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marWorld®

Individual Solutions from a Single Source

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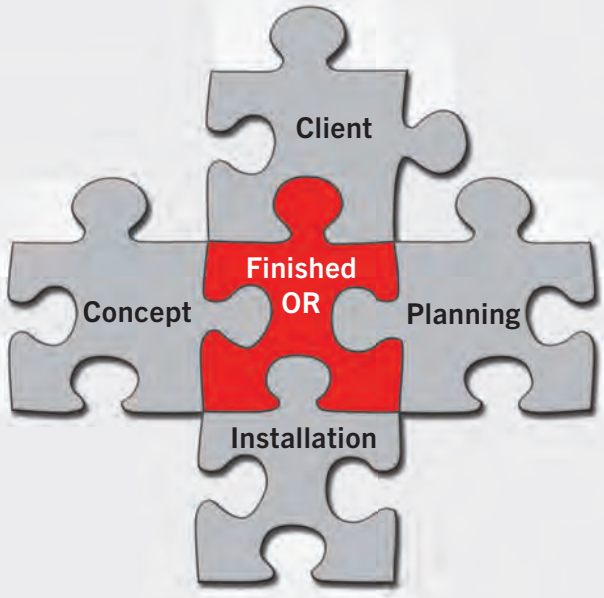
marWorld®
Individual Solutions from a Single Source

marWORLD® – this is the comprehensive, modular concept that KLS Martin offers you for creating your customized surgical work environment. Starting with your specific requirements, we provide you with exactly the solution you need. All this is possible thanks to our decade-long experience in the OR field and the manufacturing of surgical devices.

marWORLD® consists of two components: products such as wall, ceiling or door systems, operating lights or ceiling pendants on the one hand – and a comprehensive range of services on the other hand. Of course, we guide you through all the stages of the process – from conception to planning to implementation. In short: What you get is the operating room of your choice, ready for use. In the quality that you expect from KLS Martin.



Modular wall and ceiling systems
marModuls®

marModuls® –
Modular wall and ceiling systems

Modular wall and ceiling systems have come to be an indispensable part of state-of-the-art hospital architectures. Whereas the structure as such is planned for life, the inner fixtures should be designed in a way that provides a maximum of flexibility in the various functional areas. This not only enables you to adjust to changing technological requirements, but to implement new strategic orientations as well if need be.

Advanced systems in modular structure meet all hospital requirements with regard to standards, directives, flexibility and material properties.

Thanks to the industrial prefabrication of the various components, it is possible to achieve and maintain an extremely high quality standard. But that's not all, because reduced on-site construction times lead to time and cost savings as well.

The cables and hoses for the central media can be easily and conveniently installed in the intermediate walls.

Another advantage of such systems is the flexibility in terms of room planning and installation of various functional elements. Wall thicknesses are thus freely selectable according to the depth of the components to be installed.

It goes without saying that customers can choose among various materials and a wide range of colors. This optionally includes the development and implementation of comprehensive material and color concepts for the various hospital areas.

Since we make sure that function and design go hand in hand, you'll get a work environment that fully satisfies the requirements of both your staff and your patients.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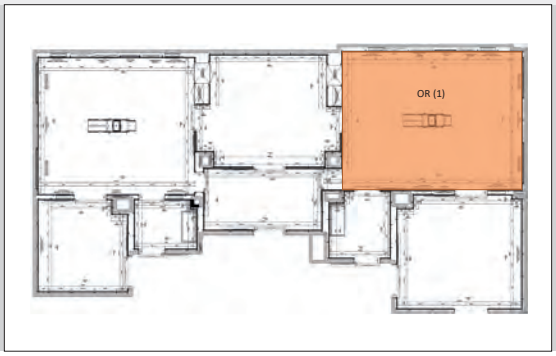
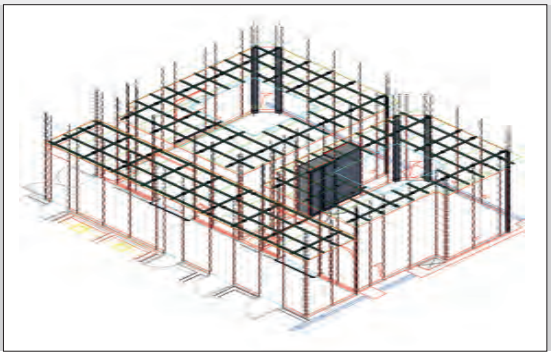
marModuls®
Substructure





Substructure – the supporting element from floor to ceiling

The substructure is designed to accommodate all the wall elements from the floor to the unfinished ceiling. Thanks to the unilateral paneling, this structure is independent of existing walls.

In addition, the unique fastening technology allows fast installation and removal of any wall element.

Special cross-sectional profiles are used for installing the wall-mounted fixtures (such as monitors and gas outlets).

marModuls® substructure	
Material	Square precision steel profile
Material thickness	2 mm
Surface finish	galvanized, powder-coated
Fixation	M8 threaded bolts

marModuls®
Wall elements

marModuls® –
Wall elements that meet your needs

marModuls® are available for installation in various types of material. All materials can be freely combined with each other. This property, along with a wide range of colors, provides for a multitude of design options.

Depending on customer preference, the wall linings are available in single-part or multi-part design.

A unique fastening technology enables a joint width of 3–5 mm between the panels. All joints are sealed with antibacterial and antifungal silicone. However, sealing with silicone profiles is possible as well.

The use of appropriate profiles ensures a perfect transition between the walls and the floor and the walls and the ceiling.

The integration of lead shielding, insulating materials and wall heating systems provides for comprehensive solution concepts covering even the most special requirements. The variable wall thicknesses allow unlimited freedom for the installation of the required components. All in all, this leads to a perfectly matched work environment that fully satisfies customer expectations.

General information on wall panels

Wall panels –
four different materials & eight colors

marModuls® wall elements are available in four different materials. The selection depends on the type of use intended, but should be guided by design aspects as well.

Radiation, sound and fire protection requirements can be taken into consideration for all elements.

A self-locking clip mechanism is used for the fixation of the wall elements. This ensures fast and efficient installation and at the same time prevents wide joints, because no fastening screws are required.

marModuls®	
Standard module width	1200 mm
Maximum panel height (single-part)	4000 mm
Panel sectioning	1-4
Joint width	3-5 mm
Fixation	Self-locking clip mechanism
Sealing	Liquid silicone or silicone profile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Wall panels
Materials

Galvanized steel

For corridors and preparation or scrub rooms, wall elements made of galvanized, powder-coated sheet steel are usually used. Despite its low cost, this option is in no way inferior to the higher-class variant in terms of function, design and appearance.

Galvanized steel	
Type of material	Galvanized sheet steel
Surface finish	Antimicrobial powder coating
Material thickness, sheet steel	1 mm
Plasterboard thickness	9.5–18 mm
Overall panel thickness	20 mm

Stainless steel

For scrub rooms and the sterilization department, stainless steel is the frequently preferred option. Nevertheless, coated elements can be used in combination to give the design the final touches.

Stainless steel	
Type of material	Stainless steel 1.4301
Surface finish	Ground, 240 grain size
Material thickness, stainless steel	1 mm
Plasterboard thickness	9.5–18 mm
Overall panel thickness	20 mm

Stainless steel powder coated

This is the standard option for wall elements used in operating rooms. Stainless steel is resistant to commonly used aggressive detergents even in case of surface damage.

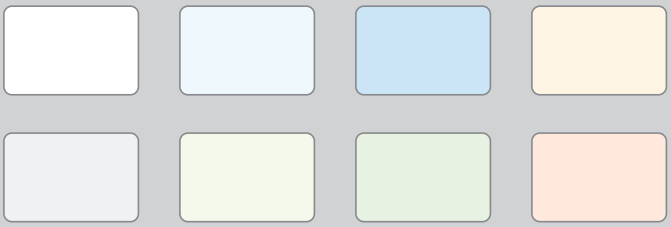
Stainless steel powder coated	
Type of material	Stainless steel 1.4301
Surface finish	Antimicrobial powder coating
Material thickness, stainless steel sheet	1 mm
Plasterboard thickness	9.5–18 mm
Overall panel thickness	20 mm

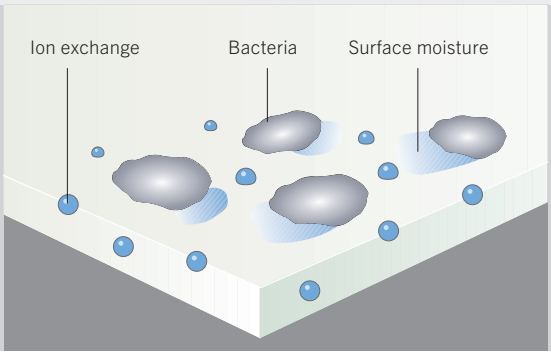
Glass

This material can be used for the whole room or as a design acent. Glass combined with different color coatings and light concepts allows to add a special touch to the room.

Glass	
Type of material	ESG
Material thickness	≧5 mm (acc. customer preference)
Overall panel thickness	20 mm

marModuls®
Color concepts





Eight standard colors –
plus the color of your choice

Colors and color concepts are increasingly gaining in importance for state-of-the-art hospital architectures. A selection of 8 standard colors is intended to make your choice easier. Of course you can select any RAL shade for your marModuls®.

Examples:
- 000 90 10 white
- 240 80 20 crystal blue
- 240 90 05 light blue white
- 075 90 20 butter white
- 000 90 00 winter grey
- 120 90 10 light pistachio
- 30 90 20 light chrome
- 060 90 15 apricot

Antimicrobial coating

All powder-coated wall elements are routinely provided with an antibacterial and antimycotic surface. The powder coating offers active and long-term protection against microorganisms. Thanks to the targeted release of natural silver ions, bacteria and fungi are immediately killed when coming into contact with the surface. This is due to a triple effect, since the silver ions block the cellular metabolism, prevent cell respiration and stop cell division.

The protection consists of a minimally concentrated silver compound with a silver ion content in the micro range. Such coating therefore has no toxic, sensitizing or irritating effect on more complex and more developed organisms at all and is therefore completely harmless for humans.

marModuls®
Safety

Fire protection

The marModuls® wall system consists of non-flammable materials of building materials class A. It has been tested and certified according to DIN 4102. No toxic gases are released in the event of fire.

Sound insulation

marModuls® wall systems provide natural sound insulation (sound reduction index R‘w = 46 dB).

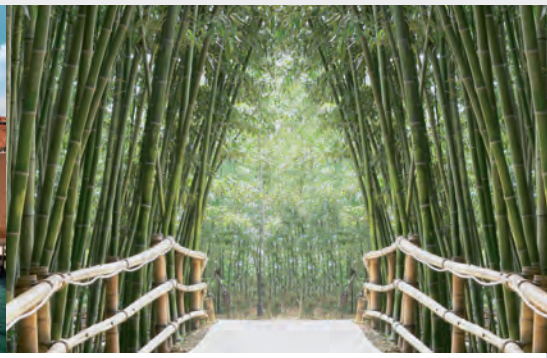
By installing non-combustible sound insulation lining the sound insulation can be increased accordingly.

X-ray protection

marModuls® systems offer a lead equivalent of 0.6 mm at 100 kV. Higher lead equivalent values can be achieved by additional lead shielding.

marModuls®
Graphical elements





Graphical elements that suit your taste

In addition to a color concept, of course it is also possible to have the wall elements embellished with graphics printed on them. This helps to create a pleasant environment for the staff and the patients, thus increasing their sense of well-being.

Here you see simply design examples. If you provide us with a high-quality artwork master, we can implement the design of your choice, in every detail.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marModuls®
Built-in wall elements

Wall-integrated medical monitor without glass elements

Monitor installation behind a single-pane safety glass element

Built-in wall elements – configured to match your specific requirements

Built-in wall elements are determining factors in regard to the functionality of a room and the working processes taking place in the room. marModuls® therefore offer you a wide range of selection and variation options. Apart from standard elements, you can choose from a multitude of customer-specific solutions. We'll be glad to discuss all the options in detail with you on a personal basis.

Instrument cabinet

Instrument cabinet with double wing door
Body: stainless steel 1.4301.Doors optionally available in stainless steel (1.4301) or in glass with stainless steel frame (1.4301).

All cabinet elements are of course optionally available as pass-through cabinets.

Catgut cabinets

- Wall cabinet for surgical sutures
  Body made of grade 1.4301 stainless steel
- Glass doors with stainless steel frame (1.4301)

marModuls®
Built-in wall elements

Gas outlets & power connections

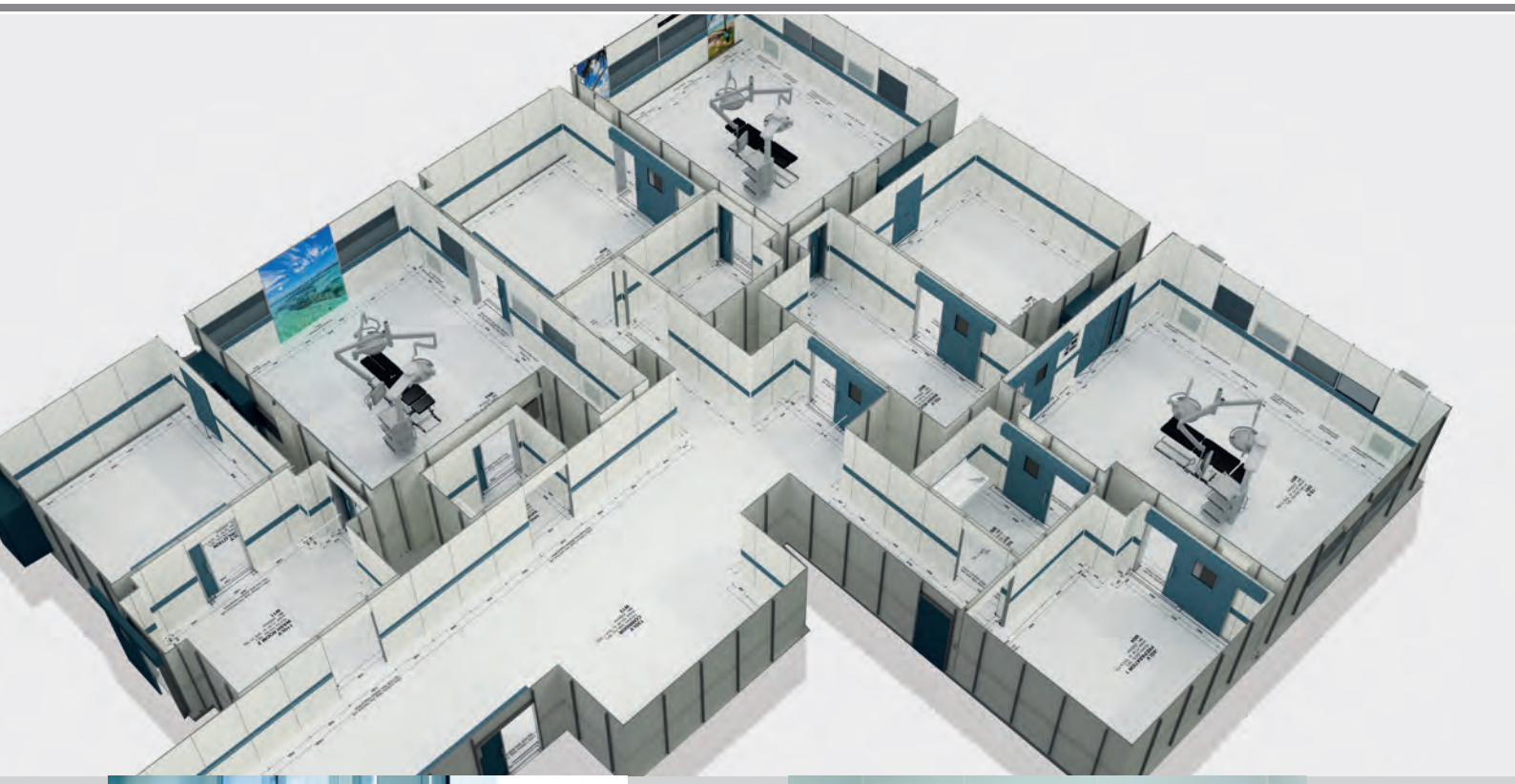
The chiefly needed media – electric power, signal leads and gas – can all be implemented with the wall panels in line with the customer's preferences. Thanks to the well thought-out substructure, the cabling can be installed with ease.

Control panel

The electronic control panel is a completely customized component. All functional elements are arranged on the panel according to customer requirements, complete with lettering. Depending on the panel size, the housing comes with one or two wing doors. All supply cables are run through the wall structure and are therefore hidden from sight.

X-ray

Branded products are used exclusively as X-ray viewers. Devices with louvers and brightness control are available in different sizes.



Flush-mounted windows

Windows can be installed flush with the wall surface. They are available in double-glazing design and comprised of two 5-mm safety glass panes, with the intermediate frame in the same color as the wall.

Installation of dimming shades is possible as well (for manual or electrical operation).

Lavatory facilities for physicians

Multi-place washing facilities are available in two different materials: classic stainless steel and mineral-based materials.

Facilities with 1-4 scrub sinks are available. Customers can choose from the following options for mixing battery operation:

- optoelectronic control
- arm lever
- foot switch
- hip-operated switch

marModuls®
Doors




Doors

The marModuls® door product range leaves nothing to be desired, irrespective of whether you prefer revolving or sliding doors, single- or double-wing, automatic or manual operation. We provide the right door for any room – flush-mounted of course.

Doors	
Door frame material	Stainless steel 1.4301, brushed
Door leaf surface material	Stainless steel 1.4301, brushed
Door handle/latch material	Stainless steel
Door leaf thickness	40 mm

Door windows, lead shielding, colors

The integration of flush-mounted windows is possible in various sizes. Both the door leaves and the windows can be fitted with additional lead shielding.

The door leaves are available with a colored powder coating. This provides a pleasant touch to enliven the unicolored wall surfaces.

Door drives and controls

German brand drives are exclusively used for door drives.

Opening, closing and stay-open times are programmable and can therefore be easily adjusted to user requirements.

The following control mechanisms are available:

- Pushbuttons
- Rabbet ledges
- Non-contact buttons
- Footswitches
- Motion sensors
- Code locks
- Light barriers

marModuls®
Suspended ceiling

Suspended ceiling

The dipling clamped, coffered OR ceiling is fixed to the base structure using a vernier suspension for perfect adjustability. It comes powder-coated in white.

More complex ceilings (e.g. walkable) are also available on request.

The use of special ceiling edge profiles ensures a perfect transition between the ceiling and the walls.

Suspended ceiling	
Module size	600 x 600 mm or 1200 x 600 mm
Material	Galvanized sheet steel or aluminum
Material thickness	0.6 mm, non-perforated
Surface finish	powder-coated, white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Ceiling-mounted elements

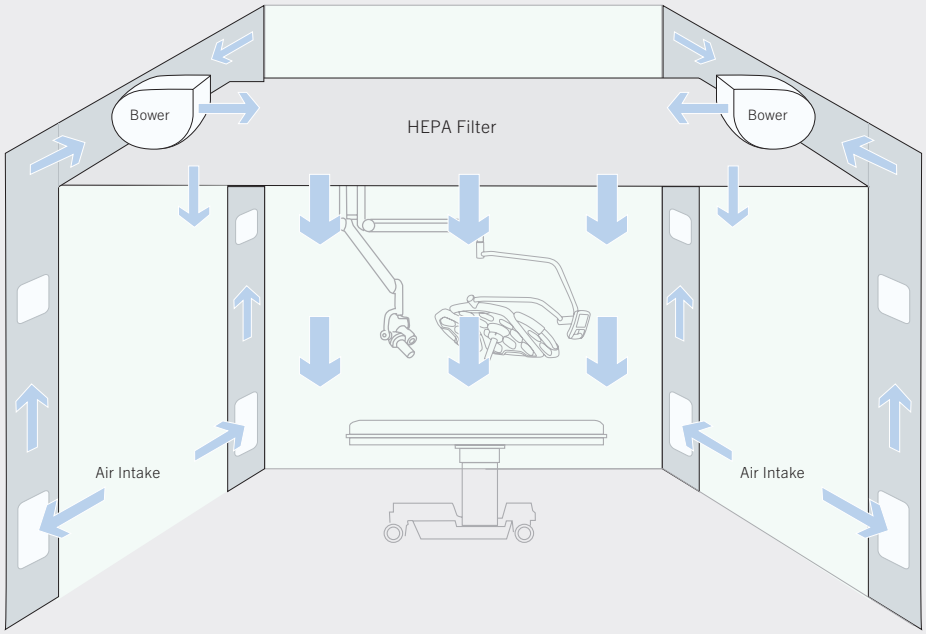
Integrated illumination

The ceiling lighting depends on local requirements. There is a basic difference between general room lighting and the lighting required for surgical site illumination. All lights are installed flush with the ceiling. The light intensity and light source requirements depend on the room size and the field of use. All lights are designed for use in cleanrooms.

Ceiling-mounted elements	
Wattage per light source	18–80 W
Number of light sources per light	2–3
Class of protection	IP 65
Dimming	optional
RGB coloration	optional
Adjustable mirror reflectors	optional

Spiral air outlets

For anterooms, corridors and other spaces, ceiling-mounted spiral air outlets are used for ventilation. Mounted flush with the surface of the ceiling systems, these powder-coated outlets are connected to the central ventilation system. Their size and capacity is determined by local requirements.

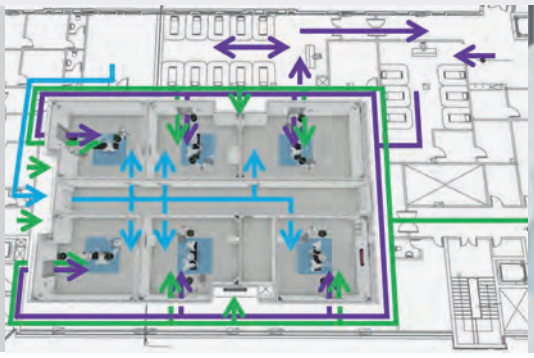


Laminar-flow ceilings

Different sizes and shapes are available. Standard sizes are 2.4 x 2.4m, 2.8 x 2.8 m, 3.2 x 2.4 m and 3.2 x 3,2 m but also rectangular, octagonal and circled shapes can be custom made.

Our system uses high performance particle filters made of micro glass fibre and of course it respects the highest hygienic standards and meets all international regulations.

Service
From the idea right up to commissioning – the 3 pillars of the **marWorld®** service concept



Clear concept

The whole process starts with a careful requirements analysis: What do you need for your operating room? What's possible? What's not? How about the cost ceiling? This is the conception phase, during which we work with you closely to draw up a clear requirements profile. This phase also includes the first design drafts.

Professional planning

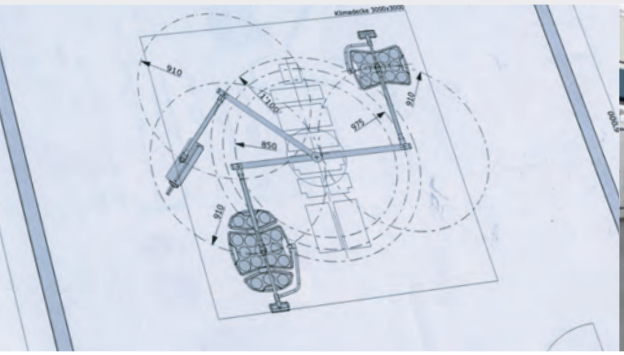
Who has to do what? And when? And how?
We'll do all the planning work for you. Based on an initial concept, this entails the development of specific 3D layouts. We organize and control all the processes for you as well.
An essential part of the planning phase consists of analyzing, simulating and evaluating your daily processes. This guarantees from the outset that you'll really get what you're looking for once the project has been completed.

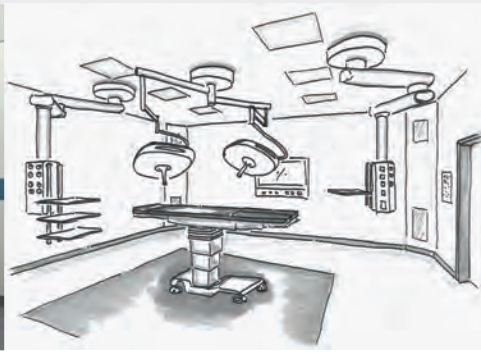
Reliable implementation

Needless to say, we also coordinate all the processes included in project implementation for you. From component installation to commissioning to documentation. With exactly the modules for which you opted.

The marWORLD® service concept is based on the general marWORLD® philosophy epitomized by the slogan "Modular & Flexible". For our customers, this translates into a customized offer. All services required can be freely selected from a compre-hensive pool of offers.

Service
Concept phase





Requirements profile

- Spatial setting
- Equipment

Defining the K.O. criteria

- What must be avoided under any circumstances?
- What must be achieved under any circumstances?
- What standards and regulations are applicable?

Financial framework conditions

- Defining the budget
- Identifying savings potentials
- Initial cost assessment

Identifying problem areas

- Where did problems arise?
- How do these problems manifest themselves?
- What issues are unsolved to date?

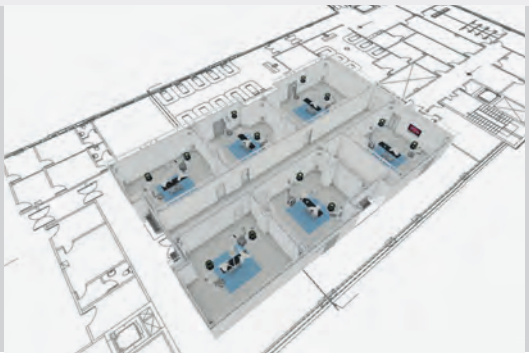
Assessing feasibility

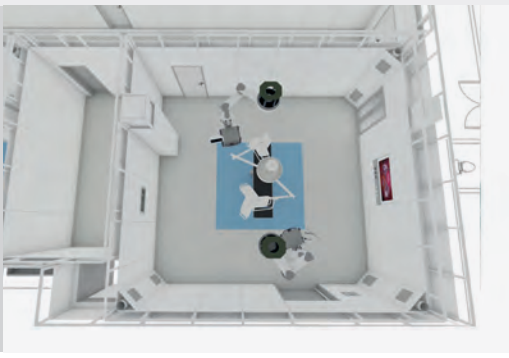
- Can the requirements, issues and K.O. criteria be completely implemented?
- What compromises could be acceptable if any?

Initial design drafts

- Developing room concepts in the form of drawings and simplified graphical representations

Service
Planning Phase





3D conception

- Processing the initial drafts to provide meaningful 3D animations

Implementation drawings

- Creating the implementation drawings
- Creating the interface drawings

Process and logistics simulation

- Process visualization and optimization
- Safeguarding investments
- Simulation of future scenarios

Technical room planning

- Defining the central media
- Defining the interfaces for the various technical crews involved

Planning meetings & workshops

- Coordination & implementation
- Moderation

Project management

- Creating the project plans
- Coordinating the planning process

Service
Implementation Phase

Project management

- Managing the project on-site during the installation phase
- Integrating the work schedules of additional technical crews if applicable

Installation

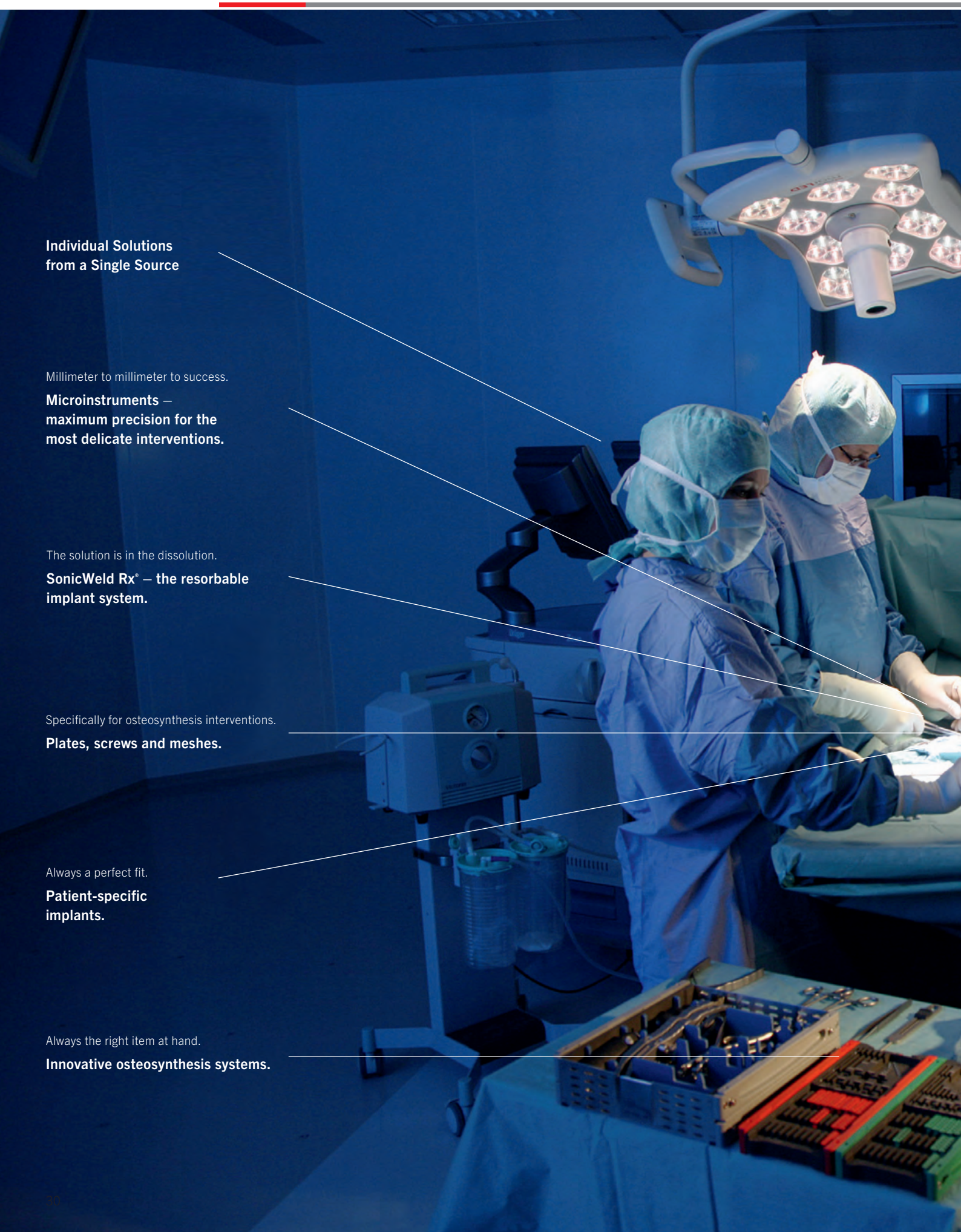
- Ensuring professional installation

Commissioning & user instruction

- Handing over the project
- Providing instructions for the technical and clinical staff

Final documentation

- Establishing and handing over the documentation “as built”



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Millimeter to millimeter to success.

Microinstruments – maximum precision for the most delicate interventions.

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SonicWeld Rx® – the resorbable implant system.

Specifically for osteosynthesis interventions.

Plates, screws and meshes.

Always a perfect fit.

Patient-specific implants.

Always the right item at hand.

Innovative osteosynthesis systems.

All good things come from above.

marLED® operating lights and Independant® ceiling pendants.

980 nm for a wide range of applications.

The particularly gentle diomax® diode laser.

The reference system in HF surgery.

The easy-to-use maXium®.

Scissors, swab and scalpel.

16,000 instruments – made in Germany.

Maximum safety for your instrument sets.

microStop® sterilization containers.

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