okay we're out here today we're going to talk to Larry Mayer about uh one of the energy efficient buildings that he's working on putting together and he's going to talk about some of the things that go into uh making this such an efficient building and what's going to make it more comfortable and cost effective for the homeowners as it goes into it Lar can you point out a few things that uh are going into this building site here okay Carl uh what we're trying to do here is that uh we're trying to keep our building load down and a big key element of that is reducing our moisture infiltration into the building so what you're seeing here is we have exterior foam behind this 6 mil three ply Vapor Barrier and that Vapor Barrier goes down to the pad and and out four feet from around the building so that we shed the water away from the building and the typical absorption of moisture into the foundation wall that a lot of times moves into the building is kept away so we've done that all the way around the building here uh and then at the top of the foundation wall you can see that

that this has all been primed because
moisture will move up from the ground
and move up through the seal plate and
will uh come into the house so we primed
the outside and this priming surface not
only is a perm one perm less Vapor
Barrier but it also is an adheres
barrier so that we can actually glue our
foam right to it so it gives it serves
two purposes and then here um this
structure out here is a three- season
porch and it's unheated so we have a
thermal brake 2 in of of uh high density
foam that is a thermal brake so we're
not transferring energy from inside the
house to an unheated space common air
that we see in a lot of structures that
they don't put thermal Brakes in the
next thing that we've did on this
structure is you'll see that there's
tape here this is beine tape that's
actually adhered to the foundation wall
on this primer that and the second half
of this tape will go up against the OSB
on the house structure and act as a rim
joist air barrier and a vapor barrier
and so that that runs all the way around
yeah I notice you know you've got your
high density foam here but the uh the

majority of the foam that using
underneath the slab and along the
outside Foundation walls it's not
necessarily high density you can use
right uh typically this is uh 15 to 20
psi uh rated foam this foam here is
rated at 15 psi but it's not uh extruded
polystyrene it's expanded polystyrene or
beadboard we like using beadboard
because it's a flexible foam it doesn't
break up under walking and traffic under
back filling issues and so it keeps its
integrity and gives us a good tight
moisture and thermal seal so that's
largely why we we use this around it's
also much more cost effective generally
less than half the cost of extruded
polystyrene foam I know some folks are
uncomfortable with it cuz the the
moisture issues are concerned with that
absorbing moisture as opposed to the uh
the extruded that that would be an issue
if you didn't have a water management
system but we have a water management
system here with this three fly poly
that we put on on here there are a lot
of typical one ply Poes that you can buy
out there but they're not as durable
they tend to uh crack and break up but

if you go Bend 20 bucks more a roll you get a lot more durable surface and all your joints taped and overlapped yeah everything's overlapped uh 6 in to a foot with with a good durable industrial tape uh not just uh hoping that uh tyx tape works in every situation get the tape that fits to the vapor barrier and what do we have underneath the ground here we can't see as far as the insulation well what we can't see is this structure is built close to the river and so there's a concern about Overland flooding so this structure was built up high so our actual pad is only 2 feet below the level of the ground so typically we'd have a huge concern for Frost and so what we've done here is is following the uh uh shallow Foundation Frost protected system developed in Europe by the swedes and the Norwegians and then studied by the University of Minnesota they put out a engineering bulletin in 2005 saying that in our climate zone we need to have 4T of exterior foam apron around this structure uh and 2 ft down minimum r10 if we do that the frost will not come in underneath that foam will not have

heaving so it it it provides us a watershed keeps the dirt ground underneath there dry so we have less moisture absorption into the structure and it also saves US Energy so it has three three good benefits over here uh in order to manage thermal loss in the garage knowing that our garage door comes down on the inside of our exterior wall uh we've put ourselves a thermal breake at that inside point in order to support the interior slab we've dry stacked concrete blocks up off the pad and then they just come up and then uh when the garage slab gets poured it will float and ride on this dry stack footing wall here and then the rest of the foundation and then this foam will be set down about an inch and a half from the top of the concrete and then we will have a treated lumber on top of that and then we'll have half inch nylon sheet on top of that and then that whole uh wood structure in the concrete pouring phase is wrapped in poly so that we can pop that board out or replace it if we have to uh the board gives us a structural material uh so that we can attach the uh nylon sheet to that we have a durable

surface and then we can trim that off with uh some industrial uh clocks and sealants uh but it gives us a nice durable thermal brake and then the outside driveway apron will actually sit on the foundation wall so rather than having that driveway apron settle on you we're not going to have that problem also so so that's one of the unique things we've done here in the garage area just a little bit of planning ahead we probably have less than $100 into this thermal brake in materials and just planning ahead