

# Urban Mine

A Circular Concrete Project

Teaser | February 2023



## The Pursuit of Circularity

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Concrete is produced by mixing sand, gravel and cement. As a key feedstock into concrete, cement is a major contributor to climate change. The chemical and thermal combustion processes involved in the production of cement are a large source of carbon dioxide (CO<sub>2</sub>) emissions. Each year, more than 4 billion tonnes of cement are produced, accounting for around 9 per cent of global CO<sub>2</sub> emissions.

The production of cement is not the only environmental impact resulting from concrete production. To satisfy the ever-growing demand of concrete, massive quarrying is required to produce sand and gravel, causing land degradation and airborne pollution in the form of dust while deposits of suitable sand and gravel are being depleted.

The environmental impact of traditional concrete production, combined with rising costs related to primary sand, gravel and energy will increase concrete production costs significantly, this while the floor area of the world's buildings is projected to double in the next 40 years, requiring concrete production to increase with 25% by 2030.

In the Netherlands, the first urban mine for concrete waste has been launched successfully. The urban mine produces new concrete based on recycled materials, effectively producing carbon neutral concrete while generating superior financial returns. Work has now started to develop new urban mines in those regions where it matters most, reducing CO<sub>2</sub> emissions and the use of primary materials dramatically.





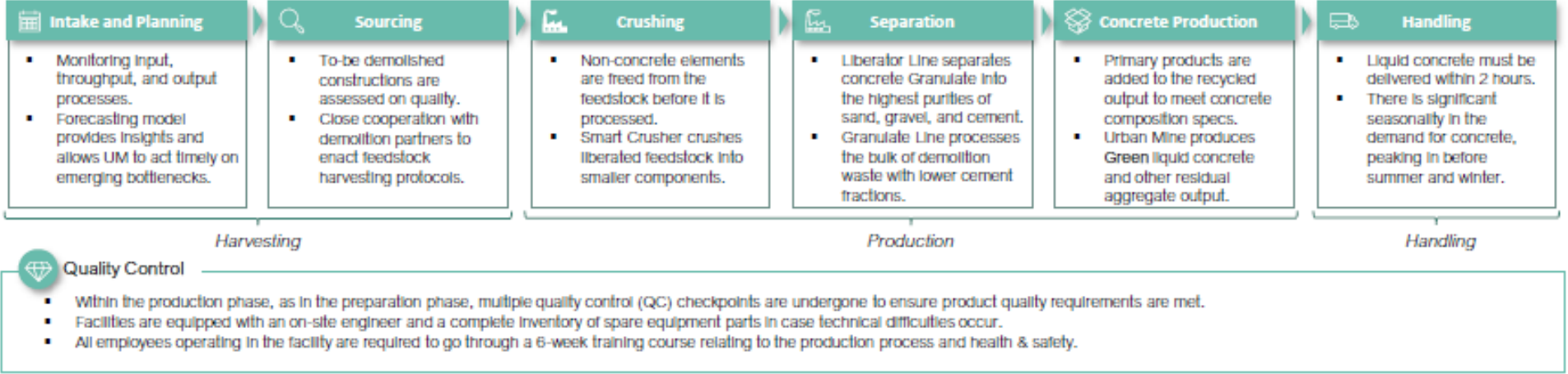
# Urban Mine at a Glance

## Company Timeline

*An endeavour to produce Green Concrete*

- 2003-2016**  
Rutte Group invests in R&D for a concrete recycling initiative – first innovation, the Smart Liberator, appears in 2018.
- 2018**  
Rutte Group starts construction of a recycling plant in Zaandam, where demolition waste is recycled using this Smart Liberator technology.
- 2019**  
Inception of Urban Mine as a green innovation arm within the broader Rutte Group (focussing on recycling concrete to save CO<sub>2</sub> emissions).
- 2021**  
Urban Mine further develops R&D, resulting in patented innovations such as the Smart Crusher and the Smart Refiner.
- 2022**  
Operations capacity of Zaandam plant are scaled up to over 400,000 tonnes of demolition concrete (3% of domestic wastage).
- 2023**  
Targeting domestic expansion.

## Urban Mine Operational Activities

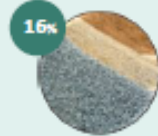


## Fulfilling the Need for Green Concrete Solutions



Liquid Green Concrete

Input for city real estate and infrastructure developers (perishable after 2 hours)



Recycled Aggregates

Input for brick and regular concrete producers (output unsuitable for Green Concrete)

### Selection of End-Market Manufacturers



## Value Proposition

Market Environment	No established players to deliver Green Concrete	📈
Proprietary Know-How	Licensing for above-market-standard technology	💡
Exclusive Agreements	Exclusive long-term contracts with suppliers/clients	📄
Quality Assurance	High production standards and strict protocols	★★★
Short Lead Times	Streamlined production and efficient planning	⏩
Cost Savings	Significant reductions in COGS due to CO <sub>2</sub> savings	💰

