

WOHNREGAL BUILDING

MARC FROHN

Profesor, Karlsruhe Institute of Technology – KIT,
Karlsruhe, Alemania

MARIO ROJAS

Profesor, Universidad de las Américas,
Santiago, Chile



Berlín, Alemania
2019

Keywords

Resistance
Housing
Work
Adaptability
Project

It is not very common for residential buildings to express the layout of their structural resistance so clearly. But when it comes to precast concrete systems – such as the one used by this building – the necessary dilatations between the different elements requires the load exchange to be evident. Thus, the visibility of the structural system becomes the protagonist of absolutely neutral and flexible interiors.

Wohnregal is a 6-story building that contains residential spaces with work studios. It was built using standardized precast concrete elements that are generally used in the construction of industrial sheds: pillars, beams, and double-T beams. The use of this serialized construction system responds to two apparently contradictory challenges of Berlin's residential market. On the one hand, industrial prefabrication offers benefits such as low cost and reduced construction deadlines (less than 1,500 euros m² and 6 weeks to complete the heavy construction of the 6 floors) that help to face the rise in home construction costs. On the other hand, it counteracts the belief that serialization automatically implies a standardization of the habitable unit; the Wohnregal building offers a wide range of different work/residential spaces, apt to cater to the diversity of new ways of urban life.



The precast concrete structure – with its double-T beams, which cover a large span – facilitates that variety, offering a free space of approximately 13 meters between the two facades without the need for any structural element inside. All the interior finishes were dry, made individually on each level, considering only the two installation ducts running through the entire building.

A curtain wall made up of large sliding windows is used as a facade to the west and east of the building. This allows the interior to open up to its surroundings during the summer months, turning the living space into a loggia. Through these technical resources, climate conditioning is avoided.

The Wohnregal is characterized by the clear hierarchy between the precast reinforced concrete structure and the conventional construction of partition walls with a galvanized steel structure and plasterboard covering, which offers a high degree of resistance in the long term. Future changes in use, innovations in technical installation systems, and changes in legal and regulatory requirements may apply within the supporting structure that extends from facade to facade with its double-T beams without intermediate supports.

Residential spaces adapt to the diverse and changing ways of living and working in everyday life. Since March of this year, some of the residents (like many others) have had to quickly move their workplaces to their homes as a response to COVID-19. This integration was favored both by the layout and by the possibility of combining the rooms. The partial commercial use inserted in the project was registered in the legal structure by means of the building permit. **ARQ**



© David von Becker

EDIFICIO WOHNREGAL WOHNREGAL BUILDING

Arquitectos / *Architects*: FAR frohn&rojas, Marc Frohn, Mario Rojas
 Colaboradores / *Contributors*: Max Koch, Ulrike Vandenberghe, Lisa Behringer, Ruth Meigen, Martin Gjoleka, Felix Schöllhorn, Pan Hu, Julius Grün, Erik Tsurumaki, Katharina Wiedwald
 Ubicación / *Location*: Waldenserstraße 25, 10551 Berlín, Alemania
 Cliente / *Client*: Privado / *Private*
 Cálculo estructural / *Structural engineering*: Ingenieurbüro Paasche
 Construcción / *Construction*: Montage&Rohbautechnology GmbH
 Proyecto de clima / *Weather project*: JOCO
 Instalación eléctrica / *Electrical system*: Zwerg
 Iluminación / *Lighting*: FAR frohn&rojas
 Eficiencia energética / *Energetic efficiency*: Gerdes Hubert Ingenieurbüro
 Prevención de riesgos / *Risk prevention*: Ingenieurbüro für Brandschutz

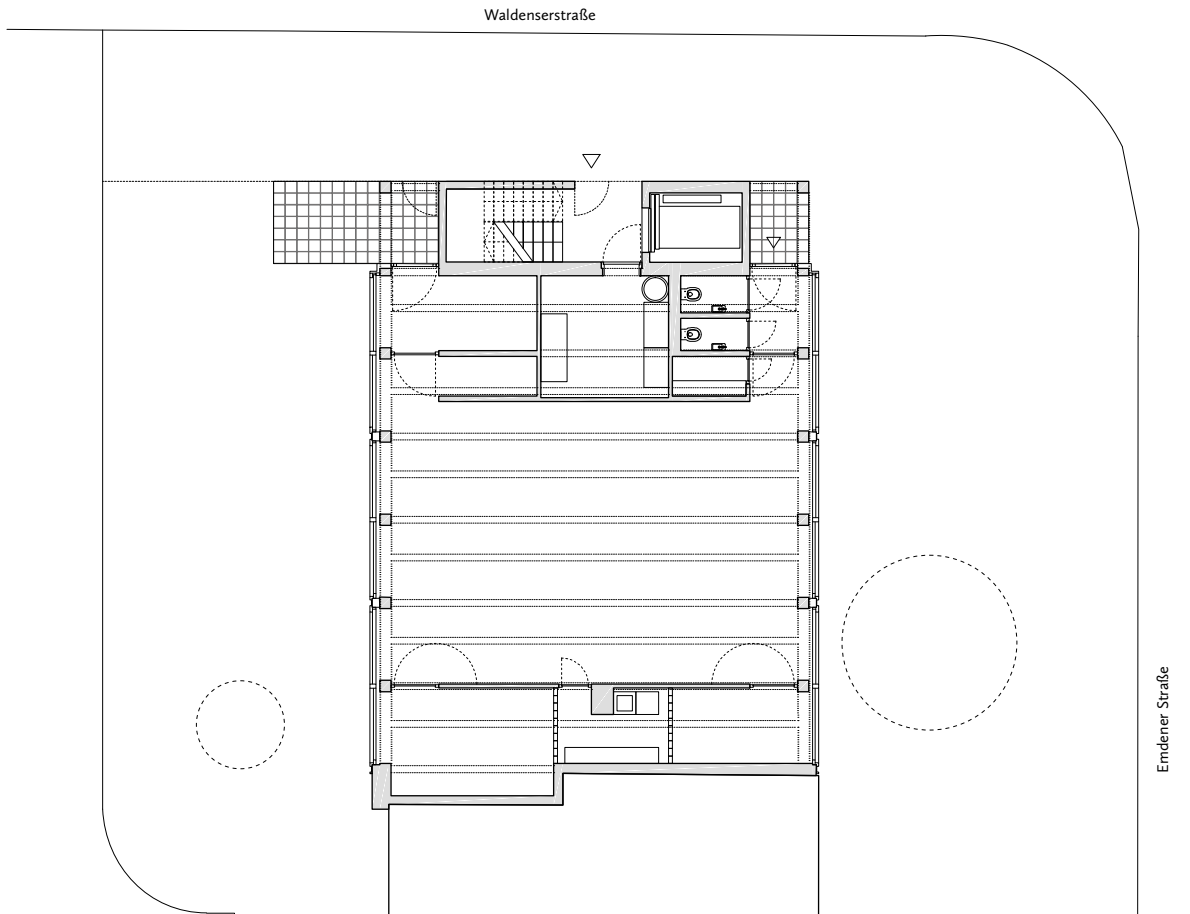
Sistema constructivo / *Construction system*: Elementos estandarizados de hormigón prefabricado / *Standardized precast concrete elements*
 Materialidad / *Materials*: Hormigón a la vista, muro cortina y tabiques con estructura de acero galvanizado revestidos con placas de yeso cartón enlucido y pintado / *Bare concrete, curtain wall and partitions with galvanized steel structure covered with plastered and painted drywall plates*
 Presupuesto / *Budget*: US\$ 1.700/m²
 Superficie construida / *Built area*: 1.088 m²
 Superficie de terreno / *Site area*: 328 m²
 Año de proyecto / *Project year*: 2017-2018
 Año de construcción / *Construction year*: 2018-2019
 Fotografía / *Photography*: David von Becker, Tobias Wootton
 Maqueta / *Model*: FAR frohn&rojas



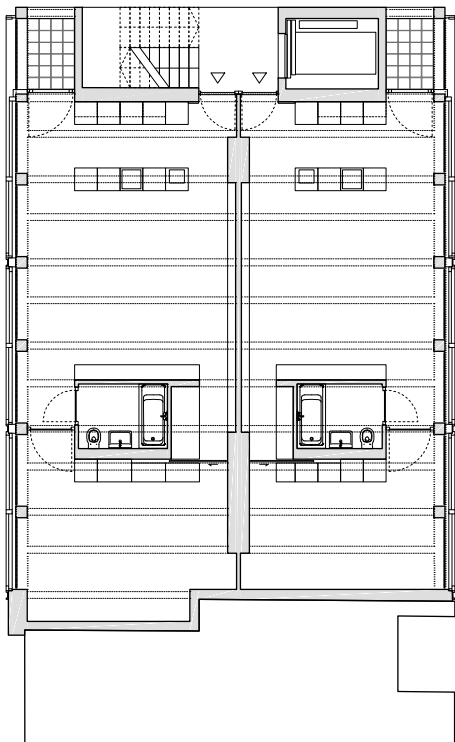
Planta emplazamiento /
Site plan
E. / S. 1: 2.000



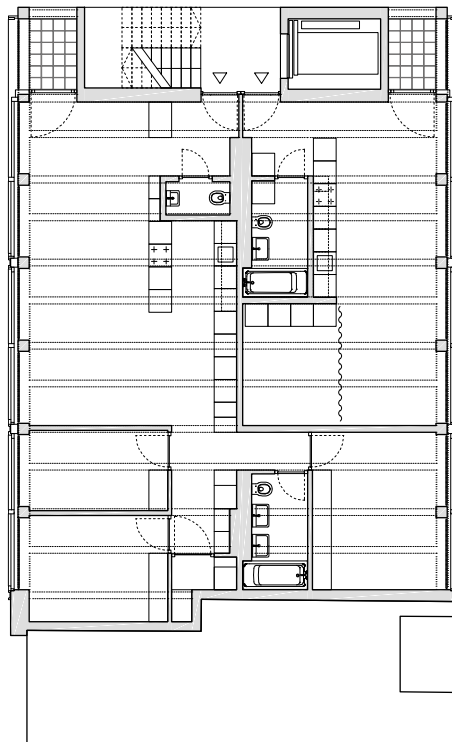
Planta primer piso / First floor plan
E. / S. 1: 200



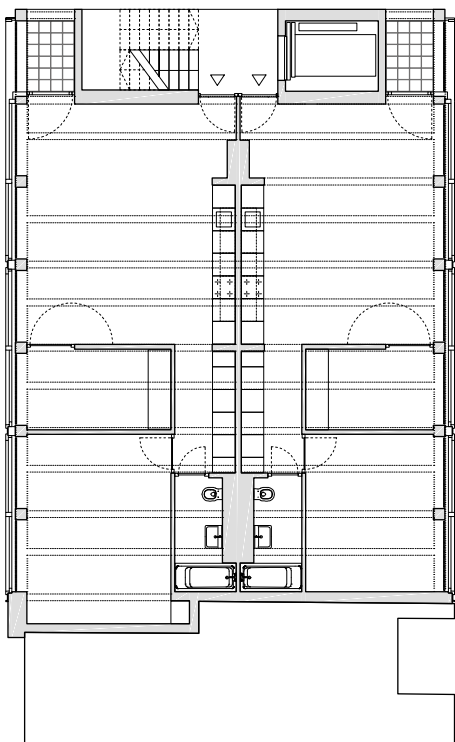
Planta segundo piso / *Second floor plan*
E. / S. 1: 200



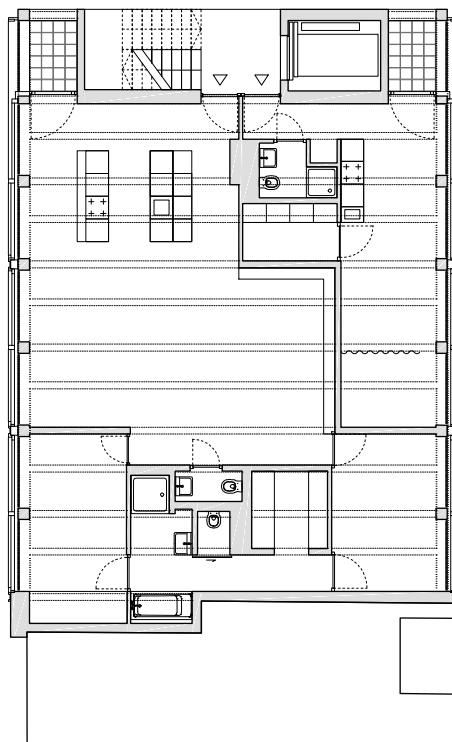
Planta tercer y quinto piso / *Third and fifth floor plan*
E. / S. 1: 200



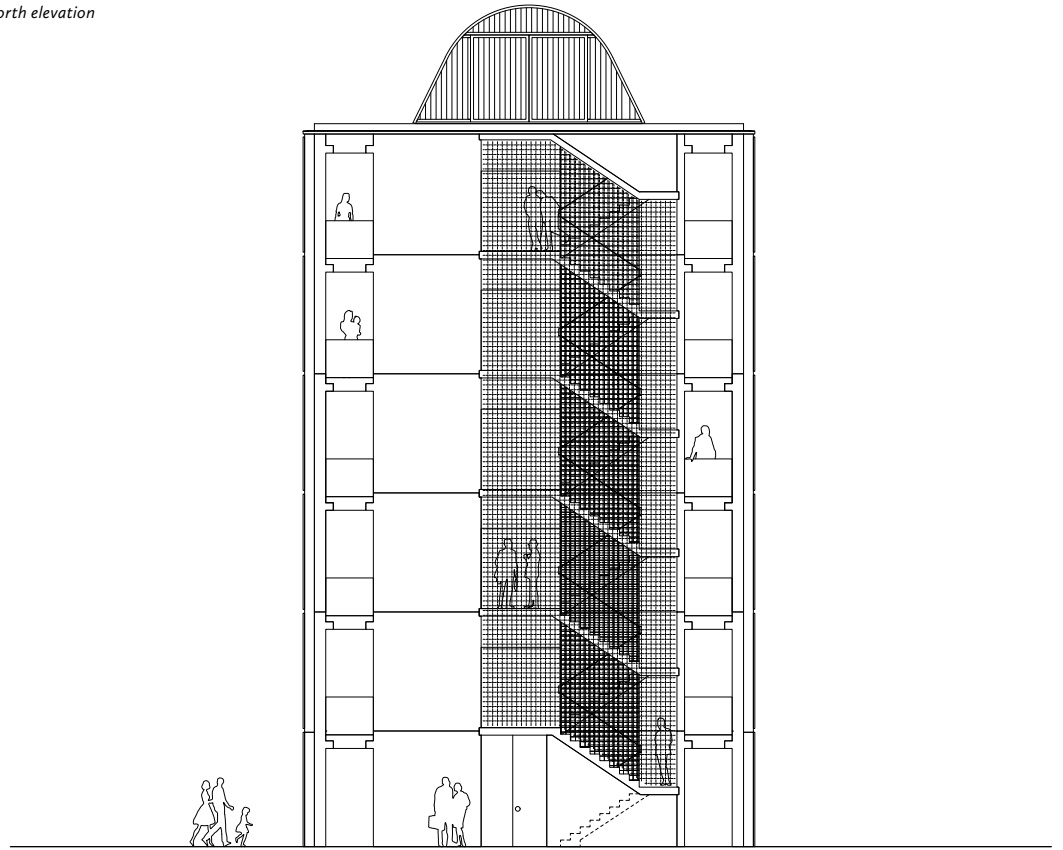
Planta cuarto piso / *Fourth floor plan*
E. / S. 1: 200



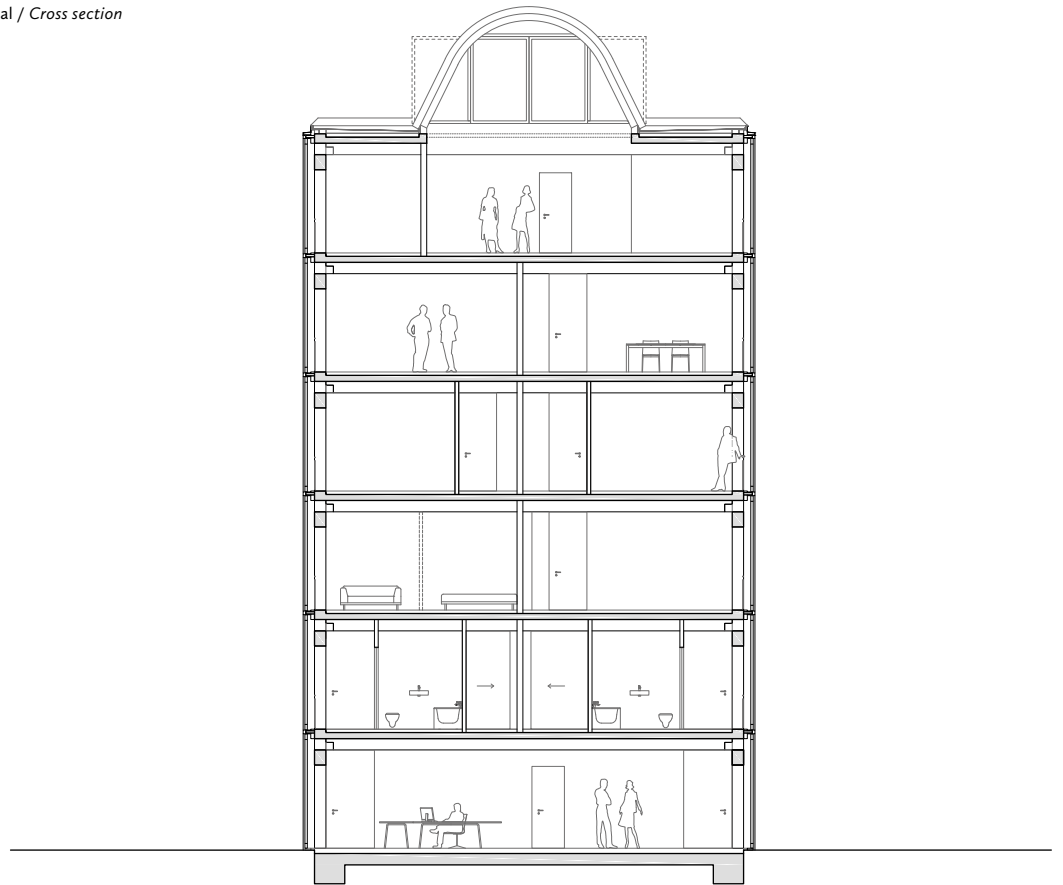
Planta sexto piso / *Sixth floor plan*
E. / S. 1: 200



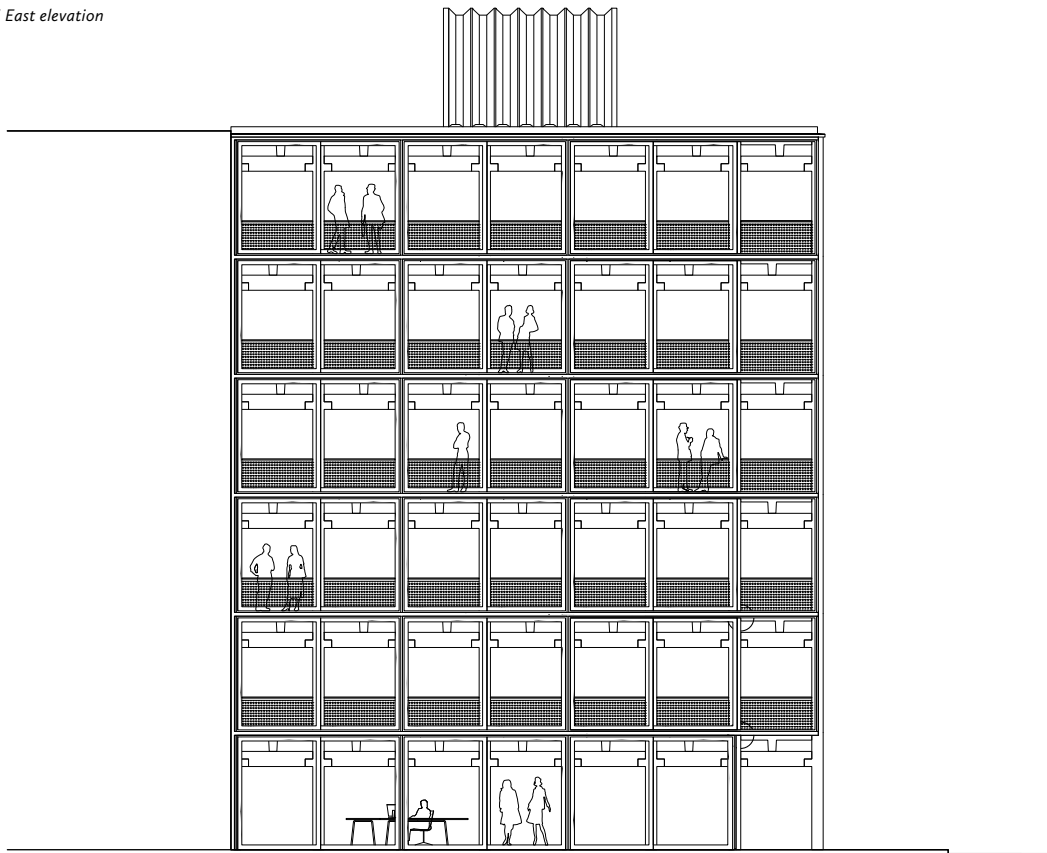
Elevación norte / North elevation
E. / S. 1: 200



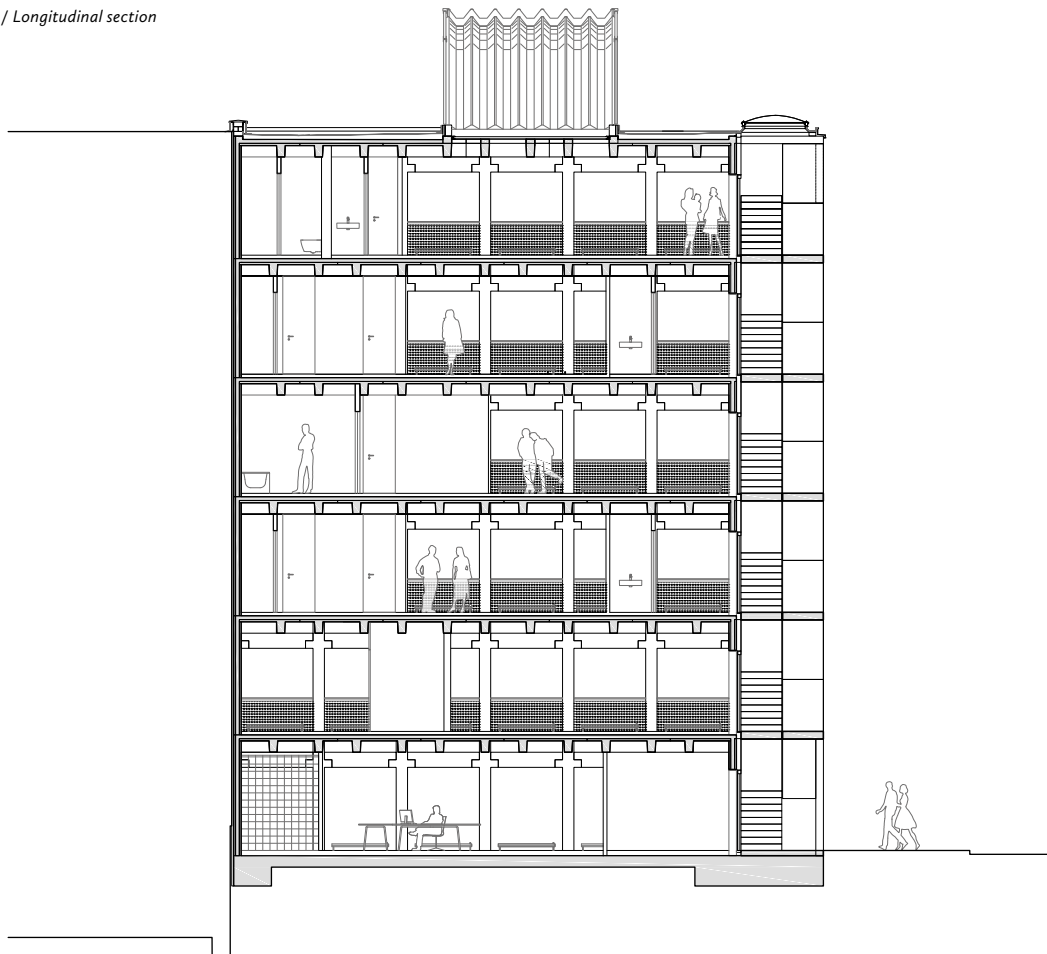
Corte transversal / Cross section
E. / S. 1: 200



Elevación oriente / East elevation
E. / S. 1: 200



Corte longitudinal / Longitudinal section
E. / S. 1: 200





© David von Becker



© David von Becker



© Tobias Wootton



© Tobias Wootton



© David von Becker

Marc Frohn

<frohn@f-a-r.net>

Master of Architecture, University of Houston, USA (2001). Master of Architecture, Rice University, USA (2004). He has collaborated with OMA/Rem Koolhaas and with b&k + brandlhuber&co. He co-founded FAR frohn&rojas in 2004. He has won the AR Award for Emerging Architecture (2007), the DETAIL Prize ArchitectureXport (2009), the Architectural League Prize for Young Architects and Designers (2010) and the RIBA National Award (2016). He has been a professor at RWTH Aachen University, Germany, at sci-Arc, USA, and at the Royal College of Art in London. Since 2015 he is a tenured professor at Karlsruhe Institute of Technology, Germany.

Mario Rojas

<rojas@f-a-r.net>

Diplom-Ingenieur (Dipl.-Ing.) Architektur, RWTH Aachen University, Germany (2002). He has collaborated with gmp Architekten, Oscar Niemeyer and bgp de Bernardo Gómez Pimienta. He co-founded FAR frohn&rojas in 2004. He has won the AR Award for emerging architecture (2007), the DETAIL prize ArchitectureXport (2009), and the Architectural League Prize for Young Architects and Designers (2010). He is a professor at the Universidad Andrés Bello since 2007, and, since 2017, at the Universidad de las Américas (UDLA), Chile.