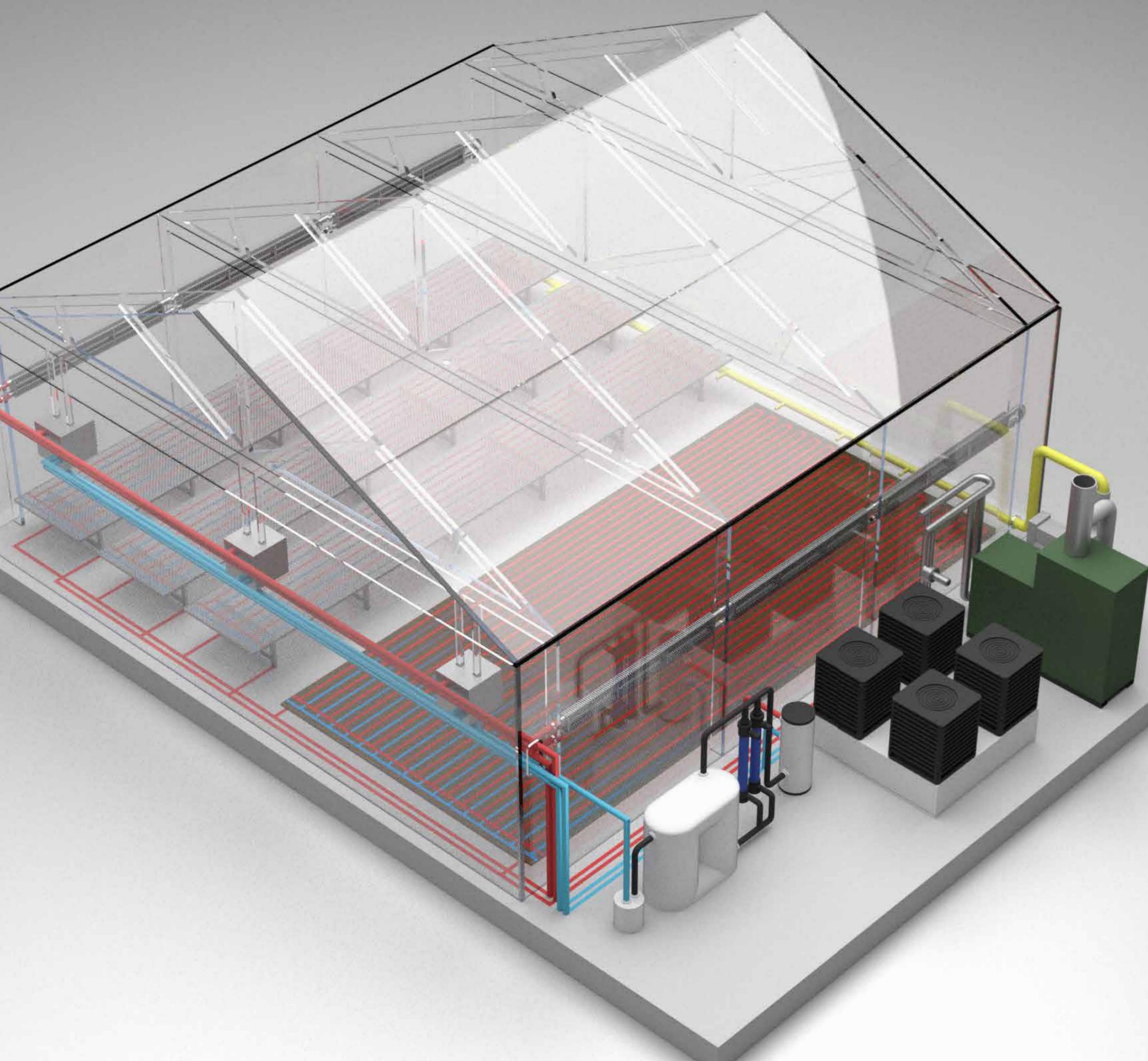


A photograph of a BioTherm CO2 enrichment system installed in a facility. The system consists of several large pieces of equipment: a green compressor on the left, a central stainless steel vertical column, and a large grey control cabinet on the right. The control cabinet has a digital display and is labeled 'XVers' and 'BioTherm'. The background shows industrial pipes and a metal wall.

BioTherm
CULTIVATION CLIMATE
TECHNOLOGIES

▲
BIOTHERM
CO2 ENRICHMENT SYSTEM

OPTIMIZED AIR



BioTherm[®]

CULTIVATION CLIMATE TECHNOLOGIES



When the environment outside is not ideal for the crop you are growing, the air in your cultivation facility needs to be adjusted. Sometimes it's as simple as adding heat, but more growers are requiring "active" cooling inside their cultivation facility during the rugged summer months. For certain crops, the air must be dried or dehumidified as well.

BioTherm has proven systems designed to optimize the air inside your facility and ENHANCE your growing conditions so that even crops not normally grown in your region can flourish. We can take the temperature and humidity down just a touch, or we can close down the access to outside air and bring those factors way down. It is all in the design, and our experienced team knows how to engineer and deliver systems made specifically for RUGGED cultivation environments using special air handlers or standalone dehumidifiers made of stainless steel.

Many plants require a dose of CO₂ to maximize growth, for this, BioTherm delivers systems that harvest CO₂ from the products of combustion from our high-efficiency boiler equipment, condition and dry it, and then deliver it to the growing zones.

Your production plans require predictable, high-quality harvests year 'round – if the weather doesn't cooperate, you need not worry if you have a robust BioTherm Optimized Air system on your side!

OPTIMIZED AIR SOLUTIONS



OPTIMIZED AIR SOLUTIONS

AC/DEHU SYSTEMS CENTRALIZED 4-PIPE SYSTEMS

BioTherm understands the demands of indoor gardening and greenhouse crops. A major issue is moisture control & humidity management. We know that high humidity levels can be devastating to your crop so that's why we have developed a line of pragmatic dehumidification and air temperature control solutions for agricultural applications without compromising performance.

Large-scale growing operations control humidity levels with integrated heating and cooling systems. The air handlers in the growing spaces summon heat from the boilers or cooling from the chillers, regulated by the greenhouse's environmental controls.



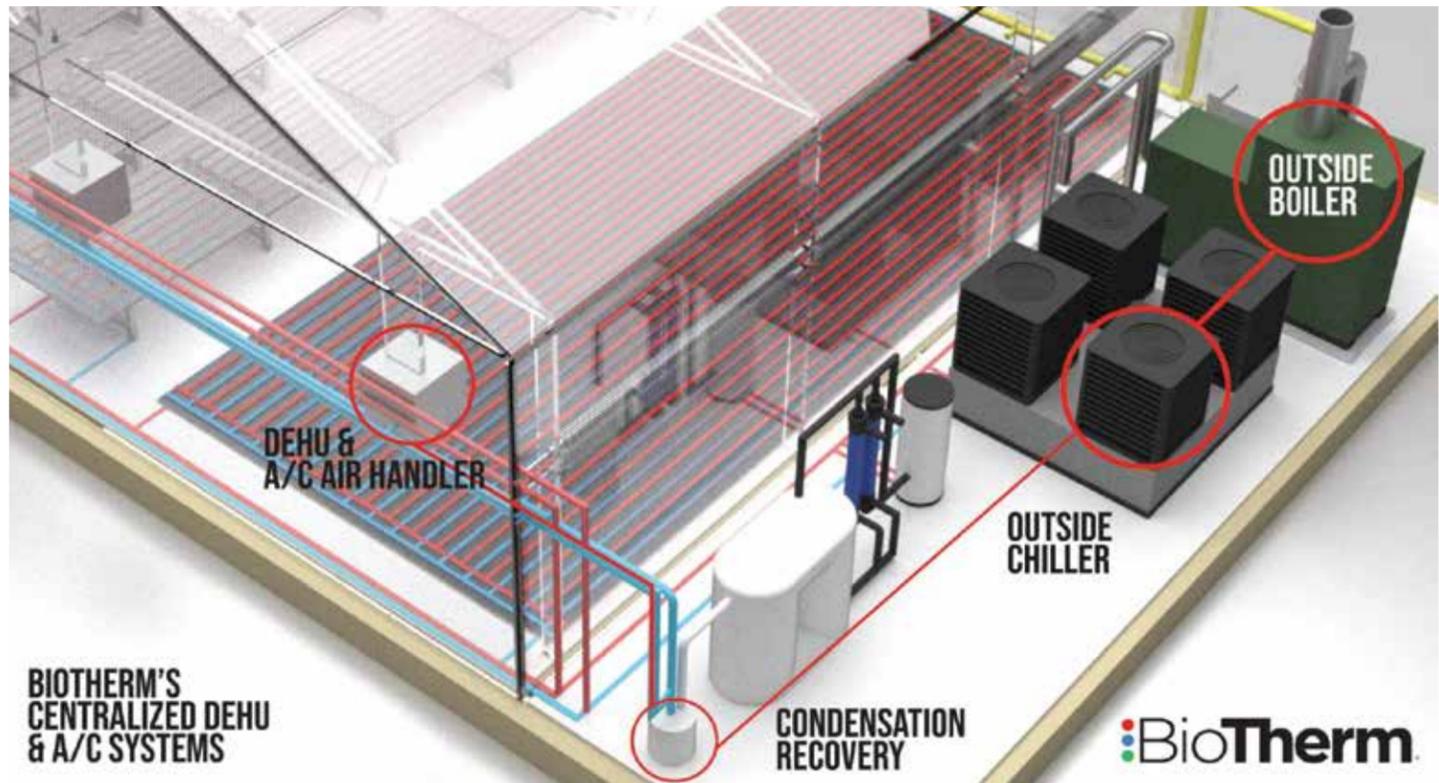
Chillers provide cooling, boilers provide warmth.



4-pipe air handlers control air & humidity.



Balanced air distribution.



**BIO THERM'S
CENTRALIZED DEHU
& A/C SYSTEMS**

GROWER STORY RICHARD PHILBRICK, APOTHCA

As far as greenhouse systems and dehumidifiers, I recommend BioTherm solely. In New England it's 90 degrees and 90% relative humidity. BioTherm's products are sound; the engineering is solid. After 40 years of business, they know the greenhouse and the plant industry like the back of their hand. More than anything, it's their service that's got me to be a follower.



**ASK US ABOUT OUR
STANDALONE
DEHUMIDIFIERS!**

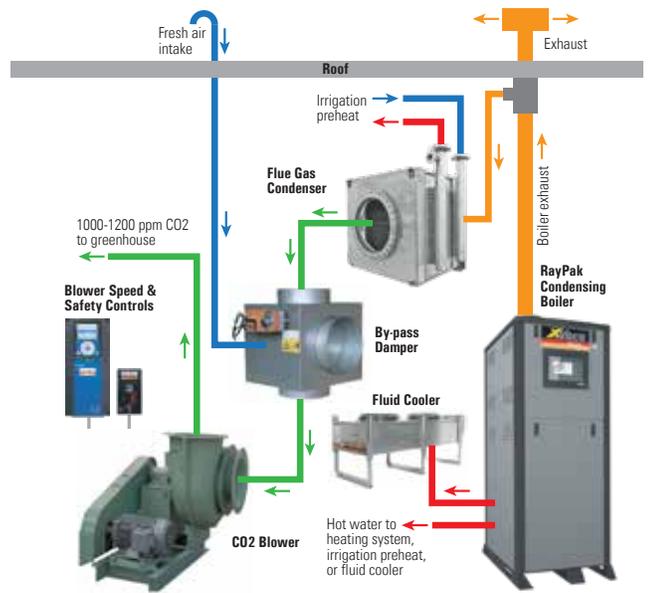
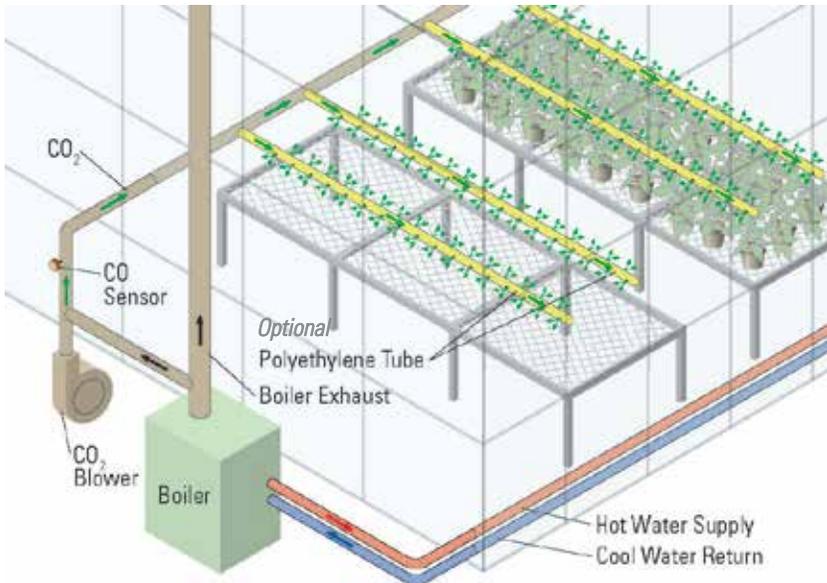


OPTIMIZED AIR SOLUTIONS

CO2 ENRICHMENT SYSTEMS

With the right condensing boiler system in place, a BioTherm CO2 System can easily be integrated to achieve elevated CO2 levels in the greenhouse environment.

Our CO2 Enrichment Systems deliver clean, safe, and dry CO2 to your growing environment.



Schematic of BioTherm CO2 Enrichment System



CENTRALIZED CO2 DISTRIBUTION

CO2 levels are naturally low in a greenhouse environment as plants use available CO2 as part of the photosynthetic process.

Increasing CO2 levels above ambient conditions promotes increased plant growth and health.

BioTherm's system pulls CO2 directly from the boiler's exhaust gasing system and distribute it uniformly into the growing environment.

With a BioTherm CO2 System, there is no need for large bulk tanks or individual CO2 burners. These systems can be used in indoor and greenhouse operations.



GROWER STORY BOB LADUE, LEF FARMS

Bob grows leafy greens at Lef Farms in New Hampshire, where he's always looking for ways to control costs and make the greenhouse more productive. "New England has high electric prices," Bob said, "and we want to use every tool at our disposal to control for high production, in an economically feasible way."

With the lights burning all night to support the leafy greens 24/7 growing program, Bob needed to offset those costs with higher yields. He knew that supplementing the CO₂ in the growing environment would increase the efficiency of photosynthesis up to 30%. He considered liquid CO₂, but he knew that price would fluctuate with the cost of transportation and storage, so he turned to a source he could control.

Lef Farms burns natural gas fuel in their BioTherm heating system to maintain warm temperatures during the cold New England winters, and CO₂ is a natural byproduct. BioTherm added a CO₂ system to the boilers, to harvest CO₂ from the exhaust gases and distribute it throughout the greenhouse. "When CO is at 1500 ppm level, we save 50% of supplemental lighting hours," Bob said. "We essentially get 50% more growth vs 375 ppm ambient CO₂ levels."



ROLL'N GROW MACHINE
AT BIOTHERM HQ

MIKE MUCHOW,
BIOTHERM CO-FOUNDER

Raypak[®]
A Rheem[®] Company

**BIOTHERM IS THE EXCLUSIVE DEALER FOR RAYPAK[®]
BOILERS TO THE CEA AND CANNABIS INDUSTRIES**

RAYPAK PRODUCTS OFFER UP TO 98% EFFICIENCY

GROWER STORY MIKE GOODER, PLANTPEDDLER

BioTherm installed two Raypak boilers, which have run continuously since 1984. Tied to an Argus control system, they serve the greenhouse's needs well, even in the bitterly cold, snowy winter months – Mike says they get 20° F below weather, blizzards with 40 mph winds and dinner plate-sized chunks of ice on the greenhouse roof.

“We have them set about 160 to 175°, and they roll with what we need. The water temperature is always there.”

“The crops we produce are very fragile, needy,” he says. “We make sure we have redundancy, and work with BioTherm who understands the loads greenhouses require, how heat integrates into our short-range plan.”

**BioTherm**[®]
Elements...Enhanced.

476 PRIMERO COURT • COTATI, CALIFORNIA 94931 • 1-800-GET-HEAT • BIOTHERMSOLUTIONS.COM