SCArA-Group

UNDERPEARL
SMART CHOICE

SMART BUILDINGS FOR A SAFE FUTURE

MODERNISATION & AUTOMATION OF PUBLIC SHELTERS

UNDERPEARL PRIVATE SHELTERS

SMART MOBILE SHELTERS

- Safe from drones
- Radiation and explosion-proof
- Resistant to natural disasters
- Resistant to pandemics
- Space Station autonomy
- Modular expansion option
- Ballistic resistant
- Environment simulation
- Made in EU

PRIVATE HIGH-END LUXURY
HYBRID SHELTERS

In times of crisis, you can take refuge in public shelters. But these are designed for the bare minimum. For crowds. For short-term survival.

UnderPearl® does not compromise.

It represents a new category of living - **a private, fully autonomous, high-tech hybrid environment** that combines the architecture of the future, space standards of self-sufficiency, and the luxury of everyday life. **This is not a shelter. It is an independent living ecosystem.**

UNDERPEARL® OPERATES 365 DAYS A YEAR.

- **Complete energy autonomy.**
- **Complete automation of all key functions and controls.**
- **Intelligent systems that operate without external sources.**
- **An environment designed for long-term living – without a feeling of isolation, without sacrifice, without degradation of quality of life.**

UNDERPEARL® IS A GLOBAL INNOVATION.

As a **zero-energy, smart building for everyday use,** and instantly transforms into the **highest level of protection** when the world around it becomes unpredictable.

The **modular design allows for unlimited square footage, complete customization, and discreet integration into private or commercial projects** – from residential villas to strategic facilities.

THERE IS NO COMPARISON. THERE IS NO ALTERNATIVE.
THERE IS ONLY A NEW BENCHMARK.

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SCArA-Group d.o.o., Slovenja vas 77, SI-2288 Hajdina VAT ID: SI95577106

SCArA-Group
FOR A SAFE FUTURE

Our goal is to overcome these limitations. That is why we develop and innovate systems that enable full autonomy, long-term independence, and optimal quality of life. We don't just adhere to minimum standards, we set new benchmarks in the design of safe living spaces.

We don't believe in shelters that are only useful in times of crisis – we believe in intelligent, flexible, and sustainable solutions that serve as comfortable living spaces in everyday life and as indispensable shelters in the worst crises.

> Hybrid design
SCArA intelligent (including mobile) shelters combine everyday living comfort with maximum safety under extreme conditions.

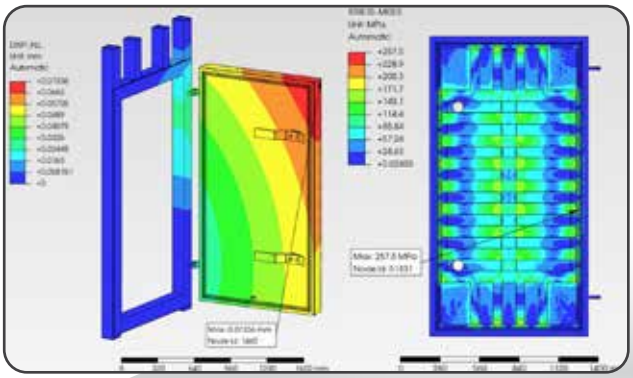
> Complete autonomy
Intelligent systems for ventilation, air filtration, energy and water management enable complete independence from external sources for 14 days.

> Highest safety standards
The construction is resistant to explosions, radiation, biological and chemical threats and includes multi-level security passes.

> Adaptability and personalization
The modular design allows the interior layout and functionality to be adapted to the user's needs (operating room, server, command center, etc.).

AUTOMATED CONTROL

To ensure optimal air quality, safety, and real-time monitoring, UnderPearl smart shelters are equipped with state-of-the-art sensor systems that monitor conditions in the environment and inside the shelter, enabling 14 days of complete autonomy.



PROPRIETARY TECHNOLOGY DEVELOPMENT

We have developed equipment that provides protection against all serious threats, including:

- Protection against radioactive radiation,
- Protection against electromagnetic radiation,
- Protection against high temperatures,
- Protection against explosions,
- Protection against water ingress,
- Protection against the penetration of gaseous substances.

QUALITY OF THE EUROPEAN UNION

SCArA-Group UnderPearl® - Protective shelters are developed, designed, and manufactured in the EU, which guarantees the highest quality and safety standards. The production process is carried out under the strict supervision of experts, with each component being thoroughly tested against all relevant criteria.

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SUITABLE FOR HARSH CONDITIONS

PROTECTS YOU FROM:

The shelter cell is the central protected space, designed for maximum safety and self-sufficiency under extreme conditions.

It is equipped with sensors and **an intelligent air filtration system, controlled power supply, and safety barriers** that ensure complete protection from external adversities.

The cage construction of the shelter is the **load-bearing and protective structure** that provides structural strength and resistance to external stresses.

Atomic radiation

Chemical and biological weapons

Explosions and wars

Drones

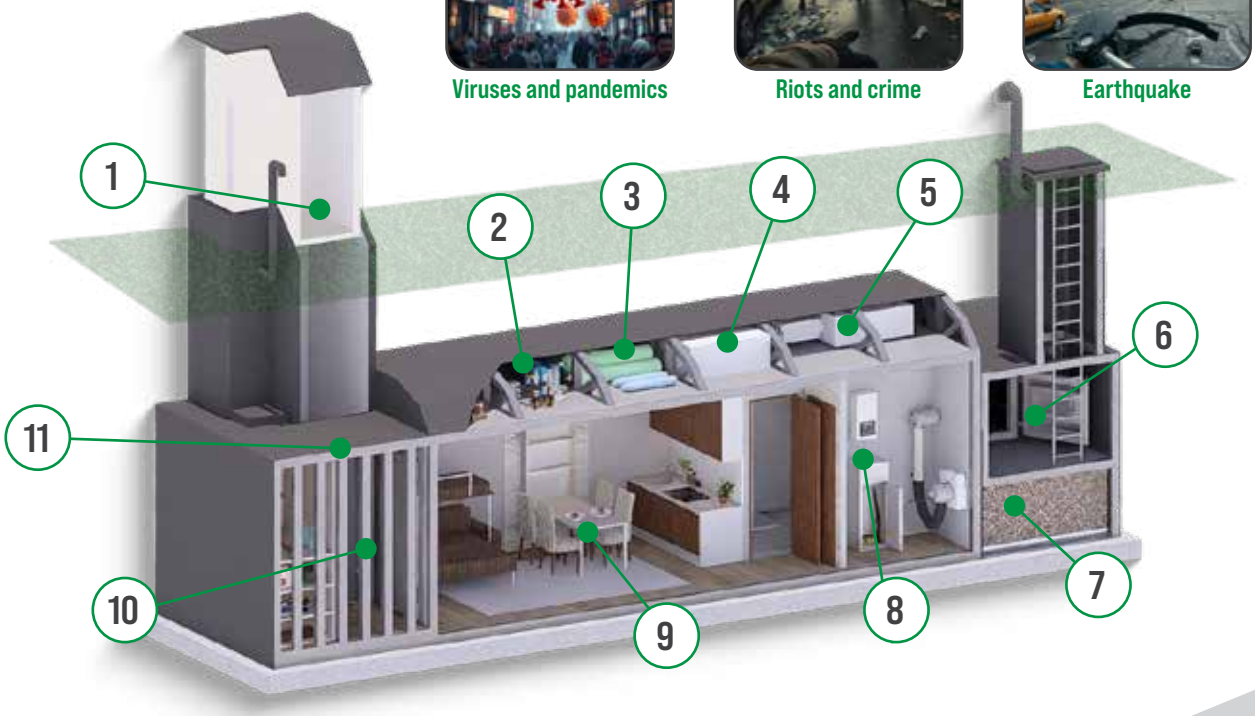
Floods

Fires

Viruses and pandemics

Riots and crime

Earthquake



1. Entrance with stairs (optional elevator),
2. Food storage,
3. Air and oxygen tanks,
4. Water storage,
5. Air purification system,
6. Safe corridors and emergency exits,
7. Sand filters and RBK filters,
8. Sensory and automated control console,
9. Interior design according to customer's choice,
10. Double shelter doors and safety passages (equipment room),
11. Radiation-, explosion-, and natural disaster-resistant steel construction.

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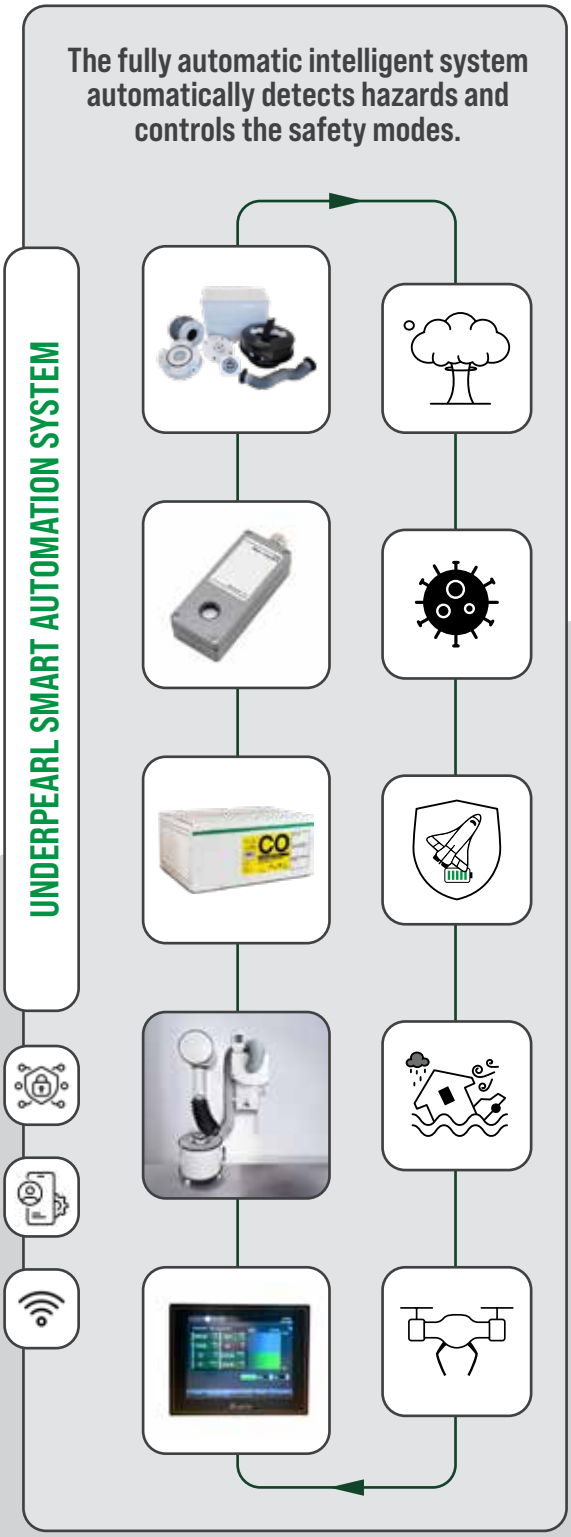
HIGH-QUALITY COMPONENTS FOR COMPLETE SAFETY

The safety of the population must not be based solely on meeting the most basic requirements of the shelter regulations. Existing public solutions often fail to take into account the crucial factors that influence the psychological and physical well-being of residents during a prolonged stay in a shelter.

We believe that a shelter must be more than just a place to survive—it must be designed according to the principles of the circular economy and with a minimal ecological and carbon footprint in order to be suitable for long-term, comfortable, and carefree living, both in times of peace and in extreme situations.

IMPORTANT TECHNICAL COMPONENTS THAT ENABLE THE HIGHEST QUALITY OF PROTECTIVE FACILITIES:

Ventilation and filtration system	A sand filter and an advanced HEPA and NBC (nuclear-biological-chemical) filter system ensure clean and safe air.
Full automation	Sophisticated sensor and control systems automatically switch between ventilation modes, close valves, and control other important functions of the accommodation.
Complete autonomy	In an emergency, the unit enables survival without dependence on external air, water, or energy sources for up to 14 days.
Temperature control	Advanced HVAC systems ensure controlled temperature and comfort under all conditions.
Cellular construction	Constructed from renewable raw materials – high-strength special steel and high-strength composites for maximum protection.
Safety passages	Multilevel entry systems with security doors that resist fire, radiation, explosions, and other threats.
Emergency exit system	Discreet and secure exits that allow for evacuation in an emergency.
Water supply	The water storage system enables long-term self-sufficiency.
Internal equipment	Modular furniture systems allow the space to be functionally adapted to different needs, even for long-term stays.
Energy independence	Has its own energy sources such as solar panels, battery systems, or generators.
Communication systems	Satellite and radio connections ensure independent communication in emergency situations.



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DESIGNED FOR HIGH REQUIREMENTS & DEMANDS

We offer a wide range of shelters in various sizes, designed for short-term or long-term stays, providing maximum safety, autonomy, and comfort in extreme situations.

Individual modules allow complete flexibility in terms of size, enabling adaptation to the needs of each user. The modular design offers maximum adaptability and satisfies even the most demanding customers. In peacetime, these are energy-independent living spaces that can be used for various purposes – whether as a room for music rehearsals, an office, a home spa, a wine cellar, or a retreat for men or women. Since they allow you to adjust the indoor climate, you will love the regeneration function, which enables faster recovery, better sleep, or simply enjoying simulated air from the French Alps or meditation in the Amazon rainforest with the sound of a stream. The possibilities are endless; it all depends on your imagination.

VARIOUS SIZES

MODULAR

10x3m

8x3m

6x3m

FULLY CUSTOMIZABLE

RELIABLE WHEN YOU NEED IT MOST

The reinforced steel cage is made of special steel that offers high resistance to external influences. The structure can withstand 18 tons per m^2 **(i.e., a total of 540 tons of static pressure on the entire structure),** which means that you could **place three Boeing 747 aircraft on top of the structure** and the occupants of the unit would still be safe, as **the cage would not cave in.**

SLO-PEARL®
MOBILE SMART BUNKER

During development, we take green transition guidelines into account and use renewable resources in the modules, paying close attention to achieving a near-zero carbon footprint. Just as conventional smart buildings stand for a safe future, the mobile smart module is also designed for versatile use both in peacetime and in extreme situations.

The modules can be used as offices, living spaces, classrooms, or hospitals when public infrastructure is adapted, as the temperature and other parameters inside module can be regulated according to usage preferences. The mobile version of the shelter allows for quick and flexible setup of a safe area anywhere, as it can be transported to the desired location and assembled into a smart mobile modular camp.

The highly resistant SLO-PEARL® modules are made from special renewable materials that are resistant to gunfire, explosions, radioactivity, various gases, and biological contamination.

ENERGY- AND ECOLOGICALLY OPTIMIZED INTELLIGENT MOBILE MULTIPURPOSE MODULE

Each unit can be specialized for a specific function and operate as an independent unit. It is equipped with advanced sensors for automation that independently execute survival modes depending on the identified situation.

Similar to a swarm, it communicates with other units and automatically activates defensive or other protocols. In practice, this means that modules can be assembled into a larger base and used in a variety of ways, such as replacement living quarters for personnel, operating rooms, drone control rooms, storage for food, weapons, or other important logistical capacities, without compromising safety.

MULTIPURPOSE SMART MOBILE CAMP (MODULAR ASSEMBLED CAMP) - SLO-PEARL ®

The intelligent secure mobile camp is a modular and technologically advanced solution that combines autonomous units with advanced security systems, communications infrastructure, and the possibility of self-sufficient energy and water sources, enabling rapid establishment of a secure operational environment anywhere. An example of the combination of individual modules is shown in the following simulation.

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SMART BUILDINGS FOR A SAFE FUTURE RBK FILTERS
HYBRID SHELTERS MODULAR CONSTRUCTION
VENTILATION SYSTEMS WITH HEPA FILTRATION EMP
PROTECTION BALLISTIC PROTECTION AUTONOMOUS
ENERGY SYSTEMS EMERGENCY EXIT WITH PROTECTIVE
MECHANISM SAFE ROOM ANTI-SEISMIC STRUCTURE
UNDERGROUND LOGISTICS AND TRANSPORT SYSTEM
CONTROL SYSTEM BIOMETRIC ACCESS AUTHENTICATION
REMOTELY OPERATED CONTROL SYSTEMS INDEPENDENT
HVAC SYSTEMS FARADAY CAGE ACOUSTIC AND
VIBRATION INSULATION DECONTAMINATION CHAMBER

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