

EnerPHit planning:

REDUCTION FACTOR SOLAR RADIATION, WINDOW U-VALUE

Building:Primary School 8 "Sveti Sveti Kiril I Metodi" - Section C

Annual heating demand:228kWh/(m²a)

Heating degree hours:

Climate:

User data - Велико Търнов

| Window area orientation | Global radiation (cardinal points) | Shading | Dirt | Non-perpendicular incident radiation | Glazing fraction | g-Value | Solar radiation reduction factor | Window area | Window U-Value | Glazing area | Average global radiation |
|---|------------------------------------|---------|------|--------------------------------------|------------------|---------|----------------------------------|-------------|----------------|--------------|--------------------------|
| maximum: | kWh/(m²a) | 0,75 | 0,95 | 0,85 | | | | m² | W/(m²K) | m² | kWh/(m²a) |
| North | 127 | 1,00 | 0,95 | 0,85 | 0,000 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 127 |
| East | 251 | 0,78 | 0,95 | 0,85 | 0,507 | 0,77 | 0,32 | 101,98 | 2,74 | 51,73 | 251 |
| South | 444 | 0,13 | 0,95 | 0,85 | 0,532 | 0,77 | 0,06 | 22,14 | 2,83 | 11,78 | 444 |
| West | 253 | 0,51 | 0,95 | 0,85 | 0,512 | 0,77 | 0,21 | 103,69 | 2,74 | 53,08 | 281 |
| Horizontal | 417 | 1,00 | 0,95 | 0,85 | 0,000 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 417 |
| Total or Average Value for All Windows. | | | | | | 0,77 | 0,24 | 227,81 | 2,75 | 116,59 | |

| Transmission losses | Heat gains solar radiation |
|---------------------|----------------------------|
| kWh/a | kWh/a |
| 0 | 0 |
| 18857 | 6254 |
| 4216 | 430 |
| 19122 | 4723 |
| 0 | 0 |
| 42195 | 11407 |

Go to glazing listGo to window frames list

| Quant ity | Description | Deviation from North | Angle of inclination from the horizontal | Orientation | Window rough openings | | installed in | Glazing | Frame | g-Value | U-Value | | Ψ Glazing edge | Installation situation | | | | | Results | | | | | |
|--------------|-----------------|-------------------------|--|-------------|--------------------------|--------|-------------------------------------|--|--|---------------------------------|---------|--------------------|---------------------------------|---|-------|--------|-------|---|----------------|--------------|-------------------|----------------------------------|------------------------------|-------------|
| | | | | | Width | Height | Selection from worksheet 'Areas' | Selection from worksheet 'Components' | Selection from worksheet 'Components' | Perpen- dicular Radiation | Glazing | Frames (centre) | Ψ _{spacer} (centre) | user-defined value for Ψ _{installed} OR '1': Ψ _{installed} from worksheet 'Components' '0': in the case of abutting windows | | | | U- and Ψ-values from 'Components' worksheet can be shown through clicking the '+' sign on the top edge of the sheet. | | | | | | |
| | | Degrees | Degrees | | m | m | Sort: AS LIST | Sort: AS LIST | | - | W/(m²K) | W/(m²K) | W/(mK) | left | right | bottom | above | Ψ _{installation} (Average) | Window Area | Glazing Area | U-Value Window | Glazed fraction per window | Trans- mission- losses | Solar gains |
| | | | | | | | | | | | W/(m²K) | W/(m²K) | W/(mK) | W/(mK) or 1/0 | | | | W/(mK) | m² | m² | W/(m²K) | % | kWh/a | kWh/a |
| 20 | Gym Type 1 | 260 | 90 | West | 0,600 | 1,350 | 17-Gym cocle west | 94ud Double glazing 4/16mm air4 | 03ud Aluminium window frame, thermally | 0,77 | 2,70 | 2,40 | 0,040 | 1 | 1 | 1 | 1 | 0,040 | 16,2 | 6,85 | 2,86 | 42% | 3118 | 538 |
| 22 | Gym Type 1 | 90 | 90 | East | 0,600 | 1,350 | 19-Gym cocle east | 94ud Double glazing 4/16mm air4 | 03ud Aluminium window frame, thermally | 0,77 | 2,70 | 2,40 | 0,040 | 1 | 1 | 1 | 1 | 0,040 | 17,8 | 7,53 | 2,86 | 42% | 3429 | 845 |
| 2 | Gym Type 2 | 260 | 90 | West | 0,600 | 1,300 | 17-Gym cocle west | 94ud Double glazing 4/16mm air4 | 03ud Aluminium window frame, thermally | 0,77 | 2,70 | 2,40 | 0,040 | 1 | 1 | 1 | 1 | 0,040 | 1,6 | 0,65 | 2,86 | 42% | 300 | 78 |
| 6 | Gym Type 3 | 180 | 90 | South | 0,600 | 0,900 | 20-Gym cocle south | 94ud Double glazing 4/16mm air4 | 03ud Aluminium window frame, thermally | 0,77 | 2,70 | 2,40 | 0,040 | 1 | 1 | 1 | 1 | 0,040 | 3,2 | 1,19 | 2,87 | 37% | 627 | 32 |
| 3 | Gym Type 4 | 260 | 90 | West | 0,900 | 1,500 | 1-Gym west | 94ud Double glazing 4/16mm air4 | 03ud Aluminium window frame, thermally | 0,77 | 2,70 | 2,40 | 0,040 | 1 | 1 | 1 | 1 | 0,040 | 4,1 | 2,27 | 2,82 | 56% | 769 | 298 |
| 4 | Gym Type 4 | 90 | 90 | East | 0,900 | 1,500 | 3-Gym east | 94ud Double glazing 4/16mm air4 | 03ud Aluminium window frame, thermally | 0,77 | 2,70 | 2,40 | 0,040 | 1 | 1 | 1 | 1 | 0,040 | 5,4 | 3,03 | 2,82 | 56% | 1026 | 372 |
| 6 | Gym Type 4 | 180 | 90 | South | 0,900 | 1,500 | 4-Gym south | 94ud Double glazing 4/16mm air4 | 03ud Aluminium window frame, thermally | 0,77 | 2,70 | 2,40 | 0,040 | 1 | 1 | 1 | 1 | 0,040 | 8,1 | 4,54 | 2,82 | 56% | 1538 | 185 |
| 10 | Gym Type 5 west | 260 | 90 | West | 1,600 | 0,600 | 1-Gym west | 94ud Double glazing 4/16mm air4 | 03ud Aluminium window frame, thermally | 0,77 | 2,70 | 2,40 | 0,040 | 1 | 1 | 0 | 1 | 0,040 | 9,6 | 4,22 | 2,79 | 44% | 1801 | 379 |
| 10 | Gym Type 5 west | 260 | 90 | West | 0,800 | 1,400 | 1-Gym west | 94ud Double glazing 4/16mm air4 | 03ud Aluminium window frame, thermally | 0,77 | 2,70 | 2,40 | 0,040 | 1 | 0 | 1 | 0 | 0,040 | 11,2 | 5,82 | 2,75 | 52% | 2076 | 514 |
| 10 | Gym Type 5 west | 260 | 90 | West | 0,800 | 1,400 | 1-Gym west | 94ud Double glazing 4/16mm air4 | 03ud Aluminium window frame, thermally | 0,77 | 2,70 | 2,40 | 0,040 | 0 | 1 | 1 | 0 | 0,040 | 11,2 | 5,82 | 2,75 | 52% | 2076 | 514 |
| 10 | Gym Type 5 east | 90 | 90 | East | 1,600 | 0,600 | 3-Gym east | 94ud Double glazing 4/16mm air4 | 03ud Aluminium window frame, thermally | 0,77 | 2,70 | 2,40 | 0,040 | 1 | 1 | 0 | 1 | 0,040 | 9,6 | 4,22 | 2,79 | 44% | 1801 | 515 |
| 10 | Gym Type 5 east | 90 | 90 | East | 0,800 | 1,400 | 3-Gym east | 94ud Double glazing 4/16mm air4 | 03ud Aluminium window frame, thermally | 0,77 | 2,70 | 2,40 | 0,040 | 1 | 0 | 1 | 0 | 0,040 | 11,2 | 5,82 | 2,75 | 52% | 2076 | 698 |
| 10 | Gym Type 5 east | 90 | 90 | East | 0,800 | 1,400 | 3-Gym east | 94ud Double glazing 4/16mm air4 | 03ud Aluminium window frame, thermally | 0,77 | 2,70 | 2,40 | 0,040 | 0 | 1 | 1 | 0 | 0,040 | 11,2 | 5,82 | 2,75 | 52% | 2076 | 698 |
| 4 | Type 6 west | 260 | 90 | West | 0,900 | 1,500 | 21-Corridor cocle west | 94ud Double glazing 4/16mm air4 | 01ud Plastic window frame good | 0,77 | 2,70 | 1,60 | 0,040 | 1 | 1 | 1 | 1 | 0,040 | 5,4 | 3,03 | 2,47 | 56% | 898 | 241 |
| 4 | Type 6 east | 90 | 90 | East | 0,900 | 1,500 | 22-Corridor cocle east | 94ud Double glazing 4/16mm air4 | 01ud Plastic window frame good | 0,77 | 2,70 | 1,60 | 0,040 | 1 | 1 | 1 | 1 | 0,040 | 5,4 | 3,03 | 2,47 | 56% | 898 | 372 |
| 4 | Type 7 west | 260 | 90 | West | 1,200 | 2,600 | 5-Corridor west | 94ud Double glazing 4/16mm air4 | 01ud Plastic window frame good | 0,77 | 2,70 | 1,60 | 0,040 | 1 | 1 | 1 | 1 | 0,040 | 12,5 | 8,54 | 2,53 | 68% | 2130 | 695 |
| 3 | Type 7 east | 90 | 90 | East | 1,200 | 2,600 | 6-Corridor east | 94ud Double glazing 4/16mm air4 | 01ud Plastic window frame good | 0,77 | 2,70 | 1,60 | 0,040 | 1 | 1 | 1 | 1 | 0,040 | 9,4 | 6,40 | 2,53 | 68% | 1597 | 843 |
| 10 | Gym Type 5 west | 260 | 90 | West | 1,600 | 0,600 | 1-Gym west | 94ud Double glazing 4/16mm air4 | 03ud Aluminium window frame, thermally | 0,77 | 2,70 | 2,40 | 0,040 | 1 | 1 | 0 | 1 | 0,040 | 9,6 | 4,22 | 2,79 | 44% | 1801 | 395 |
| 10 | Gym Type 5 west | 260 | 90 | West | 0,800 | 1,400 | 1-Gym west | 94ud Double glazing 4/16mm air4 | 03ud Aluminium window frame, thermally | 0,77 | 2,70 | 2,40 | 0,040 | 1 | 0 | 1 | 0 | 0,040 | 11,2 | 5,82 | 2,75 | 52% | 2076 | 536 |
| 10 | Gym Type 5 west | 260 | 90 | West | 0,800 | 1,400 | 1-Gym west | 94ud Double glazing 4/16mm air4 | 03ud Aluminium window frame, thermally | 0,77 | 2,70 | 2,40 | 0,040 | 0 | 1 | 1 | 0 | 0,040 | 11,2 | 5,82 | 2,75 | 52% | 2076 | 536 |
| 10 | Gym Type 5 east | 90 | 90 | East | 1,600 | 0,600 | 3-Gym east | 94ud Double glazing 4/16mm air4 | 03ud Aluminium window frame, thermally | 0,77 | 2,70 | 2,40 | 0,040 | 1 | 1 | 0 | 1 | 0,040 | 9,6 | 4,22 | 2,79 | 44% | 1801 | 515 |
| 10 | Gym Type 5 east | 90 | 90 | East | 0,800 | 1,400 | 3-Gym east | 94ud Double glazing 4/16mm air4 | 03ud Aluminium window frame, thermally | 0,77 | 2,70 | 2,40 | 0,040 | 0 | 0 | 1 | 0 | 0,040 | 11,2 | 5,82 | 2,75 | 52% | 2076 | 698 |
| 10 | Gym Type 5 east | 90 | 90 | East | 0,800 | 1,400 | 3-Gym east | 94ud Double glazing 4/16mm air4 | 03ud Aluminium window frame, thermally | 0,77 | 2,70 | 2,40 | 0,040 | 0 | 1 | 1 | 0 | 0,040 | 11,2 | 5,82 | 2,75 | 52% | 2076 | 698 |
| 8 | Gym Type 4 | 180 | 90 | South | 0,900 | 1,500 | 4-Gym south | 94ud Double glazing 4/16mm air4 | 03ud Aluminium window frame, thermally | 0,77 | 2,70 | 2,40 | 0,040 | 1 | 1 | 1 | 1 | 0,040 | 10,8 | 6,05 | 2,82 | 56% | 2051 | 213 |