

Product Name

The Dutch Windwheel

Designer

Windwheel Corporation BV

Company Name

Windwheel Corporation BV

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Italian Dealer

Not applicable

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Description of innovation social values

- product category
- formal and functional features
- problems solved by innovation
- user
- field of application

Meet the Dutch Windwheel. A sustainable icon of climate architecture and the future landmark of Europe's largest port city. An attraction with unprecedented global reach and a showcase for Dutch Design & Innovation. The spatial structure of the building consists of two rings, which 'kiss' each other at the top, where a sky bar is located. The outer ring functions as a ferris wheel, but in this case the cabins move themselves, as 'circular elevators'. The inner ring features both apartments and a hotel. Visitors (inhabitants of Rotterdam, tourists from the Netherlands and foreign countries) are treated with an incredible experience of both an amazing view with information about the city and with an spectacular story about new sustainable technologies which will shape our future.

The development of this project is as innovative as the building itself. Recently an unique innovation program of 16 collaborating organisations has already started working on the highambitions of the project. These organizations will work together to 'build the next economy today' and accelerate a transition to a clean, digital economy. These organisations are AM / Royal BAM Group, Delft University of Technology, Deltares, Dura Vermeer, ECN, Eneco, Evides, Huawei, InnovationQuarter, Mammoet, NBTC Holland Marketing, Rotterdam Partners, SPIE, TNO and the Windwheel Corporation. This team is already working on a variety of real technical challenges as described below. This is already resulting in . The Dutch Windwheel will be of great economic value for both Rotterdam and the Netherlands. The whole city and its surrounding area will benefit from the boost in tourism and the Netherlands will benefit from the iconic showcase for technical and technological innovations.

Description of technical features

- operations
- technology

The aim of (the innovation program of) the Dutch Windwheel is to develop, combine and scale all kinds of promising technological and technical innovations at the nexus of water, energy, technology and building technology. Possibilities will be researched for local energy production (including the EWICON technology, solar and residual heat, and heat exchange), the water system, the development of a smart grid, the use of materials as well as technologies to enhance the experience and attraction value of the Dutch Windwheel and its environment.

Dimensions

Height: 174 m, 36 floors, 2 rings, 40 cabins, 29.313 m2 PV surface, 1 MW wind energy, 1350 m2 sky lobby, 7082 m2 hotel, 21.246 m2 living space, 5120 m2 commercial space

Materials

To be specified in the innovation program, but most certainly next generation materials such as highly insulated glass with integrated energy production functionality and 3d printed steel elements.

Certifications

Not yet applied for.

Benefits for environment

The Dutch Windwheel is the sustainable future icon of Rotterdam. It is both figuratively and literally a vehicle for technical and technological innovations. It is for instance a dynamic energy generator for both the building itself and the city. This makes the building a game changer for sustainable building. Therefore it will have a clear contribution to the transtition to a circular economy and a world without waste.

Benefits for human being

The Dutch Windwheel is a spectacular attraction that can be experienced by everyone. A large number of visitors from around the world can enjoy fabulous views of Rotterdam and the surrounding area from the giant coaster. Apart from that, the Windwheel will help develop new technologies that will make our world more pleasant: circular elevators, next generation information systems, underwater experiences and innovative food production methods.