

CHAPTER V

CONCLUSION AND SUGGESSTION

Summary of the Study

The computer program shows the result from steps of calculation in the process of OTTV and RTTV after completed input of the required parameters. The program will calculate based on the data from the energy conservation promotion act. This program is very convenient and easy for using. The user can select the direction of wall, which has 8 directions. There are 12 types of opaque wall and 2 types of transparent wall, which can be selected from the list of materials. In part of roof, there are 12 types of the materials of roof to select for calculating roof thermal transfer value. Besides this program can support the value of other materials that does not provided in the program.

The computer program will display the value of OTTV and RTTV in the red font when there are more than the standard values stipulated by law of Thailand. The current OTTV limit is less than 45 W/m^2 for new building and less than 55 W/m^2 for old building. So the program can change the result of OTTV to be consistent with the standard by installing insulation for wall and changing glass type of window. The program will show the suitable insulation for the room. Otherwise, the program can analyze the investment cost, payback period and sizing of air-conditioner for the designed room. This program will display the results following the steps of calculation that is easy to remember and understand.

After completed the input data, the program will calculate and display the values of OTTV in each direction. Comparing the results from the program and the house model found that there is a little difference. From Table 23, it was found that when the front of the house is in the east direction, the accumulate heat in the

considered room is the highest because of all sides of the room absorb direct radiation all-time. According to the sun path in Thailand, there are 9 months that the route of the sun will move through the south. In this case, you may have to modify the materials and install insulation in the south and the west direction to reduce the OTTV and heat gains. On the other hand, you should design the front of the house in other directions. The recommend directions for the front of the house are the southwest, the west and the northwest. Besides, the heat will be reduced if the ratio of the area of the opaque wall to the transparent wall is reduced because the effect of heat gains through the transparent wall is more than the opaque wall.

Suggestion for Further Study

The numbers of suggestion for further study are as the following:

- 1 There are many factors that influence to save energy in a house such as using the advantages of large-tree shading and ground-covering plants to reduce the heat from radiation.
- 2 The effect of wind and humidity should be concerned to complete the program.