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Abstract:

The analysis of the developed project documentation on thermomodernization of secondary schools and preschool institutions of Vinnitsa is carried out. The results of the analysis of design solutions for thermal drainage on the example of preschool educational institution No. 75 are presented in the materials of theses, and characteristics of architectural and structural solutions of building engineering networks, as well as analysis of engineering activities that do not affect directly on energy efficiency.

Keywords:

Energy, cost, energy saving, municipal institutions, modernization, DBN, thermo-modernization, heat losses.

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70

, 80

, 6,5

50

8

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[1-3].

50-60%

[4-6]:

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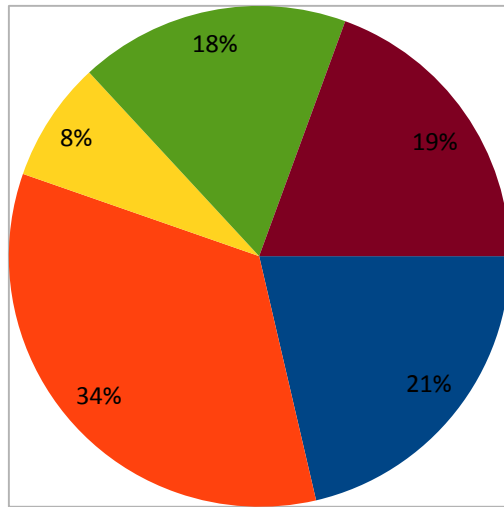
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[7-9].

.600- : ,62 . .(75 -17'575'772.00 .)



. 1 - (%), : - 2522 ²);
 34% (295 ²);
 21% (2110 ²);
 18% (8%);
 20% (108 ²).

, ²	2397,3
2-	-
	F
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2017 .
 - F, - .

- 1.
- 2.
- 3.

3,87 6,01 ^{2*} / , -3,3 ^{2*} / [9-11].

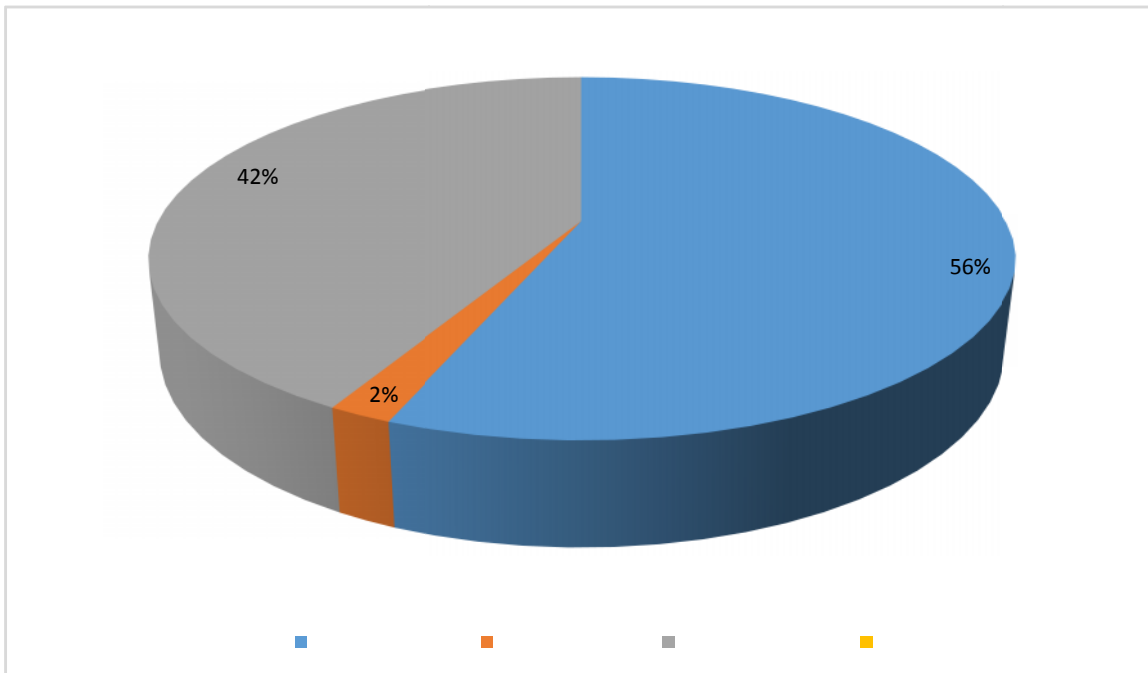
1-1,2 ^{2*} / .

(-18 310 355 .) :
 9%, 28%, 8%, 14%, 2%, 23%, 6%

	*	-
) (, ,	-	25-45%
		25-47%
		10-25%

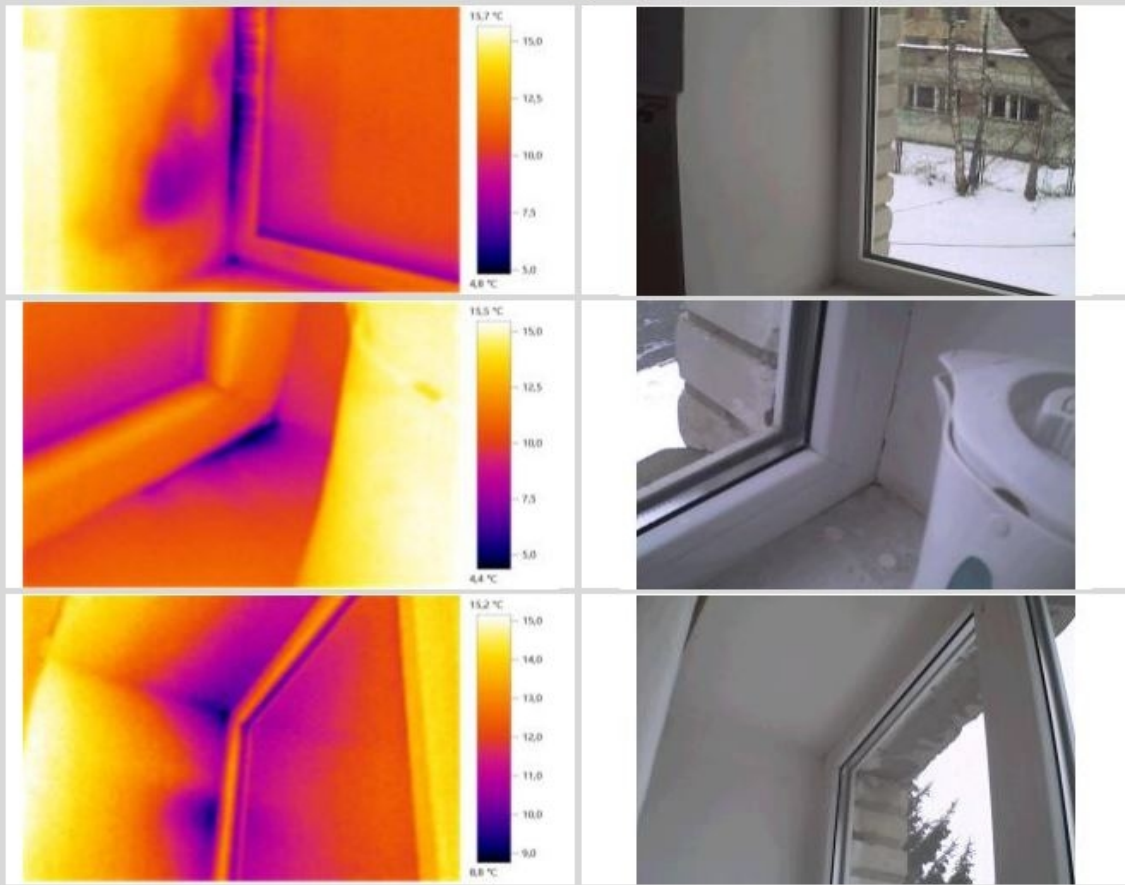
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(%)

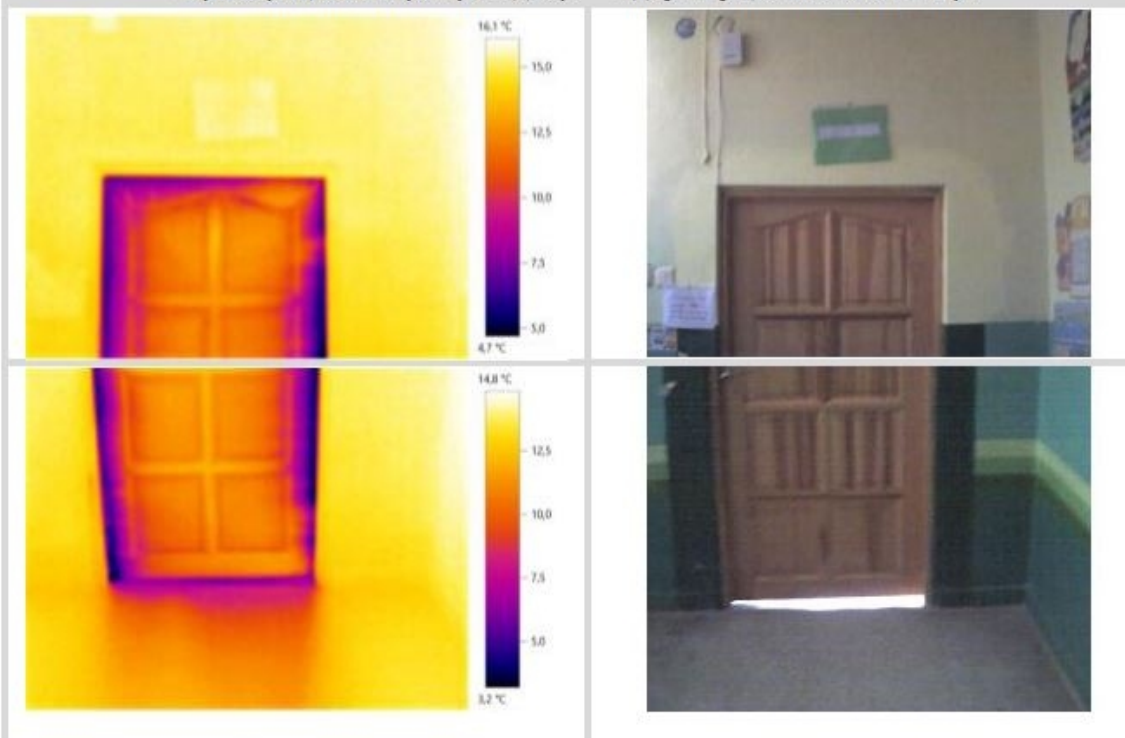


Тепловізійна зйомка

Проникнення зовнішнього повітря крізь щілини у відкосах вікон через зруйновану монтажу піну



Інфільтрація повітря крізь двері – відсутні ущільнювачі та поріг





58,2 68,9%;
125 690

2019

75

1. <http://old.niss.gov.ua/Monitor/March2010/19.htm>.

2. .2.6-31:2016. «

3. . 2007. 12. . 2-4.

4. - B.3.2-3:2014 "

5. .2.6-33:2018

, 2018. – 19 .

6.

] / . . , . . // XLVI -

, , 22-24 2017 . - . - 2017. -

<https://conferences.vntu.edu.ua/index.php/all-fbtegp/all-fbtegp-2017/paper/view/3019>.

7. https://radnuk.com.ua/publications/articles/articles-1_11042.html.

8. : 3- , ./ , -
. - , 2016.

9. : -
/ . . - : , 2010.-128 .

10. // . - 2013. -

2. - . 116-118. <http://stmkvb.vntu.edu.ua/index.php/stmkvb/article/viewFile/315/313>

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