

# HEALING ARCHITECTURE

Construction Specialties 06





## CASE STUDY:

LAUSANNE CHILDREN'S HOSPITAL,  
SWITZERLAND

**There is no doubt that healing architecture fosters wellbeing and recovery amongst users of healthcare facilities. However, architecture in general and spatial planning also affect a child's development, mental stimulation and healing.**

That is why hospitals and paediatric services need to understand how best to adapt their architecture to children. Of course, that entails putting yourself in a child's shoes and understanding their needs.

The first difference that springs to mind between children and adults is size. But the differences don't stop there. Children are more restless and need to move around. They have to let off steam, run, jump, test things out, become more independent, and build their social and communication skills. But on the other hand, they sometimes need some downtime and rest.



*Discover more on the subject of healing architecture in our other issues*

In this article, we will focus on the future Lausanne Children's Hospital to reveal the key elements healthcare facilities designed for children and teenagers should have. We will also present other examples of paediatric hospitals that have successfully implemented the core principles of healing architecture.

**1** Lausanne Children's Hospital, Switzerland. Image source: GMP (<https://www.gmp.de/en/projects/9718/hpital-des-enfants-chuv>)  
Cover Image: Shutterstock



# GROUPING ALL PAEDIATRIC DISCIPLINES INTO A SINGLE LOCATION

The Children's Hospital project was approved in 2013, but work only started in 2019, and the building is expected to open in 2024.

The new hospital is designed to free up the Lausanne University Hospital (CHUV), specifically the main hospital building. It will take over paediatric specialisations in a building suited to children, teenagers and families.

## Caring for children of all ages

The Children's Hospital is for all stages of childhood, from newborns right through to children in their teens, that is, patients from 0–18 years old.

## A single building for seven paediatric specialities

Before this project, paediatric specialities in Lausanne were split between the Children's Hospital on the Montétan site and the CHUV.

With this new building, however, all paediatric disciplines will be on a single site. That will improve and simplify admissions for young patients and the arrangements for paediatric medicine.

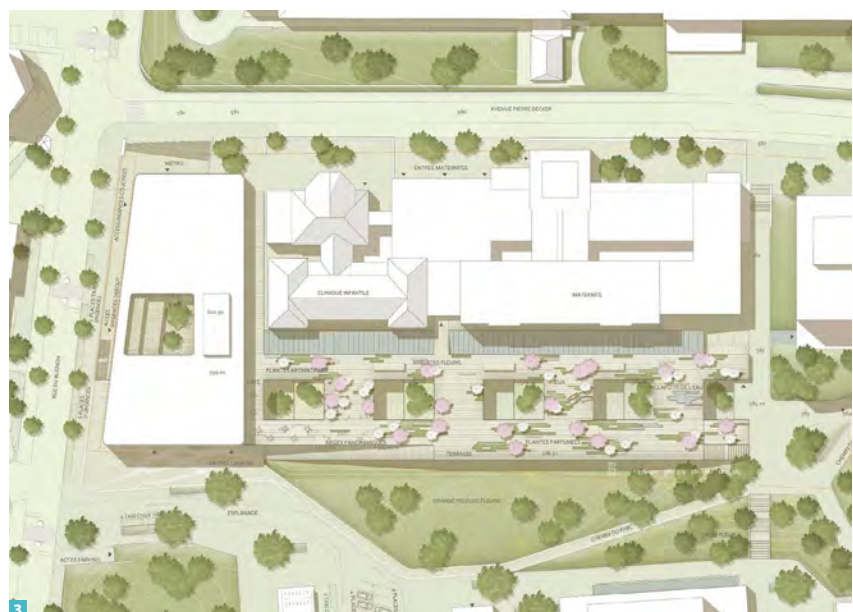
As such, all paediatric medical and surgical disciplines will be on the same site, namely:

- General and specialist consultations,
- Care wards,
- X-ray, haematology, oncology, physiotherapy, ergotherapy services and more,
- Paediatric accident and emergency (A&E),
- An operating theatre,
- Inpatient wards,
- Outpatient services and day-case treatment and surgery,
- A bereavement area,

- A family support service and a Woman, Mother and Child Unit.

Only paediatric intensive care, complex operations and specialist X-rays will continue to be in the main hospital building within the CHUV.

Grouping the various paediatric disciplines into one building will foment new collaborations and synergies and free up 5,000 m<sup>2</sup> on Floor 11 of the main hospital building.



<sup>2</sup> Image source: Envato Elements

<sup>3</sup> Lausanne Children's Hospital, Switzerland. Image source: GMP (<https://www.gmp.de/en/projects/9718/hpital-des-enfants-chuv>)





# RISING TO THE CHALLENGE OF CREATING A NURTURING LIVING SPACE FOR CHILDREN AND FAMILIES

The Children's Hospital will provide a distinct environment that will help children get better and grow. It will be an environment suited to the needs of the children and their families. As such, the premises must adapt to any changes to hospital missions and activities.

## Providing suitable, high-quality care

To guarantee quality, the Children's Hospital observes the EACH Charter, the main tenets of which recall the rights of children to be informed of their care, to have their parents or parent substitute with them, and so on.

The rights mentioned in the Charter apply to all sick children, regardless of their illness, age or disability, their origin or their social or cultural background, or of any possible reason for treatment or forms or places of treatment, whether as in-patients or out-patients.

But this hospital will go further still – it will provide tailored, multidisciplinary treatments. That means each patient will receive the best possible care.

## Adapting to each child, their development and pace

The building will offer a more functional and welcoming environment for patients (children and teenagers) and their families.

As you can imagine, a child's needs from 0 to 18 years of age change dramatically. As a result, the primary

challenge for the Children's Hospital will be to treat, welcome and support these patients whatever their age.

A child or teenager will not be treated in the same way as an adult. After all, children are not miniature-sized adults. Healthcare facilities can be terrifying and stressful places, especially for young patients who need reassurance. A comprehensive approach should be adopted so as not to cause these patients angst. It is also important to provide them with an environment where they feel at ease, can thrive, have fun, play, be stimulated, learn, find their bearings, and have psychological support.

Before a child reaches 18, their organism, organs and body functions are constantly developing, as are their emotional, social, cognitive and motor skills. That is why the future Children's Hospital has factored in an educational area for the youngest patients, an area for teenagers, and a classroom.

The other challenge that needed to be addressed was to make room for families. After all, a child is less independent than an adult and doesn't have the same need for a social circle. Families must be included and welcomed – parents, brothers and sisters, grandparents, everyone – and the building's architecture must be adapted accordingly.

## Offering plenty of room to parents

Adapting hospital care to children basically requires the involvement of parents. As such, the Children's Hospital plans to turn parents into partners to help cure their children.

# The EACH Charter

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The EACH Charter recognises and endorses the rights of the child as stipulated in the UN Convention on the Rights of the Child (UNCRC), and in particular the key principle that, in all situations, the best interests of the child should prevail.

In addition, the EACH Charter relates to the UNCRC General Comment No 15 (2013) on the child's right to the enjoyment of the highest attainable standard of health, and to the UNCRC General Comment No. 4 (2003) on adolescent health and development.



## Article 1

Children shall be admitted to hospital only if the care they require cannot be equally well provided at home or on a day basis.



## Article 2

Children in hospital shall have the right to have their parents or parent substitute with them at all times.



## Article 3

1. Accommodation should be offered to all parents and they should be helped and encouraged to stay.
2. Parents should not need to incur additional costs or suffer loss of income.
3. In order to share in the care of their child, parents should be kept informed about ward routine and their active participation encouraged.



## Article 4

1. Children and parents shall have the right to be informed in a manner appropriate to age and understanding.
2. Steps should be taken to mitigate physical and emotional stress.



## Article 5

1. Children and parents have the right to informed participation in all decisions involving their health care.
2. Every child shall be protected from unnecessary medical treatment and investigation.



## Article 6

1. Children shall be cared for together with children who have the same developmental needs and shall not be admitted to adult wards.
2. There should be no age restrictions for visitors to children in hospital.



## Article 7

Children shall have full opportunity for play, recreation and education suited to their age and condition and shall be in an environment designed, furnished, staffed and equipped to meet their needs.



## Article 8

Children shall be cared for by staff whose training and skills enable them to respond to the physical, emotional and developmental needs of children and families.



## Article 9

Continuity of care should be ensured by the team caring for children.



## Article 10

Children shall be treated with tact and understanding and their privacy shall be respected at all times.



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To do so, parents must be in a position to understand medical concerns. They must be stakeholders in their own right, learning to monitor their child's health and get involved in treatment.

With this in mind, the Children's Hospital will have spaces to welcome families and loved ones within the building. Firstly, inpatient rooms will be able to accommodate parents for the night. Secondly, there will be areas for meeting up, relaxation, socialising and play to maintain family ties. In fact, 20% of the extra space in this building has been earmarked to welcome families in a satisfactory manner.

Dedicated family areas will be set up throughout the hospital:

- One family area on each floor in the care wards so families can recharge their batteries and talk elsewhere other than in the bedroom.
- Long-stay wards will have spaces for children to enjoy recreational time and share learning opportunities as a family.
- The large cafeteria, with an 80-seat capacity, will also be suited to get-togethers and discussions.
- The hospital gift shop selling magazines, newspapers and small toys will bring even more life to the building.
- An 800 m<sup>2</sup> tree-lined patio area in an outdoor 3,000 m<sup>2</sup> setting will be perfect for enjoying time outside with family.

Let's look at another example: the Geneva Children's Hospital in Switzerland.

Erected in 1957, this building is the work of Albert Cingria. The hospital is due for renovation in 2025, which will be overseen by the architectural firm Architecturestudio, and it will reopen to the public in 2031.

This renovation project places great importance on families. It will have dedicated spaces to respect family privacy – individual rooms with a bathroom and a day and night space for parents. The hospital will also have dedicated areas for accompanying persons, including a living room, kitchen, bathrooms and extra bedrooms for parents who live far away and cannot return home every day.

## Supporting children so they can learn to care for themselves

While parents must help children get better, young patients should also learn to care for themselves and treat their condition insofar as possible, particularly if it is a chronic illness.

Teenagers are old enough to do this – they simply need to be taught how and trusted to do so. During this transition, parents must slowly let their children be, which can be particularly challenging for parents.

The role of a hospital is to support patients and their families in this handover.

## Managing anxiety and pain

Hospitals and doctors can be a source of stress for adults and children alike.

However, being treated in a hospital or hospitalised can be even more stress-inducing for children. Moreover, young patients don't handle stress and pain in the same way.

Therefore, hospitals must assist them so they can handle stress and pain.



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1 Image source: Envato Elements

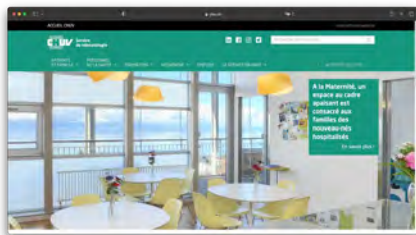


# SETTING UP AND EQUIPPING THE CHILDREN'S HOSPITAL TO MEET THE INDIVIDUAL NEEDS OF USERS

## A strategic location for ease of access

All hospitals should be accessible to all, whatever the person's financial, physical or geographical situation. Access to hospital complexes from town and city centres and neighbouring areas should be straightforward.

The new Children's Hospital hyper-central location in the heart of the CHUV complex will facilitate synergies with the University Hospital, its technical hub and emergency services, the Maternity Division, the Neonatal Service and the Nestlé Hospital.



Visit: <https://www.chuv.ch/neonatalogie>

## Configuring spaces for smoother admissions and flows

All hospitals should endeavour to improve their admissions processes and user flows. Reception and admission areas should not be crowded for too long, and patients should be able to find their way to consultations and treatment rooms with clear, intuitive signage that does not create any added stress. What is more, if the building layout has been carefully thought through, spaces and equipment can be pooled to optimise the floor space.

The configuration and layout of the various spaces in the Children's Hospital have been designed to succeed in combining resources, flows and synergies.

By pooling resources and creating synergies, you can save on equipment and resources, which is worth considering, given the current economic climate.

Take France as an example. Therapeutic education programmes were initially dispatched to departments, but some university hospitals and other healthcare establishments now pool these programmes. By doing so, they can share human resources (staff, skills, training, coordination, administration, third-party personnel, etc.), equipment (premises, reception, files, educational and therapeutic material) and financial resources.

Managing flows effectively – tactical, strategic or operational – is just as vital within healthcare centres. Doing so helps reduce repeat hospital visits, secure movements and travel (equipment, patients and staff), and relieve the A&E and admission services.

After all, when a healthcare facility encounters patient flow management issues, A&E and admissions feel the impact first and foremost. Managing flows has become a real issue for hospitals due to the increased complexity of medical treatments, shorter hospital stays, and the explosion in the number of people involved.

The result is that hospitals need to rethink flow management by placing more focus on the patient journey, as investigated in conference paper published on ResearchGate in 2017 (read more on page 8).

It explains why thought must go into how spaces will be arranged before a hospital is built to make work easier for staff and create a more efficient, pleasant place for users.



## CONFERENCE PAPER

## “Management of clinical pathways based on patient flows”

### Authors:

Virginie Fortineau, Lucie Roussel, Samir Lamouri, Guillaume Eckerlein, Andre Rieutord, Niccolo Curatolo, Renato Fior

**Abstract:** As patient care is getting more and more complex, with more stakeholders involved and as, at the same time we are facing a growing demand to reduce the length of stay, managing patient flow is a key issue to address. Although there are currently some interesting developments about the « Clinical pathway » concept promoted by healthcare policies, we must admit that silo organisation are still predominant especially in hospital settings. To our knowledge, there are neither planification method nor tools customized for managing simultaneously complex patient clinical pathways. We have identified two major difficulties:

- (1) There are no structure within hospital dedicated to manage patient clinical pathways.
- (2) The manufacturing tools from the industry are not adapted to the hospital context due to the high variability and uncontrollability of patients flows and the prevailing hospital's functional approach.

This paper presents a contribution to draw patient flow charts in a real clinical context and their implementation in some models using UML and GRAFCET languages in order to develop a robust tool to manage the complexity of patient care.



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### Inpatient units

The care wards for short and long stays at the Children's Hospital will be set up in the same manner with a considerable bed capacity, autonomous units that are structured around a nurses' station, a treatment room, and other treatment support facilities (pharmacy, clean room, bedpan closet, equipment, etc.).

Each inpatient floor will have offices for staff and a conference room on the eastern side of the building.

These floors will also allow access to a patio on Floor 4 for young patients and their families to make the most of a secure outdoor living space.

### Physiotherapy and ergotherapy

In the physiotherapy and ergotherapy department, the inpatient and day care wards will communicate with one another.

To facilitate flows, treatment rooms will be next to the inpatient ward and a changing room with booths so patients can easily change.

A large storage room will stock the equipment needed for all rooms. In fact, the physiotherapy and ergotherapy units will share some spaces, as these spaces will be suited to both their needs.

Lastly, there will be an outdoor patio on the same floor for patients to receive treatment outside.





## Accident & Emergency

The A&E department will have its own entrance, accessible from Avenue Pierre-Decker, with two accesses: one for patients who can walk, the other for patients who arrive by ambulance. This ensures proper patient allocation and routing.

The resuscitation room will handle the most serious cases in A&E (cardiac arrests, heart attacks, serious trauma) with two designated areas and an isolation booth for the most urgent first aid. It will be next to the ambulance parking bay for the fastest possible handover.

For patients who can walk, there will be two semi-open booths for nurses to determine the level of urgency and reallocate patients according to their condition. Patients will be assigned to two different zones with waiting rooms and examination rooms for urgent and non-urgent care.

There will be 17 consultation booths in all in A&E, along with two treatment rooms, a plaster room and an X-ray area. Patients can be treated on-site for orthopaedic problems without having to move around.

## Admissions and reception area

Logic dictates that you access the reception and admissions area from the main entrance.

That is why the reception desk in the new Children's

Hospital will have a waiting area and several admissions booths. As soon as the paperwork has been completed, the patient will be transferred to the appropriate department, which will have its own waiting room to free up admissions.

To simplify the patient journey, all secondary reception services will be near the main reception. The layout of the main routes in relation to the secondary ones, will help make orientation within the building intuitive.

## Intermediate care

The intermediate care premises will be configured in line with the Swiss Society of Intensive Care Medicine's directives and meet these criteria.

The unit will have 13 beds, four of which have a decontamination room to isolate contagious or immunocompromised patients.

Another unique feature of the department is that its desks will be in the middle, providing a panoramic view of all rooms and staff.

## Paediatric haematology and oncology

The paediatric haematology and oncology unit will be accessible via a secure door to manage flows and protect patients from the risks of infection. Some rooms will have a decontamination room and a positive pressure ventilation system to isolate immunocompromised patients.

<sup>1</sup> Lausanne Children's Hospital, Switzerland. Image source: GMP (<https://www.gmp.de/en/projects/9718/hpital-des-enfants-chuv>)

<sup>2 3</sup> Lausanne Children's Hospital, Switzerland. Image source: INGPHI Concepteurs d'ouvrages d'art (<https://ingphi.ch/en/2020/10/19/childrens-hospital-lausanne-fhel/>)

## X-ray

The X-ray department will have two standard X-ray rooms, a room for MRI scans and three ultrasound rooms. It will also have a room with a mobile X-ray machine to ensure round-the-clock X-ray capabilities in A&E.

Aside from enabling paediatric X-ray examinations and diagnoses, it will be easier to process obstetrics and gynaecology patients and newborn babies as the department will be directly connected to the Maternity Division.

## Specialist consultations clusters

Three consultation clusters, grouped by speciality, will centralise the Children's Hospital's outpatient services, fostering synergies and shared premises and resources.

These clusters will be located between the ground floor and the first floor, with users easily accessing them from the hospital reception area. Each cluster will have a desk to welcome patients with a panoramic view of the waiting room.

There will be 42 consultation booths, four therapeutic education rooms, two dental booths, seven treatment rooms and a plaster room.

## Operating department

The operating department will observe the fundamental principle of surgical asepsis (separating sterile objects from non-sterile ones). The operating department will have six multidisciplinary operating theatres dotted around the sterile preparation area and an induction room between each. Parents can thus accompany their children to the operating theatre.

To ensure proper monitoring of all beds, the nurses' station will be in the centre of the recovery room, which can accommodate up to 12 patients.

Some operations will continue to be carried out in the main CHUV hospital building (Floors 5 and 7) because they are complex or of a highly technical nature. That is why Floors -3 and -1 in the Children's Hospital and Floors 5 and 7 of the main hospital building must be connected via a tunnel system.

## Offices

Each department will have its own offices to enable healthcare professionals to be nearby and facilitate their work.



1 Lausanne Children's Hospital, Switzerland. Image source: GMP (<https://www.gmp.de/en/projects/9718/hpital-des-enfants-chuv>)



## Improving how children and families are welcomed with healing architecture

Find out more about the key components of healing architecture in our issue #01:



### A user-centric approach

Children must be involved in the project definition phase if hospitals are to be truly tailored to them. After all, they are best placed to determine their exact needs and wants. Children should be a source of inspiration for all architectural projects designed for them, whether children's hospitals, healthcare centres, nurseries, primary schools or high schools.

With this in mind, several collaborative surveys were carried out: the Pousses Urbaines workshops for children in 2014, followed by the Innov Entrepreneurs workshops from 2017–2020. Thanks to these discussions and workshops with students from the Swiss cantons of Geneva and Vaud,

the Children's Hospital will genuinely meet the needs of its patients and promote their general wellbeing.

During the Innov Entrepreneurs workshops, students aged 10 to 18 put forward solutions to create a positive environment for young patients that would help them get better.

The four winning projects in 2018 consisted in:

- Creating a welcome pack for hospitalised children full of goodies, games and practical information.
- Setting up a social network within the hospital so patients could meet up and chat.
- Providing activity areas in the A&E waiting room.
- Installing projectors in bedrooms to provide patients with a means of distraction.

The winning projects in 2019 suggested:

- Setting up an interactive aquarium in the A&E waiting room and inpatient floors and providing an outdoor enclosure for patients to see their pets.
- Improving patient intake and wellbeing with a guest services desk.
- Reorganising the hospital's outdoor areas and patio so there are play, rest and performance areas, as well as a vegetable patch.
- Offering animal-assisted therapy in line with the constraints of the hospital environment.



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The Lausanne Children's Hospital plans to integrate these projects, in whole or in part, if the budget allows and if they are feasible. That is why the Swiss foundation for sick children, Fondation Planètes Enfants Malades, is seeking donors and sponsors to finance the winning projects.

### **Generous personal spaces to feel just like at home**

Areas must be personalised and roomy to ensure patient wellbeing and welcome families.

As such, each room in the Lausanne Children's Hospital care wards will have its own toilet, shower, wardrobe to store their personal effects, and a sofa bed so a parent can stay the night.

If any painful treatment needs to be administered, this will only take place in treatment rooms, never in a bedroom. Ultimately, children and their families should always consider bedrooms as welcoming places for rest and comfort.

Long-stay care wards will be customised so that young patients feel more at home in an environment that tempers the hospital environment.

### **The importance of light**

Light also plays a crucial role in healing architecture. To create comfortable spaces conducive to wellbeing, you need to maintain a good balance between natural and artificial light.

All the intermediate care rooms in the Children's Hospital will bathe in natural light thanks to the glass façade and skylights.

Although the operating department will be on Floor -1, it will also enjoy natural light. The same will be true for the reception area – visitors will enter a light, airy space with window walls and a landscaped patio.

### **Access to nature**

Access to nature is another area deserving of attention as it encourages healing.

As such, the Children's Hospital will open onto a large, protected patio with green outdoor areas, with the grounds shaped around courtyards. There will be play and rest areas and all the equipment needed for outdoor physiotherapy and ergotherapy.

The patio will promote connections with nature, but that is not all. It will also help create a place to live and socialise where patients, families and employees can meet.

### **Places for living and socialising**

Hospitals shouldn't just be viewed as places for receiving treatment or where people die or see out the end of life. No, these places for healing should be designed and viewed as places for living and socialising. Our attitude can have a tremendous impact on healing, and architecture, too, influences our perception and mental wellbeing.





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Common rooms will be provided on all floors to make the Children's Hospital a place for living.

For example, the two inpatient floors will have learning areas to encourage family time through educational, social and recreational activities.

The school, teenagers-only space, patio, cafeteria and gift shop on Floor 3 will also help to give a sense of normality. Meanwhile, the cafeteria will have a seating capacity for 80 diners and can provide hot food, in the form of snacks, to families and loved one

### Art and entertainment

Another crucial aspect of healing environments lies in art and entertainment. Integrating art in healthcare establishments helps improve feelings of wellbeing and entertainment, stimulates the senses, and fires the imagination.

Therefore, the Children's Hospital will feature artistic creations. For instance, the Swiss artists Claudia and Julia Müller and plastic artist Camille Scherrer (winners of the hospital's November 2018 call for proposals) will create original, childlike works to brighten different areas of the hospital. The Müller sisters will install 14 chrome steel balloons on the hospital forecourt, visible to everyone entering via the main entrance. The light and surroundings reflected on the surface of the balloons will illustrate the "universality of human feelings, dreams and wonder".

Meanwhile, Scherrer's work entitled JOY will take pride of place at the A&E entrance. The inspiration for this

work was that of a children's game, a box of building blocks with bright, timeless geometric shapes.

*"If a child is to get better, they need to be in a good place psychologically-speaking."*

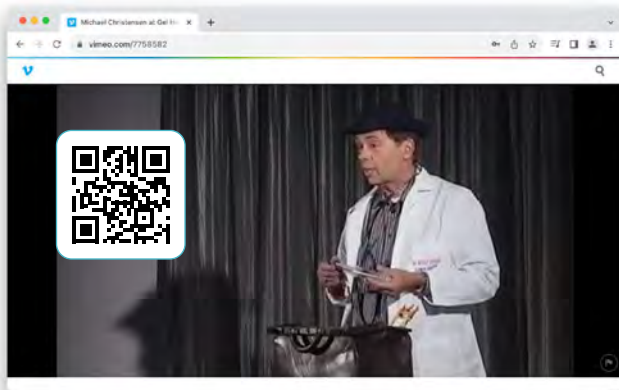
Nathalie Genton, Head Nurse at the CHUV University Hospital

Other hospitals have set up other interesting artistic and entertainment initiatives. For example, they have performances specially for children.

Take the Foundation Theodora, created in 1993 by the Poulie brothers (André and Jan) in memory of their mother. It provides hospitalised children with moments of joy, fun and laughter that transport them elsewhere. The foundation has been around for 30 years and celebrated its 30th anniversary in early September 2023.



Hospitalised at a young age following an accident, André Poulie remembers how much his mother's regular visits meant to him. This personal experience inspired the brothers, as did the work of the American circus artist Michael Christensen, who visited sick children for 34 years as Dr. Stubs (see video below).



And so, the brothers came up with the idea to bring some fun and laughter to hospitalised children or those in care through the Foundation Theodora. Its artists have made 2 million visits to children in 59 establishments, 32 hospitals and 27 specialist institutions across Switzerland every week.



1 2 Image source: Stiftung Theodora (<https://theodora.ch/de>)

## “If you please, draw me a sheep.”

Saint-Exupéry's *Petit Prince* couldn't have said it better when he asked the pilot to draw him a sheep. After all, children want to hear stories. They want to dream and have a purpose.

For architecture to be meaningful, especially for children, it must tell a story and stick to the narrative, as Nathalie Dziobek-Bepler explains in her book *Designing Spaces for Children: A Child's Eye View*. Dziobek-Bepler is the Director of the Berlin-based architectural and design firm Baukind, specialising in architecture for children.

When she works on an architectural project for children with her firm, she draws inspiration from the surroundings, clients and the teaching concept to write a new story. The aim is not to change the theme as you move from room to room but to have a central theme and be consistent throughout the building.

While children do not understand everything from an intellectual point of view, their instincts and senses are highly attuned. And so, the narrative aims to create a certain harmony between spaces. For example, for her “Into the Wild” nursery project (see below), Dziobek-Bepler and her firm created a journey leading from town (where you enter the nursery) to the jungle (the heart of the nursery). The further you go into the nursery, into spaces for children, the more you travel to a primitive, wild environment.





## Why colours and materials matter in architectures for children

Colours and materials should not be selected at random for healing environments. Like light, colours and materials affect the healing process and wellbeing. This is what is known as colour psychology. For example, red and orange are stimulating colours, while blue and green hues are more calming. That is why colours must be used wisely.

Colours should be discreet in areas where children spend a lot of time. Meanwhile, brighter colours can be used in areas where children don't spend much time, such as bathrooms.

*“What matters is that children feel good. As such, you can indeed propose cheerful, childlike worlds.”*

That's precisely what the Paint A Smile foundation based in Geneva does, enhancing “hospital stays with its colourful frescos and installations”. These colourful frescos are great for sparking the imagination and inspiring creativity, and they also have a therapeutic purpose. With these kinds of imaginary worlds, children are distracted and focus less on their fears and pain.

The Children's Hospital has comfortable, colourful furnishings to create a joyful environment far removed from typical medical facilities.

Remember, the world in which hospitalised children live must be joyful to downplay the situation they find themselves in and reassure them.

# Paint a Smile

### Our mission

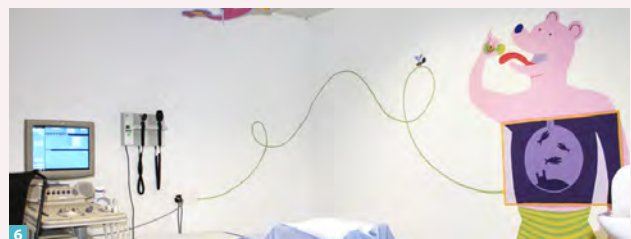
The Paint a Smile Foundation is a non-profit NGO (nongovernmental organisation). Based in Geneva, the Paint a Smile Foundation is recognised as being in the public interest. Its mission is to optimise stays in healthcare environments thanks to its colourful paintings and installations specifically designed for such places. It uses its expertise and professionalism to the benefit of hospitalised children, disabled persons in institutions, and our elders in nursing homes.

This decor, developed in consultation with the medical profession, becomes veritable therapy support tools that help relieve and stimulate patients.

Since its inception in 2000, Paint a Smile has decorated 193 healthcare units in 18 countries around the world.



visit [www.paintasmile.org](http://www.paintasmile.org)



3 4 5 6 Image source: Fondation Paint a Smile ([www.paintasmile.org](http://www.paintasmile.org))

## Hospital-grade materials that offer a great degree of freedom

Some building materials and products are particularly suited to hospital environments. This is particularly true of Acrovyn products: wall protections, handrails, crash rails, corner guards, door protections, and so on.

While safety and hygiene are the top priority in hospitals, healthcare facilities must also become warm, welcoming places. With this in mind, you can use malleable, customisable materials that leave room for creativity.

With children's hospitals, like in schools (our blog will soon have a new article on this), children are the raison-d'être of these environments. As such, they can be a prime source of inspiration to create the perfect environment suited to them. After all, if you want children to feel good in a place, they have to appropriate it for themselves.



*“Even in the form of stylised icons, the animal kingdom adds a touch of humour and fantasy for children.”*



1 2 Pelhrimov Hospital, Czech Republic. Image source: Construction Specialties.

3 4 5 6 7 8 UPMC Golisano Children's Hospital. Image source: Construction Specialties (<https://www.c-sgroup.eu/blog/custom-wall-protection-for-childrens-hospital/>)





For example, you can reproduce wall mural projects made by children for children on Acrovyn by Design wall panels.

Whether or not children help design these healing wall murals, brightening up the walls and corridors in a building is always beneficial and projects positive energy. For example, the Pelhrimov Hospital in the Czech Republic has Acrovyn by Design wall panels with motifs depicting the land, sky, birds and all manner of animals, giving the building an upbeat, refreshing touch.

Moving on, Construction Specialties also showcased the potential of Acrovyn by Design products during renovation work in the Royal Albert Edward Infirmary in Wigan, UK. The project specifications called for the design and installation of bright, colourful, customised wall coverings, and the result was a resounding success.

Children find the vivid bird motifs and different shapes of clouds on this Acrovyn by Design wall protection to be fun and a welcome distraction as they wait for treatment. And that has positively affected their healing, and stress and pain management.

In 2015, the Golisano Children's Hospital in New York, USA, tasked CS Specialties with creating a pleasant

environment in the common areas to help children heal.

Naturally, the company suggested a décor with natural themes printed on Acrovyn by Design wall protections to combine creativity, comfort, hygiene and safety. As these panels can be customised, designers and architects could be as creative as they liked. These wall protections offer a harmonious blend of soft colours, depicting flowers, meadows, animals and lakes to bring nature into the facility. To finish, Acrovyn corner guards and handrails were added for hygiene and safety reasons.

In the spirit of healing architecture, Acrovyn by Design panels have breathed life and hope into the Riley Hospital for Children at Indiana University Health, USA. The hospital's Simon Family Tower has been in use since 2011, and its corridor walls are decorated with natural, plant-inspired motifs thanks to the work of the artist Walter Knabe, the architect Barbara Eden and Construction Specialties.

The quality of the high-definition Acrovyn by Design wall panels is simply incredible. These wall panels are easy to install and meet all the healthcare facility's requirements: customisation, high-definition print quality, durability, hygiene and hard-wearing.

You can see another gorgeous example of the rich colour palette available with Acrovyn by Design wall panels in the renovations of two paediatric hospitals in Athens, Greece: the Aghia Sophia Children's Hospital and the P. & A. Kyriakou Children's Hospital between 2012 and 2020. With the Acrovyn by Design panels, CS provided a childlike universe – cheerful and bright – to these children's hospitals.



*“The illustration of the hopscotch grid rising from the floor to the wall gives continuity and a sense of feeling protected, which is reassuring for children.”*



**1 2 3** Aghia Sophia Children's Hospital, Athens, Greece. Photo Credits: Manolis Chiotis - Architects: Betaplan | Ventourakis - Tavaniotis & Associates



*“The elements of nature (clouds and rain), arithmetic symbols and letters of the alphabet help maintain the ties with school and life outdoors, which will resume shortly. It is a promise of a return to normality, which helps children imagine the future more easily.”*



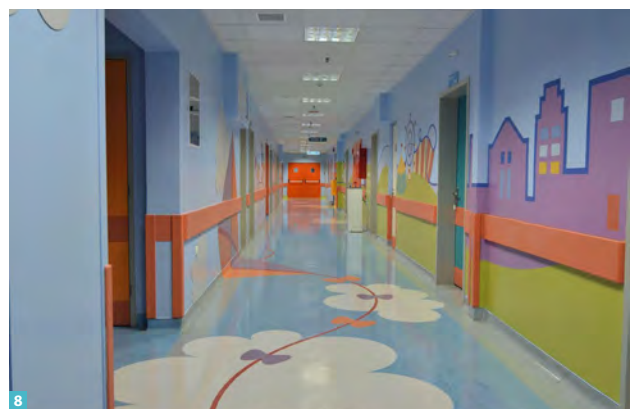
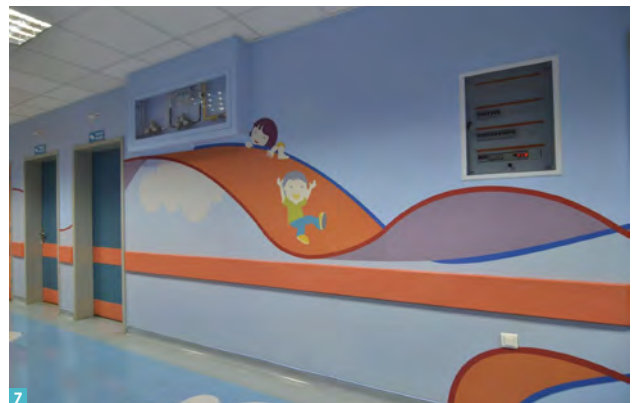
*“The joy of music and song – particularly as a musician or singer – also has healing properties.”*

### **The interior designer’s conundrum: to create something beautiful or functional?**

These illustrations for children in the P. & A. Kyriakou hospital in Greece may seem excessively colourful or garish with a mix of colours that clashes. However, they succeed in their primary aim: reassuring children.

After all, a children’s hospital is for children, and the design approach needs to be tailored to them. Architects sometimes forget this, as they are taken with the idea of using lustrous or noble materials, such as oak or stone in the case of the latter. Residential care facilities have often been victims of this trend, with smooth, polished buildings more suited to architecture magazines than end users.

Each specific case deserves careful consideration, but ideally, we should strive to combine beauty with utility.



## Other examples of children's hospitals that subscribe to a healing architecture logic



### PZ Heilige Familie Psychiatric Hospital, Kortrijk, Belgium

The new psychiatric hospital for children and young adults in Kortrijk opened at the end of September 2022. It is located near the city centre and the historic Groeningepark.

In this instance, the VK design team developed a concept of houses with a patio area, intermediate gardens dotted along a central thoroughfare for treatments by healthcare professionals, and a street for recreation for young patients fashioned the same way. The living quarters are the same: a living space, bedrooms, a bathroom, support functions, and a patio garden suited to the age group.

Nature and play very much have their place here. For example, the gardens for the youngest patients have sandpits, hopscotch grids and swings. Teenagers, meanwhile, have fitness equipment, sports fields and more. In these facilities, the patients benefit from the positive effect of nature on their physical and mental wellbeing.

Natural light, warm colours and natural materials help strengthen the feeling of comfort in these areas.

This hospital was designed to be a place for living, socialising and connections. As such, it branches out from the street for recreation towards the various hospital departments around it. While play is the overriding theme of this architectural design, art has

not been overlooked. The hospital has four immense pieces of art – colourful geometric sculptures by the artist Henke Delabie. The premise of these works is that they are places for meeting as you can lean, sit down or even lie down on them. The hospital also pays homage to the demolished school formerly on the site with references to it here and there and glass art by Maurits Nevens in the window façades on the first floor. The school's original foundation stone is also part of the façade.

To guarantee a customer-centric approach, all items and spaces were tested by users during weekly consultations and study visits.



**1 2** PZ Heilige Familie Psychiatric Hospital, Kortrijk, Belgium. Image source: Architectura.be / ©Klaas Verdru (<https://www.architectura.be/nl/nieuws/kortrijks-kinder-en-jeugdpsychiatrisch-ziekenhuis-op-shortlist-european-healthcare-design-awards/>)





### Day hospital for children with autism – Chevilly-Larue, France

The day hospital for children with autism in Chevilly-Larue is the work of the Tolila + Gilliland architectural firm.

The healthcare facility has drawn on neuroscience and environmental psychology studies to offer everyone a welcoming environment.

Designed as a village of adjoining maisonettes, the space can house up to 20 children in a stunning green setting.

For this build, discussions with users took place from the very beginning. Residents and staff were shown a cardboard mock-up to better understand the end result. The layout, fittings and furnishings addressed the specific needs of children with autism by including doors with secure locks and soundproof spaces.

This healing architecture meets patient needs as it focuses on two primary points: light and colour. Light helps shape and differentiate between spaces; meanwhile, the shades of green on the ground help residents find their way around.

Lastly, the choice of materials used proved essential. Wood is all around, giving even more warmth to the site. At the same time, the natural rubber on the ground prevents damage and injuries.



**3 4 5** Day hospital for children with autism, Chevilly-Larue, France. Image source: Les Echos - Philippe Ruault (<https://www.lesechos.fr/pme-regions/ile-de-france/a-chevilly-larue-les-enfants-autistes-soignes-dans-un-cocon-de-bois-1304550>)

# PERFECTING PAEDIATRICS

*The new Lausanne Children's Hospital will revisit healthcare facilities and paediatrics.*

*Innovation will take centre stage, and the hospital will integrate the very latest in paediatric medicine.*



1

## Giving impetus to research and sharing knowledge

The Children's Hospital wants to further paediatric and maternal healthcare research, which is why the Woman, Mother and Child Unit will be created.

In addition, the new building will also have an auditorium, a hall and four conference and meeting rooms to train students and help the departments run smoothly. With cutting-edge audiovisual equipment, the entire space can be accessed by all, including people with a disability or a visual or hearing impairment. The auditorium alone will house up to 160 attendees.

While each department has small meeting spaces for conferences, sharing information and networking, these four extra conference rooms will be accessible to all hospital employees. They will also be helpful for seminars and educational events.

The desire to integrate research and training activities within the hospital itself is a shared one for the future children's hospital in Geneva. It hopes to facilitate the work of healthcare staff and attract medical students specialising in paediatrics.



2

1 Image source: Shutterstock

2 CHUV Children's Hospital, Lausanne. Image source: Ferrari Architectes (<https://www.ferrari-architectes.ch/portfolio/hopital-de-lenfance-chuv>)



## Expanding the fields of expertise

For several years, paediatric medicine has been branching out into new areas, particularly paediatric oncology, rare diseases and illness, foetal medicine, epidemiology and epigenetics.

Professor Umberto Simeoni, a paediatrics lecturer in the Faculty of Biology and Medicine at the University of Lausanne, has been researching developmental approaches to prevention and promoting early health to parents. Simeoni is also head of the paediatrics department and the Developmental Origins of Health and Disease (DOHaD) Research Group at the CHUV Lausanne University Hospital.

It is reasonable to think that a healthy child will become a healthy adult.

Given the progress made in epidemiology and epigenetics, Simeoni states that one of the key factors of the early environment – the first 1,000 days of life (nine months of pregnancy + two years) – is the lifestyle adopted by parents. However, acquired parental marks prior to the child's conception also have their part to

play. Addressing these different factors could positively influence a child's health from the very beginning right through to adulthood.



visit: <https://doi.org/10.1016/j.prrv.2021.05.005>

## Conclusion

As we have seen with the case study of the future Lausanne Children's Hospital, adapting hospitals to children of all ages is paramount.

If you involve children and teenagers, you can create welcoming, energising environments suited to their needs. The children's hospital offers an inspiring example of this approach as it has used the principles of healing architecture and surveyed its future users. By doing so, the architecture and design have been carefully thought through to support the development and wellbeing of children.

In adopting this holistic vision of hospital care, the Lausanne Children's Hospital has laid the groundwork for a society that values and protects children's rights in a setting that will help children grow and thrive.

Indeed, architecture and spatial planning are crucial to healing. But not only. These notions are also vital for children to become more independent, gain self-

awareness, and develop and build communication and social skills.

Even when hospitalised, children continue to grow fast. As such, due consideration must go to the different stages of their development. They must be stimulated both physically and intellectually, with many studies showing a direct link between the developing musculoskeletal system and the brain. Even in hospitals, children and teenagers need to move, run, jump and burn off energy.

Multifunctionality seems to be one of the keys to designing spaces for children. Such spaces must encourage children to create their own world with the everyday architectural features around them and be adventurous. Ultimately, children's hospitals will score top marks with users if they fire the imagination, foster communication and pave the way for socialising and discussions.



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