



OFFICE OF THE FUTURE

Case Study

The COVID-19 pandemic forced many offices to re-look at what it takes to create a safe and healthy environment for their employees. Take a closer look at how these businesses have utilized UV disinfection to improve their defenses against bacteria and viruses.

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“Employees will not settle for the offices they once had; they want healthier work environments that better account for their personal health and overall sustainability.”

— *Niall Patrick Walsh, Archinect News*



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Preface



While many businesses either expanded or began to offer remote or hybrid work environments, many still want or need employees to be able to return to the office setting in person. While we may be returning to “normal” after COVID-19, bacteria and viruses still pose a real threat.

Many businesses still face the challenges of keeping up with a clean environment for their employees and customers. While exposure to infectious diseases often occurs through person-to-person contact, there is extensive evidence that environmental exposure to pathogens can also transmit illnesses. Therefore, it's critical to sanitize both air and surfaces.

Many bacteria and viruses can remain viable on surfaces in offices, conference rooms, break rooms, and bathrooms for hours, weeks or even months, placing staff at risk for exposure. Much of the guidance that is out there focuses solely on the use of chemical disinfectants, which comes with high associated costs in terms of ongoing expenses of chemicals, extensive labor requirements, and potential health risks to students and staff that can come from long-term exposure to chemicals.

These practices may not be sustainable in the long-run economically and there is risk of reduced compliance over time. However, there are automated disinfection technologies that have been proven effective against SARS-CoV-2 as well as other pathogens, particularly UV disinfection. Used by hospitals for decades to combat healthcare-associated infections, advancements in UV technologies have made it possible (and affordable) to bring the power of ultraviolet light into schools.

This case study, written by Violet Defense, lays out the challenges that businesses face in helping keep the spaces throughout their campuses safe from harmful germs; and how the advancements in UV disinfection technology have helped several organizations change the way they think about protecting their environments.



01

The Value of Safer Spaces

Regardless of industry, businesses need to create safe and healthy offices where their employees can thrive and customers can feel confident in visiting spaces. This can not only create more value for your business in terms of productivity, but can also help generate a positive return on your investment.

THE REAL COSTS OF EMPLOYEE ABSENCES

Most businesses understand that their employees are their most valuable asset. That's why employee absenteeism can be such an impact on the organization - not only the loss of production or decreased quality, but also the time spent by supervisors, HR, or others covering for that absence.

Productivity losses linked to absenteeism are costing employers over \$225 billion each year according to the CDC¹, averaging \$1,685 per employee. It's



also estimated that employees working when they are sick, can cost employers \$150-250 billion.

In 2020, these statistics grew amid the COVID-19 pandemic with employers experienced an average of 1.5 million people a month missing work. While these record numbers were 45% more than normal over the past 20 years², they highlighted the need to have better policies and protections in place to prevent the rampant spread of illnesses throughout offices.

However, it is important to note that this isn't just about COVID. Pre-COVID it was estimated that there were 111 million workdays lost each flu season, costing \$7 billion on its own³. Placing a sustainable disinfection solution helps any state that the school is in, pre-COVID, during COVID, and post-COVID, especially looking forward to the future.

Recent studies have suggested that the timing of the flu season has become harder to predict. This combined with the ongoing battle with COVID-19 and its variants, the surge of RSV in 2022, and normally everyday bacteria and viruses, suggests that businesses will need a way to compact these harmful pathogens all year long, in the air and on surfaces.

Creating safer, healthier workplaces is just smart business. L. Casey Chosewood, M.D., M.P.H., director, Office for Total Worker Health™ at the National Institute for Occupational Safety and Health at CDC states "The health and safety of the American workforce is vital to the U.S. economy,"



We've known for a long time that workplace absenteeism is highly correlated with the occurrence of influenza type illness."

- Matthew Groenewold, Epidemiologist, Centers for Disease Control and Prevention

\$1,685

Average Cost of Absenteeism Per Employee

\$225.8 Billion

Productivity Losses Linked to Absenteeism

111 Million

Estimated Workdays Lost to Flu Each Season



1 <https://www.cdcfoundation.org/pr/2015/worker-illness-and-injury-costs-us-employers-225-billion-annually>
2 <https://www.usatoday.com/story/money/2021/01/21/covid-19-workplace-absences-surge-2020-due-illness-fears/6585474002/>
3 <https://www.cdc.gov/niosh/updates/upd-03-17-11.html>

RE-EVALUATING DISINFECTION IN A POST-COVID WORLD

While certain disinfection strategies during COVID-19 were coined unnecessary “hygiene theater,” the reality is that businesses were all trying to find solutions to keep up with the new disinfection recommendations, but to also find ways to give their employees and customers peace of mind.

As the science evolved and we are reminded that there are still many different pathogens from influenza to MRSA that we must protect against, it's important that facilities understand the best mitigation strategies to prevent the spread of infectious pathogens, including cleaning

and maintaining healthy facilities. The CDC recommends a layered approach that includes solutions for cleaner air and disinfection of high-touch surfaces.

While using chemicals has been a common way to disinfect, UV disinfection provides a safer, more cost-effective option providing disinfection coverage for both air and surfaces in offices, bathrooms, break rooms and more.

Chemicals pose challenges in terms of reliability with up to 50% of surfaces missed and can cause significant equipment and surface degradation.

UV disinfection also reduces the health risks associated with harmful chemicals, which can impact respiratory health specifically. A study examining children who were passively exposed to bleach as a disinfectant at home and in school found an increased frequency of respiratory symptoms such as respiratory inflammation and recurrent bronchitis, as well as other related infections.

Finally, the labor requirements and ongoing cost of chemicals can make it difficult to sustain these disinfection practices in the long run. With installed UV disinfection solutions or easy to use mobile options, disinfection becomes simpler to implement on a daily basis.





Employees will have a choice in where they go to work and when they go to work, and it will be driven by productivity, what creates personal happiness, and where those people get inspired.”

- Sarah Travers, CEO, Workbar

Direct Cost Savings Comparison

Based on 1,000 square feet analysis

Violet Defense Installed

Total 5 Year Cost

\$35,126

Average Daily Cost:
\$19/Day

Manual Disinfection

Total 5 Year Cost

\$62,821

Average Daily Cost:
\$34/Day

INVESTING IN UV DISINFECTION

A closer look at your ROI potential

To investigate whether chemicals really are less expensive than alternative methods like UV disinfection systems, Violet Defense conducted a study to determine the long-term costs of each, accounting for capital expenses, operational expenses, labor, PPE and other supplies in order to disinfect a 1,000 square foot space over a 5-year period.

Compared to chemical disinfection, Violet Defense's installed solutions are nearly half the cost over this time frame leading to significant savings for your school. Furthermore, there are additional benefits when comparing UV disinfection to chemicals, including:

- Disinfection of both air and surfaces
- No degradation of critical equipment
- Reduced health risk for students and staff from chemicals
- More sustainable disinfection option

Improved disinfection practices have also been associated with decreased absenteeism. The Healthy Workplace Project explored the impact that a cleaner environment can have specifically on absenteeism. It was estimated that improved disinfection, including better surface decontamination could result in as much as a 46% reduction in absenteeism.

Consider a business that had 500 employees with an average cost of \$1,685 per employee in lost productivity per year. That translates to **\$842,500**. What if you could reduce that by even 20% or \$168,500? Those potential savings, particularly when combined with the ability to also reduce chemicals and labor costs associated with disinfection, make for a very compelling ROI on investing in UV disinfection.



02

Real World Deployments

“The workplace can undoubtedly play a key role in supporting happiness and engagement, but it’s clear that the post-Covid landscape is demanding that employers up their game and provide workplaces that support our wellbeing as well as our productivity.”

—Adi Gaskell, Forbes

Next Level Healthy Office



Providing a safe and clean environment for our employees is a top priority, and the standard of protection against germs offered by Violet Defense gives us peace of mind.”

— Richard Cancro, CEO, AdvisorEngine



Advisor Engine built Violet Defense’s technology throughout their new office to help their employees feel more comfortable returning to the office. With advanced Wi-Fi controls, they can even disinfect on demand between meetings.

Violet Defense has outfitted the new office location for AdvisorEngine, developers of a wealth management platform for financial advisories, with its patented UV disinfection technology, addressing the nationwide trend of employees’ health concerns over returning to offices.

According to research by McKinsey & Company, 30% of employees are concerned a return to the office will negatively impact their physical and mental health. McKinsey found that “improved air filtration was a core request, with 62 percent of respondents reporting that it could decrease the stress they experienced from returning on-site.”

AdvisorEngine’s leadership team set employee health and well-being as a primary goal for employees’ return to office.

They worked with Violet Defense to proactively address three concerns:

- Giving staff the confidence that they could return to an in-person setting safely.
- Ability to easily disinfect shared spaces like conference rooms in between work sessions.
- Ability to safely disinfect IT equipment and trade show assets between uses—without chemicals that can damage the equipment.

Violet Defense solved those concerns with an integrated plan of installing Xenon UV disinfection solutions in the office spaces and shared bathrooms. The system includes new Wi-Fi modules for enhanced control of the system, allowing AdvisorEngine staff to schedule the units’ disinfection cycles from desktop, or activate on-demand.





DISINFECTION BY DESIGN

Violet Defense can work alongside your architects and design team to optimize your design in terms of both aesthetics and coverage.

Violet Defense works with each of its customers to create a custom disinfection plan to ensure optimal coverage by taking into account square footage, ceiling height and type, intended use of the space, and any anticipated equipment, furniture, walls, or other elements that may impact the recommended location of lights.

The team will also work to understand any design elements to keep in mind, such as color, finish, or even if you want to tuck away the installed units so they are less visible.

For Advisor Engine, the design called for black, industrial style ceilings. Therefore, Violet Defense produced custom black powder-coated units so the UV lights would blend seamlessly with the aesthetics of the office.

Base units are brushed aluminum, but mounting plates come standard in a white finish, but as you can see, custom work can create beautiful disinfection by design.





PEOPLE. PROTECTION. PERFORMANCE.

RFK Racing understands the importance of keeping its team healthy and the impact that it can have on their success on and off the track. They have outfitted their headquarter facilities with Violet Defense's UV disinfection technology to keep their team performing at their best.

Team Director for RFK Racing, Jeremy Thompson knows that it's his job to make sure that his team has what they need to compete at a high level. "When you think about how many different individuals and departments have to come together to build something that can go run up front and compete for wins, it all starts with teamwork." However, missing even just one person can "hold us back from our competitive max potential" adds Brad Keselowski, co-owner and driver for RFK.

While every organization might not race cars at 200 miles per hour, all businesses need their employees performing at their best. By better protecting against harmful germs that cause unnecessary illnesses, employers can help keep their staff healthy and productive.

RFK Racing has outfitted their headquarters in Concord, North Carolina with Violet Defense's UV disinfection technology in their admin offices, engineering spaces, bathrooms, and conference rooms. They also have access to mobile units that can be used to disinfect their haulers, protecting the team even when they are out on the road.

"In this day and age there are tons of technological tools and assets to help you compete at a high level, and I think Violet Defense fits hand in hand with our desire to continuously improve and embrace any technology that's out there to help us do that," Thompson added.



“ The ability for a technology like Violet Defense to come in and give employees and employers peace of mind that they can have a safe workplace is huge. I think it’s something that the workforce and employees should be very excited about and quite frankly demand in their workplace.”

— Brad Keselowski, Co-Owner & NASCAR Cup Series Driver, RFK Racing



Building Confidence for Employees & Customers

The Cade Museum for Creativity & Invention in Gainesville, Florida is a hands-on museum that teaches science with exhibits designed to spark imagination and inspire creativity. During COVID-19, the museum shut down as many other businesses had to, but turned to Violet Defense's UV disinfection technology to help them re-open safely. The museum's leadership credits this technology in creating the type of environment necessary to make employees and guests comfortable and confident enough to come back in to the museum.

The Cade installed UV lights in each of the museum's public restrooms and uses mobile units throughout the spaces to disinfect exhibits, science lab, and more.



“

Creating an environment where people have the comfort in coming together and gathering and sharing ideas and experiences - it's essential to who we are as humans. Violet Defense enables us to create that type of environment.”

— Stephanie Bailes, Executive Director
Cade Museum for Creativity & Invention



CADE
museum

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