



Shielding in Difficult Environments

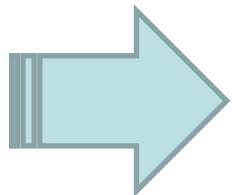
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Effective Shielding Construction

MMS – a system developed by a Polish company Medishield in collaboration with NCBJ (HITEC) in response to the very practical challenges

- **Cost effective**
- **Short construction time (not more than 30 days)**



- **Partially prefabricated**
- **Minimal use of resources on-site**
 - Personnel
 - Construction equipment
 - Water
 - Power
 - Formwork and assembly elements
- **Well suited for demanding environments**



MMS system characteristics

- **Modular, repeatable system**
- **Permanent or demountable, depending on the version:**
 - **Walls and ceiling slab filled with concrete**
 - **Walls filled with concrete, ceiling slab prefabricated**
 - **Walls filled with a dry compacted blend, ceiling slab prefabricated**
- **Suitable for bunkers either with or without a maze**
- **Easily adaptable to the individual requirements at the design stage**
- **Fast, clean and safe to construct**
- **Use of locally available components**



MMS system elements

- **Foundation slab**
 - individually designed, made of reinforced concrete
- **Walls**
 - prefabricated external reinforced concrete wall panels fitted to the inner support cage (anchored to the foundation slab),
 - space between the plates filled with a shielding material (concrete or dry blend); concreting in one cycle
- **Ceiling slab**
 - prefabricated reinforced concrete slab plates used alone or concreted to the desired thickness
 - membrane cover
- **Shielding doors**
- **Industrial floor**
 - screeded or
 - raised



MMS system in practice -1



Reinforcement of the foundation slab



MMS system in practice - 2



The foundation slab after concreting



MMS system in practice - 3



Wall support cage



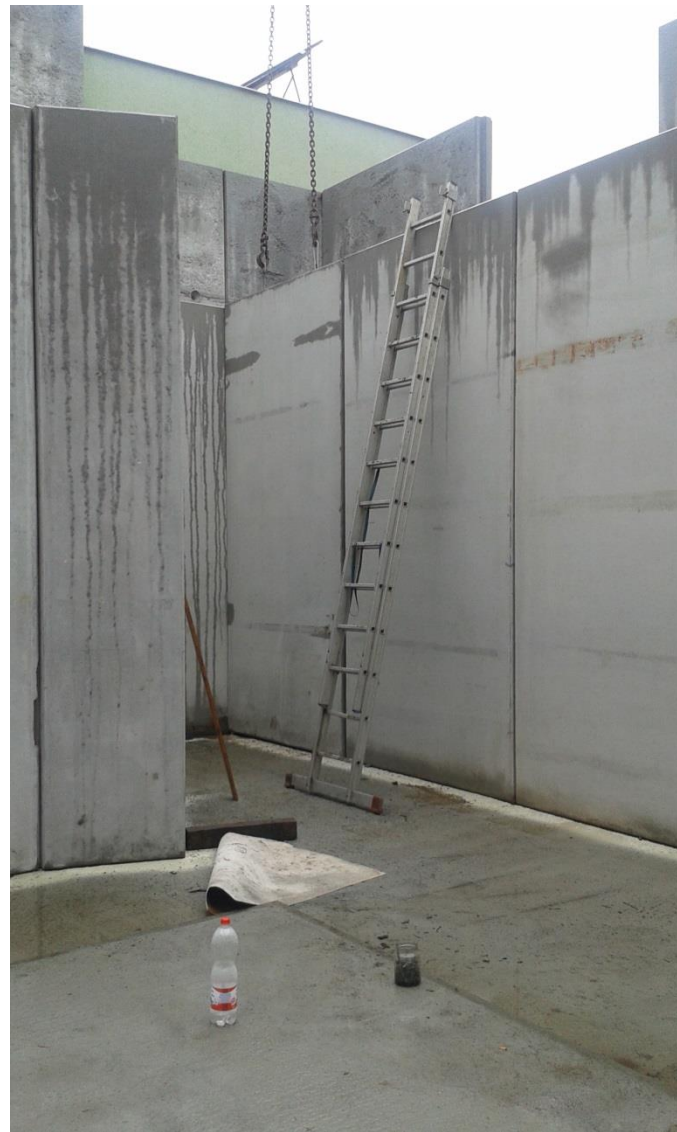
MMS system in practice - 4



Wall panel fitting



MMS system in practice - 5



Wall panel fitting continued



MMS system in practice - 6



Space between the wall panels





MMS system in practice - 7



Prefabricated ceiling slab plates ready for installation



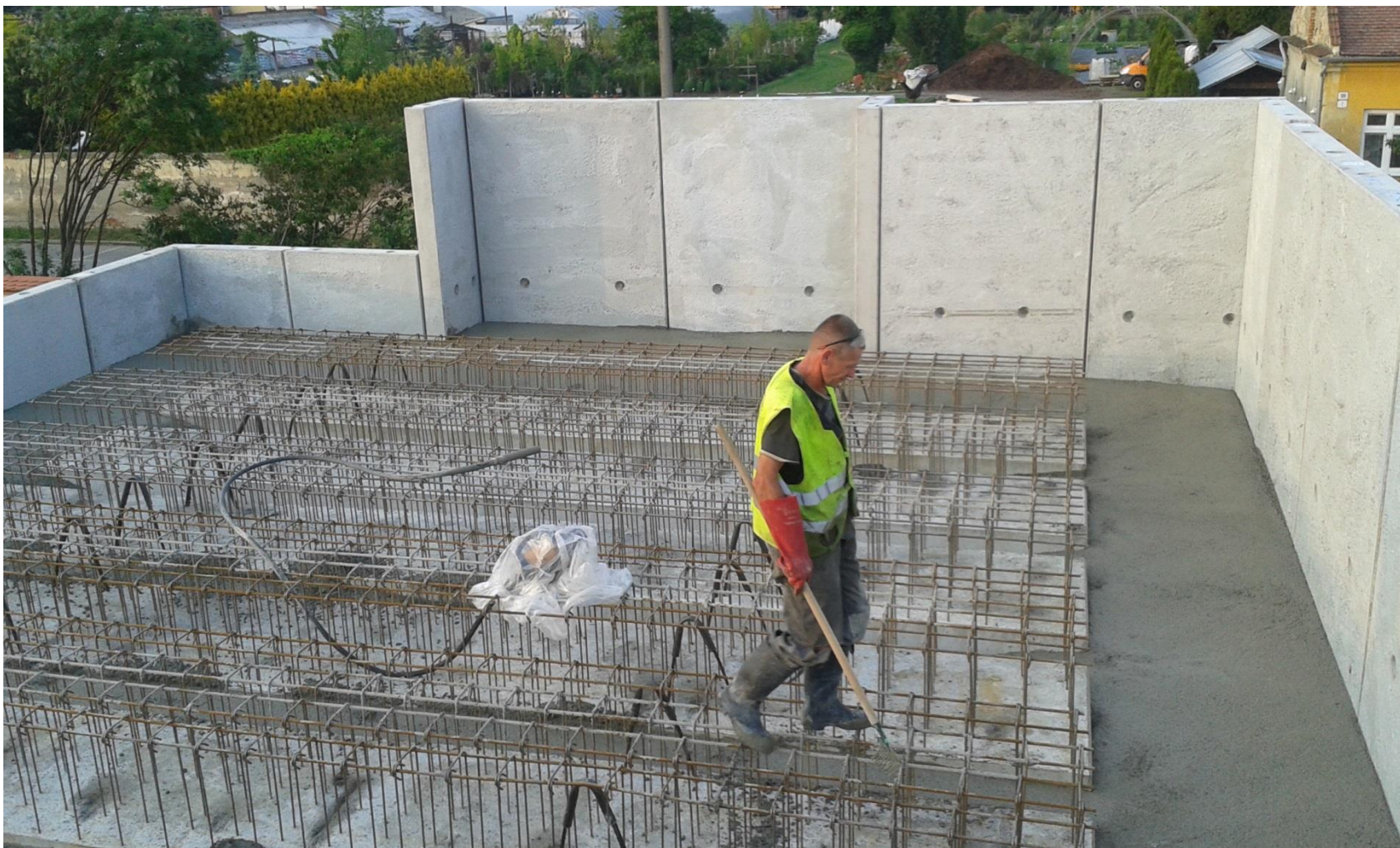
MMS system in practice - 8



Installed slab plates ready for concreting



MMS system in practice - 9



Walls and slab concreted



MMS system in practice - 10



Preparation for final concreting of the ceiling slab



MMS system in practice - 11



Ceiling slab concreted and covered with a membrane



MMS system in practice - 12



Preparation for floor screeding



MMS system in practice - 13



Floor ready for linac installation



MMS system in practice - 14



Inner wall finishing





Thank you for your attention