

GREEN

# FUTURE

CUSTOMER MAGAZINE FOR CHILLER OY, A TRENDSETTER IN ENERGY SOLUTIONS • 2 • 2012



## SHOPPING CENTRE VETURI PLACES HIGH DEMANDS ON ITS AIR- CONDITIONING



▶ TURKU T-HOSPITAL IS THE HOSPITAL OF THE FUTURE - NOW ▶ A PIECE OF FRANCE - STOCKHOLM'S FAMOUS GRAND HOTEL ▶ THE POPULAR CHILLER-SELECTION PROGRAMMES RENEWED

# THE EVER TIGHTENING REQUIREMENTS OF THE ENERGY FIELD

► EDITOR-IN-CHIEF

**The near future** for Europe sure does not look very bright. Even here in Finland news flow seem to consist of layoffs and employee negotiations. However, there is no need to despair. There is still building and refurbishing taking place. And new constructions are more energy-efficient than ever, thanks to their high level HVAC solutions.

A good example is the expansion of the University of Turku Hospital's T-hospital. It is an exceptional building in many ways, none the least because of its ingenious ventilation and cooling solutions. The patient rooms or departments can be isolated if in need. They have their own separate HVAC systems and equipment. The hospital's nerve centres, electrical, UPS and telecommunications facilities use our SMART Vari™ standard air-conditioning machines.

Alongside the T-hospital, the construction of the Pharmaceutical Service Building of the Hospital District of Southwest Finland is almost ready. There are about 800 m<sup>2</sup> of cleanrooms in the entire building. There are strict requirements for a variety of functions. The building's two high efficiency Chillquick Thermo™ heat pumps not only warm, but can also cool, if necessary, the ventilation system. In addition there is a specific coldwater station which dries the air in the cleanrooms. The telecommunications, electricity and UPS- premises use standard air-conditioning equipment also supplied by us.

The newly built shopping Centre Veturi in Kouvola is the largest and also the most modern shopping centre in Southeast Finland. The energy efficient and ecological shopping centre is heated geothermally by a heat pump. For the special shop premises we have supplied a total of 330 BOX Vari™ cassette fan coils, of varying sizes.

The highlight of the year for the HVAC industry was, by far, the Chillventa Trade Fair – organised in Nuremberg on 9-10 October. We were presented with new products and ideas and showed our own solutions. Read more about the trade fair on [www.chilleren/news](http://www.chilleren/news)

Please learn more about our projects in this renewed GREEN FUTURE -magazine. I wish You all a pleasant autumn.

**Heikki Lahdenperä**  
Managing director, Chiller Oy



Pauli Juppi

GREEN FUTURE 2 • 2012

## CUSTOMER MAGAZINE FOR CHILLER OY

- 2 Editorial ► Time for energy efficiency
- 3 News ► Construction and real estate
- 4 Perfect setting for a shopping centre
- 8 A hospital of the future - now ► Turku's new central hospital
- 12 Only the best is good enough
- 14 A piece of France in Sweden ► Grand Hôtel Stockholm
- 15 The popular Chiller- selection programmes renewed

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# NEWS FROM THE RESEARCH, CONSTRUCTION AND REAL ESTATE SECTORS

Investments are being made to increase energy efficiency in all kinds of buildings. Modern engineering solutions for building services are at the forefront of development.

## ► SAVINGS THROUGH GEOTHERMAL HEAT AND LED LIGHTS

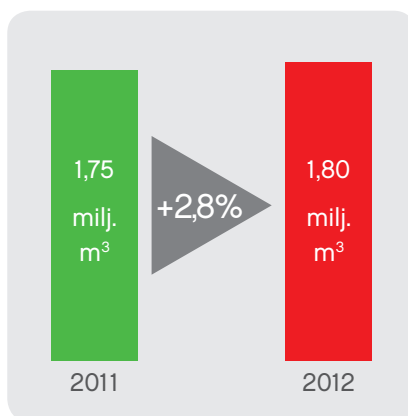
According to a recent study by VTT and the University of Eastern Finland, the use of geothermal heat and LED lighting provides the possibility to significantly reduce the energy consumption of buildings. When compared to the T8- fluorescent lamps most commonly used in buildings, LED light tubes consume less than 50 percent in



electricity. Geothermal heat pumps, in turn, can reduce the electricity consumption of a building by up to 60 percent, especially outside district heating networks. According to studies, the magnitude of savings depend on the location and the length of pump's collector circuit.

► **Additional information:** <http://vtt.fi/news/2012/120912>

## ► A SLIGHT INCREASE IN THE AMOUNT OF BUILDING PERMITS



The long-term drop in the cubic volume of building permits began to increase slightly in July this year. A total of 1.80 million cubic meters of building permits were issued in July 2012, which is 2.8 percent more than the year before. Additional details can be found through the preliminary construction and housing statistics data of Statistics Finland.

► **Additional information:** <http://www.tilastokeskus.fi/til/ras/index.html>

## ► WASTE HEAT TO BE UTILIZED

For the first time ever, large Finnish industrial and energy companies are searching together means to utilise waste heat. According to Motiva a Finnish company promoting efficient and sustainable use of energy and materials, the recovery of excess industrial heat would reduce the annual Finnish need for thermal energy by an amount of roughly over four TWh. The amount corresponds to over 10 percent of the amount of district heat used in Finland.

► **Additional information:** [http://www.motiva.fi/ajankohtaista/motivan\\_tiedotteet/2012/teollisesta\\_ylijaamalammosta\\_huomisen\\_lammonlahde.5201.news](http://www.motiva.fi/ajankohtaista/motivan_tiedotteet/2012/teollisesta_ylijaamalammosta_huomisen_lammonlahde.5201.news)



Stockphoto

## ► INNOVATIONS IN CLEAN ENVIRONMENTS DEVELOPED IN FINLAND

With the "High-tech hospital" projects, hospitals, businesses and VTT, The Technical Research Centre of Finland, have developed means to improve hygiene levels and control infections in preventive manner. New forms of cooperation has led to new ground braking solutions to be found. Five different hospitals are already utilizing them in the Pirkanmaa region.

The strict and extensive control of hygiene is of very important in preventing infections. In Finland, about 750 patients die annually as a result of an infection connected to their treatment, and not such an illness which causes an immediate risk of death. The costs of treating these infections range between 200–500 million euros a year.

Many innovations developed for, among others, the electronics, pharmaceutical and food industries can nowadays be utilized in health care. The quality of air, air-conditioning and cleanliness of, among others, the operating departments and infection departments were inspected at five hospitals in the Pirkanmaa region, and new solutions were sought for the purification of ventilation systems. The study results will be utilised in planning of the renovation of Hatanpää Hospital's operating department.

► **Additional information:** <http://htsairaala.vtt.fi>

KUVIO



► Text: Dakota Lavento ► Images: Aki Loponen

The opening last September of the largest and most modern shopping centre in Southeast Finland, Shopping Centre Veturi, provides the perfect conditions for shopping. The air cooling of the shops is carried out by Chiller BOX Vari™ -cassette fan coils ideally situated in the ceiling structures.

**The moving** symbol of the Shopping Centre Veturi, located along main road 6, is a steam train, Little-Jumbo, that used to serve VR and comes from famous Finnish long-distance runner **Martti Vainio's** steam train park located in Haapamäki. Regardless of its compact size, the Little Jumbo weighs 52 tons. Then again, despite its giant external dimension, Shopping Centre Veturi is quite easy to perceive when inside. The curved form only reveals a small enough section of the entirety at one time. A department store K-Citymarket is located at one end and a modern ironmonger's K-Rauta at the other end. In between the shopping centre offers specialty shops and a restaurant world for all tastes.

If the spacious and light premises of the Shopping Centre Veturi provide visitors with **a sense of déjà vu**, the customer

must certainly have visited the Shopping Centre Karisma, which was completed in Lahti at the beginning of the year. The architect **Rainer Lindberg** has utilised experiences from implementation of mega-class shopping centres. The Finnish trading sector company Kesko has, in recent years, invested in improving its shopping centres and shopping environments. Veturi, with its 100 M€ costs, belongs to Kesko's largest individual retail investments. With its two floors, Veturi has 48 000 square meters of leasable premises altogether and about 80 stores. It is also the sixth largest shopping centre in Finland. The Shopping Centre Veturi was constructed using the project management service model of the consultancy firm Pöyry CM Oy. Pöyry were responsible for the management of the entire construction project and the guidance of the designing process, acquisitions, the management of the construction worksite and occupational safety, as well as the main builder obligations.



▲ Anttila's footwear and bag department provides plenty of space and products. The open ceiling solution reveals the structure's integrated Box Vari™ -cassette fan coils.

◀ Juha Loisa has held great responsibility in the Veturi building services project. The comfortable conditions are largely to his credit.

## COOLING REQUIRED

Just weeks to the September opening of the shopping centre, the corridors and shop premises are quite busy. Interiors are being finished and products carried inside. The pervading smell of new textiles fills the air in fashion stores.

"Textile dust is easily created in shops selling clothes and textiles. The cassette fan coils taking care of the cooling and air-conditioning of the shop premises have hard work to do. The filters have to be changed regularly", says the HVAC supervisor **Juha Loisa** from Pöyry. "Fortunately it is easily done with these Chiller BOX Vari™ -cassette fan coils", he points out.

A BOX Vari™ -Cassette contains a large pleated filter instead of a normal filter, which is efficient even in these challenging conditions. A cartridge fan coil is well suited to ceilings, as there is no need to move boards to the side during maintenance times. The conditions in the shopping centre are relatively constant, but individual differences are large. The lighting in the shops causes large heat burdens and cooling is required even during the winter season. Mere cooling through ventilation would not have been efficient enough, so premises specific adjustable fan coils were required. The cooling of Veturi's air-conditioning during summertime utilises free cooling. There are a total of 330

Chiller BOX Vari™ cassette fan coils in the shops, of different sizes and powers, with controllers, single and double-mounted. The technical areas, such as for IT, substations and transformers have standard air-conditioning equipment (CWUC120) in use. The condensation water of the cassette fan coils can be handled, either by pump or free drainage. The dimensioning of Veturi was carried out with great care.

"A separate drain, leading from 330 machines, would have been too cumbersome and not a very aesthetic solution in an open ceiling system. On the other hand, the experiences of using pumps have not always been promising. Power determinations have to be precise, so that drainage is not needed. It requires precise control, in respect of the dewpoints", Loisa points out.

## ENERGY EFFICIENT ENTIRETY

BOX Vari™ -cassette fan coils were not only selected for the Shopping Centre Veturi for their practicality, but also due to their energy efficiency. The energy consumption of an unit in a normal room is a mere 6 W. The energy efficiency of all of the solutions that are used in Shopping Centre Veturi were really under the spotlight, since Kesko is committed to the principles of social responsibility, by investing in the energy efficiency of their business and working premises.

"We work hard to provide our clients with sustainable consumption patterns. The reduction of our own environmental impact is also very important", stresses Shopping Centre Manager, **Jari Koistinen**.

The starting point in the planning of the Veturi's building systems was its environmental sustainability and energy efficiency. Veturi's geothermal heat system is capable of producing about half (1.5 MW) of the shopping centre's required heating energy, and geothermal heat, in fact, already provided heat during the construction period.

"All in all, 110, about 200 m deep holes, were drilled in the real estate plot for the geothermal heat system. The heat production has proved to be very good in deed. The system produces a water temperature of 50 °C. In summertime we are able to fill back the field using the condensation heat from the premises", says the department manager of Pöyry's Building Solutions Department, HVAC expert, **Jorma Asikainen**.

The condensation heat of the shops' refrigeration systems is also recovered. District heating is only used during very cold temperatures.

#### ENVIRONMENTAL CLASSIFICATION HELPS PLANNING

The energy efficiency and environmental sustainability of the Shopping Centre Veturi will be, on its completion, in accordance with the **BREEAM environmental assessment method**. BREEAM (Building Research Establishment's Environmental Assessment Method) is the most globally used real estate assessment method, which can be used to decrease a building's operating costs, as well as improve working and living conditions. Achieving this classification is also recognition of the building's low environmental burden.

In the BREAAAM classification, buildings are evaluated on the basis of seven different subject groups. With the total points achieved, the building can be granted the grades, passed, good, very good or excellent. BREEAM is suitable for the evaluation of all building types. The classification can also be given to existing buildings.

Other existing environmental rating systems are the American **LEED** (Leadership in Energy and Environmental Design), the Finnish PromisE and the, under trial, Architects' Council of Europe Open House. •

#### CASE VETURI

- ▶ **Developer:** Kiinteistö Oy Tervaskangas c/o Ruokakeskos
- ▶ **Project management contractor:** Pöyry CM Oy
- ▶ **Architectural design:** Arkk. tsto Innovarch Oy
- ▶ **Structural design:** Wise Group Finland Oy
- ▶ **Building services and automation, electrical, and refrigeration systems design:** Olof Granlund Oy
- ▶ **HVAC-contracting:** Consti Talotekniikka Oy, Skanska Talonrakennus Oy Talotekniikka and Kouvola Putkityö Oy
- ▶ **Fan coil units:** Chiller Oy
- ▶ **Electrical contracting:** Sähkösuomilampi Oy and Sähköneliö Oy
- ▶ **Building automation contracting:** Fidelix Oy



Shopping Centre Veturi provides a pleasant shopping environment, with fresh and brightly lit interiors.



## HVAC SOLUTIONS BRING SAVINGS IN SHOPPING CENTRE VETURI

The energy efficiency of the solutions used in the Shopping Centre Veturi have a great significance on the environmental sustainability of the entire shopping centre.



**BOX Vari™ -cassette fan coils** are highly energy efficient and consume less energy than a LED-lamp. The roof directed air control of the revolutionary EC-lattice guarantees a pleasant and draft free interior climate.

- ▶ The new EC-grille allows for substantial energy savings
- ▶ A pleasant climate, no draft feeling
- ▶ Fan and valve adjustment from 0 ... 100%
- ▶ 50% less maintenance costs
- ▶ Modbus interface as standard
- ▶ Long intervals between filter maintenance
- ▶ Plug-in connection

The typical user locations for the use of **the SMART Vari™ standard air-conditioning machines** are IT-premises, electronics, measurement and testing rooms.

- ▶ The appreciable temperature coefficient is as high as possible and the floor area that is required by the machine is as little as possible.
- ▶ Any necessary maintenance procedures can be performed through the machine's front panel.
- ▶ The microprocessor adjustment that is used to control the machine is user friendly and keeps the room conditions within the desired limits.
- ▶ It is possible to obtain different levels of filters for the units according to desired requirements.
- ▶ The low noise level allows free placement of the units.
- ▶ The equipment is intended for continuous operation.

**BOX Vari** | **SMART Vari**

▶ Read more: [www.chiller.fi/air-conditioning](http://www.chiller.fi/air-conditioning)



► Text: Dakota Lavento ► Images: TYKS ja Pasi Leino

The T-Hospital in Turku, which will be completed at the end of the year, is a significant hospital project, even on an international scale. Its cooling solutions of ventilation are advanced and energy efficient.

**Turku** University Hospital's T-hospital is attractive. It does not look, feel or smell like a hospital at all. It is simply an advanced construction: functionally and technically one of the world's best buildings. The pleasant interiors, created by interior designer **Pekka Kojo**, bring to mind a cosy spa or a hotel. The working areas and patient rooms are open, relaxing and pleasant. The colours not only provide guidance, but also create an atmosphere; refreshing and calming. The abundant natural light is a pleasant and energy efficient solution. On the other hand, artificial lighting is used to create peaceful waiting areas and active function rooms.

#### ROLE OF A PIONEER

TYKS has been a pioneer in improving and expanding its hospital buildings. Small wonder that the T-hospital clearly stands apart from older hospitals, primarily those built during the 1950s

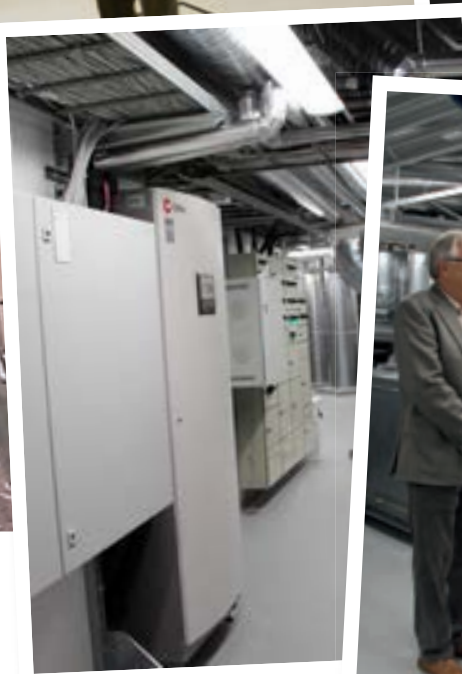
and 1960s. It doesn't just look different, but everything in the planning solutions has taken note of modern nursing service requirements.

The wait for a new hospital in Turku has been long. Turku Provincial Hospital was built in 1938. Overcrowding became a problem already in 1946, when it became the university's teaching hospital. Relief was provided in 1968 with the completion of the U-hospital. The construction of "the hospital of the future" was envisioned already the following decade.

The size of the first stage of the T-hospital to be completed (sections A, B and C in 2003) was 25 000 m<sup>3</sup>. Section D was completed in 2009, with section B being heightened the following year, the gross area of which was 23 000m<sup>3</sup>.

The new sections of the T-hospital, E, F and G will be completed in December and introduced next year in March and April. The general expansion of the new parts is about 63 000 square metres. It houses the hospital facilities and operations that require vast techni-





◀ *The Turku T-hospital will be an impressive sight when finished at the end of the year.*

◀ *The developer's HVAC specialist Juha Kettunen (left) and HVAC designer Juhani Kokko represent together almost eight decades of experience in HVAC design in Finnish hospitals.*

▼ *Juhani Kokko and the managing director of Chiller Turku Jari Lingberg (right) are more than pleased with the whole project.*

ques, such as 14 operating theatres, comprising an operating department, intensive care department, equipment maintenance, cardiology treatment area and imaging facilities.

During the spring of 2006, the total cost of the project was estimated to be about 200 million euros, of which the construction part was close to 130 million euros. The construction projects of TYKS won't just culminate at these, as a continuation project is already expected as early as next year.

### A TOP PROJECT

The T-hospital has been called a top project in hospital construction. Even internationally, it is advanced concerning hospital activities as well as technical innovations. During the construction period, the site got visitors from Europe and Japan.

Overall, the starting point has been the vision of the T-hospital as a top class hospital, with an emphasis on patient-based practices and a high quality of care, as well as results.

***Welcome to get better, says the whole hospital building to patients and visitors alike.***

The entire building bids you welcome to get better, from the front door onwards.

The entire T-hospital has been planned, keeping the patients as the central point of all the operations.

The patients are taken care of in the hospital building and, at the same time, according to the disease groups in TYKS, by the operational areas. The nature of a modern hospital concerns continual change. The starting point for all the designing at the T-hospital has concerned modifiability. Flexibility has been a prerequisite in both facility solutions, as well as, for example, building technology solutions. For this reason, the new expansions have also utilised previously identified technology towers.

### MODIFIABLE AND ISOLATABLE

Flexible and modifiable hospital facilities are required, for example, to fight global epidemics. In this respect, there is nowhere else in Finland such a progressive location as the T-hospital.

# THE ENERGY CONSUMPTION IN THE NERVE CENTRES OF THE HOSPITAL IS OPTIMISED WITH CHILLER'S NEWLY DEVELOPED WARM GAS HEATING SYSTEM.



A number of air and contact isolation rooms have been built for different departments. The T-hospital is prepared to carry out the large scale isolation of entire departments or parts of them as needed. In order for a patient room or department to function as an isolated facility, separate from the rest of the hospital's ventilation system, the air insulated section must have its own separate air conditioning system and machinery.

In accordance with hygiene requirements, the air handling machines require the highest levels of purification (VDI-standard).

## RELIABLE COOLING

Good quality indoor air in a modern hospital requires a functioning air-conditioning cooling system so that common areas and patient rooms will remain pleasant even during hot summers. Cooling machines will take care of the cooling, for example, in operating theatres, patient and examination rooms, as well as sampling areas.

Many developed hospital machines require fully standardized conditions, in terms of both temperatures and air humidity levels. In some promises air has to be dried too. Chiller's standard air conditioning machinery is used in the hospital's nerve centres,

electrical, UPS and telecommunication areas. The energy consumption is kept in check by a new warm gas heating system developed by Chiller.

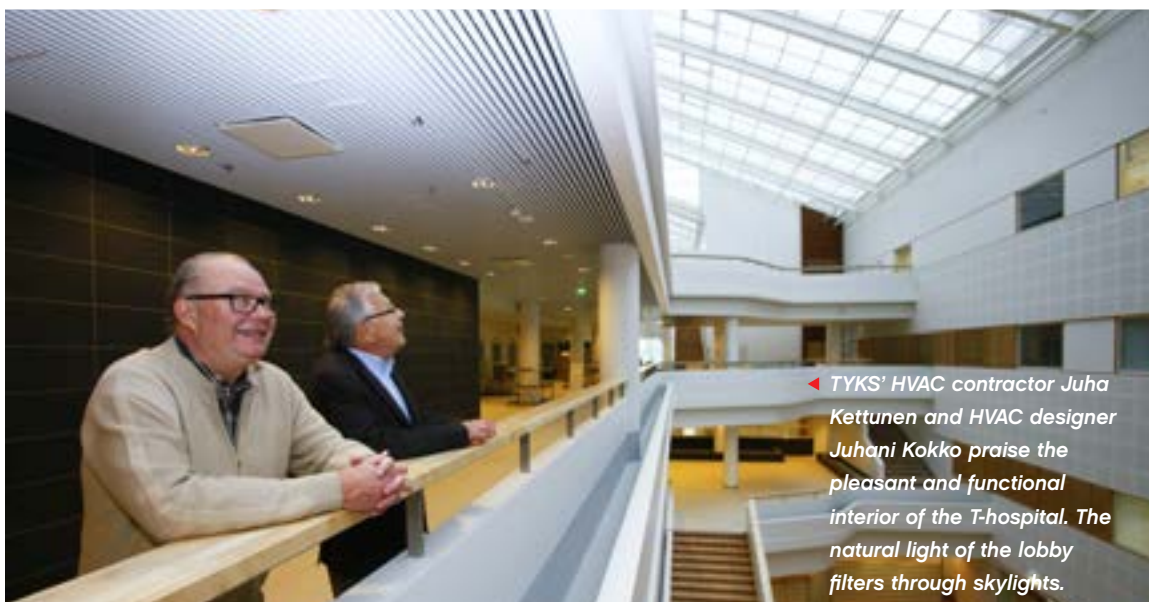
A modern hospital is an energy intensive entity. All solutions towards reducing energy use were utilized from the planning stages onwards. The significance of a hospital's ventilation system is of utmost importance, as it has to operate 24 hours a day, 365 days a year, and many special areas, such as operating theatres, require exceptionally large amounts of ventilation. A hospital must function in all conditions, so back-up systems are needed. The large amount of equipment consume energy and solutions that improves it are significant.

## EXPERIENCE IN THE RING

"Such a modern hospital and fine technology cannot be found elsewhere", boasts developer TYKS' HVAC technology specialist **Juha Kettunen**. He should know better than anyone else as he has, during his long career, visited a great many hospitals around the world. He has been serving TYKS for 38 years, so was already part of the renovation of the old building. The HVAC- planner of the T-hospital



◀ Sections E, F and G of the T-hospital, project managed and contracted by YIT Rakennus Oy, will be completed in December 2012 and taken into use during spring 2013.



◀ TYKS' HVAC contractor Juha Kettunen and HVAC designer Juhani Kokko praise the pleasant and functional interior of the T-hospital. The natural light of the lobby filters through skylights.



▲ Chiller Oy Turku's managing director Jari Linberg inspecting the settings of a SMART Vari™ - standard air-conditioning machine.

## T-HOSPITAL SOLUTIONS

As a result of the air-conditioning cooling, the general areas and patient rooms of the T-hospital remain pleasant, even during summer heat waves. The stable conditions are guaranteed with the SMART Vari™ -air-conditioning equipment.

- ▶ **Chillquick™-cold water station with free cooling (CGIW-120, 300kW)**
  - The machines in the operating theatres, patient and examination rooms, sample facilities and the carrying out of basic ventilation procedures.
- ▶ **SMART Vari™ -air-conditioning unit with warm gas heating (energy control optimisation)**
  - Units in electrical, UPS and telecommunication facilities
- ▶ **BOX Vari™- cassette fan coils, with fluent control**

**Chillquick™** | **BOX Vari™** | **SMART Vari™**

▶ Read more: [www.chiller.fi/air-conditioning](http://www.chiller.fi/air-conditioning)

expansion, **Juhani Kokko**, from the Engineering office Åke Jokela Oy, has even a couple of additional years of experience on Kettunen.

"When I came into the building, Juha was already here", Kettunen laughs.

Long term and good cooperation has born fruits. Experience is a premium commodity in hospital constructions, for which there are no guidebooks, neither can assistance be found in construction regulations. A new hospital requires the development of new solutions and introductions. According to Kokko, technology has developed greatly during the 2000s.

## SECTIONS E, F AND G OF THE T-HOSPITAL

- ▶ **Architectural design: Sweco Paatela Architects Oy**
- ▶ **HVAC-design: Engineering office Åke Jokela Oy**
- ▶ **Main and frame contractor: YIT Rakennus Oy**
- ▶ **Automation contractor: Siemens Osakeyhtiö**
- ▶ **Ventilation contractor for sections E and F: YIT Kiinteistötekniikka Oy**
- ▶ **Ventilation contractor for section G: Saipu Oy**

"In the development of new and ever effective solutions, cooperation with, for example, HVAC area manufacturers, has been worth its weight in gold", Kokko stresses.

Unit manufacturers can provide information on the development of technologies, bringing about new possibilities and, on the other hand, be informed about set requirements concerning the hospital environment and functional influencing factors. Every project functions as a sort of further education programme in hospital construction to those who are involved, accumulating Finnish building technology expertise in specialist construction locations. In the future, this expertise could be the new Nokia. •

## T-HOSPITAL YEAR 2013

- ▶ **Total surface area of 108 000 m<sup>2</sup>**
- ▶ **7 outpatient clinics**
- ▶ **13 wards, 309 sick rooms**
- ▶ **14 operating theatres**
- ▶ **68 intensive care and surveillance places**
- ▶ **About 1 600 employees**



# ONLY THE BEST IS GOOD ENOUGH

► Text and images: Dakota Lavento

At the same time as the latest expansion of the T-hospital of TYKS, a strikingly beautiful building was constructed in the neighbourhood. The requirements for the construction solutions and HVAC techniques were the same as with the T-hospital - the best premium quality.

**The Pharmaceutical** building of the Hospital District of Southwest Finland, located close to the T-hospital, accommodates the hospital pharmacy of TYKS. The building cost about 25 M€ and is a combination of a pleasant office building, impressive storage facility and an ultra-modern pharmaceutical.

## CLEAN AIR

The pharmaceutical service building has about 800 m<sup>3</sup> of cleanrooms. The basic foundations for the good indoor air conditions are a large airflow, efficient filtration and the correct distribution of air.

Concerning the cleanrooms used in the preparation of medicines, the requirements of the materials and equipment used are very strict, similar to the industrial production of pharmaceuticals. The equipment needed for the ventilation and its cooling requires high reliability, energy efficiency and easy maintenance. All of the components of the ventilation system have to be as easy to clean as possible. For example, the surface of all the equipment for the pharmaceutical service premises must be able to endure external chemical disinfectants and the same demand on the cleanroom areas for pharmaceutical preparations relate to all the surfaces and other fittings.

## ACCURATE DESIGNING

The location's HVAC-designer **Jyrki Vuorio**, from the Engineering office Åke Jokela Oy and HVAC-engineer **Jarno Salminen** from

TYKS, as the representative of the developer, have had to face demanding task. The construction of the Pharmaceutical service building has required accurate room specific condition requirements for all the building's functions and 91 rooms with different requirements. To be able to design very good indoor conditions for each and all takes excellence and precision. Everything must be precise, so that the conditions on the part of all the areas can comply with official requirements concerning the preparation and storage of medicines, taking into account air fluctuation, temperature, relative humidity and pressure differences.

## ENERGY EFFICIENT OPERATION

Cleanrooms need a great deal of air, thus, the correct dimensioning of the ventilation, as well as the entire energy efficiency, are emphasised in the designing of the system. The energy efficiency of the pharmaceutical service building's ventilation heating and cooling systems is also necessitated by TYKS, as the project developer. Two high-efficient Chiller Thermo™ heat pumps (CHT-80, total thermal heat 700 kW) can also cool, when required, the building's ventilation system. The air cooling heat pump system of all the premises does not produce enough cold water. A cold water station is required to dry the air of the cleanrooms.

The building's telecommunication, electrical and UPS areas have Chiller's precision air-conditioning units. Due to the warm gas system, their energy efficiency is very good. The cooling of The T-hospital's IT- data centre located in the building is also taken care of by precision air-conditioning units with heat pumps. •

- ▼ The service employees for the carefully determined indoor conditions of the Pharmaceutical service building.



- ◀ SMART Vari™ -air-conditioning machines are used in Electrical, UPS and telecommunication facilities.

## THE PHARMACEUTICAL SERVICE BUILDING OF THE HOSPITAL DISTRICT OF SOUTHWEST FINLAND

- ▶ Floor area: 5352 m<sup>2</sup>
- ▶ Volume: 33400 m<sup>3</sup>
- ▶ Total area: 7911 m<sup>2</sup>
- ▶ Developer: The hospital District of Southwest Finland/ TYKS
- ▶ Main contractor: Rakennusliike SRV-Asunnot Oy
- ▶ Architectural design: Architects office Sigge Oy
- ▶ HVAC-Design: Engineers office Åke Jokela Oy
- ▶ Electrical design: Electrical engineering office Matti Leppä Oy

### CHILLER -EQUIPMENT SOLUTIONS

#### Pharmaceutical building:

- ▶ 2 x Chillquick Thermo TM- heat pumps (CHT-80, total 700 kW heat)
- ▶ Chillquick™-cold water station, for the drying of cleanroom air (CGIW-80, 250 kW)
- ▶ SMART Vari™ -air conditioning machines for the cooling of the IT-machine hall

#### Precision air conditioning machines for clean areas:

- ▶ SMART Vari™ -air conditioning machines with warm air heating (energy regulation optimisation)
- ▶ Machines in electrical, UPS and telecommunication areas
- ▶ BOX Vari™ - cassette fan coils with smooth control

ChillquickThermo™ | Chillquick™

SMART Vari™ | BOX Vari™

▶ Read more: [www.chiller.fi/air-conditioning](http://www.chiller.fi/air-conditioning)



## BOX VARI™ - SUPERIOR ENERGY EFFICIENCY



**BOX Vari™**  
All-in-One Air-conditioner

The new BOX VARI™ -cassette fan coil combines style, practicality and high quality. It is very energy efficient and consumes less than a LED-lamp. The revolutionary upward directed air control of the EC-lattice guarantees a pleasant and draft free interior environment.

BOX VARI™ -cassette fan coil integrates seamlessly with a variety of interior solutions. The technology is safe and the service requirements are considerably small. The unit is manufactured in Finland and is thoroughly pre-tested.

BOX VARI™ represents a highly convenient installation, use, service- operational concept.

- ▶ The new EC-grille allows significant energy savings
- ▶ A present indoor environment, draft free
- ▶ Fan and ventilator adjustment 0...100%
- ▶ 50% less service costs
- ▶ Modbus-connection as standard
- ▶ Minimum service required for the filters
- ▶ Plug-in connection

#### ▶ Additional information and retailers:

Chiller Oy, Louhostie 2, 04300 Tuusula, Finland  
Tel. +358 9 2747 670 · [www.chiller.fi](http://www.chiller.fi) · [info@chiller.fi](mailto:info@chiller.fi)

[www.chiller.fi](http://www.chiller.fi)

# A PIECE OF FRANCE

► Text: Dakota Lavento ► Images: Grand Hôtel Stockholm

The famous Grand Hôtel Stockholm is a concept in itself. It is one of the great sights of the city and perhaps, Sweden's most luxurious hotel. It has functioned as a venue for bombastic banquets and glamorous celebrations, as well as a place to stay for celebrities and fun lovers since 1874.

**Grand Hôtel** represents a small part of France, on the Swedish mainland. The hotel was founded by Frenchman **Jean-Francois Regis Cadier**. The construction work on the hotel building began in 1872.

The hotel is located in a prime position, opposite the Royal Palace and Gamla Stan. The hotel is already well known for its perhaps a bit attractions: a classical Swedish veranda with buffet tables, the pompous Cadier-bar and a restaurant ran by **Mathias Dahlgren**, currently boasting two Michelin stars.

At the same time, Grand Hôtel is both traditional and modern. The five star hotel has 300 rooms, 31 of which are suites. The hotel accommodates normal tourists, as well as the rich and famous, in addition to influential characters; politicians, musicians and world-renowned film stars. Hotel guests are royalty and Nobel Prize winners. One of the finest suites, the 85 m<sup>2</sup> Nobel suite is located on the top floor of the building. The room possesses a giant double bed and the bathroom has a double sized bath, as well as a steam sauna. If additional space is required, the nearby Flag suite can be reserved, with an area of 195 m<sup>2</sup> available.

The first Nobel Prize event was held in the hotel's Hall of Mirrors in 1901. The event was held there until 1929, whereupon it bloated to be too large for the hall and was moved to Stockholm City Hall. Award winners still stay with their families at the hotel and the visit of St Lucia takes place on the 13th of December.

High-class hotels treat their famous guests with discreetness, although guests that have already passed away would surely not complain if mentioned as previous guests. The following have stayed over in the Grand Hôtel: **Martin Luther King**, Princess **Grace** of Monaco, old blue eyes **Frank Sinatra** and the mysterious legend **Greta Garbo**.

The legendary hotel manager **Wilhelmina Skogh** built an extension to the hotel, Grand Hôtel Royal in 1909, the crown jewel of which is the Winter garden. During the 1930s, Jazz dances were held there. The **Wallenberg** family took over the hotel in 1968. In 1974, the hotel celebrated its century of existence by making a permanent restaurant on the popular summer veranda. It was inaugurated by the beloved Prince **Bertil** of Sweden.

The ageless luxury hotel has never at any point been able to rest on its laurels. The hotel is maintained in exemplary fashion. Only the best will do – as for the renovation of the ventilation system that took place at the end of 2000, with the Chiller Studioline™ - fan coil units being selected. •



## CHILLER- EQUIPMENT SOLUTION

**Studioline™- fan coil units** are equipped with six row and one path cooling coil units. The equipment that was supplied to the Grand Hôtel Stockholm operates through district cooling water 8/18 °C. They consume only a fraction of the energy that is used by other traditional fan coil solutions.

**STUDIOLINE™**

► Read more: [www.chiller.fi/air-conditioning](http://www.chiller.fi/air-conditioning)



◀ A new selection programme will be taken into use at the end of 2012.

# VALINTAOHJELMAT UUDISTUVAT

► Text: Dakota Lavento ► Image: Pauli Juppi

The familiar Chiller cooling unit selection programmes facilitating the work of designers and consultants, renewed during the autumn. A fully renewed selection programme for Chillquick™- cold water stations and heat pumps is already fully in use. New selection programmes for the cassette fan coils and fan convectors are being finalised and will be ready for use by the end of the year.

**The popular** selection programmes have already been in use for over 15 years. These were developed to be easy to use and provide clear tools to improve the work of designers and consultants in the selection of machine units.

"The old programme was however too rigid for current needs and function mainly in the selection of the main components", product development manager **Ari Aula** points out.

In the new programmes there are significantly more options so the equipment and accessories can be customised in a project specific manner and the technical selections be honed in a dimensioning programme.

## NEW PROGRAMME QUICKLY INTO USE

The old selection programme for cold water stations is no longer in use so please start using the new programme as soon as possible!

Please register and get the codes using an electronic registration form: [www.chiller.fi](http://www.chiller.fi) and select **Programmes** from the bar on the upper right hand side.

## FEEDBACK IS WELCOMED

Even large changes to the new database-orientated programmes are easy.

"We gladly welcome all kinds of development proposals, since such service programmes are never fully complete. There is always something to develop and improve", Aula says. •

## SUPPORT IN THE USE OF THE NEW PROGRAMMES

► Selection programmes: [kalle.helenius@chiller.fi](mailto:kalle.helenius@chiller.fi)

► Codes, machines, etc: [ari.aula@chiller.fi](mailto:ari.aula@chiller.fi)

## THE RENEWED SELECTION PROGRAMMES PROVIDE MANY IMPROVEMENTS

*The selection programme for cold water stations and heat pumps allows precise dimensioning of cooling and heating machine units, as well as design and selection of various additional modules. The programmes will provide designers customised documentation, such as schematics, electronic images, dimensional sketches and work summaries.*

- *The programmes will serve designers better and speed up their work significantly*
- *The new programmes are part of the Chiller client portal and converse with the PDM-system*
- *Sales may transfer the selection data to a tender calculation and from there, offers can be accepted for production*

► Read more: [www.chiller.fi/programs](http://www.chiller.fi/programs)

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- ▶ Additional information and retailers:  
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