Architecture 4.411
Building Technology Laboratory
Spring 2004

Assignment 1   Thermal Dynamics and Solar Energy
Lab report checklist

<u>Introduction</u>   _____   1
Several paragraphs that motivate the report and describe its contents

<u>Mr. Potato Head</u>

Data - temperature plotted against time   _____   1

Time constant – three methods of using data   _____   1

Time constant – estimate based on physical properties   _____   1

<u>Elf House</u>

Design and construction   _____   2
drawing or photo, choice of materials, dimensions, design criteria

Indoor temperature prediction, for first test period   _____   2
with description of model

Data - inside and outside temperatures plotted against time, for   _____   2
two test periods

Analysis of two sets of data - average temperature difference,   _____   3
measure of variation, improvements, use of simulation to
justify improvements

Simulation to determine impact of solar energy absorbed on walls   _____   1

Design of full-size dwelling, using Solar Calculator 2   _____   2

Matlab simulations   _____   2

<u>Conclusions</u>   _____   2
What's been learned, how to do better with the elf house

                                                                          20 points maximum