



Knowledge FOR Resilient soCiEtY

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FIRE SAFETY AND EVACUATION IN INDUSTRIAL FACILITIES – CASE STUDY OF
COMPLEX “JAT TEHNIKA”

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1. General introduction to evacuation – environment and predictability of human behaviour?
2. Safety identification – escape and evacuation plan signs
3. Architecture, technology, safety and standardization – can we homogenize the evacuation plans?
4. Program and plan maintenance
5. Conclusion



1. General introduction to evacuation – environment and predictability of human behaviour?

Familiarity with the space

Preparedness

Panic and crowd control

Psychology of the behavioral process

Facility's system of safety – escape plans

Integral role in fire safety management plan

Escape plan – a tool for communication with users

Smart way to create a feeling of safety and comfort

1. General introduction to evacuation – environment and predictability of human behaviour?

The International Organization for Standardization (ISO) is an international standard-setting body composed of representatives from various national standards organizations.

ISO 23601:2009 establishes design principles for displayed escape plans that contain information relevant to fire safety, escape, evacuation and rescue of the facility's occupants. These plans may also be used by intervention forces in case of emergency. It has already been widely adopted throughout Europe and Worldwide.

This standard was used in creating the escape plans for industrial complex IAT Tehnika in Belgrade



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3. Architecture, technology, safety and standardization – can we homogenize the evacuation plans?

- The exact location of the user shall be indicated on the escape plan;
- All defined areas and floor plan details shall be illustrated consistently;
- Standard ISO/EN safety signs to identify safe condition and fire-fighting equipment;
- The minimum size of an escape plan shall be A3 and A4 in rooms:

This type of preparation has proven to be very successful for smaller establishments, mainly in restaurants and hotels.

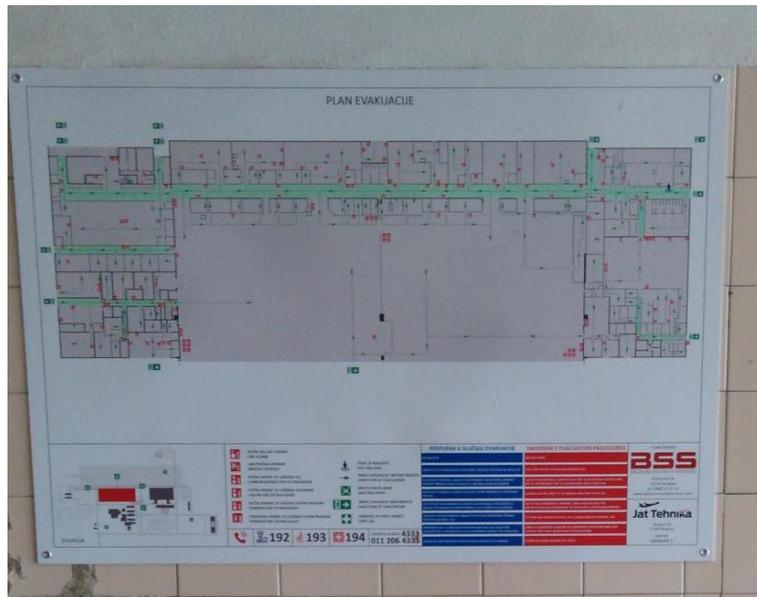


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Example of escape plan for JAT Tehnika done in accordance with ISO 23601:2009

However, in large industrial complexes, these plans, regardless of the design and size of the plan, appear to be insufficiently legible due to too much information presented in one place



This is a board 100 x 70 cm. NOT readable, comprehensive and simple enough to be used in emergency situation

Due to it's position – engine trial hangar – it gets blown away from the wall constantly due to high speed wind.



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- Industrial complexes are rarely visited by people who are not employed by them, that is, people who do not know the space.
- For visitors to such facilities, light signs and other safety signs pointing to an evacuation exit as well as equipment used for extinguishing fire are more important, assuming that visitors are trained to use it.

This paper argues that organizing employees within the complex is actually a better way to prevent injuries if a fire occurs.



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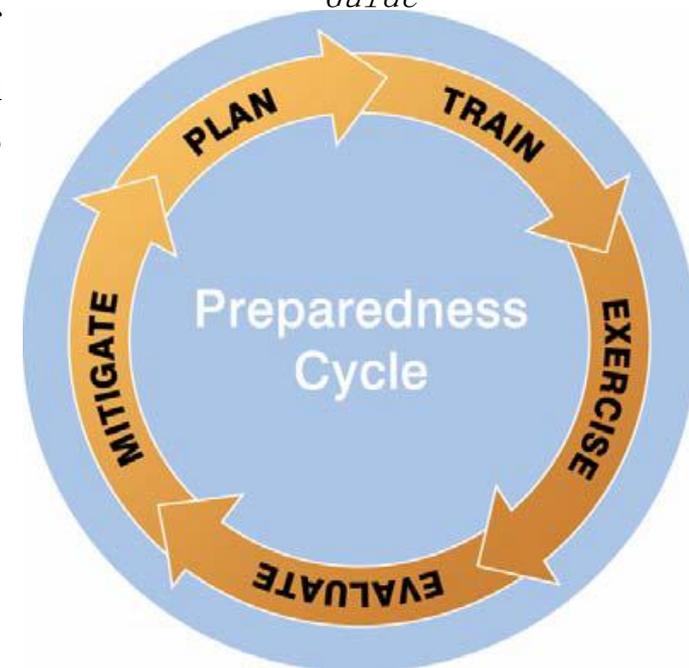


4. Program and plan maintenance

Evacuation plans are intended to **assist** emergency responders in **implementing flexible and scalable procedures and methodologies** for addressing a range of emergency conditions that occur in isolation or as part of a larger, multi-entity response initiative.

- critical element of all evacuation planning is the **identification of the organizational structure**
- PROTOCOLS - derive from the roles and responsibilities contained within the organizational structure
- All stakeholders should participate in all phases of this cycle to ensure that the plan is as comprehensive as possible
- Evaluation as a tool for identifying areas to be sustained, improved or added enhancing the facility's overall preparedness

*Preparedness cycle, NASCAR
Mass Evacuation Planning
Guide*



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5. Conclusion

Evacuation plans are designed to **familiarize** the occupants with the fastest evacuation routes, the location of fire extinguishing equipment, and safe gathering places outside the facility.

Industrial facilities are larger in size and their users are mostly employed within the complex and familiar with the structure of the facilities.

- Plans should be larger in scale so that they are readable to first-time site visitors who are unfamiliar with their organization
- Plans should be simplified as much as possible
- Other emergency signs should play a more significant role – panic lights, sirens and speakers, strobes, floor led strips, illuminated exit signs
- Train your staff! Practice the emergency evacuation and extinguishing!



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Thank you
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