

TROX life

magazine sept/2011

TROX



Hotel Air.

The World a Guest at TROX.

Contents



Project report

Sustainable Climate. The EMPORIO In Hamburg.

Page 004



Science & Technology

Hotel Climate. Innovative Solutions In Demand.

Page 010



Highlights

**Hotels. Hotels. Hotels.
A Guest In The Best Hotels.**

Page 018



Forum & Economy

Construction Boom Gathers Momentum.

Page 022



Reportage

At Hotel Mount Olympus.

Page 024



Interview

Prisoner Of Comfort.

Page 028



Lifestyle

In Climate Veritas.

Page 032



TROX news

Computational Fluid Dynamics.

Page 034



TROX internal

**Room Air Conditioning Re-defined. X-CUBE From TROX.
TROX Well Equipped For The Future.**

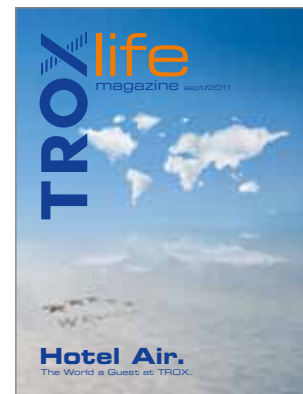
Page 036



Apostil

Vision: Hotel In The Year 2021.

Page 038



Viewpoint

Air Changes ...

... This year's ISH cast us in a positive light. Growth in our sector is on the rise – in 2010, TROX generated global revenues of € 351.2 million – the third best result in the history of the company. Building activity is once again gathering in momentum, and we are particularly pleased that TROX air handling units were so well received at the trade fair.

If, like myself, you travel a great deal and you too tasted hotel air for an entire week during the ISH, then you can appreciate the benefits of a good climate of wellbeing. We have dedicated this copy to the interesting and amusing topic of hotels. Special attention has – along with many other entertaining stories – been paid to the three most important aspects in the technical equipment of a hotel: wellbeing, energy efficiency and sustainability. It goes without saying that a good climate plays a crucial role in the wellbeing factor of a hotel, but haven't we all at some point witnessed the negative qualities of hotels: noise, stale air, rooms that are too warm?

For this reason, we at TROX are investing a lot of time and effort into noticeably increasing the quality of life in hotels – with ventilation and air conditioning solutions that work quietly, efficiently, safely and in such a way that they are hardly even noticeable, thus ensuring an optimum climate in hotels.

Our cover story outlines one of the most exemplary hotel projects in terms of sustainability. Here, our active chilled beams will ensure optimum air quality in the future. We have also compiled many other small and exciting stories on the topic of hotels that we hope will amuse and entertain you.

We at TROX are, of course, delighted that TROX products can be found in the world's best establishments. This validates our efforts to continuously create optimum conditions for "people in their surroundings".

Have fun on your trip across the five continents of the world, and enjoy the unusual insights into hotel life.

Lutz Reuter
Chairman of the Board of Management of TROX GmbH





Sustainable Climate.

Hamburg to be home to a new role model building complex.

Just a stone's throw from the Hamburg Gänsemarkt farmer's market, the spring of 2012 will see a new top hotel open in the heart of Hamburg: the Scandic Hamburg EMPORIO.



Project report



The hotel foyer: Along with 325 hotel rooms, the Scandic Hamburg EMPORIO has a 700 m² conference area with eight conference rooms on the 7th floor, a restaurant, a bar and a spacious health spa boasting a fitness room, sauna and relaxation area.



For more than 40 years, the former Unilever tower on Dammtorwall has formed the cityscape of the Hanseatic city. Visible from afar, the landmark has been preserved as a historical monument since 2001 and is now undergoing a spectacular revival. Nestled beside the tower is another wing-like complex with offices, apartments and a hotel. Together, they form the EMPORIO, a building complex set to become one of Hamburg's most prominent addresses.

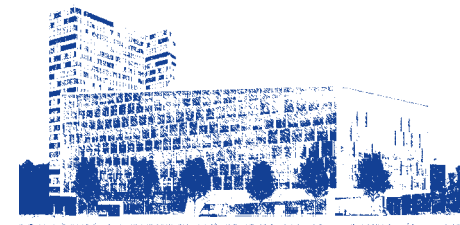
Pioneering climate and energy concept.

The refurbishment of the tower and the new construction of the hotel and apartment complex places the most demanding requirements on material and energy efficiency. For this reason, only certified ecological products are used and sunlight is utilised as a source of natural energy. Heating, ventilation and



lighting can be tailored to individual office requirements and windows can also be opened. The reduced energy consumption, state-of-the-art building services and the natural indoor climate of the EMPORIO are a win for both the occupants of the building and the environment. The sustainable climate and energy concept reduces operating costs by up to 64% and the environment is spared almost 1,700 t of CO₂ emissions a year. This makes the EMPORIO one of the most sustainable building complexes in the Hanseatic city – and a role model. The German Sustainable Building Council (DGNB – Deutsche Gesellschaft für Nachhaltiges Bauen e.V.)

for the first time awarded four hotels with the sustainability certificate; the Scandic Hamburg EMPORIO received the preliminary silver certificate. This award is clear testament to the integral quality of the building – with respect to cost effectiveness, energy efficiency and user comfort.



Scandic Hamburg EMPORIO Hotel

*Owner: Union Investment Real Estate GmbH
Architects: MRLV Markovic Ronai Voss Architects
General contractor: HOCHTIEF Solutions AG
BSE planning: HSG+P – Heinze, Stockfisch, Grabis & Partner GmbH
Plant construction: KBV – Klima-Bau Volk GmbH & Co. KG*

Building services engineering details at a glance.

New hotel construction with:

- 325 single and double rooms
- approx. 440 m² restaurant and kitchen
- approx. 300 m² lobby and bar
- approx. 700 m² conference area with lounge
- approx. 170 m² fitness area

Ventilation and cooling technology:

- Total air volume of ventilation and partial air conditioning systems: approx. 100,000 m³/h
- Zonal air conditioning systems with frequency converter for load-sensitive supply
- Air volume of TROX DID-E hotel room active chilled beam depending on thermal load: 70–160 m³/h (sometimes two units)
- Fire protection technology: 360 FKRS-EU fire dampers
- Diffuser in restaurant: TROX ADLR ceiling diffusers
- Total cooling: approx. 1,000 kW
- Specific cooling load: 33 W/m² (specific heating load: 22 W/m²)
- Cooling via two air-cooled compressor refrigerating machines, each with eight compressors for load-dependent operating modes



A large passageway to the inner courtyard opens the building up to the public. This is also the entrance to the hotel.

Project report



Energy-efficient room air conditioning from TROX in the EMPORIO, Hamburg.

Fresh air and a climate that can be individually adjusted are a matter of course today in hotel rooms. General Manager Folke Sievers: „For this reason, special attention was paid to the indoor air concept.“ The importance of good hotel air is ultimately reflected in the catalogue of criteria of the German classification system. It may only be an optional criterion, but it is worth a great deal of points when being rated.

Kai Grabis, Managing Director and shareholder of HSG+P, the BSE (building services engineering) design office responsible for the EMPORIO, briefly summarised the central elements of the ventilation concept for us: „The central air handling units for the hotel rooms are located in the roof and supply the hotel rooms and access corridors via shafts. The supply air is distributed via a duct network to the vertical room shafts, which are sealed off on a floor-by-floor basis for fire protection reasons. The air is supplied to the DID-E active chilled beam installed in the ceiling void in the entrance lobby. The supply air is introduced to the room through louvred grilles and removed again from the bathroom via disc valves. The recirculated air is taken in via a grille in the entrance lobby.



In the entrance lobbies of the rooms, active chilled beams are installed in the ceiling void. The supply air is introduced to the room through louvred grilles and removed again from the bathroom via disc valves.



Specially developed so that guests are not disturbed whilst sleeping: the DID-E. The mixed flow air distribution ensures a pleasantly quiet climate of wellbeing for guests.

All hotel rooms have individual temperature control. For energy-saving reasons, when the hotel rooms are not in use the rooms are only ventilated, and in the winter they are just heated enough to prevent them from getting cold.“

Also an investment in safety.

Fire protection is particularly important in a hotel. Statistically speaking, most hotel fires originate in guest rooms. A guest nodding off while smoking in bed, a cigarette that has not been completely extinguished, and electrical defects are frequent causes of fire.

According to estimates from the Federal Association for Fire Protection Technology, one in ten of Germany's roughly 14,000 hotels will experience a fire at some point or other over the course of its operating life.

In the Scandic Hamburg EMPORIO, 360 FKRS-EU fire dampers from TROX ensure that, in the event of a fire occurring in the hotel, it does not spread to other parts of the building. Huge emphasis is placed on fire protection at TROX. This has allowed the market leader to set the pace in this field for decades. In the International Center Fire Protection (ICB) in Neukirchen-Vluyn, the most advanced facility of its kind, fire protection components undergo extensive testing, thus ensuring maximum safety, e.g for people in hotels.



The TROX FKRS-EU fire damper

A hotel is a complex building with many different areas of usable space. And the main priority is the wellbeing of guests. Regardless of whether we are in a hotel room, seminar room or conference room, or whether we are relaxing in a restaurant, bar or spa – without sufficient fresh air from a well designed ventilation and air conditioning system, wellbeing is difficult to come by.

Hotel Climate.

Innovative Solutions
Are In Demand.



Science & Technology

In addition to office buildings, conference centres, theatres and schools, also in hotels a thermally pleasant indoor climate and good air quality play an extremely important role. The ventilation system should be quiet and draught-free in order to ensure a good night's rest for hotel guests. The system must supply the room with 40 m³/h of well-filtered outside air per person, and the air must have a pleasant temperature. It also has to guarantee the highest level of hygiene. *

We have all experienced it at least once in our lives: you get back to your hotel room late at night, the air smells stale, prompting you to look for the air conditioning switch. The system starts up and fresh air soon flows into the room. At the same time, however, loud air flow noise resounds from the air conditioning system, effectively dispelling any hopes you had of getting a peaceful night's rest. The only other option is to open the window, but the noise from the street is worse than the noise from the air conditioning system. Frustrated now, you wonder to yourself how on earth you're going to get through this night!

Unfortunately, this is a situation that is all too familiar for guests in many hotels, and generally speaking no one is immune – regardless of whether you stay in a three, four or five-star hotel or whether you spend € 100 or € 300 per night. Here, the expectations of the guest are simple: comfort, comfort and more comfort. It starts with checking in, extends to the use of all hotel facilities and ends with the guest bedroom. In the bedroom, cleanliness, a comfortable

bed, minibar and flat screen TV are not the only factors that play a role in determining a guest's level of comfort; the air conditioning is also of the utmost importance. For this reason, controlled, mechanical ventilation are standard for any higher class hotel – even if it hasn't been an essential criterion up until now in the star rating system for hotels.

Air is not always the same.

In buildings like hotels, the demands placed on the ventilation and air-conditioning technology are manifold and challenging. The more varied the rooms and use, the more flexible the designer must be in tailoring individual solutions to meet the requirements of particular locations. We tried to decode the „air complex“ hotel in order to highlight efficient and ideal-typical alternatives in room air conditioning.

Air calculations.

The indoor air quality in a hotel is directly related to the quantity of fresh air supplied to the room and the level of pollutants and odorous substances in the room.

The fresh air flow rate is then based on how many people are in the room and how many odorous substances are emitted by devices and equipment in the room.

The DIN EN 15251 standard, „Indoor environmental input parameters for design and assessment of energy performance of buildings addressing indoor air quality, thermal environment, lighting and acoustics“, distinguishes between three further room categories: Category I for high indoor air quality, Category II for normal indoor air quality and Category III for moderate indoor air quality.

Lastly, the quality of the outside air must also be taken into consideration on the basis of the loading of SO₂, O₃, NO₂ and fine dust. To this end, the DIN EN 13779 stipulates the minimum quality and the combinations of air filters that must be used to clean the outside air taken into the air handling unit, thus ensuring an indoor air quality of Category I, II or III. Depending on the load, air filters of classes F5 to F9 are used, and these must be supplemented with activated carbon filters or chemical filters when there are very high concentrations of harmful gases.



In cooperation with Prof. Dr.-Ing. Bjarne Olesen, Director of the International Centre for Indoor Environment and Energy at the Technical University of Denmark in Lyngby. He is regarded as one of the world's leading experts for thermal comfort and indoor air quality.

If you take outside air with a normal level of pollutants and a building low in harmful substances, and calculate the fresh air flow rates required, the following fresh air flow rates are derived for typical hotel rooms:

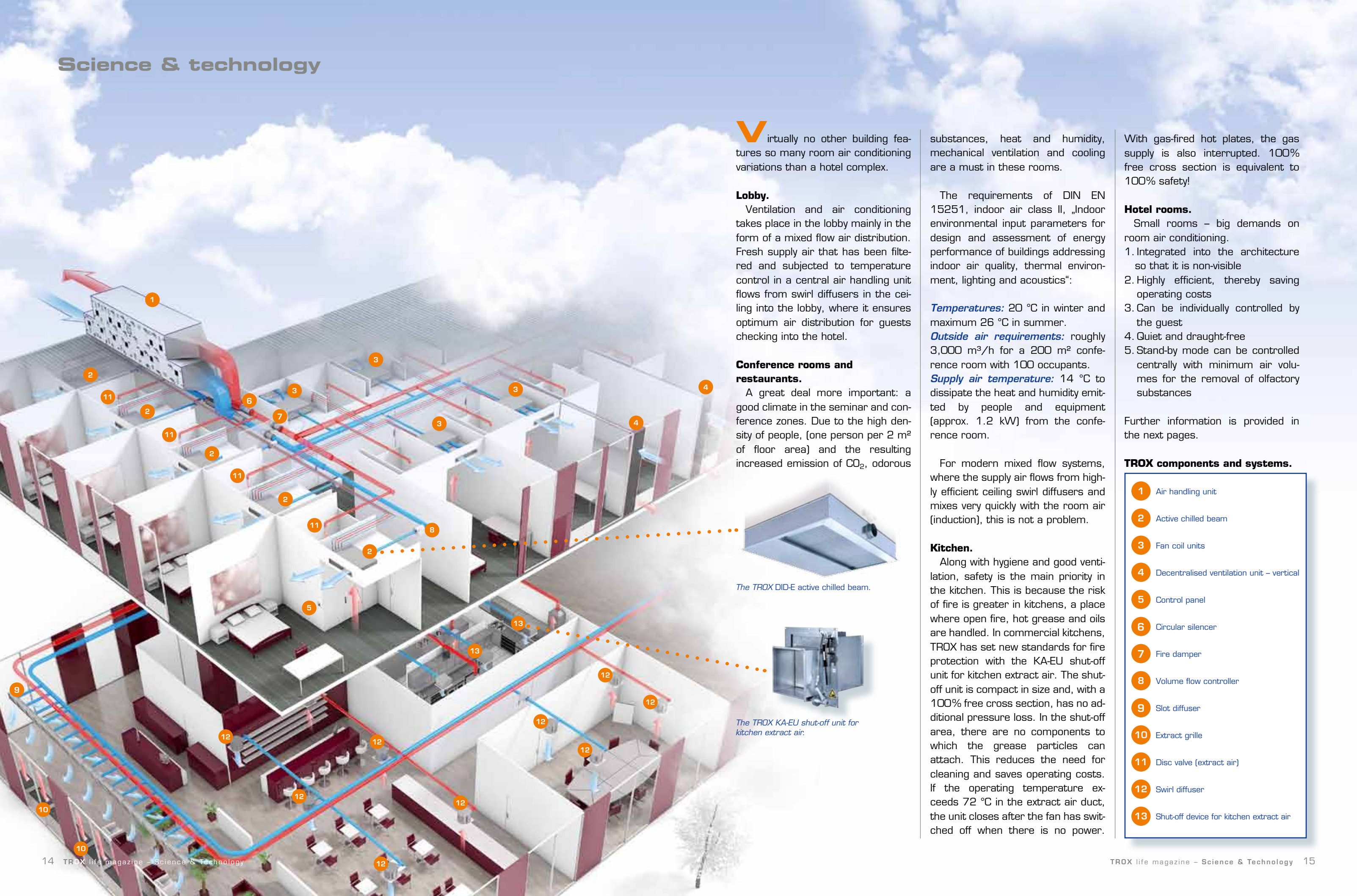
Floor area per person	Category I	Category II	Category III
Hotel room 10 m ²	72 m ³ /h	50 m ³ /h	39 m ³ /h
Conference room 2 m ²	43 m ³ /h	30 m ³ /h	17 m ³ /h
Restaurant 1,5 m ²	43 m ³ /h	30 m ³ /h	17 m ³ /h

By way of contrast, if you define a hotel room as a bedroom, the fresh air flow rates derived are slightly lower according to DIN EN 15251:

Floor area per person	Category I	Category II	Category III
Hotel room 10 m ²	50 m ³ /h	36 m ³ /h	22 m ³ /h

* See also EN 15251, „Indoor environmental input parameters for design and assessment of energy performance of buildings addressing indoor air quality, thermal environment, lighting and acoustics“, and VDI 6022, „Hygiene requirements of room air conditioning systems“.





Virtually no other building features so many room air conditioning variations than a hotel complex.

Lobby.

Ventilation and air conditioning takes place in the lobby mainly in the form of a mixed flow air distribution. Fresh supply air that has been filtered and subjected to temperature control in a central air handling unit flows from swirl diffusers in the ceiling into the lobby, where it ensures optimum air distribution for guests checking into the hotel.

Conference rooms and restaurants.

A great deal more important: a good climate in the seminar and conference zones. Due to the high density of people, (one person per 2 m² of floor area) and the resulting increased emission of CO₂, odorous

substances, heat and humidity, mechanical ventilation and cooling are a must in these rooms.

The requirements of DIN EN 15251, indoor air class II, „Indoor environmental input parameters for design and assessment of energy performance of buildings addressing indoor air quality, thermal environment, lighting and acoustics“:

Temperatures: 20 °C in winter and maximum 26 °C in summer.

Outside air requirements: roughly 3,000 m³/h for a 200 m² conference room with 100 occupants.

Supply air temperature: 14 °C to dissipate the heat and humidity emitted by people and equipment (approx. 1.2 kW) from the conference room.

For modern mixed flow systems, where the supply air flows from highly efficient ceiling swirl diffusers and mixes very quickly with the room air (induction), this is not a problem.

Kitchen.

Along with hygiene and good ventilation, safety is the main priority in the kitchen. This is because the risk of fire is greater in kitchens, a place where open fire, hot grease and oils are handled. In commercial kitchens, TROX has set new standards for fire protection with the KA-EU shut-off unit for kitchen extract air. The shut-off unit is compact in size and, with a 100% free cross section, has no additional pressure loss. In the shut-off area, there are no components to which the grease particles can attach. This reduces the need for cleaning and saves operating costs. If the operating temperature exceeds 72 °C in the extract air duct, the unit closes after the fan has switched off when there is no power.

With gas-fired hot plates, the gas supply is also interrupted. 100% free cross section is equivalent to 100% safety!

Hotel rooms.

Small rooms – big demands on room air conditioning.

1. Integrated into the architecture so that it is non-visible
2. Highly efficient, thereby saving operating costs
3. Can be individually controlled by the guest
4. Quiet and draught-free
5. Stand-by mode can be controlled centrally with minimum air volumes for the removal of olfactory substances

Further information is provided in the next pages.

TROX components and systems.

- 1 Air handling unit
- 2 Active chilled beam
- 3 Fan coil units
- 4 Decentralised ventilation unit – vertical
- 5 Control panel
- 6 Circular silencer
- 7 Fire damper
- 8 Volume flow controller
- 9 Slot diffuser
- 10 Extract grille
- 11 Disc valve (extract air)
- 12 Swirl diffuser
- 13 Shut-off device for kitchen extract air



The TROX DID-E active chilled beam.



The TROX KA-EU shut-off unit for kitchen extract air.

Alternative indoor air solutions for hotel rooms.

A relatively small room but with the most demanding requirements. Non-visible, quiet, draught-free: TROX life explains the alternative indoor air concepts.

Fan coil units

Frequently encountered internationally: so-called fan coil units are generally installed in the suspended ceiling in the entrance lobby of the room. Fan coil units generally work well, but frequently give rise to air-regenerated noise levels that can be considered as an annoyance.

Along with fan coils, which are in particularly highly in demand in southern countries, TROX has developed two new alternative systems for the virtually silent and optimum air conditioning and ventilation of hotel rooms.



Fan coil units are mainly used for the ventilation and air conditioning of hotel rooms.

DID-E active chilled beam, an air-water system.

The fresh air flow of roughly 40 m³/h per person (smoking room approx. 80 m³/h per person) required for a fresh air supply is filtered and pre-conditioned in a central air handling unit. The primary air flow is then fed to the DID-E, where it is discharged via a primary air duct with nozzles. As a result, room air is taken into the unit from below (induced), it then passes through a water coil where it is heated or cooled. In the mixing chamber of the DID-E, the temperature-controlled secondary air is mixed with primary air and supplied to the room via grilles. The hotel guest can simply set his/her desired temperature on the control panel.



Active chilled beams specially developed for the room situation in hotels ensure virtually silent and optimum air conditioning.

Similarly to a fan coil unit, the DID-E is installed in a suspended ceiling in such a way that it is non-visible, but the DID-E has one distinct advantage: a very quiet air conditioning system that works without a fan and meets the most demanding requirements in terms of acoustics. The type DID-E is available in six sizes for air flow rates of between 36 and 300 m³/h and with a heating/cooling capacity of up to roughly 1.7 kW – i.e. suitable for the efficient air conditioning of both smaller single rooms and larger suites.

Decentralised systems

Decentralised systems are hidden in the façade or sill in such a way that they cannot be seen or they can be installed beside windows. The compact decentralised units usually take in up to 120 m³/h of outside air. It is filtered and then discharges – depending on the requirements of the customer – into the room as heated or cooled supply air.

The infinitely variable EC fans used in the decentralised units of the TROX type FSL are extremely quiet. Thanks to sophisticated insulation and sound attenuation measures, noise from the street remains outside. With a heating capacity of up to 4 kW and a total cooling capacity of up to 1.2 kW, the devices have sufficient capacity to ensure comfortable temperatures and clean fresh air in rooms.



Energy-efficient air-water systems are installed in the façade or sill in such a way that they cannot be seen.

Hotels. Hotels. Hotels.

The world's first hotel ...

... the "Grand Hotel", is said to have been opened on 25th January 1774 in London by barber David Low in Covent Garden. Up until then, there were only furnished rooms or inns offering board and lodging; such establishments were not known as hotels. The Belle Epoque saw the emergence of the hotel as we know it today. The construction boom during the period that came to be known as the "founder era" ("Gründerzeit") led to the appearance of showpiece architecture among the business middle class in European cities as well as monumental castle-like resort hotels in remote regions.



They are everywhere: hotels. Officially, however, they have only existed under this name since the 18th century. TROX life has gathered a few interesting and record-breaking facts on this topic for you.

The oldest hotels.

The hotel website www.fineartofliving.de/2011/04/03/die-aeltesten-hotels-der-welt provides information on where to find the world's oldest hotels. However, most of these were not even called „hotels“ when they were built.

A Japanese family has been running the world's oldest hotel for about 1,300 years: the Hoshi Ryokan in the Japanese town of Komatsu. The hotel, which has 100 rooms and opened in the year 718, has been in the ownership of the family for 46 generations. Guests of the hotel are welcomed with a Japanese tea ceremony and are offered a variety of relaxation options, e.g. a walk through the Japanese garden or bathing in one of the hot springs.

In hotel years, the NH Porta Rossa in Florence is one of the oldest lodging establishments in Italy – for over 800 years, it has offered guests accommodation and refined gastronomy. Decorated with wonderful frescos, the hotel's rooms as well as its exclusive location set the hotel apart from any other – it is only a stone's throw from important Florentine sights such as the cathedral Santa Maria del Fiori, the Ponte Vecchio or the Piazza della Signoria.

The oldest hotel in Germany is the Pilgrimhaus in Soest, founded in 1304. It is also the second oldest hotel in the world. *Source: reisen/t-online.de*



The world's highest hotels.

Swim in a pool at almost 500 m above sea level and enjoy cocktails above helicopter altitude (250 m in Hong Kong) in the open air. The Ritz-Carlton Hong Kong offers the highest level of luxury in floors 102–122 of the International Commerce Centre (ICC) – at 484 m above sea level, it is the fourth highest building in the world. A whole eight metres higher is the World Financial Center in Shanghai. However, as hotel guests of the Park Hyatt Shanghai „only“ stay in floors 79 to 93 of the 101 floors in total, the hotel air is not quite as thin as the air in the Hong Kong Ritz. At third place is the Grand Hyatt Shanghai in the 420 m high Jin Mao Tower. Its highest room, however, is six floors lower than the highest room of its sister hotel. *Source: emparis.com*



1. Ritz-Carlton Hong Kong International Commerce Center
Height: 484.00 m
Rooms: 312

2. Park Hyatt Shanghai World Financial Center
Height: 492.00 m
Rooms: 173

3. Grand Hyatt Shanghai Jin Mao Tower
Height: 420.50 m
Rooms: 555

4. Rose Rayhaan by Rotana Rose Tower, Dubai
Height: 333.50 m
Rooms: 482

5. Burj al Arab Burj al Arab, Dubai
Height: 321.00 m
Rooms: 202

6. Jumeirah Emirates Towers, Emirates Tower Two, Dubai
Height: 309.00 m
Rooms: 400

7. Bayoke Sky Hotel Bayoke Tower 2
Height: 304.00 m
Rooms: 658

8. Park Hyatt Tokyo Shinjuku Park Tower
Height: 235.00 m
Rooms: 278

9. Swissotel The Stamford Raffles City Tower, Singapore
Height: 226.00 m
Rooms: 1,263

10. Nagoya Marriott Associa Nagoya/Japan
Height: 226.00 m
Rooms: 760



The world's smallest hotel.

According to information from the municipal office in Amberg, this is home to the world's smallest hotel, the Eh'häusl. This narrow building in the old town can accommodate just one couple and has been doing so for more than 280 years.

Back then, Prince-electoral Karl Albrecht had declared that citizens who did not possess property could not just simply marry one another. In 1728 a resourceful Amberg merchant took advantage of this situation and built this narrow house in a gap on Seminargasse just 2.50 m wide. He thereafter "sold" it to newly-married couples for one night respectively, thereby offering couples that wanted to marry the proof of property possession required.

The highest hotel. ★★★★★

From here, you can see the highest mountain in the world, Mount Everest. The Hotel Everest View in Nepal is situated 3,880 m above sea level and is located in the Sagarmatha National Park. However, the hotel can only be reached by helicopter. More on this on page 24.



A Guest In The Best Hotels.



TROX Technology.

A climate of wellbeing is one of the most important aspects for hotel guests. Optimum wellbeing is achieved when you cannot see, feel or hear the air conditioning system. For this reason, the TROX indoor climate specialists are in demand across the globe when it comes to ensuring good air and effective fire protection in hotels.



Holmenkollen Park Hotel Rica, Norway



Marmara Taksim Hotel, Turkey



Taj Mahal Palace & Tower, India



Hotel Sofitel, Austria



Hotel Burj Al Arab, Dubai



Bodegas Marqués de Riscal, Spain



Hotel Mendoza-Camara Aerea, Argentina



Oyster Box Hotel, South Africa



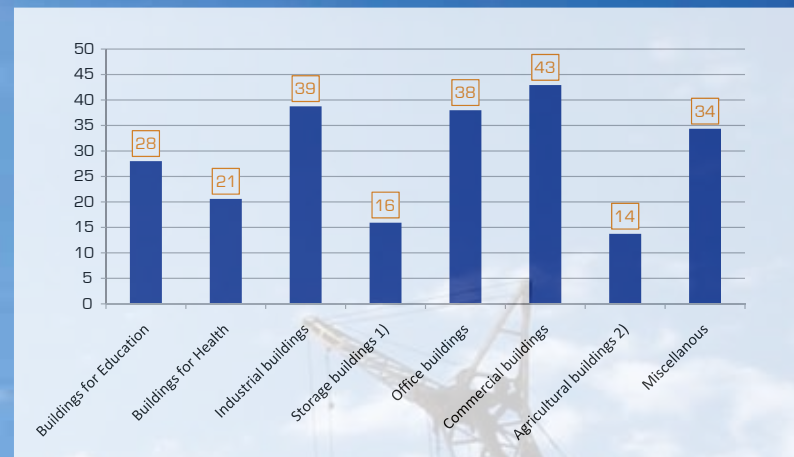
The iPad Hotel App.

For the 15th anniversary of the internationally renowned travel magazine HIDEAWAYS, publisher Klocke is launching its very first HIDEAWAYS App featuring the best hotels for € 4.95. Like the magazine of the same name, the App impresses its users with more than 200 fascinating, large-format photos produced exclusively for HIDEAWAYS.

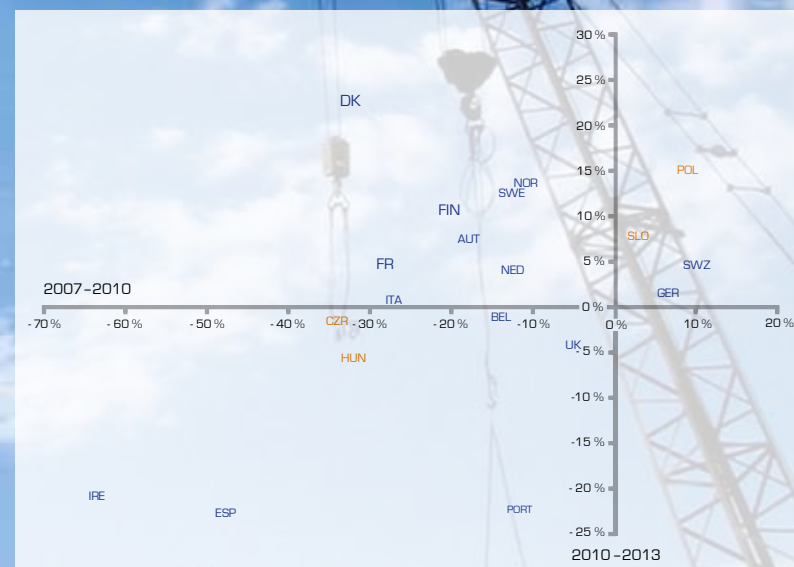


Construction Boom Gathers Momentum.

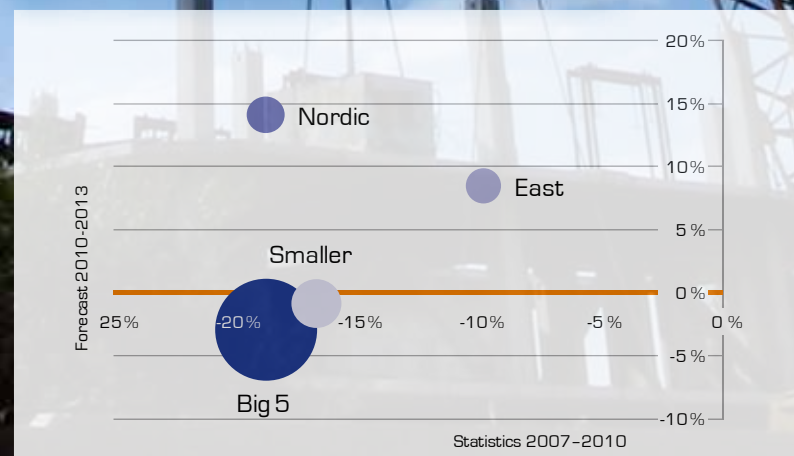
Percentage according to building type in non-residential construction



Growth rate by country: 2007-2010 and 2010-2013



Share of non-residential construction by country



According to the Euroconstruct Conference, European building activity in 2011 is on the rise despite the debt crisis. Fukushima and increasing oil prices are in no way dampening the bright expectations. However, forecasts for 2012 have been revised downwards slightly due to increasing energy prices. Development in European non-residential construction will stabilise in 2012 and economic researchers predict moderate growth once again for 2013. The percentage of non-residential building in relation to total building activity came to 33% in 2010 at € 425 billion. New construction accounts for 55% of total building activity, while refurbishment accounts for 45%.

The Big 5 – Germany, Italy, the UK, France and Spain – continue to dominate construction and account for almost 68% of activity. At 28%, the smaller Western European countries together account for more than a quarter of non-residential building in 2010, while Central and Eastern Europe account for 7%. The highest increase is being registered in Northern Europe and in the Eastern European countries, while debt-ridden countries such as Ireland are still suffering through the effects of depression. The business climate in Germany is also positive. The current business situation and perspectives in the main German construction trades continue to be as optimistic as ever according to the Ifo Institute.

Green hotels become more and more popular.

According to the Deloitte study „Hospitality 2015“, growth is expected to continue in the tourism sector. Demographic change is giving rise to new target groups – pensioners are shaping established markets, while in emerging countries a well-funded middle class is yielding new market power. Different customer requirements and continued market saturation require focused, efficient brand profiling.

Focus on new target groups.

Demand in the established markets such as the UK or the US is being shaped by the baby boomers from the period between the 1940s and 1960s – their share of US national wealth will increase to 60 percent by 2015. People in this target group – approaching pension age – are well-off and like to travel. In emerging countries like China and India, on the other hand, the middle class is defining the nature of the market as a result of the huge growth in disposable income. India expects 50 million travellers in 2015.

Promote sustainability, reduce uncertainty.

Sustainability is becoming a competitive factor. High space, energy and water consumption means that the hotel industry is particularly affected. In addition, „green hotels“ are becoming more and more popular.

Sources:
Euroconstruct Conference,
Helsinki, June 2011
Ifo Institute for Economic Research

Source:
Deloitte study "Hospitality 2015"



At Hotel Mount Olympus.

Taking a step closer to the gods.

When someone takes a trip, he has a story to tell. This is a fact! Our trip around the globe may only be of the virtual kind, but we still have lots to report. We have stories that are highly unusual, unique and even bizarre. Who would have thought that there would be so many facets to spending the night somewhere. Immerse yourself in the most unusual beds of the world, in floating overnight capsules or in beds at record-breaking altitudes.*

Majestic view: The world's highest mountain, as seen from a base camp, where the prayer flags of the Sherpas blow in the wind.

** The most curious bed stories can also be found in Bettina Kowalewski's "Crazy Hotels" or Kurt Jaworski's "Die verrücktesten Hotels" (The Craziest Hotels).*



Rooms in thin air.

The adventure of landing on an undulating path carved out by nature itself, the mile-long footpath from the airstrip to the hotel that will steal your breath for a full 45 minutes while taking you to a dizzying height of 13,000 feet, and above all the view that will greet you upon your arrival: the world's highest hotel, the Everest View, on top of the world next to the Tibetan border in Nepal certainly deserves its name. The highest mountain on Earth and other eight-thousand peaks seem to be within arm's reach, but yet for most they remain inaccessible. To get to the base camp of Everest alone takes seven days in air that is wafer thin. Thanks to the World Wide Web, communication with the hotel at the foot of Mount Everest was surprisingly not a problem for the TROX life editorial team. We would like to thank the Sherpa hotel team for their extraordinarily fast response and the great picture story. Great distance and immense altitude posed no obstacle at all – in contrast to closer locations in Germany, from which we are still awaiting a response.



The Capsule Hotel, The Hague.

These orange-coloured capsules were originally rescue boats for the workers of the Norwegian drilling rig, the "Ekofisk" – today, visitors to The Hague can spend the night inside these capsules in what can only be described as very unusual surroundings. Dutchman Denis Oudendijk saved the capsules from the scrap yard and converted them into floating hostels. Incidentally, Barbara Bach and Roger Moore can be seen lounging about in such a capsule in the James Bond film "The Spy Who Loved Me".



Next best thing to flying. Hotel-plane in Woodlyn Park.



Two holiday apartments are located in the massive aircraft that rests on the centre of a green hill in the Woodlyn Park in the north of New Zealand. There is a kitchen and a shower and the bed offers a direct view of the cockpit in which pilots sat in the 1940s while flying freight around the world.



Underwater: Poseidon Undersea Resorts, Fiji.

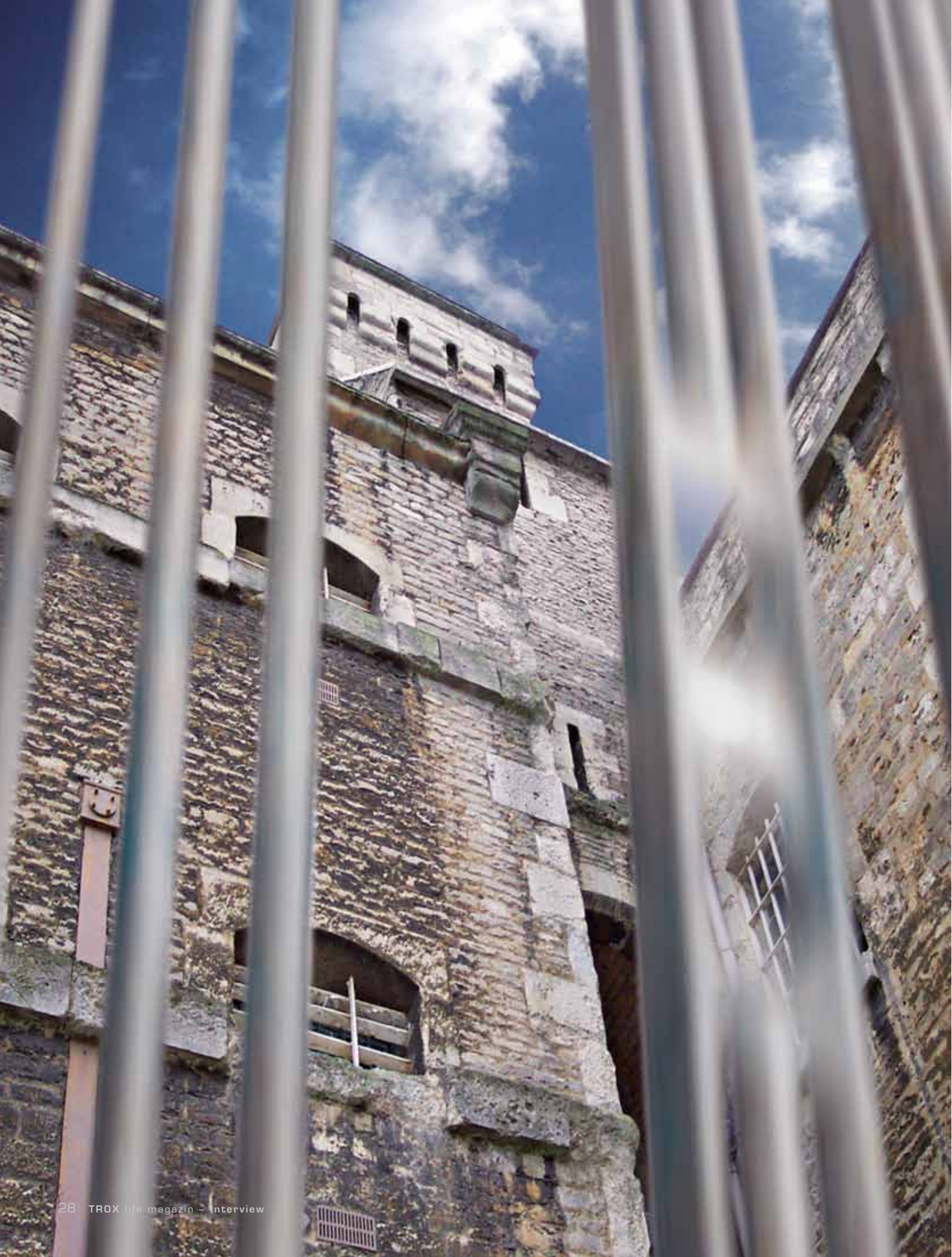
Have you ever seen a ray while breakfasting? This unusual view can be enjoyed at the luxurious Poseidon Undersea Resorts on Fiji. Underwater rooms give the guests a unique insight into the Kingdom of Poseidon.



Spend the night like Diogenes.

Sleep in a barrel, or rather in a sewage pipe, with only the basic necessities in terms of interior fittings. In Bottrop, standard sewage pipes with an inner diameter of 2 m and a length of 2.60 m are considered to be an extravagant place to sleep. *dasparkhotel_bernepark*, the second of its kind, opened in May. Equipped with an electronic access system, the sewage pipes offer a retreat without having to shut yourself away from the action, or so we are told by the operator of this unusual hostel. „Pay as you wish“ is its philosophy, with guests only paying what they feel is appropriate or by whatever means they would like to support this idea. Bookings are taken over the Internet.





Interview

Life Behind Bars.

Staying at Mark McSorley means “life behind bars”. He is the new man in charge of one of England’s most ancient buildings. Today, Malmaison Oxford Castle is a luxurious boutique hotel, but its blood-thirsty history dates back almost 1,000 years, in which it has served time as a jail and starred as a film set.

Built in 1071, just after the Norman Conquest, Oxford Castle is believed to have been used as a jail from as early as 1230. Across the centuries, many prisoners repaid their debt to society in its walls, and a number never regained their freedom. The last public execution took place in 1863, but hangings continued behind closed doors, within C Wing, until 1950.

In modern times, when Her Majesty’s Prison Oxford was deemed too expensive to run, it was closed down and sold for a mere £9,000. With all the cells still intact, the site became popular as a film set. TV programmes such as Inspector Morse, Bad Girls, Porridge and The Bill were filmed here, as well as movies like 102 Dalmatians and Mean Machine.

In 2003, the Malmaison hotel chain stepped in – a company which by its own admission “dares to be different”. An ambitious two-year refurbishment took place to bring the site back to life. The hotel we see today is as luxurious as it is atmospheric, and worth a cool £30 million. Still retaining its architectural features, but refitted to offer the very best in comfort and fine dining, it attracts visitors from all over the world.

In the following interview Mark McSorley talks to TROX Life about his most challenging post to date.



Mr McSorley, how does the Malmaison Oxford Castle compare with other hotels in which you've worked?

The age of the building and its history make it an entirely new experience for me. A modern building with insulation and double-glazing is very different to Malmaison Oxford Castle, where you have stone walls several feet thick and bars across the windows.

A prison doesn't immediately sound like the ideal place for relaxation and leisure. Do your guests get the feeling they are being taken into custody?

Our guests particularly love the converted cell rooms in A Wing, which still have the original prison doors and barred windows. It's the idea of being 'locked up' for the night which really appeals. When we are very busy, we sometimes find that guests are disappointed if they are in our New Road rooms. The rooms are beautiful, but they're not cells!

So your company really does 'dare to be different'.

Absolutely, the company slogan runs right through the organisation. This is more than just a place to stay, it is an unforgettable experience. All of the Malmaison hotels are quirky and different. Many of our guests travel around the country specifically to visit different Malmaison hotels.

What sorts of improvements were needed to turn an old prison into a comfortable boutique hotel?

Air conditioning was crucial of course, but it was important that the equipment could blend in. The ceilings in the cells are coved, so the TROX chilled beams are special customised designs that provide high levels of comfort for guests whilst still retaining the building's character. As you can imagine, we've also had to control the acoustics in the large echoing halls.

The area that used to be the hanging cell for the prison has been converted and is now a staff area. Do your employees get nervous about working there?

The kitchens are where the hanging cell used to be, but that's not the area that people find scary, funnily enough.

Have you seen any ghostly activity yourself?

They've shown themselves to me in other places I've worked. Hotels are notorious for hauntings, but I've not seen anything here. I'm not scared of ghosts. If I see one I'll probably say welcome and offer it a drink.

Have your guests experienced any ghostly happenings?

I think quite a few of our guests would love to experience something like that. They are fascinated when they hear that 58 skeletons were discovered when we were redeveloping the area which is now rooms 401-415. The theory is that corpses of executed murderers were used illegally by trainee doctors in the nearby university for medical research and then buried in the prison grounds. That might explain why these 58 were not resting in peace in the nearby graveyard.

In reality though, as much as they enjoy the ghost stories and legends, our guests are more likely to get a good night's sleep than a fright in the night.

Mr McSorley, thank you for speaking to us.



Malmaison
hotels that dare to be different





In Climate Veritas.

The truth about the right wine temperature is generally in the middle. Perfect climate conditions are not only an important quality factor for wine-growing, but temperature control is also extremely important in the storage of wine. Above all, wines should not be exposed to extreme temperature fluctuations and there must be sufficient air humidity to ensure that natural corks do not become too dry. Many traditionally manufactured quality wines do not develop their flavour until post-ripening, a process that takes place during storage of the bottles. Top wines only reach their optimum maturity after 15-20 years. And the higher the quality of the wine, the better the storage conditions have to be.

Storage temperature

10 to 13 °C. Essential for old and very old wines. A higher temperature of 13 to 15 °C accelerates the maturing process of the wines. Gastronomers use this effect to shorten the storage time of Grand Cru wines.

Temperature fluctuations

The perfect storage room should be kept at a constant temperature if possible. Continuously changing between heating and cooling, e.g. between night and day, reduces the quality of the wine. The wine changes its volume, and this leads to increased gas exchange through the cork. The more the bottles are exposed to such fluctuations, the more oxygen is available for the oxidation of the wine and this results in accelerated maturing. The air relative humidity should be at least 60 % so that natural corks do not dry out.

Serving temperature

The general rule is at low temperatures, the acidity in the wine emerges, bitterness is hardly noticeable and the wine becomes pleasantly sweet. At high temperatures, on the other hand, the acidity recedes, the wine tastes bitter and the sweetness becomes coarse and sticky. The simplified temperature rule is as follows: serve white wine not too cold and red wine not too warm. White wine loses its aroma under 6 °C and tastes sour in the mouth. Above 20 °C, red wine tastes very alcoholic and coarse.

It is a popular saying to serve red wine at „room temperature“. This would be the right thing to do if the temperature in the room was 18 °C. Nowadays, people prefer to be warmer, so room temperatures of between 20 and 22 °C are the norm. These temperatures are far too high for red wine! For this reason, red wines should also be stored in a place that is slightly cooler.



Drinking temperature:

Full red wines, e.g. a good Bordeaux	16 – 18°C
Light red wines low in tannin	14 – 16°C
Top white wines, Beaujolais	12 – 14°C
Full, aromatic white wines, ports,	
Sweet wines, Banyuls, sherry	10 – 12°C
Light, fresh white wines	8 – 10°C

Here, it is important to know that the temperature of wine will have increased by 1°C to 2°C by the time it has been poured into the glass.

Computational Fluid Dynamics. Computer-aided development of plastic diffusers.

TROX AIRNAMIC and XARTO swirl diffusers are the result of extensive development work on the basis of new materials. For this new product, scientists at the RWTH Aachen together with a development team headed by Dr. Thomas Sefker carried out highly complex simulation calculations in order to achieve the highest level of efficiency.

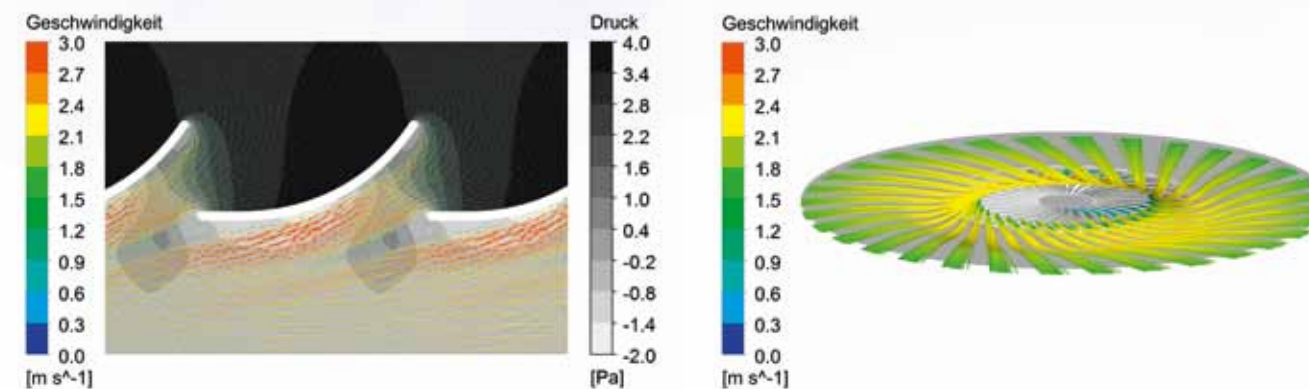
Using Computational Fluid Dynamics (CFD), powerful computers can calculate and visualise the three-dimensional flow field in a diffuser in detail, even before a prototype exists.

To this end, the geometry of the diffuser is reproduced with the aid of a three-dimensional grid.

In the example of the new AIRNAMIC diffuser, approx. four million grid points are required to allow the calculation of small turbulent structures with high accuracy. Turbulence, reverse flow and flow separation over edges increase pressure loss and generate noise and must therefore be kept to a minimum.

On the basis of velocity and pressure distribution, the blade geometry is now being optimised in the first design stage.

Here, the benefits of the plastic material over sheet steel are cleverly utilised in the design.



Velocity and pressure distribution between the blades of the AIRNAMIC diffuser

Representation of streamlines in the discharge behaviour of the new AIRNAMIC diffuser

After the initial calculations, the first prototype is generated on the basis of the three-dimensional geometric model by means of a rapid prototyping process and this is then subjected to rigorous testing.

The results are compared with the CFD analysis and are used to carry out further optimisation.

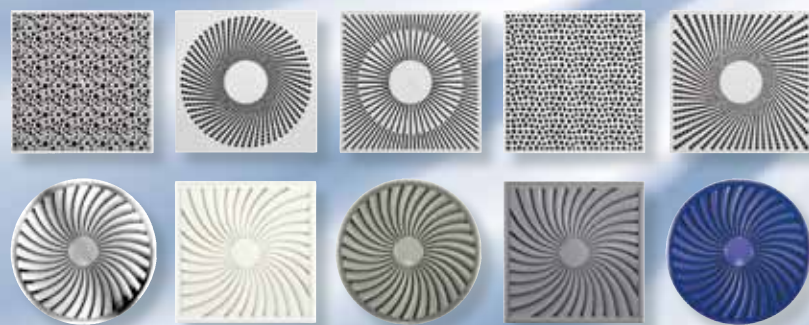
Catalogue data is then compiled in accordance with standard procedures for the type geometry of the new diffuser and these are then given to the planner to serve as the basis for

the design. In this way, TROX has developed innovative plastic diffusers that meet the highest aerodynamic and acoustic requirements.

*Rapid Prototyping is an umbrella term for different processes for rapid production of sample components on the basis of design data, without first constructing a tool or mould.

*Prof. Dr. Ing. Dirk Müller,
Director of the Institute for Energy
Efficient Buildings and Indoor Climate
at RWTH Aachen University
Dr. Thomas Sefker,
Head of Research & Development,
TROX GmbH*

The new TROX XARTO and AIRNAMIC diffusers.



Thanks to high-value ABS plastic, innovative air control blades can achieve extremely quiet air discharge with optimum swirl generation. The most demanding comfort standards can thus be fulfilled, even in the event of very high volume flow rates.



Room Air Conditioning Re-defined. X-CUBE from TROX.

By developing Central Air Handling Units TROX has made decisive steps towards being a complete system supplier in the air conditioning and ventilation technology, true to the maxim "One-stop-shopping". X-CUBE provides many advantages. The optimized coordination between the AHU and the system components results in high energy efficiency and increased quality and at the same time less coordination and commissioning issues. TROX manufactures the bulk of the components itself, thereby putting into practice the vast experience of the company.

The high-quality manufacture and state-of-the-art design of the flexible frame construction, which is completely covered externally by thermally insulated panels or doors,

create an industrial, high-quality impression. The structural design of the X-CUBE and the self-explanatory icons ensure simple assembly, maintenance and cleaning and help to reduce costs. The field-bus-based modular control system solution with significantly reduced wiring simplifies the installation.

The configurable X-CUBE is available in flexible standard constructions for supply or extract air and as a combination unit with the casings arranged side by side or double-deck or as a small compact unit

A special hygienic construction in accordance with the German RLT Guideline O1 and a weather-proof construction for roof top installation complete the range of units.

On 13th October 2011, the official opening of the production site in Anholt will take place with 250 guests attending from political and business spheres. The 150 new TROX employees and the management are delighted that Day X is drawing closer. Type production of the X-CUBE central air handling unit can then start in the beginning of December so that the first units can be delivered before the end of 2011.

Technical data:

Modular, flexible frame construction

Flow rate range:
Up to 24,000 l/s, 86,000 m³/h

Dimensions:
h: 0.5-4 filter elements
(305-2,440 mm)
b: 1-8 filter elements
(610-4,880 mm)

TROX well equipped for the future.



From left: Prof. Dr.-Ing. Dirk Müller (Chief Technical Officer), Lutz Reuter (Chief Executive Officer), Udo Brinkmann (Chief Financial Officer) with Heinz Trox (Principal Shareholder of TROX GmbH)

On 5 July 2011, the Supervisory Board of TROX GmbH appointed Prof. Dr.-Ing. Dirk Müller as Chief Technical Officer at TROX GmbH. Prof. Müller is responsible for Research & Development, Product Management as well as International Production.

Prof. Dr.-Ing. Dirk Müller will continue to be active as a University Professor and Director of the Institute for Energy Efficient Buildings and Indoor Climate at RWTH Aachen. For some years now, he has been a close advisor of TROX and was a member of the TROX GmbH Supervisory Board until the end of June 2011.

Within the newly structured Board of Management, Lutz Reuter has taken over the position as Chief Executive Officer.

At the same time, Robert Baumeister, Chairman of the Management Board of the German Association of AHU Manufacturers (Herstellerverband Raumlufotechnische Geräte e.V.), was appointed to the Supervisory Board of TROX GmbH. He, too, has worked with TROX in an advisory capacity for the past few years.



The optimum harmonisation between the central unit and the components in the X-CUBE ensures high energy efficiency.



TROX X-CUBE
Central air handling unit for the supply and extract ventilation of rooms and buildings, filtering, heating, cooling, heat recovery, humidification and dehumidification. It can be individually configured, so that all project requirements can be fulfilled.

Vision: Hotel In The Year 2021.

2 p.m. Check-in at my favourite hotel in Berlin. It is April in the year 2021, and it is extremely mild for this time of year in the capital city. There is no one at reception to bother me. My ID inserted into the registration slot at the counter is sufficient. The computer identifies my details and my thumb print will now serve as a room key.

I arrive upstairs and the heating has set itself to my usual 22°C, the screen comes on, ntv shows the latest news. This is just how I set it during my first visit and the system will repeat this procedure every time I visit the hotel.

I already know that the minibar will have my favourite drink and the bathroom will have my favourite shower gel. I already know what I will have for breakfast in the morning and even the time of the alarm will be set to the same time as that of my last visit.

Boredom pur.

How inconvenient, but how exciting it was a few years ago. The tiresome filling out of forms in front of an ill-mannered receptionist. The room that was always either too warm or too cold. The same applied to the beer. And the right channel on the TV would take forever to find – if you managed to find it at all.

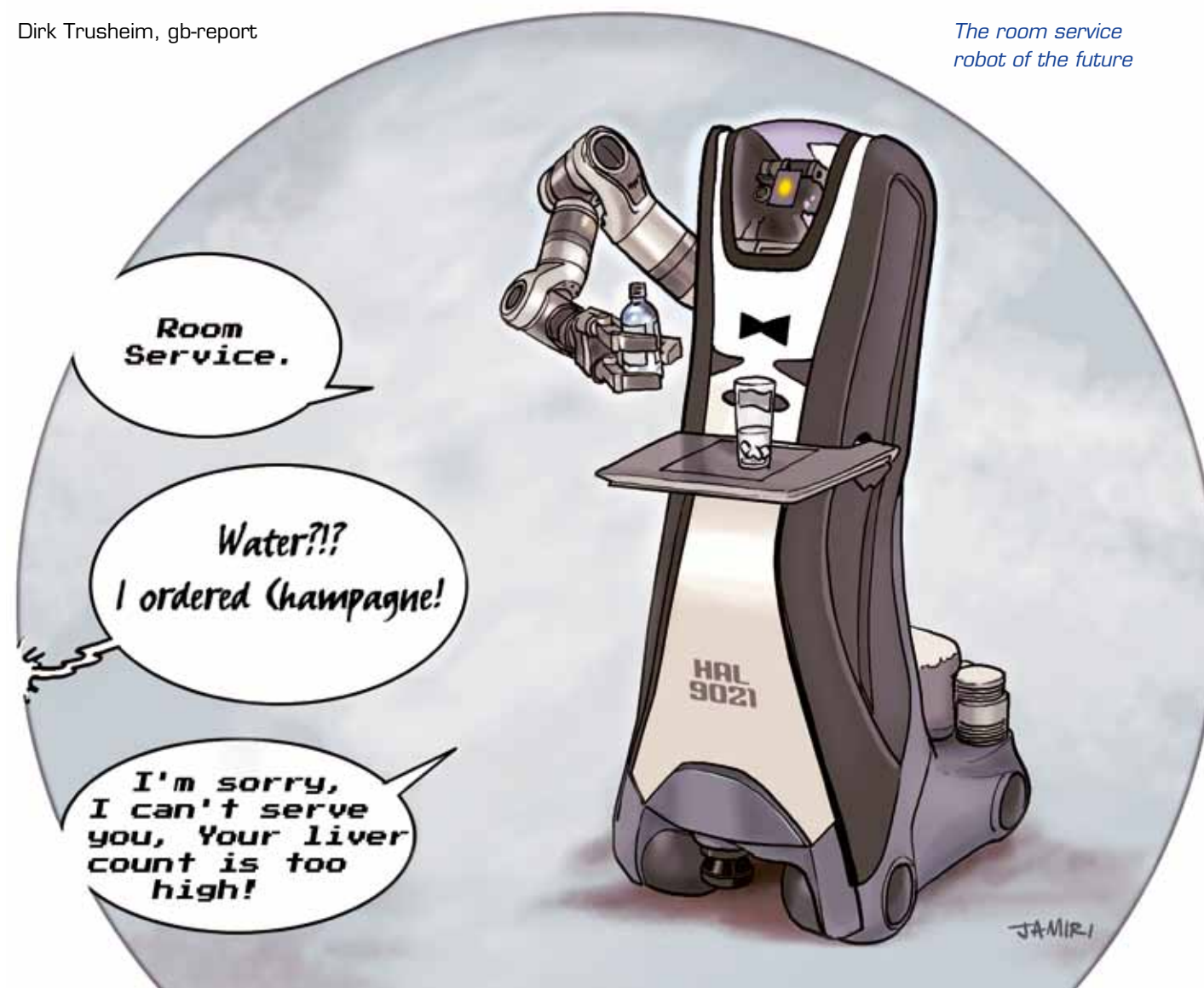


Dirk Trusheim, gb-report

Breakfast was a surprising discovery. And woe betide anyone who lost their room key!

Oh how I miss the chat at the reception. And who knows, maybe I would encounter a new brand of beer in the minibar. And would it really be the end of the world if I overslept in the morning?

Dirk Trusheim, gb-report



The room service robot of the future

TROX® TECHNIK
The art of handling air

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