Digital City Rotterdam

OASC Conference Rotterdam

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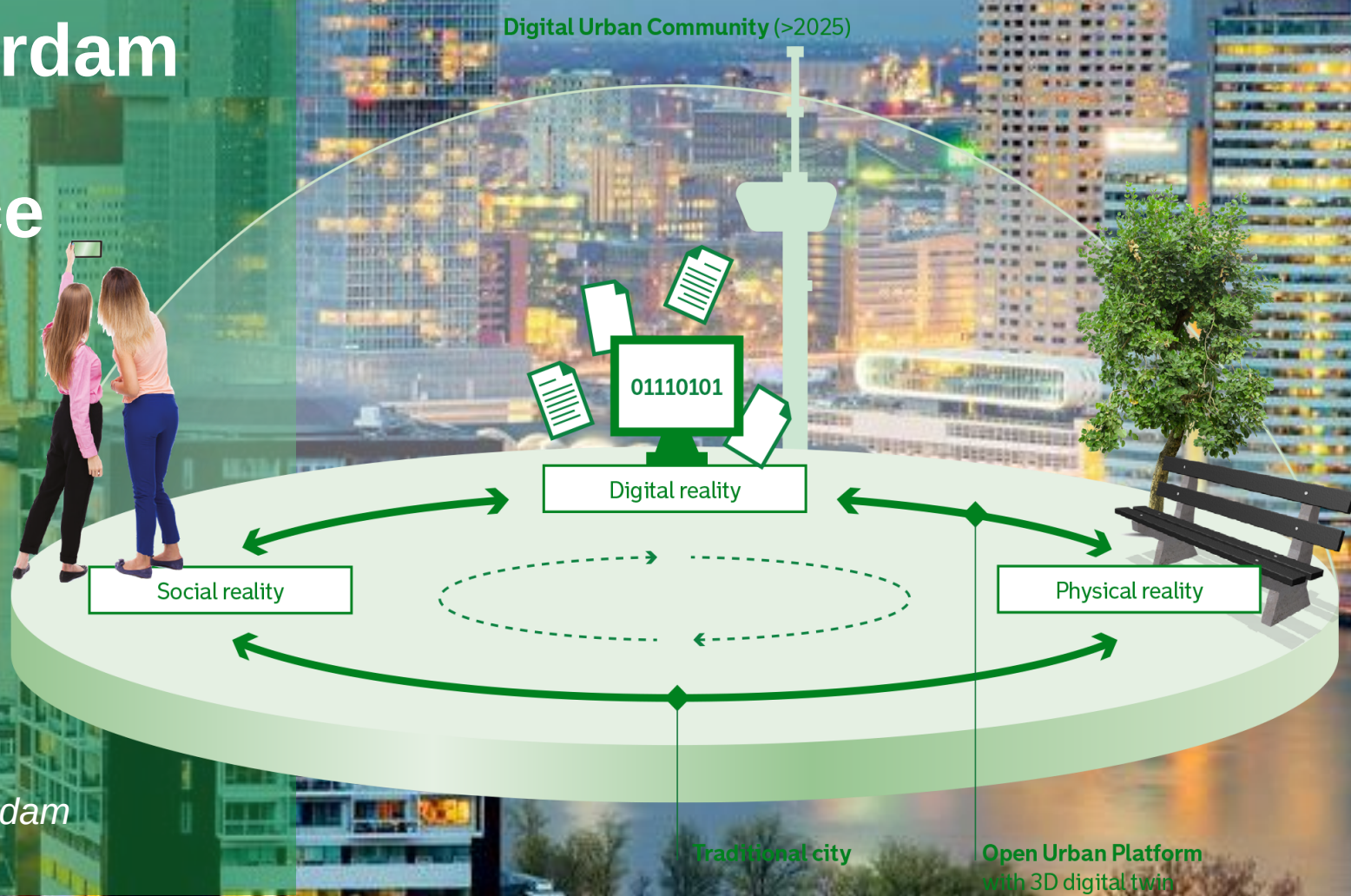
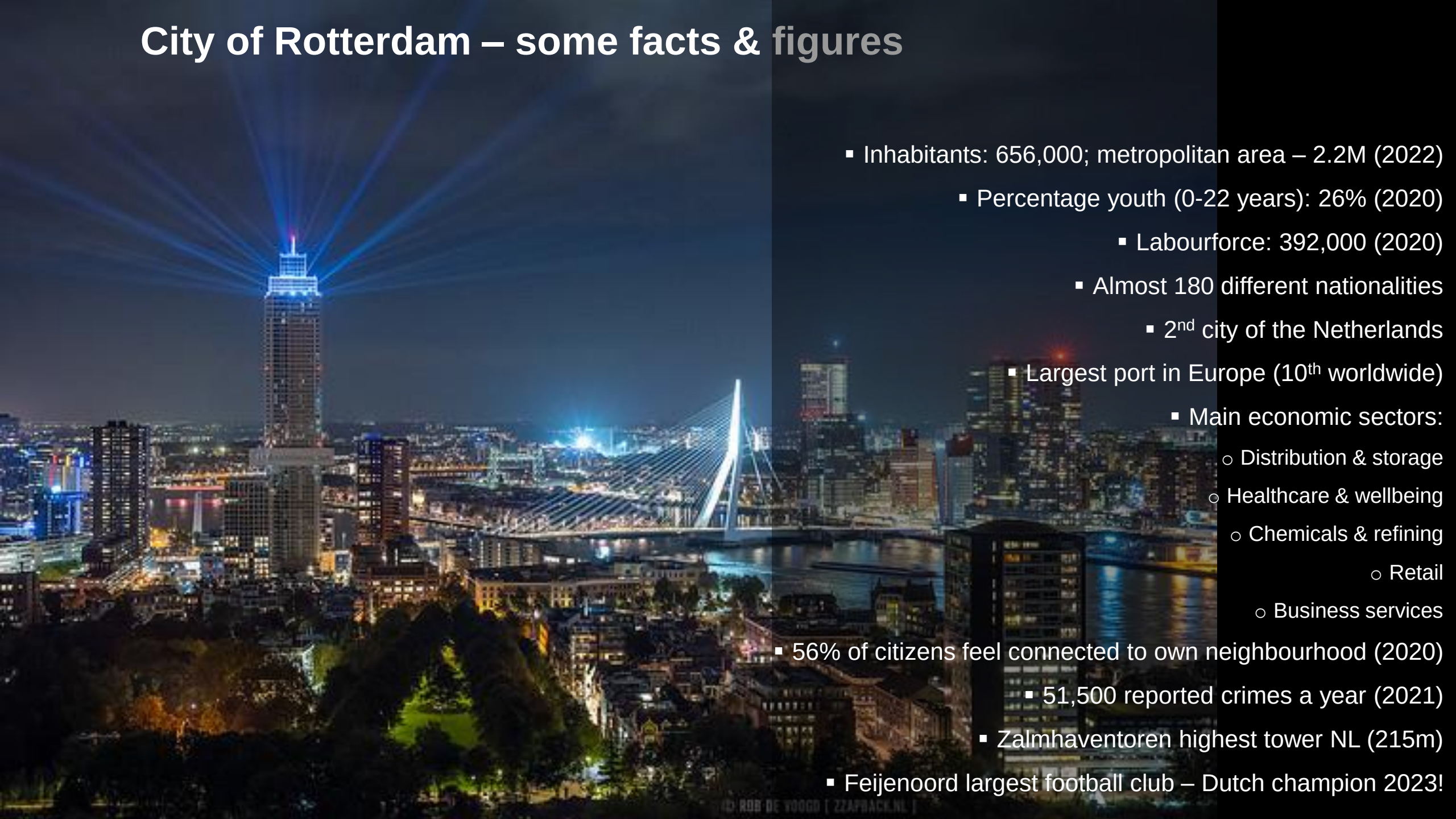
Coordinator Council of Cities OASC



City of Rotterdam – some facts & figures

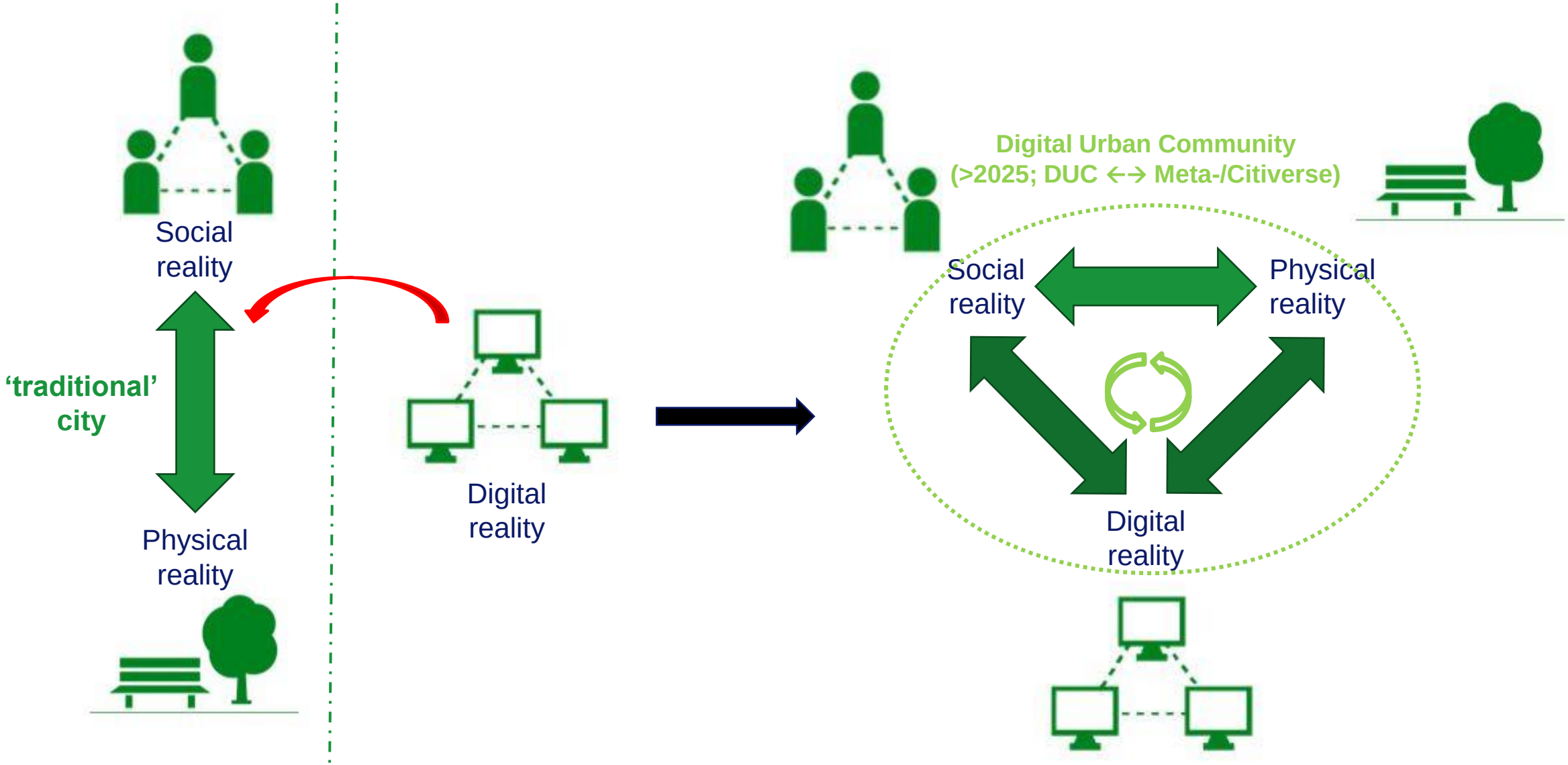


- Inhabitants: 656,000; metropolitan area – 2.2M (2022)
- Percentage youth (0-22 years): 26% (2020)
- Labourforce: 392,000 (2020)
- Almost 180 different nationalities
- 2nd city of the Netherlands
- Largest port in Europe (10th worldwide)
- Main economic sectors:
  - Distribution & storage
  - Healthcare & wellbeing
  - Chemicals & refining
  - Retail
  - Business services
- 56% of citizens feel connected to own neighbourhood (2020)
- 51,500 reported crimes a year (2021)
- Zalmhaventoren highest tower NL (215m)
- Feijenoord largest football club – Dutch champion 2023!

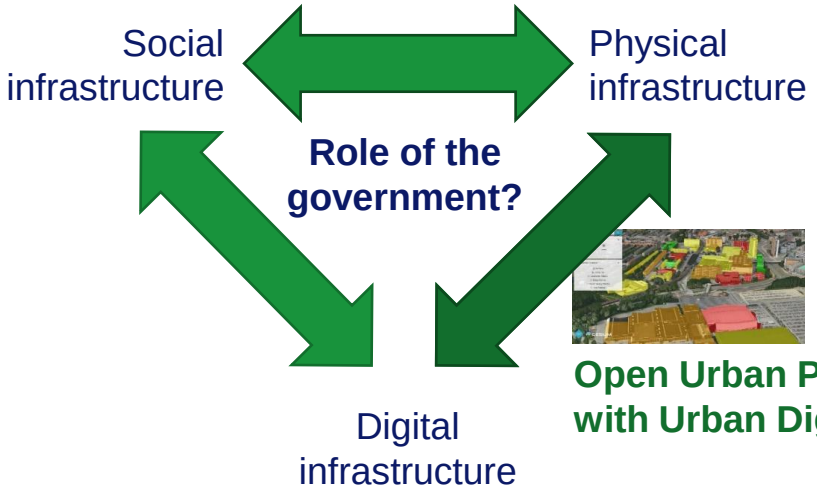
Priorities Rotterdam as coordinator Council of Cities OASC

1. understanding that the city is shifting from a social-physical towards a social-physical-digital construct;
2. data-driven, which means data (and open -data-standards) is put central and software follows;
3. open (and well-known) standards and MIM's, which means that the underlying data infrastructure is primarily based upon open standards and facilitates any system (like Fiware) by offering an open interoperable reference architecture;
4. importance of FAIR use of data and a responsible data governance model for every ecocystem.

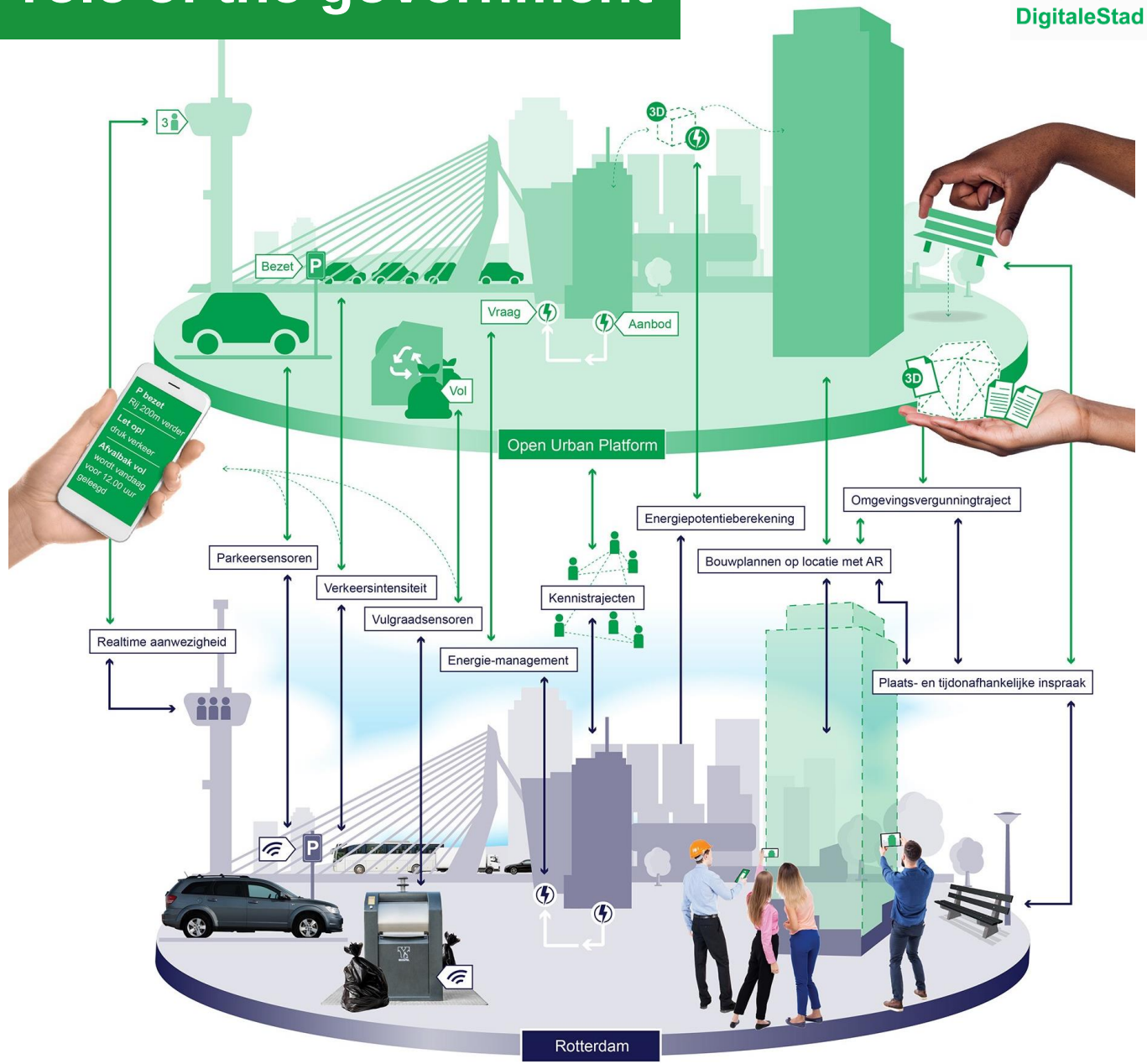
City in transition – a new reality (why a digital city program?)



Open Urban Platform and the role of the government



Open Urban Platform with Urban Digital Twin

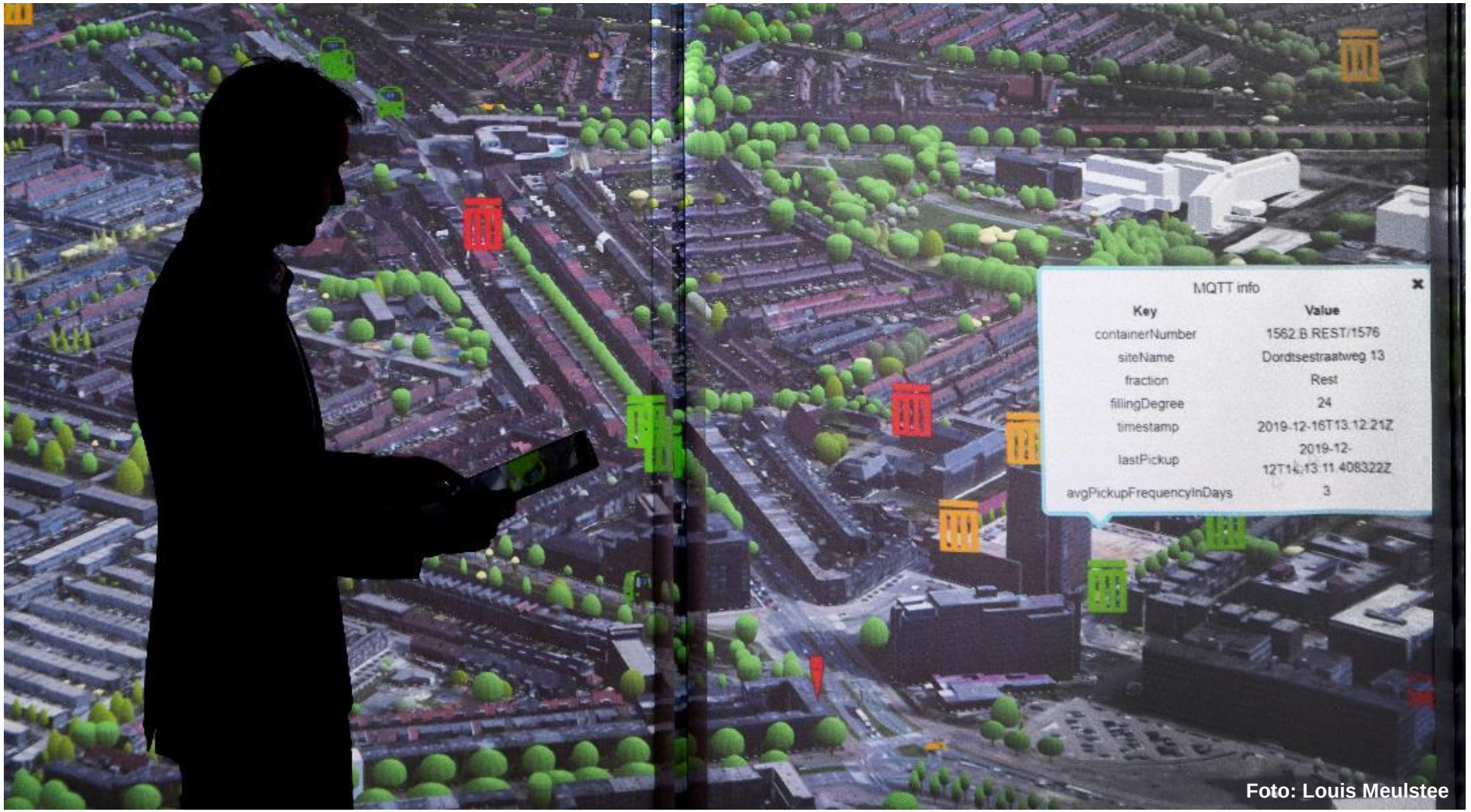


The Digital Twin: a ‘smart’ 3D model of the city …

DigitaleStad

… combined with realtime data …

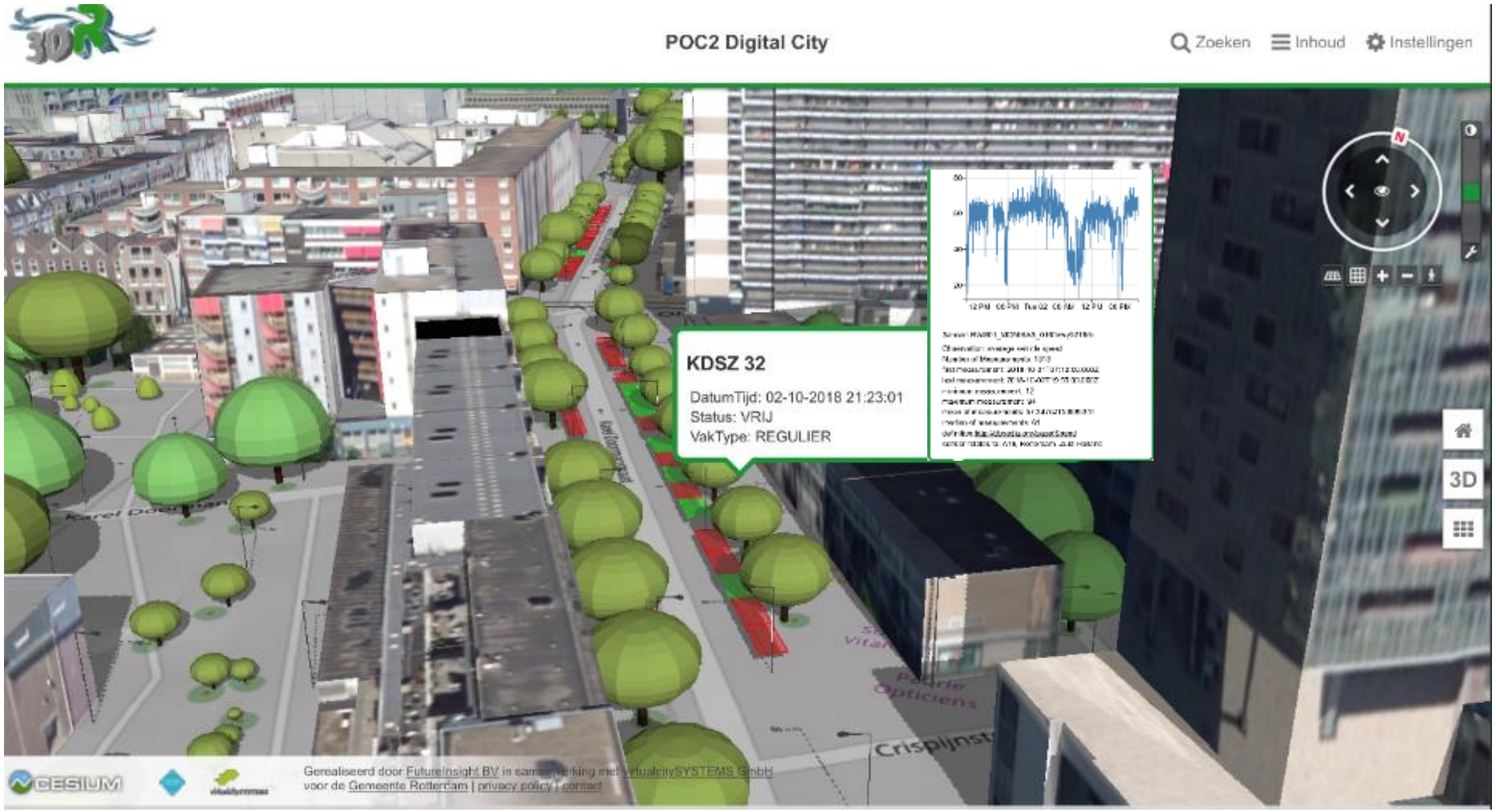
DigitaleStad



… forms an Urban Digital Twin of the city…

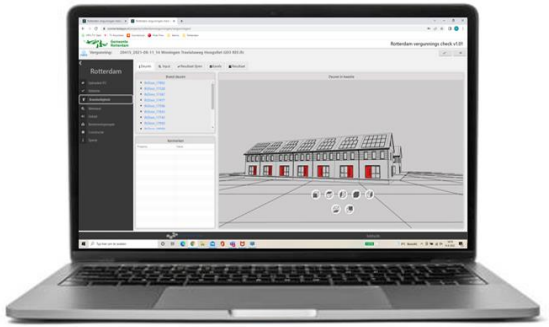
DigitaleStad

Urban (Local) Digital Twin = a common and shareable view on the current physical reality of a city, described by actual (realtime) data



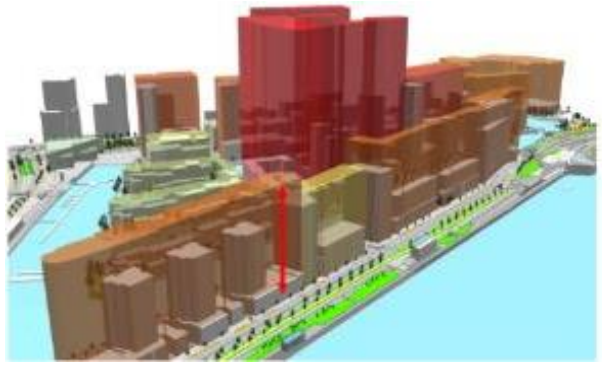
…and is therefore *a basis for* new smart applications & services

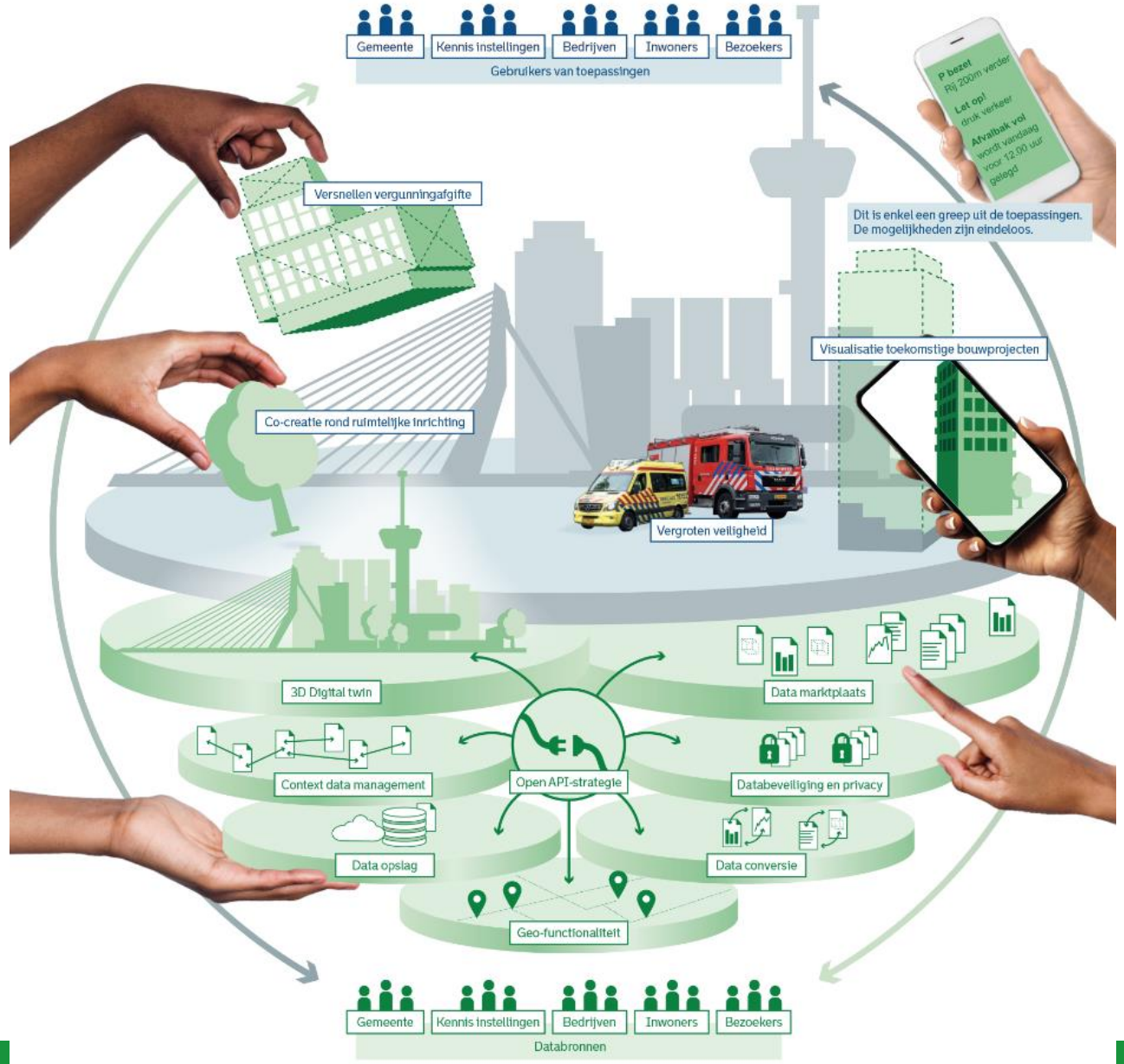
DigitaleStad



Smart spatial planning:

- Building permit check service
- Co-creation in the digital city
- Smart zoning plans (Smart planning rules)





SAFE Rotterdam 3D

Digital Twin Sustainability & Generic, scalable and maintainable data sources

Grenzeloos Datalandschap

Regional cooperation ‘Borderless data landscape’

Not on this sheet: a.o. Digital Twin Underwater, Crowd Safety Management, Generic BIM service, New buildingsplan app

Digital infrastructure: Open Urban Platform with Digital Twin

Urban digital ecosystem Rotterdam

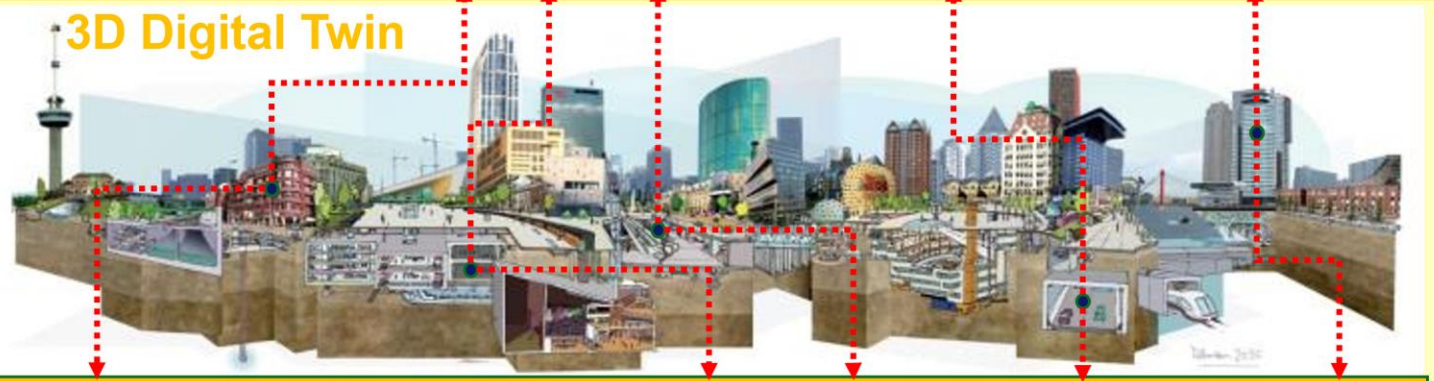
Municipality
Knowledge institutes
Companies
Inhabitants
Visitors
...

Applications & Users

Applications and services layer

Data marketplace

3D Digital Twin



Open Urban Platform

Shared data models

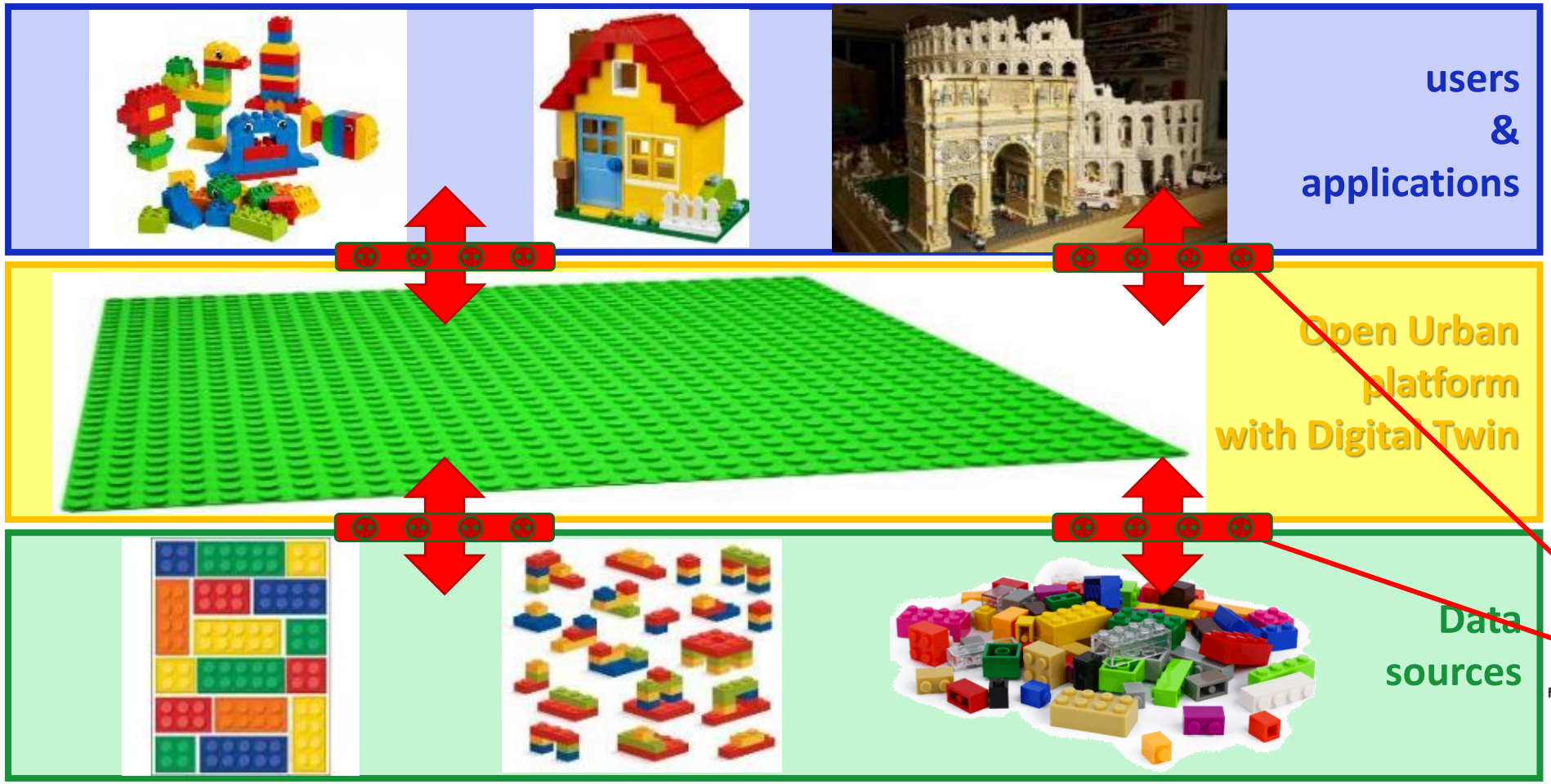
Data hub

(open API strategy, meta data management, privacy and security management, geo functionality, data storage functionality, data conversion functionality)

Municipality
Knowledge institutes
Companies
Inhabitants
Visitors
...

Data sources

Open Urban Platform – design principles



Generic, scalable, maintainable & FAIR datasources

DigitaleStad

Demo omgeving

Governance model digital ecosystem (OUP) Rotterdam

EU

‘100%’ Private digital Infrastructure (platforms)

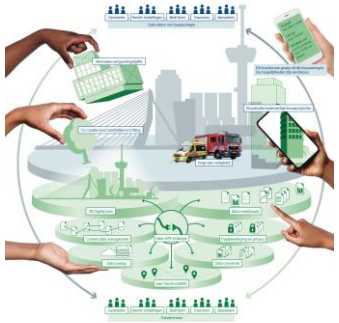
Google (Alphabet)

Microsoft

Meta

amazon

Digital infrastructure Rotterdam (Open Urban Platform)



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‘100%’ Public digital Infrastructure (platforms)

- Importance of trust
- Public-private partnership:
  - Private exploitation
  - Public supervision

- Governance Board:
  - ‘Grey area’
  - ‘Responsible’ exploitation:
    - Privacy
    - Ethics
    - Transparancy
  - Level playing field
  - 5 members
  - Binding decions
  - Independent
  - Market master

Advantages using the Urban Digital Twin concept

DigitaleStad

1. Gives ‘meaning’ to the OUP
2. Gives visualisation of current and historic state
3. Offers common and shareble image as startingpoint for cooperation
4. Basis for numerous applications and services (i.e. scenario planning, AI)
5. Enhances the ecosystem way of thinking
6. Stimulates the use of generic, scalable and maintainable datasources
7. Consistent user experience
8. Offers new possibilities for citizens participation and empowerment
9. Stimulates economic innovation

Digital City Rotterdam

Thank you for your attention!

Contact: digitalestadBCO@rotterdam.nl

Links

Videos and demos

- Digital City Rotterdam website
- Interview ENG
- Demofilm prototype OUP met DT (Ruggedised)
- PoC Co creation in the digital city – tijd- en plaatsonafhankelijke participatie (demo)
- PoC SAFE 3D Rotterdam (vergroten veiligheid in de stad door betere info voor hulpdiensten - demo van proof of concept)
- Rotterdam 3D city model (basis for Digital Twin)
- Energy potential data (example generic, scalable and maintainable datasources)

Background information

- Erasmus Universiteit – Rotterdam School of Management – Urban Data Platforms
- NEN – Praktijkrichtlijnen Open Urban Platforms
- EU-project ESPRESSO
- EU-project RUGGEDISED
- Open & Agile Smart Cities (OASC)