



CASE STUDY

Sophisticated, smart device *iTherapy 1* affects the reduction of the concentration of aerosol particles PM_{2.5}, PM₁₀, volatile organic compounds TVOC, formaldehyde HCHO.

- ✓ Application of advanced and alternative technologies for the purpose of air conservation.
- ✓ Sensors and reports 24/7.
- ✓ New technological system.

ABSTRACT

Technical and technological parameters in graphic production are not the same for all graphic products, so it is very important that the printing house is equipped with the technology and tools needed to produce products which are then placed on the market. Therefore, printers have various machines, each of which in a certain segment contributes to the realization of the final product. During the maximum usability of the printing machine, ie the transfer of ink to the printing substrate, various chemical compounds accumulate. Inhalation of chemical odors by employees can cause headaches, fatigue, tiredness, stomach problems. In order to eliminate health problems and prevent the accumulation of harmful chemical compounds, it is necessary to ensure safe air quality inside the printing plant.

THE CHALLENGE

As an Institution that encourages the employment of people with disabilities, they are always looking for innovative solutions that provide quality and healthy air, and thus ensure a safe working environment for all its employees. For this purpose, a smart air purifier *iTherapy 1* is installed in the printing plant. Since the operation of the printing machine is not conducive to creating and maintaining optimal purified air inside the printing plant, a ventilation system is installed. The type of ventilation system is a decentralized (local) ventilation system that regulates air distribution. However, even after installation of ventilation system, many chemical odors remained present inside the printing plant.



iTherapy 1 installed near the printing press

Impact of air purifier iTherapy 1

- ✓ **concentration of aerosol particles PM_{2.5} reduced by 31%, PM₁₀ by 23%**
- ✓ **concentration of TVOC particles reduced by 27%, HCHO by 10%**
- ✓ **air quality improved by 20%**

Therefore, they explored new ways to eliminate harmful chemical compounds using the innovative **iTherapy 1** air purifier. The air purifier simultaneously detects the presence of harmful chemical compounds inside the printing plant, purifies and modifies the air and achieves optimal air quality.

THE SOLUTION

To ensure its employees a safe working environment, the iTherapy 1 air purifier is installed inside the printing facility. The highest concentration of contaminant parameters was detected in the moving parts of the printing machine, at the points of indentation and next to the rollers. Therefore, an air purifier is installed in the immediate vicinity of the printing machine. New air purification technology contributes to the rapid reduction of harmful volatile organic compounds (TVOC), aerosol particles (PM_{2.5}, PM₁₀) and formaldehyde (HCHO). PM aerosol particles, TVOC particles, HCHO are inhaled together with air and penetrate deep into the lungs. iTHE100 filters these particles by the adsorption process. When their molecules reach the filter, they stick to its specific surface by the adsorption process. The analysis of the results of the measurement of the overall air quality and the air quality index AQI revealed the high influence of the smart air purifier iTherapy1 on the elimination of pollution. The concentration of aerosol particles PM_{2.5} was reduced by 31%, PM₁₀ by 23%. The concentration of volatile organic compounds TVOC was reduced by 27% and formaldehyde HCHO by 10%.

THE RESULTS

Thanks to the integrity of the air purification process of the **iTherapy 1** smart device, the measured values of the pollutant parameters are within the standard permitted air quality parameters. The fully automated **iTherapy 1** device **has improved the overall air quality by 20%** and thus brought the air within the correct and healthy values.

Good indoor air quality **improves work productivity up to 10%**. The latest technology available to the device enables modeling of climatic conditions and achieving the most favorable air quality in the room.

**iTherapy improving
quality of life**

Kristalna ideja d.o.o. , Put Duilova 10, 21000 Split, CROATIA
contact : 00385(0)21772805 , www.itherapy-shop.com