



# COLORED CONCRETE WORKS®

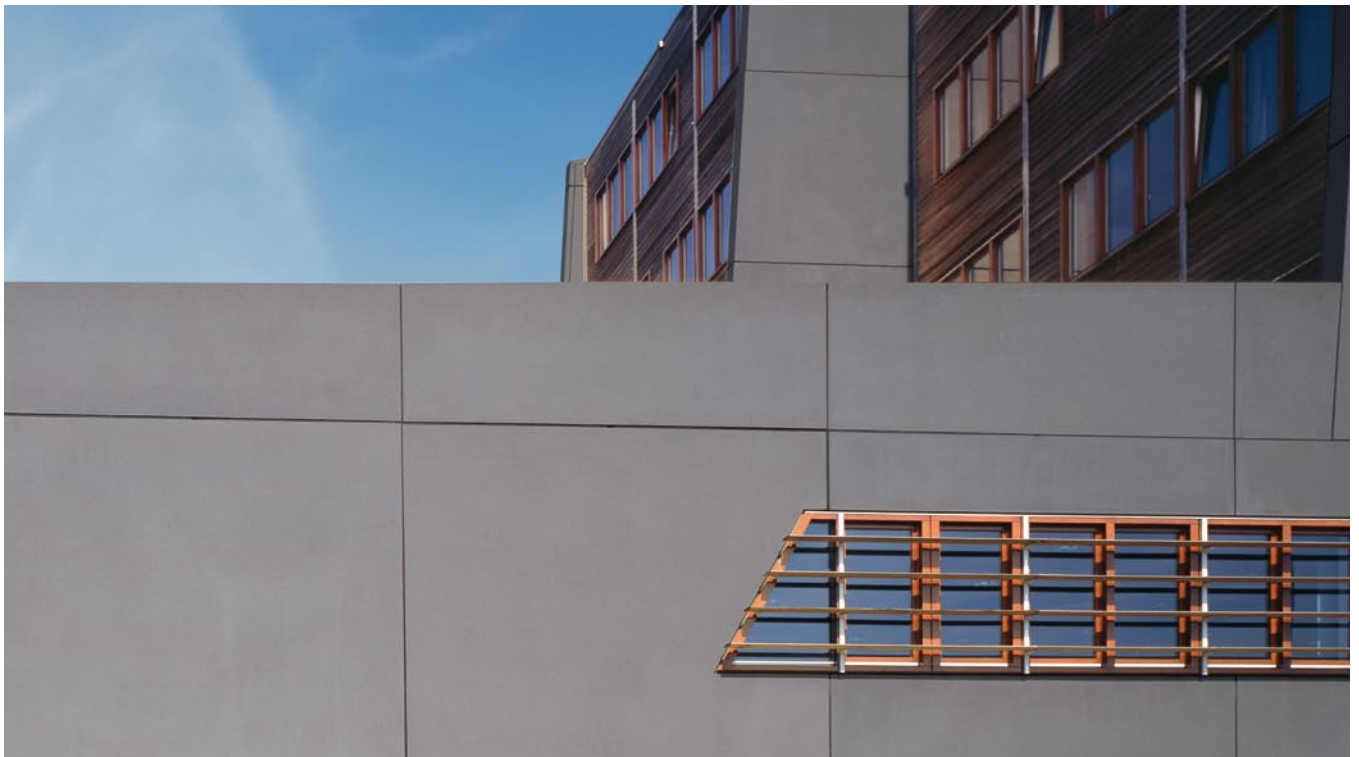
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## Case Study

Project:  
Middelburg Town Hall,  
Netherlands

**LANXESS**  
Energizing Chemistry

**A town hall forming a link  
between two worlds.**





**The vast town hall, with its four distinctive towers built from integrally colored concrete, rises up from the wharf.**

**An architectural concept that links the city's history with the modern age.**

The new town hall in Middelburg, the capital of the Dutch province of Zeeland and home to nearly 48,000 people, was designed by the German-Dutch architectural firm RAU and built between 2002 and 2004. But a slew of extraordinary planning had to be overcome before the building could be opened because a canal, a railroad line with a station, a highway, and in the middle of all of this, a barely developed rail yard divided Middelburg and cut off the historic city center from the south. There really could be only one goal: to transform this zone into a vibrant area that connected the historical parts of the city.

The Amsterdam-based architectural firm RAU accomplished this with a well thought out concept using integrally colored exposed concrete as the most prominent building material. Using panel walls oriented in such a way as to serve as a visual intermediary between the city neighborhoods, and with towering, clearly structured elements on the wharf side that emphasize the linear character of the building, this building not only gives the city administration space for present and future uses, it also reconnects the two neighborhoods and adds vitality to the entire wharf.





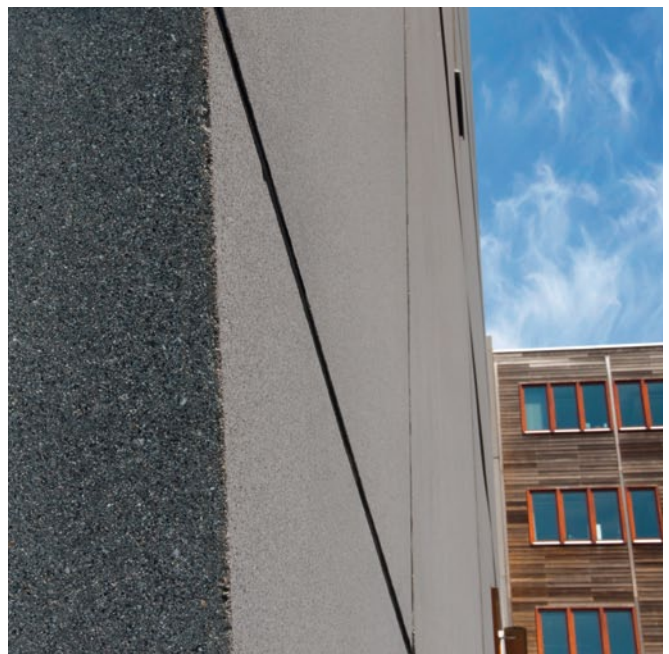
# Color as a fundamental part of the architectural concept.

## **Integrally colored concrete creates new space within a space.**

The integrally colored concrete used in the construction of the town hall played a major role in the success of the concept of creating daylight architecture with vibrant spaces. Spaces in which people happily spend time and work enthusiastically. Spaces that lend themselves to multifunctional use.

Because the building's location between the canal and the railroad line made it impossible to create exterior spaces, they were simply moved inside. The publicly accessible foyer on the first floor, for example, was positioned so that both sides of the city could be seen.

The vertical and horizontal slot-like openings in the facades permit a view of a small group of trees over the parking garage and reinforce this interplay of spaces within spaces. The result is a town hall of ultramodern colored concrete, that combined with sophisticated architecture has a unique look and feel.

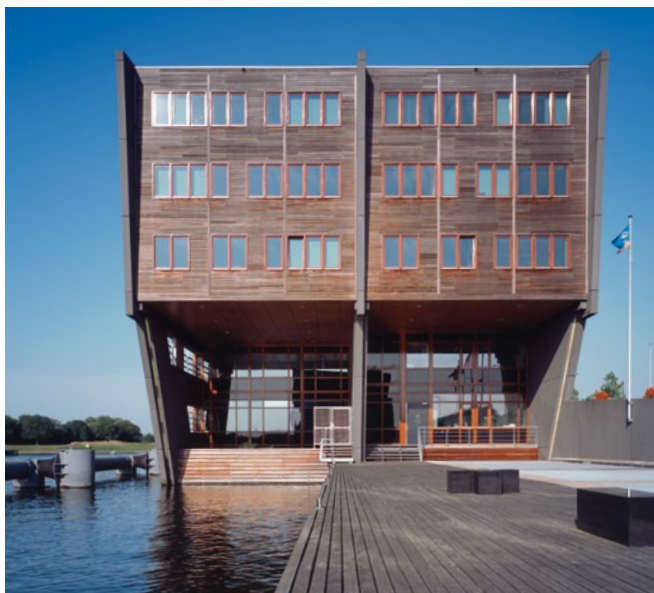


**LANXESS Bayferrox® 330 pigment is the basis for the anthracite-colored concrete.**

# The dynamics of mass.



**Alternative uses as an integral element of sustainability, the towers are also designed with residences.**



## **Integrally colored concrete combines design with sustainability.**

The town hall is not only a piece of modern architecture and a lively meeting place for citizens and government official, it also demonstrates what is possible in energy-efficient design using innovative concepts and integrally colored concrete. All of the heat generated by people and machines was included in the energy calculations. The majority of the building's energy demand is covered by a photovoltaic solar energy system on the roof with a total output of 100,000 kWh. A network of pipes in the concrete roof provides heating and cooling to all the spaces, and a water reservoir 70 m underground serves as buffer storage for hot and cold water, enabling the energy required for heating and cooling to be reduced to an absolute minimum.



**The town hall evocative of a container ship is Middelburg's new calling card.**

The basis for the building's high energy efficiency, however, is the thermally inert behavior of the massive concrete structure, which is particularly beneficial for regulating the temperature of the interior spaces. Concrete is a building material that buffers heat and cold, is extremely durable and long lasting, and easy to maintain. The pigments from LANXESS are light-fast, weather stable, and ecologically safe to use. And since they are combined in the matrix of the concrete, the building does not require painting.

RAU Architects Amsterdam consider buildings to be an interaction between nature and culture, and the use of integrally colored exposed concrete enabled Middelburg Town Hall to be built in keeping with this philosophy.



*Architect  
Thomas Rau*

*RAU,  
Amsterdam*

**“The key to sustainable building is to combine energy-saving technologies with an energy-generating building concept. Integrally colored concrete is ideal for this.”**

## For more information contact our LANXESS country representative.

### Germany

LANXESS Deutschland GmbH  
Business Unit Inorganic Pigments  
Rheinuferstraße 7–9  
47812 Krefeld  
GERMANY  
Tel.: +49 2151 88 5416  
Fax: +49 2151 88 4133

### United Kingdom

LANXESS Ltd.  
Colour Works  
Lichfield Road  
BRANSTON  
Burton-on-Trent  
Staffordshire, DE14 3WH  
UNITED KINGDOM  
Tel.: +44 1283 714222  
Fax: +44 1283 714201

### Spain

Europigments, S.L.  
Business Unit Inorganic Pigments  
Arquitectura, 27  
Poligono Industrial Els Garrofer  
08340 VILASSAR DE MAR  
SPAIN  
Tel.: +34 93 75407 70  
Fax: +34 93 75407 84

### Central Eastern Europe

LANXESS Central Eastern  
Europe s.r.o.  
Stetinova 4  
811 06 BRATISLAVA  
SLOVAKIA  
Tel.: +421 905 719 637  
Fax: +421 2 32151624

### USA

LANXESS Corporation  
Business Unit Inorganic Pigments  
111 RIDC Park West Drive  
Pittsburgh, PA 15275-1112  
USA  
Tel.: +1 412 809 2000  
Fax: +1 412 809 3599

### Brazil

LANXESS Indústria de Produtos  
Químicos e Plásticos Ltda.  
Av. Maria Coelho de Aguiar, 215  
Bloco B, 20. Andar 058040902  
SAO PAULO  
BRAZIL  
Tel.: +55 15 3261 9304  
Fax: +55 15 3261 9371

### China

LANXESS Shanghai Pigments  
Co. Ltd.  
Business Unit Inorganic Pigments  
No. 845, Qi Lian Road  
SHANGHAI, 200331  
CHINA  
Tel.: +8621 52847860  
Fax: +8621 52500337

### Singapore

LANXESS Pte. Ltd.  
Business Unit Inorganic Pigments  
No. 9 Benoi Sector  
SINGAPORE 629844  
SINGAPORE  
Tel.: +65 6725 5828  
Fax: +65 6266 5329

### Japan

LANXESS K.K.  
Business Unit Inorganic Pigments  
Marunouchi Kitaguchi Building 23F  
1-6-5, Marunouchi, Chiyoda-ku  
TOKYO 100-8215  
JAPAN  
Tel.: +81 3 5293 8017  
Fax: +81 3 5219 9776

### South Korea

LANXESS Korea Ltd.  
Business Unit Inorganic Pigments  
395-62, Shindaebang-Dong  
Dongjak-gu  
SEOUL, 156-712  
REPUBLIC OF KOREA  
Tel.: +82 2 829 6681  
Fax: +82 2 847 3062

### India

LANXESS India Private Ltd.  
Business Unit Inorganic Pigments  
Kolshet Road  
THANE – 400 607  
MAHARASHTRA  
INDIA  
Tel.: +91 22 2531 1251  
Fax: +91 22 2545 5152

### Australia

LANXESS Pty. Ltd.  
Business Unit Inorganic Pigments  
Unit 1, 31 Hill Road  
HOMEBUSH BAY NSW 2127  
AUSTRALIA  
Tel.: +61 28748 3927  
Fax: +61 29748 6103

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LANXESS Deutschland GmbH  
Inorganic Pigments  
Rheinuferstraße 7–9  
47812 Krefeld  
Germany  
Fax: +49 2151 88 4133  
E-mail: [coloredconcreteworks@lanxess.com](mailto:coloredconcreteworks@lanxess.com)  
[www.lanxess.com](http://www.lanxess.com)  
[www.bayferrox.de](http://www.bayferrox.de)  
[www.colored-concrete-works.com](http://www.colored-concrete-works.com)

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[www.colored-concrete-works.com](http://www.colored-concrete-works.com)

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# Project data



**Place**

Middelburg, Netherlands

**Client**

City of Middelburg

**Planning and architecture**

Rau, Amsterdam

**Use**

Town hall and offices

Basement as parking garage for 240 cars

**Construction period**

2002–2004

**Floors**

5

**Construction**

Load-bearing sandwich facades,  
reinforced concrete floors

**Facade**

469 individual elements

**Pigment**

Bayferrox® 330



**Bayferrox® 330**

The speed of construction was important. Everything had to work according to the just-in-time principle because there was no way of storing building materials on the small property between the railroad line and the canal. That combined with the architectural concept left only one choice for the building material: integrally colored concrete. More than 6,000 m<sup>2</sup> of ecologically surface-treated facade elements were made from integrally colored concrete during a phase of fundamental construction lasting just a few months.

# For more information contact our LANXESS country representative.

## Germany

LANXESS Deutschland GmbH  
Business Unit Inorganic Pigments  
Rheinuferstraße 7–9  
47812 Krefeld  
GERMANY  
Tel.: +49 2151 88 5416  
Fax: +49 2151 88 4133

## Spain

Europigments, S.L.  
Business Unit Inorganic Pigments  
Arquitectura, 27  
Poligono Industrial Els Garrofer  
08340 VILASSAR DE MAR  
SPAIN  
Tel.: +34 93 75407 70  
Fax: +34 93 75407 84

## USA

LANXESS Corporation  
Business Unit Inorganic Pigments  
111 RIDC Park West Drive  
PITTSBURGH, PA 15275-1112  
USA  
Tel.: +1 412 809 2000  
Fax: +1 412 809 3599

## China

LANXESS Shanghai Pigments Co. Ltd.  
Business Unit Inorganic Pigments  
No. 845, Qi Lian Road  
SHANGHAI, 200331  
CHINA  
Tel.: +8621 52847860  
Fax: +8621 52500337

## Japan

LANXESS K.K.  
Business Unit Inorganic Pigments  
Marunouchi Kitaguchi Building 23F  
1-6-5, Marunouchi, Chiyoda-ku  
TOKYO 100-8215  
JAPAN  
Tel.: +81 3 5293 8017  
Fax: +81 3 5219 9776

## India

LANXESS India Private Ltd.  
Business Unit Inorganic Pigments  
Kolshet Road  
THANE – 400 607  
MAHARASHTRA  
INDIA  
Tel.: +91 22 2531 1251  
Fax: +91 22 2545 5152

## United Kingdom

LANXESS Ltd.  
Colour Works  
Lichfield Road  
BRANSTON  
Burton-on-Trent  
Staffordshire, DE14 3WH  
UNITED KINGDOM  
Tel.: +44 1283 714222  
Fax: +44 1283 714201

## Central Eastern Europe

LANXESS Central Eastern  
Europe s.r.o.  
Stetinova 4  
811 06 BRATISLAVA  
SLOVAKIA  
Tel.: +421 905 719 637  
Fax: +421 2 32151624

## Brazil

LANXESS Indústria de Produtos  
Químicos e Plásticos Ltda.  
Av. Maria Coelho de Aguiar, 215 Bloco  
B, 20. Andar 058040902 SAO PAULO  
BRAZIL  
Tel.: +55 15 3261 9304  
Fax: +55 15 3261 9371

## Singapore

LANXESS Pte. Ltd.  
Business Unit Inorganic Pigments  
No. 9 Benoi Sector  
SINGAPORE 629844  
SINGAPORE  
Tel.: +65 6725 5828  
Fax: +65 6266 5329

## South Korea

LANXESS Korea Ltd.  
Business Unit Inorganic Pigments  
395-62, Shindaebang-Dong  
Dongjak-gu  
SEOUL, 156-712  
REPUBLIC OF KOREA  
Tel.: +82 2 829 6681  
Fax: +82 2 847 3062

## Australia

LANXESS Pty. Ltd.  
Business Unit Inorganic Pigments  
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LANXESS Deutschland GmbH  
Inorganic Pigments  
Rheinuferstraße 7–9  
47812 Krefeld  
Germany  
Fax: +49 2151 88 4133  
E-mail: [coloredconcreteworks@lanxess.com](mailto:coloredconcreteworks@lanxess.com)  
[www.lanxess.com](http://www.lanxess.com)  
[www.bayferrox.de](http://www.bayferrox.de)  
[www.colored-concrete-works.com](http://www.colored-concrete-works.com)