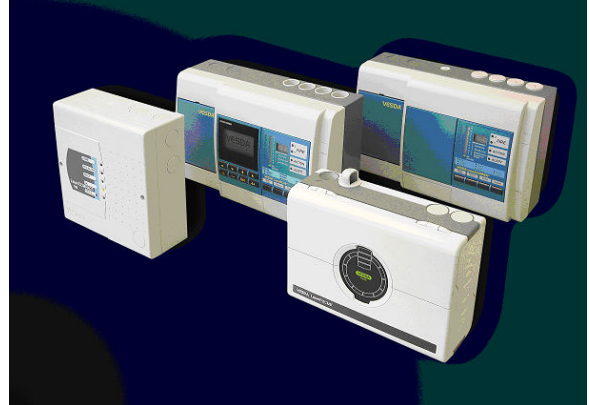




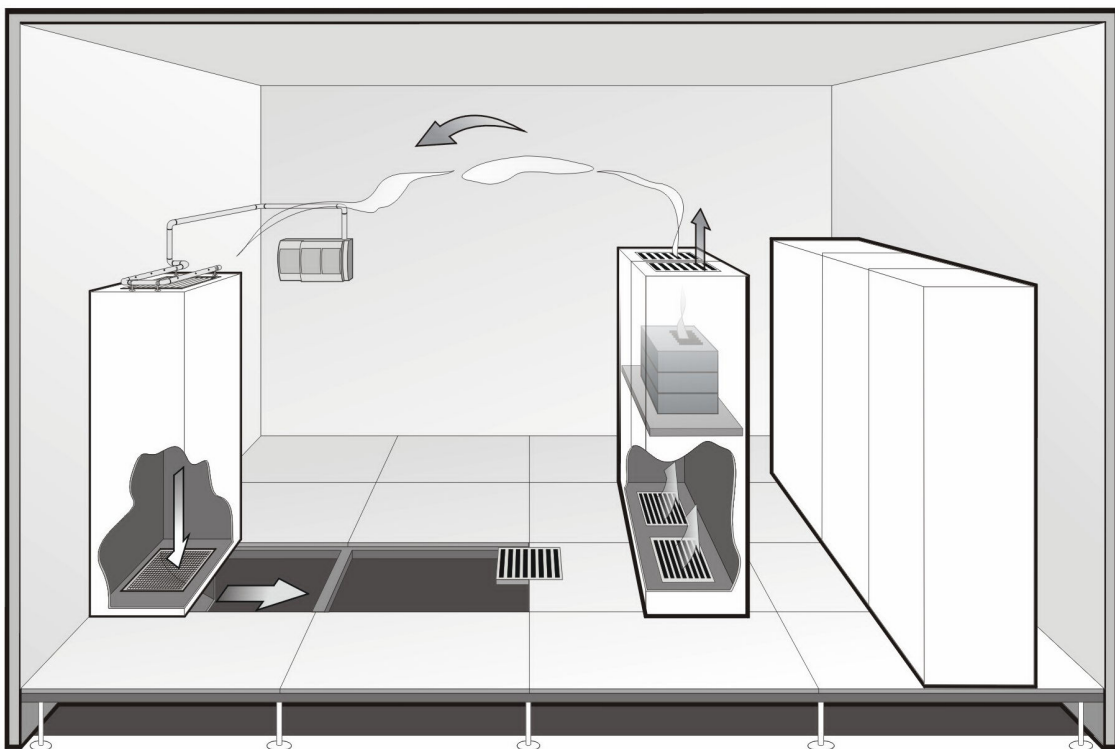
### 3. EARLY WARNING:

To limit damage highest priority is to detect fire earliest.

Because of this automatic fire detection systems are installed in all IT-facilities nowadays. Detectors have to be placed inside and outside the rooms. To detect a fire as soon as possible, the installation of systems with high sensitivity is essential. Thus, air aspiration systems are to be installed. They are designed to detect fire even in phase of pyrolysis. To detect earlier grants extension of time to react considerably. Consequently this enables the staff to manually and concentrated fight a fire, even better, to avoid it totally.



Air Aspiration System Diagram



#### 4. FIRE EXTINGUISHING SYSTEMS:

Whenever a fast manual reaction cannot be secured permanently the installation of automatically activated Fire Extinguishing Systems is common standard.

The extinguishing media is Gas. We distinguish between Inert-Gases (these extinguish by displacement of oxygen) and Chemical-Gases (these interfere into the ignition process chemically).

	N <sub>2</sub>	Ar	CO <sub>2</sub>
Nitrogen	100%		
Argon		100%	
Carbondioxid			100%
Inergen <sup>®</sup>	52%	40%	8%
Argonite <sup>®</sup>	50%	50%	

FM200 <sup>™</sup>	C <sub>3</sub> F <sub>7</sub> H
FE13 (Trigon 300 <sup>™</sup> )	CHF <sub>3</sub>
Novec1230 <sup>™</sup>	(CF <sub>3</sub> CF <sub>2</sub> C(O)CF(CF <sub>3</sub> ))

Although chemical gases are in use, it is not certain that one day they may be ruled out like Halon. It is fact that all chemical gases containing Fluor generate HF (HydroFluoric Acid). HF is highly toxic and corrosive. A higher sustainability offers the use of CO<sub>2</sub> (which is in contradiction to the protection of human life and therefore not used anymore) and inert gases. The latter do not – besides few exceptions – react with other materials. Inert Gases are part of our natural atmosphere (78 Vol% of N<sub>2</sub> and 0,93% of Argon). For the use in Fire Protection Systems they are subtracted from the atmosphere. When exposed to reduced oxygen content by activation of an extinguishing system based on inert gases, the human organism's reacts and mainly balances automatically.

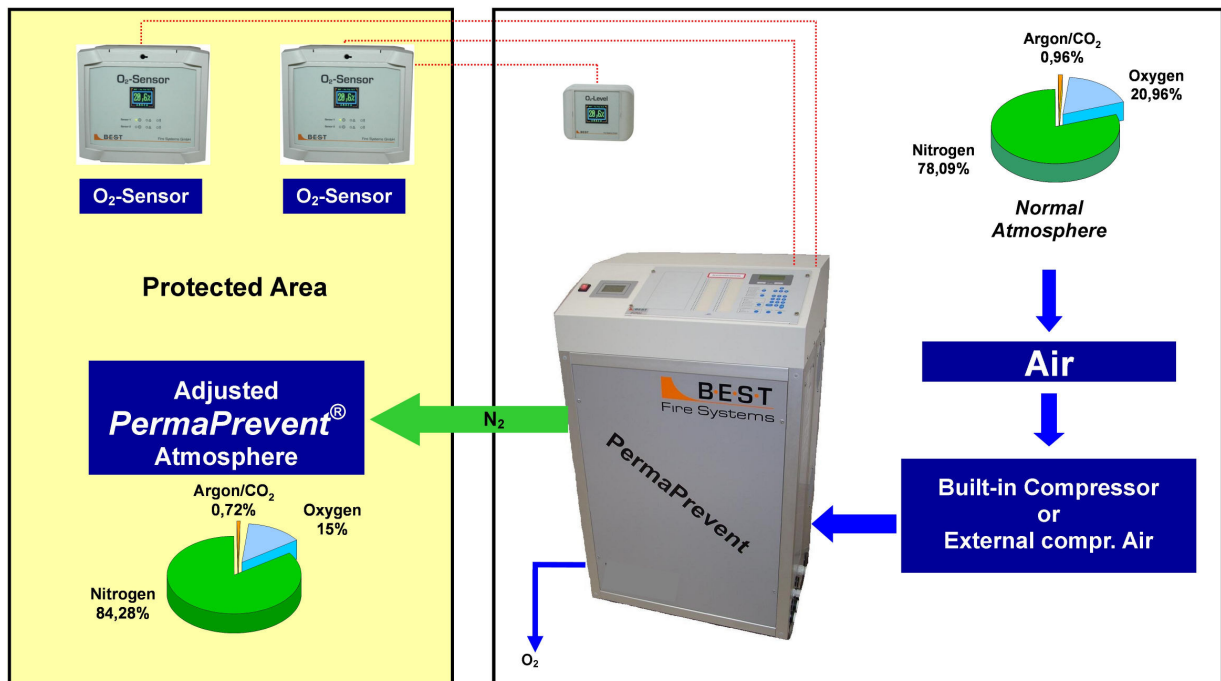


#### Clean inert extinguishing gases offer advantage:

- non-toxic, in large amounts part of nature.
- environment-friendly, inert und electrically non-conductive.

## 5. FIRE PREVENTION (PermaPrevent®)

Sensitive zones were protected against fire mostly by Extinguishing Systems. The activation of these systems starts, after a certain level of damage is sad reality already. It is fact that it is of big advantage to PREVENT a fire instead of detecting it, evacuates the facilities and activates the extinguishing system. An atmosphere, in that an open fire cannot exist, guarantees that protection. **PermaPrevent®** generates and maintains an oxygen-reduced atmosphere via controlled injection of Nitrogen, produced locally. No exchange of cylinders required!  
**No interference with the work in progress, the protected area remains accessible!**



### CONCLUSION:

#### Provide:

1. Fire Zones
2. Mobile & First Aid, inclusive training of staff
3. Earliest Warning in pyrolysis-phase by installation of high-sensitive aspiration detectors
4. Automatic Inert-Gas-based Extinguishing, or, even better,
5. Fire Prevention System PermaPrevent®