



Unger
MEAT COMPANY

HERITAGE
RANCH
PREMIUM SOURCE VERIFIED BEEF™

FROM RANCH TO GRILL

A CASE STUDY

ZERO ZONE®

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FROM RANCH TO GRILL: CONTROLLING THE 'TEMP' IN YOUR TEMP-TING BURGER

Who doesn't love a juicy burger on a hot summer day? But, bringing that beef to our tables involves much more than a trip to the grocery store. How that meat is held at controlled temperatures during processing is an art in itself. A visit to UngerMeatCo.com reveals that they are "setting the industry standard in delivering source-verified, top-quality, U.S. raised beef and empowering ranchers, foodservice, and retail industries to provide their customers a consistently satisfying eating experience." The freshness and temperature of that meat is protected by a complex refrigeration system during processing and that is the essence of this case study.

ABOUT UNGER MEAT COMPANY

With its ground beef processing plant located in St. Paul, Minnesota, Unger Meat Company receives its raw material from certified Heritage Ranch partners "with a COA (Certificate of Analysis) attached," according to Jeremy Turnquist, VP of plant operations, "so we know it's a cleared item from our supplier. We then grind that product. After grinding, it goes into a forming process. Then we package it into vacuum bags and after that we package it into cases. We turn product very fast. We give our customers just two days prior to ship to place an order."

THE REFRIGERATION CHALLENGE

Throughout the process, the meat moves through the raw material production room, the cooler, and the blast freezer. Zero Zone, Inc. and Solid Refrigeration partnered to supply most of the refrigeration equipment, engineering design, installation, and



System in Mechanical Center

and maintenance of the system that keeps the product cold and safe. In preparation for their role, Solid Refrigeration's "first move was to go up to see the boys in Ramsey (the Refrigeration Systems Division of Zero Zone in Ramsey, MN). We sat down for literally half a day and talked about 'what do we need to consider,'" said Pat Kline, Managing Partner of Solid Refrigeration. "We really needed some help from somebody that had done it before. We went to Zero Zone and they were a big help and ended up providing us a beautiful mechanical center that was going to accommodate our DX coolers and freezers, as well as a blast chiller. It was coordinated very well. We really counted on them heavily and they performed very well."

PROCESSING A MILLION POUNDS/WEEK

This initial planning step was crucial since the facility is designed to process 1,000,000 pounds per week and is capable of expanding production significantly to meet future needs. Jeremy Turnquist comments: "we had them (Solid Refrigeration) and Zero Zone design it so we had 30% more growth in the mechanical center. So we could grow in the unit we have now and also move that mechanical center if we needed to grow to the back end of the building."



Product in Blast Freezer

ACCELERATED TIMELINE

"We asked our vendors, Zero Zone and Solid Refrigeration, to come through and get us some product quicker than normal," says Jeremy. "Zero Zone came at us with a date. We actually went back to Zero Zone and asked them if they could improve and they were able to do that for us by three or four weeks. That really stepped up the whole process of getting us up and going faster. It made them stand out to us and made them a good partner for us to have and work with. We got our building permit on July 1st and we were up and running by October 9th."

Pat Kline comments: "the blast chiller piece was the biggest challenge because the engineering that was needed to be done by a third party was kind of slow to come. And what Zero Zone was good for with us was making sure we were asking the right

questions and getting the information that they needed to lay out the capacity requirements. So certainly the most difficult part of that was, in fact, getting the information we needed from the blast chiller people so that we could do the work we needed to do to engineer the project appropriately.”

“It wasn’t just making sure that we had the right size compressors. The valving and piping requirements are also different when you get in these ultra-low temperatures. We got expertise from Zero Zone on how to lay that out and, in fact, how to purchase that. Without that, it would have been a lot of trial and error. We didn’t really need to go back for much of anything. We laid it out—a very complex system. How we had it engineered and designed and drawn was how, in fact, we installed it and how it’s working today.”

ZERO ZONE REFRIGERATION EQUIPMENT

Aside from engineering support, which included the critical valving and piping diagrams, Zero Zone provided four condensing units, a heat recovery system, and a custom Electrical/Mechanical Center with two refrigeration racks, one with reciprocating compressors and one with screw compressors.



Reciprocating Compressors

monitored through a computer system in the mechanical center that is hooked up to our security of the building and we are notified immediately. We’ll get a phone call saying that we’re temperature out-of-spec or a motor is down or anything like that. We haven’t had one yet but that’s how that part of it works. We do have two racks in the mechanical center. One of the racks is for the spiral unit that we run. The other one is for the full building refrigeration. We have clean modes installed so when we go into a clean cycle we can turn the refrigeration off right in the room and do a full cleanup without building up condensation on the roof.”

“We’re fully monitored in every room,” says Jeremy. “We have a raw material room that holds a temperature, a finished goods cooler room that holds a different temperature and a freezer that holds a cold -5°F temperature. Those rooms are all



Screw Compressors

KNOWLEDGE: KEY TO SUCCESS

“What really stood apart was just the knowledge that Zero Zone and Solid brought to the table,” Jeremy continues. “We really look at things where we can grow. We have that capability to be able to grow and get bigger and not just have a plant where we’re already fully grown in. But that’s the main thing that stood out of Zero Zone and Solid: their knowledge.”

Jeremy was pleased with the installation and start-up: “When we did the initial setup everything went smooth as could be. We had a successful startup and I guess all the temperatures that I’ve asked Solid to be able to hit, we’ve hit. So, the Zero Zone equipment has performed very well. We haven’t had any glitches. Everything has been running really solid.” Pat agrees: “They have been very pleased with it. We’ve had next to no issues. I don’t know that we’ve been up there more than once a month



Mechanical Center Installation

for the seven months that it’s been open. Once a month is for the most part just us going to make sure that everything is working well and working appropriately. Their feedback has been: ‘things have been operating far more smoothly than they would have imagined’. They were anticipating that there was going to be some downtime. There were going to be some difficulties because most of the people involved in that project had been at an older facility and were used to regular shutdowns and equipment in disrepair. And at this point it’s just been humming along great.”

“Attaining energy efficiency in the refrigeration system was one of our primary goals,” says Jeremy. “Unger Meat Company pays close

attention to

maintaining ‘green’ standards throughout our business activities. We realize we have a responsibility to protect the environment. Zero Zone and Solid were good partners in that respect.”

DO YOU WANT FRIES WITH THAT?

Pat sums the whole experience up this way: “To have Zero Zone, they’re kind of more than just an equipment supplier, but kind of an engineering support that was very critical for us -- very important for us, and it worked beautifully. The equipment is running smoothly. It was built appropriately. The capacity requirements were well thought



Condensing Units



Electrical Control Panel

out and designed and it's just working. I mean the best we can get from a customer is very little response relative to requirement for service calls and we've really nailed it with this one."

Would they use Zero Zone again? According to Pat, "Oh, we'll certainly use Zero Zone again. What we learned on that project was as much from us actually doing it as what we learned from Zero Zone and the experience that they've had in this type of work before. We anticipate getting involved in more of these and when we do, we'll have Zero Zone right there with us."

We'll let Jeremy have the last word: "Everything about it—all the piping—is just perfect. All the quality is second to none. Zero Zone

and Solid Refrigeration will be a part of any growth that we do have. We're ground beef experts," Jeremy says. When it comes to refrigeration, however, go to the refrigeration experts. As Jeremy says, "let Zero Zone and Solid do it. I would definitely recommend Zero Zone and Solid Refrigeration in the future for anyone. They are both great companies to work with. The partnership that we have with them is great. They've exceeded in everything that we've asked. I can't ask for anything more from them, for them to come through on a timeline and get us the equipment we needed, up and running, as fast as they did, you'd be crazy not to use them."

So, next time you bite into that big, juicy hamburger, remember the care that went into safeguarding the quality of the ground beef and keeping it cold...until it's time for you to 'heat things up' on the grill.



Zero Zone, Inc., headquartered in North Prairie, Wisconsin, is a respected manufacturer of refrigerated display cases for supermarkets as well as grocery, convenience, dollar and drug stores. With a half century of manufacturing expertise, Zero Zone also provides the finest refrigeration systems and electrical distribution systems to food retailers and industrial customers through its manufacturing facility in Ramsey, Minnesota. Zero Zone employees are committed to exceeding customer expectations through innovation, quality, and responsiveness.