

## Press

### **Sustainable and efficient: Messe Düsseldorf has a good position with a compelling masterplan for its premises**



Until summer 2019 Messe Düsseldorf will be implementing two forward-looking building projects at its exhibition centre: the new multifunctional Hall 1 and the adjacent South Entrance with a translucent illuminated canopy and a 17.5m high foyer. The two projects will meet state-of-the-art technical standards and form part of the Messe Düsseldorf 2030 masterplan with its focus on sustainability and energy efficiency. Exhibition centres are important advertisements for entire regions, and Düsseldorf is right at the top of this league.

The city has had a top-of-the-range exhibition centre since 1971, featuring over 300,000 sqm of exhibition space, with 18 halls and 43,000 sqm of outdoor space. Messe Düsseldorf has been continually developing its premises since the day it started, providing the centre with state-of-the-art equipment and facilities. After years of bustling activity, with extensions, substantial refurbishments and regular repairs, construction of the new Hall 6 started punctually at the turn of the millennium. It was the first step in implementing the Messe Düsseldorf 2030 masterplan.

#### **Construction and modernisation of halls and technical facilities**

Since then many more halls have been fully modernised and equipped for multifunctional use. After Hall 6, three further halls have been rebuilt – Halls 7a, 8a and 8b – and have partly been equipped with conference and seminar rooms, to meet the high demand for event space as efficiently as possible. Construction will continue in the southern section until summer 2019, with the new Hall 1 and its adjacent foyer as well as the completely redesigned and generously roofed-over South Entrance and its neighbouring conference area.

Running in parallel with the building project, Messe Düsseldorf has also modernised the technical provisions and energy supply of its entire premises. The aim was to reduce energy consumption at trade fairs by over 20 per cent. One essential element was the construction of a combined heat and power unit and the installation of two photovoltaic units. Numerous organisational innovations and a customisable control system ensure flexible, needs-focused air conditioning in the halls, conference and seminar rooms and event areas.

### **Renovation of the power control centre and energy usage**

Improvements in energy efficiency are only feasible with a well-thought-out strategy that approaches the relevant challenges in a variety of ways: the level of heat insulation in a building envelope, the standard of systems engineering, the efficiency of the energy network and the flexibility of the controls. All these elements need to accommodate an exhibition centre that has grown organically over several decades and was originally designed at a time when oil was still cheap and energy savings unheard of. Over the years, all the legacy heating systems have gradually been replaced by state-of-the-art equipment, and the entire network has been totally redesigned. One of the main aspects in reaching the relevant efficiency goals was to change the controls from a multilevel system to an individually adjustable system. Today, four cooling and two heating systems are in place, serving the entire exhibition centre via a network structure that can be flexibly activated and modified. About one third of the entire heat is delivered by a combined heat and power unit with a thermal output of 770 kW, while the remaining heat is generated by boilers using fossil fuels (gas and oil). However, there is a much greater and therefore more important need for cooling, at 220 W/sqm. This is provided by an automated cooling system with 14 turbo cooling units. In all, 58 MW are generated, ensuring comfortable air conditioning and optimised ventilation in all 18 halls.

### **Efficient air conditioning through an ingenious control system**

As the exhibition halls are extremely large, the various trade fairs and other events require air conditioning that is well thought out, with a fast and responsive control system. Furthermore, the entire exhibition centre is rarely booked out in its entirety and events can differ in type and size, so the aircon can be turned on and off separately and at different times in each building. 85 per cent of an air conditioning system depends on the internal heat load, and although there are important empirical values, the variables are so diverse that there can never be a rigid control pattern: During setup and setdown phases, when gates are wide open for long periods of time, neither heating nor ventilation is required, yet on cold winter days a minimum temperature still needs to be ensured. At the opening of a trade fair, on the other hand, a comfortable basic temperature is necessary in the mornings. As the number of visitors rises, and depending on changes in internal heat load, there needs to be some transition to a cooling mode, to keep the air in the exhibition halls fresh. Moreover, the conditions at the centre of a hall may turn out to be entirely different from those along the outside walls or in the entrance areas. The ventilation system has been designed and scaled to take this into account. Also, trained and experienced staff are available, who can

respond to sudden changes and requests from visitors and exhibitors, overriding the set controls at any time.

### **Energy management system as a motivating factor**

In addition to constructional changes, the Messe Düsseldorf energy management system also makes a substantial contribution to ensuring sustainability and energy efficiency. It covers all buildings in the exhibition grounds as well as the vehicle fleet and all other energy sources. Messe Düsseldorf has been certified under ISO 50001 since 2014, and since that time – though probably for longer – has met certain legal requirements which are checked at annual intervals. Essentially, the standard concerns electricity and heat consumption as well as ventilation, cooling, compressed air and water. The energy management system has been designed to reduce consumption and at the same time to improve the production and distribution of energy and to make it more energy-efficient.

Messe Düsseldorf joined ECO PROFIT as early as 2011, a scheme which forms part of Düsseldorf's climate protection programme. It supports businesses in saving energy and in making the most efficient use of resources. Recognition as an ECO PROFIT enterprise means that Messe Düsseldorf has undertaken to implement environmental standards and to take specific steps to save energy. The ECO PROFIT programme also promotes participation in workshops and an exchange with other companies recognised under the scheme. One major element in obtaining successful recognition is the so-called "traffic light list", a new system that covers all recommendations, errors and initiatives and which documents their implementation.

### **Success through perseverance and single-mindedness**

Messe Düsseldorf's energy management system is one of many criteria to measure its voluntary commitment to sustainable action, its single-mindedness in achieving energy savings and its implementation of resource-friendly solutions. Apart from the company's technical facilities, its most important potential lies of course in the workforce. Without their help, it would be impossible to save carbon emissions and achieve climate protection goals. What has made a major difference, for instance, is the implementation of suggestions by staff members, such as turning off lights and ventilation at night and installing timers and motion detectors by mid-2018. These measures have saved Messe Düsseldorf 751,500 kWh of electricity – roughly matching the annual power consumption of 188 households.

## Acting responsibly

Thanks to many different initiatives, both big and small, Messe Düsseldorf has succeeded in reducing the power consumption of trade fairs by up to 20 per cent over the last 10 years and – despite an increase in exhibition space – reducing the use of heat by up to 30 per cent and therefore saving around 5,000 tonnes of carbon dioxide each year. It's good for its image, and even better for the environment. Although the Messe Düsseldorf 2013 masterplan with its EUR 650 million investment volume still has a long way to go, nearly all exhibition halls are already meeting state-of-the-art technical standards. The new Hall 1, due to be completed next year, and its adjoining South Entrance with its generous foyer are important milestones towards a contemporary, forward-looking and sustainable exhibition centre.

Length: 8,644 characters (including spaces)

Further details of Messe Düsseldorf's environmental responsibility can be found at [www.messe-duesseldorf.de/environment](http://www.messe-duesseldorf.de/environment)

The most recent updates on the construction of the New Southern Section can be found at [https://www.messe-duesseldorf.com/construction\\_timeline](https://www.messe-duesseldorf.com/construction_timeline)

### The Messe Düsseldorf Group:

With a revenue of around EUR 367m in 2017, the Messe Düsseldorf Group maintained its position as one of Germany's most successful trade fair companies. More than 29,000 exhibitors presented their products to 1.34m trade visitors at events in Düsseldorf this year. About 50 trade fairs were held in Düsseldorf, including 23 proprietary number one events and 15 strong partner and guest shows in five areas of expertise: machinery, plants and equipment, trade and services, medicine and healthcare, lifestyle and beauty, and also leisure. Add to this some 3,300 conventions, corporate events and meetings attracting some 640,000 visitors organised by the subsidiary Düsseldorf Congress. Furthermore, the Messe Düsseldorf Group organises 70 proprietary events, participations and contracted events abroad and is one of the leading export platforms worldwide. Messe Düsseldorf GmbH is the trade fair company with the highest level of internationalism in capital goods exhibitions. In 2017 Messe Düsseldorf's proprietary events in machinery, plants and equipment had approx. 74% international exhibitors and attracted 73% trade visitors from other countries to the Rhine. In all, Düsseldorf trade fairs were attended by customers from about 180 countries. The Group runs a global network of sales offices in 140 countries (76 international representations) as well as competence centres in 8 countries.

### Contact:

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