HIGH MEADOWS FARM:
TURNING AN OLD DAIRY BARN INTO A WARM AND SUNNY YEAR-ROUND PACKSHED

Challenge: Making an old dairy barn into a light, warm space for winter processing
Solution: Turned a south-facing wall into a solarium with greenhouse polycarbonate

Farm: High Meadows Farm, Westminster West, VT
Operators: Howard and Lisa Prussack
In operation since: 1971
Size of farm: 7 acres in production
Markets: 95% wholesale
Number of farmworkers: 16 during spring planting, 9 rest of growing season

Size of barn: 80’ x 40’
Time to construct: 2 months for renovation
Type of wash system: Used stainless 4-bay sink for greens; Willsie barrel washer; automated wash-line
Total project cost: Approximately $39,000 – $40,000
Founded in 1971, High Meadows Farm is Vermont’s oldest certified organic farm. Howard and Lisa Prussack grow primarily horticultural and winter storage crops such as garlic, onions, and winter squash. The farm came with an old dairy barn in which the previous owners once milked cows. When the Prussacks made the switch to produce, part of the barn was used for cleaning squash and part for other winter storage crops. The rest of the large barn was not being used. Not wanting to waste the space, and wanting to give his employees a more pleasant year-round working environment, Howard has spent the last three years upgrading the barn in stages.

The old space was dark and cold, but the end wall faced south. Howard decided to renovate the barn and install greenhouse polycarbonate on this southern wall. The sunny southern end is now used for processing crops in the winter and storing horticultural supplies in the off-season, while the northern end is used for a workshop and tool storage. While his primary goal was creating a warmer, more pleasant working environment for winter processing, Howard also wanted the space to be Good Agricultural Practices (GAPs) certifiable. The new improved space is much easier to clean and the bright light helps with sorting and quality control.

The first year, Howard tore out the old stanchions, poured a new concrete floor, replaced the southern end wall and roof with new rafters and double-layer greenhouse polycarbonate, and white-washed all the walls and ceiling. The second year, he lined the remaining walls and most of the ceiling with 1 ½” foil-backed foamboard to make a warm, inviting space lit largely with natural light. All of the electrical system was re-wired at this time and an insulated overhead door was added. The third year, they installed a water tank in the pack area to warm up water in the winter, installed a four-bay stainless steel sink for washing greens, a Willsie root washer, and a new cooler.
*WHAT WORKS WELL*

**Year-round workspace:** Having a warm, naturally lit work environment now allows Howard to keep two to three workers on year-round. “This helps in terms of having a consistently reliable labor force. If additional heat is needed, it is provided with a propane heater.”

**A smooth floor means increased mobility and flexibility:** A smooth concrete floor makes it much easier to move produce from the packing line to the cooler and to move equipment around. “With a smooth floor, you can have equipment on wheels and re-arrange how things are configured depending on the activity.”

**Insulated overhead door:** Howard replaced an old sliding barn door with an insulated overhead garage door. “You can’t seal sliding barn doors well, but an insulated overhead garage door seals tight at the seams, and is energy-efficient. We all love it! We close it, and we are warm again. Plus you never have to worry about snow and ice building up when you are raising it up overhead vs. sliding it horizontally along the ground.”

**Silver foil foamboard:** “Light bounces off of the foil on the insulation and reaches way back into the barn, the white wash on the other walls and ceiling also make the space much brighter.”

*WHAT COULD BE IMPROVED*

**Segregated storage:** Howard is planning on bringing in a shipping container to store pots and other horticultural business supplies to keep them separate from the winter storage crops.

**Loading dock:** He is also planning on installing a loading dock on far end of the barn to improve flow.
ADVICE FOR OTHER GROWERS

Double-check definitions when selecting and working with contractors: make sure that you are both on the same page. As an example, Howard says that one person’s understanding of a ‘smooth’ concrete surface may be different from another’s. Not realizing that he and his contractor were not using the same definition of ‘smooth’ meant that the new floor is not quite as smooth as Howard would have liked it, and it is hard to operate the pallet jack in some spots where there are raised bits that it gets stuck on.

Cheap does not necessarily mean a bargain: Trying to make do with what you have on hand can actually cost you time and money in terms of being inefficient in the long run. In Howard’s experience, sometimes paying more upfront will save you money over the long term – this can also be true of hiring a contractor with expertise for a special project vs. trying to do the work yourself.

A greenhouse can be a good packshed: While Howard liked the idea of re-purposing an existing building, he had this advice for growers who do not have barns: “If you don’t have a barn, put up a greenhouse- just make sure it has a really good base that is engineered for good drainage, then add insulated overhead doors. You’ll have a nice naturally lit and easy-to-clean large space.”

Build bigger than you think you will need: “Small growers often become bigger growers – always anticipate growth in your plans. Build everything so that you can expand and build bigger than you think you will need!”

Make your tables, shelves, equipment portable whenever possible

You can never have enough outlets! High Meadows added a number of new outlets when they re-wired the electrical system – this means that there is always an outlet within easy access for any task.

COSTS OF COMPONENTS

<table>
<thead>
<tr>
<th>COSTS OF COMPONENTS</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Removing stanchions and gutter</td>
<td>$29/hr. (x 195 hrs)</td>
</tr>
<tr>
<td>Pouring concrete floor</td>
<td>$7,557 for 55-sq yards concrete</td>
</tr>
<tr>
<td>Foil-lined foam board</td>
<td>$1,834 for 75 4’x8’x1.5” sheets, $900 (farmer labor)</td>
</tr>
<tr>
<td>Solarium</td>
<td>$3,500 (labor and lumber for removing walls and ceiling and replacing with polycarbonate)</td>
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<tr>
<td>Double layer polycarbonate/sheet</td>
<td>$1,300</td>
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<tr>
<td>Insulated overhead door</td>
<td>$1,586 (Champion Overhead Door Co)</td>
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<tr>
<td>Lighting fixtures</td>
<td>$200</td>
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<tr>
<td>Wiring</td>
<td>$600</td>
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<tr>
<td>Outlet box</td>
<td>$150</td>
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<tr>
<td>White wash on remaining walls and ceiling</td>
<td>$600</td>
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<tr>
<td>Modine propane heater</td>
<td>$900 new, plus $730 installation</td>
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<tr>
<td>Other labor and materials</td>
<td>$13,713</td>
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