WEBUILD

HOSPITALS

GREEN BUILDINGS

APRIL 2026

webuild

COVER IMAGE:
NEW HOSPITAL IN VENICE-MESTRE ("OSPEDALE DELL'ANGELO"), ITALY

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TABLE OF CONTENTS

CHAPTER 01

WEBUILD: EXCELLENCE IN THE HEALTHCARE SECTOR

The Webuild Group has designed and built more then 200 healthcare facilities worldwide.

The Webuild Group's experience in constructing highly complex civil and industrial works has led to significant recognition for the design and construction solutions it has adopted for its innovative and iconic buildings around the world, which are often the result of collaboration with prestigious architectural firms. This commitment is also expressed in the construction of healthcare facilities and treatment centres.

In the healthcare/hospital sector, Webuild suggests the best technical and technological solutions for constructing and managing traditional and state-of-the-art facilities. Added to this is the Group's ability to develop licensed initiatives, through its hub of expertise dedicated to this type of initiative and to operation and maintenance activities. These skills increase its range of offerings and allow for designs that are closer to the needs of those who will have to use, operate and maintain the work.

Building and maintaining healthcare infrastructures to care for people with different needs means thinking, designing, building and operating 'healthcare machines' capable of providing patients with an environment that eases their stay. Humanity, warmth, well-being and high technology must be an integral part of the design and construction of these works.

Humanising places of care — also through a new architectural vision of environments and green spaces — is Webuild's primary objective. Through its works, it puts people and territories at the centre, following the One Health approach underlying the global healthcare strategy promoted by the World Health Organisation.

From logistics, with the best solutions for access and emergency routes, to technical solutions for thermal and acoustic insulation and the mental-physical comfort of patients, relatives and caregivers, and meticulous attention to key processes in healthcare facilities, as well as maintenance and cleaning — everything is designed on a people-friendly basis. Sustainable structures follow evidence-based design, often surrounding them with greenery, to make hospital stays more comfortable. And, again, they follow environmental criteria, such as energy efficiency and savings, a careful choice of materials, shapes and colours to improve indoor air and wellness quality and the study of noise, light and colours to create interiors reflecting the most modern structures.

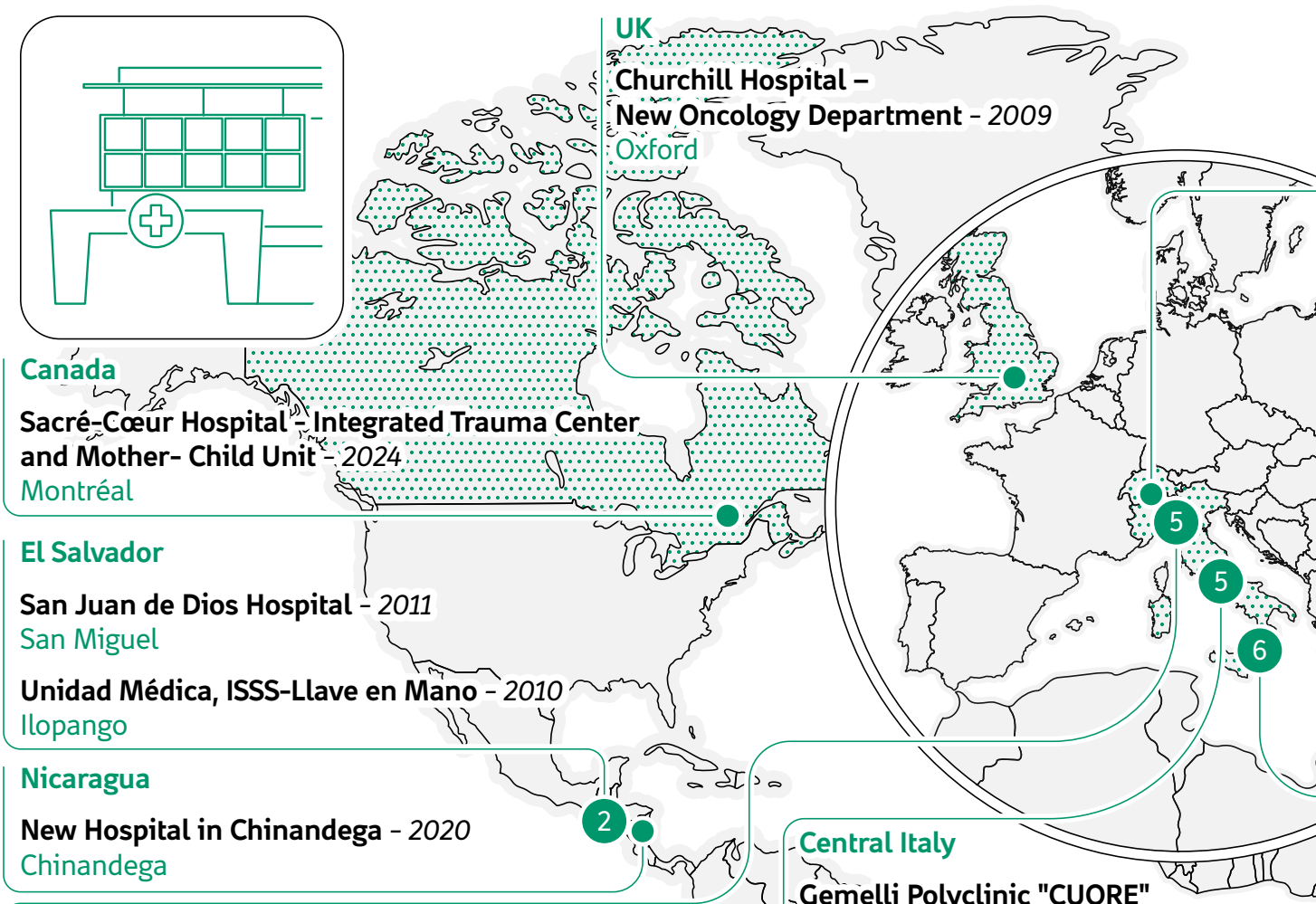
Due to their efficiency and as places where complex processes are managed, hospital buildings are very energy-consuming facilities. Energy aspects are therefore a key parameter in the environmental and economic sustainability of such works.

Webuild is committed to designing and building facilities with technologically advanced systems to maximise the efficiency and safety of the systems, while greatly reducing emissions and the use of fossil-fuel energy sources.

Webuild's expertise in pursuing and certifying its achievements with the main energy and wellness protocols (e.g. LEED, BREAM, GSAS) is put at the service of the hospital sector.

CHAPTER 01

GROUP'S MAJOR PROJECTS IN HEALTHCARE SECTOR



UK

Churchill Hospital – New Oncology Department - *2009*
Oxford

Canada

Sacré-Cœur Hospital – Integrated Trauma Center and Mother- Child Unit - *2024*
Montréal

El Salvador

San Juan de Dios Hospital - *2011*
San Miguel

Unidad Médica, ISSS-Llave en Mano - *2010*
Ilopango

Nicaragua

New Hospital in Chinandega - *2020*
Chinandega

North Italy

New Hospital in Venice-Mestre ("Ospedale dell'Angelo") - *2008*
Mestre

Villaggio S. Ambrogio Psychiatric Rehabilitation Centre - *2004*
Cernusco sul Naviglio

Modena General Hospital - *2003*
Modena

Carlo Poma Hospital (Lot 2, 1st package) - *2002*
Mantua

New General Hospital " A. Manzoni" - *2000*
Lecco

Central Italy

Gemelli Polyclinic "CUORE" Heart Centre -
Rome

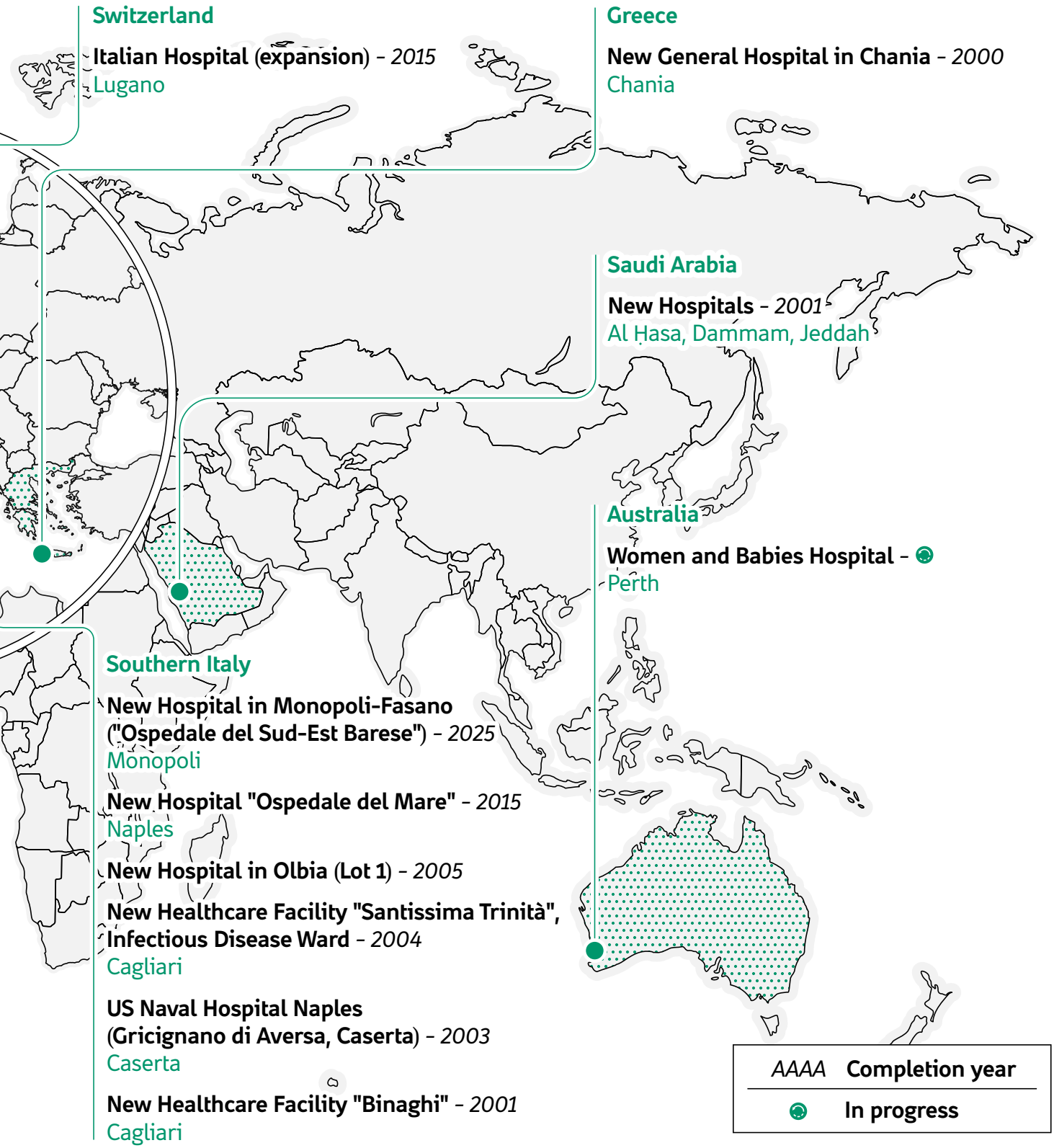
New Careggi Unversity Hospital (Block F) - *2022*
Florence

Four Hospitals in Tuscany - *2015*
Prato, Pistoia, Lucca and Apuane

New Hospital "San Salvatore" - *2003*
L'Aquila

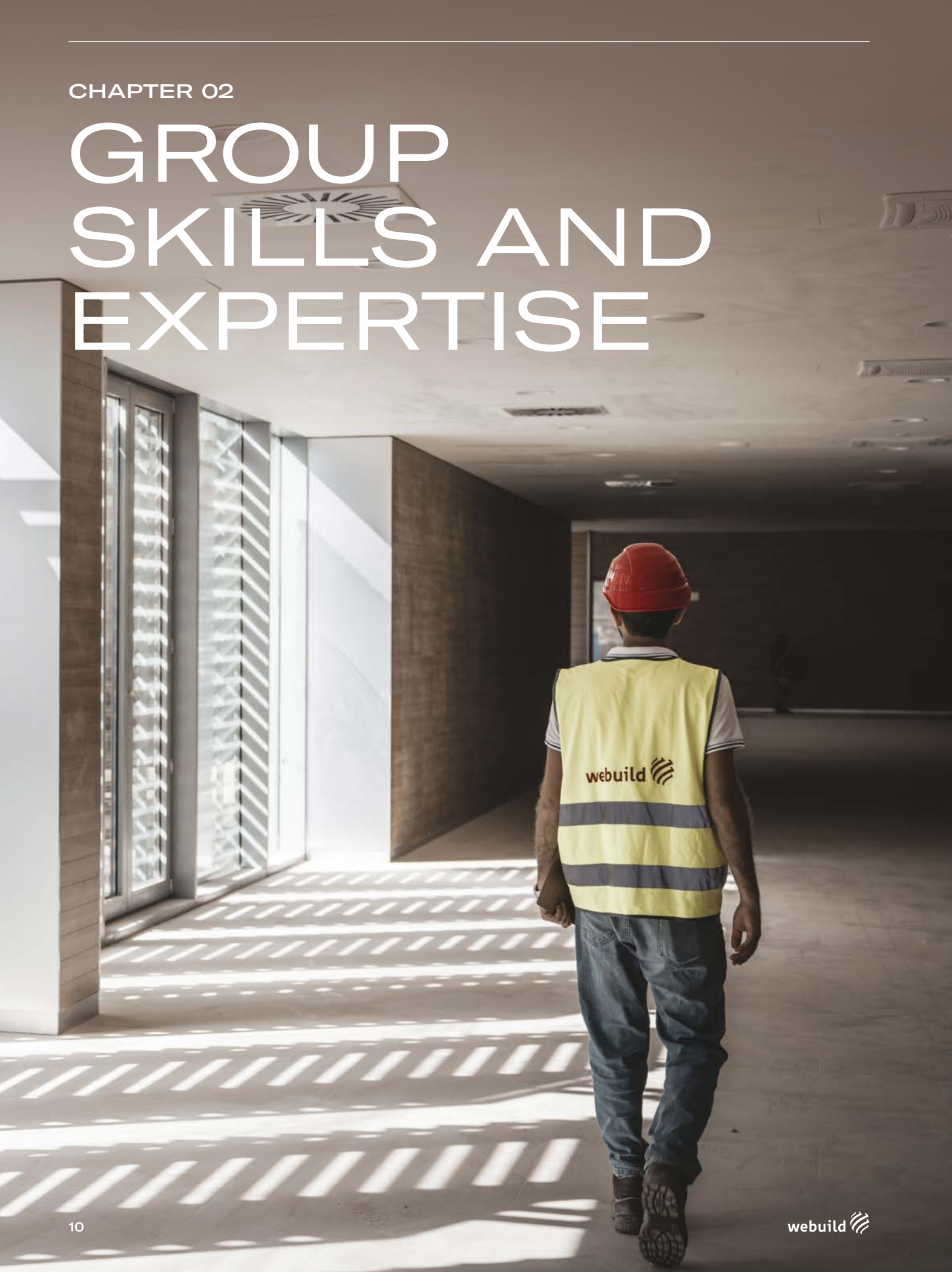
New Hospital "Versilia" - *2001*
Camaiore

Silvestrini Hospital (Lot 1) - *2001*
Perugia


Switzerland
Italian Hospital (expansion) – 2015
Lugano
Greece
New General Hospital in Chania – 2000
Chania
Saudi Arabia
New Hospitals – 2001
Al Ḥasa, Dammam, Jeddah
Australia
Women and Babies Hospital –
Perth
Southern Italy
New Hospital in Monopoli-Fasano ("Ospedale del Sud-Est Barese") – 2025
Monopoli
New Hospital "Ospedale del Mare" – 2015
Naples
New Hospital in Olbia (Lot 1) – 2005
New Healthcare Facility "Santissima Trinità", Infectious Disease Ward – 2004
Cagliari
US Naval Hospital Naples (Gricignano di Aversa, Caserta) – 2003
Caserta
New Healthcare Facility "Binaghi" – 2001
Cagliari
AAAA Completion year
In progress

CHAPTER 02

GROUP SKILLS AND EXPERTISE



In recent years, the Group has built and managed some of the most innovative and cutting-edge centres of excellence in the healthcare sector in Italy and abroad.

The Webuild Group specialises in the design and construction of hospitals and healthcare centres, involving various professionals from the construction and healthcare sectors: designers, engineers, architects, bioengineers, doctors, and healthcare personnel.

This synergy often sees the Group's construction capabilities supported by the visionary creativity of internationally renowned architects, as in the case of Argentinean Emilio Ambasz with the New Hospital in Venice-Mestre, Italy.

DESIGN AND CONSTRUCTION

The Webuild Group is organised to design, manage, and carry out the construction of hospitals and healthcare centres in Italy and abroad, in addition to the management and integrated maintenance activities offered by the Group through its O&M (operation and maintenance) expertise.

The Group also supplies electrical medical systems and equipment, as well as providing support, including after-sales services, selecting equipment and appliances for hospital units, working with experts and technicians in the sector and guaranteeing effective and efficient support tailored to the needs of customers and end users.

PLANT ENGINEERING

Webuild develops plant engineering solutions applied to the healthcare construction sector. These include integrated solutions and EPCs for complex systems and state-of-the-art technological facilities, from design and construction to testing, commissioning, maintenance, and operation.

Webuild proposes technological solutions and can manage any problems related to traditional and advanced plant engineering.

Specific expertise in energy retrofits and services in energy, water and outdoor quality complete the offer.

OPERATION AND MAINTENANCE

The Group has recognised expertise in O&M services. These include routine and emergency maintenance of civil works and installations, heat and energy management, healthcare technology management, electrical medical equipment and sterilisation of medical instruments, hotel management such as cleaning and catering and the management of green areas and commercial areas.

O&M activities typically involve services enabling the management of the completed structure. For this purpose, a specific O&M company is usually established for each contract to provide services and maintain the structure.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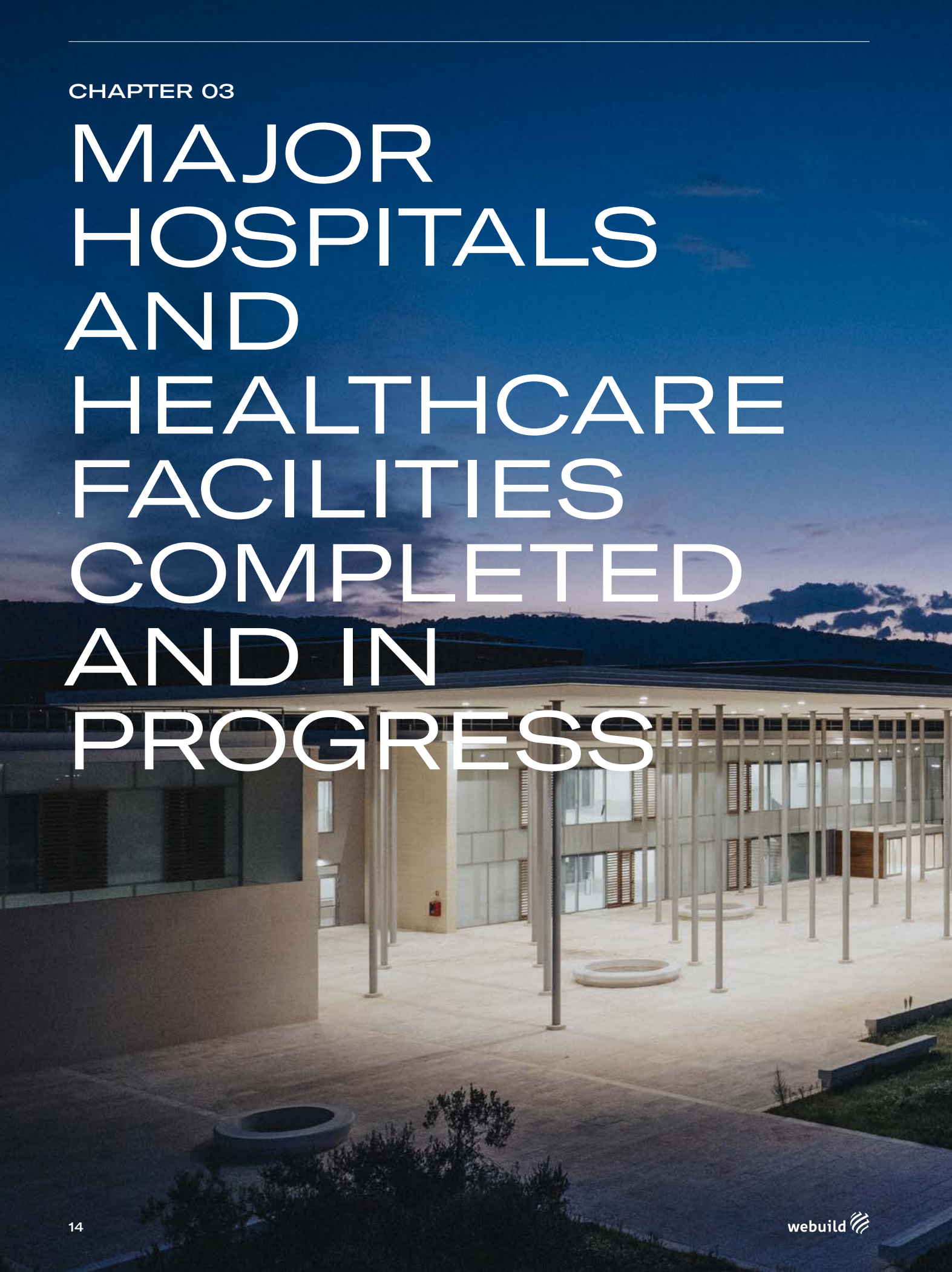
P
Q-ASC 2.1
Q-MC 2.1

CHAPTER 03

MAJOR HOSPITALS AND HEALTHCARE FACILITIES COMPLETED AND IN PROGRESS



Courtesy of Binini Partners

ITALY

GEMELLI POLYCLINIC "CUORE" HEART CENTRE IN ROME

Innovation, sustainability and advanced technologies for heart health

The "CUORE" (Cardiovascular Unique Offer ReEngineered) Heart Centre Facility will be a cutting-edge national centre of reference to heal heart problems. Webuild, with its subsidiary NBI, will build the structure on behalf of Fondazione Policlinico Gemelli, in collaboration with the Università Cattolica del Sacro Cuore, the “Istituto G. Toniolo di Studi Superiori”, and the support of Fondazione Roma. The new structure will be raised within the University Campus. Its iconic design will bring to mind the decks of a cruise ship. The main structure will develop on a total area of 27,000 m^2, with 100 beds for ordinary patients, 16 day hospital beds, 28 intensive care beds and 9 operating rooms, as well as advanced technology for cardiovascular imaging and telehealth. A technological room, which will be independent and totally underground, will ensure the structure's operational efficiency. It will be directly connected to the Gemelli Polyclinic through two dedicated passages. CUORE will be eco-sustainable and innovative. A photovoltaic solar roof with 180 kW of self-generated energy will contribute to its energy efficiency. A district heating system will be provided to produce hot carrier fluids and a supervision system to efficiently control all plant engineering integrated with the main system of the Gemelli Polyclinic. The large transparent facades will ensure maximum natural light, improving visibility of outdoor spaces and comfort conditions for healthcare workers.

RECENT AWARDING

CLIENT
FONDAZIONE POLICLINICO GEMELLI

TECHNICAL/PRODUCTION KPIs

27,000 m^2
total area

SUSTAINABILITY KPIs

+180 kW
self-production capacity of the photovoltaic solar system

~200
jobs (direct and third part) created during the construction phase

ITALY

NEW HOSPITAL IN MONOPOLI-FASANO ("OSPEDALE DEL SUD-EST BARESE")

A new healthcare facility of excellence for Southern Italy, built according to eco-design principles

The New Hospital in Monopoli-Fasano is an innovative, sustainable project that respects the area's cultural heritage. Once fully operational, it is set to become a center of healthcare excellence with strategic value for the area. The construction contract covered all civil works and installations. Commissioned by the Province of Bari Local Health Authority, the hospital was designed according to criteria inspired by the principles of eco-design and was conceived as a real 'hospital in a park'. Indeed, the structure is set in an olive orchard that creates a wide strip of agricultural landscape, designed to harmonise the new building with its surroundings. Sustainable technologies and innovative materials are predominant elements of this project. The new buildings meet bioclimate design criteria (e.g. ventilated walls, storage and transformation of solar energy and rainwater, etc.). Craftsmanship and traditional materials, such as the historic 'dry stone walls', were used to build the perimeter walls following an ancient technique that was recognised as an Intangible Cultural Heritage in 2018. System design was inspired by proven energy-saving criteria and a high degree of reliability to ensure continuity, flexibility and safety of the services. Eco-friendly and locally sourced materials were preferred. The construction and technological solutions were developed to optimise the energy efficiency of the structure, such as high-efficiency energy production using renewable energy, reuse of rainwater for irrigation, and flexible regulation of system operation. The new hospital covers 178,000 m^2, with 299 beds and 9 operating theatres for all major medical and surgical areas, related intensive care and outpatient and diagnostic services. The facility also includes an A&E unit and a car park with over 740 spaces, benefiting a catchment area of 260,000 potential users.

COMPLETED

WORK COMPLETION DATE
2025

CLIENT
PROVINCE OF BARI LOCAL HEALTH AUTHORITY

TECHNICAL/PRODUCTION KPIs

178,000 m^2
total project area

295,000 m^3
total building volume

55,000 m^3
concrete

6,500 t
steel

63,000 m^2
hospital gross area

SUSTAINABILITY KPIs

299
beds

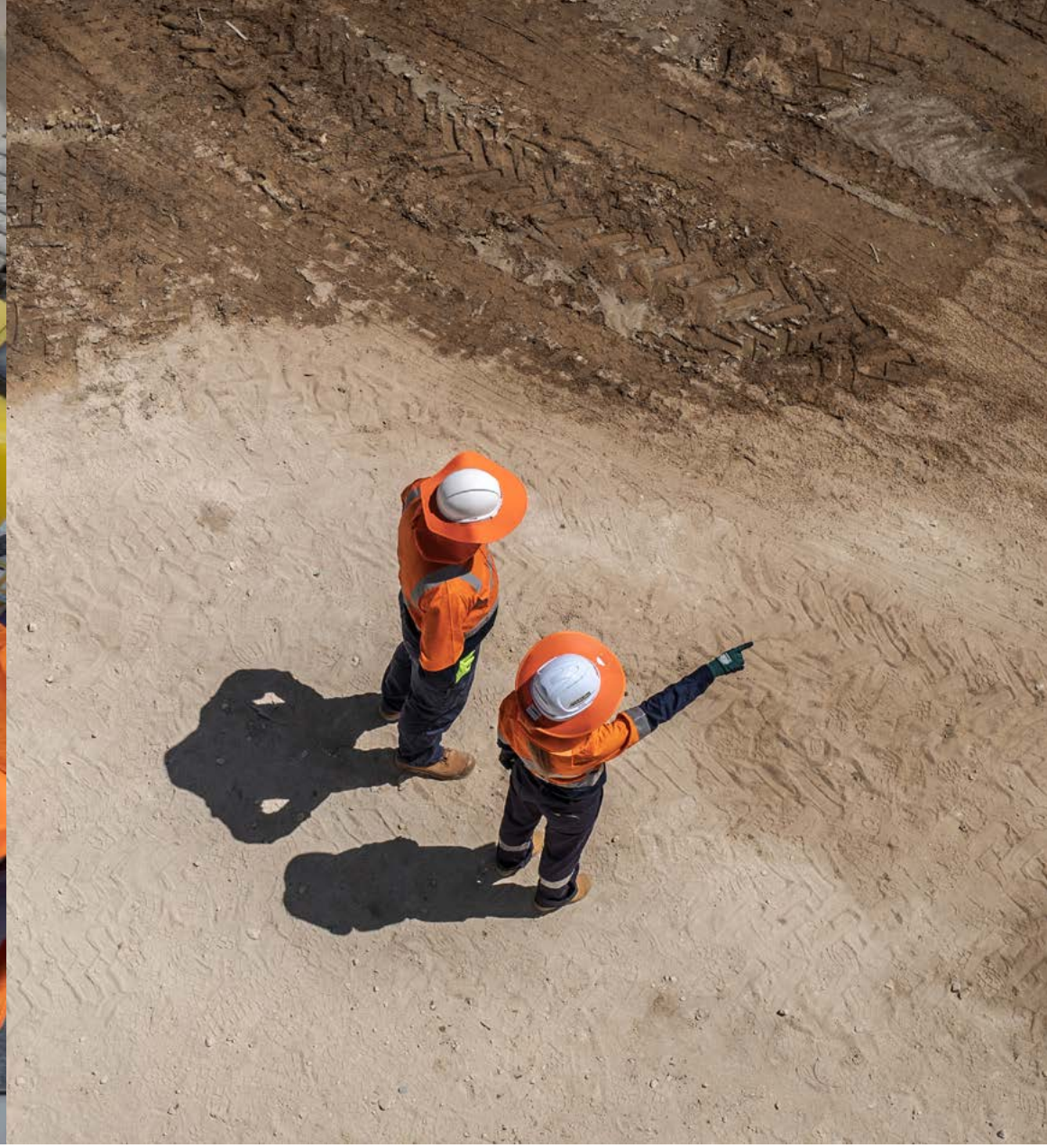
260,000
potential users

AUSTRALIA

WOMEN AND BABIES HOSPITAL DI PERTH

A new premium healthcare facility for Western Australia

Commissioned by the Western Australian Government, this landmark project aims to replace the century-old King Edward Memorial Hospital and expand the healthcare services for women, children and their families in the State of Western Australia. The contract includes the design and construction of a premium healthcare facility specializing in the care of women and children. It is destined to transform the capacity of two important healthcare campuses: the Fiona Stanley Hospital complex and the Osborne Park Hospital.



RECENT AWARDING

CLIENT
WESTERN AUSTRALIA GOVERNMENT
(DEPARTMENT OF FINANCE)

TECHNICAL/PRODUCTION KPIs

Additional area for
the Fiona Stanley Hospital

Additional area for
the Osborne Park Hospital

SUSTAINABILITY KPIs

Expansion of the healthcare services for women, children and their families in the Western Australia

ITALY

FOUR HOSPITALS IN TUSCANY

Four new compact, technological and fully computerised facilities

‘Four Hospitals in Tuscany’ is the name of the project that led to the construction, with project financing, of four new provincial-sized healthcare facilities in Tuscany, which are currently under management. These are the Santo Stefano Hospital in Prato, the San Jacopo Hospital in Pistoia, the San Luca Hospital in Lucca and the New Hospital (“NOA”) in Massa-Carrara.
The modern structures have similar characteristics and are integrated with each other in an IT network, in which every design choice was inspired by a focus on the patient’s well-being: the large windows that enhance sources of natural light, the choice of colours and use of materials that stimulate positive thoughts, the size of the green areas and attention to comfort and privacy. This is a complex and cutting-edge project from an environmental perspective, due to the choice of materials, system quality, insertion of the structures in the territorial context, levels of acoustic and thermal comfort, air conditioning and ventilation systems and effective solutions adopted to save energy. As a whole, the four facilities contain 1,710 beds, 52 operating theatres, 21 labour and 14 delivery rooms, 72 short intensive observation places, 134 dialysis places and more than 4,300 parking spaces. Each individual facility consists of a main building — 4 floors above ground and a basement housing the diagnosis and treatment services and inpatient wards — and a separate building — 3 floors above ground and a basement dedicated to services, housing the technology areas, warehouses, morgue, pharmacy, analysis laboratory and kitchen. The two buildings are connected by a corridor on the ground floor, while the upper levels have connecting areas with pathways for inpatients and outpatients, medical staff and visitors, dirty and clean materials. A&E services and helicopter rescue are provided for. The structures were designed to minimise energy consumption. The energy needs of each hospital are covered by renewable resources and energy-efficient production technologies, with the installation of eco-friendly solar panels and independent cogeneration plants. Rainwater harvesting systems were installed to feed the toilet drains and irrigate the surrounding greenery. The façades were designed to ensure thermal and acoustic insulation of the structure. A high level of technological efficiency and computerisation is ensured in the hospitals, where special robots handle food and materials. Pneumatic mail systems enable the fast and safe transfer of reports, test tubes and medicines. In all, the four facilities provide services for 1.1 million potential users across the provinces.

COMPLETED AND CURRENTLY UNDER MANAGEMENT

WORK COMPLETION DATE
Santo Stefano Hospital in Prato, 2013; San Jacopo Hospital in Pistoia, 2013; San Luca Hospital in Lucca, 2013; New Hospital (“NOA”) in Massa-Carrara, 2015..

CLIENT
TUSCANY CENTRAL LOCAL HEALTH AUTHORITY (PROVINCES OF PRATO AND PISTOIA) AND TUSCANY NORTH WEST LOCAL HEALTH AUTHORITY (PROVINCES OF LUCCA AND MASSA-CARRARA)

TECHNICAL/PRODUCTION KPIs*

~349,000 m²
total project area

~205,000 m²
total gross floor area of the facilities

~821,000 m³
total structure volume

SUSTAINABILITY KPIs*

1,710
beds

1.1 mln
potential users across the provinces

21,000 m²
dedicated to ward areas, all lit by natural light

* Overall values for the four hospitals

UNITED KINGDOM

CHURCHILL HOSPITAL, OXFORD – NEW ONCOLOGY CENTRE

A world-class centre of excellence specialising in oncology research and treatment

The New Oncology Centre at Churchill Hospital in Oxford is a world-class centre of excellence specialising in oncology research and treatment, and at the forefront of radiology and radiotherapy. The contract covered the design, construction, supply and installation of furnishings and electrical medical equipment, as well as multi-year management of the work. Completed in 2009 and currently under management, the facility features sustainability and a focus on patients. Among other things, systems for rational and efficient energy management and large inner courtyards with green spaces were created to ensure greater well-being for patients. The complex has a total gross floor area of about 35,000 m^2 and a total volume of 33,400 m^3. It is designed to accommodate, inter alia, 233 new beds, 10 operating theatres, 6 linear accelerators, 2 MRI units, 6 digital radiology units, 2 cardiovascular laboratories, 2 CT scanners, 3 units for digital mammography and 2 units for fluoroscopy. The complexity of the project was accentuated by a demanding construction schedule, which had to consider the operations of the existing adjacent structure, with no interruption of service during the entire construction period. In this respect, BIM technology played a key role, as did 3D modelling and cash detection software that allowed mechanical and electrical services to be prefabricated in modules off site. As a result, production times were reduced, and the difficulties associated with coordinating operations were eliminated.

COMPLETED AND CURRENTLY UNDER MANAGEMENT

WORK COMPLETION DATE
2009

CLIENT
OXFORD RADCLIFFE HOSPITAL NHS TRUST (GRANTOR)

TECHNICAL/PRODUCTION KPIs

~35,000 m^2
total gross floor area of the facilities

33,400 m^3
total structure volume

SUSTAINABILITY KPIs

233
beds

725,300
potential users

ITALY

NEW HOSPITAL IN VENICE-MESTRE ("OSPEDALE DELL'ANGELO")

A state-of-the-art facility and still today one of the most beautiful hospitals in Europe

Completed in 2008 and currently under management, the New Hospital in Venice-Mestre is one of the most comprehensive examples of project financing applied to healthcare in Italy, boasting the highest standards of accessibility and efficiency. Still considered one of the most beautiful healthcare facilities in Europe, it was designed by architect and designer Emilio Ambasz, together with Studio Altieri. The contract, executed with project financing, covered the design, construction, supply of furnishings and electrical medical equipment and the multi-year management of a healthcare centre of excellence. The work features sustainable infrastructure on a 'human scale', capable of joining architectural beauty, functionality and the pursuit of patient well-being. The hospital proper, with a height of 31 metres and a volume of about 619,000 m^3, is designed to accommodate, inter alia, 680 beds, 350 rooms, 20 cots and about 20 operating theatres. Its shape is reminiscent of a truncated pyramid and it consists of two blocks. The first contains operating theatres, staff changing rooms, car parks, outpatient clinics and all diagnostic services, while the second contains the wards. The two blocks are joined by a sound-absorbing façade made of glass and steel, as high as the entire building and 180 metres long, which not only creates a distinctive aesthetic element, but also ensures thermal and acoustic insulation for the structure and natural light for all inpatient rooms. The glazing also surrounds the interior hall, which features a hanging garden with numerous plants and an optimal microclimate to preserve the plants. 'Green' elements are preponderant. They surround, incorporate and run through the hospital, becoming an integral part of the interior spaces. About 118,000 m^2 — 45% of the total project area — are dedicated to greenery, and each patient has long-distance views of the outdoor vegetation visible through the windows. The facility is also equipped with an A&E unit, shops and ancillary services housed in the lobby, a car park with 1,300 spaces and helicopter rescue. The facility uses state-of-the-art technology that makes it one of the most advanced facilities in Italy and Europe. For example, it uses RIS-PACS for digital medical records. The systems were built with a view to guaranteeing maximum safety and service continuity and a high level of serviceability and distribution flexibility. The hospital area also includes a building dedicated to the "Fondazione Banca degli Occhi del Veneto", the first eye bank in Europe in terms of the number of corneas collected and distributed, with a laboratory for research into eye diseases and stem cells and a 200-seat auditorium. Overall, the facility provides services for an estimated catchment area of 800,000 inhabitants across the province.

COMPLETED AND CURRENTLY UNDER MANAGEMENT

WORK COMPLETION DATE
2008

CLIENT
AZIENDA ULSS 12 VENEZIANA

TECHNICAL/PRODUCTION KPIs

260,000 m^2
total project area

~663,000 m^3
total structure volume
(including the eye bank)

100,000 m^3
concrete

15,000 t
steel

SUSTAINABILITY KPIs

680
beds

7,200 m^2
dedicated to ward areas,
all lit by natural light

45%
of the total project area allocated
to green areas

800,000
potential users across the provinces

PRIZES AND AWARDS

Project Financing International Magazine – Best PPP 2005 in Europe

Euromoney Magazine – Best PPP 2005 in European healthcare

SAUDI ARABIA

AL-ḤASA OASIS HOSPITAL COMPLEXES

One of the most important hospital complexes in the al-Ḥasa region

The hospital complexes of the Saudi Arabian National Guard, with a total of 467 beds, are among the most important in the al-Ḥasa region in the eastern part of the Kingdom. Completed in 2001, the project covered the design, construction and supply of furnishings and electrical medical equipment for two new complexes — Al-Ḥasa, the largest and most innovative, and Damman — as well as the expansion and modernisation of a third facility in Jeddah. Housing and infrastructure were also built for the National Guard and their families. The entire project involved an area of over 53,000 m^2 and the use of 121,000 m^3 of concrete, with more than 221,000 m^3 of earthwork. The project was recognised as 'best practice' in the healthcare sector by the prestigious Joint Commission International, an organisation active in over 100 countries.

3 GOOD HEALTH AND WELL-BEING

COMPLETED

WORK COMPLETION DATE
2001

CLIENT
S.A.N.G. (SAUDI ARABIAN NATIONAL GUARD)

TECHNICAL/PRODUCTION KPIs

+53,000 m^2
total area

+221,000 m^3
earthwork

121,000 m^3
concrete

SUSTAINABILITY KPIs

467
beds

+570,000 m^2
green areas

ITALY

CAREGGI UNIVERSITY HOSPITAL IN FLORENCE (BLOCK F)

A new hospital block of nearly 10,000 m^2, with more than 150 beds

A new hospital block of nearly 10,000 m^2, with more than 150 new beds for ordinary, intensive and sub-acute care, all distributed within a six-storey building with five floors for inpatient wards. This is the new Block F of the Careggi University Hospital in Florence, constructed by Webuild through its subsidiary NBI. This is an important project for the Tuscany Regional Healthcare Service as it completes Deas Pavilion 12, which is dedicated to the clinical and surgical Trauma Centre, built by NBI itself. With Block F, the facility has been upgraded with new wards for ordinary inpatients, surgical patients and trauma patients, among others. All interventions were designed to ensure safety, functionality and comfort for patients and healthcare workers. The facilities and installations were adapted for the latest COVID measures. The ordinary wards were designed as sub-acute wards. The medical gas supply systems were designed with flow rates and air changes to ensure flexibility and ventilation capacity for patients in all care pathways within the new block. The data lines were upgraded in terms of transmission capacity and data sockets to ensure the activation of remote patient monitoring.

COMPLETED

WORK COMPLETION DATE
2022

CLIENT
DIREZIONE DELL'AZIENDA OSPEDALIERA-UNIVERSITARIA CAREGGI

TECHNICAL/PRODUCTION KPIs

~10,000 m^2
project area

SUSTAINABILITY KPIs

150
beds

CHAPTER 04

TECHNOLOGY AND INNOVATION APPLIED TO THE HEALTHCARE SECTOR

By applying the most innovative systems and models in the healthcare sector, Webuild proposes suitable solutions for state-of-the-art facilities.

Extraordinary progress has been made by science and medicine, also through technological, organisational, scientific and cultural developments. Today as in the past, Webuild promotes cutting-edge technological and technical solutions.

It is estimated that more than 80% of our knowledge in the healthcare sector will change in the next 10 years, affecting a large part of how we carry out prevention, diagnosis, therapy and rehabilitation. Faced with these challenges, a radical change in healthcare systems and the structures themselves is indispensable, introducing innovative solutions that Webuild proposes and implements in every project it works on.

The COVID-19 pandemic put the entire global healthcare system in serious crisis. It highlighted critical structural and organisational aspects of existing healthcare structures, underlining their severe lack of flexibility and resilience. In this context, Webuild designs and implements solutions to quickly convert existing spaces, resolving the lack of flexibility inherent in most of today's healthcare facilities.

By applying the most innovative systems and models in the healthcare sector, Webuild proposes suitable solutions for building new hospitals, using the best design and organisational measures to turn them into state-of-the-art facilities.

FLEXIBILITY AND RESILIENCE

One of the most important challenges facing hospital facilities is their flexibility and resilience with respect to healthcare needs. Flexibility is defined as the ability of a facility to change its functions and spaces in the short, medium, or long term, while resilience is the ability to adapt and return to the initial configuration if necessary. This adaptability can be ensured with a building designed with this in mind from the preliminary stage and built with technological, structural and plant engineering aspects geared towards overall resilience and flexibility.

AIR QUALITY AND VENTILATION SYSTEMS

Plant engineering plays a strategic role in hospital facilities and the systems must be able to respond to different healthcare needs, even in the event of an emergency. In fact, the following are necessary:

→ flexible and easy-to-inspect/-maintain ventilation systems, with the ability to reverse the pressure (positive/negative), if required;

→ air-quality detection and monitoring sensors that use smart beacons help users (patients, visitors and/or workers) understand whether the indoor air quality is adequate.

Webuild presents a range of technological solutions at all stages of healthcare facility conception, design, construction, management and maintenance to maintain the highest levels of indoor air quality and an aseptic environment.

EXTREMELY HYGIENIC MATERIALS AND PURIFIED ENVIRONMENTS

A topic of considerable importance in healthcare environments is controlling the risk of hospital infections and the persistence of bacterial and viral loads on surfaces.

Webuild proposes high-performance, durable and easily sanitised technological solutions in its projects, with the use of innovative materials (containing eco-active components and photocatalytic paints) to reduce bacterial loads on surfaces.

ENVIRONMENTAL, SOCIAL AND ECONOMIC SUSTAINABILITY OF HEALTHCARE FACILITIES

Healthcare facilities are naturally very energy-intensive — that is, they have very high energy consumption — so the application of sustainability strategies can only improve the performance and management of such complex architectures.

For healthcare facilities, Webuild implements state-of-the-art technological solutions to produce and distribute energy carrier fluids for summer and winter air conditioning. These solutions have higher environmental and energy parameters than those dictated by regulations in any country and, therefore, on a global scale. Solar cooling, trigeneration and reusing processing water to save water are just some of the technological solutions Webuild proposes.

INTEGRATED PROJECT DESIGN AND MANAGEMENT USING BIM

The complexity of high-tech healthcare facilities has led Webuild to identify BIM as an essential means for designing modern hospitals.

BIM allows Webuild to:

→ visually check the interaction between blocks from the outset and manage transitional phases with the support of three-dimensional modelling;
→ improve the quality and exchange of information between the different parties (designers, client, contractor, suppliers, etc.);
→ produce easy-to-read and immediately visualised documentation useful for presenting and illustrating the project to laymen;
→ improve the efficiency of the design process and minimise the number of design errors;
→ streamline all procurement and construction processes by keeping information unambiguous and consistent;
→ ensure that the end result meets the initial objectives;
→ provide a ready-made database for maintenance and facility management;
→ use the model for hygienic and functional planning.

SMART HOSPITALS

The COVID-19 pandemic, negative as it is, has accelerated every aspect of innovation and digitisation. The use of smart devices for interacting with doctors and the pervasive use of apps to monitor certain health parameters are just some future trends. As a result of this gradual process of dematerialisation of clinical-diagnostic activities, Webuild hospitals are increasingly showing themselves to be very highly specialised centres for the treatment and care of acute patients, high-level clinical and experimental research, diagnostics and more complex operations.

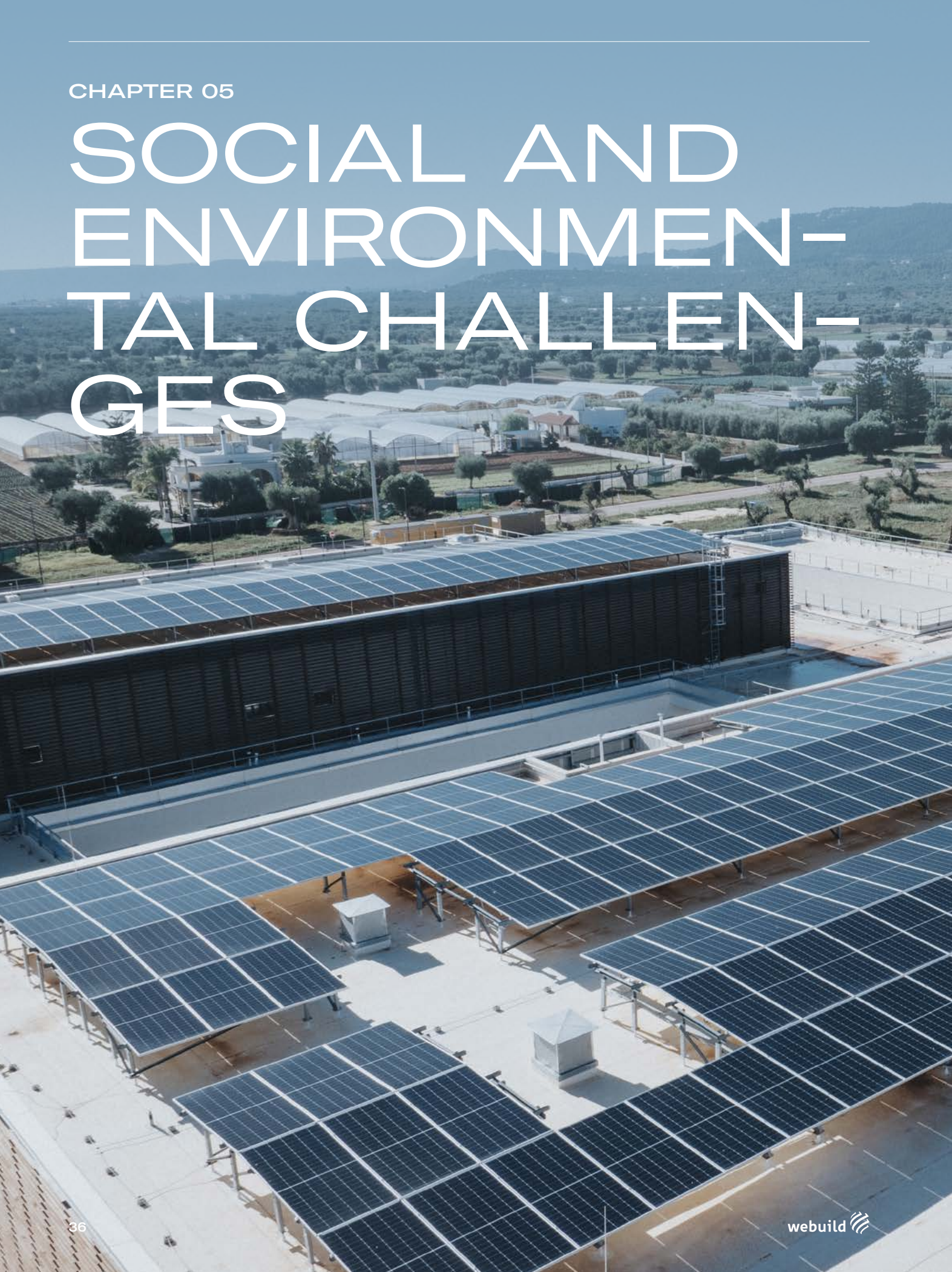
New digital technologies can support the care and treatment of patients in hospital and in the region, not only for ordinary healthcare activities, but also in emergency situations. Webuild introduces these integrated technological innovations into its works. Some examples include:

→ using smartphones or 'wearable' devices to continuously transmit health status and vital parameters to healthcare staff, which ensures better management of admissions, organization and consequently hospital space;
→ a substantial reduction in paper-based healthcare and administrative documentation and its digital transfer to the cloud, allowing storage and warehouse space to be used for other purposes;
→ constant monitoring and technological advancement, allowing some electrical medical equipment to be used remotely, reducing contact between patients and staff, providing staff with overall control and using human resources more efficiently;
→ using sensors and the Internet of Things (IoT), so the hospital can guarantee a customised and dedicated experience for each user and monitoring the degree of comfort and satisfaction (checking microclimate parameters, acoustic comfort, etc.).


EXIT

CHAPTER 05

SOCIAL AND ENVIRONMENTAL CHALLENGES



Webuild incorporates innovative ideas and architectural solutions in its works, with the aim of promoting well-being for users and patients.

Webuild views healthcare facilities as complex buildings and places aimed at preventing illness and promoting health, understood not only as the absence of disease, but as a state of complete physical, mental and social well-being.

Such buildings, where form and function go hand in hand, are situated within organised social and healthcare systems. They reflect renewed and changing social demands, which also have important repercussions on architectural design. For several decades, diagnosis, treatment and research in medicine have increasingly featured a rapid evolutionary cycle requiring constant renewal and transformation.

Webuild capitalises on various types of works it has constructed, incorporating innovative ideas and architectural solutions with the aim of promoting the well-being of users and patients.

PLACEMENT AND RELATIONSHIP WITH THE URBAN CONTEXT

Webuild hospitals are situated at the centre of the local system of social, economic and cultural relationships, stimulating the provision of citizen services. Moreover, as emphasised by the scientific community, a hospital that has been repurposed can only gain regenerative value if it is situated coherently within a precise urban planning project.

ENVIRONMENTALLY FRIENDLY AND HUMAN-CENTRED DESIGN

The objectives pursued by Webuild when designing a healthcare facility are:

→ high levels of hospitality and comfort;
→ appropriate admissions and related care settings;
→ effectiveness of continuous healthcare;
→ appropriate, efficient use of advanced technology;
→ ability to accommodate and develop research and training activities;
→ management efficiency.

RESILIENCE OF THE CONSTRUCTION

As public buildings, hospitals play a strategic role in case of disasters. They are called upon to perform the very important task of providing relief to the population, ensuring effective initial medical emergency operations in the field.

In the event of a disaster, hospitals must therefore not only remain free of excessive damage, but also continue to offer sufficient levels of healthcare.

To ensure this, Webuild knows that special attention not only to load-bearing elements, but also to non-structural and system elements, as well as the distribution of functions and flows, ensures that healthcare facilities remain fully operational to cope with and manage extreme emergencies with the utmost efficiency.

USER SAFETY

In general, hospitals encompass multiple risks and environments. They are considerably diverse with respect to the people present — not only workers, but also patients, relatives, suppliers and students — and there is a constant need to provide all services throughout the day with the highest efficiency.

Monitoring the safety levels of healthcare facilities and assessing risks with a view to continually improving hygiene and safety are crucial, and Webuild is the first to consider this when upgrading or developing new healthcare facilities.

As such, in high-care areas, Webuild proposes systems to monitor users, their vital parameters and their state of health.

In addition, in its creation of sensory rooms, it can also embed sensors in the floor to monitor the user's movements in the room. This data makes it possible to assess the fundamental parameters of walking: the speed of movement, the people present in the various rooms and movement trajectories, but — above all — detecting if the person falls.

USER-CENTRED DESIGN AND MENTAL-PHYSICAL WELL-BEING

According to ‘user-centred design’, and ‘universal design’ in general, particular attention must be paid in hospital design to the physical, mental and social needs of all users (patients, healthcare personnel, visitors), which can be amplified in emergency situations. From past and current experience, scientific studies have shown that poorly designed and constructed healthcare facilities result in users, and particularly healthcare personnel, experiencing more anxiety, depression, insomnia, and stress than the rest of the population.

Webuild takes a new approach, starting with evidence-based design studies, in which the presence of spaces to ensure the mental-physical well-being of all individuals and the working efficiency of the healthcare staff is strategic. These spaces provide users with areas to relax from mental stress and daily pressure.

NATURAL LIGHT AND CIRCADIAN RHYTHM

As also highlighted by the scientific community, the quality and efficiency of the services provided in healthcare facilities are closely tied to and influenced by the building system and related technologies. To provide high-quality services, it is necessary to have innovative and sustainable healthcare facilities equipped with efficient technologies that improve both the services provided and the comfort of patients and workers. Perceived comfort and well-being (in many different situations) can influence care pathways and treatment outcomes, as shown by evidence-based design studies.

This is the basis for the guidelines of the healthcare facility projects and constructions that Webuild aims to pursue in future initiatives, drawing on past experience.

Providing as many naturally lit areas and rooms as possible is the first objective in bringing well-being to hospital users and staff. Webuild therefore introduces technological solutions such as solar tubes and/or daylight simulators in windowless rooms, workplaces and/or waiting rooms.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Design
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Data Visualization
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Edition
April 2026

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