

ZE1 R&D TEST CENTER - SUSTAINABLE HOUSE

(NET ZERO, COLD CLIMATE, & NO CH4)

PROTOTYPE RESEARCH FACILITY- 2,000 SF PLAN AND COLLECTOR PLUS INTERIOR CORE TO MEASURE DEVELOPMENT.

ONE OF THE MAIN LIVING SPACES IN THE HOUSE CAN BE CONVERTED INTO THE CENTRAL ZE1 RESEARCH LABORATORY.

LAST 10-METER INITIATIVE NEXT GENERATION IOT AND LED LIGHTING LAB

°GOAL: DEVELOP A LOW-COST AND RELIABLE STANDARD FOR ATTACHING DOORS, WINDOWS, AND WALLS TO A COMPUTER NETWORK.



A HOUSE HAS A COMPOSTING SANITARY AREA. AN AREA OF 10' X 20' FOR LEACH FIELD IS PROVIDED. GRAY WATER GOES THROUGH SAND AND CHARCOAL FILTERS AND FEEDS THE GARDEN.

SOLAR THERMAL ENERGY STORAGE LAB

°GOAL: DEVELOP A LOW STANDARD FOR STORING HEAT AND COLD IN A LARGE WATER TANK.

RADIANT BLOCK

°GOAL: PLACE A 2X3X3 METER BLOCK OF CEMENT IN THE BASEMENT AND RUN HOT WATER THROUGH IT. THE WATER CAN THEN BE DIRECTED TO RADIATORS IN DIFFERENT ROOMS TO SPREAD THE HEAT ALL OVER THE HOUSE.

SOLAR NEXT GENERATION FARM LAB

°GOAL: DEVELOP A LOW-COST PLUG & PLAY STANDARD FOR SOLAR ON LAND



AERIAL SIDE VIEW OVER SERVICE COURT

SOLAR DIRECT-TO-SURFACE LAB

°GOAL: DEVELOP A LOW-COST STANDARD FOR MOUNTING SOLAR DIRECTLY TO PLYWOOD ROOF AND WALL.



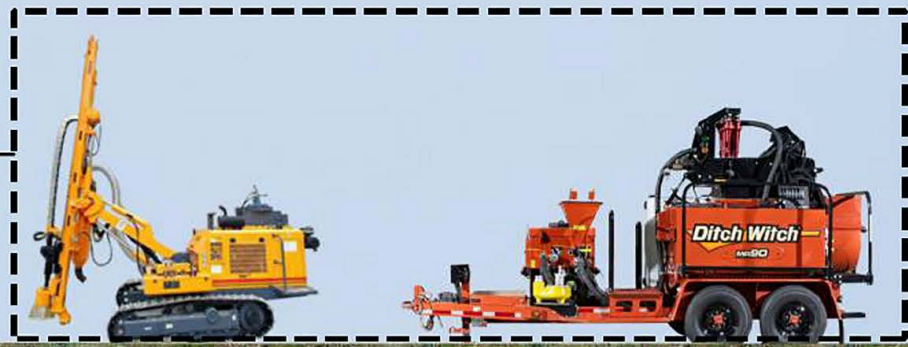
WINDOW THERMAL COVER LAB

°GOAL: DEVELOP A LOW- COST STANDARD FOR COVERING WINDOWS WITH 2" THICK (R13) MOTORIZED INSULATORS WHEN WINDOWS ARE NOT IN USE.

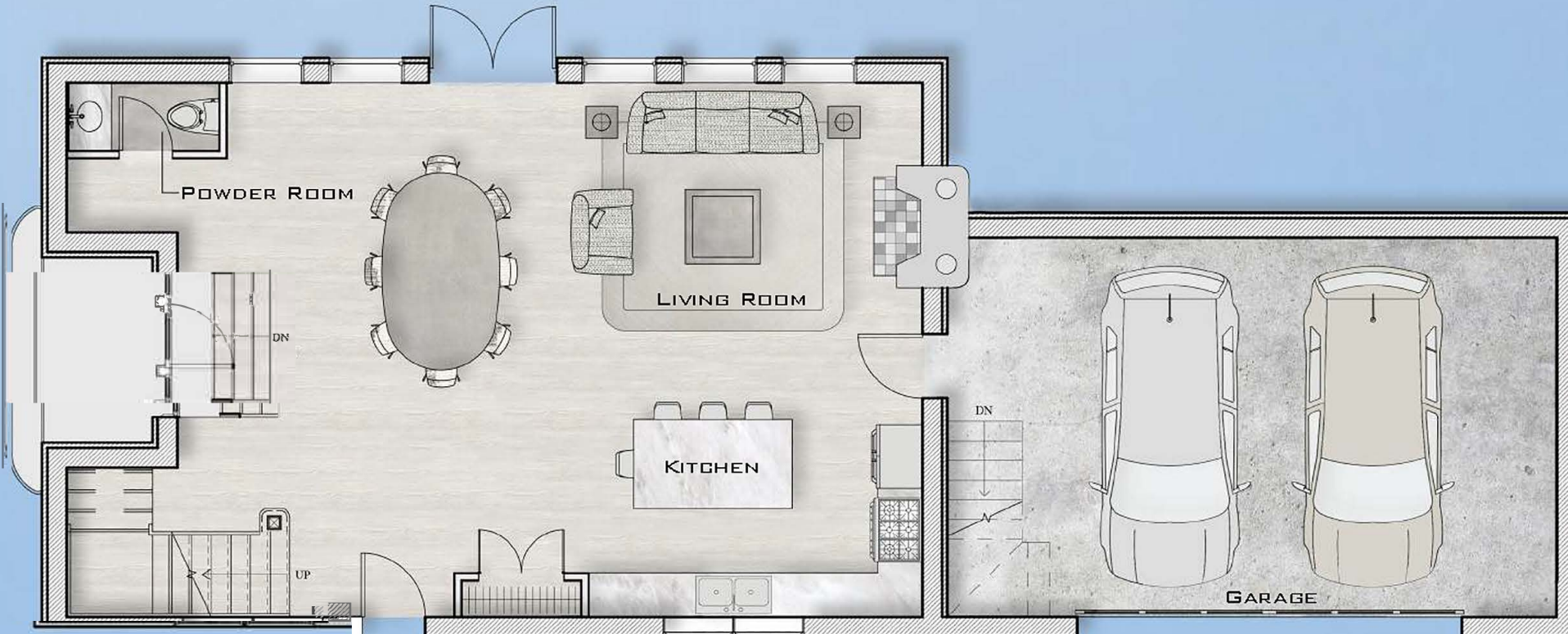
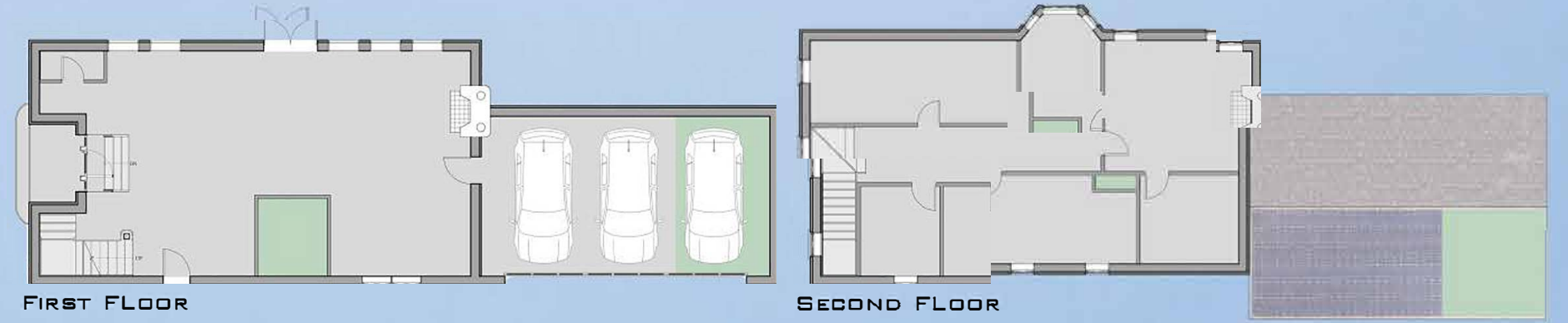


AUTOMATED DRILLING LAB

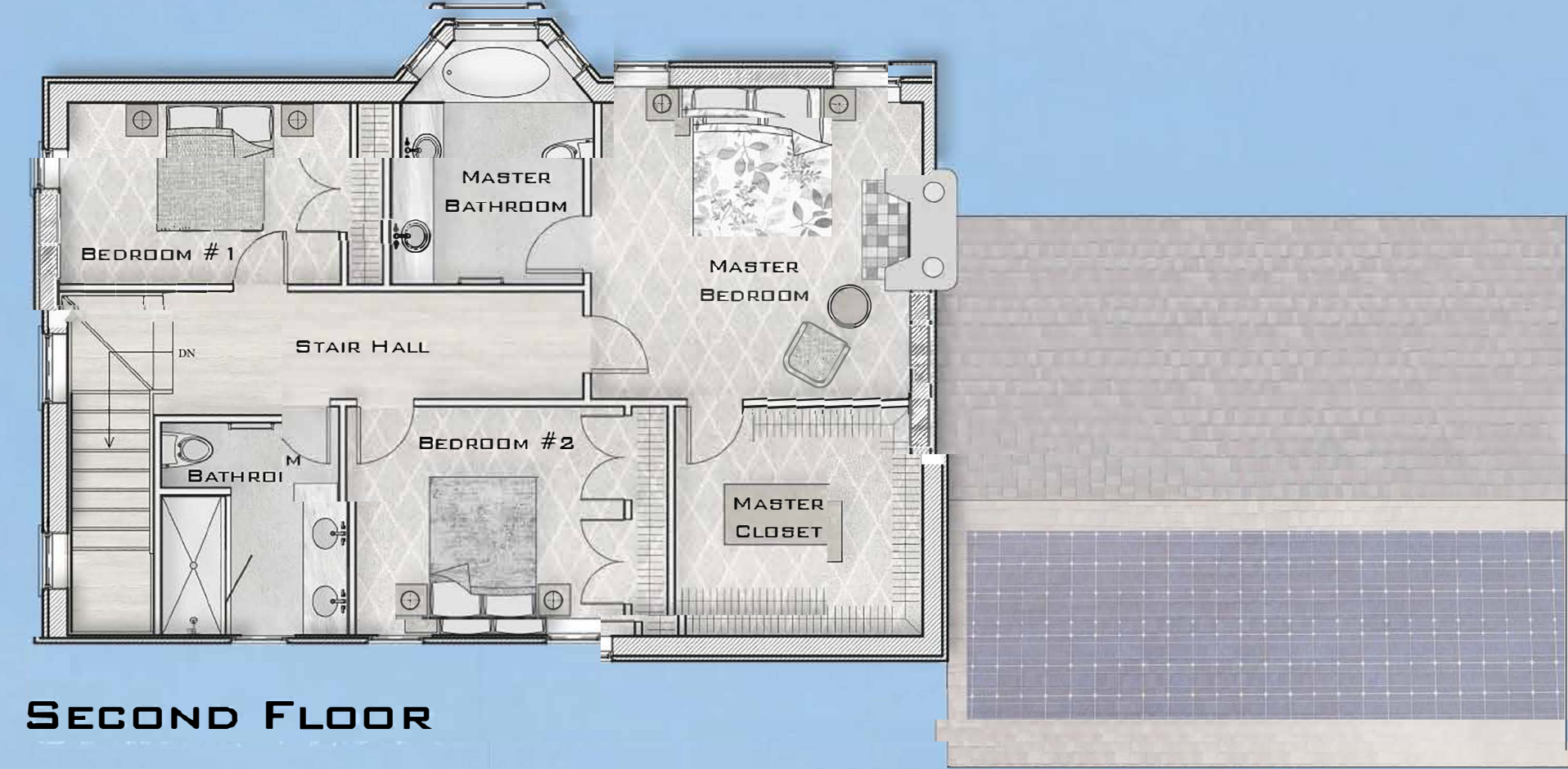
°GOAL: DEVELOP A LOW-COST TECHNIQUE FOR DRILLING A HEAT PUMP GROUND SOURCE.



°IN ORDER TO SUPPLY AND SUPPORT THE RESEARCH GOALS OF THE CENTER, RESEARCH SPACE CAN BE ADDED ON THE FIRST FLOOR. UTILITY SHAFTS WILL EXTEND TO THE SECOND FLOOR. IN ADDITION, THE GARAGE CAN BE EXTENDED TO INCLUDE A WIDER ARRAY OF SOLAR PANELS.



FIRST FLOOR



SECOND FLOOR



2,000 SF. THREE BEDROOM HOME WITH 2000SF. COLLECTOR ROOF FACING STREET. STREET FACADE CAN BE CHARMING AND DISARMING NOT SOMETHING INAPPROPRIATE: JUST HAPPENS TO BE A SELF-SUFFICIENT HOME. ZERO ENERGY HOUSE SHOULD EASILY FIT ANY NEIGHBORHOOD WITHOUT DISTURBING LOCAL CHARACTER.