

QUALITY COLORS.



Case Study

ESO Hotel, Cerro Paranal, Chile

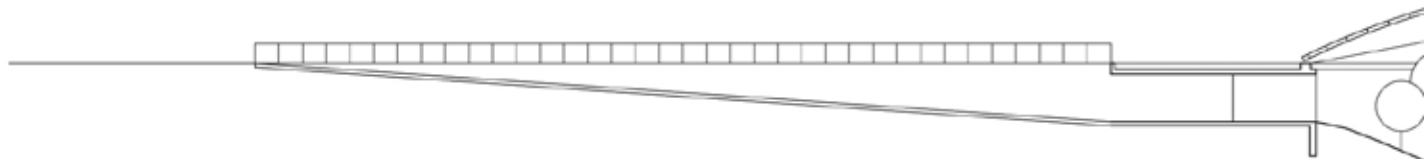
COLORED CONCRETE WORKS®

An initiative of LANXESS

QUALITY WORKS.

LANXESS
Energizing Chemistry

A BOARDING HOUSE ON MARS.

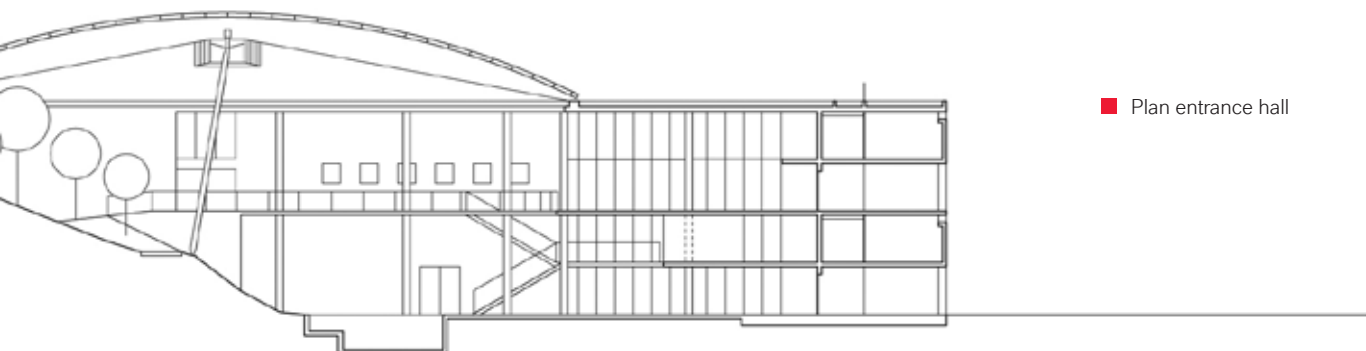




Living and working in the desert.

The European Southern Observatory (ESO) is located 2,600 metres above sea level in the Cerro Paranal region of the Chilean Atacama desert. The ESO Hotel situated in direct proximity functions as a guest house for the scientists conducting research in the observatory for temporary periods. The building was designed by the Munich architectural firm Auer+Weber+Architekten. With its exposed concrete pigmented by iron oxide, the monolithic construction fits in perfectly with the desert backdrop, which is reminiscent of a Martian landscape. The thermally inert properties of the massive concrete structure have a favourable influence on the interior temperatures, since the extreme temperature variations between day and night can be buffered. In this way, the thermal energy stored by the concrete over the course of the day is transferred gradually to the inside rooms at night, creating a pleasant room temperature.

- The concrete was colored with iron oxide pigments to reflect the reddish tones of the desert, allowing the highest degree of optical integration with the landscape.



■ Plan entrance hall

COLOR AS PART OF THE ARCHITECTURE.



The building – part of the landscape in the changing light.

In this desert wilderness shaped by strong gusts of wind, the building resembles a large plateau cleared by erosion. The structure has only one façade which faces the Pacific and the setting sun. It is here on the wind-sheltered side that all the hotel rooms and offices are situated. The intention of the architects was to create a location that appears to be free from the steady progression of technology, such as that observed in the neighbouring telescope facilities. After their arduous research work in the observatory, scientists are offered the necessary amenities and the opportunity to regenerate, in the sense of an oasis. The warm earth tones of the concrete underline this conceptual approach.

■ The color saturation of the structural elements strengthens the monolithic character of the building, enhanced by the fact that the interior wall surfaces were also left untreated.



**„COLOR AND EXPOSED
CONCRETE IN CREATIVE UNITY.“**

Prof. Fritz Auer

Colored Concrete Works® by:

Auer+Weber+Architekten, Munich

Philipp Auer

(Project Director)

Dominik Schenkirz

(Project Director)

Robert Giessl

Michael Krüger

Charles Martinin

■ Views from the hotel



EXTREME CLIMATE CONDITIONS REQUIRE **CLEVER SOLUTIONS.**

BAYFERROX® pigments – as if made specifically for the desert..

For the ESO Hotel project, pigmentation was undertaken directly on the construction site. A somewhat risky venture, since one could never be sure with the exposed concrete construction whether local pigmentation might cause unwanted color changes. Therefore, the high-quality outcome was all the more surprising: the very irregularities – initially the cause of concern – created pleasantly varying surfaces that harmonise with the changing hues of the desert.

In order to formally integrate the overall construction within the surrounding scenery, and even allow the building to appear like a piece of solidified landscape, colored concrete was used in stead of painted concrete. In this way, the reduced exterior appearance of the ESO Hotel could be supported by a perfect match to the environmental hues. And this with amazingly low construction costs of just 8.7 million euros. This relatively low contract price is attributable on the one hand to a superb feat of planning and logistics as a “work package” and on the other, to the construction concept – a “refined building shell”.

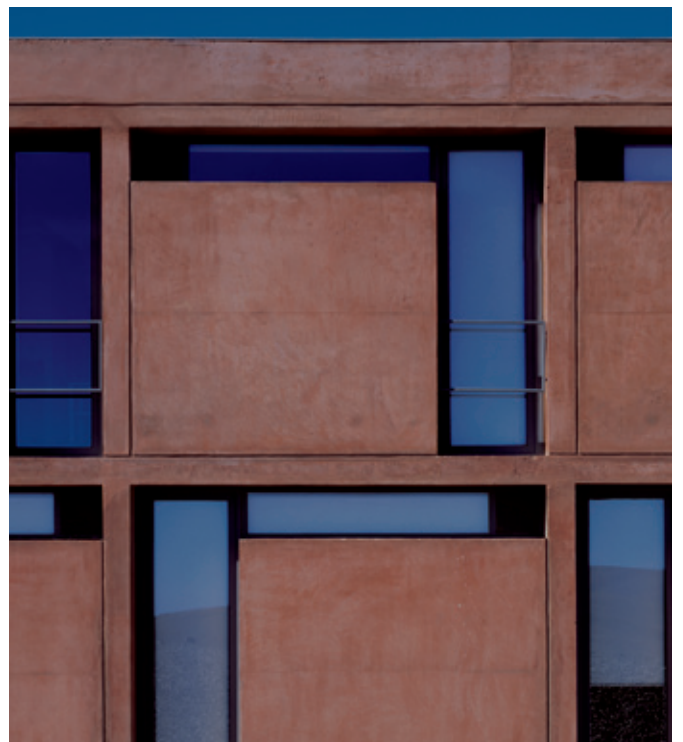
■ The structure features exposed, site-mixed concrete throughout.



- Cast and colored concrete blocks against the adjacent soil background offer ideal thermal and optical attributes.



- The building's rigorously structured exposed concrete façade faces the Pacific and stores up the thermal energy absorbed during the day. Due to the limited number of openings, it offers adequate protection from extreme sun radiation.



FOR ADDITIONAL INFORMATION, CONTACT THE LANXESS COUNTRY REPRESENTATIVE.

Germany

LANXESS Deutschland GmbH
Business Unit Inorganic Pigments
Rheinuferstraße 7-9
47829 Krefeld
GERMANY
Tel.: +49 221 8885 3974
Fax: +49 2151 88 4133

USA

LANXESS Corporation
Business Unit Inorganic Pigments
111 RIDC Park West Drive
Pittsburgh, PA 15275-1112
USA
Tel.: +1 412 809 1000
Fax: +1 412 809 1059

Singapore

LANXESS Pte. Ltd.
Business Unit Inorganic Pigments
3A International Business Park
#07-10/18 ICON@IBP Tower B
SINGAPORE 609935
Tel.: +65 6725 5828
Fax: +65 6725 4828

Australia

LANXESS Pty. Ltd.
Business Unit Inorganic Pigments
Unit 1/35 Carter Street
Lidcombe, NSW 2141
AUSTRALIA
Tel.: +61 28748 3910
Fax: +61 28748 3999

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

Great Britain

LANXESS Ltd.
Colour Works
Lichfield Road
Branston
Burton-on-Trent
Staffordshire, DE14 3WH
UNITED KINGDOM
Tel.: +44 1283 714200
Fax: +44 1283 714201

Brazil

LANXESS Indústria de Produtos
Químicos e Plásticos Ltda.
Av. Maria Coelho de Aguiar, 215 Bloco
B - 2º Andar
05804-902 São Paulo
BRAZIL
Tel.: +55 11 3741 2615
Fax: +55 11 3741 3933

Italy

LANXESS S.r.l.
Segreen Business Park, Palazzo Y
Via San Bovio n.1/3
20090 - Milano San Felice - Segrate
ITALY
Tel.: +39 0230722644
Fax: +39 0230724298

South Korea

LANXESS Korea Ltd.
9F, Samsung Boramae Omni Tower
23, Boramae-ro 5-gil
Dongjak-gu, Seoul
07071, Korea
REPUBLIC OF KOREA
Tel.: +82 2 6715 5100
Fax: +82 2 847 3295

Central and Eastern Europe

LANXESS Central Eastern
Europe s.r.o
EUROVEA
Central
2 Pribinova 6
811 09 Bratislava
Slovak Republic
Tel.: +421 2 3215 1626
Fax: +421 2 3215 1699

Spain

Europigments, S.L.
Business Unit Inorganic Pigments
Arquitectura, 27
Polígono Industrial Els Garrofers
08340 Vilassar de Mar
SPAIN
Tel.: +34 937 540 770
Fax: +34 937 540 784

China

LANXESS Specialty Chemicals
Co., Ltd.
No. 458 Haijin Road
Jinshanwei Town
Shanghai, 200540
R.P. CHINA
Tel.: +86 21 5284 7860
Fax: +86 21 6250 0769

India

LANXESS House
Plot no's. A162-164
Road No.27, MIDC
Wagle Estate
Thane (West) - 400604
Maharashtra, INDIA
Tel.: +91 22 25871000
Fax: +91 22 25871287

France

LANXESS S.A.S.
Inorganic Pigments
Le Doublon A
11, avenue Dubonnet
92407 Courbevoie Cédex
FRANCE
Tel.: +33 1 80 46 30 00
Fax: +33 1 80 46 30 45

LANXESS

Energizing Chemistry

Health and safety information

Appropriate documentation was compiled with information on the health and safety measures that have to be observed in handling the LANXESS products mentioned in this brochure. For materials mentioned here that are not LANXESS products, the operational hygiene and other safety measures recommended by the respective manufacturers must be observed. Before working with these products, you must read and familiarise yourself with the available information on their dangers, proper use and handling. This point is of decisive importance. Information is available in various forms: such as safety data sheets, product information and product labels. Please contact your LANXESS representative in Germany or the Department of Regulatory Affairs and Product Safety of LANXESS Deutschland. For business in the USA, please contact the LANXESS Product Safety and Regulatory Affairs Department in Pittsburgh, Pennsylvania.

Information on Regulatory Compliance

For some end use purposes of the products found in this brochure, the applicable regulations must be observed, including those of the FDA, BIF, NSF, USDA and CPSC. If you have any questions regarding the approval status of these products, please contact your representative at LANXESS Deutschland GmbH or the Department of Regulatory Affairs and Product Safety of LANXESS Deutschland GmbH or, for business in the USA, your representative at LANXESS Corporation, the LANXESS Regulatory Affairs Manager in Pittsburgh, Pennsylvania. How and for which purposes you utilise our products, our technical support and our information (oral, written or through product assessments) is beyond our control. The same applies for suggested formulations and recommendations. Therefore it is indispensable that you check our products, our technical support and our information for their suitability for the intended processes and purposes. The application-specific analysis must encompass at least suitability tests in regard to technical as well as health, safety and environmental aspects. Such testing has not necessarily been done by us. Unless agreed to otherwise in writing, all products are sold exclusively in accordance with our general terms and conditions for sale and delivery. Information and technical support are provided without warranty (we reserve the right to make changes at any time). It is expressly agreed that you release us from any possible liability resulting from the use of our products, technical support and information due to fault, contract or other reasons and that you assume this liability yourself.

Any statements and recommendations not contained in this brochure are not authorised and are not binding for us. None of the information in this brochure is to be interpreted as a recommendation to use the products in any way that violates commercial proprietary rights such as patents in regard to any materials or their use. Furthermore, neither explicitly nor implicitly is any licence granted under commercial proprietary rights such as patents.

LANXESS Deutschland GmbH

Business Unit

Inorganic Pigments

Rheinuferstraße 7-9

47829 Krefeld

GERMANY

E-Mail: coloredconcreteworks

@lanxess.com

www.lanxess.com

www.bayferrox.com

www.colored-concrete-works.com

Bayferrox® is a registered trademark of Bayer AG, Leverkusen, Germany.
Colortherm® is a registered trademark of the LANXESS Group.

Issue 1/2017

Visit our Internet site:
www.colored-concrete-works.com



PROJECT DATA



Address

Cerro Paranal, Chile

Client

ESO European Southern Observatory, Munich,
Karl-Schwarzschild-Str. 2, 85748 Garching,
Germany, Robert Fischer, Phone 089 32006-0

Overall planning

Auer+Weber+Architekten, Munich
Philipp Auer (Project Director)
Dominik Schenkirz (Project Director)
Robert Giessl, Michael Krüger, Charles Martin

Production time

1998 – 2002

Gross floor space

12,000 m²

Gross volume

40,000 m³

Net internal area

8,000 m²

Pigment

BAYFERROX® 600 N 2.3 %, by weight of cement

Concrete

Compressive strength class C20/25 (B25)
and C27/37 (B35)



BAYFERROX® 600 N
2.3 %, by weight of cement