

# MODU LAR BUILD INGS



HEALTH SECTOR  
BUILDINGS

THE SPEED OF BUILDING,  
FINANCIAL SECURITY AND  
MINIMAL DISRUPTION OF THE  
PROCESSES IN CLINICAL  
OPERATIONS ARE UNBEATABLE  
ADVANTAGES OF MODULAR  
CONSTRUCTION IN THE HEALTH  
CARE SECTOR.



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## BUILDING THE FUTURE HEALTH CARE IN TIMES OF CHANGE

Today, clinics and hospitals are facing totally new challenges. Increasing pressure on costs has made mergers and collaborations in the health care sector essential in recent years. Centralisation, mergers of clinics and modifications to services, admin structures and technology generally involve changes to buildings too. In order to remain economically and medically competitive, it is necessary to invest in a modern infrastructure.

However, it has been avoided to make investments for years. Hospitals themselves become the patients.

Fast construction times, financial security and minimal disruption during the construction phase: ALHO modular construction provides efficient building solutions for health care and nursing. Discover the advantages of modular construction in the health sector!





# MODULAR EXPERTISE FOR OVER 50 YEARS

For over 50 years, ALHO has been successfully producing modular buildings as a sustainable alternative to conventionally constructed buildings. It all started in 1967 with an assembly workshop for series construction of site cabins. In 1971, ALHO started producing standardised mobile room units, proving that standardisation and the desire for comfort are not mutually exclusive.

Over time, permanent stationary solutions – today's room modules – were added to the range of products. Today, modular construction is at least the equal of conventional building methods when it comes to quality and durability.

## Facts about the ALHO Group:

- Over 1,000 employees
- 5 production locations in Germany, France and Switzerland
- 72,000 m<sup>2</sup> production space
- 10 branches in Germany plus sales offices in Belgium, France, Luxembourg and Switzerland
- Manufacturing capacity of 12,000 modules each year

“Reliability, partnership and not least consistent customer focus make ALHO as distinctive now as it was when it was founded.

Albert Holschbach, founder of the ALHO Group



ALHO administration building and production unit at the Morsbach site

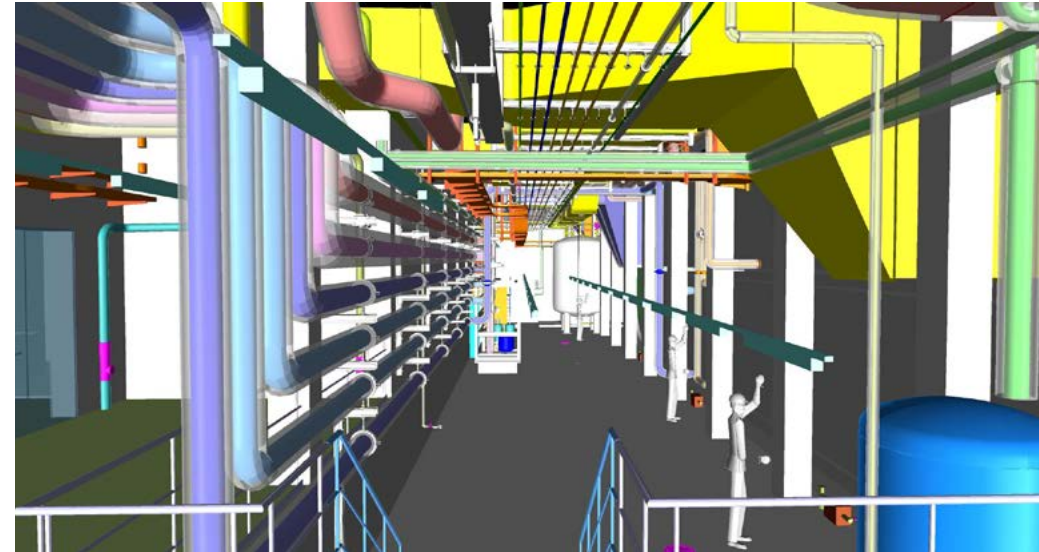


# SERIES CONSTRUCTION WITH ROOM MODULES

At the ALHO “room factory”, we are your partners in every phase of the work – from initial consultation to completion of the building. By the time they start their journey to the site, the individual modules are already 70% industrially prefabricated using lean manufacturing processes.

The deployment of the trades involved in the production process can be ideally coordinated. This provides the optimum, calculable conditions for planning – always consistent, allowing the progress of the project to be precisely predicted. This is how we can guarantee fixed prices and fixed handover dates.

On site, the modules are assembled cleanly and quietly in just a few days, and thanks to the dry wall materials used, they can be fitted out in a few weeks so that the building can be occupied immediately. Our many years of experience in modular construction and professional project management reduce the construction time by up to 70% in comparison with conventional building methods.



## 01

INTEGRAL  
PLANNING

ALHO plans buildings on the basis of BIM guidelines, incorporating all the relevant specialist disciplines.

## 03

CLEAN &  
QUIET  
SITES

The construction time on site is only around 10 weeks. Noise and dirt pollution are reduced to a minimum.



## 02

INDUSTRIAL  
MANUFACTURE

The room modules are up to 70% prefabricated in-house, using lean manufacturing methods and independently of weather conditions. Continuous monitoring guarantees the highest quality.

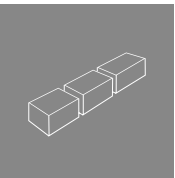
## 04

FAST  
BUILDING  
HANDOVER

Thanks to the parallel process of module manufacture and assembly, the construction time is shortened by 70% in total.







# CLEAN AND QUIET CONSTRUCTION IN EXISTING CONTEXTS

Alterations or extensions to a hospital can be challenging for everyone involved, as work must continue in the existing buildings during construction. Modular construction is absolutely ideal for building in an environment which is intended to promote patient recovery.

With ALHO modular construction, interventions in the hospital procedures are “minimally invasive.” Noise and dirt pollution are reduced to an absolute minimum. When the modules are lifted and positioned to their intended positions and welded together, the floors, ceilings and walls are already assembled, electric and sanitary installations laid, floor screeds installed and bathrooms tiled.

The modules are put together on site in just a few days. The cross-module work, such as attaching the facades and roofing the building, are completed in a few weeks. Everyday hospital work can continue as normal at the same time.

“ Every day on which the operation of the hospital can continue undisturbed despite the building measures is good for the patients’ health and vitally important economically for the hospital administration.

Dr. med. Patrick Frey, Director of the Catholic Clinic, Mainz







# FAST SOLUTIONS TO ACUTE ROOM SHORTAGES

Every day that doctors and nurses can work more efficiently in the hospital counts. More space, a better infrastructure, more modern equipment – all this can save lives.

ALHO manufactures all year round in modern production halls, without being affected by the weather. Working in parallel in the factory and on site also speeds up the building process, so that the new rooms can be used much earlier.

High-tech medical buildings with their stringent requirements can be constructed in record time, from the integrated, BIM-based planning to the turn-key handover.

**”** *I felt that the short construction time combined with the general planning and implementation services provided by ALHO were a major advantage – for us architects too. Dealing with just one partner in the firm makes overall coordination very much easier and faster.*

Oliver Schmidt, Architect



# BUILDING SUSTAINABLY PAYS OFF

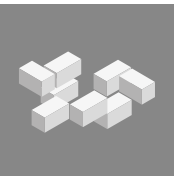
The construction of a building is usually only a fraction of the cost of the entire life cycle. A life cycle costs analysis examines at a building over 50 years – from construction to demolition. Whether a building can be classified as sustainable can be determined, in great detail and objectively, from the “building-related costs in its life cycle” according to the DGNB (German Association for Sustainable Building).

In terms of sustainability, the modular construction principle stands out even at production level with its optimised use of resources and the use of the sustainable material steel. Because of the steel frame structure and non-loadbearing walls, buildings can be repurposed or extended at any time and adapted flexibly to changing needs. The steel frame structure of the individual modules are mechanically connected, Modular buildings can easily be dismantled or even moved to another location as “mobile real estate”. The building materials are almost 100% recyclable.

All in all, the costs – from construction to demolition – are well below those for conventionally constructed buildings. Sustainable building with ALHO pays off both ecologically and economically.







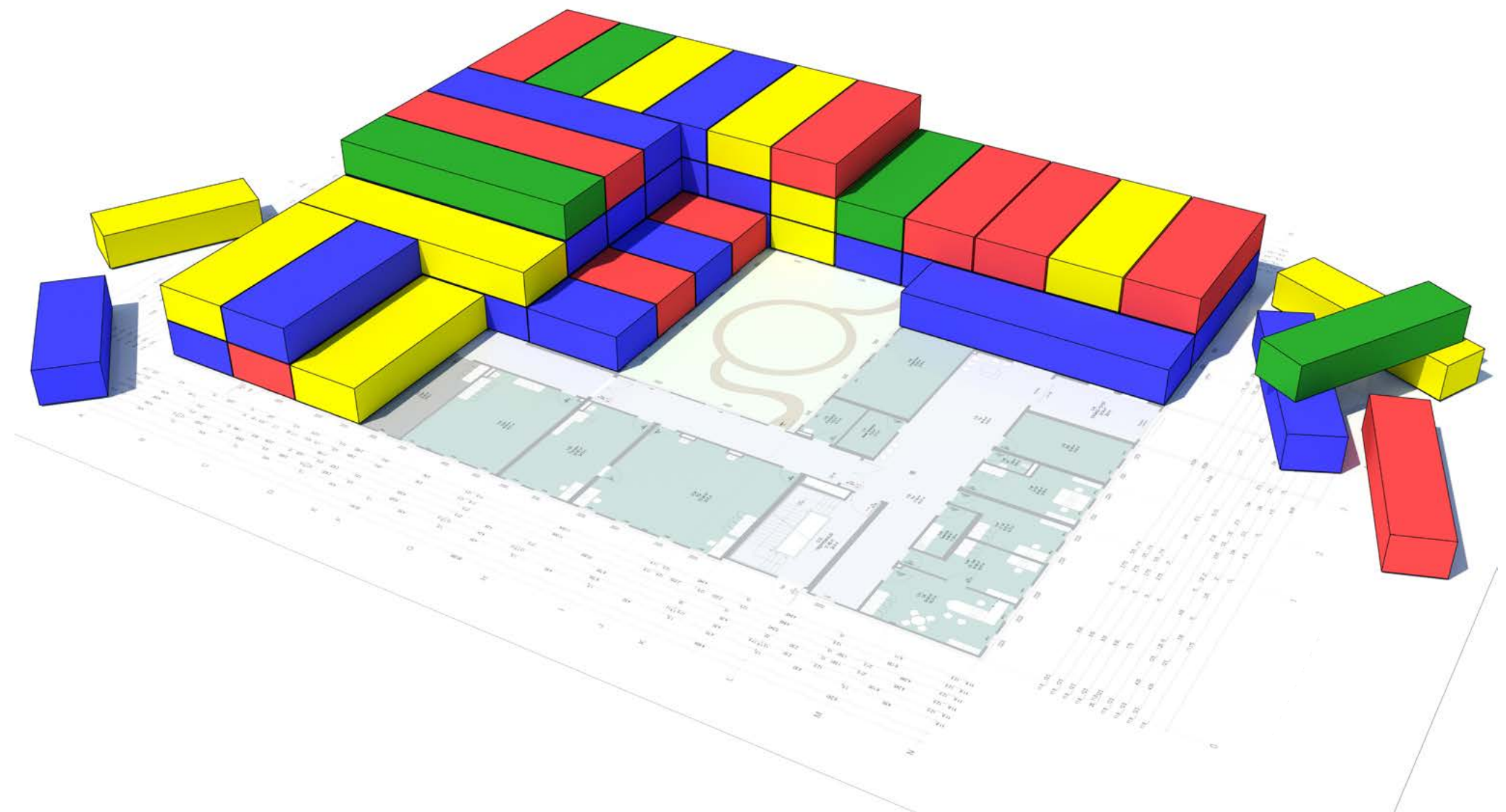
# MODULAR CONSTRUCTION DIAGNOSIS FLEXIBLE ADJUSTABLE

Module buildings are based on an orthogonal grid made up of individual room modules.

Within the module grid, the possibilities for the architect are essentially unlimited. Almost any design for a solid building can also be implemented using modular construction. The planners at ALHO transfer the floor plan to an economical modular building grid with as many reproducible units as possible.

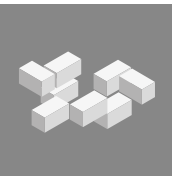
The standard module sizes range in width from 2.625 to 5.00 m, in length from 7.75 to 18.50 m and in height from 3.20 to 4.05 m. The maximum dimension of the individual room modules is defined by their transportability to the site.

Planners who value clear lines or the Bauhaus style will feel at home in the world of modular construction.



**”** Originally, the extension to the SRH Health Centre in Bad Wimpfen was to be built using the bricks-and-mortar method. But after spending some time on the planning, the client changed course – and went for ALHO modular construction. Our design only needed minor adjustments to fit easily into the ALHO modular construction grid.

Marion Donnig, Donnig + Unterstab architects



# MODULAR BUILDINGS FOR THE HEALTH SECTOR

No matter if you need a permanent new building, an extension connected to the existing building, an additional storey or an interim building during refurbishment or renovation – ALHO offers health care buildings to suit any need, from a single source.

benefit from our many years of experience in the construction of health care buildings – from planning and construction to service during period of use.

ALHO modular buildings for the health sector: intelligent, technically advanced building solutions you can count on.



## 01

HOSPITALS  
AND CLINICS



ALHO builds while clinics are still running, without disturbing day-to-day operation.

## 03

NURSING  
HOMES



ALHO's barrier-free living concepts for nursing homes allow people to live with dignity in old age.



## 02

THEATRES  
AND  
PROCEDURE  
ROOMS



An ALHO operating theatre or procedure room creates the right space for providing the best medical care.

## 04

LABORATORY



ALHO modular construction has proved very successful in the construction of laboratory buildings.







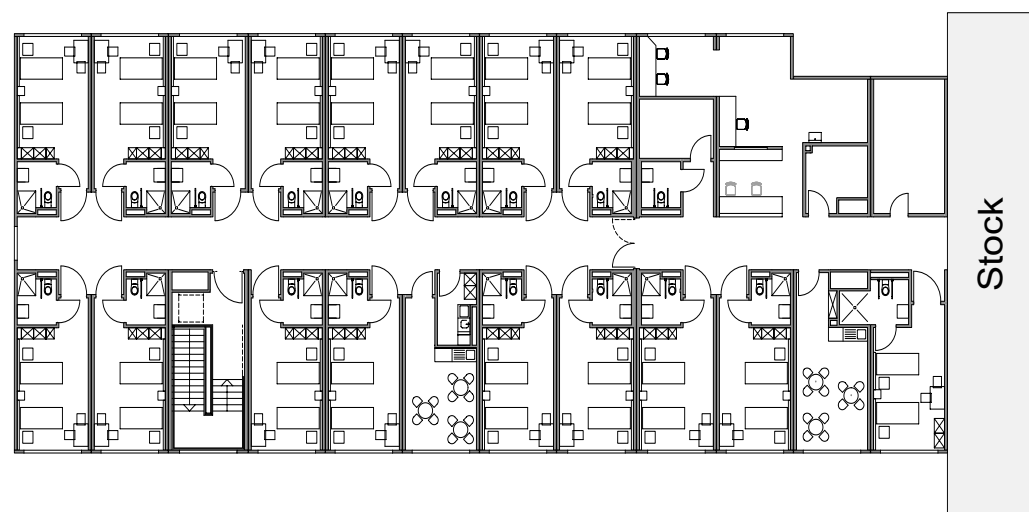
# THE BEST POSSIBLE CARE HOSPITAL CONSTRUCTION

Nowadays, patients expect more from their stay in hospital than just medical care. The overall concept is important – the care provided by the doctors and nursing staff along with room layouts and equipment form the basis for overall recovery.

Rooms should be designed in such a way that patients and their relatives spend time in an environment that

takes the fear out of hospitalisation. High-quality materials ensuring healthy living create a pleasant indoor climate and an atmosphere that has been proven to improve recovery.

ALHO healthcare buildings in modular construction are the right answer to the rising demands made on contemporary hospital buildings.



floor plan, normal ward



Fixed costs. Fixed deadlines. Finished fast.





# REFERENCES FOR CLINICS IN GOOD HEALTH THANKS TO ALHO

As the general contractor, ALHO coordinates the requirements for comfort, function and the room programme in detail with the client, right at the start of each construction project. Whether a quick "surgical intervention" is needed in an existing clinic building or a completely new usage concept has to be prepared – the ALHO method of modular construction allows customised, project-specific planning and realisation of the clinic development.



## 06

MEDIAS  
CLINIC  
PROF. AIGNER  
BURG-  
HAUSEN

The private Medias Clinic for Oncological Surgery brings together an operating theatre section, a nursing ward, treatment rooms and offices under one roof. It is attached to the existing building of the Burghausen District Clinic.

## 01

STÄDTISCHE  
KLINIKEN  
MÖNCHE-  
LADBACH

The Geriatric Ward was built in just 14 weeks.



## 02

CATH.  
CLINIC MAINZ

The high-quality fitting out of the patients' rooms makes the clinic seem more like a hotel.



## 03

DISTRICT  
CLINIC  
SIEGEN

The six-storey ward block was connected to the existing building on three sides. In addition, a bridge links the clinic with an administrative section.



## 04

LVR-KLINIK  
DÜREN

The psychiatric clinic in Düren designed according to the LVR guidelines in such a way that it meets the level of a passive house in terms of energy usage.

## 05

CATH.  
CLINIC MAINZ

Three storeys were added to the Catholic Clinic in Mainz during ongoing operation.

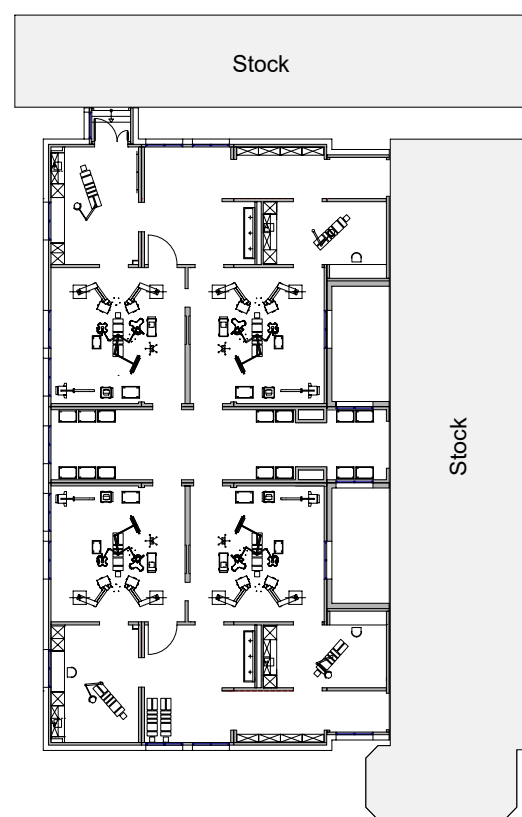




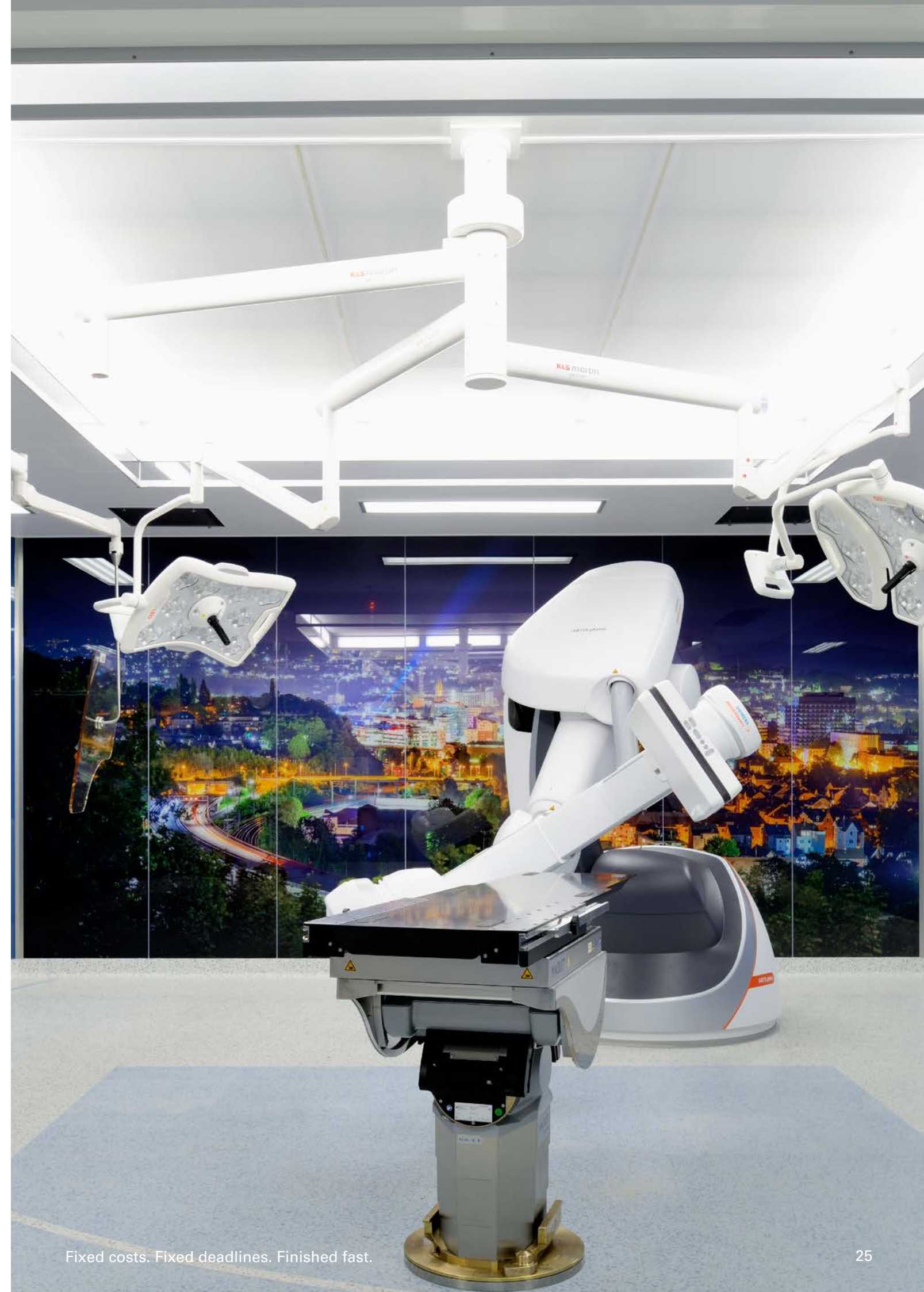
# OPERATION MODULAR BUILDING OPERATING THEATRES AND PROCEDURE ROOMS

Special requirements in terms of infrastructure and equipment apply in the area of operating theatres and procedure rooms. Theatres place particular demands on hygiene and thus on the materials used. Facilities to accommodate cutting-edge diagnostic imaging units were specially created so that the robot-assisted X-ray machine can operate precisely without any vibrations.

Innovative operating, diagnostic and treatment techniques often mean changing requirements for rooms, which often have to be built especially for this purpose. ALHO takes these new, individual requirements into account from the start in its integrated planning of operating theatres and procedure rooms.



floor plan, operating theatre unit







# REFERENCES FOR PROCEDURE ROOMS PLANNED FOR EFFICIENCY

Are you looking to build an operating theatre or procedure room on a turnkey basis? With ALHO as your general contractor, you can create the necessary space for providing your patients with outstanding medical care. Convince yourself by visiting one of these reference facilities.



## 06

ENZKREIS-  
KLINIKEN  
MÜHLACKER

Reception, waiting, changing, examination and results – all these functions were linked operationally with each other in the Radiology Building.

## 01

FRANKFURT  
UNIVERSITY  
CLINIC

Four new operating theatres were directly connected with the existing building. For this, the modules were elevated over a service yard.



## 05

SAARLAND  
UNIVERSITY  
CLINIC  
HOMBURG

The MRI Building was built as an extension during ongoing operation, with another floor being added after a year.



## 02

JUNG-  
STILLING  
HOSPITAL  
SIEGEN

The hybrid operating theatre is located in the operating theatre extension building. It is one of its type in the whole of Europe.

## 03

KREISKRANK-  
ENHAUS ST.  
FRANZISKUS  
SAARBURG

The operating centre was located for many years at the Hegau Clinic in Singen and, as a “mobile building”, was dismantled there; the power and technical facilities were updated and it was then reassembled to be used again in Saarburg.



## 04

ST. JOSEFS-  
KRANKEN-  
HAUS  
SALZKOTTEN

In the operating theatre extension of the St Josef Hospital, ALHO installed the latest medical technology with laminar flow unit and media bridge.







# THE BEST POSSIBLE CARE RESIDENTIAL AND NURSING HOMES

Basically, the traditional nursing home has had its day. An apartment block for assisted living today, a residential unit for senior citizens tomorrow, and an in-patient facility the day after: This meets the needs of many

nursing home operators to be able to change functional uses without having to alter the basic structure of the building. This is precisely the flexibility that the ALHO modular construction concept offers.



floor plan, nursing home.







# REFERENCES FOR RESIDENTIAL/ NURSING HOMES FEELING AT HOME

ALHO nursing facilities combine the needs for good medical care with attractive surroundings in which both residents and carers feel completely at home, to ensure optimum care and support.



## 05

SERVIOR  
NIEDERKORN  
(LUXEM-  
BOURG)

With 60 rooms for residents, four spacious communal areas and a large dining room, the residential home for the elderly provides plenty of space and ideal conditions for people to live together comfortably.

## 01

KBO  
SOCIAL  
PSYCHIATRIC  
CENTRE  
MUNICH

In this residential home, people suffering from mental illness are prepared for re-integration into everyday life.



## 04

HAUS  
ST. KLARA  
FRIESEN-  
HAGEN

The facade design and slate-covered hipped roof meant that the extension fitted in with the listed existing building, so that the complex formed a well-conceived whole.



## 02

HAUS EL-  
BMARSCH  
ELMSHORN

This retirement and nursing home covers 11,620 m<sup>2</sup>.

## 03

SERVIOR  
NIEDERKORN  
(LUXEM-  
BOURG)

The high-quality surroundings create a cosy atmosphere.







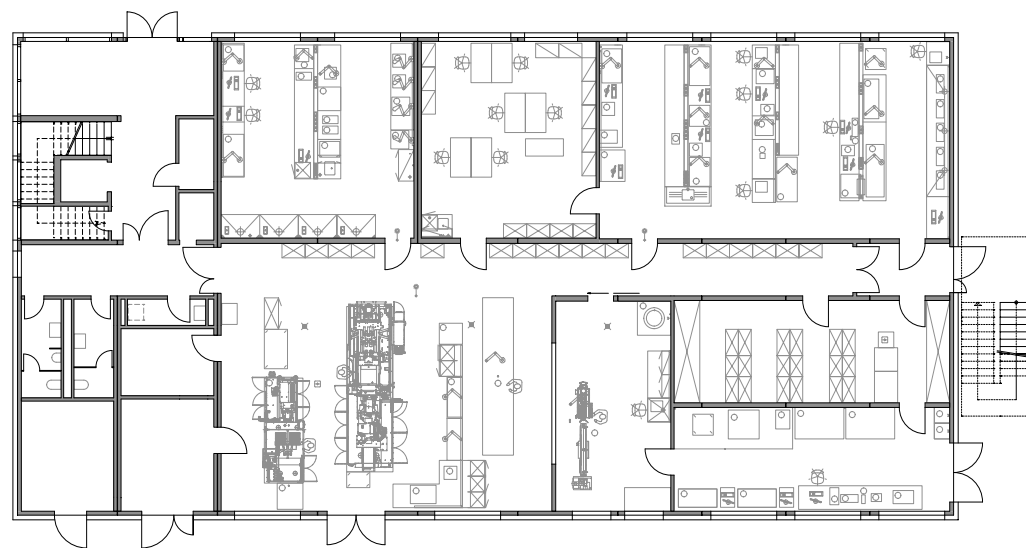
# A SCIENCE IN ITSELF LABORATORY BUILDINGS FOR THE FUTURE

ALHO supplies turnkey laboratories from one source – as new builds or extensions, with the experience gained from over 50 years of modular construction.

The ALHO modular construction concept makes it possible to create laboratory buildings that ideally meet the needs of working procedures, test setups and all the processes resulting from these.

Changes in use due to new research targets are easily possible with the flexibility provided by module construction.

The basic technical components are already largely pre-equipped in the factory. Modular construction methods can create research rooms that meet the safety categories S1 to S3, as required.



floor plan, laboratory







# REFERENCES FOR LABORATORIES FOR RESEARCH AND TEACHING

The ALHO modular construction concept enables laboratory buildings to be adapted ideally and with the necessary flexibility to needs relating to working procedures, research tasks and changing processes. This produces modular laboratory buildings that meet the highest standards of quality, safety and hygiene.

05



COLOGNE  
UNIVERSITY

The new modular construction laboratory at the 2nd Physical Institute of Cologne University was built on the campus specially for the new Physics Working Group led by Prof. Dr. Yoichi Ando.

01

CHEMIE-  
PARK  
WESSELING

The building combines laboratory and office rooms. Various heavy-duty machines were installed on the ground floor.



02

EUROPEAN  
MEDICAL  
SCHOOL  
OLDENBURG

Because work in the laboratory areas involves potentially infectious substances, the requirements of the S2 standard of GenTSV (Genetic Engineering Safety Regulations - in buildings) needed to be met.

03

F. HOFFMANN-  
LA ROCHE  
KAISERAUGST

With 11,900 m<sup>2</sup>, the Roche Learning Center is the largest modular laboratory in Europe.



04

CRP SANTE  
BOMMEN-  
BERG

The laboratory, which has a S3 Safety area, is part of the Luxembourg Institute of Health and specialises in cellular research.



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MODULAR BUILDINGS