

## Recent fires

As London Grenfell Tower or Liverpool parking garage and also WTC in NY show as we really need better fire prevention solutions. That will be safe, efficient not expensive, not limited by pumping water high up in cascades to reach top of skyscrapers.

New »AirExtinguishing« system for buildings is an improvement of existing water hydrant network. Basically it utilizes same type of plumbing as water supply network, but uses different extinguishing agent. Low oxygen air is ideal extinguishing agent, because it can be used to extinguish all types of materials, unlike water, that is not suitable for extinguishing of oil, gasoline, light metals, electrical cables, variety of chemicals, data storage banks, electronics etc.

## History

Low oxygen extinguishing method is traditionally used in coal mines, submarines, computer server rooms and aerospace. In previous solutions extinguishing agent was stored in high pressure cylinders or mixed on site by adding nitrogen to air.

## Novelty

“Air Extinguishing“ system is using low oxygen air mixture of breathable air that is available in big quantity in storing and distribution ductile iron pipes, ready to be released in case of fire. This system doesn't create »suffocation pockets« of to low oxygen air that would be dangerous for people or animals.

## Application

System was originally developed for future e-car tunnels. In 3-4 years next generation of capacitors and sodium or potassium batteries will be available on the market, consequently forcing abandonment of water extinguishing. »Air Extinguishing« is also perfect for long train tunnels, subways, shopping malls, museums, galleries, studios, operas, airports, hotels, industry, warehouses, data storage banks, server rooms, hospitals, schools, garages etc.

## How it works?

Liquid nitrogen and oxygen are delivered in transport tank, expanded into gaseous state, mixed and used to fill extinguishing agent storage pipeline. Existing sprinkler and ventilation systems are connected to this pipeline. In case of fire detection, extinguishing gas mixture is applied on location of fire. Smoke will be diluted and forced out. Nitrogen atoms will isolate hot surfaces from oxygen atoms and exponential oxidation will be immediately stopped. All the flames will be simultaneously put out. Expanding gas reduces local temperature and cools down hot spots. For network monitoring and determining fire location What3Words global position mesh will be used.

## Advantages

Water damages are significant part of damages in most fire events. »Air Extinguishing« system does not cause water damage, reduces smoke and heat damages and it does not need big pumps and lots of energy for operation, like water mist systems do. It consists of existing building blocks like ductile iron pipes and sprinkler system, common and well-known to contractor`s employees and users.

At any time, even during firefighting, the sprinkler system can be switched back to water with a simple valve switching. **Fire is suppressed. Evacuation from facility is safer, less pollution for environment and better conditions for firefighters to work in.**