



## Objectives Leerpark

- Improvement of the spatial quality of the Leerpark area
- Intensify the use of the Leerpark area
- Improvement of the safety situation



## Program: Leerpark

- **65.000m<sup>2</sup> educational institutions**
- **27.000m<sup>2</sup> commercial properties**
- **250 houses**

## Investment

- **€200 miljoen (totaal)**



## Improvement of the safety situation <sup>(1)</sup>

- **reducing the risks of transport of dangerous goods to an tolerable level by spatial planning:**
- **Individual risk**
  - **No buildings within 10-6 contour**
    - **Oversized zoning N3: 80 meters (including space for future transport)**
    - **Oversized zoning the railroad 50 meters (including space for future transport)**
  - **Replacing the level crossing by a tunnel**



## Improvement of the safety situation (2)

- **Societal risk**

- Reduction of Societal risk levels by using risk assessment in spatial planning
  - Assessment of different spatial designs
- Replacing the level crossing by a tunnel
- Removing a school near the N3



## Improvement of the safety situation (3)

- **Other measures**

- Improvement accessibility (rail-)road
- Improvement capacity fire brigade:
  - Reduction of intervention time
  - Fire engines
  - Sufficient water supply
- Excluding vulnerable objects within 200 meters from railroad (hospitals, homes for elderly, kindergarten)
- SMS alert for inhabitants Leerpark
- Buildings adapted to some scenarios:
  - Fire
  - Toxic releases



# Improvement of the safety situation (4)

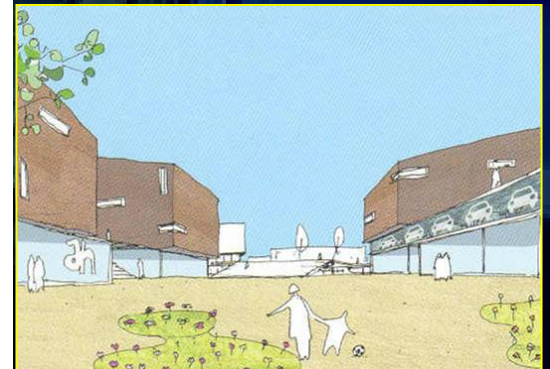
## Design principle



# Leerpark 2010



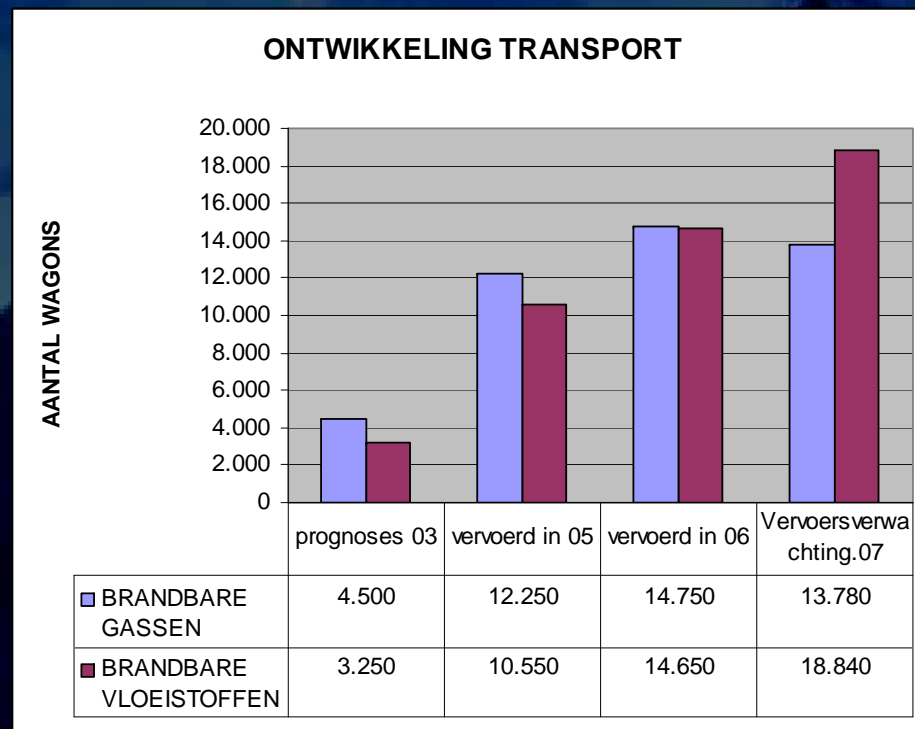
**impressions**





## Difficulties

- **Insufficient zoning railroad**
  - **caused by unexpected growth of transport**





## The future

- **“Short term” measures**
  - Better train safety systems
  - Slower train speed (<40km/h)
  - Reduce chance BLEVE by altering train composition
  - Improved spatial planning by using risk-assessment
- **Long term measure**
  - a separate dedicated goods transport line avoiding the urban area (port of Rotterdam – Antwerp)