MOORING
CONSTRUCTION + RESTORATION

**INNOVATIVE CONTAINMENT FOR RESTORATION & CONSTRUCTION**

Contact: Terri Kuvach
Business Developer
tkuvach@mooringusa.com
832-600-4665

**Introduction**

The need for provisional and eco-friendly containment systems is increasing as restoration, renovation, and construction teams work to mitigate the business down-time associated with disruptive project debris and noise. A temporary containment system allows an area(s) of a building to be isolated to ensure the safety of employees, patients and/or patrons and provides optimal working conditions for businesses to remain operational. When used properly, containment systems solve any temporary containment problem or situation that calls for isolating an environment.

**The Challenge**

Construction and renovation projects are known to increase levels of dust as well as disturb and release harmful bacteria and mold and/or cause noise disruption. The CDC estimates that 5,000 people die every year from healthcare-associated infections (HAIs) linked to construction and renovations.

Healthcare settings such as hospitals, urgent care, assisted living facilities, and surgical centers always need an effective temporary containment system in place in order to reduce the spread of infection, however, healthcare facilities are *only one* of the *many* industries in which containment systems are able to be utilized on a small and large scale. Protecting people and creating a healthy, safe environment should always be the priority of *any* businesses.

So, how do you contain airborne particulates and debris on renovation projects while also protecting employees, patrons, and workers? How do you protect high tech data systems and equipment when you need to renovate the structures surrounding them? Finally, how can you ensure you have a containment system that meets ICRA Class IV requirements for healthcare and life sciences environments?

The industries in which containment systems play a vital role in the reduction of potentially harmful debris include office buildings, academic institutions, airports, hospitals/healthcare settings, and other commercial and residential environments.

A few working examples of how containment systems are used in various industries:

- Corporate offices: When installations disrupt the flow of business, containment systems provide the ability for the work day to continue while restoration and/or construction is underway regardless of sound attenuating wall panels or dangerous debris in the air.
- Educational institutions: Innovative containment systems make smaller and more organized spaces out of large ones and section off areas of a building while construction is taking place to avoid noise, debris, and other disturbances.
- Data centers: Containment solutions ensure that critical tech systems and equipment are free of dust and debris risks while *also* easily reconfiguring the panels/containment as requirements change and layout of server room changes.
- Healthcare and hospital environments: Innovative containment solutions create and build spaces that comply with ICRA Class IV protocols and maintain negative pressure *and* the highest clean environment standards.
- Hospitality: Containment systems maintain business and accommodation of guests and ensure they are not disturbed by noise and dust during renovation and construction projects.

**The Solution**

Identifying a proven and effective containment system is an *important* and oftentimes *critical* consideration for restoration and construction projects. Temporary containment for fire, water, smoke, mold or other restoration situations is important to ensure areas outside of the affected space are not contaminated and/or exposed during critical stages.

Temporary containment solutions hide the mess of renovations with a transportable construction barrier that blends into the background, is airtight, simple to install/dismantle, and reusable for the next project (if not purchased, the system can be rented for one-off projects). Contemporary containment should have the ability to be installed, moved and reconfigured over and over again. Also, it is more environmentally friendly than traditional drywall containment that gets disposed at the end of a project.

Primary benefits of a reliable containment system should include key features and performance specifications which allow construction and restoration companies to work effectively and efficiently within a work space and provide a contained environment to support business-as-usual operations. Inherently, containment systems save time and money by ensuring continuation of productivity within any business. For contractors, having the right system provides time savings by allowing easy setup and installation.

Ideal Features:

- Clean exterior for finished appearance; Visually attractive and professional
- Durable metal construction
- Simple installation and dismantle – connection systems that don't require multiple tools/brackets
- Airtight system
- Dustless installation and removal
- Sound attenuating which reduces airborne noise
- A 'green' solution – no disposal waste

Ideal Performance Specifications:

- The modular system is engineered to required standards for temporary partitions for interior applications (to support various environments)
- Humidity controlled
- Interior non-load bearing applications
- Chemical compatibility; May be cleaned or disinfected with all common water and solvent based cleaners and disinfectants

Optimal containment solutions allow 50 feet of wall panels to be installed in only 30 minutes. Multiple panel sizes and accessories allow for a containment system to accommodate the setting and environment appropriate for the situation. Accessories include air panels, flexible corners and multiple doors. There are many different options in the containment/barrier management space; Choosing the right solution for your project requires a good understanding of the options.

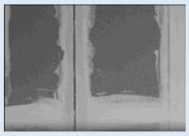
In addition to purchasing and/or renting a temporary containment system, below are other traditional methods of containment, many of which are outdated concepts:

- DRYWALL PARTITIONS
  - For years, drywall barriers have been the traditional option for contractors and restoration companies. These walls are typically constructed out of metal studs and sheetrock and take hours, sometimes days, to erect. Often, a supplemental barrier of poly sheeting must be erected to contain the dust and debris generated during the construction of the drywall partitions. After each use, these partitions have to be broken down and thrown away requiring a new structure be installed for each phase of work. Costs rise due to excessive labor hours, materials, and disposal fees that comes with drywall solutions. These barriers cannot be reused for other jobs, making them is expensive, and the waste is added to our landfills.

- PLASTIC SHEETING PARTITIONS
  - Plastic sheeting containment is commonly constructed using metal studs, PVC piping or telescopic poles as a barrier frame then covered or wrapped with thick flame-resistant plastic sheeting. The process of erecting this kind of containment requires the measuring and cutting of sheeting to fit the area that needs to be contained. Similar to a tarp, plastic sheeting is easily damaged and must be repeatedly inspected for rips and tears. The sheeting is not able to be easily cleaned, does not provide any noise reduction features, and cannot meet ICRA Class IV requirements which are necessary for the healthcare space. Additionally, plastic sheeting doesn't hide the renovation work and adds to the chaos of the physical surroundings . Upon completion of the project, the plastic sheeting must be disposed of and the structure completely dismantled and rebuilt with new sheeting for the next phase of work.

- POLYCARBONATE PARTITION SYSTEMS
  - Polycarbonate partitions are sometimes used as a dust barrier in infection control containment solutions. These panel-configured walls come in multiple sizes, multiple levels of transparency and opacity, and can be fitted with custom fasteners and ports for integration with air control systems and other tools. While many polycarbonate panel systems are able to be cleaned and reused, they are not very stable options and most do not seamlessly integrate into a facility's look and aesthetic. They also do not reduce renovation noise very effectively. For healthcare organizations, the patient experience and satisfaction is critical. These are influenced by the facility design, creating a critical need for a pleasing aesthetic and the ability to reduce the disruptions from renovation.

Comparison Chart for Containment/Barrier Management Options:

| Δ GREAT<br>– GOOD<br>X POOR |  |  |  |  |
|---|---|---|---|---|
| | ICRA APPROVED CONTAINMENT | DRYWALL | POLYCARBONATE PARTITIONS | PLASTIC SHEETING |
| REAL WALL APPEARANCE | Δ | Δ | – | X |
| IMPROVES SOUND ATTENUATION | Δ | Δ | – | X |
| DURABILITY | Δ | X | – | X |
| STABILITY | Δ | Δ | – | X |
| REDUCES ENVIRONMENTAL WASTE | Δ | X | Δ | X |

Containment systems have been proven time and time again to be the best solution for isolating an environment based on the benefits that *far* outweigh alternative containment solutions.

In summary, *key benefits* of an optimal containment system include the following aspects:

- ECONOMICAL
  - Can be purchased and reused or rented for short term temporary containment
- FAST
  - Easy to install and reconfigure to any environment/situation
- ODORS AND DUST CONTROL
  - Negative Pressure Capable
- INFECTION CONTROL
  - Meets ICRA Class IV Containment Requirements
- QUIET
  - Reduces noise by 50%
- GREEN AND CLEAN
  - No Waste and Dustless
- DURABLE
  - Engineered to last and rugged to handle small and large jobs

It is equally important to select the right company/contractor who has access to innovative containment systems and are experts in the industry to identify appropriate containment no matter the environment. These companies also need to understand infection control, prevention strategies, and facilities risk-management. Companies which leverage best-in-class containment solutions understand the need to invest in people who are certified and trained under Infection Control Risk Management (ICRA) or the Institute of Inspection, Cleaning and Restoration Certification (IICRC) who provide certifications and set standards for the inspection, cleaning, and restoration industries.

**5 Most Common Questions on Temporary Containment**

Below, the 5 most common questions asked about containment systems are listed and answered. Q = Question; A = Answer.

1. Q: What is negative air pressure and how can temporary containment systems achieve effective negative air?

   A: Negative air pressure is defined by allowing air to flow into the isolation room but not escape from the space as air will naturally flow from areas with higher pressure to areas with lower pressure, thereby preventing contaminated air from escaping the room. Particles released into the air during healthcare facility construction projects can remain suspended in the air for *hours*, *days*, and even *weeks*. These particles can migrate into other areas of the facility and pose a threat to sensitive patients. A containment solution or system that has the ability to maintain negative air pressure allows for those particles to be properly isolated and contained.

2. Q: Why does sound reduction matter during construction/renovation?

   A: It's no secret that noise increases during construction. With the demolition and rebuilding of healthcare facility areas, to be expected, crews are bringing in and operating loud but necessary equipment. An increase in noise levels can disrupt daily operations and increase the risk to patients' well-being. Sharp noises can cause high levels of stress which impact the heart and blood pressure, and in some cases, can be deadly. Having the right containment solution can eliminate up to 50% of renovation noise, allowing businesses and daily operations to continue as normal without negatively impacting patients or patrons.

3. Q: Is an Infection Control Risk Assessment (ICRA) a requirement for construction crews?

   A: Yes. The CDC requires healthcare facilities to perform an Infection Control Risk Assessment (ICRA) before any renovation, construction, or repair project. ICRA Class IV designation states that hospitals must "construct barriers to prevent dust and dangerous pathogens from entering patient-care areas and ensure that barriers are impermeable to fungal spores and in compliance with local fire codes."

4. Q: How does having an effective temporary containment system reduce downtime and labor costs?

   A: Having a reusable temporary containment system that can be quickly installed, dismantled, and reinstalled greatly reduces downtime between phases and overall labor costs whereas traditional methods (drywall barriers or plastic sheeting) increase labor costs due to the amount of time it takes to install and dismantle.

5. Q: Why does an aesthetically pleasing temporary wall matter during construction projects?

   A: When it comes installing a temporary containment wall for renovations, appearance might be the last thing the contractor is thinking about. However, the truth is that having a containment wall that is both effective *and* has a professional appearance actually plays a huge role in ensuring a project is running smoothly and business is not disturbed.

**Containment System Case Study Example**

Location: Houston Hobby Airport

Situation: Water leaking around the TSA Security Desk was identified in the Houston Hobby Airport. The origin of the water leak, source of the water, and the damage was unknown and required an investigation while keeping this high traffic area of the airport in business so as to not interrupt daily operations.

Solution: An airtight, noise attenuating, easy to install containment system was installed around the area that was required to be isolated and contained during the investigation. The containment system remained intact through renovation of the area that required water restoration as well as throughout the subsequent replacement of drywall and construction of the infected walls. This system provided an attractive solution that allowed business to continue and keep the restoration and renovation out of sight while also protecting patrons from dangerous dust, debris, and noise.