

# UL's Building Innovation Summit 2021

August 31 to September 2, 2021

Over the last year, the building environment industry has begun transforming faster as the COVID-19 pandemic changed how the construction industry conducts business. New technologies and practices as well as stricter safety and security regulations continue to present challenges to industry professionals, and construction industry trends are bringing rapid changes to global markets.

Join UL for a three-day virtual event, featuring informative sessions presented by UL safety experts on a range of topics affecting the built environment, safety and security.

## Agenda

### Day 1 – August 31, 2021

#### Enhancing Safety and Security in Uncertain Times

*All sessions are CDT*

8:30 a.m. – Message from Chris Hasbrook, vice president and general manager, Built Environment, UL

8:35 a.m. – Introduction to Hopin – How to Use the Platform

#### 9:00 a.m. – Understanding the European Access Control and Intruder Alarm Product Markets

Nigel Talbot, product manager, UL

The European intruder alarm and access control market may, on some facets, seem simple, but dig a little deeper, and you'll quickly find there are many complexities. Unlike construction products, explosive atmospheres or machinery products, there are no European regulations or directives to control third-party certification for security. European Union (EU) member states and market forces decide what is required for this industry, albeit with a base of harmonized requirements. In this session, we will look at the market and explore how UL can help manufacturers and installers create a meaningful market access solution.

- Hear relevant European standards for intruder alarm and access control
- Discover product requirements for this market
- Understand the different security grades
- Learn how UL's new scheme can help manufacturers and installers

#### 10:00 a.m. – California Market Access – What do you need to know and how can UL help?

Ghanem (Joe) Zureikat, business development manager, UL

David Castillo, mechanical engineer, CSMF – Cal Fire

Victor Wong, supervising engineer, CSFM – Cal Fire

Jinaki Bahati, associate governmental program analyst



David Castillo, the California State Fire Marshall (CSFM) Building Materials Listing (BML) program supervisor, will join UL's Ghanem (Joe) Zureikat to discuss the state of California's BML program requirements and recent changes as well as UL's support enabling organizations to access the California market.

- Get an overview of the BML program and California state requirements
- Learn what is required versus voluntary listing
- Discover how to get your product listed

1:00 p.m. - **UL 2524 – An Introduction to the Standard for In-Building, Two-Way Emergency Radio Communication Enhancement Systems (ERCES)**

Ted Ivers, senior staff engineer, UL

Emergency radio communication enhancement systems (ERCES) have become prevalent in the U.S. and, as a result, many municipal and state building codes are mandating — or planning to mandate — ERCES. Learn how UL 2524, along with UL's certification program for in-building emergency communication enhancement equipment, assists manufacturers and code authorities with compliance to codes such as NFPA 1 and NFPA 1221, when required.

- Learn the basic requirements of installation standards for two-way ERCES, e.g., NFPA 1221
- Understand the benefits of UL 2524 compliance versus other standards such as UL 60950 and UL 62368
- Learn about UL's certification program for products covered by UL 2524
- Learn about UL's resources to support manufacturers and code authorities

2:00 p.m. – **Everything You Need to Know About UL's Smoke Detection Testing and New Laboratory Design**

David Mills, principal engineer, UL

John Divelbiss, laboratory manager, UL

UL's new smoke detection test laboratory design has improved smoke test repeatability, added new data acquisition systems for smoke particle measurement, reduced test setup time and reduced time between

tests, along with a seamless customer interface for data acquisition and data streaming. Join us as we discuss how an integrated approach to laboratory design affects smoke detector testing and improves our customer's experience. We will also cover smoke particulate control, smoke measurement, data acquisition and the customer experience.

- A robust HVAC conditioning system maintains thermal stability within the test cell and, in most cases, will keep the cell at required environmental conditions during exhaust, limiting time for preconditioning between tests
- Laboratory technician interface and controls
- New software developed for full automated control of test equipment allows technicians to take control and alter most of the fire test as needed to maintain required smoke buildup profiles
- Data acquisition and data transfer for customers
- Most of the test cell information is visible on the user screen; all test cell information is logged to files for every test, allowing for trend tracking and troubleshooting
- Live data streaming of smoke-measuring equipment information that direct-to-customer interface computers allow for alignment between device data and room data

3:00 p.m. – Message from Joe Treadway, global engineering director, UL

## **Day 2 – September 1, 2021**

### **Innovations for a Brighter Tomorrow**

*All sessions are CDT*

8:30 a.m. – Message from Kristen Trawinski, business and operations manager, UL

### **9:00 a.m. – Operating Facilities in Today's Environment**

Sean McCrady, director, assets and sustainability, real estate and properties, UL

Mike Halligan, global program manager, building inspections, UL

Amanda Newsom, principal engineer, UL

The COVID-19 pandemic has brought the issue of health, wellness and safety in buildings and manufacturing to the forefront of the marketplace. Awareness of indoor environmental quality (IEQ) and the importance of buildings that support human health and wellness skyrocketed in 2020. With COVID-19 still remaining top-of-mind on a global scale, occupants have a heightened interest in how building owners, facilities managers and employers are taking action to help ensure the safety of indoor spaces with an emphasis on personal protective equipment (PPE). As the world enters an era of heightened awareness of health and wellness, proactive IEQ management remains an important component of mitigating risk for a brand, bringing competitive building spaces to market and protecting occupants by reconfiguring workspaces to comply with life safety and as well as new health standards.

- Health, wellness and safety issues and considerations for buildings and manufacturing
- Awareness of IEQ and the buildings that support human health and wellness
- Ensure the safety of indoor spaces with an emphasis on PPE
- Proactive IEQ management remains an important component of mitigating risk for a brand, bringing competitive building spaces to market and protecting occupants
- This is done by reconfiguring workspaces to comply with life safety, security and in relation to new health standards

#### 10:00 a.m. – **Cleaning First Responder Gear – The Science Behind Exposure Reduction**

Amanda Newsom, principal engineer, UL

New data is emerging about the dangers of smoke and its potential to negatively impact the health of first responders. The industry is learning more about the importance of ensuring gear is clean before re-wearing it and that this step is just as paramount as containment. The National Fire Protection Association (NFPA) 1851 – Standard on Selection, Care, and Maintenance of Protective Ensembles for Structural Firefighting and Proximity Firefighting has taken the first steps toward ensuring gear is clean and safe to use.

- Gain a better understanding of new NFPA 1851 – 2020 test requirements that will impact gear-cleaning facilities
- Learn about the test details of NFPA 1851 as well as its scope and limitations

- Gain an understanding of how the changes to NFPA 1851 will impact future improvements in cleaning
- Learn about past and present UL research on gear cleanliness and how this impacts the gear's retirement

#### 11:00 a.m. – **Comparing Antifreeze Solutions in Fire Sprinkler Systems**

Kerry M. Bell, P.E., principal engineer and corporate fellow, UL

Jeff Hebenstreit, principal engineer and distinguished member of technical staff, UL

In 2009, a fire incident in Truckee, California, raised concerns regarding the ignitability and combustibility of high concentrations of antifreeze solutions used in sprinkler systems for more than 60 years. The research covered by this presentation was undertaken to develop data and information to better understand the ability of certain glycerin and propylene glycol antifreeze solutions to effectively control a fire in a light or ordinary hazard occupancy when discharged from a standard spray sprinkler. Data generated from this research included information on temperatures measured at the ceiling and a determination of the number of operated sprinklers during specific fire scenarios.

- The history of antifreeze and NFPA standards
- Legacy solution research
- Recent UL research
- Current listing requirements and limitations

#### 1:00 p.m. – **Battery Energy Storage Hazards for the Built Environment**

Alex Klieger, research engineer, UL

As the need for energy storage expands, lithium-ion batteries are becoming more present in the built environment. The scale of battery applications ranges from personal devices to energy storage systems intended to power an entire building. When lithium-ion batteries experience thermal runaway, they generate heat and sparks as well as both flammable and toxic gases, which can create fire and explosion hazards that challenge the built environment.

- Hazards of lithium-ion batteries and associated field incidents
- Basic code requirements of NFPA 855
- Structure and testing requirements for UL 9540A

## 2:00 p.m. – **UL Collaborates With IBHS for Shingle Performance Rating Testing**

Dwayne E. Sloan, director, principal engineering, UL

Dr. Tanya Brown-Giammanco, managing director of research, South Carolina Wind and Hail Underwriting Association hail chair, IBHS

The Insurance Institute for Business and Home Safety (IBHS) recently applied their scientific knowledge of hailstone composition, study of field data and laboratory research to develop a new test protocol. The objective of the new protocol expands on test methods such as UL 2218, FM 4470 and FM 4473 to a test that does factor in damage, including denting and granule loss. This is because this type of damage can often lead to major insurance claims. To mitigate these losses and better serve the roofing industry, UL and IBHS collaborated to increase manufacturer access to testing for the IBHS Impact Resistance Test Protocol for Asphalt Shingles.

- History of impact resistance and roofing testing in UL 719, UL 2218, and UL 2218A
- IBHS's research path for impact testing and evaluating hail damage
- UL's role in testing to the new IBHS protocol

3:00 p.m. – Message from Chris Miles, regional business director, UL

## **Day 2 – Evening Session – September 1, 2021**

### **Innovations for a Brighter Tomorrow**

*All sessions are CDT*

4:50 p.m. – Message from Kevin Faltin, vice president global operations, UL

4:55 p.m. – Introduction to Hopin – How to Use the Platform

### **5:00 p.m. – Components of Third-Party Product Certification in a Global Marketplace**

Matthew Wright, built environment manager, UL

Product conformity represents the foundation of safety outcomes. As global supply chains become more complex and stakeholders develop a more discerning need for trust,

confidence in product conformity has never been more important. This webinar explores global best practices and discusses the advantages of third-party product certification to help you ask important questions and make informed decisions regarding product selection and use.

- How third-party product certification is different from other methods used to demonstrate product conformity
- Components of third-party product certification
- Questions to ask about product conformity to make informed decisions regarding product selection and use

### **6:00 p.m. – Delivering Sustainability Safely in the Built Environment**

Matthew Wright, built environment manager, UL

In the built environment, global interests in more sustainable building products and designs are leading drivers of change and innovation. As new products are being developed in pursuit of reaching sustainability goals, there is a growing demand to rethink fire safety. This webinar identifies current trends, their impact on fire safety strategies and a framework for navigating solutions.

- Increasing sustainability trends in the built environment
- Why fire safety is an important consideration for achieving sustainability goals
- Important measures to consider in order to deliver sustainability safely

### **7:00 p.m. – Everything You Need to Know About UL's Smoke Detection Testing and New Laboratory Design**

David Mills, principal engineer, UL

John Divelbiss, laboratory manager, UL

### **8:00 p.m. – Innovative Approaches for Integrating Fire Suppression and Detection to Protect Lives and Property**

Kerry Bell, principal engineer, UL

Allan Sanadrin, principal engineer, UL

William Makant, founder of Plumis and chief engineer

Manuel R. Silva, chief engineer and fellow for the Johnson Controls Fire Suppression Products business

9:00 p.m. – **California Market Access – What do you need to know and how can UL help?**

Ghanem Zureikat, business development manager, UL

David Castillo, mechanical engineer, CSMF – Cal Fire

Victor Wong, supervising engineer, CSMF – Cal Fire

Jinaki Bahati, associate governmental program analyst

10:00 p.m. – **Cleaning First Responder Gear – The Science Behind Exposure Reduction**

Amanda Newsom, principal engineer

10:05 p.m. – Message from Jack ;u, business director, UL

## Day 3 – September 2, 2021

### Building Strong Foundations for a Safer Future

*All sessions are CDT*

7:50 a.m. – Message from Dwayne Sloan, director, principal engineering, UL

8:00 a.m. – **Digital Solutions to Help Organizations Evolve in a Rapidly Changing World**

Simon Ince, project engineer, UL

While most fire events are small and recoverable, some major disasters are so notable that the shockwaves are felt around the world. Assessing properties' safety and governance is not easy, especially if you own, manage, inspect or insure a large portfolio of properties. UL's Built InForm™ software enables you to quickly identify and understand the features, risks and exposures from external building envelope systems to internal critical life safety systems quickly and effectively and to take action to address such risks. This presentation will discuss the built environment in which we live and how it can be exposed to many fire risks as well as best practices in fire safety.

- Visibility into your commercial real estate
- Navigating building safety and compliance
- Introduction to Built InForm – how can UL help?

9:00 a.m. – **A New Approach to Home Construction Using 3D Printing and UL 3401**

Bob James, global building sciences business director, UL

Sam Ruben, chief sustainability officer and co-founder, Mighty Buildings

With the rise of new building technologies such as 3D-printed habitats, code officials needed a standardized way to evaluate the integrity of this growing industry. The International Code Council (ICC) Major Jurisdictions Committee approached UL and requested a standard for 3D-printed buildings. When Mighty Buildings heard this news, they approached UL about developing the standard, and we formed a team that would learn together, until Mighty Buildings ultimately became the first company certified to UL 3401.

- Scope and intent of UL 3401
- How UL 3401 works in conjunction with building codes
- Discover what will be provided to the code official when using this technology

10:00 a.m. – **Embodied Carbon – What Is It, Where to Find It and How to Minimize It**

Josh Jacobs, director of environmental codes and standards, UL

Building product transparency has started to gain traction and evolve in North America. Changes in consumer expectations, building certification systems, international laws and standards have finally begun to converge in standardized corporate reporting for any number of environmental, social and health impacts. Many in both the design and manufacturing communities are developing ways to easily share this information through what is often called a nutrition label for building products. International tools have been developed to easily communicate this information through an Environmental Product Declaration (EPD). In this presentation, you will learn about the EPD process and components of an EPD.

- Understanding Environmental Product Declaration (EPD)
- How EPD is developed and what it is used for
- Identify what EPDs can help us accomplish in sustainable building and purchasing
- How EPDs are best used to minimize the amount of carbon in our buildings
- How optimized embodied carbon is being looked at around the world

### 11:00 a.m. – **Innovative Approaches for Integrating Fire Suppression and Detection to Protect Lives and Property**

Kerry Bell, principal engineer, UL

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William Makant, founder of Plumis and chief engineer

Manuel R. Silva, chief engineer and fellow for the Johnson Controls Fire Suppression Products business

The concept of suppression and detection systems working together to protect lives and property is not a new subject. However, in recent years, companies such as JCI and Plumis have developed water-based fire suppression protection schemes that incorporate innovative approaches to integrating detection and suppression to provide for effective fire protection for some specific end-use applications. Join us for a discussion with industry leaders as we discuss examples of these innovative technologies as well as UL's approach to investigating the safety associated with using these systems.

- Learn how detection and suppression is evolving
- Discover new technologies recently developed or under development by JCI and Plumis
- Understand how UL addresses this new technology's safety aspects

### 12:30 p.m. – **Driving Business Outcomes through Smart Buildings**

Sudhi Ranjan Sinha, vice president, Eco System and Service Development

For successful organizations, the mission of their business is reinforced by the mission of their building. With this objective in mind, asset owners and occupants are investing in smart building technologies. This session discusses how businesses can assess the effectiveness of their smart building technologies and use them to drive better business outcomes.

- Learn how smart building technologies, policies and operational processes come together to deliver business outcomes
- Learn how to assess the effectiveness of these smart building investments
- Discover how can UL and its ecosystem partners help companies improve the state of their smart building initiatives

### 2:00 p.m. – **UL's Lightning Protection Services and Fire Barrier Management**

Christopher Carlson, lead field engineer, UL

Mark St. Onge, field engineer, UL

A fourth industrial revolution is underway, fusing artificial intelligence, robotics, the Internet of Things (IoT) and various technologies into a more complex and interconnected world.

Cities and companies alike are integrating smart technologies to save time and money. Smart home hubs, thermostats, lighting systems, security, fire alarms and even appliances are more connected to our structures than ever. Designing for these capabilities is a given in the 21st century, and the need for protecting them has grown exponentially.

- Learn how to describe smart structures.
- Identify areas of opportunity to consider for the design of a lightning protection system.
- Learn about compartmentation and why it's important
- Understand what UL Qualified Firestop/SFRM Contractor Programs are
- Learn about special inspection of firestop and when its required
- Maintenance of penetrants

3:00 p.m. – Message from Frederick E. Hervey, engineering director, UL

Register now at [UL.com](https://www.ul.com).



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