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COVER STORY 14

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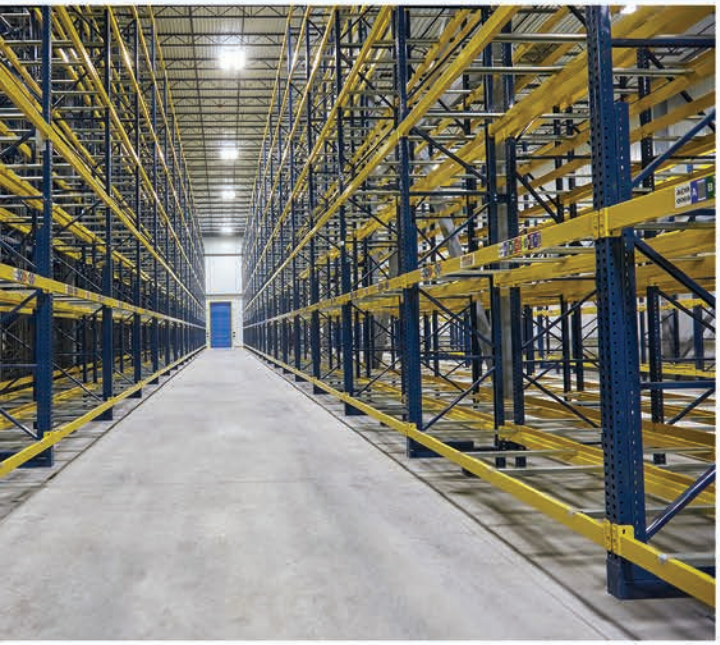

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About the Cover

This 330,000 sq. ft. freezer warehouse for Win Chill, LLC in Sioux Falls, North Dakota just completed by Tippmann Innovation is a case study for solutions in helping companies keep up with the increasing demand for industrial cold storage space. The facility has 25 dock doors, a ceiling height of 50 ft., and can accommodate 50,000 pallet positions. (Photo courtesy of Tippmann Innovation.)

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Design and Construction Needs Are Evolving. We're Ready

IF THERE'S ANYTHING THAT IS CONSISTENTLY CONSTANT, IT HAS TO BE CHANGE. Everyone knows that change is constant in the business world and that's no different in the construction arena.

For member companies of the International Association for Cold Storage Construction (IACSC), change means adapting and serving an evolving marketplace where their expertise, experience, services, and products reach the most potential customers.

Cold storage facilities remain the core market for most members, but an even broader range of facilities that require controlled environments with a thermal envelope are looking for the solutions that our member companies provide. This includes all critical temperature-controlled facilities, humidity-controlled environments, pharmaceutical storage facilities, clean rooms, and more.

This issue of *Cold Facts* is filled with insights about cold storage construction trends around the world, as you will see in the cover article, "Building Around the World," on page 14. Many companies also provide their perspectives in the *2018 IACSC Cold Storage Design and Construction Showcase*, which is enclosed with this issue of *Cold Facts*.

Flexible automation systems, jointless floor systems, the need for high-rise buildings in certain areas, new insulation materials, and new fire-resistant materials are just some of the topics we address and analyze.

As we look to the broader market, we are working to elevate the perception of the industry by communicating the need for specialization in the design and building of thermal, controlled environment facilities.

After all, when it comes to controlled environment buildings, members have seen it all. They have a depth of knowledge that has been fine-tuned through decades of experience on a wide range of projects. Who better to tackle the needs of any company looking to build a new facility or retool an existing building?

We occupy this position because members invest time and resources to educate themselves on the most innovative practices in construction, focusing on the intricate nature of controlled environment spaces. This means projects are done with integrity and built correctly the first time.

The association provides the forum where industry experts collaborate to develop content and resources that feature best practices and guidelines for constructing a thermal envelope in any type of structure.

Anyone looking to build, renovate, modernize a first-rate, innovative facility can call on members to find the most experienced designers, contractors, and manufacturers and suppliers. I would also note that members prioritize product safety best practices – nothing is more important than the safety of customers and workers.

A good place to find and talk to representatives of these companies is the upcoming 38th IACSC Conference & Expo on November 6-8, 2018, in Las Vegas, Nevada. It's the most important cold storage construction-focused event of the year. Whether you are designing, building, or buying design and construction services and materials, the conference is the place to go. It includes education, networking, and an expo filled with company displays. This year we also have some exciting announcements to make at the conference. What are they? We invite you to attend and find out.

TIM NGUYEN
CHAIR, IACSC

COLDFACTS

COLD FACTS magazine is published every other month by the **Global Cold Chain Alliance (GCCA)**, an organization that unites partners to be innovative leaders in the temperature-controlled products industry. The GCCA Core Partners are:

The **International Association of Refrigerated Warehouses (IARW)**, which promotes excellence in the global temperature-controlled warehouse and logistics industry.

The **World Food Logistics Organization (WFLO)**, which delivers education and research to the industry and empowers economic development by strengthening the global cold chain.

The **International Refrigerated Transportation Association (IRTA)**, which cultivates, fosters and develops commercial and trade relations between all those engaged in the transportation and logistics of temperature-controlled commodities.

The **International Association for Cold Storage Construction (IACSC)**, which provides a forum for innovative ideas, promotes standards of practice, and sponsors professional education programs for the controlled environment construction industry.

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REGULATORY REFORM
A BIG TOPIC AT GCCA ASSEMBLY OF COMMITTEES

Discussion centered on commonsense reform to reduce regulatory burdens.

By Lowell Randel

Regulatory reform remains a high priority for the Trump Administration. President Trump has signed multiple Executive Orders on regulatory reform and task forces have been established at regulatory agencies to identify opportunities for regulatory relief.

In response to the positive climate for regulatory reform, the GCCA is working with partner organizations to advance regulatory changes that would reduce burdens on the industry. During the 2018 Assembly of Committees (AOC), GCCA held a regulatory reform roundtable to discuss specific proposals to reform policies related to the Occupational Safety and Health Administration (OSHA) and the Environmental Protection Agency (EPA). GCCA has been working closely with the International Institute of Ammonia Refrigeration (IIAR) and IIAR has played a lead role in developing many of the proposals below that were discussed during the roundtable.

1. Update IDLH for ammonia and allowable APR usage based on latest science and technology.

Current Policy:
The current IDLH (Immediately Dangerous to Life or Health Concentrations) for ammonia is 300 ppm. The original IDLH for ammonia was 500 ppm (parts per minute) but was revised down to 300 ppm. IDLH values are established to ensure that the worker can escape from a given contaminated environment in the event of failure of the respiratory protection equipment. The values are also intended to indicate a maximum level above which only a highly reliable breathing apparatus, providing maximum worker protection, is permitted. The highest level of protection is required above IDHL levels, which means SCBA (Self-contained Breathing Apparatus) must currently be used when entering a facility during a release event with ammonia concentrations about 300 ppm.

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Problem:
The current IDLH level limits the ability of trained facility personnel to mitigate the impacts of an ammonia release. Limiting the use of full-face air-purifying respirators (APRs) above 300 ppm hinders the ability of facility personnel to engage emergency shutdown and life-saving efforts to rescue and/or escort those out of the affected area. The limitation also prevents a rapid assessment of the problem and the allowance for an immediate fix. These are unnecessary restrictions that can have a negative impact on health and life safety and inhibit the ability to minimize the impacts of a release.

Data supports an increase in the IDLH level to 500 ppm and permitting the use of an APR to accomplish critical tasks (defined by a standard operating procedure) for up to 30-minute exposure of levels that do not exceed 1,000 ppm. Since the IDLH level was revised to 300 ppm, the performance of PPE (Personal Protective Equipment), and particularly APRs, has dramatically improved. APRs have consistently been shown to work reliably at levels of several thousand ppm for ammonia. OSHA's Maximum Use Concentration for a full-face respirator is 50 times the Permissible Exposure Level that, for ammonia, equates to 2,500 ppm.

> The first 30 minutes of an ammonia release are critical to minimizing health and life safety risks, as well as mitigating off-site consequences.

Solution:
Allow the use of APR respirators to help mitigate incidental impacts of releases up to 500 ppm. Personnel who have been trained to follow Standard Operating Procedures should be allowed to wear APRs to engage in critical tasks such as rescue and emergency shutdown at levels up to 1,000 ppm for a maximum of 30 minutes of exposure. By allowing the use of APR up to 1,000 ppm, personnel will have adequate protection and, even in the event of APR failure, sufficient time to escape the situation.

2. Revise the interpretation of "immediate" to mean 15 minutes for local reporting and eight hours for national and state reporting.

Current Policy:
Under current policy, an ammonia release above the reportable quantity of 100 pounds over 24 hours must be reported "immediately." While the term "immediately" has not been defined in regulation, the EPA interprets "immediate" to mean 15 minutes from the time the facility knew about the reportable release. Under the current interpretation, notifications must take place at the local, state, and national levels within 15 minutes or the facility will be vulnerable to citations.

Problem:
The current interpretation of "immediate" results in the occupation of critical facility resources that could otherwise be used to

evaluate and respond to the ammonia release. The first 30 minutes of an ammonia release are critical to minimizing health and life safety risks, as well as mitigating off-site consequences. In many cases, release quantities and impacts can be minimized with quick action by facility personnel.

Contacting local responders within the first 15 minutes is important, as local authorities are positioned to respond and have a meaningful impact on the situation. Equally important is the rapid assessment and action by facility personnel. Many ammonia facilities have a small number of employees and diverting these resources can hinder the ability to take critical actions in the first 30 minutes after a release.

The notification of the National Response Center (NRC) and state authorities does not serve the same purpose as the notification of local authorities. National and state notifications do not trigger actions that will assist in the short-term response to the release at the facility. Delaying the national and state notifications will allow the facility to better utilize its resources during the first critical minutes after a release. If the facility makes the appropriate local notification within 15 minutes, the impact of delaying national and state notification is minimal.

Solution:
EPA should revise its interpretation of the term "immediate" to mean 15 minutes for local notifications only. National and state notifications should be made within 8 hours of knowing about the release. Facilities should be able to focus on the situation at hand and fully utilize its resources to minimize the impacts of the release. Facilities should not be cited for reporting violations if they make local notifications within 15 minutes and national and state notifications within eight hours.

3. Develop a new reportable quantity for aerosol releases of ammonia.

Current Policy:
The current reportable quantity for ammonia is 100 pounds over a 24-hour period. This applies to both aerosol and liquid releases of ammonia. The 100-pound reportable quantity was established based on risks to aquatic life with ammonia releases into water.

Problem:
The characteristics of liquid and aerosol ammonia releases are very different. The current 100-pound reportable quantity for liquid releases is appropriate, as liquid releases could reasonably impact water sources. However, aerosol releases are very unlikely to impact water sources.

The amount of ammonia needed to result in a negative environmental impact is much greater for aerosol releases. Aerosol ammonia quickly dissipates into the air, minimizing the risk of environmental impact. In many cases, releases occur in machine rooms where proper emergency ventilation is required by EPA and OSHA regulations. These ventilation systems immediately kick in at set ammonia concentrations, dispersing the released ammonia into the atmosphere.

The current reportable quantity level of 100 pounds for all ammonia releases results in reporting and response to releases that pose no significant threat to the environment. In addition, it is very difficult and impractical to measure 100 pounds of aerosol release

in 15 minutes. The current policy results in significant over-reporting of minor releases as facilities work to avoid citations. This over-reporting of non-life safety ammonia releases ties up critical fire, HAZMAT teams and other resources that may be needed for emergencies involving other health and life safety response priorities. In addition, the unnecessary deployment of multiple emergency response personnel and equipment can cause traffic hazards. Finally, the reporting burden, particularly given the current interpretation of "immediate" as 15 minutes, ties up important facility resources that could be used to assess and address the release situation.

Solution:
A new category for reportable quantities of aerosol releases of ammonia should be established. The reportable quantity should be set at 500 pounds within a 24-hour period. The current 100-pound reportable quantity should remain intact for liquid ammonia releases when 100 pounds has been released within 24 hours. The creation of a separate reportable quantity for aerosol releases of ammonia would make the agency's reporting policy much more risk-based and reduce the unnecessary deployment of critical emergency response resources.

4. Reduce burdens of using reduced oxygen technology for fire protection.

Current Policy:
OSHA currently requires the use of supplied air respirators (SARs) in workplaces where oxygen levels are lower than 19.5 percent. The OSHA requirements differ from policies in place in Europe that allow workers in reduced oxygen environments without SARs under certain protocols.

Problem:
Increasing numbers of GCCA members are considering the use of reduced oxygen systems for fire protection. However, the current OSHA standard places added burdens on facilities implementing reduced oxygen technologies. Requiring SARs is a costly and inefficient practice that has been proven unnecessary by hundreds of facilities in Europe over the last 10 plus years.

Solution:
Through OSHA's enforcement discretion, permit the entrance of employees into reduced oxygen environments under certain protocols. Protocols would include specific time ranges for worker exposure to reduced oxygen environments, worker training, facility planning, and atmospheric monitoring.

GCCA believes that these are common sense reforms that protect safety and health while reducing regulatory burdens. GCCA's regulatory reform roundtable will present an opportunity for organizations in the food and industrial refrigeration industries to discuss these and other proposals to reduce regulatory burdens on the cold chain.

LOWELL RANDEL is Vice President, Government and Legal Affairs at GCCA.

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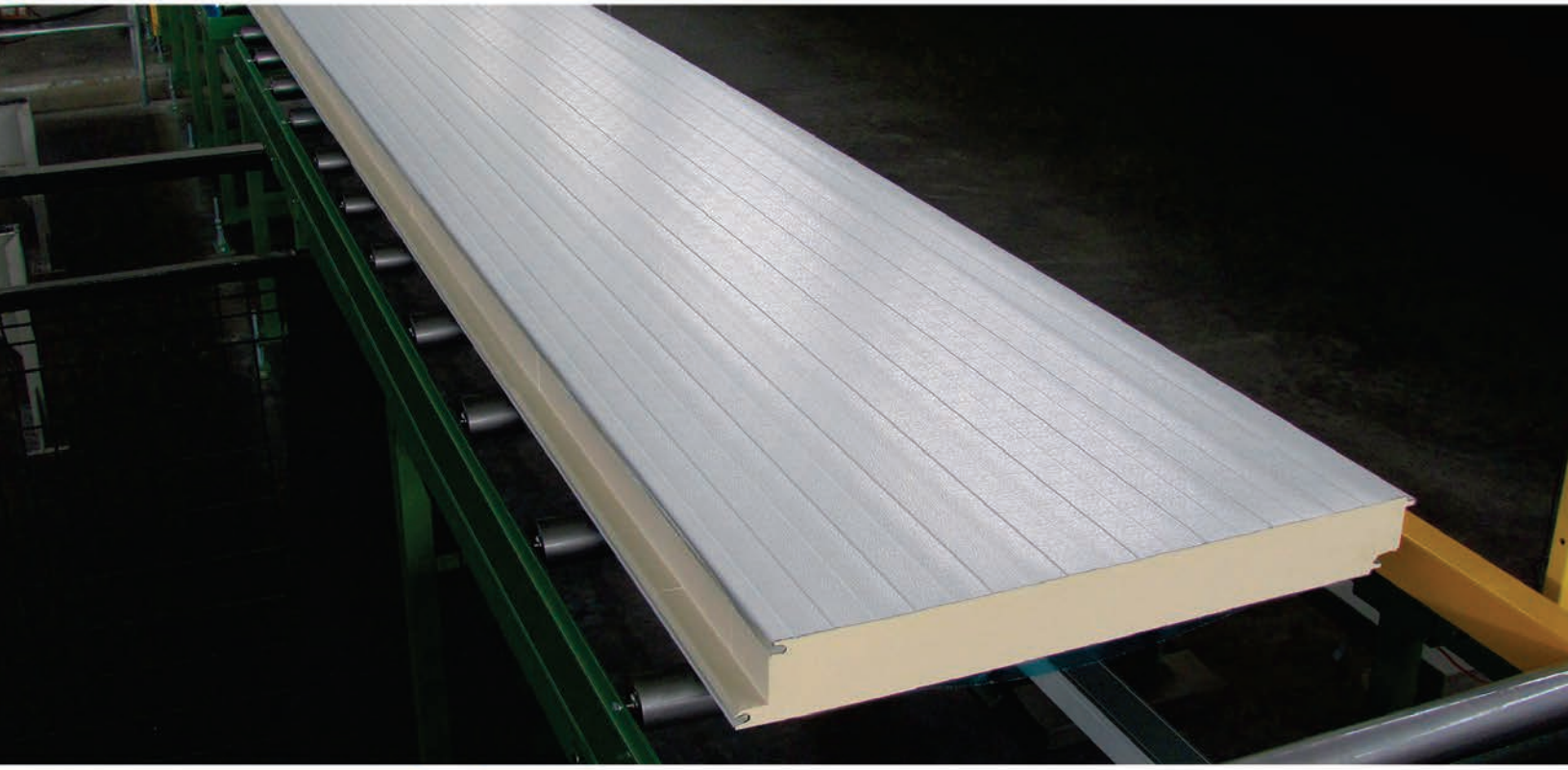

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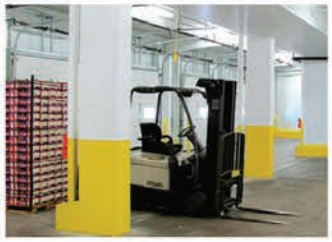


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By Alexandra Walsh

BUILDING AROUND THE WORLD

From automation to clean rooms, global trends in constructing temperature-controlled facilities.

Innovation in thermal building projects is happening at a rapid pace on almost every continent. Here is a snapshot of some of the trends in building high quality, food safety-focused, temperature-controlled environments in the Americas, Europe, South East Asia, and Africa.

Hot in Canada

"It's a hot climate these days in Canada, with lots of activity and growth in food processing and manufacturing," notes Marko Dzeletovich, P. Eng, President of Coldbox Builders. "A healthy economy, changes in consumer preferences and ways of purchasing food, meal kit companies becoming more common – all of these factors have an impact on the decisions that are made in building cold storage and processing facilities."

Dzeletovich says at this moment, the number one trend in Canada in innovative thermal building projects is end users requesting turnkey solutions and a guaranteed completion date. "It's a sign of the business climate, schedule is very important."

He adds that there is great demand from customers to find a single cold storage and processing facility specialist to pull it all together. "It helps to speed up the schedule. There are so many technological and system options to choose from, and so little time for planning right now, end users need someone with the expertise to provide solutions so they can get their facility into the market as fast as possible."

Another trend Dzeletovich points to is the increase in cross-border partnerships. "I'm seeing an increase in American companies with local clients needing a Canadian design-build partner to facilitate U.S. client growth in Canada."

Automation is a big topic these days, according to Dzeletovich. "Semi or fully automated facilities are starting to go up and operators are exploring their options and running models to see how automation can benefit their business."

(Left) A clean room at a project built by ARCO Design/Build – BTS, Inc. in Houston, Texas. Insulated metal panels and infit type doors are used in the construction of the room along with dedicated HVAC systems utilizing specialty HEPA filters. (Photo courtesy of ARCO Design/Build – BTS.)

When weighing whether to go with an automated facility, one has to determine how many pallets are going through the PRW against other costs, Dzeletovich explains.

"Automation systems are highly flexible and 3PLs want flexibility. Automation gives you higher density, greater height, and a smaller footprint but if you build conventionally and sprawl out, you can't take advantage of that space at a later time. Also, automated facilities can operate at night, in the dark, staging product. A warehouseman sitting idle costs money."

Dzeletovich points out that while the cost of labor and shortage of workers in non-automated controlled-environment buildings continues to be an issue, there's no shortage of workers interested in technology and programming. "There are plenty of folks who would like to work in a fully automated space. Augmenting and maintaining automated systems is really interesting."

But one of the main drivers in weighing the benefits of automation in Canada, says Dzeletovich, is whether there's developed land available.

"It's difficult to get developers to agree to purpose-built facilities like automated temperature-controlled buildings," Dzeletovich says. "Developers are looking out 20 plus years and consider how this specialized building can be repurposed. Just as 3PLs want flexibility to accommodate future clients, land developers want a building that is as flexible as possible for their future tenant."

Dzeletovich acknowledges it impacts the move to automation to some degree.

Pharma in the USA

The first fully automated temperature-controlled facility opened in the United States in 2018. "Regarding automation, it's been a shot in the arm for the PRW industry and garnering a lot of attention. However, we're not seeing dramatic changes yet, the ball is slowly moving down the field," says Jake Stefan, President of ARCO Design/Build BTS, Inc.

"I can tell you that automation in the cold world in the United States has a bigger foothold in facilities designed around a specific product(s) – for example facilities that are dedicated to manufacturing plants," Stefan notes. "Investment is still very high on automated material handling systems so if the products being stored use similar pallet dimensions and can be handled on the same ASRS, mole system or any other automation oriented retrieval system, it's much easier for the operator to stomach."

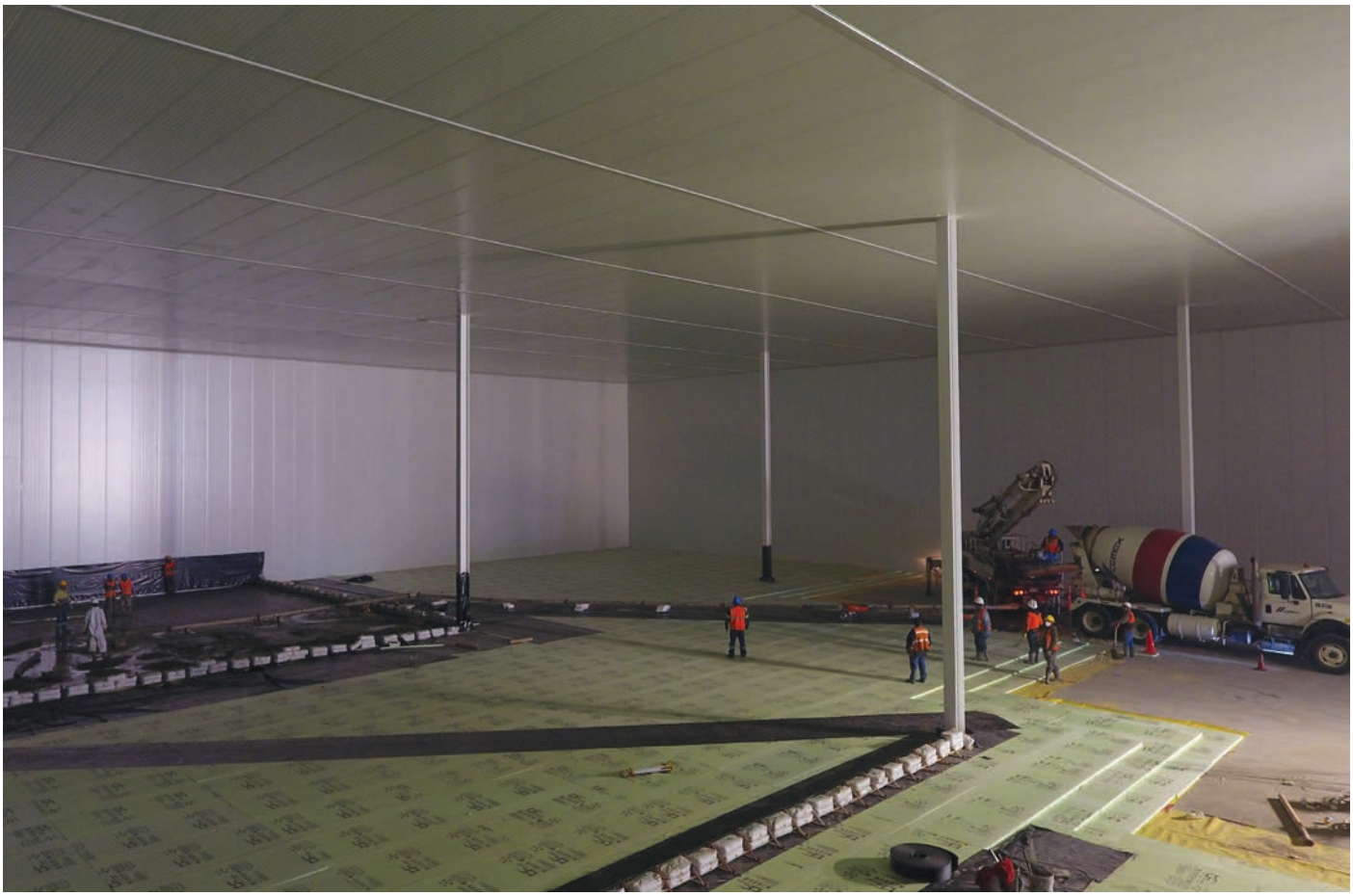
There is one cold storage market that is growing by leaps and bounds says Stefan, and that is specialty pharmaceuticals, which all tend to be temperature controlled.

"The specialty pharma, or cold storage segment, is one of the fastest growing in the pharmaceutical industry. Unfortunately, even though I like it growing quickly, I'm not sure specialty pharma is going to fill your warehouse," Stefan warns. "Pill bottles are tiny and are stored by box or case, not pallet, so much of specialty pharma is stored within walk-in coolers rather than forklift drive-in coolers. We recently completed a pharmaceutical distribution facility with a large cooler by pharmaceutical standards, but, in the end, it was still only 3,000 square feet expandable to 6,000."

There are ways for a controlled environment facility to share space between pharma and other products, Stefan says, but because of the stringent requirements of the DEA and pharma manufacturers, the cold pharma has typically been stored in independent facilities versus comingled facilities with completely dedicated storage spaces.

Stefan notes that he has been fielding questions from customers about one specific product related to the pharma world that can be stored in the same temperature-controlled facility as food. "A pill bottle measures a couple of inches but the frozen ice packs that go in the shipping containers take up a lot more space, have to be temperature controlled during storage, and have no related security risks," Stefan says. "I can see a pharma distributor

An ASRS shuttle-type facility with 80,000 pallet freezer. (Photo courtesy of Coldbox Builders.)



A 13,000-square-meter cold storage warehouse capable of reaching -20 ºC built in 2018 by Infrisa in Tijuana, Baja California, Mexico. (Photo courtesy of Infrisa.)

partnering with a facility that can blast freeze and store pallets of ice packs, allowing the distributor to receive a pallet or two as needed."

One area of growth for Stefan's company has been in designing and building cleanrooms for pharma – a controlled environment that has a low level of tolerance for pollutants such as dust, vapors, and often times humidity, for manufacturing or scientific research.

"Although there are different rules and regulations for cold cleanrooms versus cold food storage, the concept of building sanitary, air, and water tight storage is the same. The techniques and materials used in the construction of these cleanrooms are very similar to those used in cold storage," Stefan explains. "So our expertise, technical awareness, and attention to detail from building cold storage has been a big factor in our success in the pharma world."

Any other construction trend on Stefan's mind? "Yes, jointless floor systems! They have such great value, I can't understand why they haven't become the standard – I've done some for PRWs but never done one yet for a food distribution facility."

Efficiencies in Mexico

Alfredo Garza, General Director, Infrisa Mexico, couldn't agree more with Stefan. "The trend for us is to install concrete floors without joints – they require less maintenance, they increase operational efficiencies, they're more sanitary, they're easier on forklifts and their operators because there are no bumps, and they're flatter, which makes them more secure when using high racks."

Garza says there are also trends in the kind of insulation being used for thermal building projects. "The type of foam insulation we're using today has revolutionized operating systems in Mexico and efficiencies in cold storage are significantly greater."

Garza says the insulation is a foam PIR (Polyisocyanurate) that has a lot of structural advantages because it is quite rigid and strong which translates into less panel breakage and shrinking during construction.

The trends in wall design are focused on the type of materials being used and those materials, as well as the paint that will be used, are selected based on the type of product being stored and the chemicals used to clean the walls and how aggressively those chemicals will be used. "All these elements impact the way you design and specify panels so you really have to know your client and their products," Garza points out.

Doors also are among the new technologies that are creating better and safer temperature-controlled facilities, Garza notes. "Today, there are so many doors to choose from that make internal operations more efficient. You have to sit down with your client and explain the different technologies that are available in the market based on the nature of the client's operation."

Garza says that because of climate change and the risk to the environment that ammonia poses, the type of refrigerants now used in temperature-controlled warehouses in Mexico are more efficient and safer. "We're recommending systems that use a mix of refrigerant ammonia and glycol and this reduces kilos of ammonia from the system."

"Overall, there's a lot of need for cold storage construction in Mexico," Garza points

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out. "We have a very low percentage of square meters of temperature controlled storage for the population, and the facilities we do have are too spread out creating long distances for refrigerated transportation to travel."

Going High in the UK

"One of the biggest trends impacting cold storage in the United Kingdom is younger consumers buying smaller quantities of groceries more often and not going to large supermarkets," says Tony Wall, Managing Director of ISD Solutions, the largest temperature-controlled facility builder in the United Kingdom. "With this trend, we're seeing the emergence of convenience stores and the decline of big box stores."

Wall adds that the other major demographic trend – younger consumers shopping for groceries online – is having a massive impact at every level of the food supply chain. "The frozen food market is growing immensely in the United Kingdom as it is elsewhere in Europe. Every store is adding more frozen aisles, with ambient temperature discount stores looking to get into the frozen food market."

Wall says that the United Kingdom's economy has a 30 to 35 percent cold storage requirement and with the huge upsurge in demand for frozen food, his company has never been so busy building cold storage. And what they're building are automated high bay (high rise) temperature-controlled facilities. "Now that there is a 20-year track record since the first high bay was built in Belgium, when clients are looking at a new project with high volume, they look at high bay first."

Wall says the industry has changed a great deal since the first high bay facilities came into the market and has become very specialized. "Contractors like us used to manufacture and install ourselves, but now high bays are such expensive and technically challenging projects to build, contractors partner with manufacturers to provide a solution."

Wall says moving into new global markets depends not only on having good partners, but also on your company's track record. "You can't give high bay jobs to just any builder – it's a huge load on the ground."

For ISD Solutions, its partnership has been with Kingspan, one of Europe's leading construction product manufacturers – ISD Solutions is its largest customer for temperature-controlled panels in Western Europe. Wall says, "With Kingspan being a global company, it allows us to work anywhere in the world. We just entered the Australian market with the completion of that country's first high bay in 2017, and are fielding inquiries from the Middle East and Asia."

Growth in Africa and Southeast Asia

Carsten Thorsen, CEO of CT-TECHNOLOGIES, a Danish company specializing in engineering climate-controlled facilities, says his company builds all over the world and is anticipating 20 percent growth annually in the coming years in demand for their services in Southeast Asia (SEA), and in Africa, particularly in Ghana and Nigeria.

Thorsen says in Africa, where the com-

Constructed by NewCold in Melbourne, Australia, with the insulated envelope and specialty doors contributed by ISD Solutions, this is the first fully automated high bay cold storage facility on the continent and the largest in the Southern Hemisphere with the capacity of 100,000 pallet spaces and measuring approximately 135m x 105m x 36m high. (Photo courtesy of ISD Solutions.)

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A fully automated cold storage warehouse in Singapore engineered by CT-TECHNOLOGIES for Coca Cola. (Photo courtesy of CT-TECHNOLOGIES)

pany has been operating for 15 years, they supply more projects on a turnkey basis, providing everything from floor insulation, steel structure, refrigeration equipment, panels, and doors. In building temperature-controlled facilities in SEA over the past 30 years, he says they are more likely to provide sandwich panels, floor insulation, and doors.

"While our African customers are more interested in purchasing the entire solution from one company, another big difference between the two regions is that in South East Asia, ASRS and high-rise warehouses are more prevalent whereas in Africa, the concept is still new and interest low."

Thorsen adds that the growth in high rise buildings and ASRS in Southeast Asia, estimated to grow by 12 percent per year, is driven by increasing labor costs, lack of space, and the improved efficiencies that the high rise ASRS buildings allow. "Energy efficiency is a very important aspect for many clients and with the rising energy prices in all the countries we work in, this is becoming increasingly critical."

To address energy efficiency, Thorsen says the company is focusing more and more on providing photovoltaic (solar) solutions for their cold store customers. He adds that the solar panels themselves have not changed much in recent years, but what has changed is the cost. "The prices are lower now than they were a few years ago, so that is also fueling interest in solar on the part of our SEA and African clients. Now the focus is on making the batteries, where excess energy is stored and used at night, cheaper. "

Thorsen said another trend is that fire resistance is coming more into focus in Southeast Asia, with customers asking for solutions that satisfy stricter requirements. It is also a high priority because of past fires that have resulted in loss of life.

"In cold stores, we typically use PIR panels that are self-extinguishing and optimal in controlling smoke development, and temperature and fire penetration," Thorson notes. "In other buildings with even higher priority on fire safety, such as high rise cold storage facilities, we use mineral wool panels as they are highly fire resistant and act as a fire barrier, slowing down fires and giving the responders more time to get the fire under control."

Another new technology that Thorson says his company is starting to use, and which he believes will become more widespread in SEA, is active fire protection systems that reduce oxygen concentration levels, actively inhibiting fires from developing or spreading. "Unlike sprinkler-based fire protection, oxygen reduction prevents fires from starting in the first place."

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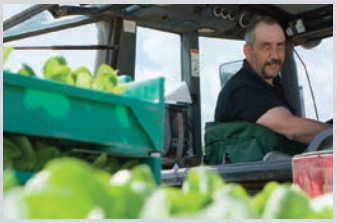

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GCCA HAS A **NEW HOME**

Using donated cold storage building materials and a mural depicting all aspects of the cold chain, new headquarters tells the story of the industry.

By Alexandra Walsh

(Far Left) GCCA members who donated products to help build the new GCCA headquarters office and association leaders gather in the entrance to the office during a reception at the GCCA Assembly of Committees. (L to R) Kurt Leibendorfer of Evapco (Evapco donated coils displayed on the front of the reception desk), GCCA President and CEO Corey Rosenbusch, IARW Chair Paul Henningsen, John Williams and Boyce Martin of Jamison (Jamison donated the replica wooden cold storage door, a high-speed roll-up door for the conference room and other doors in the office), and Carlos Oliver of Frazier Industrial Company (donated metal racking used to decorate the office). Another key donor was Metl-Span, which supplied the insulated panels that appear behind the reception desk and in many other places throughout the office.

(Top) Some of the temperature-controlled building materials used include a replica wooden cold storage door, a high-speed roll-up door, thermal paneling, metal racking and pallets.

(Bottom) Attendees at the GCCA Assembly of Committees enjoy a reception in the new GCCA headquarters office. Here they are in the GCCA conference room that features a full-length wall mural depicting the history of cold storage with pallet racking donated by Frazier Industrial Company. The conference room is separated from the kitchen by a custom high-speed fabric-and-steel roll-up door built and donated by Jamison. The 16-by-8-foot door had to be lifted to the sixth-floor offices by crane and brought in through a window.

Attendees at the GCCA Open House Reception held during the Assembly of Committees learn about the history of the cold chain from the displays, which are decorated with metal racking donated by Frazier Industrial Company.

For years, GCCA headquarters was housed in a building that had once been a Coca Cola bottling plant. With investment diversification in mind, the association purchased the building in 2002 for $600,000. It proved to be a wise investment: The refurbished Coke plant is now valued at $1.4 million.

Location, Location, Location

GCCA President and CEO Corey Rosenbusch explains that with staff crowded into hallways, it had been clear for some time that the association had outgrown its space in Alexandria, Virginia, and it was time to move.

At the same time, commercial real estate trends in the Washington, DC area had created a glut of office space in a very desirable business community near the Pentagon known as Crystal City. It was such an attractive renters' market, Rosenbusch decided that rather than sell the GCCA building in Alexandria – which was all but paid off and appreciating at a healthy rate – they would use its future rental income to lease office space in Crystal City.

"That's when the fun began," recalls Rosenbusch. "We settled on the fourth property we looked at because we were offered such an

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"We found the perfect situation because we were able to double the amount of space for staff while barely increasing our financial outlay after rental income from our old property."—COREY ROSENBUSCH

incredible deal and it met all of the objectives we were looking for in our new home."

Rosenbusch negotiated to double the association's existing space from 3,000 to 6,000 square feet, receive an $80-per-square-foot allowance to build out the space according to GCCA specifications, and occupy the space free of charge for the first 12 months.

"We found the perfect situation because we were able to double the amount of space for staff while barely increasing our financial outlay after rental income from our old property," Rosenbusch explains. "And it puts us closer to lawmakers and the regulatory agencies we work with in Washington, DC, which was one of our top priorities because of the increased amount of advocacy work we're doing."

Another benefit of the new space: It's a great human resource recruiting and retention tool in a very tight job market.

"Our old cramped building was just not an attractive space for our young staff to work in," Rosenbusch says. "In our new space we adopted the open office plan made famous by high-tech companies to foster collaboration and creativity and that's so popular with younger workers now. So most of the staff occupy a large centrally located space surrounded by windows and flooded by natural light with views of the Potomac River."

Adding to its appeal, the building is located close to a Metro train stop and features an underground mall just an elevator ride away from the GCCA office where staff can grab coffee or lunch. A section of the concrete apron that surrounds the building has been converted into a cafe-like indoor/outdoor meeting spot with tropical plants and cozy seating for the building's tenants and their guests.

Another positive aspect of the location for staff, many of who travel constantly on GCCA business, is that it is literally walking distance from the airport. "As it turns out, being located next to the airport is a plus for GCCA members as well," Rosenbusch notes. "We hadn't even unpacked when we were contacted by an IARW member who wanted to know if they could borrow our conference room as they had folks flying in from different locations for a strategy planning meeting and the airport doesn't provide meeting space."

Telling the Story

As you enter the new GCCA space, the first thing you notice is that the reception area does not look like your typical Washington trade association office. In fact, it looks more like a temperature-controlled storage facility. The front panel of the receptionist's desk is lined with refrigeration coils, the wall behind

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Some of the temperature-controlled building materials used include a replica wooden cold storage door donated by Jamison, thermal paneling donated by Metl-Span (shown here partially enclosing a meeting room), and metal racking donated by Frazier Industrial Company.

the desk is constructed out of insulted thermal panels, and the door to the utility/coat room around the corner is accessed through a replica of a 100-year-old wooden freezer door complete with a spring-loaded, walk-in freezer door handle.

Tony Maher, a Partner in the architectural firm EMA, who designed the new headquarters, says, "You can't work in 30 degrees below zero, but you can incorporate other elements typically encountered in cold space buildings. We took parts and pieces of iconic components and used them in an artistic way to showcase what GCCA is all about."

"We came up with this creative solution to ask members to donate temperature-controlled building materials that would help us tell our story and promote our industry," Rosenbusch adds. "It's more important than ever in our advocacy work, and we have an increasing number of visitors from international cold storage groups and partner associations. And, it saved us money."

In addition to the refrigeration coils donated by Evapco, Metl-Span supplied the insulated panels that appear not only in the reception area, but are used as office walls and to box in almost every corner of the office space, adding to the cutting-edge industrial vibe.

Jamison donated its 100th anniversary replica wooden freezer door behind reception plus all the doors to offices, in the conference room they provided a custom high-speed fabric-and-steel roll-up door that separates a conference room from the kitchen. The 16-by-8-foot door had to be lifted up to the sixth floor offices by crane and brought in through a window.

And finally, Frazier contributed wooden pallets and pallet racking that were modified to decoratively cover key walls from floor to ceiling.

But perhaps the best feature that tells the story of cold storage was one of the last to be conceived and installed. "We created a giant 8.5 feet high by 65 feet long wall mural that winds its way through the space depicting the history of PRWs," Maher says. "It begins with ice chopped out of frozen lakes to be stored all the way to depicting the interconnectivity of the modern global food supply chain and the worldwide influence that GCCA has today."

Maher says the ideas for the mural scenes came from GCCA's vast photo archives with Rosenbusch in the role of creative director.

"We are just thrilled with the whole project," Maher says. "GCCA was a great client, very open to ideas with Corey playing a major role in all aspects of the design. He would push ideas further, and we'd say sure – he was definitely an inspiration."

"For me, after 13 years with GCCA, our new space makes me feel like I have a new job," Rosenbusch declares. "We met our objectives of being fiscally responsible, facilitating our advocacy work, creating space to grow, telling our industry's story, and it's been a real boost for the staff. This is a space I'm so proud to share with our visitors."

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Maritime Dominicana is a 3PL that supplies integrated logistics services. (Photo courtesy of Maritime Dominicana.)

A UNIQUELY SITUATED DR

The Dominican Republic is striving to be the logistics hub of the Caribbean.

By Sheryl S. Jackson

In 1496, La Neueva Isabela – now known as Santo Domingo, the capital city of the Dominican Republic – was founded. Located in the southern part of the island at the mouth of the Ozama River, Santa Domingo became the "First City of the Americas." Recognized as the oldest continuously inhabited European established settlement in the Americas, Santa Domingo was the home of the first mercantile transactions between Europe and the Americas, which represented the beginning of international trade throughout the American continent.

Building on its history of international trade and its ideal geographic location, the Dominican Republic government and private sectors are actively promoting the country's unique position to serve as the logistics hub of the Caribbean.

"Air and maritime routes connect to more than 73 countries around the world," points out Salvador Figueroa Sanchez, Institutional Relationship Vice President of Maritima Dominicana and President of the Dominican Association of Logistics Centers and Operators. "The country has a maritime and airport network distributed in the most strategic areas of the country that are inter-

Left: IACSC Chairman Tim Nguyen of ESI Group, and IACSC Board member Marko Dzeletovich of Coldbox Builders provided technical assistance on maintaining the cold chain while loading and unloading product between refrigerated trucks, cold stores, airplanes, and staging areas during a visit to Caribe Cargo at La Romana International Airport in the Dominican Republic. Representatives from the International Executive Service Corps (IESC) and GCCA Director of Marketing & Communications Laura Poko also participated in the visit. Right: The outlook is positive for the DR becoming a logistics hub. (Photo courtesy of Maritime Dominicana.)

connected by a great terrestrial road network that facilitates rapid access." Seaports are also well equipped to unload and load ships as well as move cargo, he adds.

Government and private sector companies have worked together to develop the legal and logistical framework to establish the country as an attractive logistics hub for companies throughout the world.

In September 2015, the Dominican government issued Decree No. 262-15, which regulates logistics centers and logistics operators at international cargo terminals. Logistics centers are defined as spaces where all international supply chain services are offered including cargo management, storage, transshipment, classification, consolidation, deconsolidation, nationalization, packaging, re-packaging, distribution center and order preparation.

"Logistics parks are able to combine shipping lines cargo, segregate cargo in transit, and send by airline transportation," explains Rafael Alberto Smith, Director of Operations Landside and Cargo for Punta Cana International Cargo. "This is an important legal step because exporters from Europe, the Far East, and South and Central America are able to use the Dominican Republic as a warehouse center and serve the Dominican market as well as small markets in the Caribbean without paying taxes."

> "The country has a maritime and airport network distributed in the most strategic areas of the country that are interconnected by a great terrestrial road network that facilitates rapid access."—FIGUEROA SANCHEZ

"The country also has a monetary and financial system that has a banking network approved by the Monetary Board and is supervised by the Central Bank and the Superintendency of Banks, with more than 5,800 branches throughout the country," says Sanchez. "The system maintains good banking practices regulated by these organizations, which gives confidence in the transactions carried out through the local bank with their respective international co-responsible companies in the main countries of the world."

The country boasts eight commercial, international airports and 15 international seaports. Investment by private, public, and public-private entities is expanding the logistics capabilities within these facilities.

"The private sector has been investing in the main port and airport facilities of the country, such as DP Caucedo, which, in addition to being a seaport for transshipment, has facilities for handling and storage of cargo and added-value logistics operations," says Sanchez. Other enhancements include Haina International Terminal (HIT), which is a concession granted by the State to be managed by the private sector, he points out. "Facilities and port areas are converted for efficient handling of loose cargo, in bulk and in containers."

Logistics parks such as Caucedo Logistics Center are a clear example of the commitment to becoming a logistics hub, says Smith. "The Center has four warehouses built and three more under construction, with the master plan calling for a total of 42 warehouses," he says. "World class port structures are used as transshipment points for the big lines of the world, such as MSC and Hapag-Lloyd."

Air cargo is also a critical component of the Dominican Republic's ability to serve the Caribbean area as well as the Americas. "Punta Cana International Airport is the busiest airport in Dominican Republic with 67 percent of the total traffic of the country," says Smith. "We serve 98 cities in 36 countries, which allows us to have the best connectivity throughout Europe, North America, and South America. We have pushed this competitive advantage very seriously to position Punta Cana as the cargo hub of the Caribbean between South America and Europe and North America for perishable goods."

Smith's organization is planning to formalize an alliance with a major cargo company for Punta Cana to become the third hub in the cargo company's network to distribute perishable products such as flowers, fruits, and vegetables.

"Our proximity to main markets like the United States – only three days transit time to Miami and six days to the U. S. East Coast – and excellent connectivity to the Caribbean as we cover more than 27 islands with an average transit time of seven days or less, demonstrate our potential," says Smith.

The ability to deliver goods throughout the Caribbean and locally to residents of the Dominican Republic – about 10 million consumers – gives importers access to new markets, including producers in the country, says Smith. "The Dominican government has adopted 2018 as the Export Year," he says. "A sustained campaign to create awareness of how the airports can quickly and cost-effectively move their products to non-traditional markets has been underway." Smith's organization is planning a new cargo facility in the next two years to meet the demand and growth that is forecasted.

The market for goods and produce is healthy throughout the Latin American region, says Sanchez. "According to the Latin American Consensus Forecasts, the GDP of the Latin American region in 2017 grew by 1.6 percent and is projected to reach 2.5 percent by 2018 – putting an end to six years of economic slowdown, including a recession in the last two years," he says. "It is projected that Central America and the Caribbean will maintain a constant growth rate of around 3.8 percent."

Overall, the outlook is positive for the Dominican Republic's focus on becoming a logistics hub, says Smith. "Based on air and shipping connectivity that we have now, new legislation, and private sector efforts to provide new education programs in the university, the Dominican Republic will become the hub in the Caribbean for many important importers in the world."

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MONITORING THE COLD CHAIN

The latest developments in telematics and track and trace on land and at sea.

By Karen E. Thuermer

Developments and innovations in temperature monitoring, telematics, and track and trace technology have been developing at a fast pace with a large focus on temperature control.

Monitoring at Sea

The ocean sector has been increasingly employing refrigerated containers (reefers). Hapag Lloyd deploys reefers that utilize Controlled Atmosphere (CA) ExtraFresh, Everfresh, and Xtend-FRESH technologies. Xtend-FRESH CA equipment, developed in partnership with container manufacturer Carrier Transicold, ensures optimal cargo care for fresh fruit and vegetables while remote monitoring solutions allow for the continuous supervision of individual integrated reefer container operations throughout the voyage. Mobile connectivity devices enable live and central analysis of its reefer fleet.

Hamburg Süd offers a Multi-Temperature Mode that allows the steamship line to run defined temperature programs on reefer containers instead of using a single, constant temperature for the entire transport. Its reefers are capable of maintaining temperatures between minus 30 degrees C and plus 30 degrees C. Its PrimeLINE®/MAGNUM PLUS® containers can be cooled to minus 35 degrees C; the 20-foot MAGNUM PLUS® containers to minus 40 degrees C, which is ideal for transporting fish.

Evergreen Line is enhancing its operations with 3,000 containers refrigerated by Carrier Transicold PrimeLINE® units, chosen for their refrigeration performance and power efficiency.

"With its digital scroll compressor, the PrimeLINE unit has a reputation for energy efficiency and a value proposition that includes rapid pull-down, tight temperature control, high air-flow performance, and excellent cost of ownership," said Andrew See, General Manager, Global Container Refrigeration, Greater China, Carrier Transicold. "Evergreen's PrimeLINE units feature our LED control-display option, which the shipping line considers advantageous for ship crew members visually monitoring stacked containers onboard a vessel."

Rail and Trucking Developments

The trucking industry is increasingly employing telematics to ensure certain reefer units have enough fuel and are set correctly and running properly. Remote data monitoring simplifies centralized recording keeping.

The trucking industry is keeping a watchful eye on the Food Safety Modernization Act (FSMA) requirements regarding temperature monitoring. "The regulations put the fear of God into carriers to do so, although many carriers were doing it already," says Robert Fay, President, Florida Freezer LP.

In particular, FSMA establishes requirements for shippers, loaders, carriers by motor vehicle and rail vehicle, and receivers engaged in the transportation of food, including food for animals, to use sanitary transportation practices to ensure the safety of the food they transport.

The 2016 final rule was revised to include requirements applicable to receivers (any person who receives food at a point in the United States after transportation, whether or not that person represents the final point of receipt for the food) to provide that upon receipt of food that requires temperature control, a receiver must take steps to determine whether the food was subjected to significant temperature abuse. It also notes that the receiver at this stage "may review temperature monitoring information from an onboard temperature monitoring device that might have been employed during the food transportation process, and that such an approach would meet the requirements of this rule."

Consequently, many carriers are now employing temperature monitoring devices in their fleets as well as GPS telematics devices that send out alerts when a the temperature reaches a certain threshold.

"It's a practice rail has been doing for some time," says Fay. "Union Pacific, in particular, put its own telematics into rail car systems that are satellite tracked."

In Fay's own fleet of trucks, Florida Freezer LP is changing from an exterior probe to an interior monitoring device. He also notes how trucking companies are integrating materials into truck designs for better R- values.

"There's continual improvement," he says. "There won't be a paradigm shift. But if you've not monitoring your shipments, you shouldn't be in this business."

Don Durm, Director of Strategic Customer Solutions for PLM Trailer Leasing, describes how some companies are now employing satellite tracking tools to remotely control and monitor temperature and other activity for an entire fleet. Drum points to PLM Trailer's ColdLink, which is a web-based management tool that provides two-way GPS tracking that enables "real time" visibility into the entire fleet.

Evergreen Line is enhancing its operations with 3,000 containers refrigerated by Carrier Transicold PrimeLINE® units, chosen for their refrigeration performance and power efficiency. (Photo courtesy of Carrier Transicold.)

"Not only can you track your trailers to determine when equipment is out of a specific territory, you can also monitor the temperature of products while en route to minimize product loss," he says.

According to PLM's website, ColdLink allows fleet managers to receive alerts when trailer temperature changes en route, and change it immediately from their desk; obtain current and historical data about their freight; determine driver and route productivity; identify hazards and potential breakdowns before they happen; minimize loss and missed deliveries, and be sure product stays at the right temperature from dock to customer door.

"Trucking companies, or 3PLs, frequently wait in line to get to the facility," he says. "Telematics can give proof of time and delivery, but the problem is much of the information that logs when a truck enters the 'geofence' is done by human intervention. And humans make errors."

While telematics technology is available today, Drum contends that it is not widely used despite the fact it can provide information regarding when the driver left the loading dock and arrived at the unloading facility. "It also provides proof that the shipment was temperature compliant. For that reason, it's gaining popularity," he adds.

Next Step

And just for that reason, block chain technology appears to be the next step for the industry.

"Data is everywhere and you can track everything now, whether using smart phones or other hardware to monitor tasks," states Keith Mowery, Vice President, Transportation & Logistics, United States Cold Storage. "We have visibility on many carriers' information that not only shows where the truck is located, but also the temperature of the trailers."

But the challenge today is bringing information from multiple providers to one platform.

Block chain technology can do that since it operates as a distributed database that is updated in real time. Telematics can record the exact time the truck comes through the geofence, and that, along with other information, can be fed to the block in real time. "Telematics can message to the block," Drum says. "What's important is you can share certain information. It brings supply chain transparency to the industry and can track rising costs."

Data is stored in decentralized locations and is easy to monitor. It provides a level of security, and therefore confidence, since information cannot be changed as it is 100 percent technology driven.

Telematics can be used in conjunction with electronic logging devices (ELDs), the use of which became mandatory in December 2017.

"ELDs have affected the industry, specifically highlighting loading/unloading delays when they occur," Mowery comments. "Delays at loading/unloading facilities are the number one driver of inefficiencies in the trucking industry. The implications of the ELD mandate may open the door for more common sense and reasonable adjustments made to the Hours of Service regulation."

Drum emphasizes, however, that block chain is not a data repository and does not provide analytics or artificial intelligence. "It's just data between trading partners," he notes.

KAREN E. THUERMER is a freelance writer based in Alexandria, Virginia, who specializes in economic and logistics issues.

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COOL SOLUTIONS

SCIENTIFIC ANSWERS TO COLD CHAIN CHALLENGES

This column highlights a cold chain question and answers submitted through the GCCA Inquiry Service to the team of experts on the WFLO Scientific Advisory Council (SAC).

To get instant advice from a private, online community of over 4,000 cold chain professionals, simply post your inquiry in the GCCA Online Community. All GCCA Members and their employees can access the GCCA Online Community at community.gcca.org/home. There are active forums for Construction & Engineering, Government Affairs, and Third Party Logistics.

If you are not a GCCA member, or are unsure how to post in the GCCA Online Community, contact the GCCA Inquiry Service at www.gcca.org/resources/industry-topics/gcca-inquiry-service. GCCA Members can also browse the full archive of inquiries and responses in the GCCA Inquiry Service Archive. Access to previous inquiries is restricted to members of GCCA core partner organizations.

Q: We are in the process of renovating and expanding our refrigerated facility. We have both coolers and freezers that use large-package ammonia systems. What types of ammonia sensing equipment is available in the marketplace and what are the pros and cons of each?

A: There are two common types of ammonia sensors used in refrigerated/frozen warehouses – electrochemical sensors and photoionization sensors. The electrochemical sensor is widely used as a stationary sensor whereas the photoionization sensor is used as a portable detector when fast detection of ammonia is required.

There are several U.S.-based codes that impact the ammonia detection system design including ANSI/IIAR 2-2014, ASHRAE 15, NFPA-1, UMC, IFC, and IMC, and some of these reference the ammonia limit detection in a different location of a refrigerated storage unit. Additional information about this can be found in the table below.

Answer provided by the Scientific Advisory Council's Dr. Faris Karim, a Food Toxicology and Ammonia Contamination Specialist with Kansas State University.

Dr. Karim obtained two post graduate degrees in food science from Kansas State University, and developed and contributed to numerous projects involving food safety, food analysis, and food toxicology at the university. He also participated as an ammonia food contamination expert in several insurance claim cases. In addition to his research and teaching experience with Kansas State University, Dr. Karim has several years of experience with quality control of food products in the private sector.

ROOM	ACTIONS
Compressor Room (minimum 2 sensors)	**25 ppm** - Alarm to monitored location **25 ppm** - Horn Strobe outside each entrance and inside engine room **150 ppm** - Emergency Ventilation
Compressor Room (minimum 1 sensor)	**10,000 ppm** - Redundant Emergency Ventilation **20,000 ppm** - De-energize pumps, compressors, and normally closed valves
Vent Line	**1%** - Alarm to monitored location
Refrigerated Areas	**25 ppm** - Alarm to monitored location **35 ppm** - Close liquid and hot gas solenoid valves
Packaged Systems	**25 ppm** - Alarm to monitored location **35 ppm** - Horn Strobe inside room
Machinery under 100 HP and equipment Pits (not in machine rooms)	**25 ppm** - Alarm to monitored location **35 ppm** - Close liquid and hot gas solenoid valves **35 ppm** - Horn Strobe inside room **150 ppm** - De-energize pumps, motors, and non-emergency fans **150 ppm** - Emergency Ventilation

This table was modified from CTI Inc. product catalog 2018

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Chicago, Illinois, United States

MEMBER NEWS

NEWS FROM MEMBERS OF GCCA CORE PARTNERS

CENTRAL STORAGE & WAREHOUSE CO. (CSW), based in Madison, Wisconsin, reclaimed its title as Wisconsin's largest corporate provider of rooftop solar energy with the recent commissioning of more than 2,800 panels to its freezer warehouse in Pleasant Prairie, Wisconsin. CSW initially became Wisconsin's largest rooftop solar provider in December 2016 with the 741kW installation at its Madison location but was later surpassed by another company. With the new Pleasant Prairie install bringing CSW's total up to 1.49MW, Central Storage is once again the top producer, and expects to save almost $200,000 per year in electric costs (and up to $5 million in system lifetime savings), as well as substantially reduce its carbon footprint for decades to come.

Solar panels on the roof of the CSW Pleasant Prairie warehouse.

CSW is also building a new frozen storage facility in Caledonia, Wisconsin to complement its Pleasant Prairie location in serving southeast Wisconsin and Northern Illinois, CSW is investing $15 million in the new 115,000 sq. ft. freezer facility, located south of Milwaukee and near Interstate 94. Site work began in early June, and the company hopes to be operating in the new space by the end of 2018. Strong demand from area food manufacturers and distributors led to the company's decision to add to its existing network of seven warehouses in Wisconsin and Illinois.

FRICK INDUSTRIAL REFRIGERATION released a reliable, high-efficiency central refrigeration system – the Low Charge Central

COLD CHAIN INNOVATIONS

TIPPMANN INNOVATION

FIRST MOBILE IN-RACK FREEZING/TEMPERING SYSTEM

Tippmann Innovation has designed QFM, the first mobile in-rack freezing system on the market. It is designed to fit into a customer's existing racking and installs in just 15 minutes. Tippmann believes the product is perfect for companies with seasonal products that need to freeze/temper in various locations during the year. The QFM is the next evolution of the original QF+ In-Rack Freezing technology, which freezes product up to 4 times faster than traditional methods.

A key component of QFM is its dedicated fan and plenum. Each system has its own fan that allows users to freeze occupied positions only. High-tech loggers track KPIs and other smart data while advanced LED features constantly communicate the status of each pallet to operators.

The other key benefits of QFM include:

- Allows for agile response to changing demands
- Gathers continuous time and temp data
- Increased pallet height variability (20")
- Auto shutoff helps lower utility costs

"QFM assures exceptional and precisely delivered airflow to every pallet along with state-of-the-art controls, monitoring, and flexibility," said Dan Tippmann, Partner, Tippmann Innovation and inventor of QFM. "These features provide users with a significant freezing/tempering advantage they can showcase to their customers."

Cold Chain Innovations, a column brought to you by Tippmann Innovation, features the latest technologies, cutting-edge solutions, and innovative practices that the cold chain industry has to offer. Featured in each issue of COLD FACTS Magazine, the Cold Chain Innovations section gives readers thought-provoking ways to optimize their supply chain and improve operational efficiencies. The information presented in the Cold Chain Innovation section is sourced from GCCA members. To feature your news, press releases or submit your idea for a future Cold Innovation article, contact Laura Poko at lpoko@gcca.org or call 703.373.4300.

System (LCCS). The system has a total system ammonia charge of approximately 1.5 to 3 pounds per ton of refrigeration, or 85 to 95 percent less than traditional central ammonia systems. Frick says the LCCS is the only centralized system in the super-low charge category (less than 5 lbs/TR).

The reduction in refrigerant charge may enhance the safety of facility personnel and people living or working in the vicinity of a plant. In addition, the low charge can in some cases ease the regulatory burden and compliance costs for facilities.

MTC LOGISTICS (MTC) announced a leadership transition plan in which Andrew (Andy) B. Janson has been appointed Chief Operating Officer and will succeed F. Brooks Royster, III, as President in early 2019. Royster has served as President of MTC for the past five years and will work with Janson to ensure the smooth transition in leadership. Royster will then move into a role as head of International Operations for MTC. Janson most recently served as Chief Executive Officer with Hanson Logistics, a leading temperature-controlled logistics company specializing in warehousing and transportation. Janson brings nearly 30 years of industry service and currently serves as Vice Chair of the International Association of Refrigerated Warehouses.

Brooks Royster (left) and Andy Janson

SUBZERO CONSTRUCTORS appointed Vince Free to Vice President of Thermal Operations. Free brings over a decade's worth of industry experience to the role, specializing in project management and new client acquisition, and serves on the Board of the International Association of Cold Storage Construction (IACSC). In addition to his increased managerial responsibilities within the thermal division, he continues his work as a project manager and is also focused on incorporating advanced marketing communication strategies.

Vince Free, SubZero

2018-2019 CALENDAR

OCTOBER 4, 2018
GCCA Mexico Forum
Mexico City, Mexico

OCTOBER 18, 2018
GCCA Brazil Annual Conference
Sao Paulo, Brazil

NOVEMBER 6-8, 2018
IACSC Conference & Expo
Las Vegas, Nevada, United States

NOVEMBER 11-13, 2018
GCCA Latin America Cold Chain Congress
Lima, Peru

FEBRUARY 10-13, 2019
55th WFLO Institute East
Atlanta, Georgia, United States

MARCH 3-6, 2019
55TH WFLO Institute West
Los Angeles, California, United States

MARCH 20-22, 2019
22nd GCCA European Cold Chain Conference
Brussels, Belgium

APRIL 7-10, 2019
128th IARW-WFLO Convention
Santa Ana Pueblo, New Mexico, United States

JUNE 10-12, 2019
2019 Global Cold Chain Expo
Chicago, Illinois, United States

JULY 28-31, 2019
GCCA Assembly of Committees
Washington, D.C., United States

NOVEMBER 14-16, 2019
39th IACSC Conference & Expo
Miami, Florida, United States

*For more details go to **www.gcca.org/events**

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ASSOCIATION NEWS

NEWS ABOUT GCCA CORE PARTNERS

The 2018 **GCCA** Global Cold Storage Capacity Report was recently released. This report is the only comprehensive look at worldwide cold storage capacity in the world. It includes analyses on growth trends in global capacity, market development indicators, and characteristics of refrigerated warehouses around the world. This year, the total capacity of refrigerated warehouses worldwide was 616 million cubic meters, 2.67 percent greater than the capacity reported in 2016. India was the single largest country market, at 150 million cubic meters, followed by the United States at 131 million cubic meters, and China at 105 million cubic meters. Find out more by downloading the report from www.gcca.org/resources.

IARW released an Industry Promotion Campaign – "Protecting the Food Families Love" – during the Assembly of Committees meeting in July. This campaign reflects the GCCA commitment to evolving the cold chain industry into an even more integral part of food companies' brands and operations. The campaign is focused on showcasing our promise that the food we all eat is safely packaged, stored and transported. We want to ensure our member companies, the businesses they serve, and the end consumer all know we take the safety of their food seriously. Download the campaign promise video at www.gcca.org/resources/protecting-foods-families-love-0.

The 2018 **WFLO** Latin American Institute, held in Mexico City, July 16-18, 2018 included 58 student participants representing nine different countries (Dominican Republic, Peru, Colombia, Costa Rica, Guatemala, El Salvador, Mexico, Chile and the United States). Accompanying the students were 11 international instructors and experts in the fields of food and agriculture, cold chain, human resources, sales, finance and personal development. This year, nine students walked the graduation stage after successfully completing their three-year program, becoming the third group of graduates to successfully complete the WFLO Latin American Institute. The students who graduated were Fernando Leon Rodríguez, Jorge Arturo Herrera Martínez, Alejandro Padilla, Juan Francisco Rodríguez, César Mishaan, Alcira Romero Ríos, Gustavo Adolfo Ulate González, Alonso Sánchez Ramírez, and Martín Cerda.

Innovations in the design and construction of controlled environment facilities are improving the safety and security of food as it is stored and processed in facilities around the world. Thought leaders driving those innovations will participate in the 38th **IACSC** Conference & Expo, November 4-6, 2018 at Caesars Palace in Las Vegas. Register now and learn how state-of-the-art facilities are constructed when "Built by the Best" award candidates will also take the stage, sharing insights into how state-of-the-art facilities are constructed. Registration is open for this event at www.gcca.org/conference.

The newly developed **IRTA** Driver Training program came to fruition following the release of the IRTA Refrigerated Best Practices Guide, which provided a detailed overview of best practices for food safety in the temperature-controlled transportation sector. Available as a complimentary GCCA-IRTA member benefit, IRTA Driver Training includes an online video and training log for carriers to meet regulatory requirements for driver training.
The 25-minute online video addresses six content areas, including: FDA Sanitary Transportation of Food (STF) Rule, sanitary best practices, risk management, training best practices, temperature control, and recordkeeping.

The HCR Door results are in: over 90% efficient in blocking air infiltration!

Jamison HCR pioneered the air door market over 40 years ago, and now has over 5,000 worldwide installations.

Recently, a three-month evaluation was completed by Creative Thermal Solutions (CTS) to document the efficiency of the unique HCR air door.

CTS is a leading test lab for products in the HVAC and refrigeration industries.

The results verified that the HCR Model AC with an added rollup door is over 90% efficient when stopping air infiltration and energy transfer between rooms with different temperatures.

THE BENEFITS OF HCR ARE VISIBLY DRAMATIC

- Clear visibility of the open doorway
- Prevention of refrigeration loss
- Elimination of moving door parts
- Reduced maintenance costs
- Removal of ice and frost on floors, ceilings, and walls

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Despite warehousing seeming a benign floor operation, major forces are at work. Huge impacts from small wheels, seasonal changes, and constant abrasion add-up.

Haphazard repairs, and often local efforts seem to fail within a year. That's not mere nuisance of intrusion once or twice a year, it's in a failing condition much of the time. Paying twice, once to fix it temporarily and once to live with it burns resources and patience, not to mention the cost of wheels, and lost equipment use for transmission repairs.

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