Doncaster children’s unit gives upbeat feel

A new Children’s Unit at Doncaster Royal Infirmary that combines single and multi-bedded children’s ward accommodation, observation and assessment facilities, and high dependency beds, all located on an extensively refurbished existing floor of the Infirmary’s Women’s and Children’s Hospital, has been given a bright, uplifting feel thanks to the extensive use of a special solid acrylic material from LG Hausys. As HEJ editor Jonathan Baillie reports, in a first for the material, “Hi-Macs” has even been used to form complete circular shower units.

The new Children’s Unit, which accommodates young patients ranging in age from newborn babies to those in their late teens suffering from a wide range of illnesses, was completed in January this year by Doncaster-based main contractor Togel Construction, based on plans developed by the estates and facilities department at the Doncaster and Bassetlaw Hospitals NHS Foundation Trust. The estates and facilities department’s client, in turn, was the Trust’s Children’s and Families Unit.

One of the principal goals of the Unit’s construction was to be able to site sick youngsters close to neonatal and obstetrics facilities, which are also now housed in the same building. Also incorporated are new and improved facilities for parents wishing to stay with their children, including, as the Trust puts it, “a modern take on the sofa bed to each of the single rooms”, and reclining chairs in the multi-occupational rooms, or the use of the off-ward overnight room, which has its own en suite facilities. To make the young patients’ stay a little less arduous, meanwhile, and help entertain them during their time on the ward, all the rooms on the inpatient ward have en suite facilities.

Steve Brunyee, estates project manager at the Doncaster and Bassetlaw Hospitals NHS Foundation Trust, who headed up the in-house team that oversaw the unit’s design and construction, was the man responsible for specifying Hi-Macs Natural Acrylic Stone components including shower cubicles, nurse stations, en suite bathroom walls, vanity units, and washbasins. He explained how the facility was created, before elaborating on the reasons for the selection of the LG Hausys-supplied Hi-Macs material.

Complete floor stripped out

He said: “Our brief from the Doncaster and Bassettlaw Hospitals NHS Foundation Trust was to create a modern, comfortable, and light and airy inpatient facility, into which young patients previously housed in children’s wards on another part of the site, that had begun to show their age, could be moved. The project involved us, as an estates and facilities team, working closely with main contractor Togel Construction, and subcontractors GW Dawes (mechanical installation), and RJ Electrical (electrical installation), to strip out completely the fourth floor of the existing 1970s-built Women’s and Children’s Hospital.” This floor had previously housed a combination of offices, and gynaecology wards and treatment areas.

“The work started in August 2009, and was completed by January this year, shortly after which the first patients were able to move in,” Steve Brunyee continued. “Not only did we have to fit, and co-ordinate the fitting of, new electrical services and medical gas equipment, but much of the earlier drainage for the fourth floor was no longer fit-for-purpose, which meant replacing it. We also fitted new vinyl...
flooring throughout, and new curved walls, and installed low energy lighting, much of it multi-coloured and controllable by the young patients from the bedside to add a sense of fun.” To make their stay more enjoyable, the new unit also incorporates an American-style diner, a fitness area, and a cinema.

‘Bright, bold and fun’

“One of the key requirements of the brief,” Steve Brunyee continued, “was to make the design bright, bold, and fun. Previously some parts of the hospital have seen timber elements used extensively for components such as nurse stations, but for a children’s facility we were keen to move away from timber fixtures where possible, and also needed surfacing materials that were easy to clean, and would not harbour bacteria. These factors, in combination, led to our selection of the Hi-Macs material, which also offers the major advantage of being formable into a wide range of shapes, is seamless, looks great, comes in a very wide range of colours, and is indeed easy to clean – one of the key criteria set by the Trust’s Infection Control team.”

Made from a mixture of 75% mineral (a bi-product of bauxite), and from what LG Hausys (the company is part of the Korean multinational LG Group) says is “the finest acrylic”, Hi-Macs is said to be highly durable and robust, has a satin matt finish, is easily cleanable, and can be easily formed into a variety of shapes and profiles.

Martin Saxby, northern European country manager at LG Hausys’s West Malling, Kent offices, explained to me that the Hi-Macs material first became available in around 2002, and had, in the past, mainly been supplied direct to distributors and fabricators from factories in Korea. However, with the recent opening of a new factory in Atlanta, it was now increasingly being shipped from the US.

He said: “Hi-Macs is basically produced in three different thicknesses, and normally supplied in 3,680 mm long x 760 mm wide sheets, after which it can be thermoformed and then machined; typically on CMC router equipment, into the required shapes and profiles. It is also now widely used in sink bowls. The material, which can afford a really luxurious feel, or simply, as in the Doncaster Royal Infirmary application, add a sense of optimism and fun, has been specified for applications ranging from the headquarters of blue-chip organisations such as banks and car manufacturers, to retail outlets and, increasingly, hospitals and other healthcare facilities.”

Supplied as sheets

A robust, homogenous material with seamless joining, Hi-Macs is produced in sheet form via a thermal curing process whereby the raw material is heated to around 180˚C in an oven. The result, LG Hausys says, is a very even, flat sheet, with a particle dispersion which LG Hausys says is of considerably higher quality than that found with competitor products. These tend, Martin Saxby explained, either to be manufactured from polyester using an open cast process, or, “at the premium end”, made using a cast chemical cure process which he said was typically “significantly more expensive”, and usually required a considerable upgrade in equipment.

“The thermal manufacturing process for Hi-Macs ensures a really smooth, even finish, without the bubbling some competitor products can suffer from, and allows the finished sheet to be formed into an almost infinite range of shapes,” he added.

Of the Doncaster application he said: “After an initial enquiry from the estates...
team at the Doncaster and Bassetlaw Hospitals NHS Foundation Trust, we suggested the team get in touch with one of our network of 300 fabricators, but one of just six strategic partners we have in the UK, Newton Aycliffe-based Multi-Surface Fabrications, and they took up the project from there.”

Steve Brunyee said: “We undertook, on our in-house CAD equipment, much of the concept design for elements such as nurse stations, vanity units in the young patients’ bedrooms, and the circular shower enclosures, which are entirely formed from Hi-Macs (as are many of the bathroom walls, since the material was preferred to the mosaic tiling alternative, on infection control grounds particularly). We then gave the drawings to the main contractor, Togel Construction.

Timber templates

“Togel then went away and produced timber templates for some of the components, such as the nurses’ stations. Thereafter Multi-Surface Fabrications machined the sheet material to fit these wooden ‘carcasses’, and subsequently undertook much of the bonding of the Hi-Macs elements to the base timber on site at the new Children’s Unit as part of an installation process entirely undertaken by the firm.”

“We were approached initially by Steve Brunyee after LG Hausys recommended that the Trust consider us for this work and, in a competitive tender, won the job. I believe, both due to strong recommendations, and to our track record working with solid surfaces such as Hi-Macs,” explains Graeme Kavanagh, MD at Multi-Surface Fabrications.

Thermoformed Hi-Macs being moulded to shape at Multi-Surface Fabrications’ Newton Aycliffe factory.

Non-porous and easy-to-clean

Graeme Kavanagh explained that the Hi-Macs material is ideal for bathroom applications, since its highly polished surface not only renders it impervious, but it is also extremely easy to clean, as well as tough and robust.

He said of the two main nurse stations, manufactured from a clean-looking white Hi-Macs: “What we did here was to take the templates produced by Togel Construction and go back to our factory and mould the required straight and curved profiles. In the meantime Togel produced the basic shell of each unit from plywood, and we then bonded the Hi-Macs elements to the plywood on site using a special silicone adhesive.”

The silicone adhesive is used with the acrylic-based material, Graeme Kavanagh explained, because the material has the tendency to “move” at different temperatures – a characteristic which the silicone can apparently cater for.

“Overall this was one of our most complex projects to date, and one which we are especially proud of,” said the Multi-Surface Fabrications MD.

“The reason it was so challenging was that we had to mould and cut the flat Hi-Macs sheet into a very wide range of shapes, requiring a high level of thermoforming expertise, and then, using CNC routers and other cutting equipment at our Newton Aycliffe factory, cut and machine finish each element to give a smooth, seamless finish.

Lending the right feel

“We had also never previously produced circular shower units exclusively from Hi-Macs, so we are delighted that the finished enclosures have been so well received by Steve Brunyee and his colleagues at the Trust. Hi-Macs is an extremely flexible material in all senses, and I think that, especially as used in the wide range of colours specified by the Doncaster Trust, lends just the right upbeat feel for a treatment unit like this, where one of the overriding aims is to make things feel as non-clinical, and cheering, as is humanly possible.”

Both the circular shower units and the vanity units for bathrooms were moulded from Hi-Macs, in the case of the vanity units in a range of different colours.
LG Hausys

Contact us
Alex Gray
Tel: 01732 424 240
Email: ukoffice@himacs.eu

www.himacs.eu
More projects and new stunning colours here.