



HEALTHCARE



Hoogstraat Rehabilitation Centre: Where Tradition meets Digital Patient Care

The Hoogstraat Rehabilitation Centre in Utrecht uses a professional wireless network from Germany to enhance digitalization

Whenever a patient checks into the Hoogstraat Revalidation Centre, the stay usually is for longer. Having a long history in rehabilitation and offering a broad expertise in child- and adult-rehabilitation, the clinic is one of the top addresses in the Netherlands when it comes to recovery after an accident or injury. It employs more than 600 people and houses 140 beds.

Renovation Phase

The original building in the Rembrandtkade was built around 1948. "The IT network resembled more like a cable clutter than like a modern networking infrastructure," remembers Mark Nuijten, head of IT and automation at Hoogstraat and continues: "What we needed instead was a stable, powerful Wi-Fi solution allowing us to replace the old telephones and beepers of the staff and set up a fast Wi-Fi connection for our staff as well as for our patients."

The renovation of the interior offered the perfect opportunity to get rid of the outdated IT infrastructure, and the ideal supplier for the network was soon to be found: German-based network manufacturer LANCOM Systems. With the help of the local system integrator and wireless expert Lumiad from Utrecht the rehabilitation centre found an ideal partner for implementation and testing of the network.

The renovation itself was carried out in two phases, between January 2014

and August 2015. The first phase included a complete gutting of the original building, reconstruction and redesign of the interior. During this phase all patients and employees, as well as the rehabilitation equipment and even the IT network were moved to a temporary location nearby. Once the reconstruction work was finished, the new network was installed, with all patients and staff moving back into the building in Rembrandtkade.



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Mark Nuijten, head of IT and automation at Hoogstraat

Digitalization through Wi-Fi

One of the main reasons for replacing the existing wireless network was the wish to implement a modern Electronic Health Record System (EHR). These digital versions of a patients' paper charts are real-time, patient records that make the collected information available instantly and securely to authorized users like nurses or doctors. Typical EHRs contain medical and treatment histories of patients, but the stored information can exceed standard clinical data offering a broader view on the patient's health status.

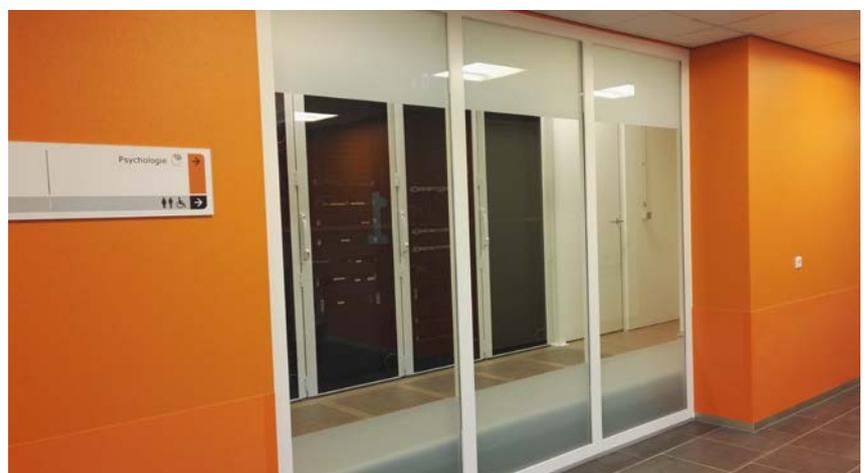
By implementing digital health records and tablet computers, the old and impractical paper work was completely abandoned. The immediate results were faster processes and more efficient workloads as well as fewer mistakes being made when taking up or editing data. Long-term benefits also include more time for patient care.

Parallel to the implementation of the EHR, new Voice-over-Wi-Fi phones were introduced in order to replace the original DECT telephony infrastructure. Today, more than 80 VoWLAN-phones are connected via Wi-Fi, allowing the

staff inside the wards to communicate with each other. In the event of an emergency, they also serve as an extension to the alarm system, with the closest phones being contacted automatically. In contrast to the former DECT system, the VoWLAN phones also support seamless roaming when moving from one wireless access point to the other. More, the interferences of DECT devices with sensitive clinical / medical devices like an electroencephalograph have been noted several times. Next to the 200 iPads of the EHR system, more than 200 Wi-Fi enabled laptop computers are used by the employees of the rehabilitation centre. This full integration of Wi-Fi based

mobile devices in the clinic's day to day workflow demanded full coverage and stability of the wireless network throughout the whole building. For reasons of stability the 5 GHz bandwidth is being used by the employees only.

Parallel to the clinic's internal services, a free, public Wi-Fi has been set up for the patients and guests inside the wards, public areas and rooms. Nuijten explains why: "the average time a patient stays in the rehabilitation centre is three months, so the demand for Wi-Fi to surf the web or answer important emails while in treatment has increased in recent years. Patients bring their own mobile devices to the healthcare





institutions and expect the same commodities as in a modern hotel – one of them being free, fast and stable Wi-Fi.”

Perfect Wi-Fi distribution

After extensive testing and consulting by technology partners and Wi-Fi specialists a closely-knit network of around 160 access points has been installed in order to achieve a maximum of coverage inside the hospital. In order to suit the new “clean” interior design of the clinic, the access points had to be hidden inside of the new ceiling. Today, the only visible trace of the Wi-Fi networks consists of discreet, round antennas who subtly integrate into the surrounding.

“We spent a great deal of time and work on the initial planning of the new network and worked closely together with our technology partners and Wi-Fi

consultants”, recalls Nuijten. “As the hospital is situated in an urban area of Utrecht, the interferences through private Wi-Fi signals were a major challenge we had to face when setting up the wireless network.”

Additional sources of reflection and interference were discovered inside the building with the network already in operation and had to be solved. For example the double-glazed doors and windows inside some of the wards that hamper the Wi-Fi signal from passing through; or the massive fire-proof doors inside the hallways of the building.

Wireless Patient Care

On an average day, around 300 clients log into the network covering a good 90 percent of the hospital. All medical information is stored digitally with

the wireless network playing the most important role in transmitting and retrieving the data. This said, of course also the security standards are at the highest level, including machine certificates and a Radius server for the free public hotspot access.

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Walking through the building today, visitors are met by one of the most modern and well equipped rehabilitation centres in Holland. With a wireless infrastructure possessing enough capability for the future it leaves nothing to be desired.

Hoogstraat has already plans to expand the wireless services for the patients by introducing an alternative paid service with support and more bandwidth. But for now, the patients and staff do not have to worry about their communication and network and concentrate fully on the rehabilitation processes.

Customer

The Hoogstraat Rehabilitation Centre is one of the largest rehabilitation hospitals in the Netherlands, situated in Utrecht and was founded in 1948. It has 140 beds and employs around 600 people. The Non-profit healthcare centre offers a broad expertise in child and adult rehabilitation, treatment of spinal and stroke among other diagnoses. In addition, it houses a large orthopedic center for client's orthoses and prostheses.

Partner

Lumiad is a leading player in the Dutch market for wireless network technology. The wireless specialist provides high quality services and only uses quality products to meet the highest requirements in the industry. Through their expertise, experience and cooperative power Lumiad has a sense of design and know-how in implementing high demanding Wi-Fi networks for all types of industries and applications: Wireless networks, Voice over IP, location tracking (RTLS), point-to-point connections, site survey, monitoring and security. The company provides total solutions for all types of organizations and industries.

At a glance

Customer

De Hoogstraat Revalidatie

Rembrandtkade 10

3583 TM Utrecht

Tel.: +30 256 1211

E-Mail: info@dehoogstraat.nl

Web: www.dehoogstraat.nl

Produkte und Leistungen:

Non-profit healthcare and rehabilitation center with an orthopedic ward

Requirements

- > Implementation of EHR system (Electronic Health Record)
- > Conversion to VoIP and VoWiFi mobile devices
- > Free guest Wi-Fi for the patients

Systemintegrator

Lumiad

Veldzigt 24

3454 PW Utrecht

Tel.: +31(0) 30-7 670 670

E-Mail: info@lumiad.com

Web: www.lumiad.com



Components used

- > ca. 160 x LANCOM L-452agn Access Points
- > 1 x LANCOM WLC-4100 Wireless Controller

