A simple comparison

Copenhagen

1950

1995

2010

Beijing

1950

1984

2010
DE-COUPLING GDP AND CO₂

GDP, energy consumption and CO₂ emissions in Denmark 1990-2013

Source: Statistics Denmark and the Danish Energy Agency
CLIMATE RESPONSIVE DESIGN
PASSIVE STRATEGIES FOR OUTDOOR AND INDOOR COMFORT

![Graph showing energy consumption from 2009 to 2020]

- AVRQ 2009
- BR1961
- BR1979
- BR1995
- BR2006
- BR2010
- BR2015
- BR2020

KWh/m²
ACHIEVEMENTS
TRAFFIC ACCIDENTS

Number of deaths in traffic in 1972: 1762
Number of deaths in traffic in 2012: 167
COPENHAGEN IN TRANSITION: RECESSION → SUSTAINABLE SMART CITY

Copenhagen 1980
Recession

Copenhagen 2014
European green capital
COPENHAGEN IN RECESSION

A commission concluded

• Lack of transportation infrastructure
• Lack of quality apartments
• Jobs moved out of Copenhagen
• Families moved out of Copenhagen
• Copenhagen had no funding
• State couldn’t donate funds

Copenhagen 1980’s
Recession
THE URBAN DEVELOPMENT VEHICLE IN COPENHAGEN

CHANGE OF ZONING

METRO AND INFRASTRUCTURE

SALE OF BUILDING RIGHTS

1,000 EURO/m²

MASTERPLAN

ARCHITECTS COMPETITION

5 EURO/m²

DEVELOPMENT COMPANY

LAND INTERPOSED
ORESTAD FIRST GENERATION URBAN DEVELOPMENT VEHICLE

**Facts**

Ørestad
3,1 km² floor area
50,000 jobs
25,000 residents
6 metro stations

**Purpose**
Develop and sell building rights to finance METRO

**Planning idea**
Pre-implementation of infrastructure to maximize land value before sale

**Status 2017**
70 % developed
ØRESTAD SOUTH - BEFORE SALE OF BUILDING RIGHTS
SMART, SUSTAINABLE AND LIVEABLE

Best practice to next practice
- Best practice today is sustainability
- Not content with best practice
- Best practice is retrospective
- Cities last for the next 100s of years
- Future practice is liveability

Liveability is the ever moving objective
- Prime enablers are:
  - Sustainability
  - Smart city
  - Mobility
  - Viability
  - Connectivity
  - Flexibility
  - Resiliency
CREATING LIVEABLE CITIES

Ramboll planning principles:

1. Liveable cities planning must be based on **sustainability** and provide the standard of living we believe is adequate and appropriate and efficient

2. Liveable cities also include **cultural values**, identify and sense of belonging

3. Liveable cities are supported by **SMART** technology

Liveable cities planning should promote ‘Green Growth’
NORDHAVN – next practice
NOMINATED ‘WORLDS BEST MASTERPLAN’

**Sustainable, smart, liveable**
- 40,000 inhabitants 40,000 workplaces
- CO2 neutral and energy plus
- Design for passive energy saving
- Smart city solutions
- Public transport prioritization
- Parking strategy
- Super bicycle paths
- District heating and cooling

**High performance building envelopes**
- Large energy store
- Sea wheat for bioethanol and biogas
- Intelligent waste handling
- Solar systems
MORE MOBILITY – LESS TRAFFIC
Definition of 5 minute city

• The five minute city makes it possible to reach basic shops, institutions, work places and cultural facilities within 5 minutes walk

• Or within 5 minutes walk to a public transport mode leading to the destination

Why?

• To create urban life
• Social interconnectedness
• Networking
• Sustainable behaviour and transportation
A smart city is a city which through technological, architectural and administrative innovations form the basis for sustainable development to ensure quality of life for the citizens.

A smart city is interconnecting across sectors, citizens, businesses and organizations through open data availability and ICT infrastructure.

A smart city supports a connected and intelligent infrastructure to improve economical, political, social and cultural efficiency, development and behaviour.
WE MUST BE ABLE TO WORK TOGETHER TO CREATE THE LIVEABLE CITY
1. **A strong and guiding political vision**
   - Quality of life (Liveable, clean, safe, diverse, sustainable)
   - Growth (knowledge, innovation, employment)

2. **A holistic approach to planning urban developments/retrofitting**
   - Acknowledgement that investments in physical infrastructure need to be viable and go hand-in-hand with investments in social and cultural infrastructure.

3. **Structured approach to dialogue with citizens and investors**
   - Open dialogue with investors on need for municipal “trigger investments”. Transparency in political decision making and trust in the future.
   - Involvement of citizens. Not only in hearings and formalized engagement processes. But also in structured co-creation processes
NORDHAVN – next generation - next practice
NOMINATED ‘WORLDS BEST MASTERPLAN’
AMAGER RESOURCE CENTER
DENMARK

Challenge
Recover the energy resource from 440,000 tonnes of waste annually

What we do
Owner’s Engineer
Services ranging from planning to commissioning of M&E

Effect
Flagship waste-to-energy facility from an environmental and energy efficiency point of view
1. Ramboll Head Quarter

Architect: Dissing & Veitling
Engineer: Ramboll
40,000 m²
2000 employees
INSPIRATIONAL TOUR OF COPENHAGEN

6. Ottetallet – 8-building or Infinity Building
   Architect: BIG - Denmark
   Total: 62,000 m² - Mixed use
   Apartments: 476
   Worlds best residential building 2011 (WAF, Barcelona)
INSPIRATIONAL TOUR OF COPENHAGEN

7. VM Mountain

Architect: BIG - Denmark
Total: 25,000 m² - Mixed use
Apartments: 80
Worlds best residential building 2008 (WAF, Barcelona)
Parking: 650 spaces
8. Tietgen Dormitory

Architect: Lundgaard & Tranbaek - Denmark
Apartments: 360
BELLA SKY

Architect: 3XN – Denmark
Engineer: Ramboll
Total: 42,000 m² - Hotel
Rooms: 812
Worlds most leaning concrete building 15,6°
9. Nordhavn

Architect: COBE, Masterplanner: Ramboll
Apartments: 20,000, Jobs: 40,000
THANK YOU

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