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Case studies



A Technological Dream Home in Portugal (1/4/2008)

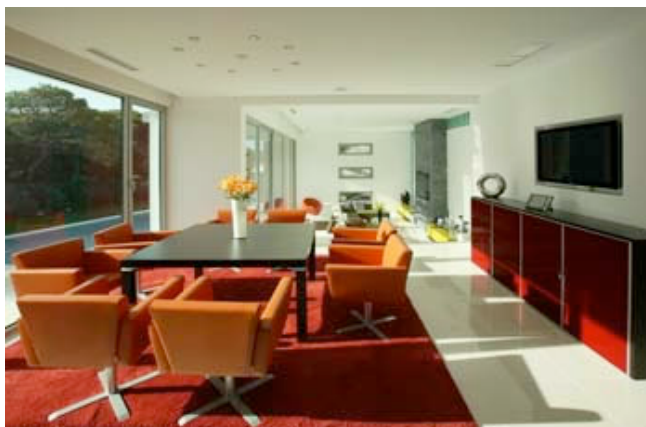
This was one of those projects which, as custom systems integrators, we dream about. The owner of this villa in the exclusive 'Golden Triangle' in southern Portugal commissioned us, GTCs-Global Technologies and Control Solutions, to design and implement a system that controlled 'everything'.



Exterior of villa in the 'Golden Triangle' in southern Portugal.

Planning and specification

Following several discussions with the owner to establish what his needs and desires were for control, we developed a control system based on the AMX NetLinX platform, various models of Modero touchpanels (both wired and wireless), centralised temperature control, and a centralised entertainment system.



Lounge with recessed plasma and AMX Modero touchpanel control.

The centralised entertainment system included a Kaleidescape Entertainment Server with multiple players, several satellite receivers for TV and radio, under-water speakers in the pool, and a PS3 which is shared in three different areas.

The PS3 is located in the central equipment rack, and within good RF coverage via the PS3 wireless remotes. The HD video and digital audio are distributed to one of the bedrooms on a 32" LCD, the bar on a 50" plasma, and the home-cinema through a projector.

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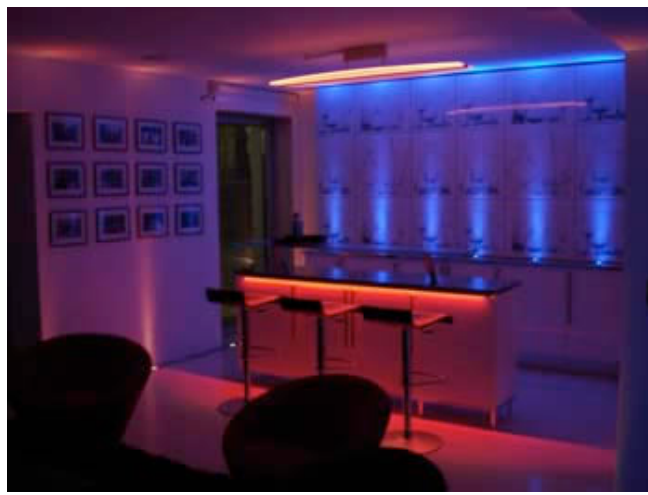
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*View of bar with colour changing light, looking back from the 50" plasma.*



*Home cinema with LED colour changing lights, recessed projector, screen, AMX Modero control and surround sound system.*

A summary of the controlled environments and features is as follows:

- \* LED lighting (over 1000 RGB- and white-light fixtures with coloured scenes and cycles).
- \* 13 zones of audio, including a pair of underwater speakers in the pool.
- \* Centralised satellite HDTV and radio, and PS3.
- \* Two surround-sound systems, in home cinema (projection) and lounge (63" plasma).
- \* Independent control of flat-screen displays in 4 bedrooms, 1 bathroom, dining room, kitchen and bar.
- \* Centralised AC control with full feature controls on touchpanels.
- \* Browsing of content on the Kaleidescape Server for both DVD and music.
- \* Door camera images are streamed to all touchpanels, allowing the user to see who is at the door and to remotely open the door if required.
- \* Remote access to allow us to analyse the full system from our offices, as well as implement future changes that our customer may desire. The same system allows our client, via the Internet, to turn on the pool heater a couple of days before arriving at the villa.

We developed a full room-by-room specification, right down to the design of the GUIs. Full system drawings were then developed to guarantee that all of the structured wiring would be in place and that good WiFi coverage would be established in all areas where touchpanels and integrated PCs were to be used.



*Bathroom with LED lighting and in-wall controller.*

Although it is difficult to design-in full WiFi coverage in the drawing stages, we were able to prepare the installation of the access points with extra extensions of shielded CAT5e cable, POE (Power over Ethernet), and placement above ceiling to allow as much flexibility as possible. During installation, we discovered that there were problems with one of the bedrooms in which the WiFi coverage was not as good as we wished, but we were able to change the placement of two of the access points above the ceiling, thus dealing with the coverage issue.

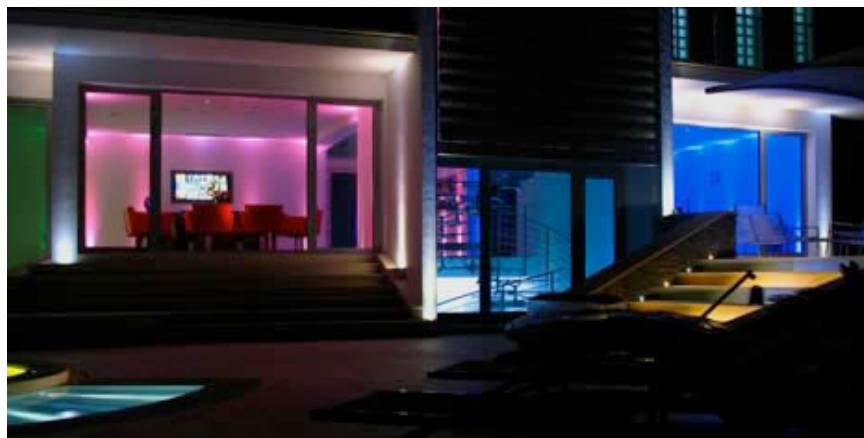
#### **Time and costs**

From our official start date in January of 2006 to the completion of the installation, the project lasted over 1.5 years and involved coordination with the LED lighting system manufacturer, the air-conditioning system installer, electrical contractors and AV components suppliers.

Our total invoiced amount to the customer exceeded 140,000 Euros but the overall investment by the home-owner in this project was well over 500,000 Euros.

#### **Experience gained from the project**

Probably the most challenging aspect of this project was the LED lighting control. We needed to allow for the selection of pre-programmed scenes and cycles which included not only intensity levels but colour control too. For the pool lighting, which incorporates DMX colour control, we configured an interface which allows the customer to dial-in the colours desired, save them, and create colour/intensity cycles. Many change orders were implemented to incorporate additional features and controls to the system, requiring several mid-stream design and programming alterations. The final product however, is a spectacular, technological dream home.



*Exterior shot showing different LED lighting in each room.*

To date, this has been our most challenging job, however, a satisfied customer and a great final product have been worth it. As usual, the more challenging the job, the greater the feeling of accomplishment! It was also satisfying to have this project become one of the finalists in the 2008 InAVation Awards category of 'Most InAVative Large Residential Project'.

#### **Equipment list**

A partial list of integration components includes:

- AMX Control System:
- \* 3 Netlinx Controllers.
- \* 8 MVP-8400 WiFi touchpanels.

- \* 1 NXT-CV17 (17" touchpanel).
- \* 1 NXT-CV7 (7" touchpanel).
- \* 9 VST (networked thermostats) with remote temperature sensors.
- \* 2 AXR-RF receivers.
- \* 1 AXB-DMX512 (DMX controller).
- \* 1 AXB-REL8 (remote relay controller).
- \* 1 AXB-232++ (remote RS232 interface).

Waterproof Remotes:

- \* 2 RTI remotes.

Full control was established for the following:

Centralized A/V distribution and source equipment:

- \* Autopatch Precis DSP 18x18.
- \* Zantech multichannel amplifiers (13 stereo zones).
- \* Extron 8x8 Cat5 matrices.
- \* SKY HD satellite receivers.
- \* Pace satellite radio receiver.
- \* PS3.

Kaleidescape system:

- \* 1 5U Kserver (2.5TB).
- \* 5 Kplayers.
- \* 1 Kmusic.

Two surround sound systems:

- \* Cinema Surround.
- \* Lounge Surround.

Display systems:

- \* 1 video projector.
- \* 1 63" plasma.
- \* 1 50" plasma.
- \* 1 43" plasma.
- \* 1 42" LCD display.
- \* 3 32" LCD displays.
- \* 1 20" Aqualink LCD display.

Lighting and Environment Control:

- \* All inside LED lights.
- \* All outside LED lights.
- \* Pool lights with DMX512 colour control.
- \* All curtains, shades and leuvres.
- \* Nine zones of HVAC.

Networked Solid state PCs:

- \* PCs available on displays in bar, dining-room and master-bedroom.
- \* Wireless keyboard and mouse.

Security and access control:

- \* Viewing of all cameras via RF distribution.
- \* View of doorcam on all touchpanels.

Global Technologies and Control Solutions, Lda, is a custom systems integrator based in Sintra, Portugal. It designs and installs high-end residential systems for customers based in central and southern Portugal.

[www.globaltechcontrol.pt](http://www.globaltechcontrol.pt)

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	<b>Monster</b> offers five different levels of HDMI performance		<b>Furman</b> offers a full line of power conditioners designed exclusively for home theatre applications in Europe		<b>BMB</b> is one of Europe's premier distributors of custom installation solutions		<b>Genelec</b> active speaker systems for custom installations

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