

The first facility of its kind in the country, the Koblenz branch of the Handwerkskammer represents a quantum leap forward in training practice. A fusion of the latest manufacturing methods and AV technologies ensures a bright future for German industry.

Design technology



HWK Koblenz fuses AV technology with practical teaching across several environments. Left to right, the CNC training room, machine building class and broadcast studio.

Unlike in many other European states, vocational training in Germany is alive and well. The modern apprenticeships that form the foundation of this continuing investment in people and skills provide young people in Germany with a mixture of training and practical experience to allow them to pursue careers in manufacturing and related industries.

One of the key providers of this training is the so-called Handwerkskammer (lit. handcraft chamber), a national association of SMEs in the manufacturing sector. Businesses send their trainees to regional training centres to receive instruction and gain qualifications in the various disciplines required for them to be fully certified in their chosen jobs.

One such centre is the HWK college in Koblenz. Sited at the what is known as “The corner of Germany”, the city lies on the confluence of the Rhein and Mosel rivers and has a long tradition of turning out of some Germany’s finest engineers. It’s fitting then, that the city should now boast one of the most advanced training centres of its type in the country, if not Europe.

Ten years in the conceiving and two in the building, HWK Koblenz’s new Kompetenzzentrum boasts the most modern manufacturing and design

tools alongside an advanced AV system including media storage and distribution, presentation equipment and a full broadcast video production facility. There’s even a building wide digital signage system and a large LED display thrown in for good measure.

However, this is no ordinary training centre. Because of a requirement under State law for projects that receive public finances to have some artistic content, it also benefits from modern architecture and some truly artistic touches. It may be an industrial site, but it boasts aesthetics worthy of any modern building.

Consultant Thomas Hülsmann first became involved in the project in 2003, writing a specification in close consultation with HWK Koblenz. Following a tender process, the systems integration contract was awarded to German company MCI under the leadership of Ralf Schultze, and AMX programming was provided by Küllenberg.

The new segment is built onto the side of the existing building, from 1987, and the main entrance remains the same. In the foyer one is greeted by the first evidence of the new installation – part of a network of digital signs. The 40” L+L TFT monitor can show a variety of content ranging from immediate lecture timetabling,

to stored video content and other media. The screen is mounted at the entrance to an interconnecting glass corridor joining the old building with the new. At the end of this is positioned another L+L screen at the foot of the elevator. This is no ordinary elevator. The glass lift travels up and down a three-story time-line built into the back wall of the elevator shaft. Back-lit with colour changing LEDs the lift shaft time-line traces man’s engineering achievements from Pythagoras’s Theorem to the invention of the CD-ROM.

This top-to-bottom chronology mirrors the function of the building. The top floor houses design studios, for the teaching of AutoCAD and other IT tools, as well as a full broadcast production suite, and TV studio. At HWK Koblenz students are not only taught to use machinery and design products, but also to market themselves and their ideas to a wider audience. HWK call this media competence, and actively encourage their apprentices to broaden their horizons from the SMEs they come from to the wider market.

The outward-looking approach is further emphasised by the Metallzentrum’s General Manager Herr Brink, who said: “HWK Koblenz has links with other sites all over Germany, and the world. We share

Tech-Spec

Audio
 Biamp AudiaFLEX mainframe
 Biamp IP2 input cards
 Biamp OP2 output cards
 Genelec 8040 loudspeaker
 Genelec 8020 loudspeaker
 Genelec 7060A Subwoofer
 Kling & Freitag CA1215 100v loudspeakers
 QSC ISA 500Ti 100v amplifier

our expertise with and learn from other centres of training. Recently HWK attended the opening of a competence centre in Sri Lanka, and we have partner sites in Vietnam, the UK and the USA.”

Udo Albrecht, a lecturer at HWK Koblenz and a prime mover in the

panel, in this case a 7.5” modero wireless model, which is kept in a wall-mounted charging station. This is hooked up to an NL3000 control unit. Further equipment such as Samsung SDP 900 digital presenters is stored in cupboards. The room is also fitted with a large number of floor tanks,

of SDI and audio inputs/outputs required to serve the whole building.

Another server rack also holds the digital signage system controllers and the control system for the large LED display wall on the side of the building. The digital signage network consists of seven 40” TFT displays



The striking exterior of the new building is complemented by the 4:3 LED display, which greets arriving students



Digital signage throughout the Kompetenzzentrum keeps students informed about time tabling and events



The timeline in the elevator shaft traces Man's engineering feats over 3000 years.

conception of the new building, added: “We aren't just here to teach people manufacturing, we have to produce people with the skills to interact with media in all its different forms, to understand passive media that they receive, and to make use of it to market their ideas. An important exercise we do for final year students is role playing a sale to a potential customer.”

Apprenticeships last from three to three and a half years in Germany, and depending on the discipline in question, apprentices will spend between 10 and 40 weeks in total at the HWK.

Up on the second floor is where the ideas come from. There is a large boardroom for presentations and conferences, in which the furniture can be re-arranged to seat up to 60 people. The room is equipped with 5.1 surround sound again using Genelec active speakers as well as an LCR set mounted in the desk at the front of the room. The DSP for this is provided by a Biamp AudiaFLEX rack.

The audience can watch footage from DVD or VHS players on the Panasonic PTD5500 projector or, as with most of the other rooms, access archive footage or training videos from the central media server. Room control comes from an AMX touch

which allow for further furniture re-arrangement and flexible use of the space.

Elsewhere on the second floor is an ICT lab for teaching students to use the various CAD and other software packages they will need throughout their career. Like most of the other teaching spaces it comes well equipped with an AMX control system for the lecturer and access to the ever-present media server. The standard fit out of Genelec monitors is present, as is the Panasonic PT-D5500E projector and Atrium screen. Further Extron and Kramer video scaling and switching equipment allows students and staff to share their work from the desktop to the projector.

Perhaps the most important room in the place is tucked away at one end of the top floor – the server room. This houses the HWK's three terabyte media storage server, routing and switching for the Ethernet network and also the head station for TV signals entering the college. These can all be distributed to any room in the building and accessed via floor boxes or the media control system. Gefen, Kramer and Extron video processing products are all used whilst Network 64x64 video matrices are used to handle the large amount

positioned at strategic points in the building, the large LED wall, and a small Macnetix TFT panel outside each classroom. Each can give students information about the classes that are in progress and scheduled events. The LED display was even used to show the FIFA world cup semi-finals to congregated students. It is made up of 16 tiles from Leurocom at 20mm pitch (10mm virtual) and is 3.8m x 2.8m in size.

Macnetix's software is also running in the server room and controls the content on all of the college's digital signage. These simpler displays don't have the full video capabilities of the larger parts of the network but they do show basic time-tabling information.

Descending to the first floor, student's ideas begin to take shape, with the teaching of design and using the skills picked up on the top level. There are also teaching rooms here for skills such as electrical wiring and telecommunications installation, as well as a hands-on machine building workshop. AV equipment in the teaching spaces follows the standard template of the rest of the building, with the addition of a separate Smart Technologies interactive whiteboard and projector in certain rooms.

Several of these ...Page 32 ▶

Tech-Spec

- Video
- AMX NI-3000 controllers
- AMX Modero 7.5" wireless touch panels
- AMX 6" touch panels
- Atrium Profi-Standard electronic projection screens
- Extron RGB190F video processors
- Extron Crosspoint 450 Plus 88 Matrix switchers
- Extron SDI-AVR 100 converters
- Gefen KVM Extenders
- Kramer VP210xl line amplifiers
- Kramer VP-43xl RS-422 to RS232 converter
- Leurocom V20/10 LED modules
- Macnetix PlayIT/editIT software
- Network A6464 matrix switcher
- Panasonic PT-D5500E Projector