iPad in cooperation with Lego League and establishment of Newton Rooms and rooms for science subjects.

A smart city is also an environmentally friendly city. In this matter, Bodø has come a long way. "We are going to become a pioneering city in terms of creating good solutions and new technologies related to emissions, consumption, recycling, and climate. We have already started measurements to find how much CO₂ is released from the city and by how much we have to reduce that," says Mayor Ida Maria Pinnerød.

International Interest

As mentioned, the international interest for what is about to happen in Bodø is great. One of those who are closely following the process is Dr. Robin C. Daniels in London. He is the founder and administrative director of Redpill Group counselling firm, which makes strategies for the development of cities and infrastructure for a living. Daniels is regarded as one of the very best in his field of work.

In 2006, The Times spoke of him as one of the most innovative persons in the United Kingdom, and in 2013 he led the process of making London City Airport, the airport in the middle of the river Thames, smart. When Daniels realised what opportunities laid within the freed-up area of land after the NATO air base, he jumped on it.

Two things about Bodø fascinate me. One is the expansion itself and the challenge of making sure all the components fit together to create a city that is as smart as possible. The other fascination is the opportunity Bodø has to commit to long-term, strategic collaborations with external partners. Daniels believes that local companies stand before the opportunity of a lifetime in terms of becoming global suppliers of the solutions which are being developed in the process of creating the new Bodø.

Recognised professor

Another sizeable international actor that has shown interest in Bodø's exciting changes is Professor Herbert Dreiseitl. "The city has been interesting to me for a long time," says Dreiseitl. Among his award-winning projects is the reformation of Potsdamer Platz in Berlin, Bishan Ang Mo Kio Park in Singapore, and the culture park in Tianjin, China. Dreiseitl has his own branch in the Rambøll Group, Studio Dreiseitl, and is a significant figure in the Liveable Cities Lab, which is a large initiative in the support of developing the cities of the future.

Bodø as a hotspot

I saw a great chance to combine a completely new runway with a hub for boat traffic and railroad traffic. I saw the opportunity to create a more beautiful and better part of the city, making it more attractive to people and to the young. And I also saw the opportunity for a destination for the Hurtigruten. Bodø is a "hotspot" in Norway. I am personally very interested in what is going on there.

For Mayor Ida Maria Pinnerød the real work is about to begin. She is perfectly clear about this being a 100 year perspective. "We approach the task at hand with a solid portion of awe. What we are doing now is going to shape the future for several generations to come," says the Mayor.



Mayor Ida Maria Pinnerød

Biking in the High North

Daniel Bjarmann-Simonsen, Bodø Kommune

I'm not an ardent cyclist. I like cycling, but that's all. I've cycled along the Rhine, through the vineyards of Alsace, along the beaches of Ill de Ré where France meets the foaming Atlantic, and in Lofoten in Norway, from Svolvær to the picturesque, romantic fishing village of Henningsvær.

In Bodø, where I live, I cycle to work every day on my battery-assisted bike. The wind blows about ninety eight per cent of the year in Bodø, so when my motivation is ebbing after a long day at work it's good to have a little extra pedal power. Mind you, when I look at my cycling habits a little closer, I might actually be more enthusiastic about cycling than I first thought. At the same time, I can honestly say that I do not possess cycling shorts, cycling shoes or any other fancy cycling gear. I have a slightly worn and deformed helmet that I bought in an Alsatian village, but otherwise I'm usually seen wearing a suit or hiking gear when I bike around this peaceful part of the world.

The freedom of the bicycle is fantastic. When you're cycling through magnificent countryside, even bad weather doesn't detract from the glorious feeling of total freedom. Bodø is framed by dramatic alpine mountains and the clear, fresh waters of the fjords. Agriculture and urban living in perfect harmony. You are your own boss, and there are hardly any limits as to where you can go. Between town and countryside, forest and fields and fjord and mountains, Bodø has everything.

And it's all just a bike ride away. Town meets country wherever you look. Nature and city. Naturicity. In the north of Norway. But Norway and the world are also close. Hop on a boat and cycle round the spectacular islands right on Bodø's doorstep. Hop on a plane and cycle round Europe. Hop on a train and hop off when you see a cycling paradise to behold.

In everyday life, the bicycle is primarily a means of transport. Even though we find ourselves north of the Arctic Circle, the winters are generally relatively mild, thanks to the warming effect of the Gulf Stream. At the time of writing, September is turning into October, there's brilliant sunshine and the thermometer is showing 15-20°C. This is fairly unusual for the time of year. It tends to be around 10°C. At Reipå, a coastal village just south of Bodø, 22.9°C was recorded just the other day. At the same time it was 22.6°C on the Greek island of Crete. This underscores in many ways the gravity of climate change. Although similar conditions have been experienced before, research suggests that this is related to human activity on earth.



Daniel out on his bicycle

In Bodø, therefore, we are concerned that what we do will contribute to developing the zero-emission cities of the future. Cities are both the cause and the solution to the climate crisis. In Bodø, we have both natural and man-made advantages, which mean we can contribute with solutions for the global green shift. From Bodø to the world - it's our business model, it's our philosophy, it's what we are working for every single day.

My cycling to work is of little significance compared with the climate challenges we are facing. If all the people in Bodø left their cars at home and cycled to work and Bodø became a zero-emission city, it would not make much of a difference. Bodø has too few inhabitants for that. But through our projects and efforts to become a zero-emission city, we can create products, solutions and new knowledge for exporting to the world. In this way, we can help make the world a better place tomorrow than it is today. We can make possible tomorrow, that which is impossible today.

We still have winters here, and occasionally there is snow. We have a studded bicycle tyres and cycle tracks that are cleared of snow. People in Bodø cycle all-year-round, regardless of the weather, and we will continue doing so and everyday more people are joining the movement.

If I have one wish from my daily journey to work, it is that we continue to have winters where we can cycle on snow. If my riding a bicycle to work does not make much of a difference, then so be it, but the snow in itself is a measure of whether we succeed in our common journey towards a world community that does not destroy the basis for life – for us, and for generations to come.



Hiking Around Bodø

Andreas P. Lorentzen

Being out in nature has always been a big part of Norwegian culture and national pride. Statistics show that 70% of Norwegians have hiked in the forest and 54% have hiked in the mountains during the last year. The people of Bodø are no exception. In fact, people in Bodø tend to have an above average fondness of hiking. This might not be surprising considering Bodø, situated at a 67° North, is surrounded by scenic mountains, fjords, and rivers. There are more views than the breath-taking scenery of the city that most visitors experience. For many, Bodø is an El Dorado of opportunities

for hiking, kayaking, skiing, hunting, fishing, and climbing. This article expresses where to go and what to do around Bodø based on my experiences exploring the nearby terrain.

Landegode

Landegode, with its steep mountains, is one of the most distinct islands seen from Bodø. The island has 132 sheep and 42 human inhabitants. There is also a lot of mountain hares and foxes that can be seen while wandering the island.

The highest mountain is Rypdalstind (802m) which one can hike to the top. As this peak is one of the most visible and available mountains near Bodø, only 30 minutes with ferry, its perfect for a weekend trip. I even took a ferry after work on a Friday with my tent, sleeping bag, food, and a small backpack and made it to the top of the summit with plenty of time to spare. It was the perfect time of year to do so, as the weather was nice and the midnight sun still meant that there was no chance of getting stuck in the dark. The entire trip to the top of Rypdalstinden is around 6km, with 3km on a



Andreas out hiking at Landegode

paved surface. The real hike starts with a difficult 150m ascent before you go over 1km of swamp. From here, it starts to get steep with almost a 40 degree slope all the way up. However, the ascent is pleasant as it is well vegetated and there are no cliffs. At 9pm, I reached the top and was overwhelmed with the view. From the top of Rypdalstind, one might have the best view of the Lofoten wall possible. On a clear day, you can see Lofoten from the tip (Røst) to the base (Svolvær). Looking toward the other side, one

almost two hours to Beiarn, where one can ski Tverrbrennstua which is 2km away from the road. Saturday, I decided to start early on the slopes. When the sun never sets, starting early is something you can easily do. With the sun at my back, I started the trip to Bjellåvasstua at around 2:30pm. Around 5am, the sun was so warm that I had to change into shorts and a tee-shirt. Twenty-two km later, and three reapplications of sunscreen and two long breaks, I reached Bjellåvasstua around 11am. After sleeping, reading,

Lofoten is probably one of the most beautiful and dramatic coastlines in the world, and might be why the designer of the Norwegian coastline won a prize in the film Hitchhiker's Guide to the Galaxy. Even though Lofoten is on the other side of Trollfjorden, and not a part of the Bodø municipality, it is really close to the city. The ferry to Lofoten only takes around 2 hours from Bodø, and it goes several times a day. Hiking in Lofoten is different from Saltfjellet as its mountains are steep (many of them over 45 degrees), rocky, and they have



can see Kjerringøy, Bodø, and Beiarn (Saltfjellet). Hiking downhill to return is often worse with steep terrain than the ascent, but there were no problems on my journey. Once I reached the bottom, I found a nice place to put up my tent and went to sleep in an instant. The next morning I awoke as it started to rain, so I headed back to Bodø for another adventure.

Saltfjellet

As there had been an abnormal amount of snow in the mountains this year, I decided to go skiing in Saltfjellet the weekend after the UPAT. On Friday evening, I took a bus for

and eating in the sun, I decided that this was not a day to just do nothing. So, I decided to go further, to Midstua, another 11km further south. This was one of those perfect days, where you cannot sit and do nothing. On Sunday, the weather changed while I skied down the mountain. It went from clear blue skies and high temperatures, to a more cloudy, light rain, colder day.

Lofoten

As a sharp contrast to Saltfjellet's flat areas where one can easily go hiking from one cabin to another cabin, the Lofoten archipelago is known for its steep mountains and deep fjord.

many cliffs that require proper climbing equipment.

The last time I visited Lofoten was in 2015, when I visited Moskenes to summit the highest mountain, namely Hermandalstind with a height of 1029m. Hermandalstind is one of the only mountains on Moskenes where you can go without climbing equipment and still have a well-established trail.

To conclude, I encourage everyone to not only look at the City of Bodø, but also at the astonishing nature that surrounds it and use it, like we Norwegians do.

Beers of Nordland

Kristoffer Larsen Seivåg

Norway has a long beer tradition, and home brewing at family farms has been common all the way back to medieval times. Old written laws of the 11th century gave orders to brew beer for Christmas every year. If not, the farm was punished and could even lose its property if they did not brew Christmas beer several years in a row. Beer has played a big part of Norwegian culture, and was brewed to every special occasion such as baptism ceremonies, weddings and funerals. Beers were mostly brewed with local flavourings in addition to barley malt, such as junipers, herbs and heather instead of hops.

Moving on to the 20th century the home brewing tradition had declined and the beer scene was mostly based on industrial brewing of cold fermented pale lagers, as in most countries in the world. Some dark lagers such, as bock bier from the Hanseatic trading times in Northern Europe, was still brewed. After WWII Nordland county's only brewery was Bodø Aktiebryggeri (founded 1897) with their flagship beer Nordlandspilsen. After changing the brewery's name to Nordlandsbryggeriet in the 70's and later got in the hands of the Oslo-based brewery Ringnes, it got closed down in 2000. Thirteen years then followed without stable commercial beer production anywhere in Nordland.

In the early 00's the global beer revolution of craft breweries reached Norway. But it was not until 2013 the first commercial craft beer in Nordland was served. In 2012 six homebrewers founded the microbrewery Bådin in Bodø, and since 2013 they have

doubled their brewing capacity as the demand has been increasing rapidly. From Bådin's facilities in the city centre they offer a wide range of beer styles from dark to pale to heavily hopped. Bådin brewed 51,000 litres in 2016 and are now available all over Norway.

Today you can find locally brewed beer all over Nordland. In the south, you find the small Hemnes Mikrobryggeri (founded 2013) idyllically located in a small place called Hemnesberget. Farther south you find the two newcomers

Bastesen & Stokvik Bryggeri and Nordgården Gårdsbryggeri (both founded 2016). The latter focuses on local additives such as yarrow, meadowsweet and elderberries, and even local malt. In the northern part of Nordland on the Lofoten Islands the brewery Lofotpils is located. From the time their first beer was released in 2014 the brewery has grown fast, and now has a capacity of 2 million litres of beers per year. Between Lofoten and Bodø, in the magnificent landscape of Steigen, the small Engeløya Håndbryggeri was founded in 2012.



There are also some small brewers that offer their beer as part of an experience. Just north of Bodø, on Kjer-ringøy, the café Markens Grøde offers customers local beers accompanied to homemade buns, cheese and other local food. In the city centre of Bodø the two-storey brewpub Hundholmen Bryggeri og Gastropub (opened 2016) offer their own beers to a wide range of food dishes.

in 2017 Bådin brewery arranged Nordlands first ever beer festival inside their own brewery facilities, where well-known breweries from Nordic countries served their beers to local beer enthusiasts. It seems that the beer revolution in Nordland is continuing, and there has been recent interest in investing in a new brewery in the old Nordlandsbryggeriet's brewery.



Welcome to BODØ



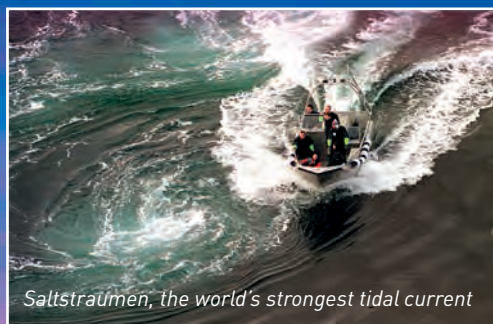
Bodø Kommune is the governing authority of Bodø. Sitting just above the Arctic Circle, it is the gateway to Norway's true north and is currently home to approximately 50,000 citizens. It is also the northern terminus of Norway's railway system.

Our airport sees approximately 1.8 million passengers per year. The city is currently on the brink of significant development with the construction of a new airport, which will liberate an area equivalent to 800 football fields for further urban development. Bodø then has a once in a generation opportunity to design and build the world's most northerly smart city, with a sustainable AV public transport system fully integrated across several modes.

Multiple research & development projects are already in progress, both on national and international cooperation levels. Will Bodø be the world's first city to house a zero emission neighbourhood of 20,000 inhabitants?

Bodø is a vibrant city on the edge of nature. The northern lights dominate the winter season, while the midnight sun captivates the summer. In Bodø's surroundings you'll find the world's strongest tidal current; Saltstraumen. In the city centre there is the award-winning concert hall and library – famous for their amazing architecture.

We welcome you to Bodø
– the small and vibrant city in the north!



Saltstraumen, the world's strongest tidal current



Plans for a new airport – and a new city



Midnight sun



Stormen library and concert hall



Photo: Terje Rakke

From city to nature

