

Prepared by:

**C7-GLOBAL**  
SUSTAINABLE LAB SOLUTIONS



**newenglandlab**  
lab-tested furniture systems

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## “The Intelligent Laboratory Solution”



*Parallel Installation of all Services*

### Open Space Concept and Design

The HL-X-LAB media ceiling concept is a patented process that maximizes flexibility and minimizes cost of ownership for any progressive laboratory solution. The critical design features incorporated in this proprietary technology provide engineering and efficiency results that no other manufacturer can accomplish through any purported system; media ceiling, floor, wall, or standard MEP construction.

Its impact on the aspects of; flexibility, efficiency, health, safety, sustainability, and cost of ownership makes it the superior solution to a broad corporate strategy or a single laboratory need.

All media, services, and utilities for the laboratory are assembled on a grid system at floor height for easy, precise, and parallel installation of all requirements; air intake and exhaust, electrical, data communication, water, gases, chiller beams, and lighting. All assembly of the precisely engineered components are conducted by hand and quickly configured. There is no interruption of any services within the building during this installation process. This system insures that there are no construction issues associated with multiple vendors supplying these services. Also, it provides the key feature of flexibility for future change and proper airflow at every distinct point throughout the laboratory.

### Maximum Flexibility, Lower Cost

The completed, absolutely unique, media ceiling system is then jacked into place (an integral part of the patented process) and secured to advanced ceiling anchors through a laser leveling system. Advanced high-tech columns are then placed at the locations within the laboratory where services, utilities, and data communications need to be delivered. These columns never touch furniture below which allows for complete freedom of movement throughout the facility. Once the columns are in place, the lab is completely operational and ready for use. One of our installation teams can render a 500 square meter lab, operational within a week. Multiple installation teams can obviously handle larger opportunities as required.

Every step of the design process is geared to maximize; flexibility, health, safety, and sustainability, while minimizing; energy utilization and cost of ownership. These features make HL-X-LAB the best solution to accumulate LEEDS points and advance concepts of lowering our ecologic impact through more intelligent laboratory design. The choices are very clear for our labs of the future, continue on the path of inefficiency and inflexibility or choose “The Intelligent Laboratory Solution”.



*Optimal Vision, Health and Safety*

# Dynamic Flexibility

Once the very careful and thoughtful process of designing and customizing a laboratory to the precise requirements and desires of each customer is complete, and further after its professional installation, there is one thing that is absolutely certain, it will undergo significant changes and modifications throughout its lifetime. Minor changes are a fact of life and are driven by enhancements to equipment technology and improvements in specific laboratory techniques.

Usually the first substantial reconfiguration occurs within the first 3-4 years of operation. HL-X-LAB's open design and centralized placement of all services, media, data, and utilities allows for changes to be made in one tenth the time of standard MEP installations, with no stoppage of any services to the building or even the laboratory itself. Further, the open aspect of the design makes it very easy to subsequently isolate space that was not originally contemplated.

**Engineered for  
Ease of Modification**



*Each Component  
Easily Modified*

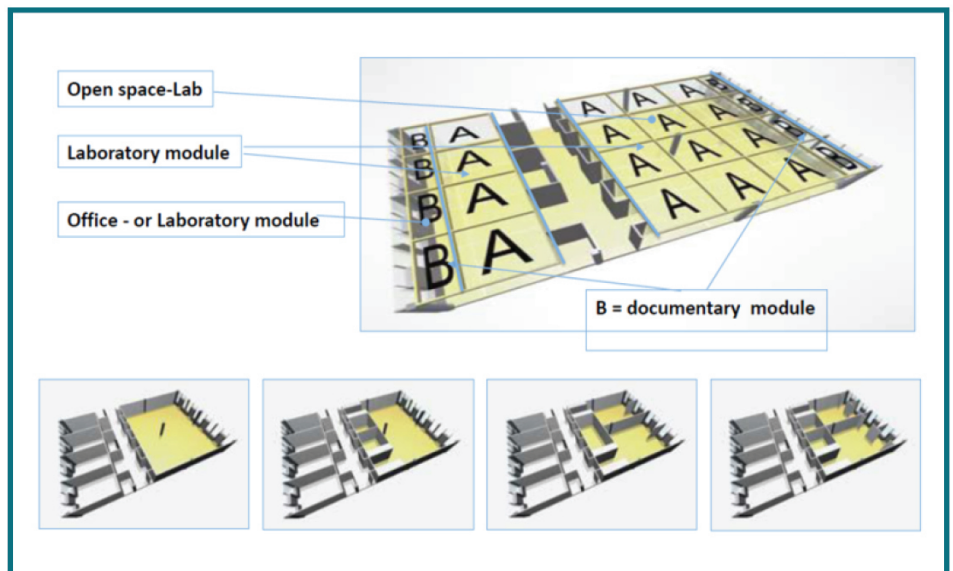
The coordination of the air intake and exhaust systems, in addition to the supplemental use of chiller beams where necessary, provides an environment whereby fume hoods will efficiently operate at any location within the lab. Access to all operating systems is easily attainable and the utilization of an electrical bus bar the length of the grid system, makes fundamental changes as easy as possible.

High precision connectors for media and utilities, placed above the lighting system, allows for quick release and plug in of new requirements in minutes rather than the typical hours or days. Breaker switches and modification boxes are placed strategically along the bus bar to allow for corrections and modifications without disturbing the balance of the laboratory.

A key aspect of our engineered flexibility is the modularity built into the design of the service columns that bring all requirements to any specific spot within the lab or to our fume hoods. The specified fixtures included in each column

reside within the column itself and they can be quickly removed and replaced when changes are required. This feature, combined with the high precision connectors aforementioned, allowing for quick snap in of new media requirements, provides optimal maintenance capabilities.

Perhaps the greatest flexibility of our labs is the ability to remove and reconfigure the HL-X-LAB media ceiling system, just as easily as it was initially installed. A significant portion of its original value can be easily retained, which would allow it to be reused.

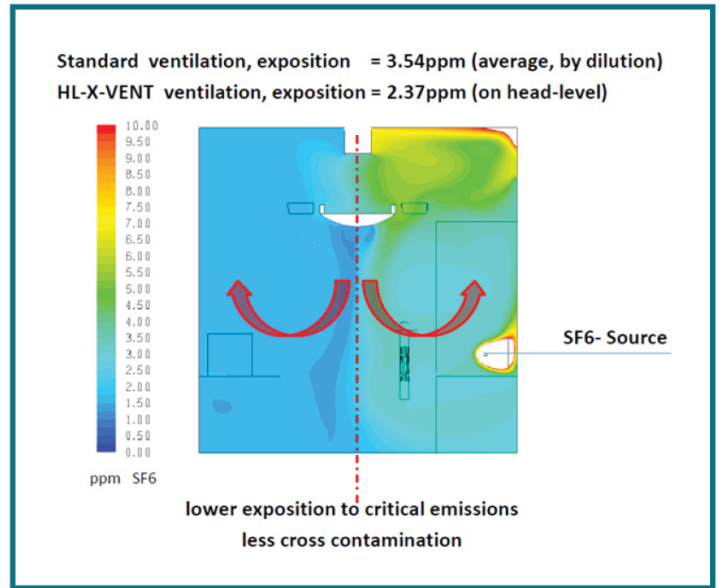


*Simplistic Future Reconfiguration*



# Health and Safety Characteristics

The health benefits of our media ceiling system begins with the basic open airflow ceiling design and the strategic positioning of all air handling equipment. The proper juxtaposition of temperature controlling devices (chiller beams) with this airflow equipment provides the ability to manage the laboratory with a direct air curtain at a very low speed producing no draft risk and less cross contamination. Your scientists will be operating within space that is less drafty (no stiff necks), with contamination opportunities minimized. The integration of the chiller beams allows for temperature management within very tight tolerances. Unlike the airflow characteristics within a standard MEP installation, the uniformity of airflow conditions throughout, allows for the proper functioning of all fume hoods at any position within the lab. The improper functioning of fume hoods due to inferior airflow designs, is one of the most serious health concerns in all lab designs. Our system provides a significant advantage in both a current healthy environment and potential reconfiguration possibilities in the future.

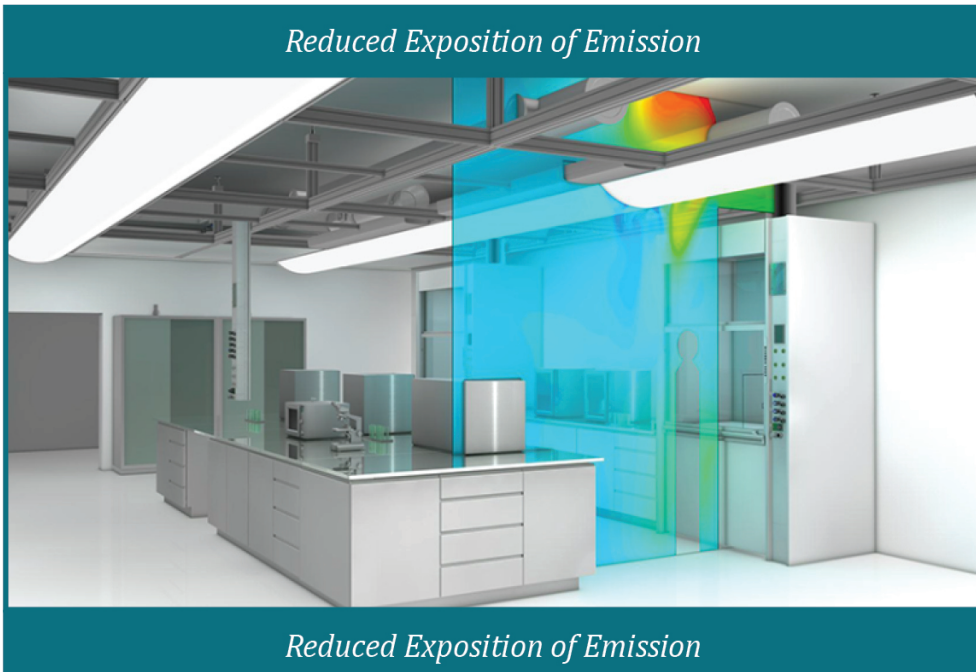


Our system provides a significant advantage in both a current healthy environment and potential reconfiguration possibilities in the future.

## Healthiest Lab Environment

Our unique lighting technology provides analytically computed diffused light from a large area light source. This laboratory efficient lighting source is integrated and conjoined with the air supply outlet, providing lighting throughout the lab that is of a daylight character.

Our lighting design meets all energy saving requirements including; Minergie/CH, EnEV/D, and LEEDS/USA. The nature of the light in an environment that requires precise concentration and attention to detail has a significant impact on both comfort and health.



## Safety Superiority

The most critical safety issue of any lab is to minimize exposition to toxic emissions and provide solutions to reduce cross contamination. Inherent in HL-X-LAB's design is the ability to do just that, which in and of itself demonstrates the superiority of this concept over standard practices, but as we will see later, besides these health and safety benefits, there are real economic reasons to choose our system.

## *Sustainability*

From the recyclability of the extruded aluminum ceiling grid system, to the hand tool assembly of the entire laboratory component subsystems, expectations of sustainability are far exceeded with HL-X-LAB than any other laboratory design. The simplicity of maintenance and reconfiguration is superior in every aspect to standard MEP systems. Indeed, the complete lab can be disassembled as easily as it was first assembled and completely removed from the initial space. The possibilities of reinstallation, redesigning, and/or reselling are all realizable and provides a longevity to laboratories not found in any other solution.

Every aspect of the design has considered environmental impacts and has been made LEEDS compliant wherever possible. We expect our design to produce a reduction of at least 30% of energy consumption throughout the lab when compared to alternatives. It is precisely HL-X-LAB's critical patented features that makes it the most sustainable infrastructure design for laboratories available in any market, for any specific technical requirement. The simple fact that it retains a significant residual value throughout its lifespan, quantifies the sustainability of this solution.

**New Concept,  
Residual Value in  
Lab Infrastructure**

Most environmentally conscious companies consider sustainability in every aspect of their decisions today. Not just because it makes ecologic sense, but also because it usually produces beneficial long-term economic results. HL-X-LAB brings sustainability to the forefront of laboratory design and places scientific facilities in a much closer relationship with total building concepts and architecture.



*Precision Engineering and Assembly*

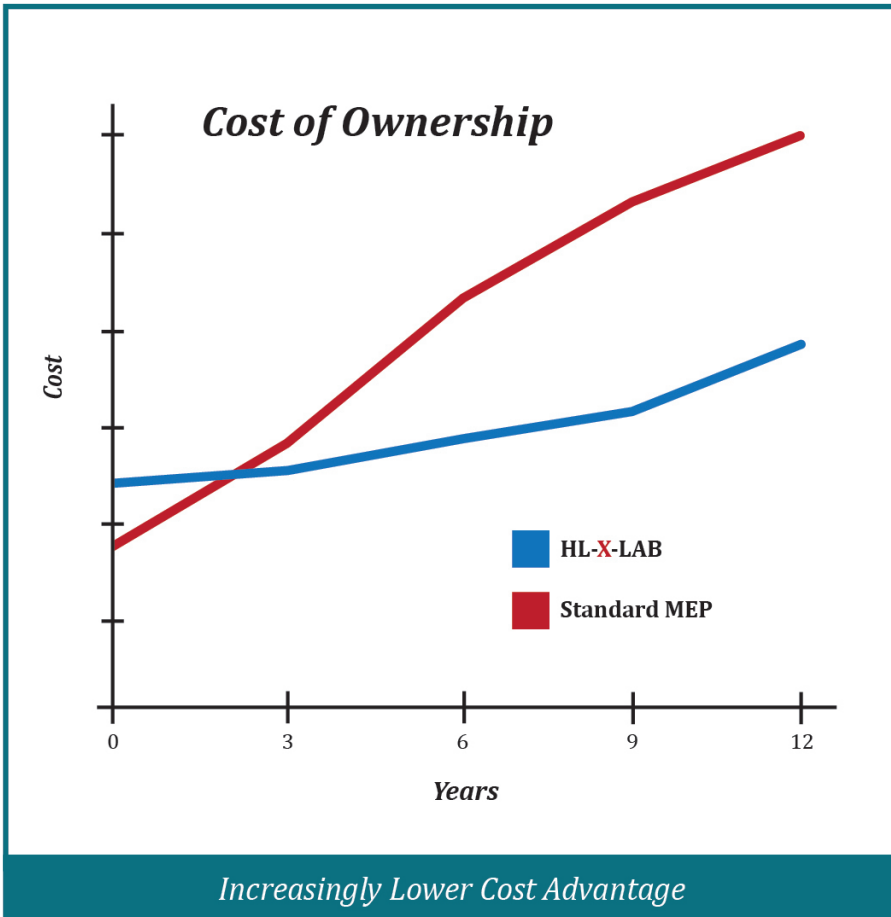


# Cost of Ownership

It is true that under certain circumstances and complexity of design, our media ceiling system can cost more than a standard MEP construction at the moment of installation. That is because it is a much superior product, in every aspect, that will produce a lower cost of ownership throughout its lifetime. The return on investment of HL-X-LAB is much higher than any alternative and simply makes it the most intelligent financial choice when contemplating laboratory creation, expansion, or remodeling.

**Healthiest, Safest, Most Flexible Lab Available**

Our cost of ownership becomes lower than standard installations at the first instance of any significant change within a lab, which historical experience tells us will occur within the first 3-4 years of operation. Most labs endure several substantial changes over a period of 10-15 years and at each occurrence our comparative cost of ownership drops relatively lower and lower. These changes are inevitable as laboratory techniques, real estate decisions, consolidation, expansion, new scientists, new applications, and equipment advances all impact the laboratory environment.



We have already demonstrated the flexibility, as well as the health and safety superiority of our lab design. These have real economic impacts and when coupled with energy reduction and a significant residual value the investment decision is clearly in favor of HL-X-LAB.

**The Highest Return On Investment Alternative**

Additionally, time is money and a small team (4+ people) can install a complete 500 square meter lab, ready for operation, within a week. Multiple teams can complete larger facilities in an equal amount of time, while not interrupting any services to the building of installation.

This, combined with our very favorable lead times for our ordering cycle, can not only keep a project on track, but also save significant construction cost overruns.

Finally, the general open design allows for clear vision throughout the lab. The fact that the columns never touch the laboratory furniture below allows for complete freedom of movement with any new configuration of the lab. All of the laboratory intelligence is built into the ceiling system and delivered to the end-user through the media columns. These columns are easily moved or modified to provide the precise requirements of any change that might be contemplated. The cost savings on laboratory furniture and possibilities for reconfigurations are enormous.

It is very clear that HL-X-LAB provides not only the healthiest, safest, most flexible lab available, it is the soundest financial investment that any company can make when considering all costs associated with lab operations.

## Hansjürg Lüdi



Hansjürg Lüdi is the third generation of his family to be proprietor of this business, originally founded in 1927. The initial focus of the business, and is still a fundamental piece of its operation today, was its precision engineering of fixtures and valves for the technical and scientific community. Like his forefathers, he also advanced the basic concepts of their engineering capability into broader market solutions incorporating subassemblies and eventually complete assemblies of these sophisticated, highly engineered fixtures into complete media columns in the late 1990's.

In the early 2000's, he began to develop advanced media columns and integrate them into a media ceiling system. It wasn't until 2007 however, that the first launch of his ceiling system occurred and began to become recognized as a major innovation and advancement in the laboratory design and construction industry. Then in 2010, the enhanced lighting system was introduced and it wasn't until 2012 that the complete integration of all laboratory service components were consolidated with the launch of HL-X-LAB.

Hence, the product line presented today is new to the industry and not yet completely understood. As with any new concept, comparative questions arise and need to be addressed. The fundamental concepts of maximizing health, safety, flexibility, and return on investment drove the development of this product line. Today, Hansjürg and his team continue to improve the efficiency and functionality of HL-X-LAB to provide the best possible solution to the scientific community.

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