

Daycare with 3D Facade

Location: Essen, Germany

Architects: JSWD Architekten and Chaix&Morel et Associés

The headquarters of ThyssenKrupp AG in Essen, Germany, include a kindergarten building. The architects were a consortium of JSWD Architekten, Cologne, and Chaix & Morel et Associés, Paris. They designed a stainless steel façade using 316L material, perforated and polished to 240 gritwidth which gives a soft matte appearance.

The design involved a hydro-mechanical forming process that had not previously been used in building and construction, with a three-dimensional surface pattern, computer-generated to the architects' specifications, transferred to the stainless steel sheets using oil pressure within a closed system. This alternative to deep-drawing uses a single faced tool and is more cost-efficient even in a smaller project. The panels are 650 mm by 1,300 mm. The façade has four areas arranged so that the overlapping parts fit snugly, resulting in a homogeneously undulating surface. The stiffening effect of the pattern made it possible to use very thin sheets, thus reducing weight and cost. Stainless steel is particularly suitable for this process because it eliminates deep-drawing marks on the visible face. The technique, which

can be used for sheets of up to 4,000 mm x 2,000 mm, won the first prize in the 2015 Steel Innovation Award by the German Steel Federation.

Details

Environment:	urban
Fabrication process:	proprietary hydro-mechanical forming technique
Grade/Surface:	316L, perforated, polished grit 240
Main thickness or diameter:	1 mm
Date of completion:	2014
Manufacturing company and material supplier:	Fielitz GmbH Leichtbauelemente, ThyssenKrupp Materials Services
More information:	stahl-online.de

