

**2015
#1**

MINKELS MAGAZINE

Minkels provides an identical Equinix look-and-feel worldwide, also in Dubai.

Minkels expands VariCondition® portfolio with the Vertical Exhaust Duct.

The combined data centre expertise of Minkels and Legrand.

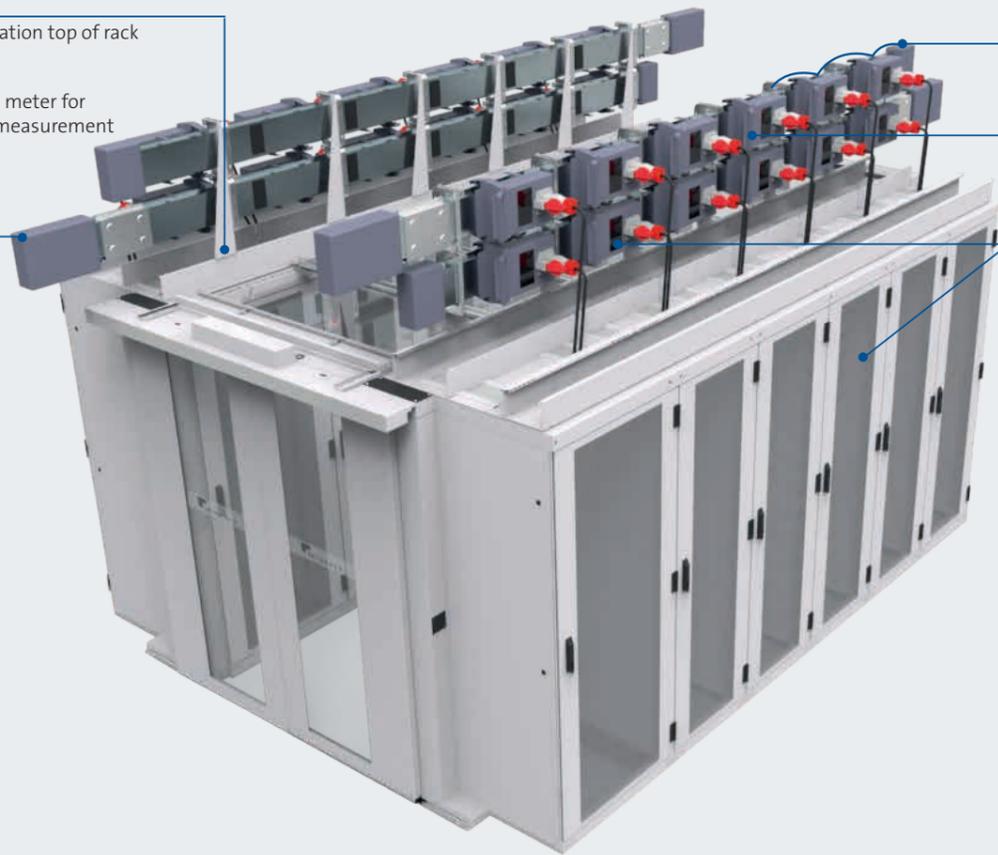
Integration top of rack

Smart meter for total measurement

Redundant ring connection

Configurable tap-off box

Smart meter internal or external



Modular busbar systems & smart tap-off boxes

An ultimate scalable approach

- Can be configured flexibly in customer-specific Cold Corridor layouts.
- Offers a power distribution infrastructure for currents varying from 160 amps to 1000 amps.
- Is suitable for both commercial data centres and corporate data centre environments.
- A safe and structured alternative to power distribution using traditional cabling.
- Entirely modular, not only at rack level, but also at Cold Corridor level.
- Gives users the option of connecting up data centre racks or rack clusters to a busbar at any desired position.

COLOPHON

MINKELS MAGAZINE

Minkels is a subsidiary of the Legrand Group. This global, publicly traded organisation has companies and offices in more than 180 countries with revenues of 4.5 billion Euros worldwide. Legrand markets a range of low voltage equipment and data networks from different manufacturers for the housing, utility construction and industrial sectors.



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MINKELSNEWS

HIGH INTEREST FROM RUSSIA



Quite some time ago, Minkels concluded distributor contracts with partner organisations in Russia for the distribution of the Next Generation Cold Corridors®, Varicon® racks, and row-based VariCondition® DX and H2O cooling solutions. The most important contracts in Russia were signed with the distributors OCS Distribution and Lindex. The partnership with these companies has turned out to be extremely successful.

Both OCS Distribution and Lindex noticed that there has been a substantial increase in interest in Minkels' solutions that yield excellent revenue and projects with large end users. Russia has become a key market for Minkels, along with other growth markets like Turkey, the Middle East, the United States and Nordics.

3,000 EMPLOYEES

OCS Distribution is a large technology distributor with a broad product range. The company has more than 3,000 employees and 29 locations throughout Russia. Along with the Minkels solutions, OCS also sells other computers, telecommunications equipment, peripheral equipment, ILM solutions, computer components and infrastructure software. Lindex is a so-called Value Added Distributor located in Moscow. This company has through, in-house knowledge of data centre design, a project-based approach to customers' business. The OCS Distribution and Lindex employees have been trained by Minkels so that they can provide the necessary knowledge and service for these products.

REINFORCING THE POSITIONING OF THE MINKELS BRAND



Minkels is the designated brand within the Legrand Group for professional data centre infrastructure, a brand that will continue to expand worldwide. In order to strengthen Minkels' international positioning and to achieve continued growth, Minkels has expanded its marketing team in December 2014.

Vincent Liebe, formerly the Senior Product Manager at Minkels, will take on the position of Marketing Manager to lead the new marketing team. Furthermore, Christiaan van Terheijden, the new CEO of Minkels, will lead the company towards a stronger international position of the brand based on his strategic, commercial and marketing experience.

Inge Minneboo has just been recruited as the Marketing & Communications Coordinator. Before joining Minkels, she worked in different marketing communications positions. Most recently, she coordinated the promotions activities for Dreumex, an international manufacturer of hand cleaning and hand care products.

EXPANDING BUSINESS

Christiaan van Terheijden, the new CEO of Minkels, has also been assigned to expand the Minkels' core business and to create further synergy between Minkels and Legrand. Before joining Minkels, Van Terheijden held a variety of different international positions at the parent company, Legrand. Most recently, he served as the Commercial Director for the Legrand Group in Austria and Germany, where he managed four locations and the corporate office in Vienna. Prior to that, he was the Export Manager at Legrand for many years.

FREE STANDING COLD CORRIDOR® DURING DATA CENTRE WORLD 2015

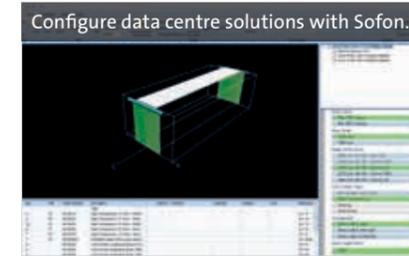


The Minkels Free Standing Cold Corridor® will be on display at a large international exhibition at the Data Centre World 2015 in London. The ultra-modular aisle containment design is unique in the market and has been developed by Minkels for corporate and commercial data centres alike. The Free Standing structure provides a 'pay-as-you-grow' model, which separates hot and cold airflows in an energy-efficient manner, thus eliminating an initial investment in racks.

During Data Centre World 2015, Minkels presents its solutions in collaboration with its parent company, Legrand. The Minkels Free Standing Cold Corridor is not the only product on display. Legrand will also be showcasing its data centre related products during the event. Legrand will display a variety of electronic systems, including UPS products, cable management solutions, power distribution products, as well as fireproof wall bushings.

Legrand has an extensive assortment of - mostly building-related - products that could also be of interest to Minkels customers. The products and services of Minkels and Legrand together form a fully comprehensive, total solution, even more so than before.

GLOBAL CONFIGURATION TOOL



Minkels is the 'centre of data centre excellence' in the Legrand Group and has a strategic position within the group for the rollout of integrated concepts in the global data centre market. Minkels' recent investments in expanding the Sofon software platform confirm that position.

Sales representatives for Minkels and also for the Legrand partner organisations worldwide can configure data centre solutions in 3D with the Minkels software system. These customer-specific product configurations are forwarded to the production and assembly facilities of Minkels. Orders are then delivered to the customer's site and deployed. At the same time, the expansion of the Sofon configuration software is contributing significantly towards the synergy between the Minkels data centre solutions and the Legrand products.

This configuration tool ensures that customers all over the world have the same, uniform Minkels experience - a custom solution with standardised modular components that adapt to the customer's actual requirements and individual needs. The tool also provides the capability to make changes, which is in perfect alignment with the flexibility that Minkels wants to provide to its customers.

Sofon allows that customers receive a well-organised, tailored offer with clear pricing from Minkels in the same, expeditious manner, no matter where in the world they are located.

MINKELS IS WORKING ON CUSTOMER SATISFACTION



"Customer satisfaction must exceed 99 percent," according to Ricsi Horváth, Manager of Operations at Minkels.

The power of good service is to continue reviewing our actions and performance with a critical eye. Minkels has initiated a process to further optimise Minkels' customer service, so that the company can analyse and refine existing and new operations processes.

Ricsi Horváth has been appointed to the position of Manager of Operations and member of the management team at Minkels on 1 December 2014, and is responsible for the optimisation process. He has held different positions with the Legrand Group these past few years, including positions in R&D, quality control and project management.

SYNERGY LEGRAND

"With the optimisation process we focus on product and process quality, and also on logistics performance," says Horváth. "We look at how we can further improve customer satisfaction. The initial objective is to achieve a steady customer satisfaction level for our service that exceeds 99 percent; however, we are ambitious and we want to be the best. We will even take it a step further if possible."

As part of the management team, Horváth is also responsible for creating more synergy between Minkels and the operations processes of its parent company, Legrand. Synergy is particularly important for international customers because it benefits the global reach of Minkels' service and contributes to a uniform quality experience in all countries. In the past Horváth was also responsible for the product standardisation in a synergy project for the cable management division of the Legrand Group in the Netherlands, the UK, France and Italy.

Globalisation, synergy and export

In my former role as Commercial Director at Legrand Austria and Germany, I did occasionally ask Minkels for assistance with technical specifications to enable us deliver various solutions. What struck me at the time was that Minkels is an extremely professional and motivated group of people with specialist knowledge in data centre solutions who can respond quickly and flexibly to ad hoc customer wishes and requirements. Now that I'm working here, that picture has only been confirmed.

As the new CEO of Minkels, I'd like the customers to keep seeing us that way. Minkels must remain a data centre specialist and continue to provide the flexibility that our customers expect from us. At the same time, the worldwide Legrand network in more than 180 countries offers Minkels wonderful opportunities to roll out projects in new export countries. This is important for Minkels because the data centre market is developing more and more on a global scale. This is also important for various key Minkels accounts because it extends their options for implementing high-

quality, flexible data centre environments together with Minkels anywhere in the world.

If our business growth is to be kept in balance, the existing business and the processes must be consolidated. This is why we have made substantial investments recently in optimising the organisation's software (see the news item about Sofon on page 5). A sales and configuration system has been implemented, along with a new warehouse management system. In addition, the management team is currently analysing and tightening up all existing and new operational processes. Minkels already has the highest possible level of ISO certification, but within that we still want to be the best and achieve the highest possible level of customer satisfaction. This is only possible if you keep examining your own processes critically all of the time.

Minkels is a strong and sturdy brand with innovative solutions, a brand that we would very much like to expand further internationally. A global presence with local excellence: that's

what we're aiming for. With that in mind, we have just expanded the Minkels Marketing team. My own strategic marketing experience at Legrand Austria and Germany will also be useful here. In addition, over the next short while we will be looking for the synergy we need with the international network and solutions provided by Legrand. A prime example of that is the joint trade fair presentation by Minkels and Legrand at Data Centre World 2015 in London.

Adding the Legrand solutions to our own portfolio means that we will be more capable than ever of offering a total solution. The infrastructure solutions that Legrand installs in buildings are actually very interesting to Minkels customers. This means a significant extension to how well we can meet data centre requirements, with innovative and proven technologies from a worldwide specialist in digital and electrical infrastructures. On top of that, both Minkels and Legrand offer solutions that are extremely energy-efficient.

At the same time, expanding our portfolio with solutions from Legrand that are targeted at data centres will let us get involved in new data centre projects at an earlier stage. Legrand carries out lots of electrical and technical installation projects. This means that Minkels can have access to the tendering process earlier than it currently does, from the moment that the basic construction of a data centre starts. I anticipate this giving a significant boost to further business growth at Minkels.

Consolidation is important if we are to retain the level of quality that Minkels has already been offering for many years. At the same time, our position within the Legrand Group provides plenty of opportunities to respond even better to new and existing requirements, in both new and existing markets. On the one hand that is a challenge, but it is also familiar territory thanks to my many years of management and export experience within the Legrand Group.

Christiaan van Terheijden, CEO at Minkels ■

Minkels: Worldwide competence centre for data centres

 legrand®

 MINKELS
A Group brand | legrand

- Publicly traded company (NYSE Euronext Paris: LR).
- Operates in more than 180 countries.
- Achieved worldwide revenues of 4.5 billion euros in 2013.

- High quality data centre solutions.
- Innovation and flexibility are key to the company.
- International focus.





“It is nice to have a standardised infrastructure with Minkels solutions in such a new region like the Middle East.”

ABOUT EQUINIX MIDDLE EAST

Equinix Middle East began delivery of co-location, interconnection and managed services in the Middle East on 1 January 2013. With more than 30 employees, Equinix supplies services from Dubai to financial companies, telecom carriers, content providers and others.

The Equinix Middle East data centre in Dubai that houses the infrastructure of 30 telecom carriers has the highest carrier density in the region. Both Tier 1 carriers and regional carriers have taken their networks to the Equinix data centre in Dubai. Minkels supplies the necessary data centre infrastructure in Dubai, with the familiar Minkels look-and-feel and quality that Equinix customers all over the world are accustomed to.

MANAGING DIRECTOR JEROEN SCHLOSSER

Jeroen Schlosser, a Dutch citizen with a long history in the data centre industry, has been the Managing Director of Equinix Middle East since the opening of the data centre in Dubai. Prior to his current pioneering role, he was co-owner of Compertius, a developer of energy-efficient data centres from Amsterdam. From 1999 until 2009 he was the Operations Director of co-location services provider TelecityGroup Netherlands.

Minkels provides an identical Equinix look-and-feel worldwide, also in Dubai

Equinix opened its first data centre in the Middle East - in Dubai - in January 2013. Just like all other Equinix data centres worldwide, Minkels was responsible for setting up the infrastructure. Jeroen Schlosser, Managing Director of Equinix Middle East, explains how the data centre market is developing in this region and what Minkels can do for the local proposition.

Why did Equinix build its first data centre in the Middle East in Dubai?

“That was a process of careful consideration.

Equinix chose Dubai because internationally there was high demand for a data centre at this specific location. It is an extremely safe area and globally it is a very well-accepted place to do business and to maintain infrastructure.”

How is the data centre market in the Middle East different from the market in Europe?

“The business data centre market here is a relatively young market, especially in comparison with Europe and the United States. You see it in meetings with prospects. Many organisations still have to take that step to outsource their

data centre infrastructure for the first time. That means you must build their trust in outsourcing. Only then can you begin to talk to them about the specific benefits of your service.”

Does the proposition of Equinix Middle East differ from that of the other Equinix locations worldwide?

“In London, Amsterdam, Sydney, New York and Dubai, or anywhere else for that matter, the Equinix data centre solutions are identical all over the world. The Minkels racks, the Minkels Cold Corridors and the Minkels data centre

accessories play a key role. It gives customers everywhere the same look-and-feel and the same high quality. Besides, it is great to have a standardised infrastructure in a new region like the Middle East and to include certain fixed elements in your proposition from the beginning so that our team can focus all its efforts on the customer.”

“The Equinix data centre solutions are proven concepts that we have developed in partnership with Minkels.”

Who are the customers of Equinix Middle East?

“Content providers, telecom companies, but primarily financial companies. We are quite proud of the fact that we have been able to establish a comprehensive financial eco system with customer organisations that share all sorts of front-end processes and infrastructure with each other. Examples include payment

platforms, credit card processing and transaction systems. The development of this financial eco system has progressed more quickly than we expected.”

What are the specific benefits you have experienced with the Minkels infrastructure?

“We had already taken significant steps with engineers from Minkels to ensure that the Equinix infrastructure would seamlessly meet the needs of our customers worldwide. They are proven concepts - data centre solutions that we have developed in partnership with Minkels. The modularity of the Minkels products is particularly important. It gives our customers the flexibility they often demand. Furthermore, the Minkels Cold Corridors in Dubai give us the assurance that we can operate in an energy-efficient manner in Dubai and that there will be no hotspots, thus avoiding the risk of problems. Many people think that the price of energy in an oil rich city like Dubai is low; on the contrary, the price of energy is practically just as high as it is in Europe. Therefore, it is nice to be able to rely on the energy efficiency gained from Minkels products.”

You have been living in Dubai for two years now. What is your experience?

“As a family, we love it here. Approximately 85 percent of the people in Dubai are expats; therefore it is very international here. My two daughters, who are 8 and 14 years old, attend an international school with children of 70 different nationalities. There are about 500 houses in our expat neighbourhood and the children can play outside a lot. There are large malls and a lot of restaurants, you can go skiing and ice skating, and a lot more. I think that we will live here happily as a family for at least another five years.”

How about work?

“I have noticed that people do business here in a very positive and pleasant manner, which can be seen in the economic growth of Dubai, with an annual growth of 4 to 6 percent. I would have never thought of this region as a place to emigrate to, but the people here are so friendly and open, which is very inspiring and is a great reason to stay here for a long time to come.” ■

Minkels expands VariCondition® portfolio with the Vertical Exhaust Duct

The Minkels VariCondition® portfolio is comprised of a variety of data centre cooling solutions. However, there was one type of product missing, a 'chimney' to separate hot and cold airflows on the rack in an energy-efficient manner. With the launch of the VariCondition® Vertical Exhaust Duct (VED) - an airflow optimised, flexible solution that is easy to install - the Minkels cooling portfolio is now complete.

Advantages of the Vertical Exhaust Duct

- **FLEXIBLE USE:**
Compatible with varying ceiling heights.
- **FUTURE-PROOF INVESTMENT:**
Connects seamlessly with racks with a capacity of up to 15 kW.
- **EASY INSTALLATION:**
Attaches to system ceiling without mechanical attachment.
- **SEAMLESS INTEGRATION:**
Compatible with Minkels Racks and Cable Ducts.
- **OPTIMUM COOLING RESULTS:**
Thanks to tight integration with airflow optimised Minkels racks.

The ideal way to create energy efficiency in the data centre in a cost-effective manner is to separate hot and cold airflow. There are three ways to do this. Recent research by Uptime Institute, (2012) shows that a total of 44 percent of the users opt for 'cold aisle containment' - thus, closing off the cold corridors. And that 35 percent of users choose 'hot aisle containment' - closing off the hot corridors in the data centre. Furthermore, 21 percent of users create energy efficiency by placing a 'chimney' on top of the rack - which is also referred to as 'passive chimney containment'.

“21 percent of users opt for achieving energy efficiency via ‘passive chimney containment’.”

Minkels meets the needs of the first two user types with its Next Generation Cold Corridor® and the Free Standing Cold Corridor®, configured as a hot or cold corridor. In order to meet the 'passive chimney containment' need, Minkels has developed the VariCondition VED in close collaboration with key customers. Minkels paid close attention to what customers were looking for and implemented the necessary innovative features that fulfil the varying customer needs. The Minkels VariCondition Vertical Exhaust Duct is an extremely flexible 'chimney' solution, whereby its flexibility and ease of installation are key features.

VariCondition VED has an air duct on the return side, thus on the hot side of the rack. The vertical air duct is mounted on top of each rack in the data centre and connected to a hanging ceiling. The hot air that has been collected is then returned to the data centre via the central cooling system.

ASSEMBLY TIME AND EASE OF INSTALLATION

The flexibility of Minkels VariCondition VED is its compatibility with varying ceiling heights. The size of the air duct is fixed; it is a standard size of 490 x 490 millimetres. The height is very flexible and easy to adjust. With the standard version of VariCondition VED users can bridge a distance in height from 300 to 1,600 millimetres.

“A unique feature in the market is the innovative, retractable part of the solution,” says Bas Jacobs, product manager at Minkels. “It has a lot of

flexibility in terms of height, which allows you to bridge a relatively long distance. A sealing mechanism and rubber then provide an airtight attachment to the hanging ceiling. This sealing method saves installation time because no mechanical fixture to the ceiling is needed.

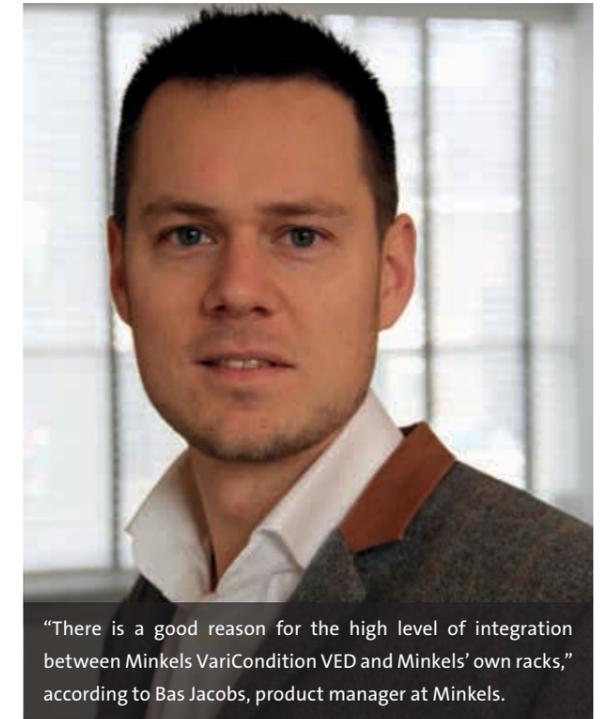
Being able to obtain higher temperature differences between hot and cold airflows provides energy efficiency in the data centre. However, under what kind of conditions is it worthwhile to deploy the Minkels VariCondition VED? “Whether VED is an option for your situation depends on the infrastructure that is already

in place in the data centre. It can also depend on the size of the centre,” cites Jacobs. “A great benefit of VariCondition VED is that elevated floors are not required. There is also no hidden infrastructure. Everything is in view, including the power source and cable duct system, which makes for easier maintenance. This solution gives engineers a very comfortable working environment.”

“Minkels VariCondition VED is capable of removing up to 2,250 m³ of hot air per hour. This means that the solution can even handle racks with a capacity of up to 15 kW.”

INTEGRATION WITH MINKELS RACKS

Minkels VariCondition VED has been specifically designed for use with Minkels racks. Even though VED is basically optimised for racks that are 600 and 800 millimetres wide, the standard formats in most data centres, the solution can also be used on racks of other sizes. Moreover, the Minkels VariCondition VED is flexible so that it can connect to racks of different depths - both 1,000 and 1,200 millimetre in depth. The system is also compatible with the Minkels Cable Ducts, which can still be mounted on top of the racks. There is a good reason for the high level of



“There is a good reason for the high level of integration between Minkels VariCondition VED and Minkels’ own racks,” according to Bas Jacobs, product manager at Minkels.

integration between Minkels VariCondition VED and Minkels’ own racks. Jacobs: “A Cold Corridor is flexible and can be used with different brands of racks. In this case, the Cold Corridor is the point of integration. This is not the case with the VariCondition VED. If you want to deploy an effective VED solution, all the components must connect together seamlessly, from beginning to end - from the 'chimney' itself, to the racks and the accessories. The airflows in the racks must be optimised. A preconfigured solution with Minkels VED and Minkels racks provides maximum effectiveness in terms of airflow optimisation and energy efficiency.”

UP TO 15 KW

Minkels VariCondition VED gives clients a future-proof investment. “We are currently seeing that heat output is generally about 6 to 8 kW. The VariCondition VED configuration enables you to remove 2,250 m³ of hot air per hour, which means that the solution can easily handle a rack with a power capacity up to 15 kW.” says Jacobs.

Meanwhile, the first clients have already deployed the VariCondition VED, including the University Medical Centre of Utrecht in the Netherlands and colocation provider Datum Datacentres in the London area, in the United Kingdom. Feedback from these and other initial clients has been used to further refine the product. ■



Minkels Free Standing Cold Corridor

The ultimate flexible solution for a phased implementation with various racks

EXCEPTIONALLY FLEXIBLE:

- A fully free standing aisle containment system.
- Offers 'pay-as-you-grow' options for separating hot and cold airflows in an energy-efficient manner.
- Can be used to create closed aisles independently from the IT racks.
- Provides the same energy efficiency immediately upon implementation as a standard Cold Corridor system with IT racks.
- Different types and sizes of racks can be adapted to the design.
- Ideal for retrofit situations.

NEW: Fire protection and physical security in European EN 50600 standard

In the past, Minkels had been asked to contribute knowledge to the Code of Conduct for Data Centers, the European guideline for building energy-efficient data centres. Minkels is currently involved in numerous international data centre standards. In particular, the addition of 'security' to the European EN 50600 standard is currently important for customers according to standards expert Niek van der Pas.

Niek van der Pas, standards expert at Minkels, is at the heart of different Dutch, European and global data centre standards. Standards are important for Minkels because it creates support for certain quality standards in the data centre sector. This puts Minkels in a better position to develop innovative and high quality solutions that adapt to the broad spectrum of needs supported by the market.

“Next Generation Cold Corridor® is a comprehensive module for aisle containment and rack level security.”

RACK LEVEL SECURITY

“In 2015 a completely new component will be added to the EN 50600, the first official European data centre standard,” says van der Pas, who contributed to the establishment of the EN 50600. “The newly added section about security, thus fire protection and physical security in data centres. The basis of this component is defined in the Dutch NEN NPR 5313 guideline, along with the guidelines for energy efficiency and availability/uptime. The key here is the use of a layered model with other security requirements for different security levels in the data centre. This standard forces data centre managers to add security at a lower level.”

EN 50600-2-5 sets requirements for different security levels, at the overall data centre level,

the server room, and thus also at the rack level. Van der Pas: “For instance, the standard specifies that rack level security must be connected to the data centre’s management system. A combination of security sensors, a keys system or cameras enables you to see who was at the rack and when. Moreover, the EN 50600 also includes a risk assessment. This guarantees that data security in the data centre is guaranteed down to the lowest desired level, the aisle containment and rack level.”

Minkels has a variety of solutions for security measures at different levels. For instance, the Next Generation Cold Corridor® provides a complete module for fire protection and physical security at the aisle containment and rack level. Minkels also has electronic security with card access systems in its portfolio, along with intelligent systems with RFID technology for authorising, registering and logging actions, so that you can check afterwards who was at a specific rack and when.

1,500 kg RACK LOAD

Other important changes to international data centre standards are energy-efficient construction of data centres and load balancing of racks.

The world standard ISO/IEC 3014-2 includes a ‘Designed PUE’ guideline. “The purpose of this



“This standard forces data centre managers to add security at a lower level, according to Niek van der Pas, standards expert at Minkels.”

standard is to enable users to already start thinking about how to build an energy-efficient data centre at an early stage, during the design phase. Modularity can be an essential component in order to be able to achieve specific low Power Usage Effectiveness (PUE) values.”

At the moment the IEC in subcommittee 48D is working on a global standard for racks and aisle containment, which van der Pas is also involved in as an expert. “This committee also adapts the former guidelines for the new standard in rack load. Currently, the maximum weight is still set at 800 kg, but the density and the weight racks have to support are on the rise. For this reason, rack loads up to 1,000 kg and 1,500 kg are also described, including a sample method for measuring the load”. ■

Vodafone Netherlands chooses Interconnect and Minkels data centre infrastructure

Modularity in the Minkels Next Generation Cold Corridors® gave Vodafone the capability to have racks with recesses in order to be able to house future systems of unknown dimensions.

Telecom operator Vodafone recently launched its SuperSwitch programme, a complete metamorphosis to reduce its twelve current data centre locations in the Netherlands to just three, high security data centres. The Interconnect data centre in Eindhoven is the only outsourced location in the new telecom infrastructure. Interconnect and Minkels provide Vodafone with the high reliability, flexibility and quality the company was looking for.

After a negative experience with a large outage in one of its data centres, Vodafone wanted to create more resilience in its telecom infrastructure. Therefore, Vodafone recently launched its SuperSwitch programme. The rollout is currently underway. The existing data centre infrastructure in the Netherlands that was built years ago at a time that the telecoms market was experiencing rapid growth, must now make way for a fully redundant data centre infrastructure with only three data centres - that can take over fully each other's role in cases of outages or disasters.

Environmental goals and maximum energy efficiency are also important to Vodafone,

which results in reduced energy usage, thus lower operating costs. They are also important for the company's strategic environmental goals to reduce its carbon footprint and to be a good corporate citizen. Interconnect exceeds these expectations with its highly energy-efficient Power Usage Effectiveness (PUE) of 1.15. The Minkels airflow optimised racks and the Minkels Next Generation Cold Corridors® that efficiently separate hot and cold airflows are key contributors to this energy-efficient PUE value.

NEXT GENERATION COLD CORRIDORS

The phased construction is expected to be completed by 2017. Vodafone's complete telecom infrastructure will then be housed in

the Interconnect data centre in Eindhoven and in two of its own data centres in Arnhem and another location. The Interconnect co-location data centre is the first Vodafone location in the SuperSwitch programme to be completed. In September 2014 Interconnect and Minkels have delivered two high security and highly redundant data centre rooms (2N+1) of 300 square metres each to Vodafone.

Minkels has installed a total of eight Next Generation Cold Corridors® in the two data centre rooms. Moreover, Minkels has placed many 19 inch racks and designed custom racks for Vodafone - including centralised network cabinets that have been optimised by Minkels

for a specific, innovative cabling system. The cables in this smart patching system have built-in sensors for self-management. Minkels has also supplied Power Distribution Units (PDUs) and cable management accessories for Vodafone's infrastructure.

"The Interconnect data centre and our own two data centres give us a good mix of initial investments and operating costs," says Jurgen Keulen, Program Manager at Vodafone The Netherlands. "Vodafone is extremely averse to risk, therefore, we are very critical of our suppliers. We stand for quality and expect the same of them as well. All elements of the infrastructure in the data centre must be of excellent quality, including the racks. It is also very comforting to know that Interconnect and Minkels provide us service as a single team and that they are very flexible when it comes to meeting all our unique needs. We have received a lot of custom work, which we can then purchase as a service from Interconnect. We get all that for a fair price and that is truly superb."

INTERCONNECT

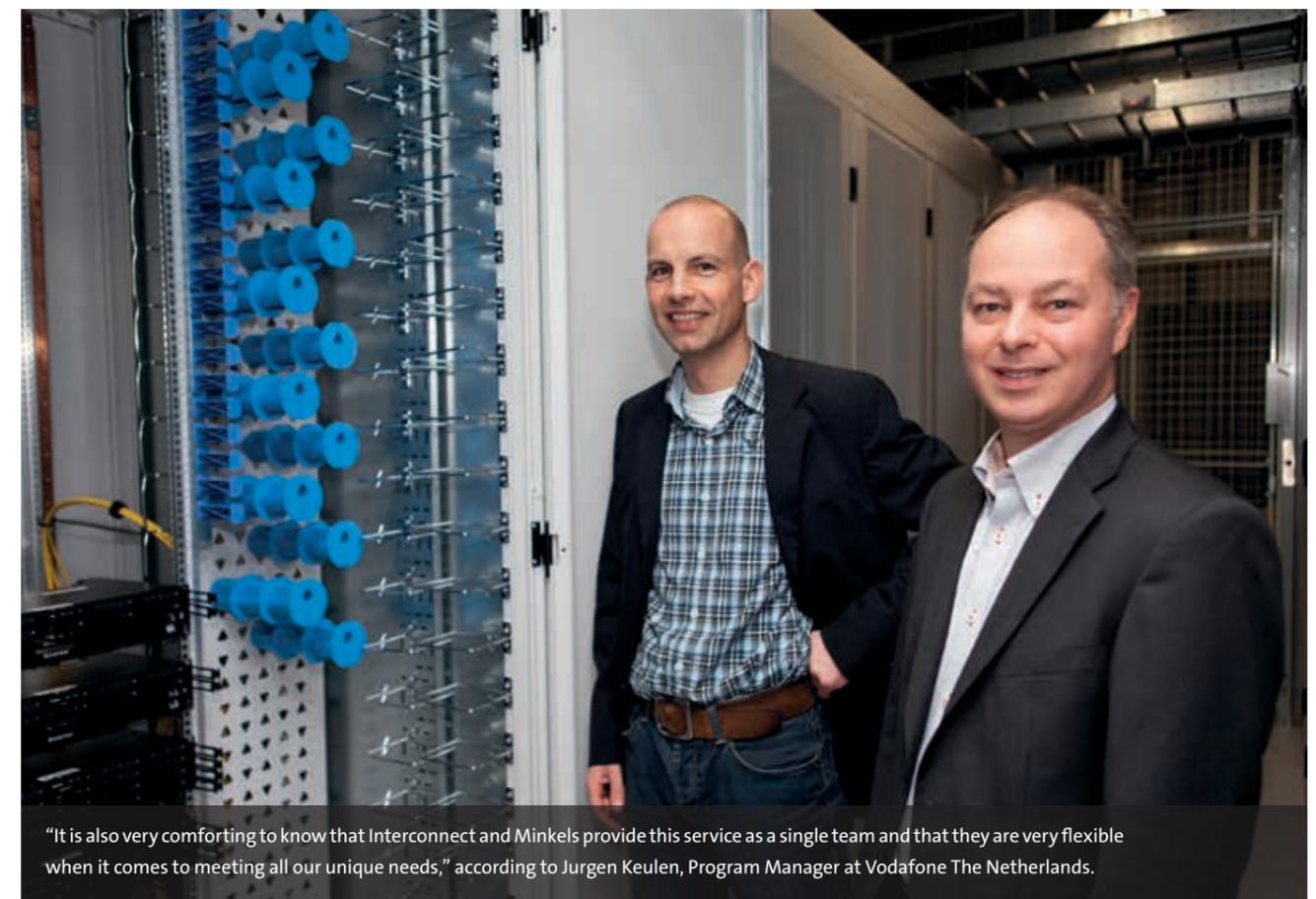
Interconnect supports ICT professionals by supplying extremely reliable ICT infrastructure, including co-location, cloud hosting (IaaS), connectivity (broadband) and Hosted Telecom from Interconnect's own Tier3 data centres in 's-Hertogenbosch and Eindhoven.

As an internet service provider, Interconnect values redundancy highly, also in the connectivity in its data centres. For this reason, the racks at Interconnect have an A, B and C feed and the internal and external connections (to Amsterdam, etc.) are equipped with multiple network paths. Interconnect has 75 employees.

VODAFONE THE NETHERLANDS

Vodafone The Netherlands is a subsidiary of the Vodafone Group, and is one of the largest mobile telecommunications companies in the world in terms of earnings, with more than 434 million mobile customers and 9 million customers on its fixed network. In the Netherlands, Vodafone has 5.3 million customers and earnings of 1.89 billion Euros. A total of 3711 people work for Vodafone The Netherlands.

Figures as of 31 March 2014



"It is also very comforting to know that Interconnect and Minkels provide this service as a single team and that they are very flexible when it comes to meeting all our unique needs," according to Jurgen Keulen, Program Manager at Vodafone The Netherlands.

UK-based Datum Datacentres selects Minkels' VED system for its cutting-edge, London area facility

Datum Datacentres, a UK provider of cloud-optimised co-location and managed services, part of the £45M Attenda IT services group, has chosen Minkels UK to deliver its VariCondition® Vertical Exhaust Duct solution, also referred to as “passive chimney containment” - as a means to provide optimised separation of hot and cold air in Datum’s energy-efficient and highly resilient data centre in Farnborough. Datum’s Farnborough data centre (Datum FRN1) is a 2N, high-resilience facility featuring advanced security measures and an available capacity of more than 1,000 co-location racks. Adiabatic cooling is just one of many unique features in this mission-critical facility, ensuring operational excellence and maximum energy efficiency with a calculated PUE of 1.25.

Minkels delivered an integrated solution, with not only the Vertical Exhaust Duct but also airflow optimised 19-inch racks, vertical power bars, Power Distribution Units (PDUs) and a variety of additional data centre accessories included.

MINKELS UK

The adiabatic flooded airflow design implemented in Datum’s facility in

Farnborough uses ambient air to provide free cooling. Large fans located in a separate room along the length of the data hall combined with a separate ceiling return air path enable extremely energy-efficient, predictable cooling for high and low densities, whilst removing the cooling plant and associated water service risks completely from the IT space. Instead of using raised floors for cold air supply in the room, the fans supply cold air to the entire room - at very low speeds.

“Minkels products are solid and very well manufactured and designed.”
Paul Garner, Datum Data Centres.

To create maximum energy efficiency, Datum needed the Vertical Exhaust Duct to feed the air back to high ceiling voids, meeting their building specific requirements. The modular characteristics present in Minkels’ entire product portfolio ensure a seamless integration of VariCondition® Vertical Exhaust Duct with the adjacent data centre infrastructure.

“At an early stage, Minkels invited us to their facility in High Wycombe, to have a look at all the Minkels data centre solutions available,” said Paul Garner, Data Centre Manager at Datum Datacentres. “There we became incredibly impressed with Minkels and their products. Each of these products is beautiful in its simplicity. It’s solid and very well manufactured and designed.”

Datum decided to select the Minkels’ newly launched VariCondition® Vertical Exhaust Duct solution, as well as a range of their other data centre products. “The flexibility of this solution and the superb integration with all the other data centre components is really impressive,” said Garner. “We just got a flat pack of modular components delivered, after which Minkels’ team of engineers built them together into an outstanding, custom made product.”

CUSTOM QUOTE ENGINE

“We’re absolutely delighted with the implementation,” added Garner. “Our clients are impressed by the look and feel of Minkels’ products and the innovative containment design. The technical results are also very good, with no hotspots and a very low PUE figure. Minkels’ products have been a contributor to the extreme resilience of our facility and its cost-effectiveness.”

Garner also noted that Minkels’ ordering process is very straightforward, with a sales configuration tool (Sofon) and predictable pricing. “I’ve never seen this before in the market. To place any orders, you don’t have to make a phone-call or to wait on a reaction. You just enter the product specifications into the system, after which your custom-made product gets manufactured and delivered. It’s very reliable, with a quick turnaround time at very competitive prices and a predictable invoice.” ■



Minkels supplied fully custom-built centralised network cabinets to Vodafone. Minkels has optimised these racks for a Vodafone-specific smart patching system, whereby cables have built-in sensors for self-management.

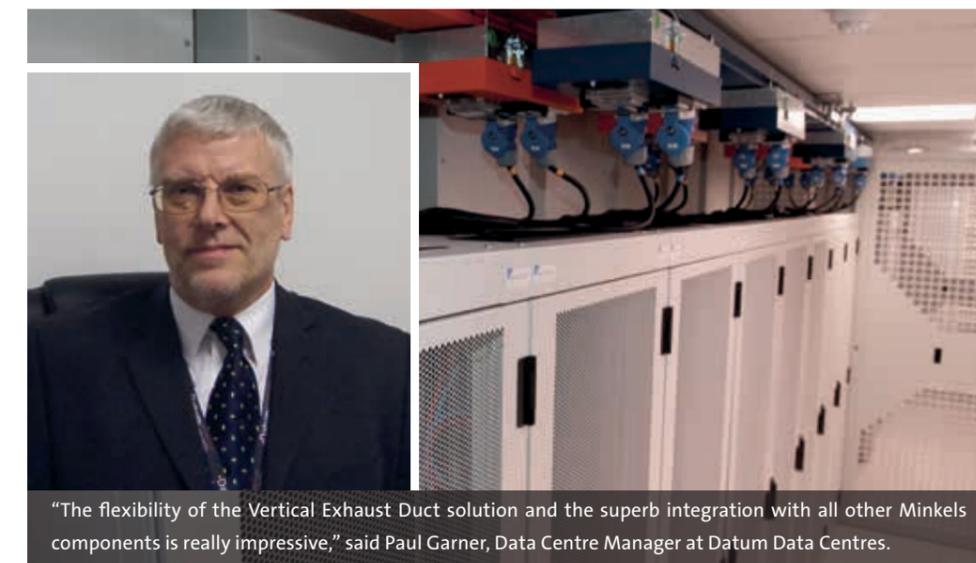
INNOVATIVE SOLUTIONS

“Minkels leads the market in data centre innovation,” says Rob Stevens, director and co-owner of Interconnect. “Minkels shares ideas with us and is capable of supplying the best components for Vodafone. At Interconnect, we prefer not to use a different rack supplier, as this could result in unnecessary complications and with Minkels we are certain that we can deliver the quality we wish to offer.”

The modularity of the Minkels Next Generation Cold Corridors® has been implemented right down to the details. This means for instance that Vodafone can opt to have racks with

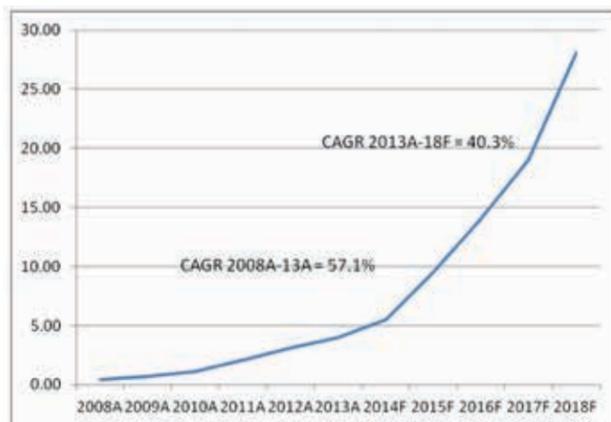
recesses made in the Cold Corridors, in order to be able to house future systems of unknown sizes. Keulen: “This illustrates how future-proof this data centre infrastructure is. The modular design of the Minkels systems ensures that we can work with this infrastructure for at least 15 years.”

Now that the first of the three data centres is ready for use, this coming year the existing Vodafone data centre in Arnhem will be rebuilt. At the same time, the design of the third data centre that is still to be built will commence. The Interconnect and Minkels infrastructure in Eindhoven will serve as the blueprint. ■



“The flexibility of the Vertical Exhaust Duct solution and the superb integration with all other Minkels components is really impressive,” said Paul Garner, Data Centre Manager at Datum Data Centres.

The five data centre management challenges for 2015



Source: BroadGroup

The amount of data to be processed by data centres will increase immensely each year between now and 2018; and the share of cloud services will undergo significant growth worldwide, according to research conducted by Cisco. This has an enormous impact on the IT infrastructure in data centres. However, there are more developments to keep in mind. The experts at Minkels have put together an overview of the five key data centre management challenges for 2015.



■ Increase operational efficiency

■ Flexible

■ Maximise security

■ Increase energy efficiency

■ Cost-efficient

The Minkels Free Standing Cold Corridor

“Data growth and the cloud bring dynamics to the data centre - modularity is the answer.”

The enormous growth of data worldwide will lead to three times the network traffic in data centres in 2018 compared to current traffic. No less than 76 percent of all network traffic in 2018 will pass through cloud-related infrastructure according to recent figures released in the Cisco Global Cloud Index, an annual study published by Cisco.

Cloud and data growth leads to a higher, fluctuating density in data centres and to the ad hoc need to expand network infrastructure. The Minkels experts are also noticing that the life cycles of ICT infrastructure in the market is getting shorter and shorter. A cycle used to last about 3 to 5 years; now, it is 2 to 3 years. This increased dynamic presents new challenges that demand flexibility in data centre environments. ■

Challenge 1: Achieving agility and flexibility in the data centre

Data growth and the cloud have increased the dynamics in the data centre, which demands flexibility and resilience. Modularity is the answer. The advantage of modularity is that technical adjustments can be made quickly and with flexibility, in line with new trends.

Minkels has recognised this market demand at an early stage. This is why modularity has already been implemented in our portfolio right down to the construction level, so that custom modifications can be made quickly and easily with the aid of standard components. They include data centre racks, Cold Corridors®, VariconPower® busbar systems with smart tap-off boxes, row-based cooling systems, hybrid PDUs, VariControl® monitoring systems, and also the Minkels Archimod UPS units.

Challenge 2: Cost-efficient data centre layout

More and more users continue to have a need for scalable aisle containment solutions. Scalability gives users the capability to (quickly) expand their IT infrastructures step-by-step in an energy-efficient manner.

Minkels recently launched the Free Standing Cold Corridor® in order to meet this market trend and customer demand. This ultra-modular aisle containment design with single wall panels, roofing and doors, gives corporate and commercial data centres a scalable and cost-efficient ‘pay-as-you-grow’ model in order to optimise airflows, thus creating energy efficiency for low startup costs (CAPEX). Users have full flexibility when it comes to specific racks and equipment - including storage and network equipment.

Challenge 3: Increase energy efficiency in the data centre environment

There is currently work being done on the first European standard for data centres, the EN 50600. This new standard states that ‘modularity’ is a requirement in order to be able to achieve a ‘Designed PUE’ with specific low PUE values. A data centre without modular components will never be able to achieve the ultimate level of energy efficiency.

Minkels has implemented energy efficiency and the modular principle throughout its entire portfolio. Not only Minkels Cold Corridors®, airflow optimised Varicon® racks and VariCondition® cooling solutions to help users to achieve a low PUE, the modular tap-off boxes with VariconPower® busbars including metres to monitor power consumption also provide many options to boost energy efficiency.

Challenge 4: Increase operational efficiency in the data centre

A seamless integration between the separate data centre components - during the entire life cycle of the data centre infrastructure - is an important condition towards achieving operational efficiency and being able to take advantage of the benefits of flexibility and scalability. The question is, how do you ensure operational efficiency in today’s world of cloud-computing and ever-expanding data.

Minkels has focused a lot of attention on ensuring that the whole product portfolio is designed to achieve maximum integration among the different data centre solutions. No matter whether it involves integration options within its own portfolio or integration options with solutions developed and marketed by other suppliers.

Challenge 5: Maximise security in server rooms

The ‘layered model’ defined in the new Dutch NEN NPR 5313 standard, which forms the foundation for the European EN 50600, states that data centre security must meet certain specific requirements at each of the different levels, or layers.

Minkels has a variety of rack and Cold Corridor® security solutions in its portfolio. These solutions not only refer to cylinder rack locks and Cold Corridors®, but also to electronic security with pass code systems and intelligent systems with RFID technology for authorising, registering and logging actions. Minkels also supplies security sensors, side panel locks from the inside, door contact points (to check whether a door is closed) and emergency power supply for locks.

Infostrada and Minkels design mobile data centre

for German Reality TV show recording



"It is nice to work with Minkels; we have learnt a lot from the knowledge shared by their engineers," according to Peter Bruggink, CTO and co-owner of Infostrada.

Infostrada received an enquiry from a German broadcasting station about whether the company could provide technical infrastructure and work flow for the live recording of a TV reality show. Infostrada then decided to partner with Minkels and develop a mobile data centre (MobileDatacenter) and special software (GrandCentral). With this new export product, Infostrada can now control the workflow of the largest reality show in Germany from its Dutch corporate office in Hilversum.

Just before Christmas in 2014, the Infostrada MobileDatacenter was transported on a lorry to Berlin where the reality TV series was being filmed. A team of editors from the German station with more than 200 employees including editors and directors, can record, manage, analyse and edit

all content within 48 hours via the mobile data centre, transforming it into a worthy television production. From the control room at the corporate office, Infostrada can manage the IP-based, digital workflow in the mobile data centre via its software monitoring system,

Grand Central, which was developed in-house. The data centre is a closed system with a total of 13,000 management control points, which in the case of the German reality TV series, processes no less than 8 Terabytes of data per day.

2.5 MILLION EUROS IN EQUIPMENT

Infostrada has been a steady Minkels customer since 2011 for racks and Cold Corridors in the corporate data centre in Hilversum. For this innovative project, the development of the MobileDatacenter, Infostrada chose Minkels again. "I have built many technical spaces and have had many different data centre suppliers," says Peter Bruggink, CTO and co-owner of Infostrada. "Therefore, I know exactly what I have to watch out for and Minkels is still the best choice. Minkels is a highly valued and reliable company that delivers quality, just like we do, and that appeals to us."

Downtime was not an option for the new MobileDataCenter. Therefore, it had to be designed with a lot of redundancy. The equipment in the data centre also had to be protected against shocks and jolts because the data centre will be regularly transported

by lorry and the ICT equipment is valued at 2.5 million Euros.

In order to provide superb housing for the 140 servers and all other equipment for audio-visual productions, the engineers from Minkels and Infostrada shared the necessary CAD drawings with each other - because the design of the infrastructure and the integration of the different data centre components had to be fully accurate, right down to the millimetre.

INTEGRATED SOLUTION

The final design has thirteen reinforced Minkels 19 inch racks in a Minkels Cold Corridor® in order to separate hot and cold airflows in an energy-efficient manner. Each rack is redundantly equipped with two Minkels VariconPower® PDUs: intelligent Power Distribution Units for A and B power supply. Furthermore, four Minkels

"Minkels is the best choice, a highly valued and reliable company that provides quality, just like we do."
Peter Bruggink, CTO and co-owner of Infostrada.

VariCondition® DX, row-based cooling systems supply a total of 88 Kilowatts of efficient cooling power. In order to guarantee maximum uptime, Infostrada has also implemented the Minkels VariControl-S Environmental Monitoring system. Fully integrated with the racks and Cold Corridor®, the Minkels Cable Ducts on top of the racks provide a tidy and efficient system for cable management.

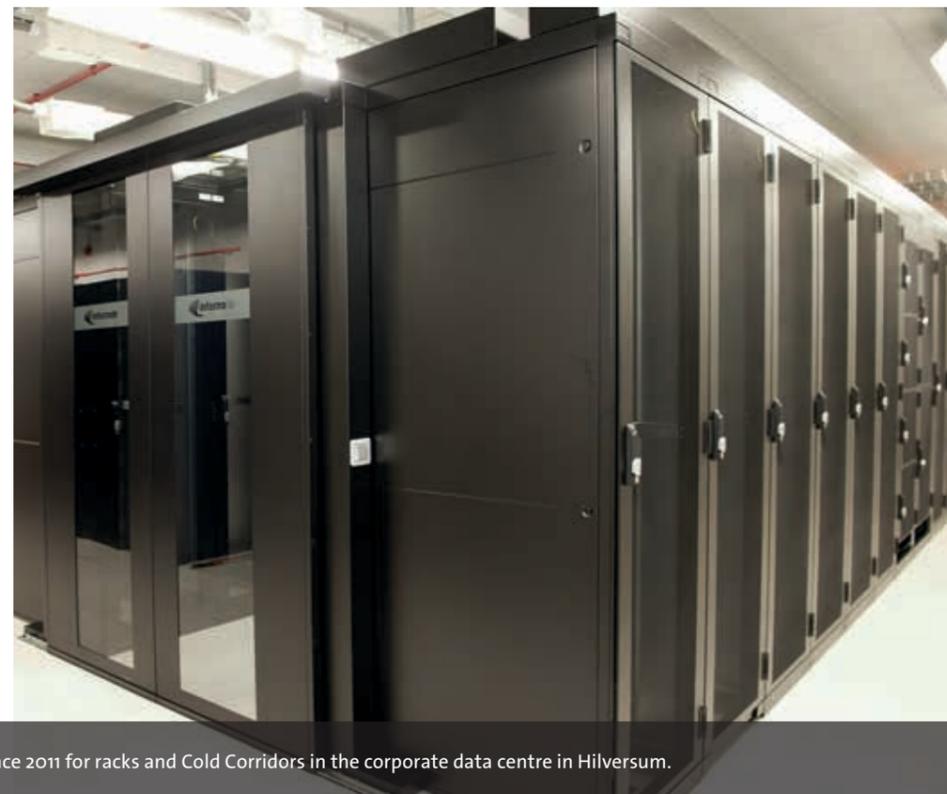
INFOSTRADA BROADCASTING SERVICES

Infostrada is a Managed Services Provider (MSP) that operates in the international market for broadcasting services. The company supplies a variety of services via different brands for (live) recording, editing, post production, data management, content distribution and for streaming audio-visual content.

Infostrada provides its (on-demand) services to content owners such as the Dutch public and private broadcasting stations, but also increasingly more to clients like Netflix, Apple, Google and Xbox. The corporate office of Infostrada is located in the Netherlands, in the Mediapark in Hilversum. The organisation has approximately 700 employees.

"It is nice to work with Minkels; we have learnt a lot from the knowledge their engineers shared with us," says Bruggink. "In addition, the extreme modularity of their products and the built-to-order custom work from the Minkels factory also played a role in the fast time-to-market of this innovative project. It is wonderful to see the outcome of this partnership. The connection between the intelligent PDUs, the VariControl-S Environmental Monitoring system and GrandCentral, ensures that all 140 servers start up in sequence at the time certain applications are initiated."

"This is the birth of a new export product. This product is not only great for television shows but also for events like the Olympic Games. I expect that the MobileDatacenter will also be deployed internationally for corporate organisations that have temporary peaks in server load." ■



Infostrada has been a steady Minkels customer since 2011 for racks and Cold Corridors in the corporate data centre in Hilversum.

Airflow optimisation by Vertical Exhaust Duct (VED)

VED system completes Minkels cooling portfolio



Minkels completes her cooling portfolio with the airflow optimised VED-system. Herewith Minkels offers her customers maximum flexibility to generate effective air separation via the Cold Corridor, Hot Corridor, Vertical Exhaust Duct (VED) system or combinations.

The Vertical Exhaust Duct (VED) system can be used as a hot air return duct between the rack and ceiling. Hot air which exits the IT equipment can be efficiently transported back to the central cooling system. The VED system is telescopic and can easily be adjusted to the correct height. Combine the VED system with the Next Generation Cold Corridor to separate the hot and cold airflows from each other into the extreme!

ADVANTAGES

- Maximum energy efficiency
- No hotspots
- Very low PUE

▶ www.minkels.com/VED_EN

The combined data centre expertise of Minkels and Legrand



Minkels Next Generation Cold Corridor with Legrand modular busbar systems & smart tap-off boxes.

Parent organisation, Legrand's solutions are very interesting for Minkels customers. Among other things, Legrand's systems for electrical distribution, network cabling and cable management add important functionality to the current solution that Minkels delivers. That is why Minkels has, for example, integrated Legrand's Archimod UPS into its own portfolio. Next time Legrand's product range will be significantly expanded in the Minkels' portfolio.

There is extensive synergy between Legrand's products and Minkels' solution portfolio. While Minkels is a leading player in the international data centre market, a strong and solid brand with integrated data centre concepts including energy-efficient housing, cooling, monitoring and power distribution, Legrand is a global specialist with proven technologies in the field of, primarily building-based, electric installations.

Extending Minkels' product range with Legrand data centre-related solutions, means that customers are now offered even more of a total solution. An energy-efficient total solution, because both Minkels and Legrand set high

standards with respect to the creation of energy efficiency in the data centre environment. How closely Minkels' and Legrand's solutions are related, becomes clear when we consider some examples.

“Legrand has a wide range of UPS systems, busbars, capacitor banks and transformers.”

AVAILABILITY

Minkels' Cold Corridor® solutions, where hot

and cold air streams are separated in an energy-efficient manner, generate, on average, energy savings of 30 percent in the data centre. Energy efficiency has the added advantage that the reliability, and, therefore, the availability in a data centre environment increase dramatically. Legrand's solutions in the field of electrical distribution are an important addition to Minkels solutions, with products that can further increase the availability of a data centre.

To ensure availability in data centres, Legrand has, among other things, a wide range of UPS (Uninterruptible Power Supplies), busbars, switching and distribution devices. Legrand's UPS models, are customised for different types

of data centres and server rooms and very efficient. Like Minkels' products, Legrand's UPSs are modular. This ensures that a UPS is staged and hence can grow together in a cost effective manner with the power requirement of a customer. This modularity also provides redundancy and consequently, continuity benefits during maintenance works.

The modular busbar systems which Legrand markets under the brand name Zucchini, are also of interest for Minkels customers' with respect to increasing the efficiency and availability in the data centre environment. Just as with Minkels' own busbar solution, the modularity enables Zucchini's various (low to high power) busbar system users to set up a power grid in the data centre, in a very flexible way, taking customer-specific configurations into account with respect to racks and Cold Corridors®.

“Legrand's LCS2 fibre optic cabling solution is of great interest for LAN and SAN environments.”

CABLE MANAGEMENT

Within its own range of cable ducts, Minkels delivers a solution which is developed in-house and fully integrated with Cold Corridor® solutions and Varicon® racks. Cable ducts can be integrated and placed in the same visual style on top of Cold Corridors, whereby network and power cables in separate compartments can implement the server and network infrastructure. Legrand, as a global specialist in the field of cable management, offers



The Minkels Archimod UPS System provides a modular UPS solution with 20 to 120 kVA power capacity for server rooms in mid-size companies and corporate environments to ensure uninterrupted power supply with uptime guarantees for the ICT environment in server rooms.

extensive opportunities to go one step further and also include the building-based installations. Examples of this are cable carrier systems, network cabling and modular distribution cabinets

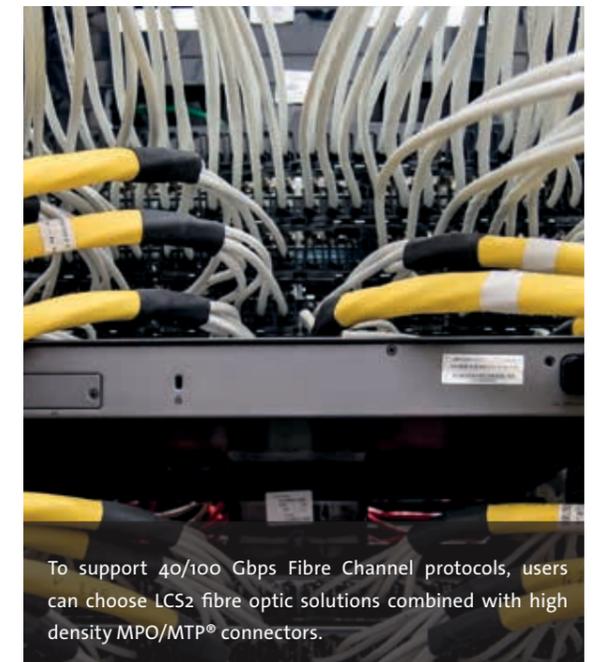
For example, Legrand also has an LCS2 structured cabling product line in the range, for zero fault solutions and routing systems. Legrand offers both copper-based and fibre optic cable management, including Legrand RJ45 and fibre optic connectors. LCS2 fibre optic cabling can be used to create cable management architectures, for example, a LAN and SAN infrastructure in a data centre. Legrand's LCS2 cable management systems have OM3 and OM4 performance levels in multi-mode, and OS1 and OS2 in single mode.

Legrand also has the necessary cable management solutions available for high density environments. To support 40/100 Gbps Fibre Channel protocols, users can select LCS2 fibre optic solutions combined with high density MPO/MTP® connectors. Together with Legrand's LCS2 network identification systems, users will be able to achieve a neat, orderly, and therefore, secure network infrastructure.

FIRE PROTECTION AND ACCESS SECURITY

Minkels has a variety of security solutions in its portfolio at rack and Cold Corridor® level. Such as cylinder locks on Varicon® racks and Cold Corridors® for example, electronic security with

access card systems, intelligent systems using RFID technology for authorisation, registering and event logging operations. Additionally Minkels offers, among other things, security sensors, door contacts and emergency power supply for locks. Furthermore, in the Next Generation Cold Corridor® Minkels has a special module for



To support 40/100 Gbps Fibre Channel protocols, users can choose LCS2 fibre optic solutions combined with high density MPO/MTP® connectors.

fire protection available that allows integration with a variety of fire management systems.

The 'shell model' within the new Dutch NEN NPR 5313 and the European EN 50600 standards, provides guidelines for security at various levels in a data centre. Minkels' and Legrand's combined security solutions enable users to implement all the guidelines within these standards.

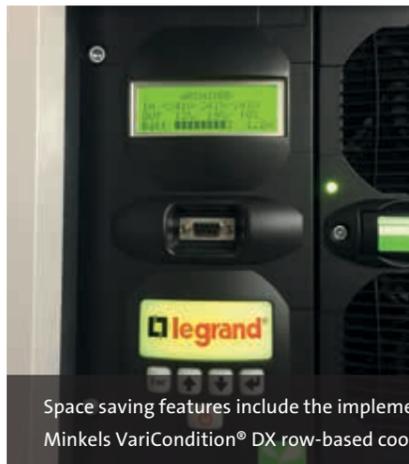
For example, Legrand's IP dome CCTV camera system offers the option of performing sophisticated surveillance, inside and/or outside a data centre, combined with Legrand's access control system, this gives the necessary tools to set up adequate monitoring - management. With Legrand's map-based and biometric systems, additionally, conclusive identification checks can be introduced at different levels. Also in terms of fire protection Legrand offers added value, among other things, with fire inhibiting cable entry systems.

These are only a few of the many data centre solutions that Minkels and Legrand offer together. For Minkels' customers, in any case, this means that they are now provided with even more of a total solution. For more information about Minkels and Legrand's solutions, visit the website:

datacenter.legrand.com ■

Freightliner chooses Comms Room Services to implement Minkels' server room solution

Freightliner, a leading global rail freight company providing logistic services across the UK, Europe and Australia, has chosen UK-based Comms Room Services to implement a fully integrated server room infrastructure based on Minkels products. Minkels was chosen for its high reliability data centre products and its capability of providing a fully customised and integrated solution.



Space saving features include the implementation of a Minkels Archimod UPS, Minkels VariCondition® DX row-based coolers, and a customised Minkels cold aisle enclosure.



Freightliner experienced a fire in the building directly underneath the room that housed their server room. This resulted in the renewal of the server room

“The Minkels solutions ideally suited Freightliner’s high expectations.”
Mark Allingham,
Comms Room Services.

and therefore provided them the opportunity to implement a data centre infrastructure of the highest quality using standard products available in the data centre market. Comms Room Services, a UK based provider of server room and data centre design and build projects, recommended to Freightliner’s IT Management an integrated and flexible data centre infrastructure utilising Minkels’ modular, row-based cooling solution.

“Having experienced fire in their server room, Freightliner’s IT Management could see the advantages of solely selecting high quality data

centre products for the new build,” said Mark Allingham, CTO and co-owner of Comms Room Services. “Freightliner was dedicated to achieve a 100 per cent uptime for their new facilities, to ensure resilience and continuity in their IT environment. Minkels’ products ideally suited these high expectations.”

LOW FLOOR-CEILING HEIGHT

The new server room, a prefabricated building with only 35 square metres of total space available, provided Comms Room Services and Minkels with some restrictive conditions. “Given the space constraints of the room, the

modularity of Minkels’ self-contained hot aisle enclosure with built in air-conditioning and UPS systems proved to be a valuable contribution to the project,” said Mark Allingham. “The low floor-ceiling height made it a challenge to set up the right airflow pattern. To get around that issue, the Minkels products were ideal for it without intensive engineering.”

Minkels delivered a customised hot aisle containment solution, an enclosed aisle with airflow optimised 19-inch cabinets. Minkels VariCondition® DX row-based coolers - inverter-driven units - were used for energy-efficient, targeted and space saving cooling of Freightliner’s equipment. Another space saving feature included the implementation of a Minkels Archimod UPS which has modularly structured power capacities from 20 to 120 kVA. The Minkels UPS is located inside the aisle containment solution, which provides not only simplified connectivity but also blends seamlessly in with cabinet housings and provides a unique setup in the market with comprehensive server room advantages.

MINKELS MODULAR UPS

“This all-in-one modular Minkels UPS system, a fully populated and generator backed UPS, provides Freightliner with great synergy

between their power supply and the cold aisle enclosure,” said Allingham. “Together with our implementation of an Argonite fire suppression system, electrical installation and an environmental monitoring system, this provides Freightliner with a fully customised and integrated server room solution.”



“The modularity of Minkels’ self-contained hot aisle enclosure with built in air-conditioning and UPS systems proved to be a valuable contribution to the project,” said Mark Allingham, CTO of Comms Room Services.

Comms Room Services is a long-term partner of Minkels in the UK. Mark Allingham: “Minkels is a good quality solution provider within the global data centre market. Minkels products are best of breed, and their installation team is also fantastic. Again, this data centre project was done hand in hand with Minkels engineers and Freightliner is very pleased with the results.” ■

ABOUT MINKELS PARTNER, COMMS ROOM SERVICES

Comms Room Services is a UK provider of comprehensive technical services and solutions for server room and data centre design and build projects; spanning the full range of data centre build activities, from refurbishing and upgrading existing data centres right through to planning and building green field data centre implementation. Comms Room Services specialize in refurbishment of live data centre environments. The company is located in the greater London area, in Berkhamsted, Herts.

www.commsroomservices.co.uk

March

Data Center World

11 & 12 March • London (United Kingdom)

DatacenterForum

25 March • Baden (Switzerland)

InfoSecurity

25 & 26 March • Brussels (Belgium)

April

Solutions Datacenter Management

1 & 2 April • Paris (France)

October

DatacenterForum

7 October • Château de Copet (Switzerland)

November

InfoSecurity

4 & 5 November • Utrecht (The Netherlands)

IT Room Infra

17 November • 's-Hertogenbosch (The Netherlands)

DatacenterDynamics

18 & 19 November • London (United Kingdom)

