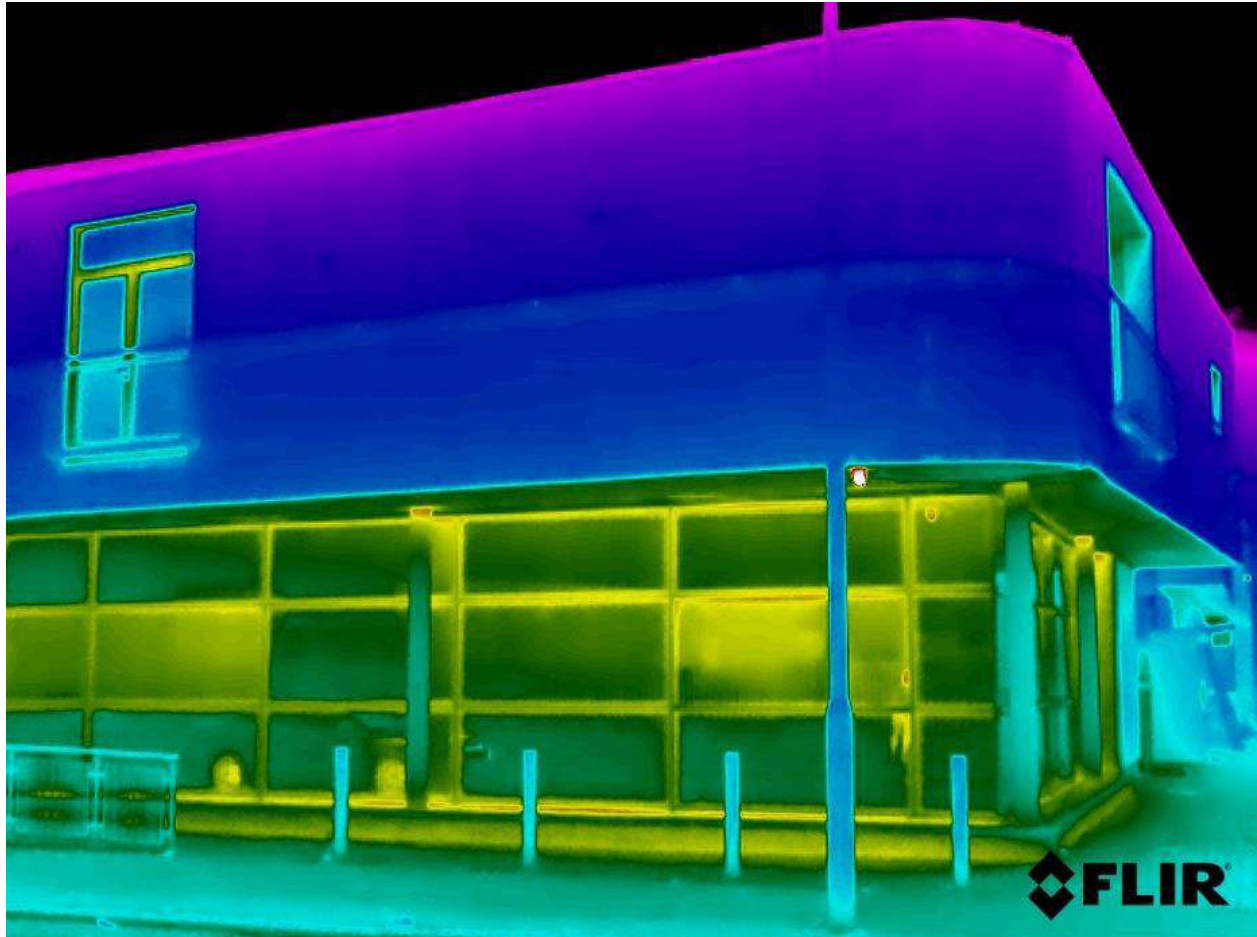


Build IR



Thermal Imaging



Project: Moss-side Millenium Powerhouse, Manchester

For: Moss-side Millenium Powerhouse

Date: 23.09.2022

Build IR Ref No: 10156-1

Survey carried out by:

Richard Ewins (PCN Cat 3 - 323591)

Project Name: Moss-side Millenium
Powerhouse, Manchester

Project ref: 10156-1

Build IR
Thermal Imaging

Email: richard@build-ir.com

Telephone: 01709432060

Report Contents

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Project Name: Moss-side Millenium
Powerhouse, Manchester

Project ref: 10156-1

Build IR
Thermal Imaging

Email: richard@build-ir.com

Telephone: 01709432060

1.0 Summary

The summary provided is designed to give a general overview of the building components surveyed. For full details, see body of report.

The insulated render appeared to be performing well thermally around the entire building.

The flat roof areas appeared to be performing well thermally around the entire building.

The older glazing systems were noted to be performing poorly with excessive heat loss through frames. In various places, the frame junction with surrounding façade showed to be allowing air infiltration into the building.

No thermal separation was noted between Plant rooms and conditioned spaces.

Open louvres were noted to be allowing cold air into conditioned spaces significantly increasing the heating requirement:

- Sports hall storerooms.
- Staff kitchen and adjacent rooms.
- Zone 2 office (formerly Kitchen).

External doors showed to be poorly performing.

Glass block areas showed to be poorly performing.

Rooflight upstands showed to be performing poorly – due to lack of insulation or cold air moving between the plasterboard and insulation.

Air infiltration was noted behind plasterboard, bypassing the insulation line.

The Kalzip and cladded areas of roof (sports hall) showed significant air leakage at junctions.

The uninsulated internal gutters to the sports hall showed to be performing poorly as expected and showed to be leaking in places.

Zone 5 (area of previous rear door) – blocked up entrance appeared to potentially be single skin blockwork with no insulation and air infiltration behind the dry lining (thermal bypass). Window above this was single glazed so performing poorly.

Project Name: Moss-side Millenium Powerhouse, Manchester		
Project ref: 10156-1		Email: richard@build-ir.com
		Telephone: 01709432060

2.0 Introduction

2.1 Site Details

Site Address:

Moss-Side Millennium Powerhouse, 140 Raby Street, Manchester M14 4SL

Persons on site:

NAME	TITLE	COMPANY
Lisa Davenport	Head of Centre	Moss-Side Millennium Powerhouse
Michael	Caretaker	Moss-Side Millennium Powerhouse
Richard Ewins	Thermographer	Build IR Ltd

2.2 Intentions of survey

Build IR have been appointed to carry out a thermographic survey of the entire building, to investigate the thermal performance and identify areas of heat loss.

2.3 Thermographer details

Richard Ewins

- PCN Category 3 Civil Thermographer – the highest achievable qualification in the UK.
- iATS Level 2 Air Tightness Tester

10 years' experience of thermographic building surveys, air tightness testing and consultancy on domestic and commercial properties.

Project Name: Moss-side Millenium
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3.0 Thermography

3.1 What is Thermography?

Thermal imaging is a type of photography which visualises heat that is unseen by the human eye. By using high resolution thermal imaging equipment each image produced is made up of more than 600,000 temperature measurements allowing us to compare large areas and identify even the smallest difference in temperature to highlight possible defects.

3.2 Methodology

- 1) The weather conditions were monitored leading up to the survey to ensure that the environmental conditions would allow for an accurate survey.
- 2) Environment conditions were recorded at the start and end of the survey.
- 3) The survey was carried out in line with the requirements of the client.
- 4) Enough thermal information and supplementary data was gathered to evaluate the thermal performance of the building against the relevant standards. These standards include (where applicable):
 - a. British Standard 13187:1999 Thermal performance of buildings – qualitative detection of thermal irregularities in building envelopes – infrared method.
 - b. BRE 176 'A practical guide to infra-red thermography for building surveys'
 - c. BRE Report BR 497 'Conventions for calculating linear transmittance and temperature factors' and BRE IP/06 'Assessing the effects of thermal bridging at junctions and around openings'.
 - d. BSRIA Guide 39/2011 'Thermal Imaging of Building fabric'
- 5) Analysis:
 - a. Qualitative analysis (colour distribution) has been carried out with the images in the Rainbow HC palette.
 - b. The images have been thermally tuned and included in the report in the Rainbow HC palette to display the thermal information in a way that is interpretable to the "untrained" eye.

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POINTS TO NOTE:

- 1) Where possible the suspected cause of any anomalies has been included with the image. This should be treated with a degree of caution as it is based on temperature distribution, the recognition of colour patterns and the Thermographers previous experience. Many anomalies are caused by a combination of factors (i.e., insulation and air leakage). Intrusive investigation is recommended should a definitive cause be needed to allow for remedial works.
- 2) A minimum 10°C internal/external temperature differential is recommended for thermal surveys. If this condition is not achieved, some anomalies or their severity could have been “masked” at the time the survey was carried out.
- 3) A heating period of 72 hours is recommended. If this condition is not achieved some areas may appear to be colder, indicating potential anomalies, when this is not necessarily the case.

DISCLAIMER

1. Build IR Ltd worked in a professional manner whilst conducting the thermal survey.
2. Build IR Ltd cannot be held responsible if the building was not presented in a way to allow a compliant survey to be undertaken.
3. All analysis and recommendations are based on experience but should be considered advisory due to the survey being non-intrusive. Further intrusive investigation would be recommended to investigate / support the report findings.
4. Build IR Ltd cannot accept responsibility for buildings or components surveyed. Thermographic surveys capture the performance of the building at the specific time of the survey.

Project Name: Moss-side Millenium Powerhouse, Manchester	 The logo for Build IR Thermal Imaging. It features the text 'Build IR' in a large, bold, sans-serif font. 'Build' is black and 'IR' is red. Below this, the words 'Thermal Imaging' are written in a smaller, black, sans-serif font. A horizontal rainbow-colored bar is positioned between 'Build IR' and 'Thermal Imaging'.	
Project ref: 10156-1		Email: richard@build-ir.com
		Telephone: 01709432060

4.0 Survey Details

Survey time:	Start: 06.00	End: 08.40
Sunrise:	06.54	

Thermal Camera	Model	Serial Number	Calibrated until date
	Flir E86	78518540	8 th October 2022

Internal temperature	
Maximum:	28.3°C
Minimum:	25.4°C
External Temperature	
Start:	10.7°C
End:	10.5°C

Weather	
General conditions:	Dry, Mainly overcast, Slight mist
Cloudy cover:	Mainly overcast
Precipitation:	None
Wind speed:	-----
Wind Direction:	-----

Project Name: Moss-side Millenium
Powerhouse, Manchester

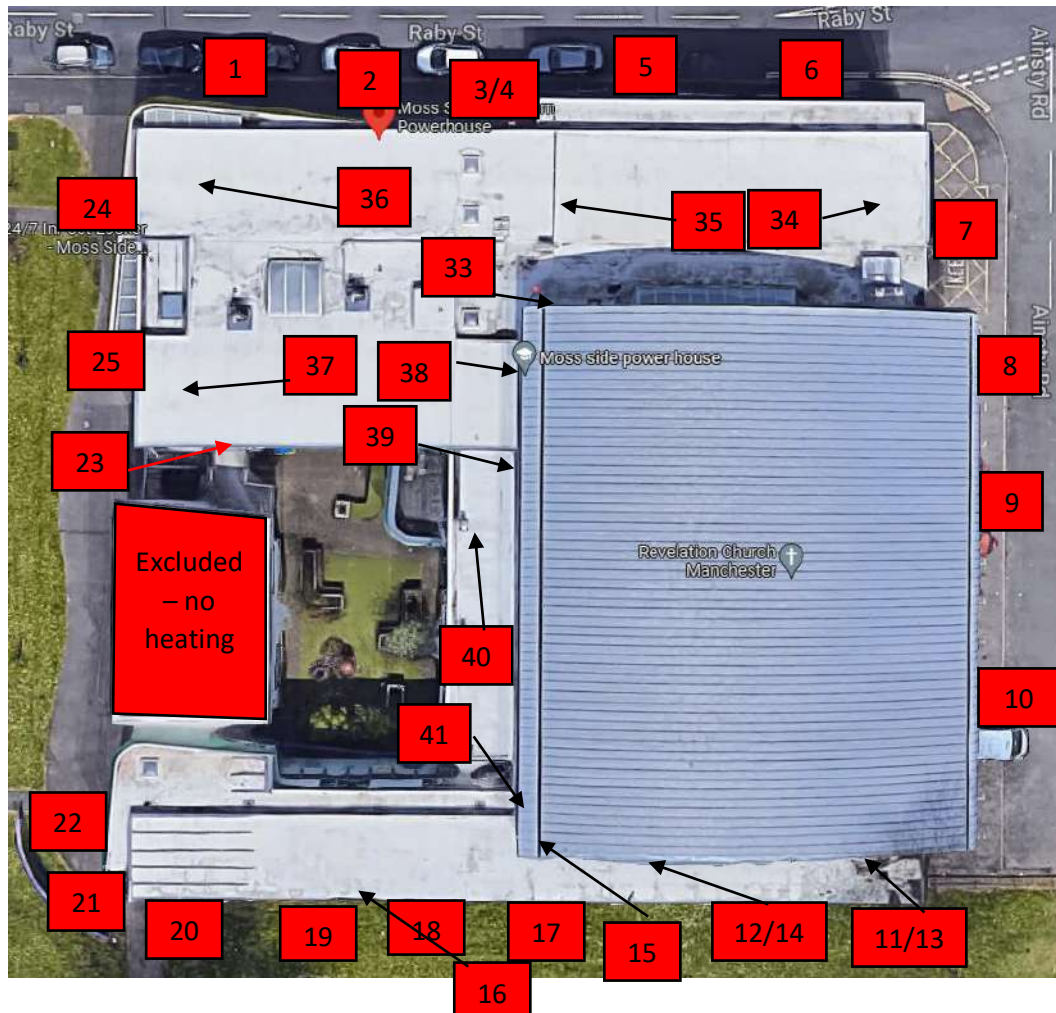
Project ref: 10156-1

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Email: richard@build-ir.com

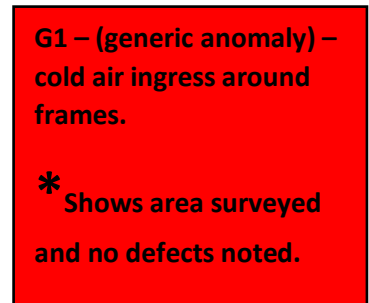
Telephone: 01709432060

5.0 Marked up plans



ROOF & EXTERNAL ELEVATIONS

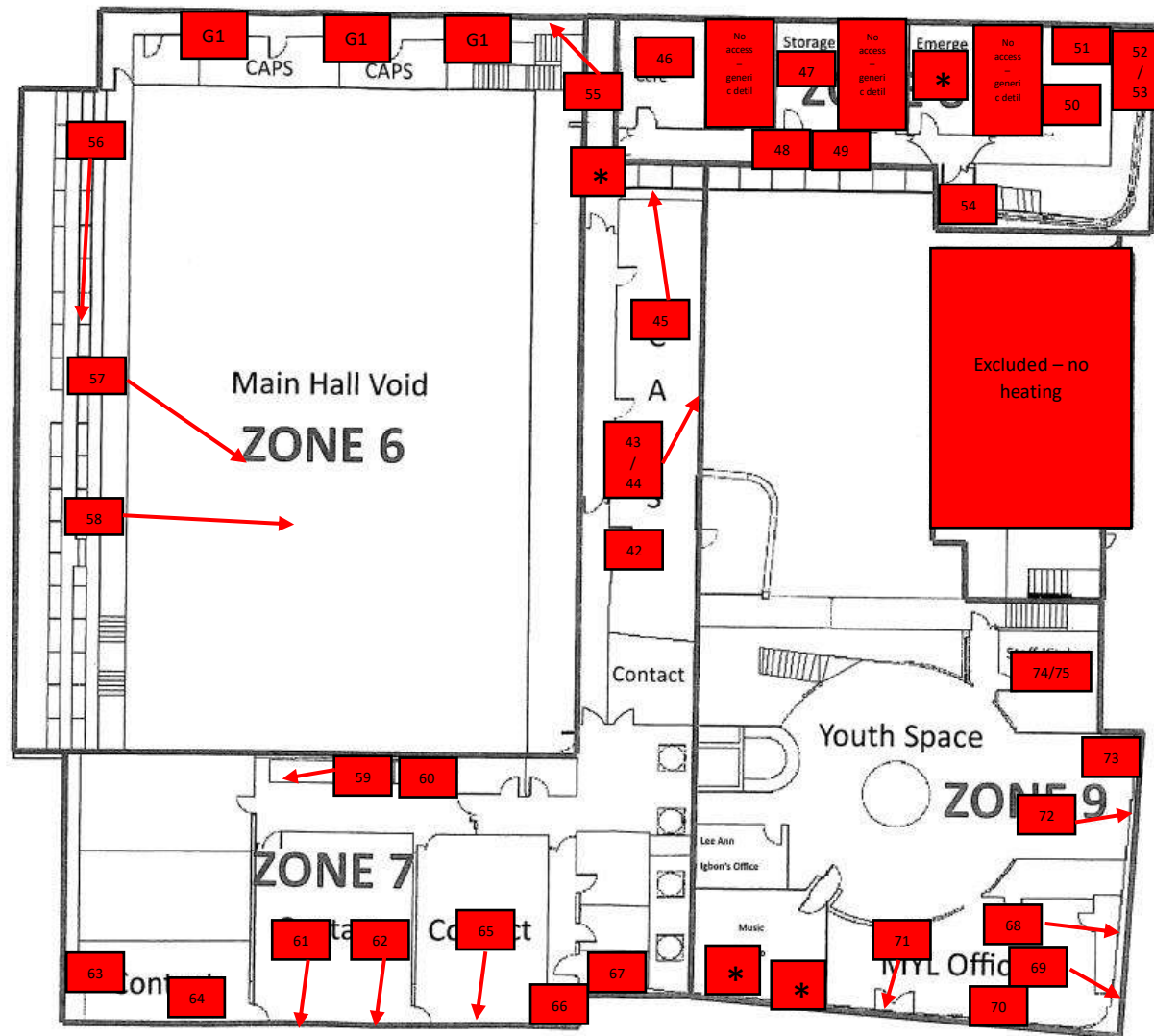
Project Name: Moss-side Millenium Powerhouse, Manchester	Build IR  Thermal Imaging	
Project ref: 10156-1		Email: richard@build-ir.com Telephone: 01709432060



Project Name: Moss-side Millenium
Powerhouse, Manchester

Project ref: 10156-1

Email: richard@build-ir.com
Telephone: 01709432060



FIRST FLOOR

Project Name: Moss-side Millenium
Powerhouse, Manchester
Project ref: 10156-1

Build IR
Thermal Imaging

Email: richard@build-ir.com
Telephone: 01709432060

6.0 Thermal Images

See next page.

Project Name: Moss-side Millenium
Powerhouse, Manchester

Project ref: 10156-1

Build IR

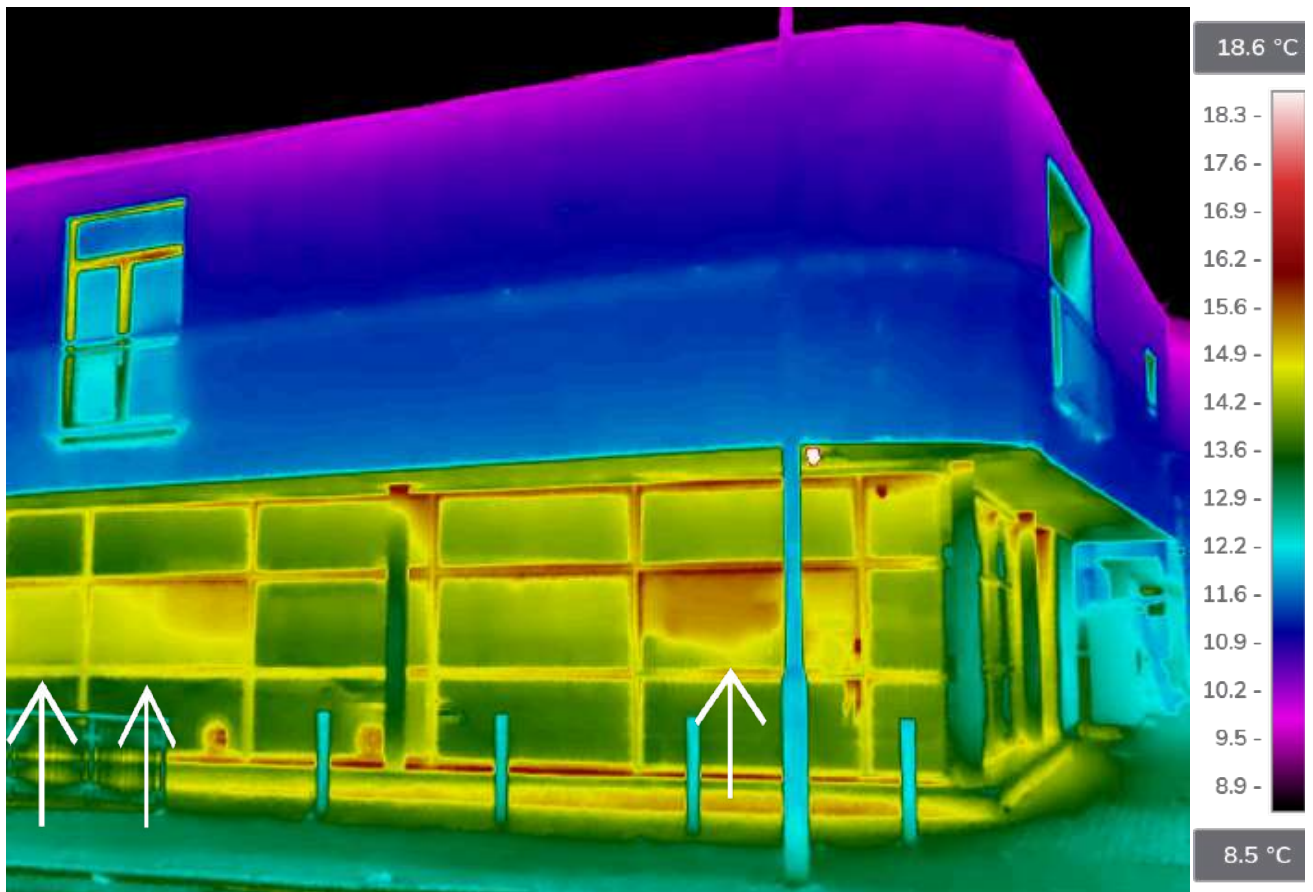
Thermal Imaging

Email: richard@build-ir.com

Telephone: 01709432060

Build IR

Thermal Imaging



File information

Created	23/09/2022 06:24:32
Reflected temp.	-10.0 °C
Distance	21.98 m
Atmospheric temp.	10.7 °C
Minimum temp.	-0.6 °C
Maximum temp.	27.0 °C
Image number	1

Measurements



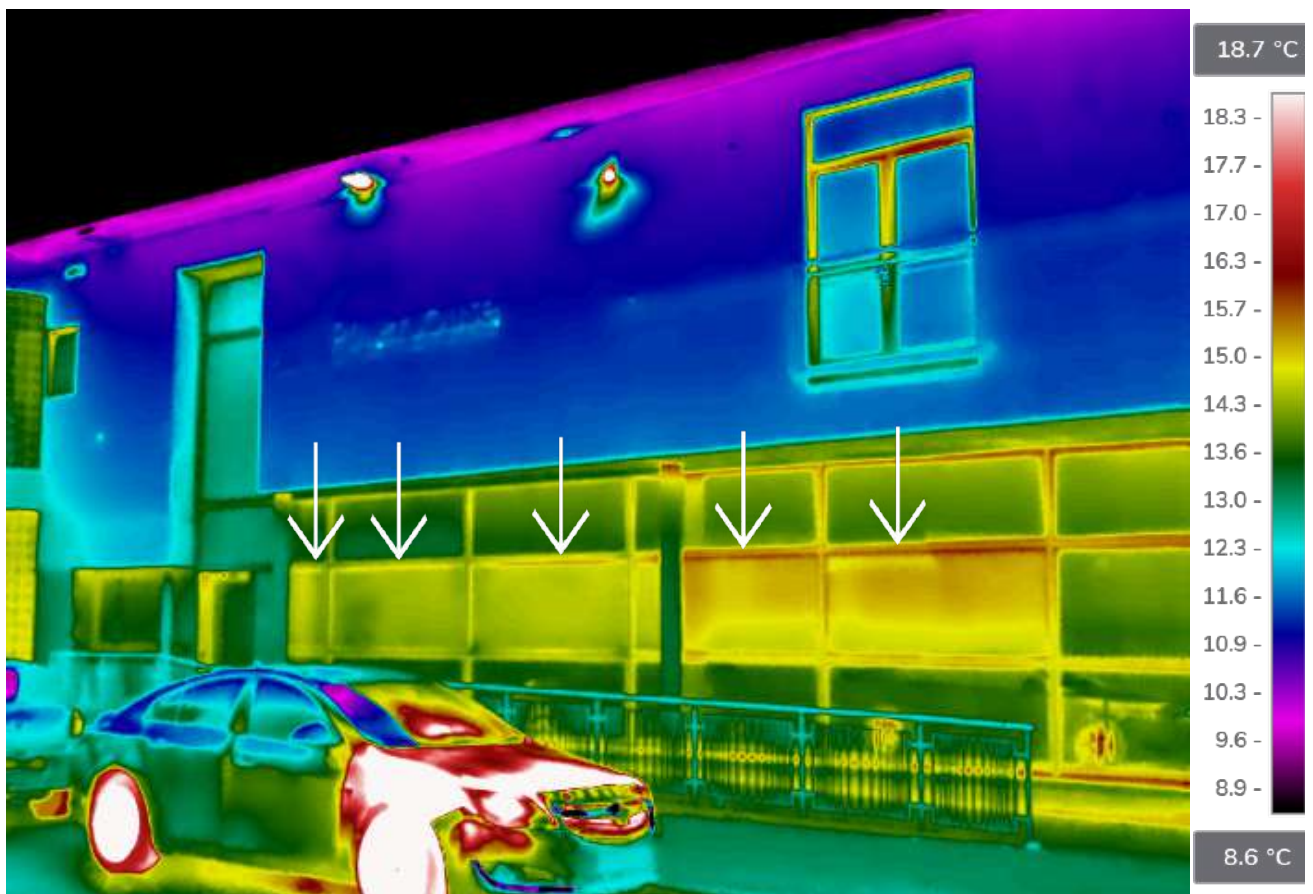
Comments

Insulated render to 1st floor showing good temperature consistency indicating good thermal performance.

White arrows indicate glazing panes showing increased heat loss. This continues along the elevation, and can be seen on internal images for the Library area.

Increased heat loss noted along edge of ground floor slab - potential thermal bridging.

Thermal Imaging



File information	
Created	23/09/2022 06:24:57
Reflected temp.	-10.0 °C
Distance	16.79 m
Atmospheric temp.	10.7 °C
Minimum temp.	-7.3 °C
Maximum temp.	35.2 °C
Image number	2

Measurements



Comments

Thermal performance same as image 1.

File information	
Created	23/09/2022 06:25:25
Reflected temp.	-10.0 °C
Distance	11.60 m
Atmospheric temp.	10.7 °C
Minimum temp.	-10.6 °C
Maximum temp.	28.8 °C
Image number	3

Measurements



Glass blocks offering lower thermal performance than surrounding elements - generic throughout.

Build IR

Thermal Imaging



File information

Created	23/09/2022 06:26:50
Reflected temp.	-10.0 °C
Distance	22.06 m
Atmospheric temp.	10.7 °C
Minimum temp.	-3.2 °C
Maximum temp.	32.0 °C
Image number	4

Measurements

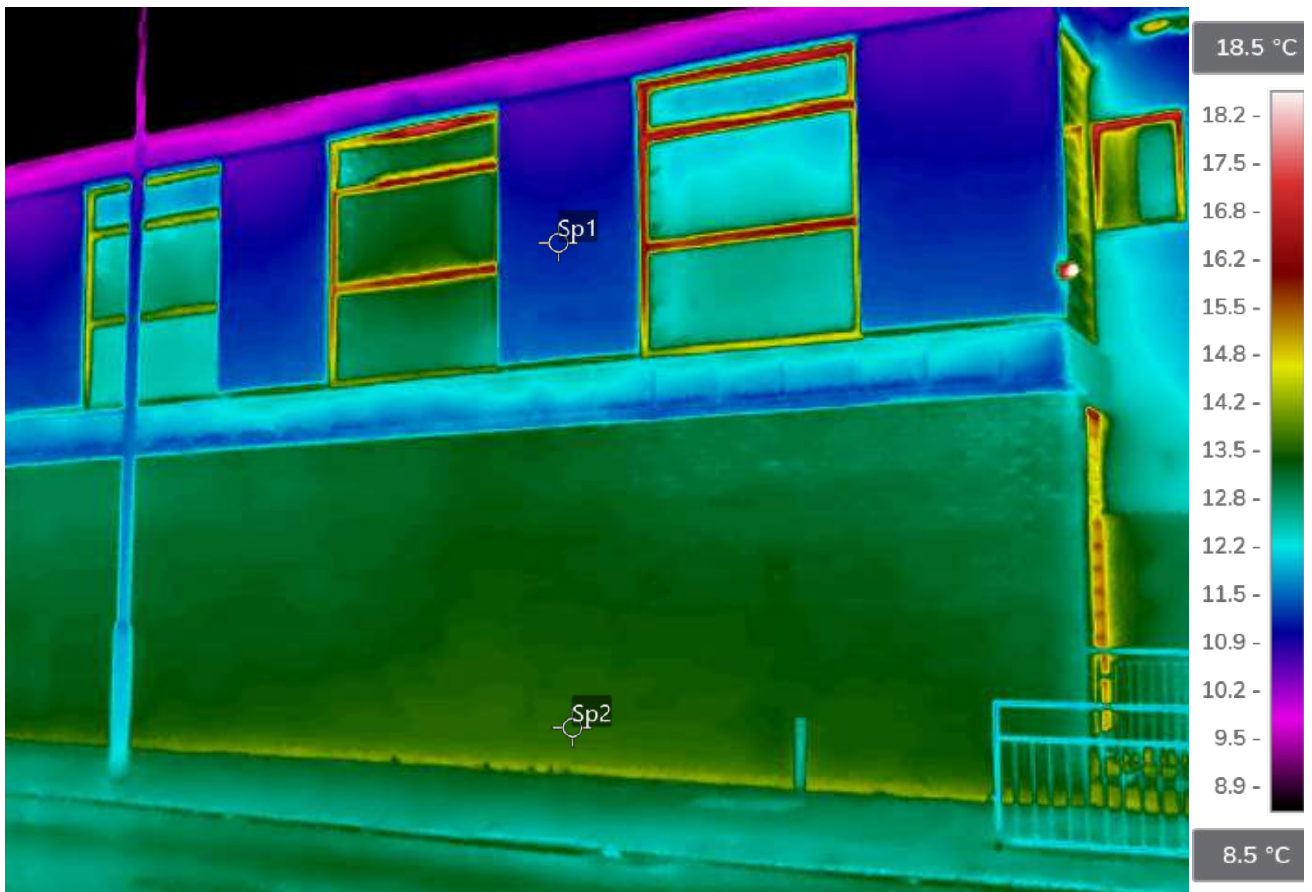


Comments

No further comment

Build IR

Thermal Imaging



File information		Measurements	
Created	23/09/2022 06:27:24	Sp1	11.2 °C
Reflected temp.	-10.0 °C	Sp2	13.7 °C
Distance	8.00 m		
Atmospheric temp.	10.7 °C		
Minimum temp.	-2.1 °C		
Maximum temp.	24.1 °C		
Image number	5		



Comments

Sp1 + 2 included to show difference in heat loss between construction types - cavity wall showing some increased heat loss (cause unknown).

Glazing frames showing poor thermal resistance

Insulated render performing well.

File information	
Created	23/09/2022 06:27:39
Reflected temp.	-10.0 °C
Distance	8.00 m
Atmospheric temp.	10.7 °C
Minimum temp.	-1.1 °C
Maximum temp.	21.2 °C
Image number	6

Measurements



Comments

Continuation of image 5.

Continuation of image 5.

This thermal image shows a building facade with a color scale ranging from 8.7 °C (dark blue) to 18.7 °C (dark red). A white arrow points to a horizontal joint in the lower left window area, which appears as a distinct line of higher temperature (yellow/orange) compared to the surrounding wall and window panes.

File information	
Created	23/09/2022 06:29:10
Reflected temp.	-10.0 °C
Distance	11.99 m
Atmospheric temp.	10.7 °C
Minimum temp.	-1.6 °C
Maximum temp.	18.6 °C
Image number	7

Measurements



Comments
Due to reflective nature of standing seam cladding - no useful analysis can generally be made to this element. This will be ignored in remained of report unless air leakage is noted.
Glazing frames performing poorly.
Arrow indicates area of potential heat bridging to upstand - review detail.

Glazing frames performing poorly.

Arrow indicates area of potential heat bridging to upstand - review detail.

Thermal image of a building facade. A color scale on the right indicates temperatures from 8.8 °C (dark blue) to 18.9 °C (dark red). A white arrow points to a horizontal pipe on the roof.

File information	
Created	23/09/2022 06:29:43
Reflected temp.	-10.0 °C
Distance	15.02 m
Atmospheric temp.	10.7 °C
Minimum temp.	-5.1 °C
Maximum temp.	27.1 °C
Image number	8

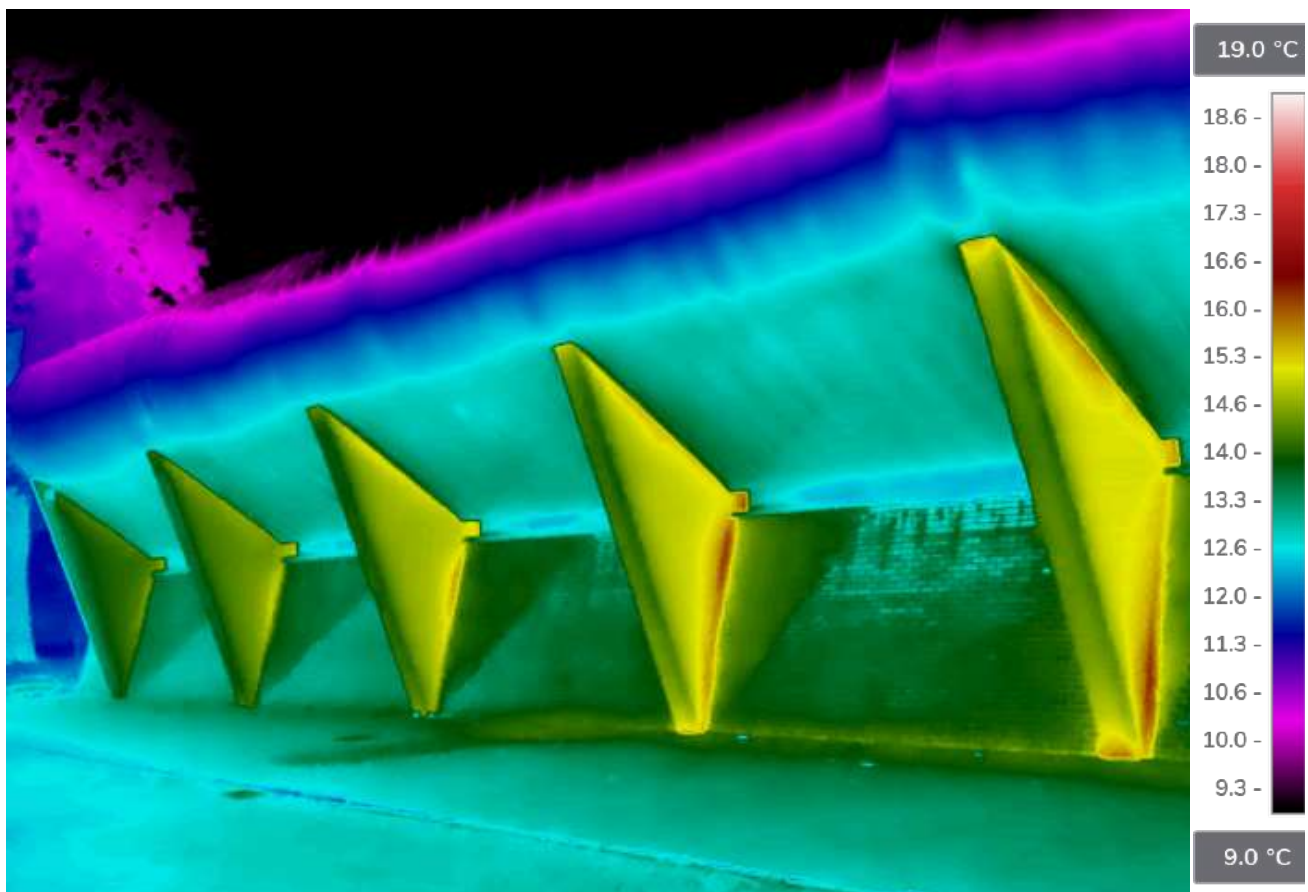
Measurements



For arrow high level - see image 33.

Build IR

Thermal Imaging



File information

Created	23/09/2022 06:31:36
Reflected temp.	-10.0 °C
Distance	10.76 m
Atmospheric temp.	10.7 °C
Minimum temp.	-5.1 °C
Maximum temp.	16.3 °C
Image number	9

Measurements

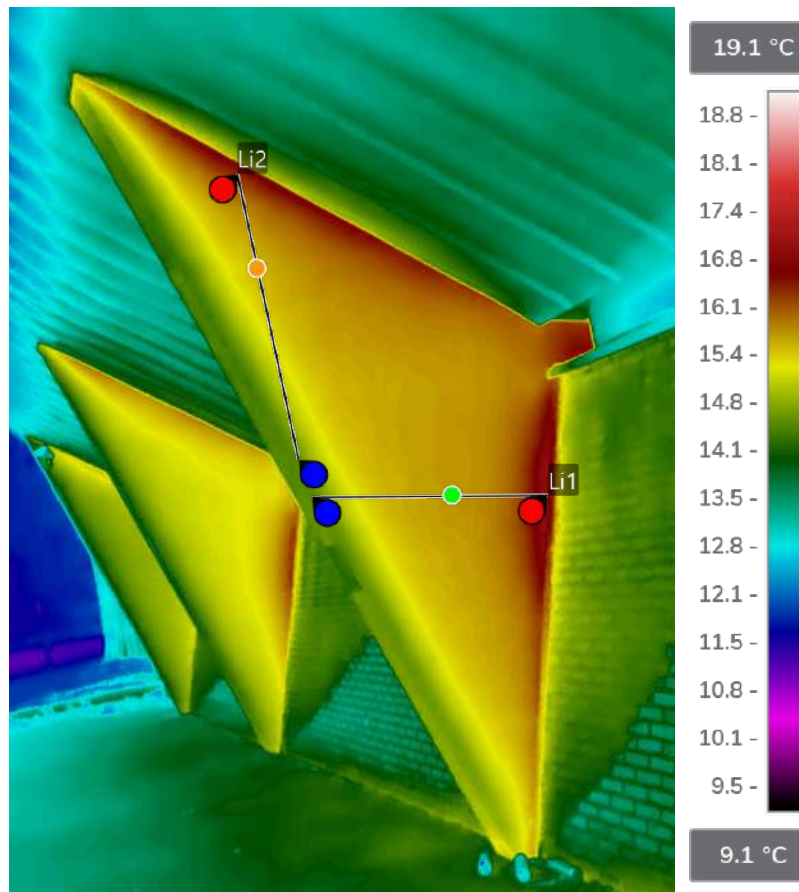


Comments

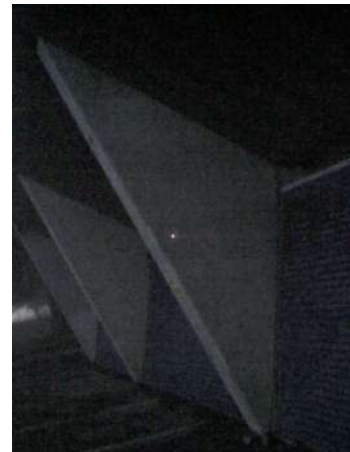
See image 10.

Build IR

Thermal Imaging



File information		Measurements	
Created	23/09/2022 06:32:10	Li1	
Reflected temp.	-10.0 °C	Max	16.9 °C
Distance	6.38 m	Avg	15.7 °C
Atmospheric temp.	10.7 °C	Min	14.6 °C
Minimum temp.	10.4 °C	Li2	
Maximum temp.	17.1 °C	Max	16.4 °C
		Avg	15.4 °C
		Min	14.6 °C
Image number	10		



Comments

Concrete fins showing increased heat loss - thermal pattern indicates thermal bridging where fins penetrate the structure.

A thermal image of a building facade. The color scale on the right ranges from 8.6 °C (dark blue) to 18.7 °C (dark red). The image shows a two-story building with windows and a door. White arrows point to thermal anomalies: one points to a bright yellow/orange area on the roof, and another points to a bright yellow/orange area on the wall above the door. A third arrow points to a bright yellow/orange area on the wall to the left of the door.

File information	
Created	23/09/2022 06:33:57
Reflected temp.	-10.0 °C
Distance	16.84 m
Atmospheric temp.	10.7 °C
Minimum temp.	1.3 °C
Maximum temp.	16.6 °C
Image number	11

Measurements

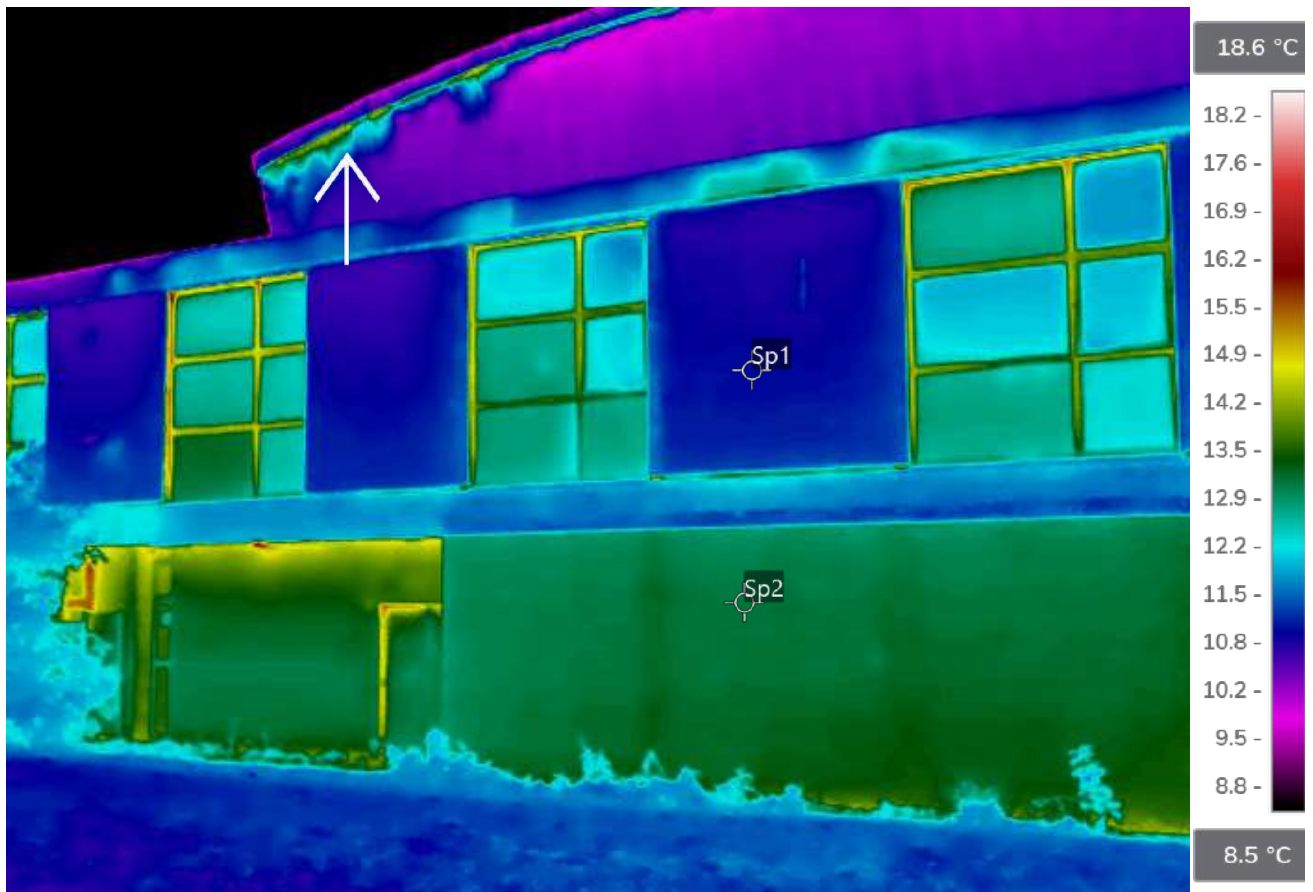


High level - air leakage at cladding wall junction with roof (generic of this detail).

High level - air leakage at cladding wall junction with roof (generic of this detail).

Build IR

Thermal Imaging



File information		Measurements	
Created	23/09/2022 06:34:06	Sp2	13.2 °C
Reflected temp.	-10.0 °C	Sp1	11.1 °C
Distance	18.75 m		
Atmospheric temp.	10.7 °C		
Minimum temp.	-0.7 °C		
Maximum temp.	16.8 °C		
Image number	12		



Comments

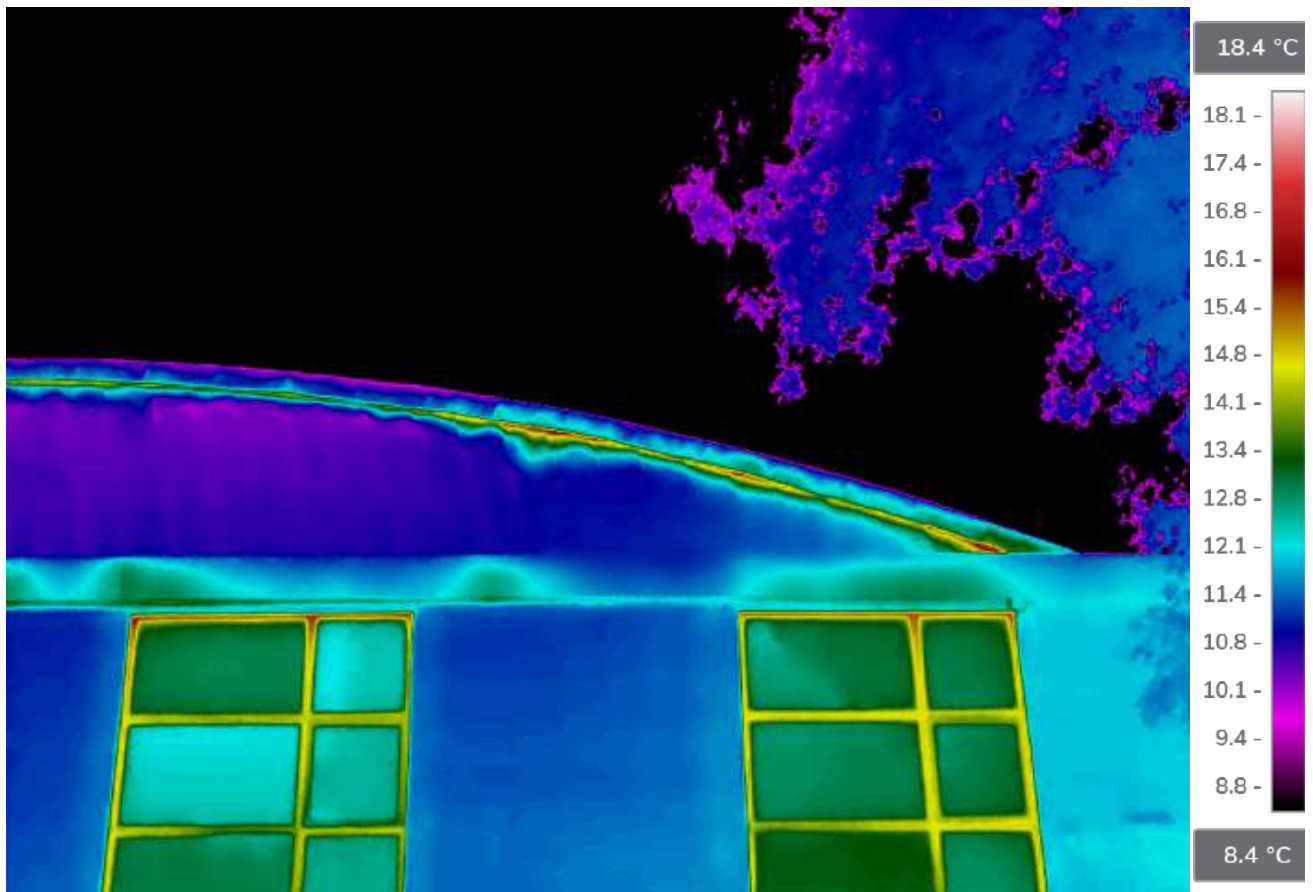
Continuation of air leakage at cladding roof / wall junction.

SP1 + 2 used to indicate difference in thermal performance between cavity wall and insulated render.

Build IR



Thermal Imaging



File information

Created	23/09/2022 06:34:19
Reflected temp.	-10.0 °C
Distance	10.67 m
Atmospheric temp.	10.7 °C
Minimum temp.	-7.9 °C
Maximum temp.	17.0 °C
Image number	13

Measurements



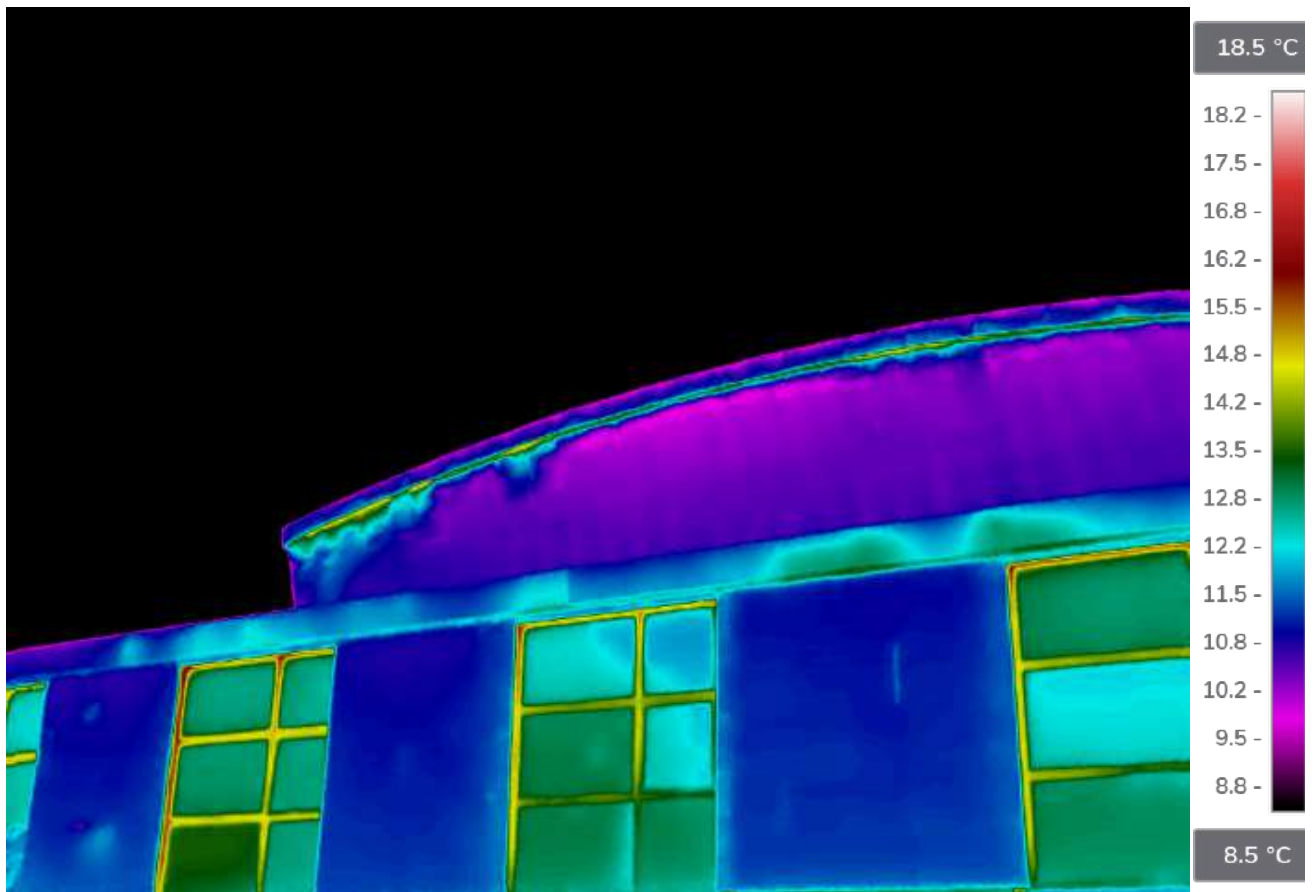
Comments

Close up of air leakage noted high level.

Build IR



Thermal Imaging



File information

Created	23/09/2022 06:34:27
Reflected temp.	-10.0 °C
Distance	8.00 m
Atmospheric temp.	10.7 °C
Minimum temp.	-8.6 °C
Maximum temp.	16.4 °C
Image number	14

Measurements

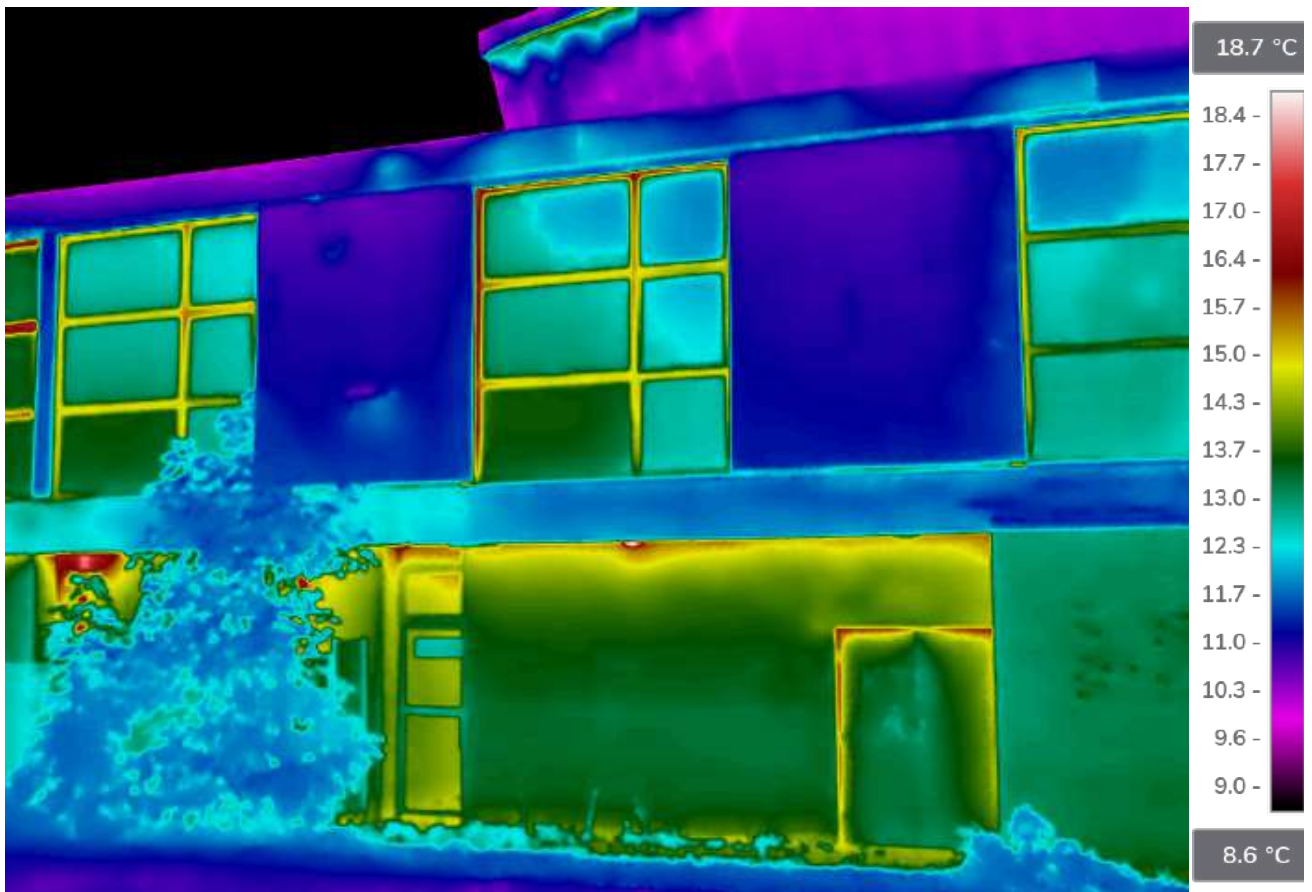


Comments

Close up of air leakage high level.

Build IR

Thermal Imaging



File information	
Created	23/09/2022 06:35:00
Reflected temp.	-10.0 °C
Distance	16.32 m
Atmospheric temp.	10.7 °C
Minimum temp.	0.7 °C
Maximum temp.	20.4 °C
Image number	15

Measurements



Comments

Increased heat loss under soffit noted generically along this elevation.

A thermal image of a building facade, likely a school or institutional building, showing a series of windows. The image is color-coded to represent temperature, with a scale on the right ranging from 8.5 °C (dark blue) to 18.4 °C (dark red). The windows are mostly dark blue, indicating they are cooler than the surrounding walls. The walls are a mix of green and yellow, suggesting moderate temperatures. The roofline is visible at the top, and the ground in front of the building is dark blue, indicating it is the coolest part of the scene.

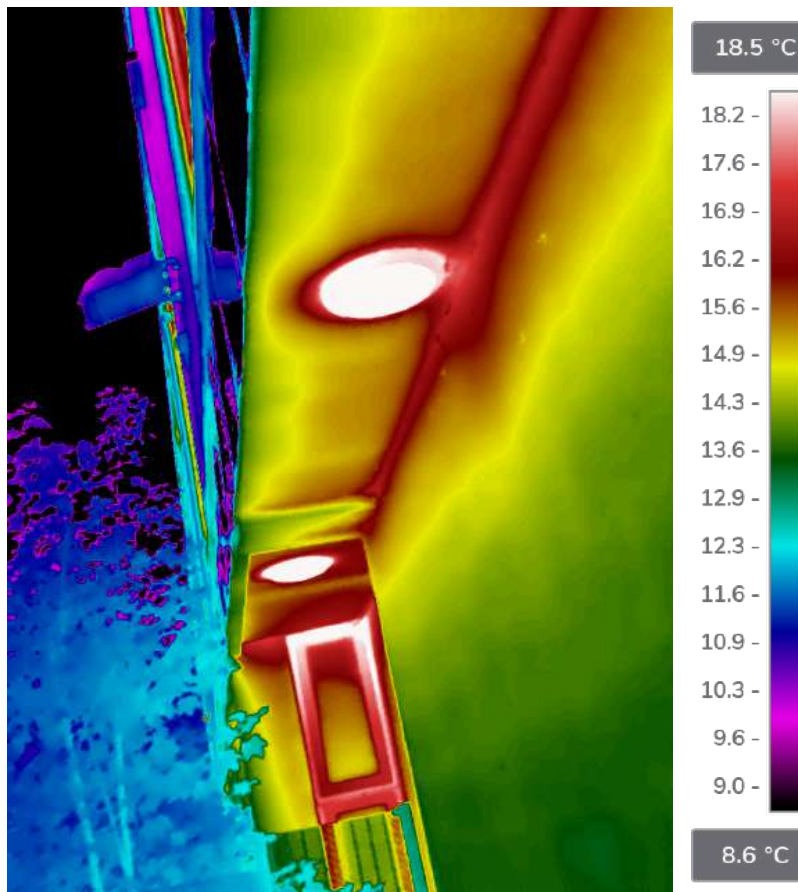
File information		Measurements
Created	23/09/2022 06:35:18	
Reflected temp.	-10.0 °C	
Distance	2.18 m	
Atmospheric temp.	10.7 °C	
Minimum temp.	2.4 °C	
Maximum temp.	21.2 °C	
Image number	16	



Continuation of increased heat loss under soffit.

Build IR

Thermal Imaging



File information	
Created	23/09/2022 06:35:58
Reflected temp.	-10.0 °C
Distance	3.71 m
Atmospheric temp.	10.7 °C
Minimum temp.	-11.7 °C
Maximum temp.	33.7 °C
Image number	17

Measurements



Comments

Close up of increased heat loss under soffit.

File information	
Created	23/09/2022 06:36:20
Reflected temp.	-10.0 °C
Distance	3.84 m
Atmospheric temp.	10.7 °C
Minimum temp.	4.0 °C
Maximum temp.	35.4 °C
Image number	18

Measurements



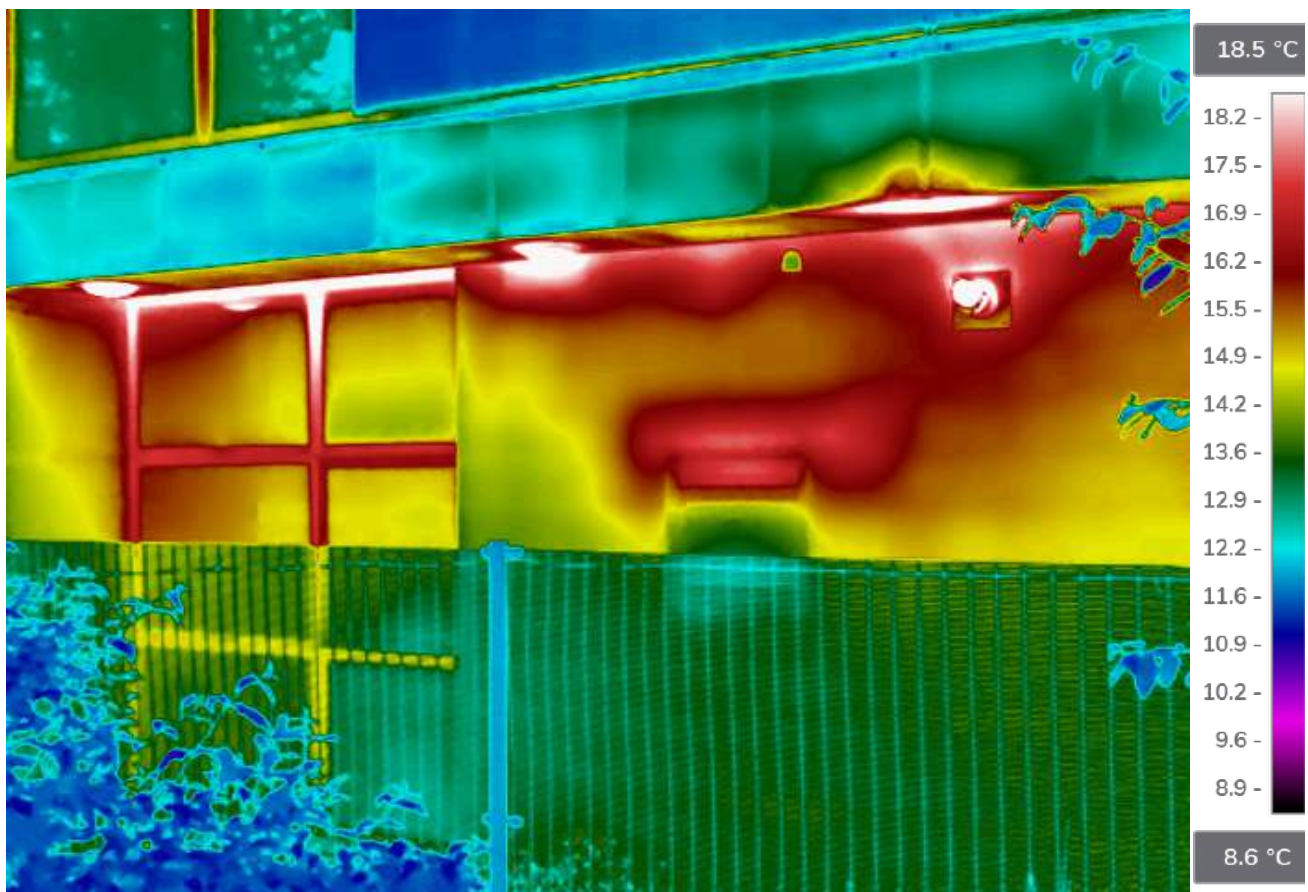
Comments

Close up highlights poorly performing glazing frames and increased heat loss under soffit.

Close up highlights poorly performing glazing frames and increased heat loss under soffit.

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File information

Created	23/09/2022 06:37:52
Reflected temp.	-10.0 °C
Distance	7.10 m
Atmospheric temp.	10.7 °C
Minimum temp.	10.3 °C
Maximum temp.	49.4 °C
Image number	19

Measurements

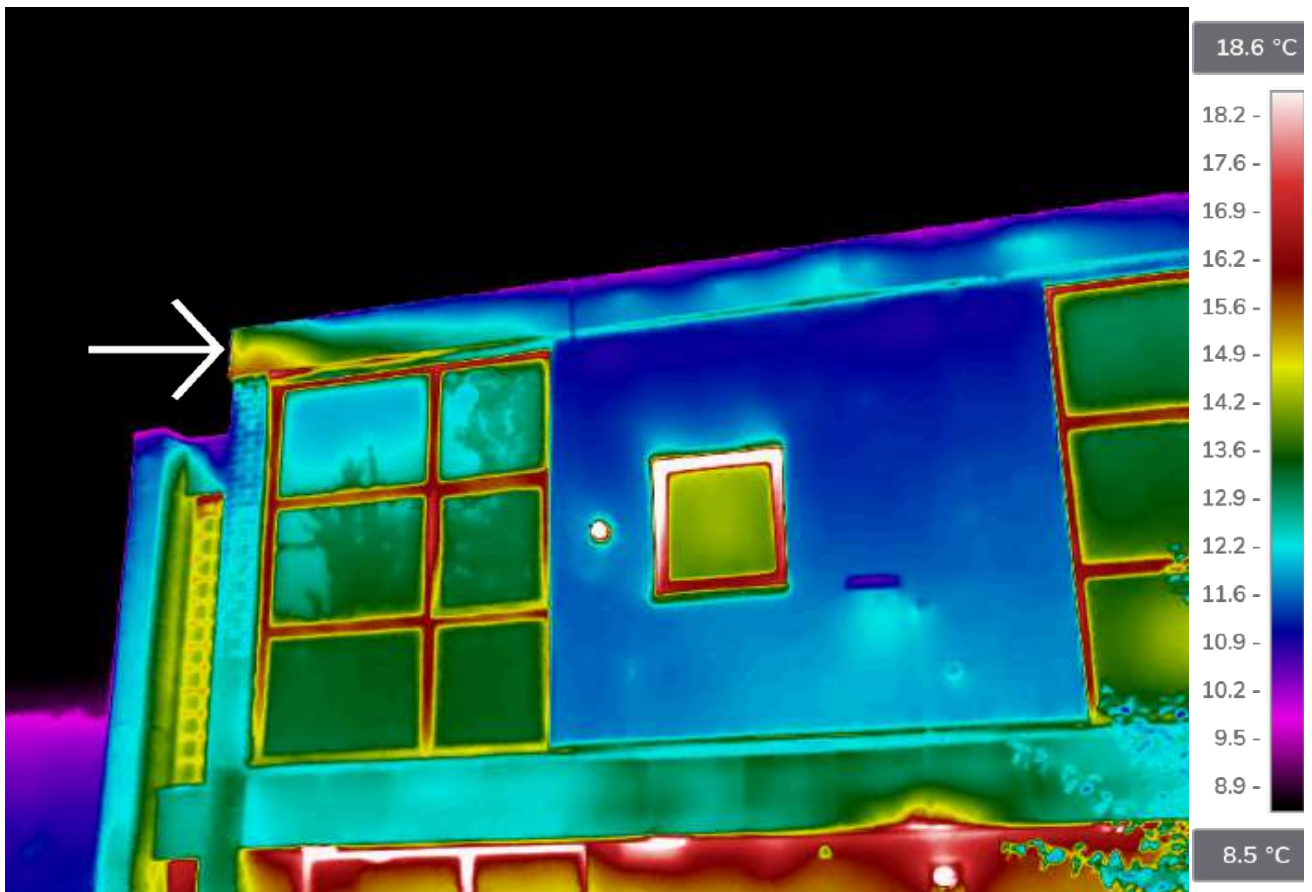


Comments

Area of facade is on to Plant room.
Glazing frames performing poorly.

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File information		Measurements
Created	23/09/2022 06:38:05	
Reflected temp.	-10.0 °C	
Distance	11.28 m	
Atmospheric temp.	10.7 °C	
Minimum temp.	-16.0 °C	
Maximum temp.	50.5 °C	
Image number	20	



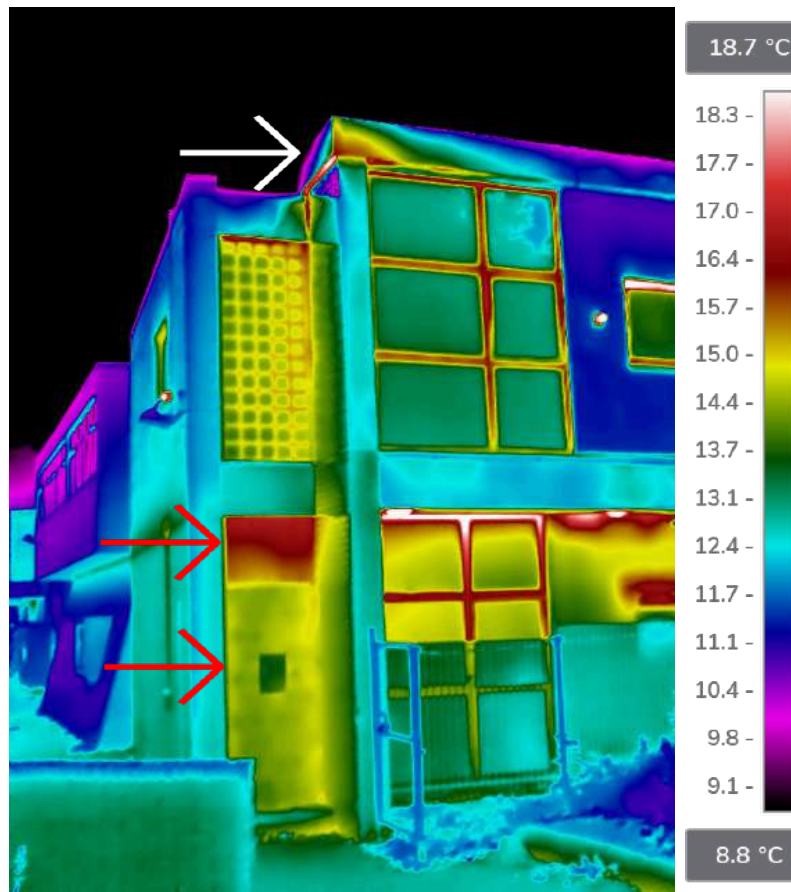
Comments

Glazing frames performing poorly.

Arrow indicates air leakage to corner parapet capping.

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Thermal Imaging



File information	
Created	23/09/2022 06:38:47
Reflected temp.	-10.0 °C
Distance	3.32 m
Atmospheric temp.	10.7 °C
Minimum temp.	-10.5 °C
Maximum temp.	27.8 °C
Image number	21

Measurements



Comments

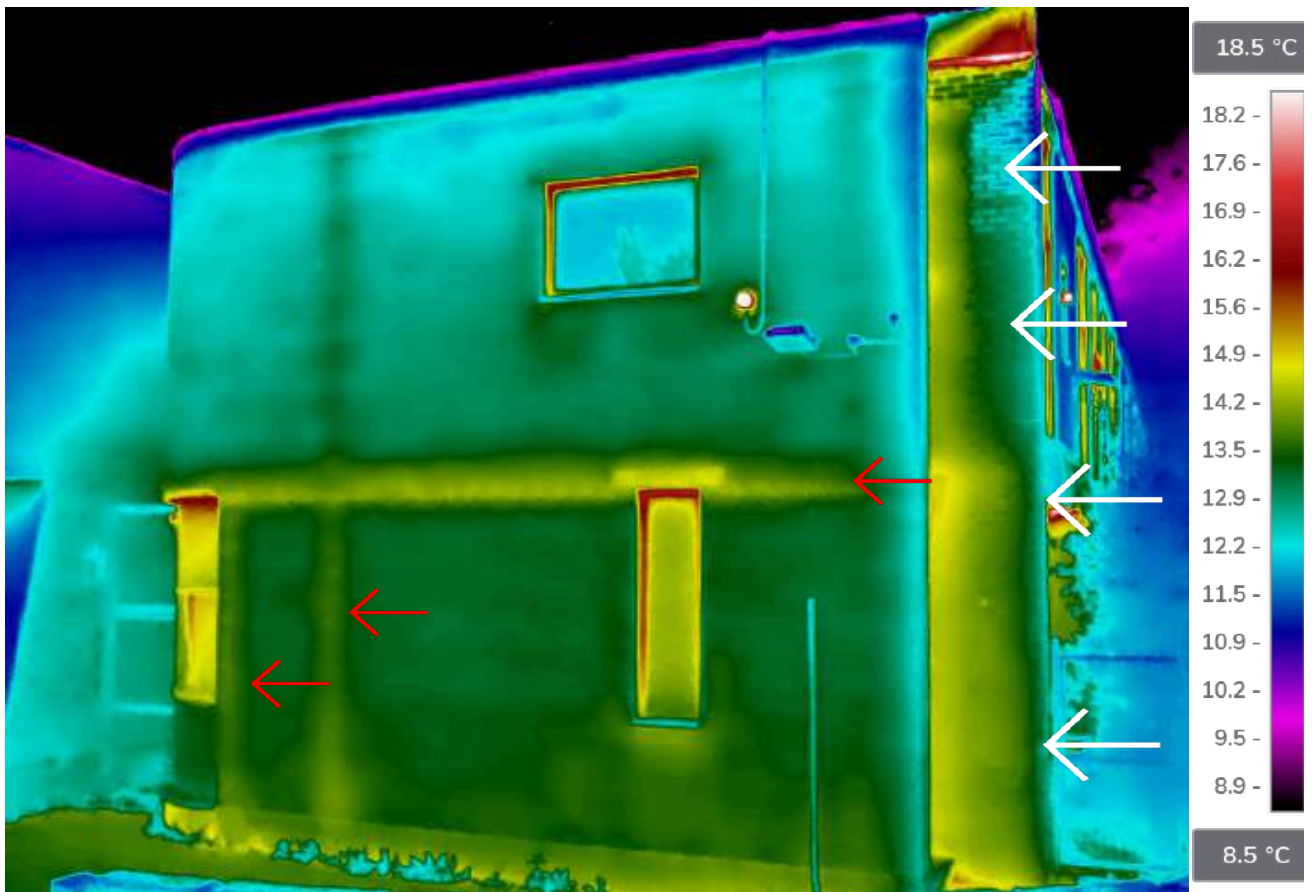
Glazing frames and glass blocks performing poorly.

White arrow indicates air leakage to corner parapet capping.

Red arrows indicate single glazed window and potential blocked up doorway with no insulation fitted. Can be seen internally in image 53.

Build IR

Thermal Imaging



File information		Measurements
Created	23/09/2022 06:39:37	
Reflected temp.	-10.0 °C	
Distance	12.85 m	
Atmospheric temp.	11.0 °C	
Minimum temp.	-2.0 °C	
Maximum temp.	27.7 °C	
Image number	22	



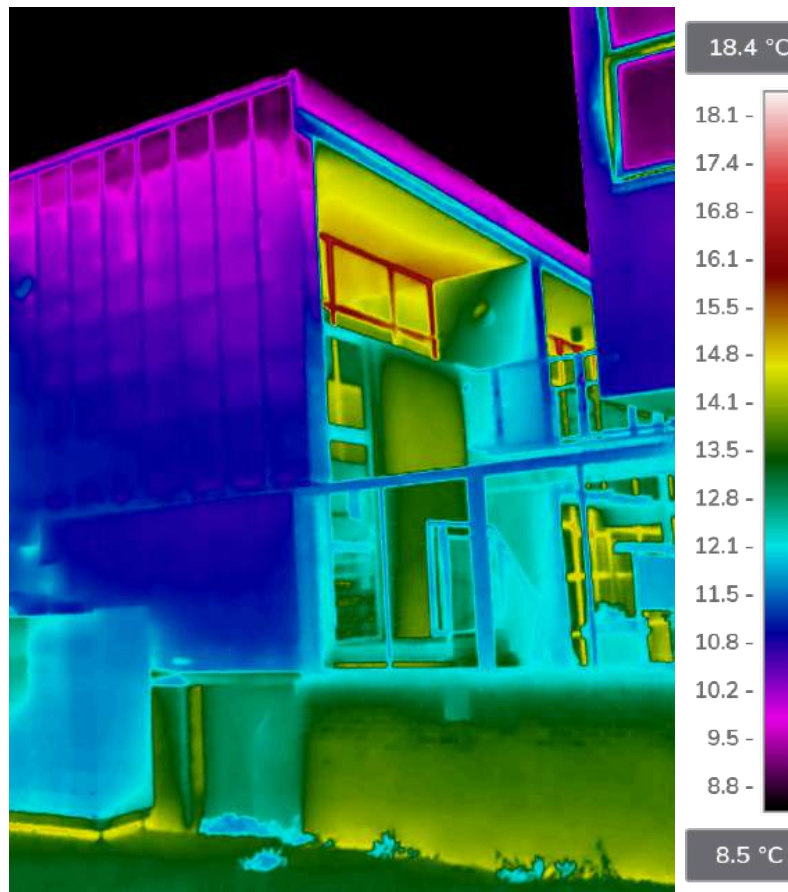
Comments

White arrows indicate thermal bridging down brickwork from junction with glass blocks and potential blocked up doorway.

Red arrow - thermal pattern indicates area of anomalous insulation.

Build IR

Thermal Imaging



File information	
Created	23/09/2022 06:42:47
Reflected temp.	-10.0 °C
Distance	3.86 m
Atmospheric temp.	10.7 °C
Minimum temp.	-6.6 °C
Maximum temp.	17.1 °C
Image number	23

Measurements



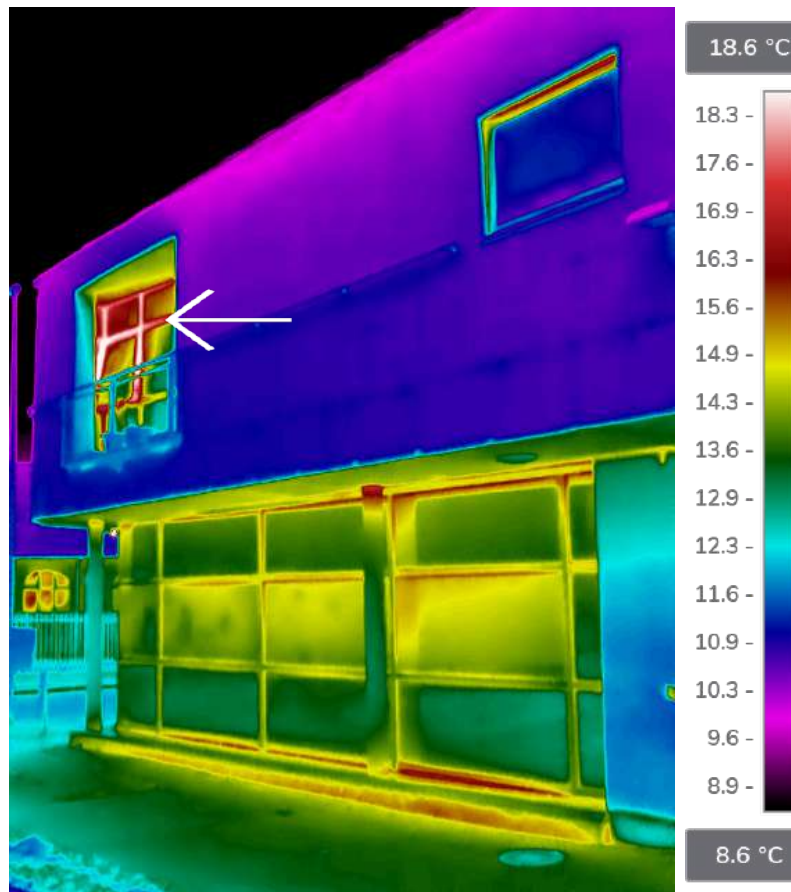
Comments

No comment to standing seam cladding.

Soffit to 1st floor window shows potential heat loss at junction with head of glazing. (could be accentuated by orientation i.e. sheltered from cold sky).



Thermal Imaging



File information		Measurements
Created	23/09/2022 06:43:19	
Reflected temp.	-10.0 °C	
Distance	10.60 m	
Atmospheric temp.	10.7 °C	
Minimum temp.	-4.7 °C	
Maximum temp.	24.9 °C	
Image number	24	



Comments

Thermal performance of ground floor same as noted in image 1.

Heat loss noted by arrow is from open window.

File information		Measurements
Created	23/09/2022 06:43:02	
Reflected temp.	-10.0 °C	
Distance	11.10 m	
Atmospheric temp.	10.7 °C	
Minimum temp.	-6.0 °C	
Maximum temp.	22.9 °C	
Image number	25	



Glass blocks performing poorly.

A thermal image of a building facade featuring a large window with a red frame. The image is overlaid with a color scale on the right, ranging from 8.5 °C (dark blue) to 18.6 °C (dark red). The window frame and surrounding wall areas show higher temperatures (yellow and red), while the interior and exterior surfaces show lower temperatures (blue and green). A small figure of a person is visible through the window, and a blue trash bin is located in the foreground on the left.

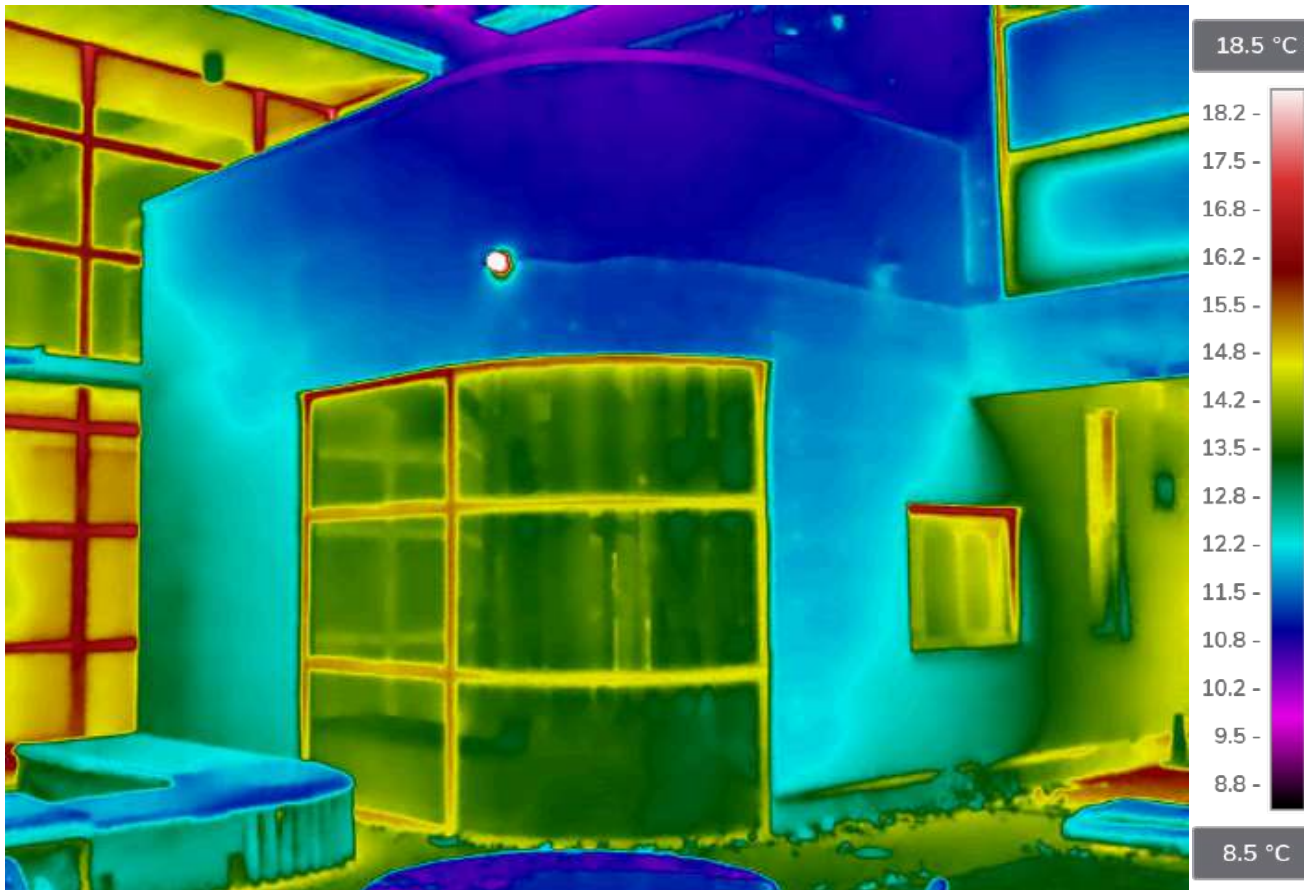
File information		Measurements
Created	23/09/2022 06:49:05	
Reflected temp.	-10.0 °C	
Distance	13.43 m	
Atmospheric temp.	10.7 °C	
Minimum temp.	1.8 °C	
Maximum temp.	35.1 °C	
Image number	26	



Glazing and frames performing poorly.

Build IR

Thermal Imaging



File information	
Created	23/09/2022 06:49:29
Reflected temp.	-10.0 °C
Distance	9.23 m
Atmospheric temp.	10.7 °C
Minimum temp.	7.4 °C
Maximum temp.	35.2 °C
Image number	27

Measurements



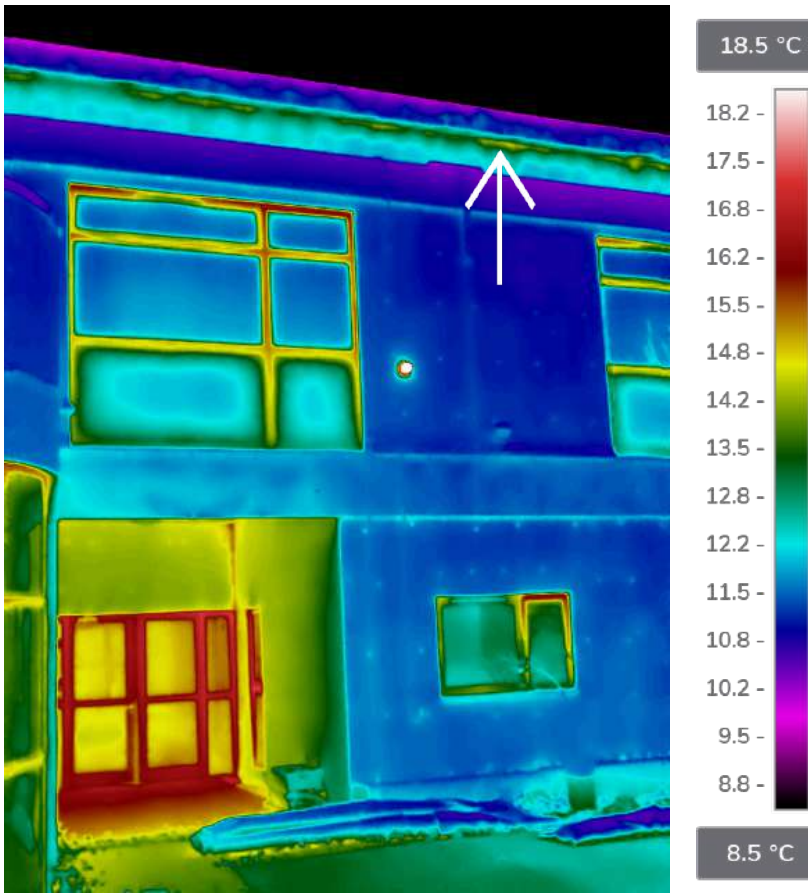
Comments

Insulated render performing well thermally.

Build IR



Thermal Imaging



File information	
Created	23/09/2022 06:50:01
Reflected temp.	-10.0 °C
Distance	10.65 m
Atmospheric temp.	10.7 °C
Minimum temp.	1.7 °C
Maximum temp.	28.6 °C
Image number	28

Measurements

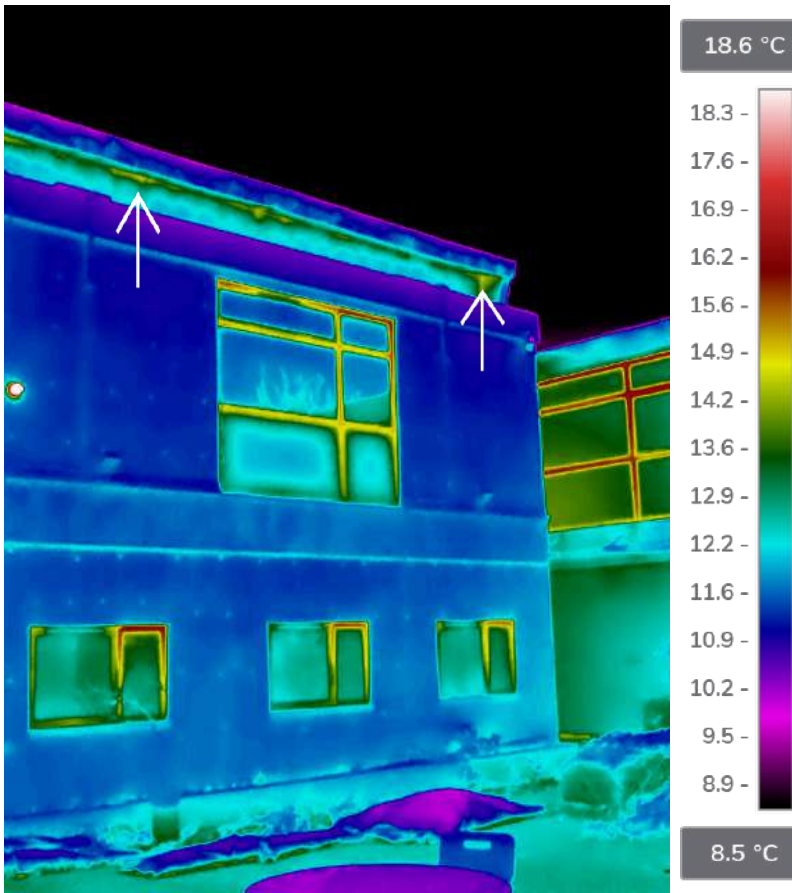


Comments
Insulated render performing well thermally.
Glazing frames performing poorly.
Arrow shows air leakage along parapet capping.
Area under canopy shows warmer potentially due to shelter.

Build IR



Thermal Imaging



File information	
Created	23/09/2022 06:50:09
Reflected temp.	-10.0 °C
Distance	14.34 m
Atmospheric temp.	10.7 °C
Minimum temp.	1.0 °C
Maximum temp.	28.9 °C
Image number	29

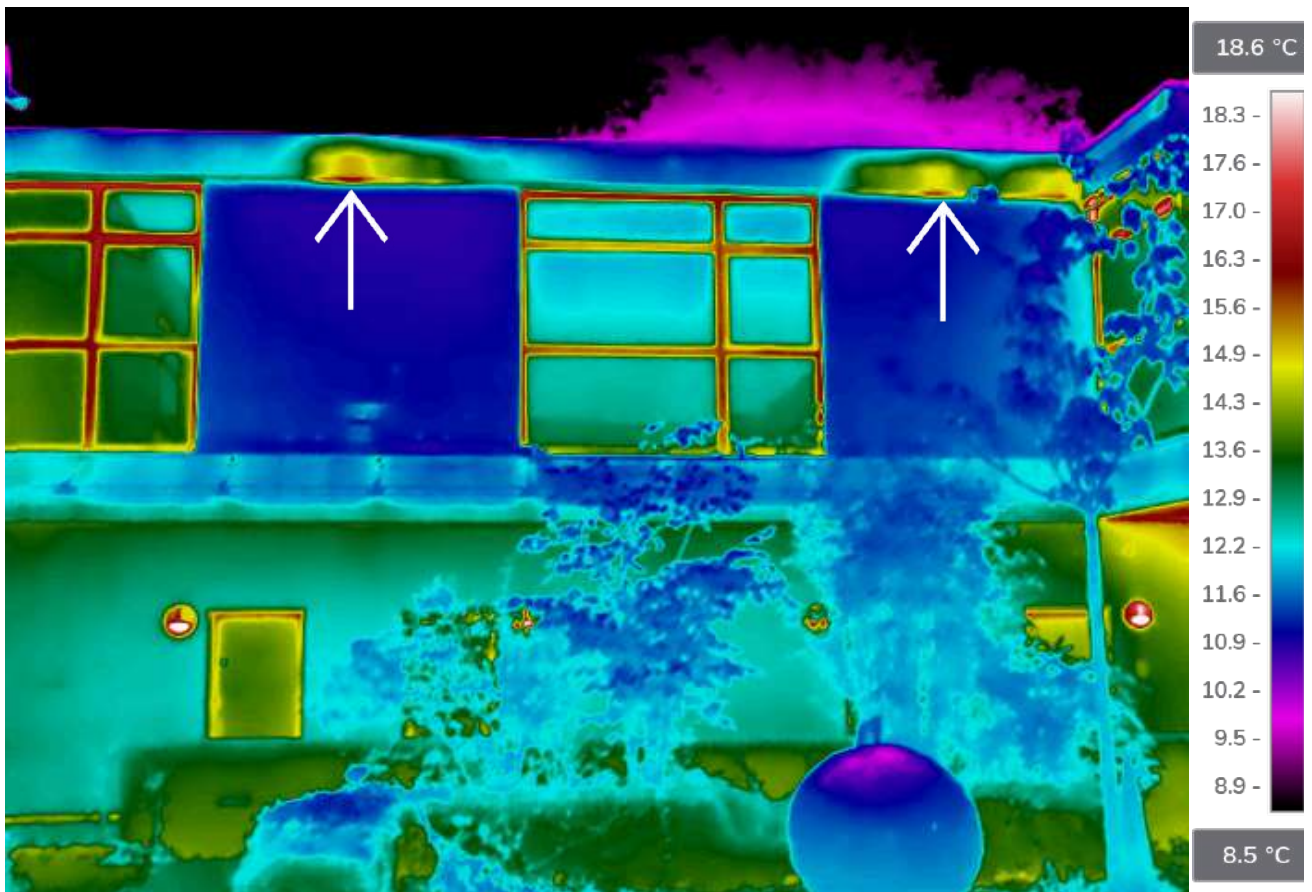
Measurements



Comments
Insulated render performing well thermally.
Glazing frames performing poorly.
Arrow shows air leakage along parapet capping.

Build IR

Thermal Imaging



File information		Measurements
Created	23/09/2022 06:50:41	
Reflected temp.	-10.0 °C	
Distance	22.05 m	
Atmospheric temp.	10.7 °C	
Minimum temp.	3.0 °C	
Maximum temp.	23.2 °C	
Image number	30	



Comments

Insulated render performing well thermally.

Glazing frames performing poorly.

Arrow shows air leakage along parapet capping.

File information		Measurements
Created	23/09/2022 06:51:06	
Reflected temp.	-10.0 °C	
Distance	9.36 m	
Atmospheric temp.	10.7 °C	
Minimum temp.	-8.4 °C	
Maximum temp.	20.1 °C	
Image number	31	

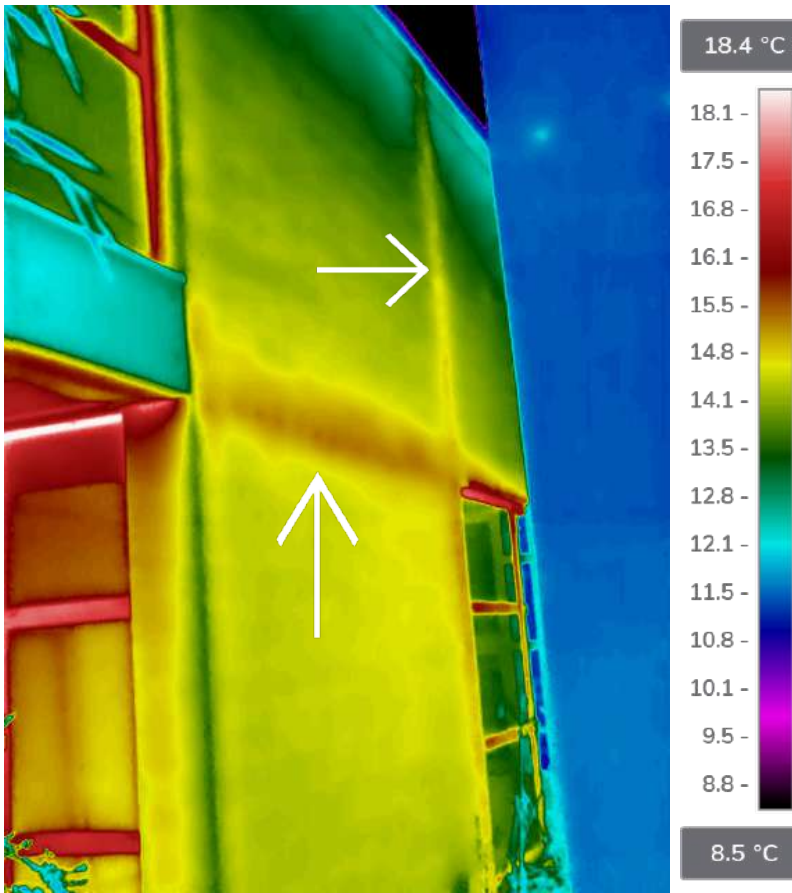


Glazing frames performing poorly.

Build IR



Thermal Imaging



File information	
Created	23/09/2022 06:52:12
Reflected temp.	-10.0 °C
Distance	6.56 m
Atmospheric temp.	10.7 °C
Minimum temp.	-4.2 °C
Maximum temp.	18.9 °C
Image number	32

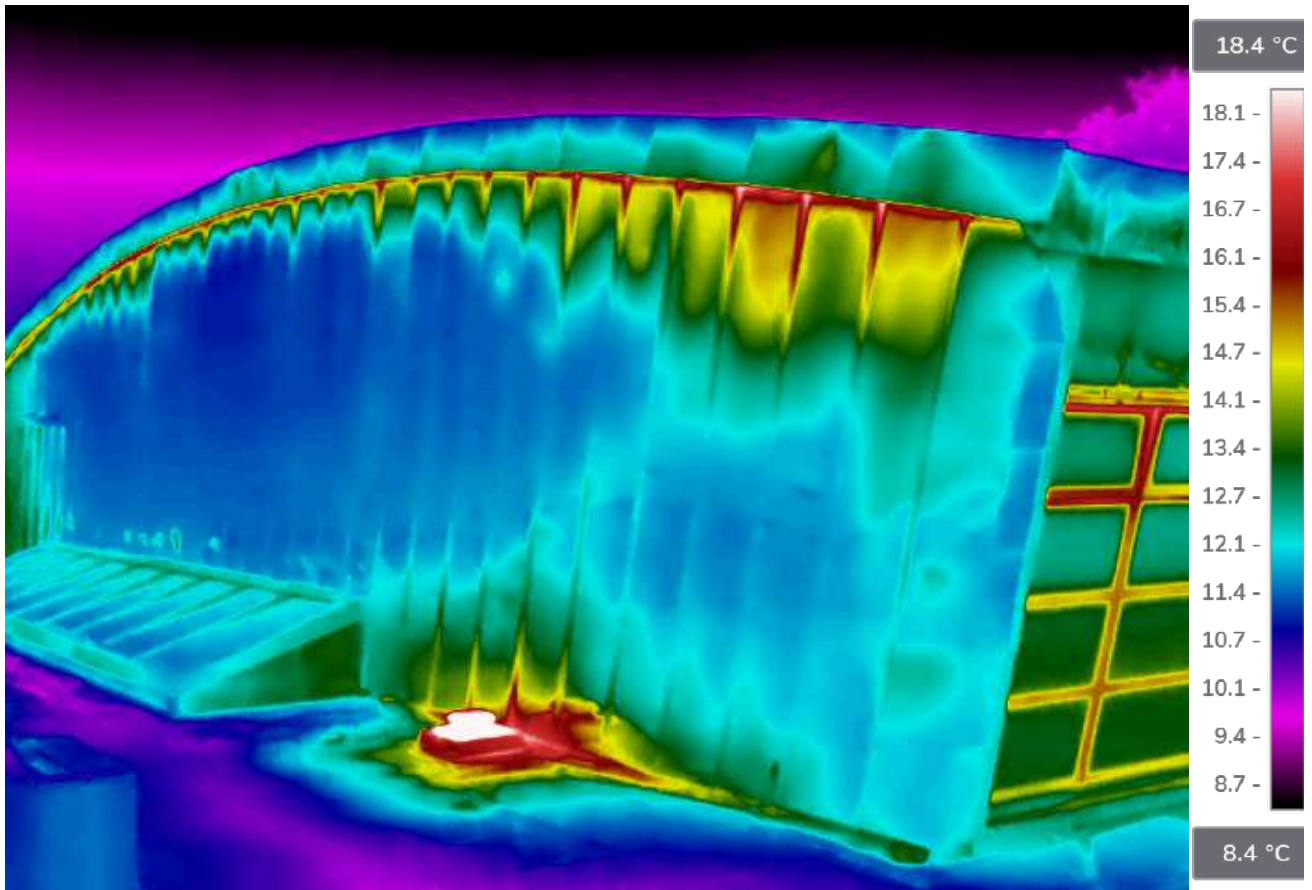
Measurements



Comments
Entire area shows warmer - likely due to shelter from Zone 4 Study building.
White arrow - thermal pattern indicates area of anomalous insulation.

Build IR

Thermal Imaging



File information		Measurements
Created	23/09/2022 06:58:45	
Reflected temp.	-10.0 °C	
Distance	8.95 m	
Atmospheric temp.	10.7 °C	
Minimum temp.	7.8 °C	
Maximum temp.	24.4 °C	
Image number	33	



Comments

Air leakage noted to flashing along entire elevation at roof / wall junction.

File information		Measurements
Created	23/09/2022 07:00:29	
Reflected temp.	-40.0 °C	
Distance	4.28 m	
Atmospheric temp.	10.7 °C	
Minimum temp.	9.0 °C	
Maximum temp.	14.1 °C	
Image number	34	



Good temperature consistency indicates good continuity of the insulation.

NOTE: Roof membrane damp, with standing water to some areas.

A thermal image of a building roof. The roof surface is predominantly dark blue and black, indicating lower temperatures. There are two circular skylights visible, which appear as bright yellow and white areas, indicating higher temperatures. A color scale on the right side of the image ranges from 7.7 °C (dark blue) to 17.7 °C (dark red). The scale has intermediate markings at 8.0, 8.7, 9.4, 10.0, 10.7, 11.4, 12.0, 12.7, 13.4, 14.0, 14.7, 15.4, 16.0, and 16.7. The top right corner of the image shows a temperature of 17.7 °C, and the bottom right corner shows 7.7 °C.

File information	
Created	23/09/2022 07:00:47
Reflected temp.	-40.0 °C
Distance	5.09 m
Atmospheric temp.	10.7 °C
Minimum temp.	8.7 °C
Maximum temp.	13.5 °C
Image number	35

Measurements



Comments

Good temperature consistency indicates good continuity of the insulation.

Good temperature consistency indicates good continuity of the insulation.

File information	
Created	23/09/2022 07:01:25
Reflected temp.	-40.0 °C
Distance	4.43 m
Atmospheric temp.	10.7 °C
Minimum temp.	7.8 °C
Maximum temp.	11.9 °C
Image number	36

Measurements



Comments

Good temperature consistency indicates good continuity of the insulation.

Good temperature consistency indicates good continuity of the insulation.

File information	
Created	23/09/2022 07:01:47
Reflected temp.	-40.0 °C
Distance	4.30 m
Atmospheric temp.	10.7 °C
Minimum temp.	7.8 °C
Maximum temp.	12.6 °C
Image number	37

Measurements



Comments

Good temperature consistency indicates good continuity of the insulation.

Good temperature consistency indicates good continuity of the insulation.

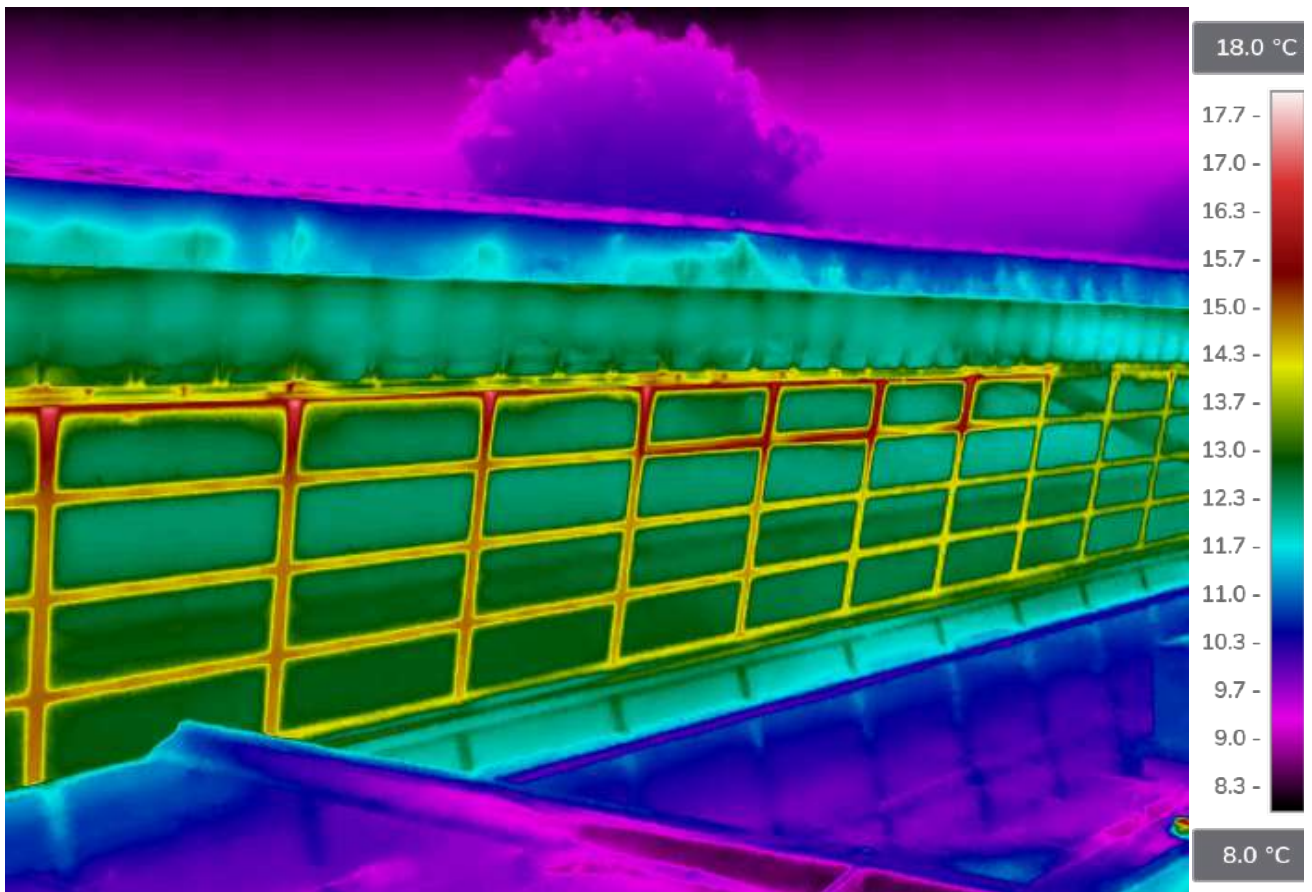
File information		Measurements
Created	23/09/2022 07:02:22	
Reflected temp.	-10.0 °C	
Distance	3.13 m	
Atmospheric temp.	10.7 °C	
Minimum temp.	7.1 °C	
Maximum temp.	18.3 °C	
Image number	38	



Arrows indicate area of air leakage to cladding.

Build IR

Thermal Imaging



File information		Measurements
Created	23/09/2022 07:02:31	
Reflected temp.	-10.0 °C	
Distance	10.82 m	
Atmospheric temp.	10.7 °C	
Minimum temp.	8.0 °C	
Maximum temp.	17.4 °C	
Image number	39	



Comments

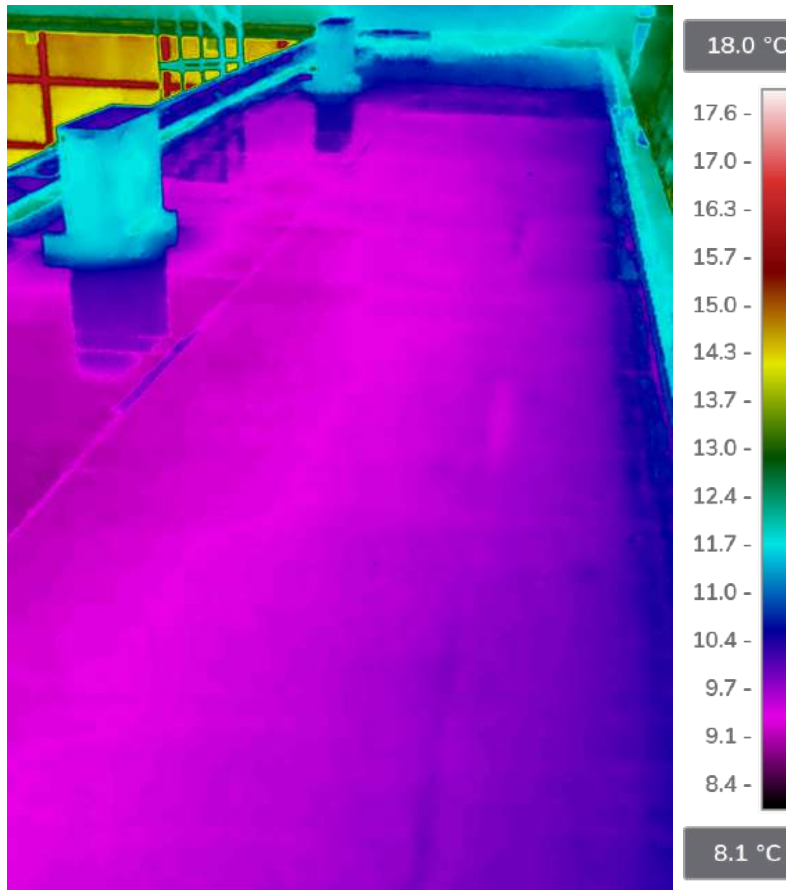
Glazing frames performing poorly.

Some air leakage noted to cladding at head of glazing junction.

Build IR



Thermal Imaging



File information	
Created	23/09/2022 07:03:37
Reflected temp.	-40.0 °C
Distance	3.54 m
Atmospheric temp.	10.7 °C
Minimum temp.	8.9 °C
Maximum temp.	16.5 °C
Image number	40

Measurements

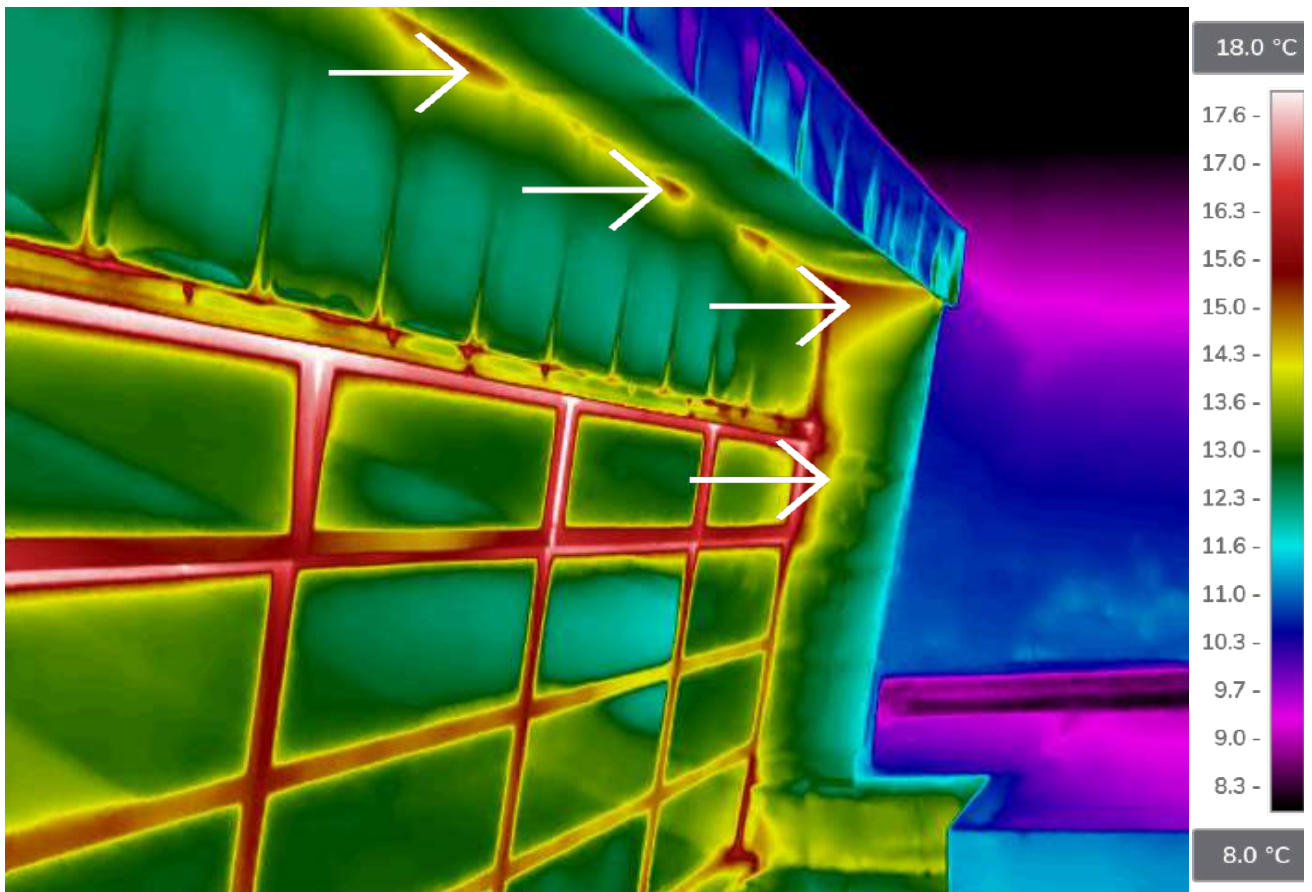


Comments

Good temperature consistency indicates good continuity of the insulation.

Build IR

Thermal Imaging



File information	
Created	23/09/2022 07:04:00
Reflected temp.	-10.0 °C
Distance	8.15 m
Atmospheric temp.	10.7 °C
Minimum temp.	6.1 °C
Maximum temp.	19.1 °C
Image number	41

Measurements



Comments

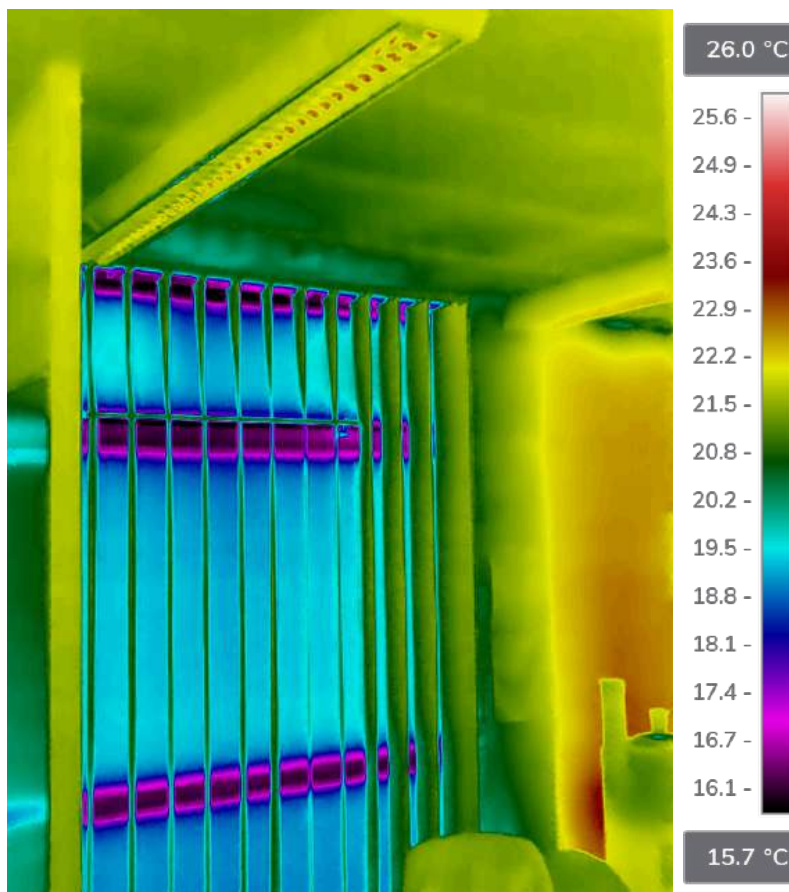
Glazing frames performing poorly.

Arrows indicate area of air leakage to cladding.

Build IR



Thermal Imaging



File information

Created	23/09/2022 07:14:42
Reflected temp.	22.0 °C
Distance	2.50 m
Atmospheric temp.	22.1 °C
Minimum temp.	14.8 °C
Maximum temp.	23.6 °C
Image number	42

Measurements



Comments

Glazing frames performing poorly.

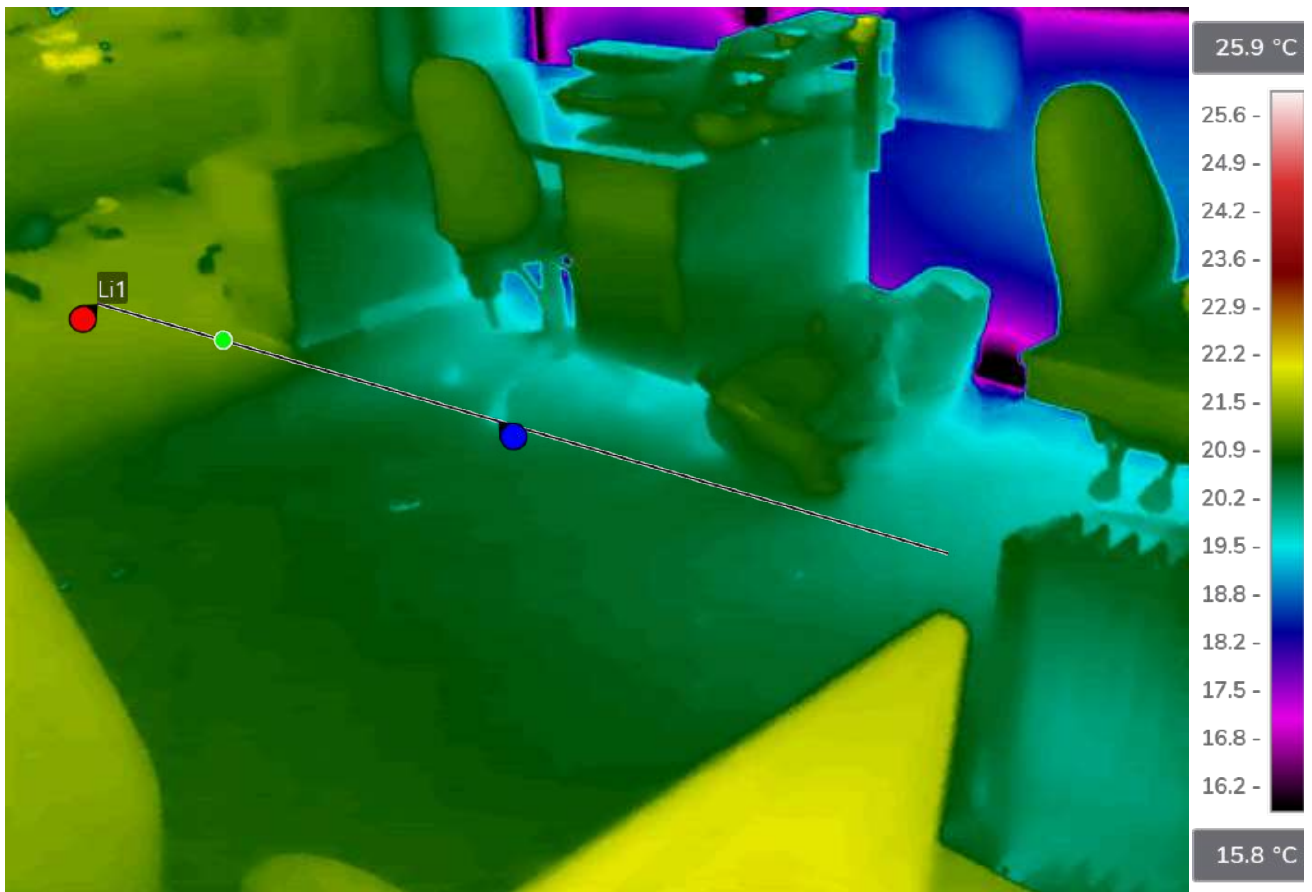
File information		Measurements
Created	23/09/2022 07:16:24	
Reflected temp.	22.0 °C	
Distance	3.00 m	
Atmospheric temp.	22.1 °C	
Minimum temp.	14.3 °C	
Maximum temp.	27.1 °C	
Image number	43	



Glazing frames and spandrel panels performing poorly.

Build IR

Thermal Imaging



File information		Measurements	
Created	23/09/2022 07:16:34	Li1	
Reflected temp.	22.0 °C	Max	21.5 °C
Distance	3.67 m	Avg	20.7 °C
Atmospheric temp.	22.1 °C	Min	20.0 °C
Minimum temp.	12.8 °C		
Maximum temp.	22.3 °C		
Image number	44		



Comments

Cold radiating from poorly performing glazed area cooling floor.

File information	
Created	23/09/2022 07:17:27
Reflected temp.	22.0 °C
Distance	5.41 m
Atmospheric temp.	22.1 °C
Minimum temp.	18.1 °C
Maximum temp.	28.7 °C
Image number	45

Measurements



Comments

Air infiltration noted behind drylining.

Air infiltration noted behind drylining.

A thermal image of a room. A window with vertical blinds is the central feature. A person's hand is visible in the bottom left corner, pointing towards the bottom left corner of the window frame. The temperature scale on the right ranges from 17.3 °C (dark blue) to 27.4 °C (dark red). The window area shows a mix of blue and green, indicating temperatures between 19.0 °C and 23.0 °C. The walls and ceiling are yellow and red, indicating higher temperatures around 25.0 °C to 27.4 °C.

File information	
Created	23/09/2022 07:20:29
Reflected temp.	22.0 °C
Distance	4.21 m
Atmospheric temp.	23.4 °C
Minimum temp.	13.8 °C
Maximum temp.	24.0 °C
Image number	46

Measurements



Comments

Wall performing well, glazing showing colder - generic along this elevation.

Wall performing well, glazing showing colder - generic along this elevation.

A thermal image of a person standing in a room, viewed through a window. The image is color-coded to show temperature variations. A color scale on the right indicates temperatures from 17.5 °C (dark blue) to 27.6 °C (dark red). The person is visible as a bright, high-temperature shape against the cooler background of the room and window. The window frame and surrounding walls are also visible, with varying temperature readings.

File information	
Created	23/09/2022 07:21:36
Reflected temp.	22.0 °C
Distance	6.39 m
Atmospheric temp.	24.1 °C
Minimum temp.	14.3 °C
Maximum temp.	33.9 °C
Image number	47

Measurements



Comments

Glazing frames performing poorly.

Glazing frames performing poorly.

Thermal image of a hallway. A color scale on the right indicates temperatures from 17.8 °C (dark blue) to 27.9 °C (dark red). A white arrow points to a cold spot (blue/purple) on the floor near a window frame.

File information	
Created	23/09/2022 07:22:17
Reflected temp.	22.0 °C
Distance	5.08 m
Atmospheric temp.	24.2 °C
Minimum temp.	14.9 °C
Maximum temp.	28.8 °C
Image number	48

Measurements



Comments
Air infiltration noted under and around poorly sealed glazing frames.

Air infiltration noted under and around poorly sealed glazing frames.

A thermal image of a hallway. A person is visible in the distance, standing near a doorway. The image shows temperature variations across the scene, with a color scale on the right ranging from 17.8 °C (dark blue) to 27.9 °C (dark red). The person appears to be holding a white object, possibly a cup or a bag.

File information	
Created	23/09/2022 07:22:38
Reflected temp.	22.0 °C
Distance	2.74 m
Atmospheric temp.	24.2 °C
Minimum temp.	14.2 °C
Maximum temp.	48.9 °C
Image number	49

Measurements



Comments
Air infiltration noted under and around poorly sealed glazing frames.

Air infiltration noted under and around poorly sealed glazing frames.

Thermal image showing a room with a table and chairs. A white arrow points to a small, dark, circular object on the floor near the base of the wall. A color scale on the right indicates temperatures from 17.6 °C to 27.7 °C.

File information	
Created	23/09/2022 07:24:24
Reflected temp.	22.0 °C
Distance	3.75 m
Atmospheric temp.	23.8 °C
Minimum temp.	14.2 °C
Maximum temp.	48.7 °C
Image number	50

Measurements



Comments

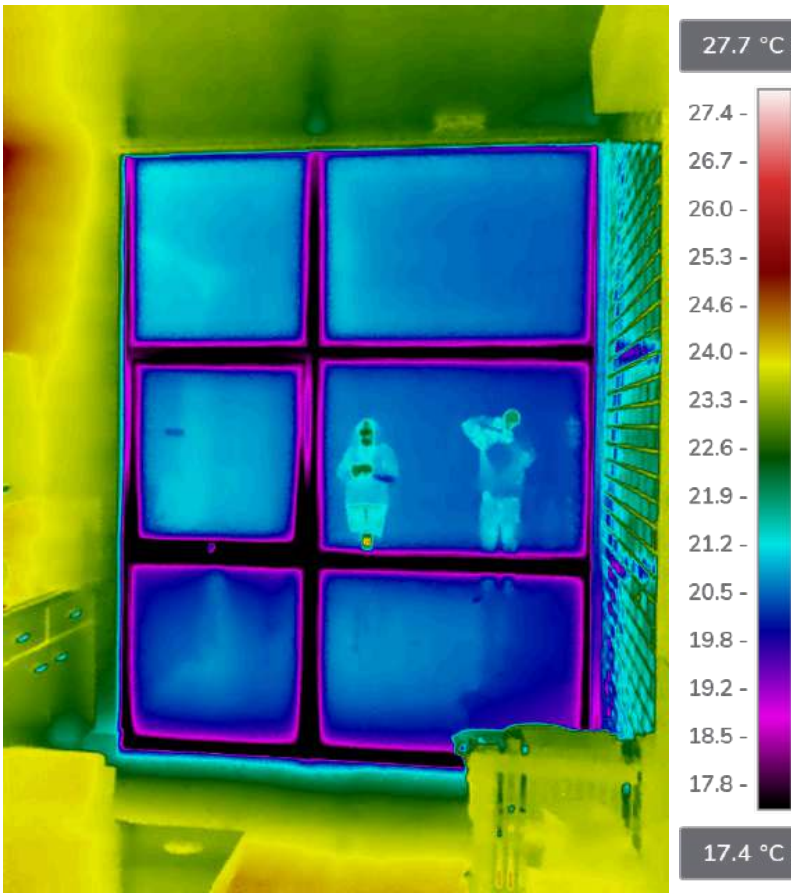
No thermal separation between conditioned space and Plant room.

No thermal separation between conditioned space and Plant room.

Build IR



Thermal Imaging



File information	
Created	23/09/2022 07:25:00
Reflected temp.	22.0 °C
Distance	5.00 m
Atmospheric temp.	23.8 °C
Minimum temp.	13.6 °C
Maximum temp.	25.3 °C
Image number	51

Measurements



Comments
Glazing frames performing poorly.

Thermal image of a room interior. A color scale on the right indicates temperatures ranging from 17.0 °C (dark blue) to 27.1 °C (dark red). The image shows a wall with a grid pattern, likely a window or a decorative element, and a ceiling with a light fixture. The temperature distribution is non-uniform, with higher temperatures (yellow/red) on the left and lower temperatures (blue) in the center and right.

File information	
Created	23/09/2022 07:25:32
Reflected temp.	22.0 °C
Distance	4.75 m
Atmospheric temp.	23.1 °C
Minimum temp.	13.3 °C
Maximum temp.	24.7 °C
Image number	52

Measurements



Glass blocks and glazing performing poorly.

Glass blocks and glazing performing poorly.

Thermal image showing a wall with a color scale from 17.3 °C to 27.4 °C. A white arrow points to a dark rectangular area, indicating a cold spot or thermal bridge.

File information		Measurements
Created	23/09/2022 07:25:43	
Reflected temp.	22.0 °C	
Distance	5.24 m	
Atmospheric temp.	21.8 °C	
Minimum temp.	13.6 °C	
Maximum temp.	24.8 °C	
Image number	53	



Arrow indicates poorly performing inle glazed window.

Area above and below showing poor thermal performance - potentially due to cold air ingress behind plasterboard. (low level - internal of image 21 - potentially single skin blockwork with no insulation).

File information	
Created	23/09/2022 07:27:31
Reflected temp.	22.0 °C
Distance	7.00 m
Atmospheric temp.	23.2 °C
Minimum temp.	12.7 °C
Maximum temp.	33.6 °C
Image number	54

Measurements



Comments

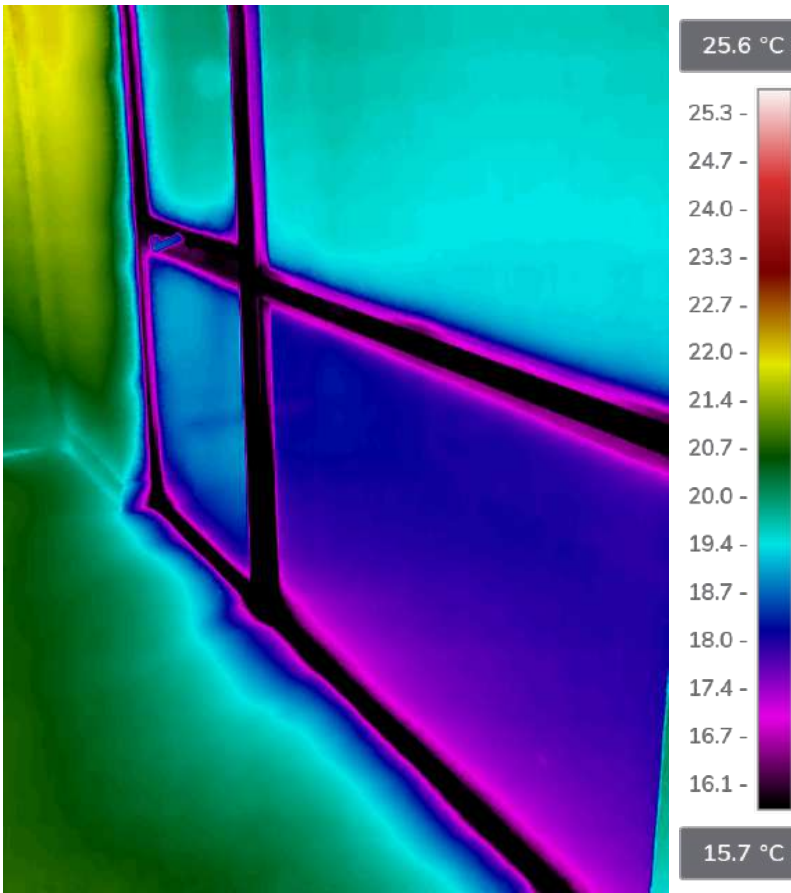
Glazing frames performing poorly. Cold areas highlighted high and low level are reflections from glazing.

Glazing frames performing poorly. Cold areas highlighted high and low level are reflections from glazing.

Build IR



Thermal Imaging



File information	
Created	23/09/2022 07:29:26
Reflected temp.	22.0 °C
Distance	4.66 m
Atmospheric temp.	21.6 °C
Minimum temp.	12.1 °C
Maximum temp.	22.2 °C
Image number	55

Measurements



Comments
Glazing performing poorly and cold air noted tracking in below frames.

File information	
Created	23/09/2022 07:33:11
Reflected temp.	22.0 °C
Distance	8.40 m
Atmospheric temp.	20.0 °C
Minimum temp.	16.6 °C
Maximum temp.	36.0 °C
Image number	56

Measurements



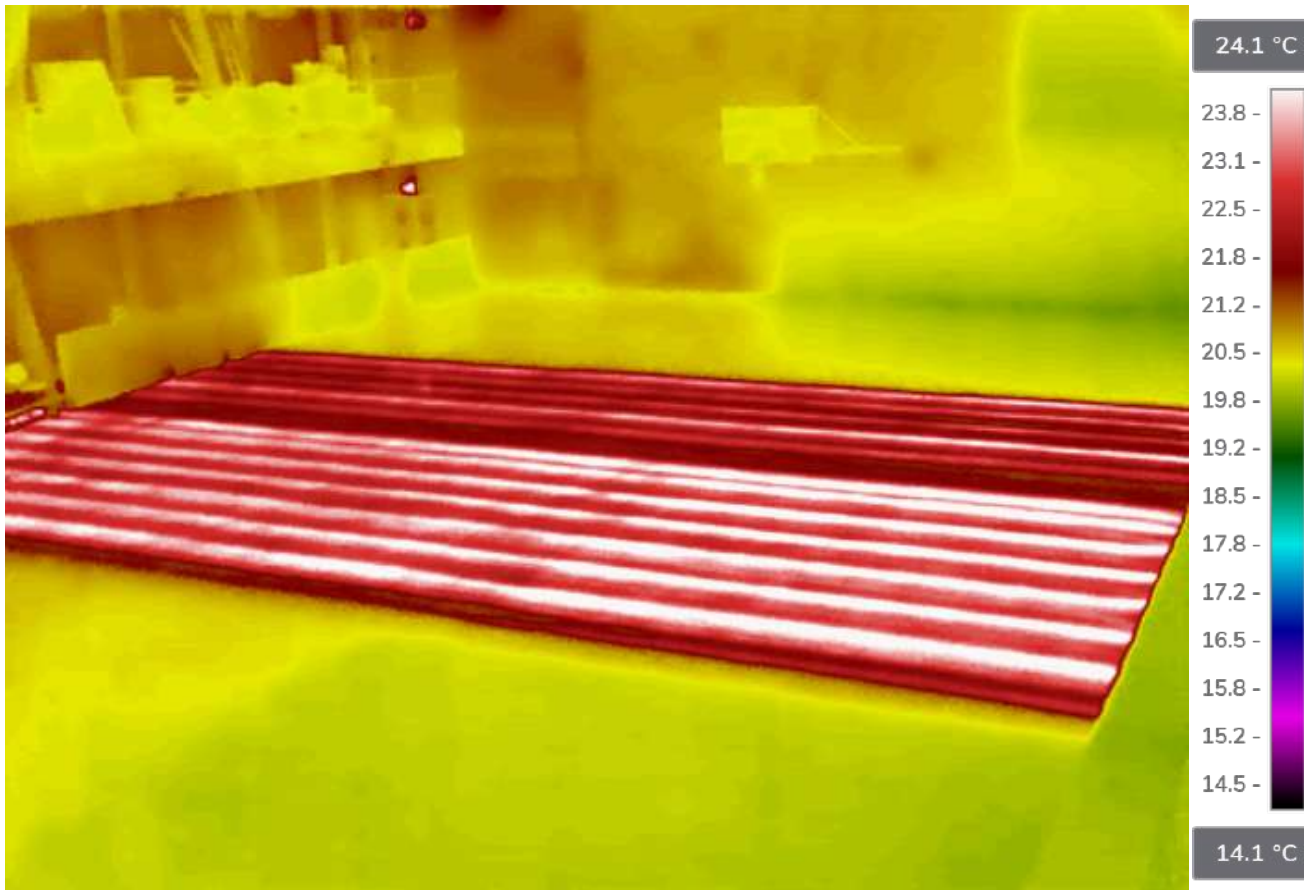
Comments
Cold noted to concrete seating area from louved store rooms below.
Cold also noted tracking behind dry lining and above ceiling tiles - possibly related to cold air ingress - intrusive investigation recommended.

Cold noted to concrete seating area from louved store rooms below.

Cold also noted tracking behind dry lining and above ceiling tiles - possibly related to cold air ingress - intrusive investigation recommended.

Build IR

Thermal Imaging



File information	
Created	23/09/2022 07:33:53
Reflected temp.	22.0 °C
Distance	8.00 m
Atmospheric temp.	20.0 °C
Minimum temp.	19.6 °C
Maximum temp.	26.0 °C
Image number	57

Measurements



Comments

At time of survey - only 1 underfloor heating loop working.

A thermal image of a room, likely a laboratory or industrial setting. The image shows a large, open space with a floor that appears to be covered in a material with a striped pattern. The walls are visible, and there are some structures or equipment in the background. A color scale on the right side of the image indicates temperature in degrees Celsius, ranging from 14.0 °C (dark blue) to 24.2 °C (dark red). The floor is predominantly red, indicating higher temperatures, while the walls and background are yellow and green, indicating lower temperatures.

File information	
Created	23/09/2022 07:35:15
Reflected temp.	22.0 °C
Distance	20.04 m
Atmospheric temp.	20.0 °C
Minimum temp.	19.5 °C
Maximum temp.	26.1 °C
Image number	58

Measurements



At time of survey - only 1 underfloor heating loop working.

A thermal image of a solar cell array. The image shows a grid of solar cells with interconnects. Three white arrows point to the interconnects, indicating the locations of the cracks. A color scale on the right indicates temperature in degrees Celsius, ranging from 15.6 to 25.5.

File information	
Created	23/09/2022 07:38:19
Reflected temp.	22.0 °C
Distance	4.36 m
Atmospheric temp.	21.5 °C
Minimum temp.	13.4 °C
Maximum temp.	26.1 °C
Image number	59

Measurements



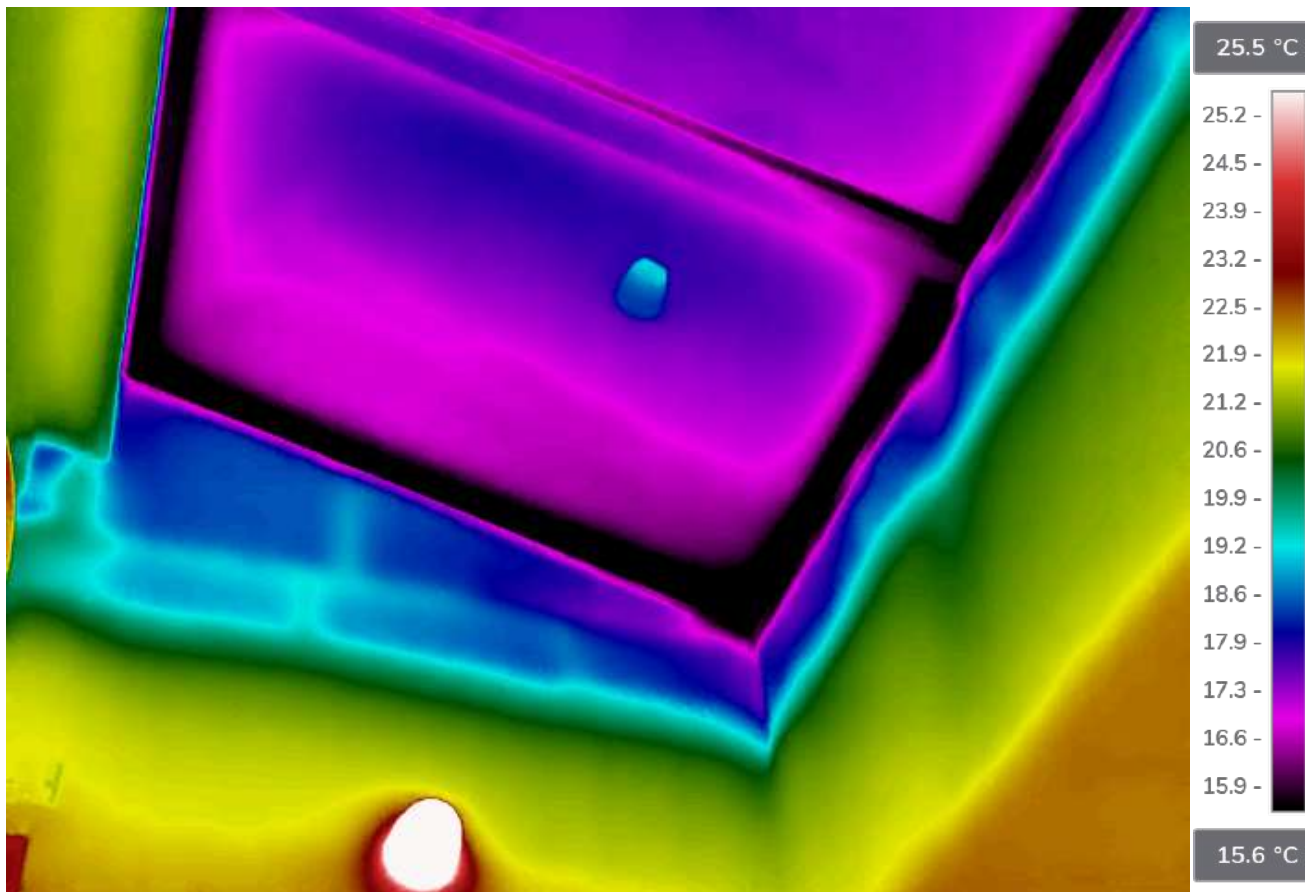
Cold areas to roof light upstands are due to lack of insulation OR cold air moving behind dry lining inside of insulation.

Cold areas to roof light upstands are due to lack of insulation OR cold air moving behind dry lining inside of insulation.

Build IR



Thermal Imaging



File information

Created	23/09/2022 07:38:30
Reflected temp.	22.0 °C
Distance	3.43 m
Atmospheric temp.	21.5 °C
Minimum temp.	13.5 °C
Maximum temp.	35.1 °C
Image number	60

Measurements



Comments

For comment see image 59.

Thermal image of a room interior. A white arrow points to a cooler area on the ceiling. A color scale on the right indicates temperatures from 16.3 °C to 26.2 °C.

File information	
Created	23/09/2022 07:40:05
Reflected temp.	22.0 °C
Distance	4.66 m
Atmospheric temp.	21.7 °C
Minimum temp.	12.6 °C
Maximum temp.	23.9 °C
Image number	61

Measurements

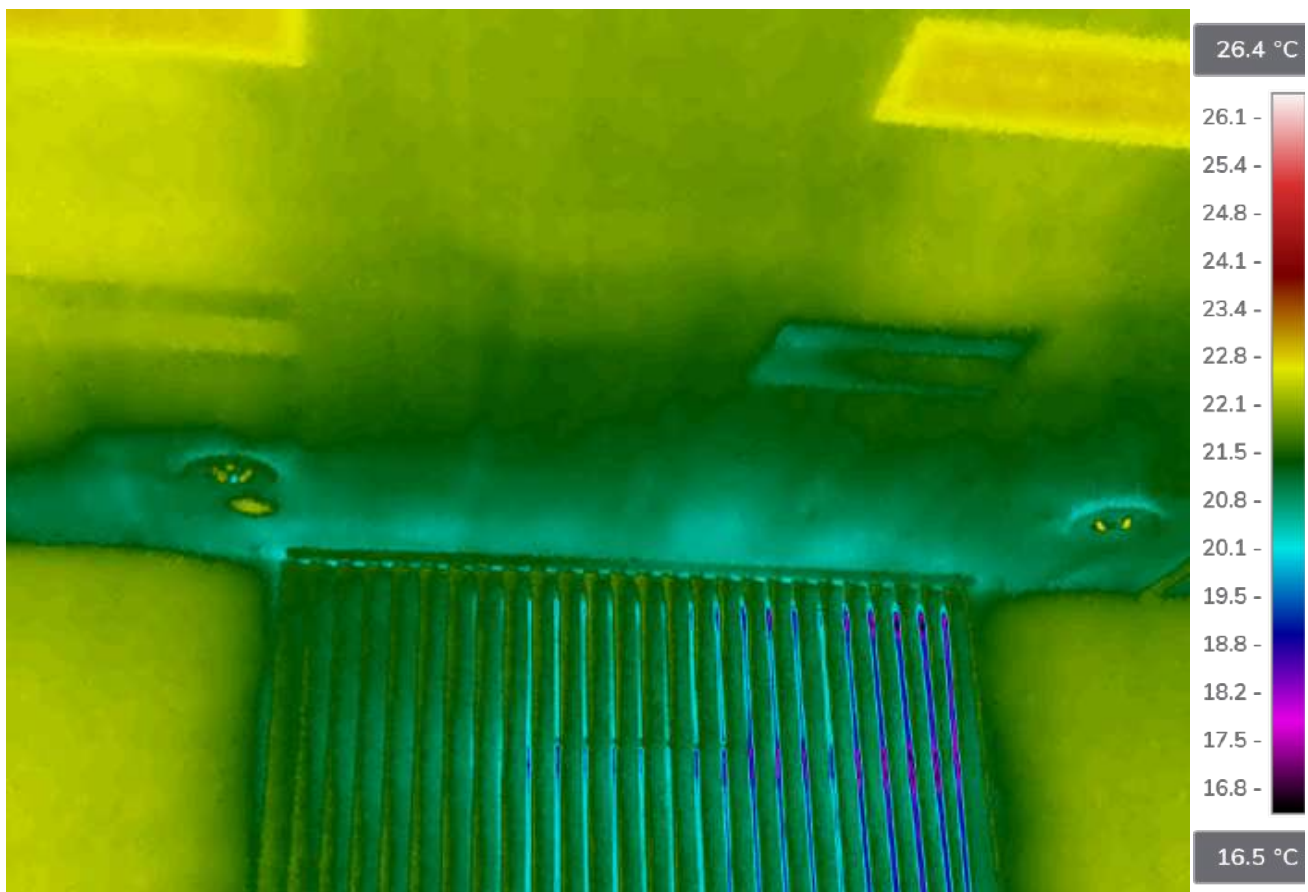


Glazing performing poorly and allowing cold air ingress above plasterboard ceiling.

Glazing performing poorly and allowing cold air ingress above plasterboard ceiling.

Build IR

Thermal Imaging



File information

Created	23/09/2022 07:40:12
Reflected temp.	22.0 °C
Distance	3.86 m
Atmospheric temp.	21.7 °C
Minimum temp.	15.9 °C
Maximum temp.	23.0 °C
Image number	62

Measurements



Comments

Continuation of image 61.

A thermal image showing a hand holding a device with a grid pattern. The device is dark blue/purple, indicating lower temperatures, while the hand and background are yellow/green, indicating higher temperatures. A color scale on the right ranges from 14.4 °C to 24.3 °C.

File information	
Created	23/09/2022 07:41:23
Reflected temp.	22.0 °C
Distance	6.08 m
Atmospheric temp.	20.2 °C
Minimum temp.	15.7 °C
Maximum temp.	22.2 °C
Image number	63

Measurements



Comments

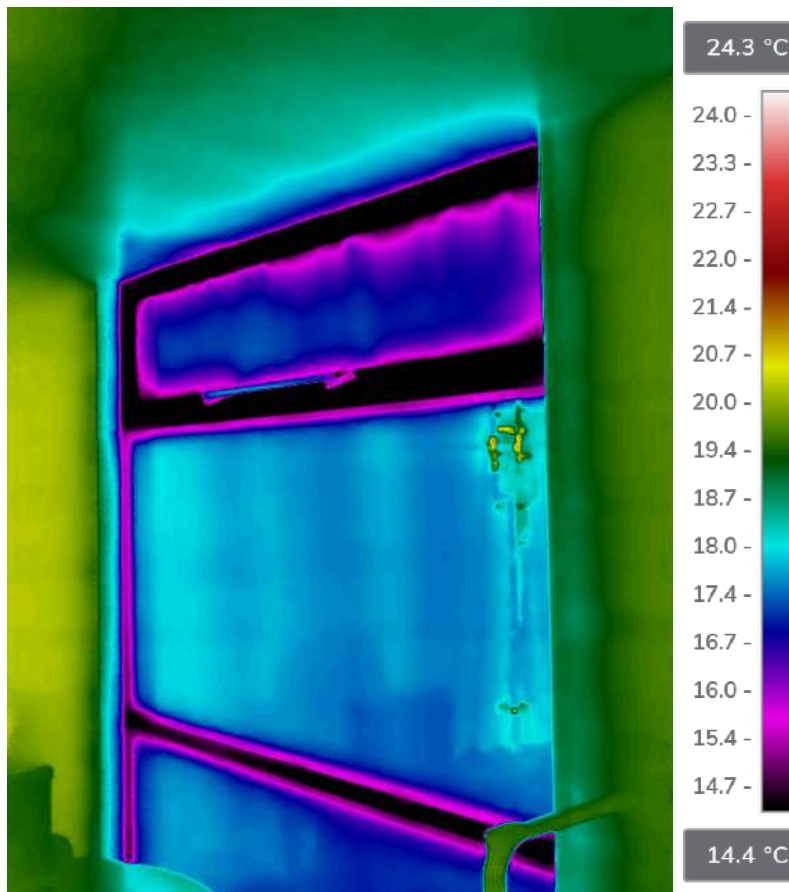
Glass blocks performing poorly.

Glass blocks performing poorly.

Build IR



Thermal Imaging



File information

Created	23/09/2022 07:41:52
Reflected temp.	22.0 °C
Distance	6.31 m
Atmospheric temp.	20.2 °C
Minimum temp.	11.4 °C
Maximum temp.	21.7 °C
Image number	64

Measurements



Comments

Glazing performing poorly and allowing above ceiling.

File information	
Created	23/09/2022 07:44:24
Reflected temp.	22.0 °C
Distance	7.36 m
Atmospheric temp.	24.4 °C
Minimum temp.	15.3 °C
Maximum temp.	38.8 °C
Image number	65

Measurements



Comments

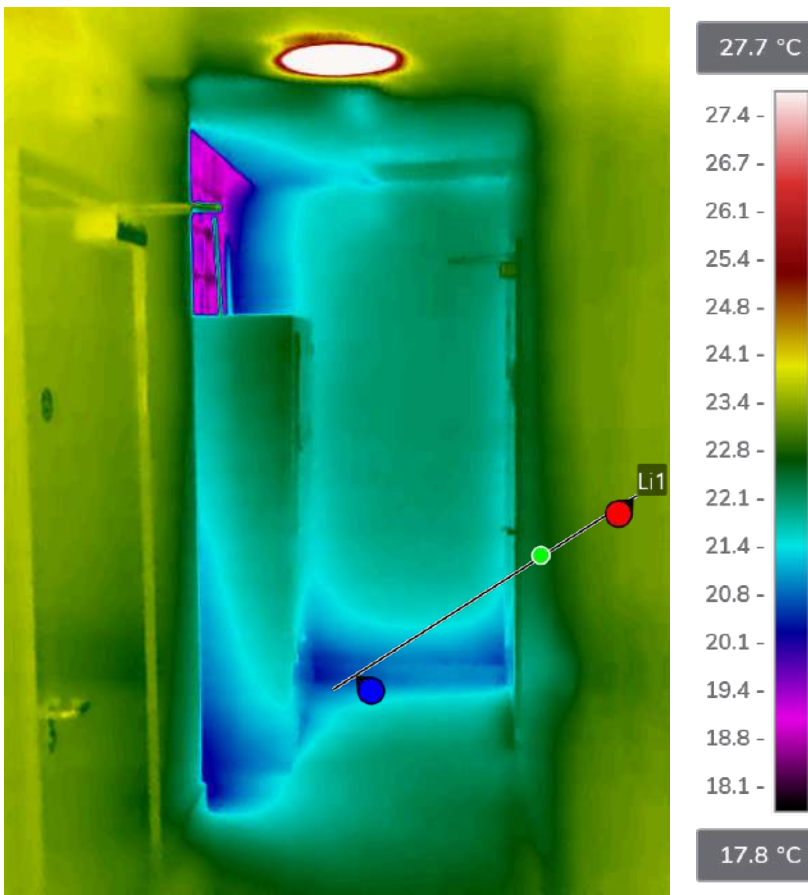
Glazing frames performing poorly.

Glazing frames performing poorly.

Build IR



Thermal Imaging



File information	
Created	23/09/2022 07:46:44
Reflected temp.	22.0 °C
Distance	5.58 m
Atmospheric temp.	23.4 °C
Minimum temp.	18.0 °C
Maximum temp.	39.5 °C
Image number	66

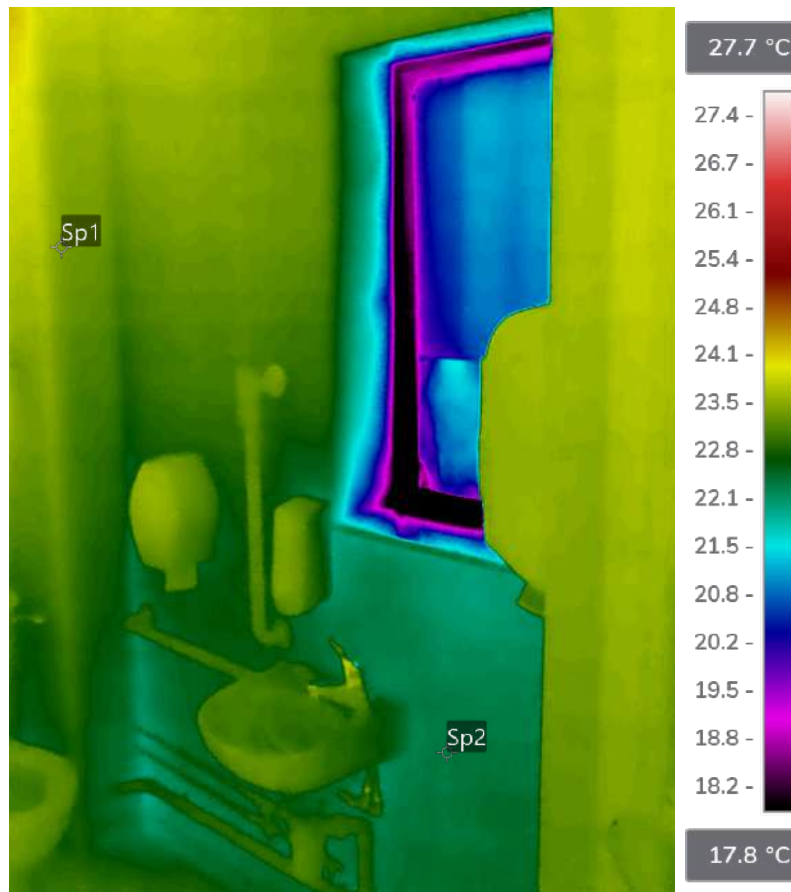
Measurements	
Li1	
Max	23.4 °C
Avg	22.0 °C
Min	20.7 °C



Comments
Cold noted to end of corridor due to lower thermal performance of glass blocks.

Build IR

Thermal Imaging



File information		Measurements	
Created	23/09/2022 07:47:51	Sp2	22.4 °C
Reflected temp.	22.0 °C	Sp1	23.4 °C
Distance	2.50 m		
Atmospheric temp.	23.5 °C		
Minimum temp.	13.2 °C		
Maximum temp.	24.3 °C		
Image number	67		



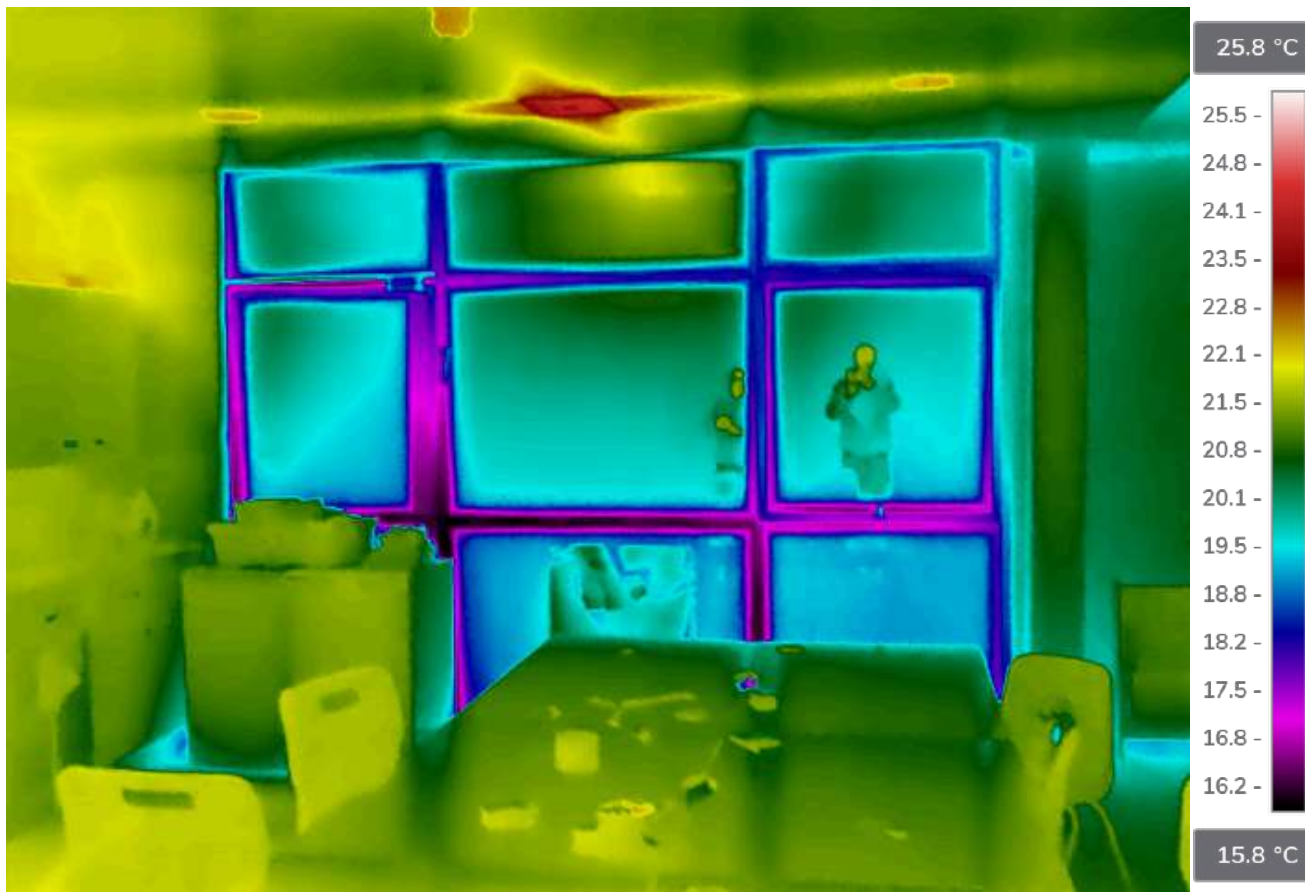
Comments

Glazing frames performing poorly.

Slightly lower thermal performance to wall area - approx. 1-degree temperature drop.

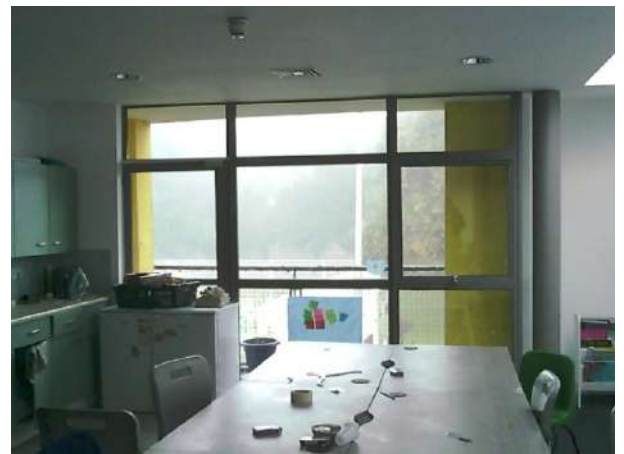
Build IR

Thermal Imaging



File information	
Created	23/09/2022 07:51:02
Reflected temp.	22.0 °C
Distance	6.54 m
Atmospheric temp.	21.5 °C
Minimum temp.	15.6 °C
Maximum temp.	24.4 °C
Image number	68

Measurements



Comments

Lower thermal performance of glazing.

Thermal image of a car interior. The color scale on the right indicates temperature in degrees Celsius, ranging from 15.7 °C (blue) to 25.7 °C (red). A white arrow points to a hot area on the ceiling, and another white arrow points to a cooler area on the floor.

File information	
Created	23/09/2022 07:51:10
Reflected temp.	22.0 °C
Distance	6.11 m
Atmospheric temp.	21.5 °C
Minimum temp.	14.8 °C
Maximum temp.	21.6 °C
Image number	69

Measurements



Comments
Cold areas to roof light upstands are due to lack of insulation OR cold air moving behind dry lining inside of insulation.
Soffit showing colder and cold noted tracking behind plasterboard form floor area and next to glazing.

Cold areas to roof light upstands are due to lack of insulation OR cold air moving behind dry lining inside of insulation.

Soffit showing colder and cold noted tracking behind plasterboard form floor area and next to glazing.

File information	
Created	23/09/2022 07:51:44
Reflected temp.	22.0 °C
Distance	4.27 m
Atmospheric temp.	21.5 °C
Minimum temp.	14.2 °C
Maximum temp.	25.0 °C
Image number	70

Measurements



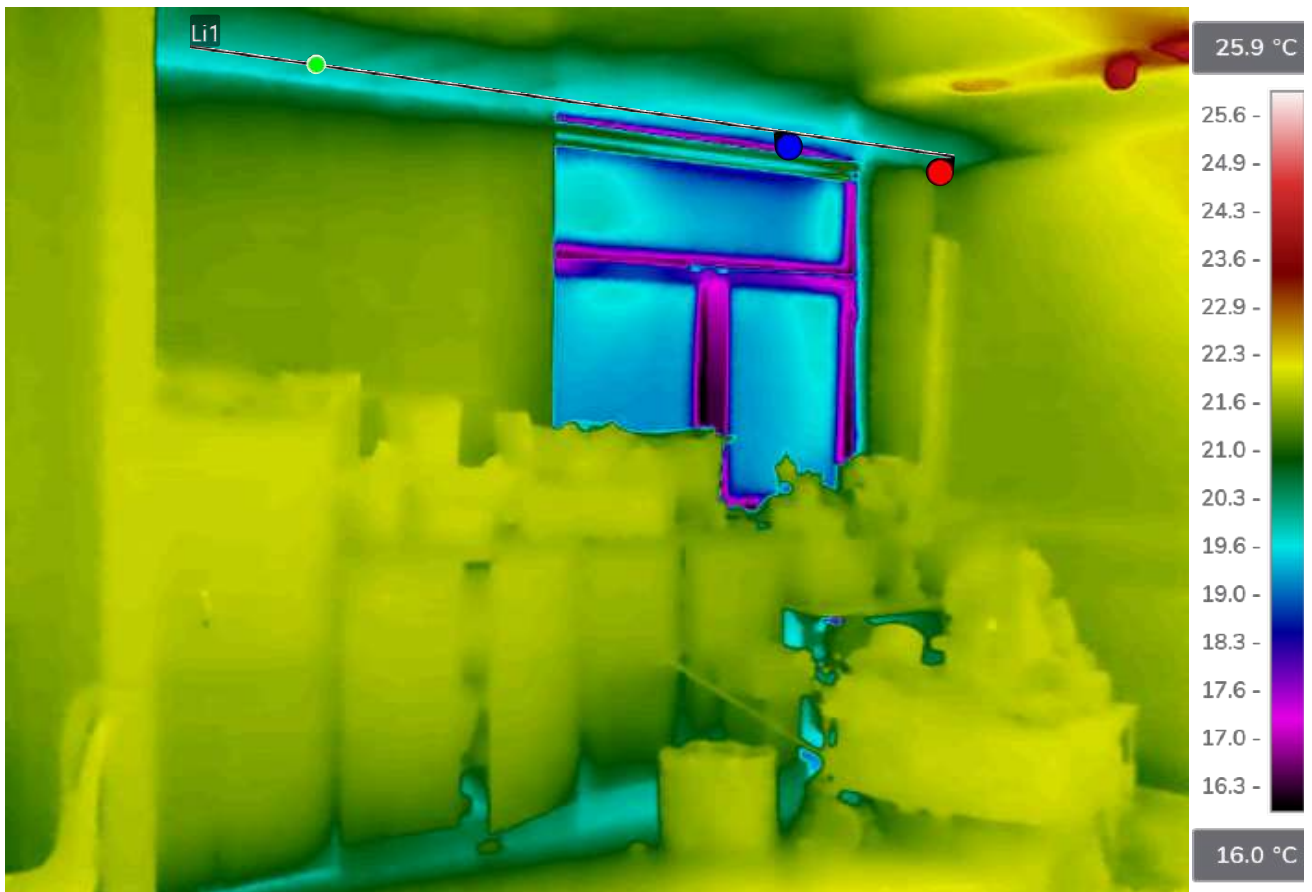
Comments

Cold areas to roof light upstands are due to lack of insulation OR cold air moving behind dry lining inside of insulation.

Cold areas to roof light upstands are due to lack of insulation OR cold air moving behind dry lining inside of insulation.

Build IR

Thermal Imaging



File information		Measurements	
Created	23/09/2022 07:52:24	Li1	
Reflected temp.	22.0 °C	Max	20.5 °C
Distance	5.70 m	Avg	19.9 °C
Atmospheric temp.	22.0 °C	Min	19.4 °C
Minimum temp.	15.4 °C		
Maximum temp.	24.4 °C		
Image number	71		



Comments

Unknown cold ingress high level - possible air infiltration.

Continuation of colder soffit detail.

File information		Measurements
Created	23/09/2022 07:55:07	
Reflected temp.	22.0 °C	
Distance	8.04 m	
Atmospheric temp.	21.7 °C	
Minimum temp.	11.1 °C	
Maximum temp.	41.8 °C	
Image number	72	



Cold noted behind dry lining from rooflight area, around window, and left side of image (glass blocks).

Thermal image of a room interior. The color scale on the right indicates temperatures ranging from 15.5 °C (blue) to 25.4 °C (red). The image shows a grid-patterned ceiling, a window, and a chair.

File information	
Created	23/09/2022 07:55:30
Reflected temp.	22.0 °C
Distance	5.29 m
Atmospheric temp.	21.7 °C
Minimum temp.	9.9 °C
Maximum temp.	36.2 °C
Image number	73

Measurements



Comments

Continuation of image 72.

Continuation of image 72.

Thermal image of a room. The ceiling features a square light fixture. A window with a grid pattern is visible in the lower left. A color scale on the right indicates temperatures from 14.8 °C to 24.7 °C.

File information		Measurements
Created	23/09/2022 07:57:06	
Reflected temp.	22.0 °C	
Distance	2.70 m	
Atmospheric temp.	20.8 °C	
Minimum temp.	15.0 °C	
Maximum temp.	23.0 °C	
Image number	74	



Likely cold air noted tracking above plasterboard ceiling.

File information	
Created	23/09/2022 07:57:18
Reflected temp.	22.0 °C
Distance	6.36 m
Atmospheric temp.	21.0 °C
Minimum temp.	11.7 °C
Maximum temp.	21.0 °C
Image number	75

Measurements

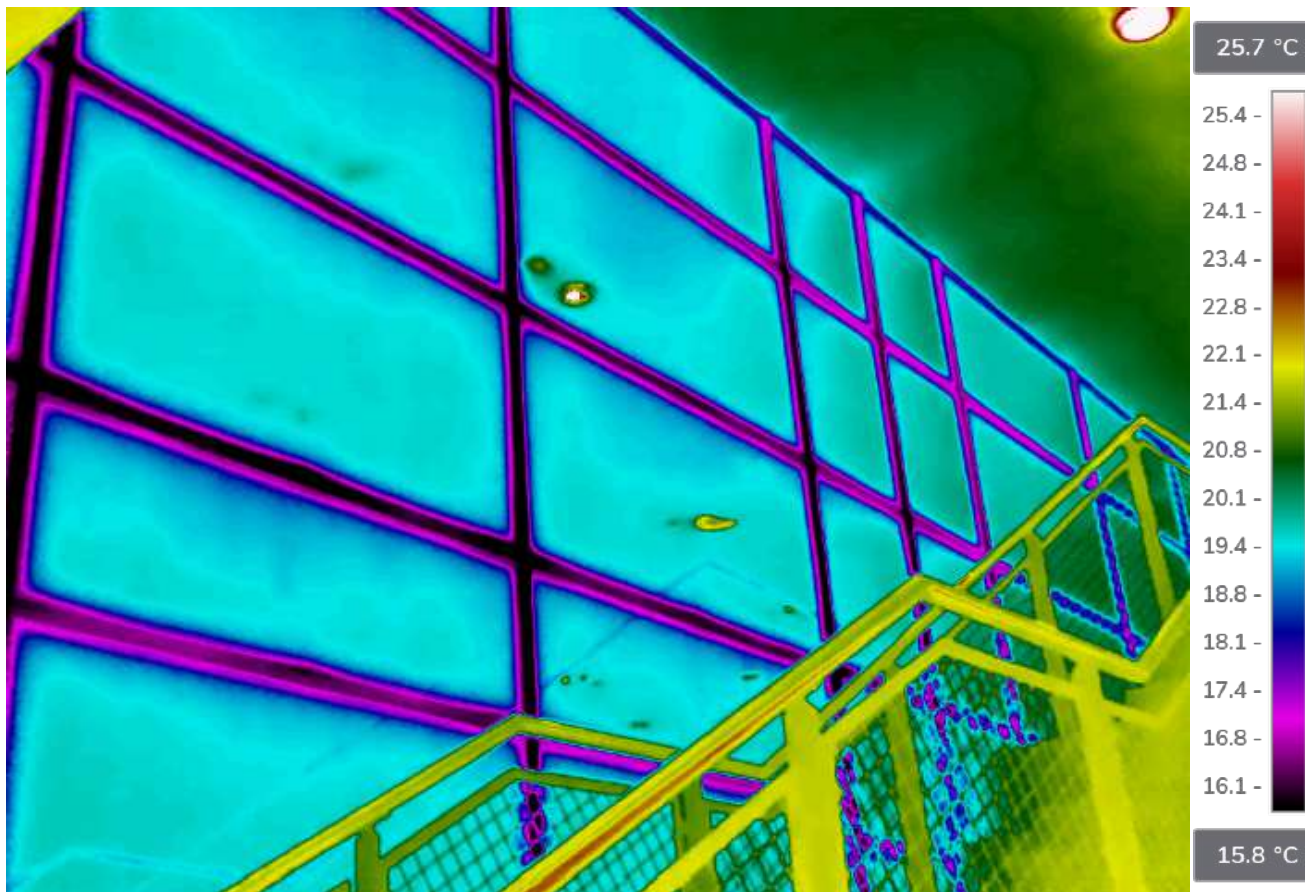


Glazing and frames performing poorly including seals to opening windows.

Air infiltration noted behind dry lining.

Build IR

Thermal Imaging



File information

Created	23/09/2022 07:58:10
Reflected temp.	22.0 °C
Distance	8.00 m
Atmospheric temp.	21.7 °C
Minimum temp.	14.5 °C
Maximum temp.	91.3 °C
Image number	76

Measurements



Comments

Poor performance of glazing frames.

A thermal image of a window with a color scale on the right. The scale ranges from 15.7 °C (dark blue) to 25.6 °C (dark red). The window panes show varying temperatures, with some areas appearing warmer (yellow/green) and others cooler (blue/purple). A small, bright yellow object is visible on the left pane, and a small, bright yellow object is visible on the right pane.

File information	
Created	23/09/2022 07:58:50
Reflected temp.	22.0 °C
Distance	3.71 m
Atmospheric temp.	21.7 °C
Minimum temp.	11.4 °C
Maximum temp.	23.6 °C
Image number	77

Measurements

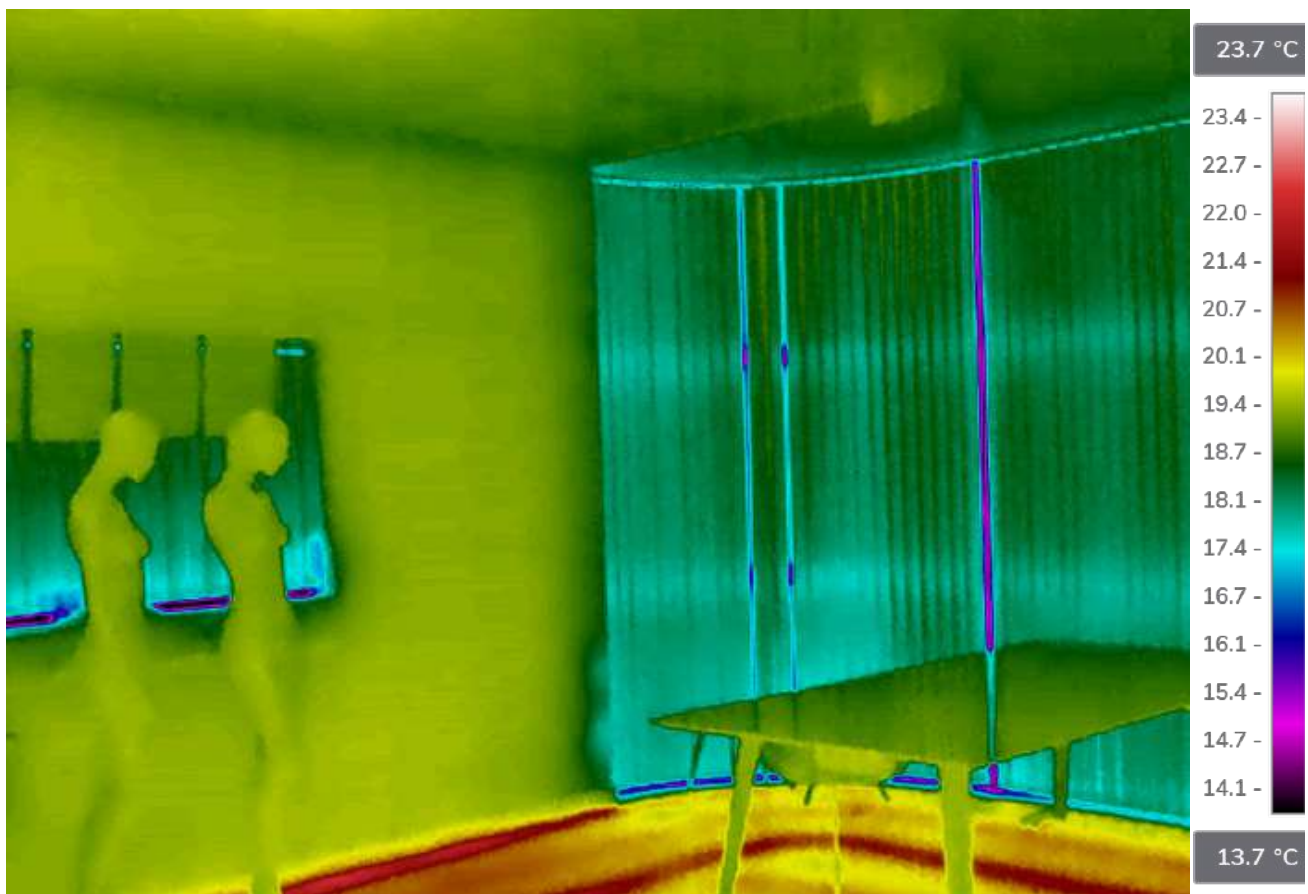


Air infiltration noted around external door.

Air infiltration noted around external door.

Build IR

Thermal Imaging



File information

Created	23/09/2022 08:01:28
Reflected temp.	22.0 °C
Distance	7.01 m
Atmospheric temp.	19.4 °C
Minimum temp.	13.1 °C
Maximum temp.	22.4 °C
Image number	78

Measurements



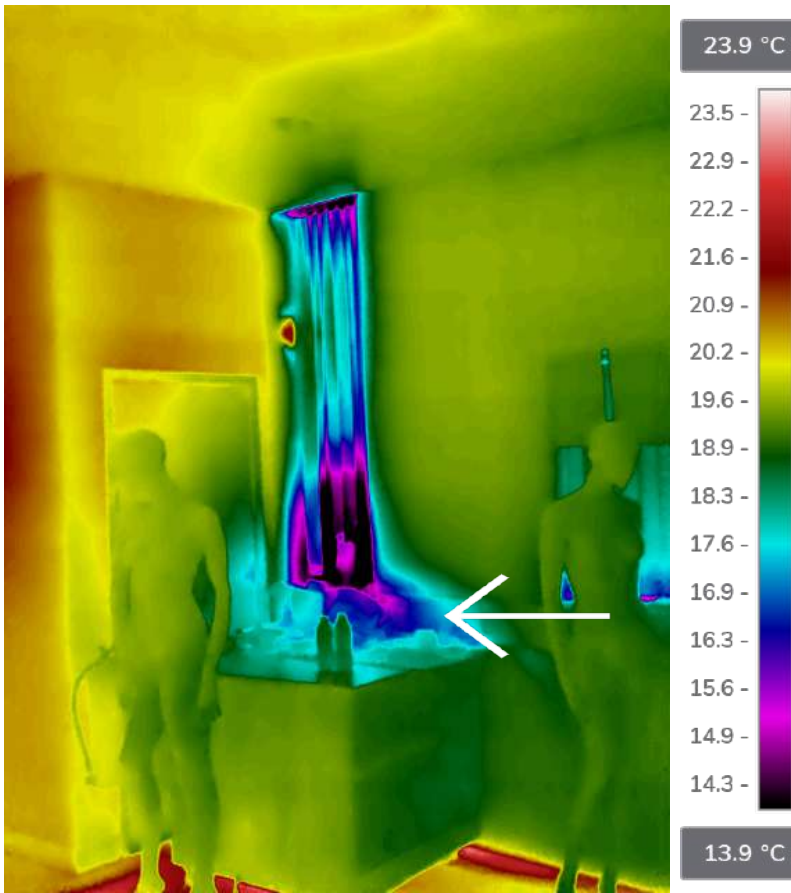
Comments

No further comment.

Build IR



Thermal Imaging



File information	
Created	23/09/2022 08:01:58
Reflected temp.	22.0 °C
Distance	5.46 m
Atmospheric temp.	19.4 °C
Minimum temp.	10.8 °C
Maximum temp.	23.1 °C
Image number	79

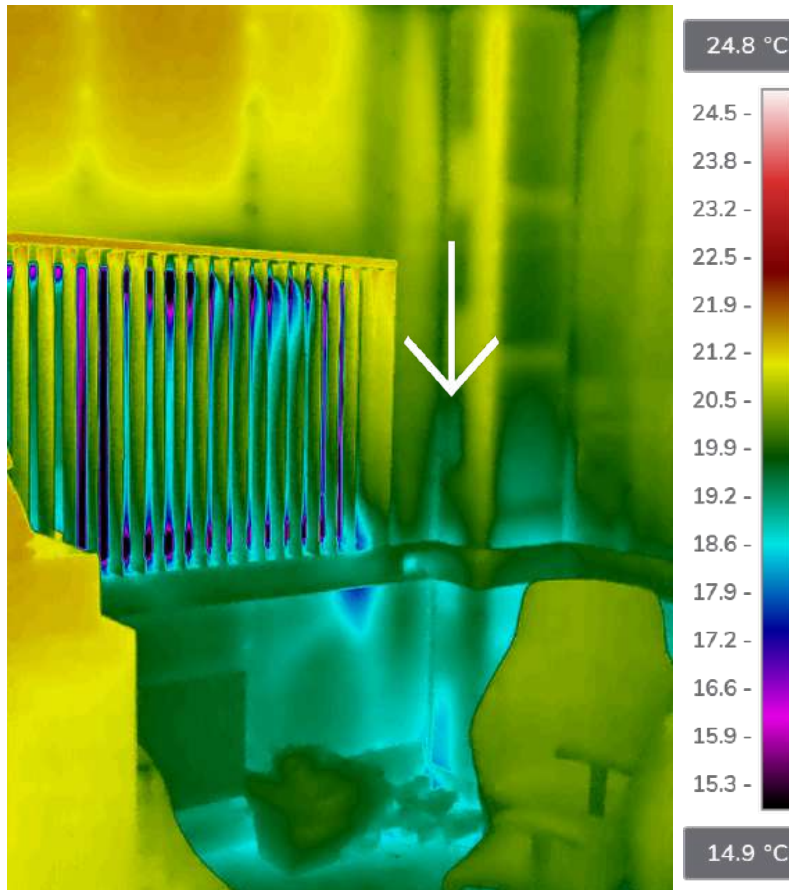
Measurements



Comments
Cold air through open window.

Build IR

Thermal Imaging



File information	
Created	23/09/2022 08:04:40
Reflected temp.	22.0 °C
Distance	4.16 m
Atmospheric temp.	20.5 °C
Minimum temp.	10.8 °C
Maximum temp.	21.8 °C
Image number	80

Measurements



Comments

Air infiltration behind dry lining.

Thermal image showing a room with a radiator. A white arrow points to a cold spot on the floor in front of the radiator. The color scale on the right indicates temperatures from 14.6 °C (dark blue) to 24.5 °C (red).

File information	
Created	23/09/2022 08:05:27
Reflected temp.	22.0 °C
Distance	4.74 m
Atmospheric temp.	20.4 °C
Minimum temp.	17.0 °C
Maximum temp.	37.1 °C
Image number	81

Measurements



Comments

Air infiltration behind dry lining.

Air infiltration behind dry lining.

Thermal image of a room. A color scale on the right indicates temperatures from 13.8 °C (dark blue) to 23.7 °C (dark red). A white arrow points to a hot spot on the wall above a radiator.

File information	
Created	23/09/2022 08:06:30
Reflected temp.	22.0 °C
Distance	3.46 m
Atmospheric temp.	19.6 °C
Minimum temp.	12.4 °C
Maximum temp.	25.5 °C
Image number	82

Measurements



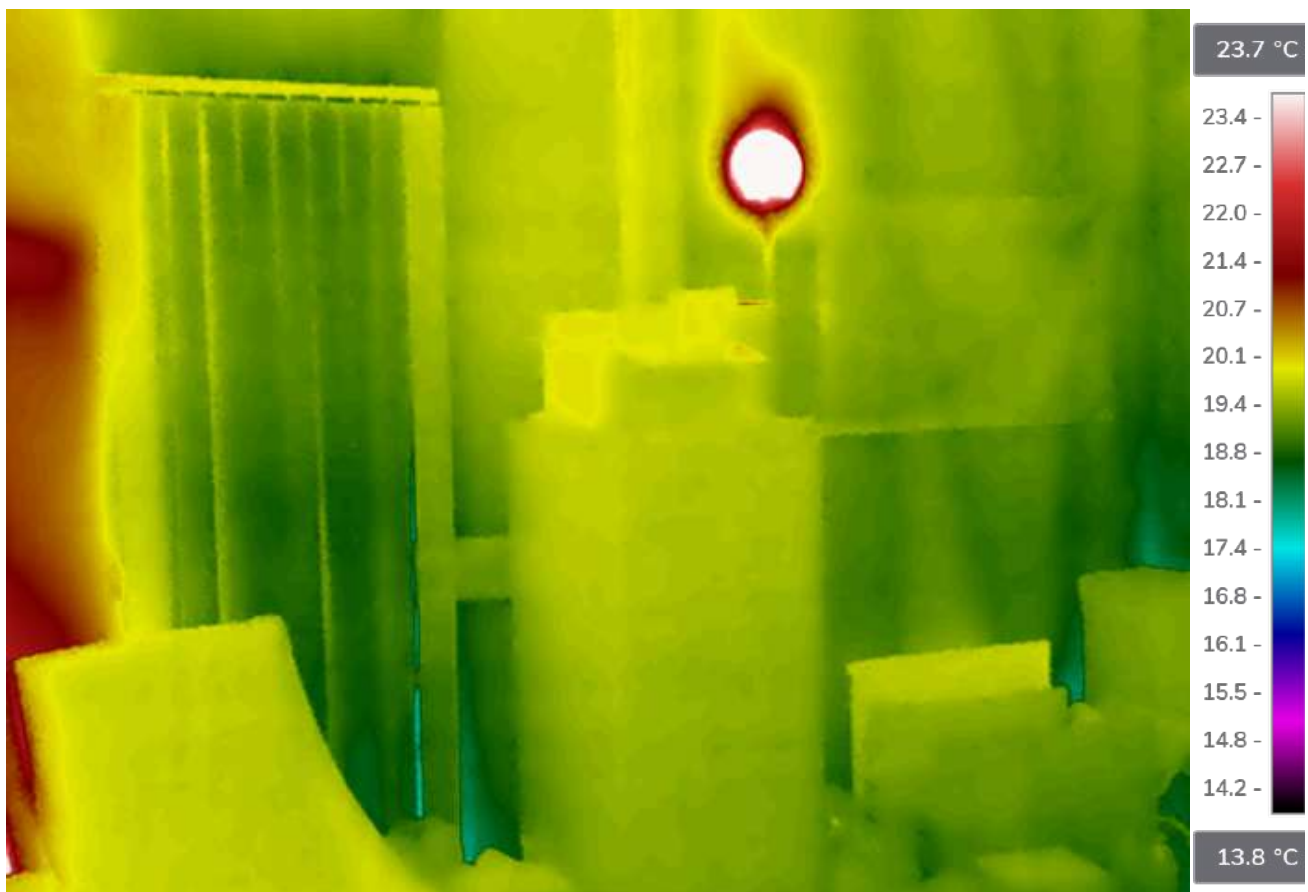
Comments

Arrow highlights air infiltration through open trickle vent.

Arrow highlights air infiltration through open trickle vent.

Build IR

Thermal Imaging



File information

Created	23/09/2022 08:06:44
Reflected temp.	22.0 °C
Distance	2.92 m
Atmospheric temp.	19.6 °C
Minimum temp.	17.8 °C
Maximum temp.	30.2 °C
Image number	83

Measurements



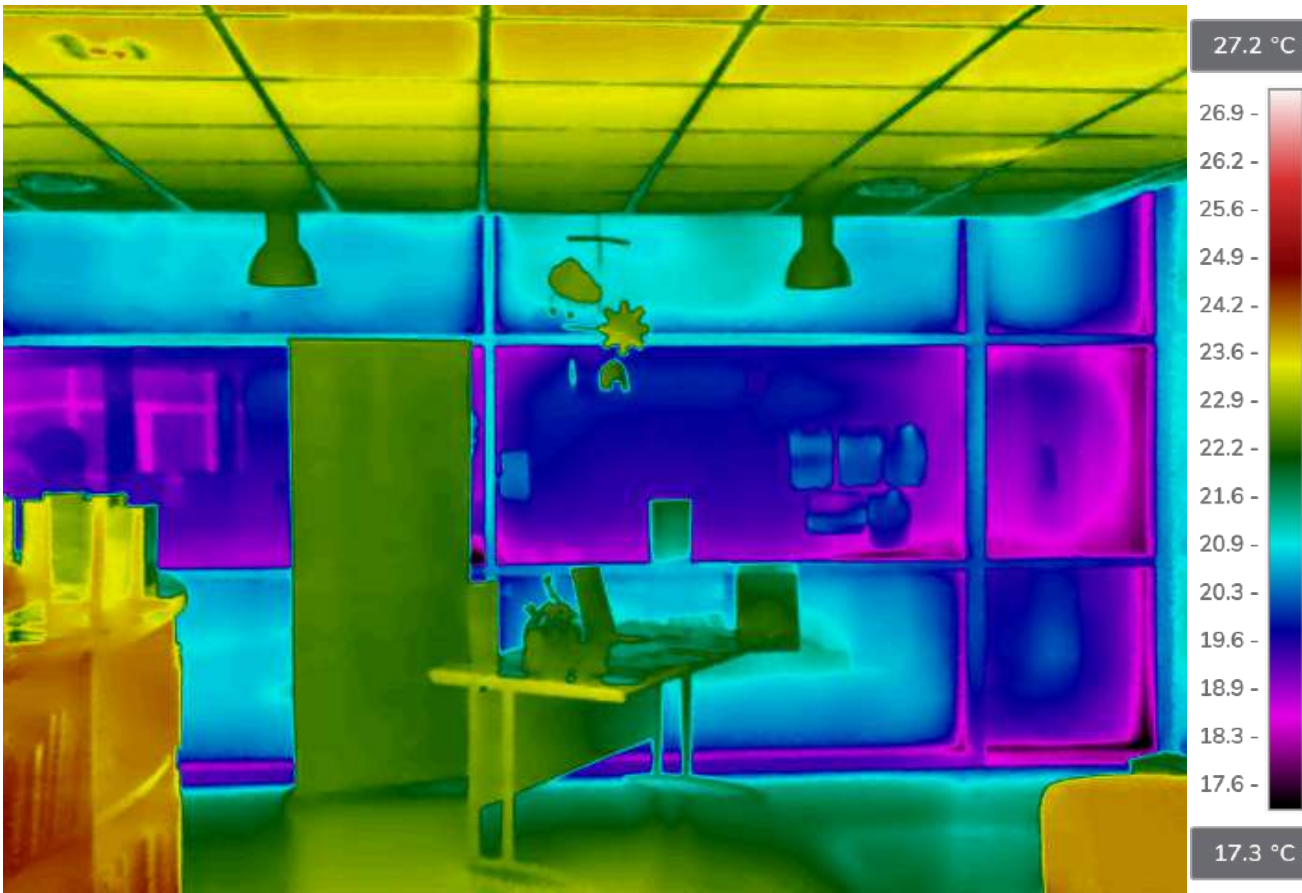
Comments

No further comment.

Build IR



Thermal Imaging



File information

Created	23/09/2022 08:11:18
Reflected temp.	22.0 °C
Distance	7.23 m
Atmospheric temp.	24.0 °C
Minimum temp.	15.8 °C
Maximum temp.	24.7 °C
Image number	84

Measurements



Comments

Increased heat loss to glazing.

File information	
Created	23/09/2022 08:11:29
Reflected temp.	22.0 °C
Distance	7.83 m
Atmospheric temp.	24.0 °C
Minimum temp.	18.0 °C
Maximum temp.	30.4 °C
Image number	85

Measurements



Comments	
Increased heat loss to glazing.	

Increased heat loss to glazing.

Build IR



Thermal Imaging



File information		Measurements	
Created	23/09/2022 08:12:01	Sp2	21.5 °C
Reflected temp.	22.0 °C	Sp1	19.5 °C
Distance	7.82 m		
Atmospheric temp.	21.0 °C		
Minimum temp.	17.3 °C		
Maximum temp.	33.9 °C		
Image number	86		



Comments

SP1 + 2 included to highlight difference in glazing performance as noted externally.

26.5 °C

26.2 -
25.5 -
24.8 -
24.2 -
23.5 -
22.9 -
22.2 -
21.5 -
20.9 -
20.2 -
19.5 -
18.9 -
18.2 -
17.6 -
16.9 -

16.5 °C

File information	
Created	23/09/2022 08:12:13
Reflected temp.	22.0 °C
Distance	7.36 m
Atmospheric temp.	23.0 °C
Minimum temp.	15.7 °C
Maximum temp.	28.7 °C
Image number	87

Measurements



Comments

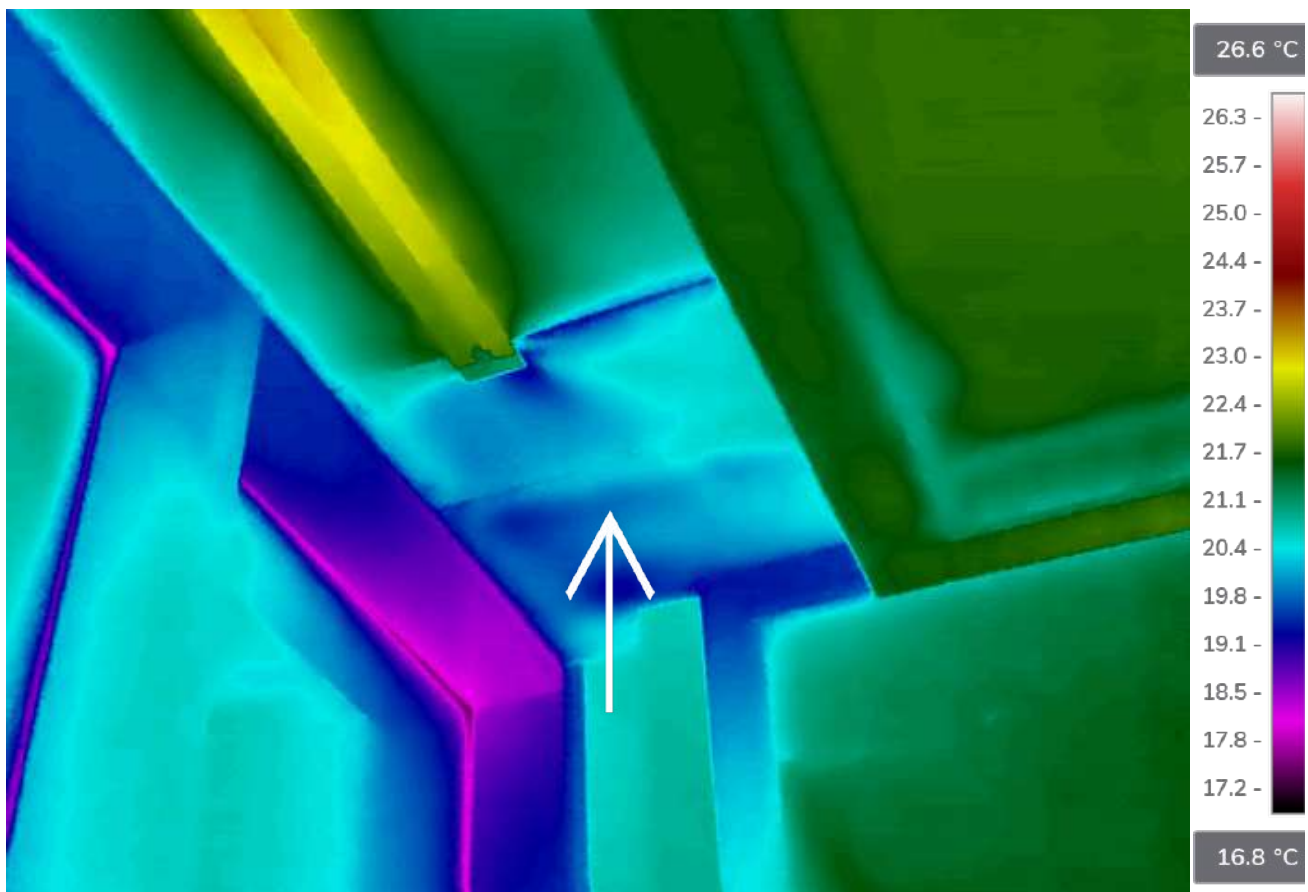
No further comment.

No further comment.

Build IR



Thermal Imaging



File information

Created	23/09/2022 08:13:19
Reflected temp.	22.0 °C
Distance	1.90 m
Atmospheric temp.	23.0 °C
Minimum temp.	17.3 °C
Maximum temp.	23.4 °C
Image number	88

Measurements



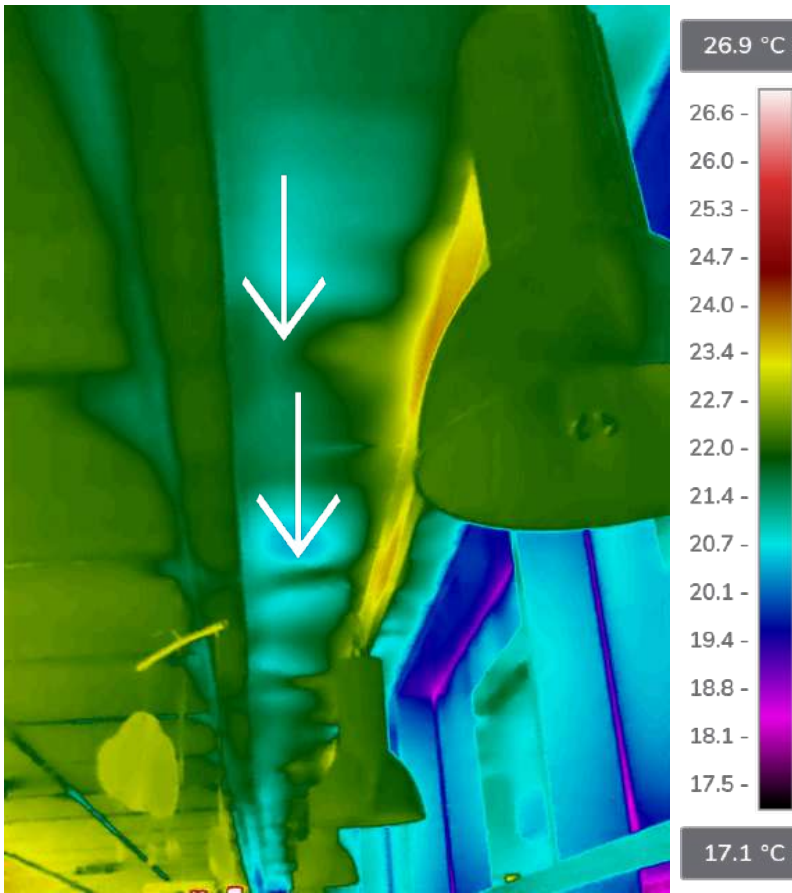
Comments

Possible air infiltration above ceiling.

Build IR



Thermal Imaging



File information	
Created	23/09/2022 08:13:38
Reflected temp.	22.0 °C
Distance	2.58 m
Atmospheric temp.	23.0 °C
Minimum temp.	17.8 °C
Maximum temp.	28.0 °C
Image number	89

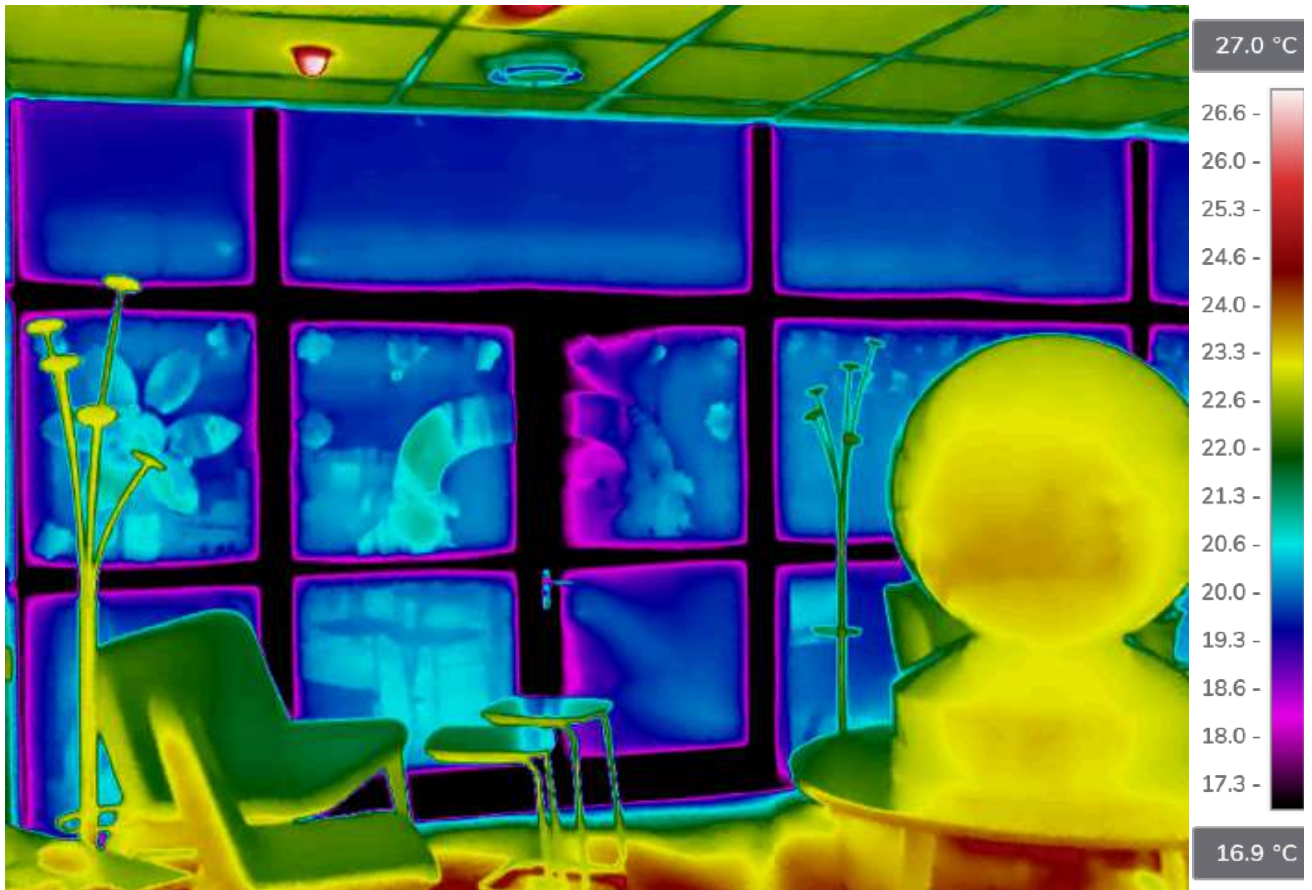
Measurements



Comments
Possible continuation of cold air above ceiling.

Build IR

Thermal Imaging



File information	
Created	23/09/2022 08:14:06
Reflected temp.	22.0 °C
Distance	13.77 m
Atmospheric temp.	24.0 °C
Minimum temp.	12.6 °C
Maximum temp.	27.1 °C
Image number	90

Measurements

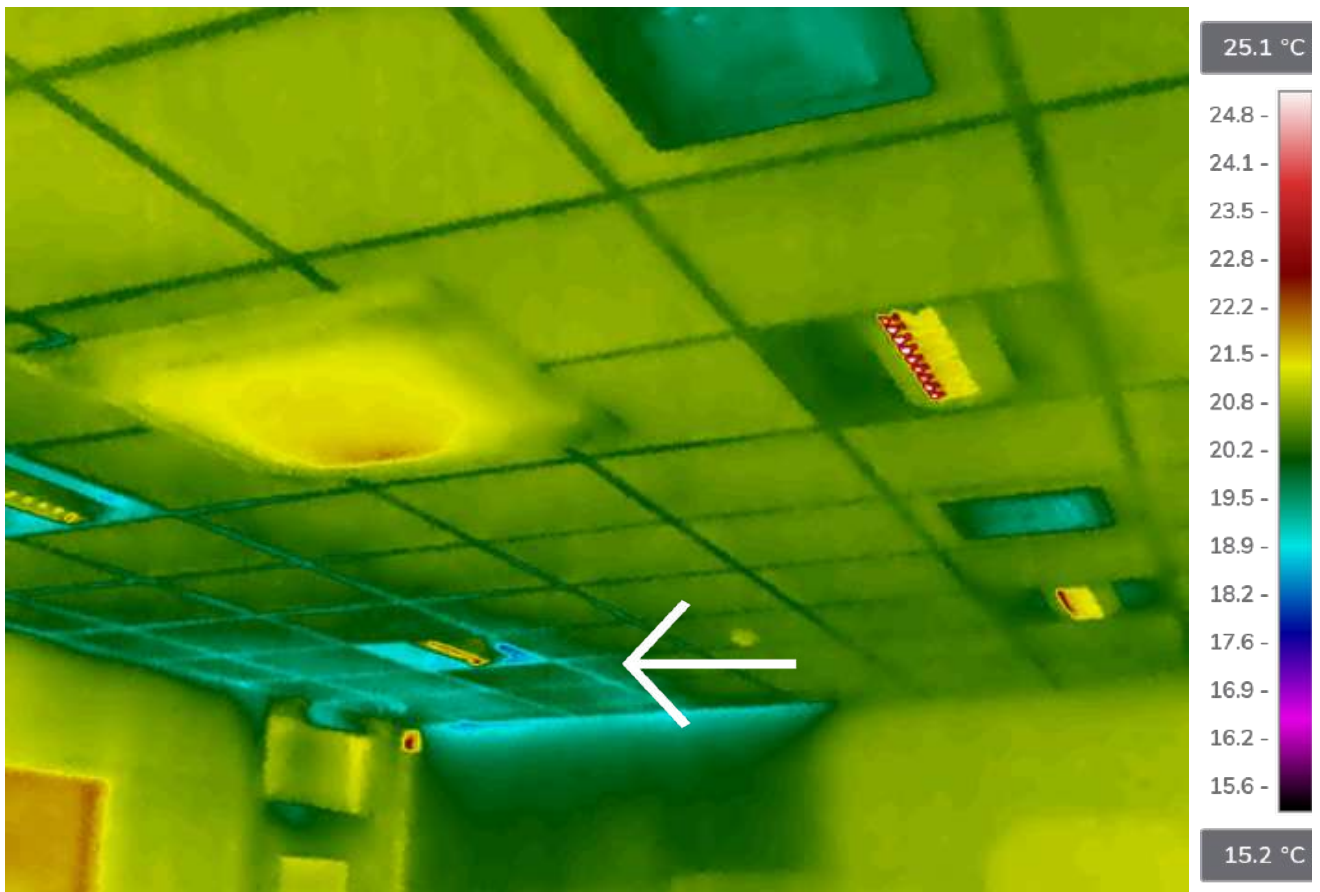


Comments

Poorly performing glazing and frames, and air infiltration around poorly fitting door.

Build IR

Thermal Imaging



File information		Measurements
Created	23/09/2022 08:15:27	
Reflected temp.	22.0 °C	
Distance	3.51 m	
Atmospheric temp.	21.0 °C	
Minimum temp.	18.1 °C	
Maximum temp.	26.4 °C	
Image number	91	



Comments

Air infiltration above ceiling. Linked to image 93.

A thermal image of a ceiling with a grid pattern. A color scale on the right indicates temperatures from 15.3 °C (dark blue) to 25.1 °C (dark red). The ceiling is mostly dark blue/green, with a small rectangular area in the center showing a cluster of small, bright yellow/orange spots, indicating a localized heat source.

File information	
Created	23/09/2022 08:15:54
Reflected temp.	22.0 °C
Distance	2.70 m
Atmospheric temp.	21.0 °C
Minimum temp.	18.3 °C
Maximum temp.	24.3 °C
Image number	92

Measurements



Comments

Colder ceiling grid indicates continuation of cold air above ceiling. Linked to image 93.

Colder ceiling grid indicates continuation of cold air above ceiling. Linked to image 93.

A thermal image of a roof surface. The image shows a grid pattern of lines, likely representing roof tiles or structural elements. Two circular features are visible: one on the left and one in the center. A color scale on the right indicates temperature, ranging from 13.0 °C (dark purple) to 22.8 °C (light blue). The temperature values are higher in the center and lower towards the edges.

File information	
Created	23/09/2022 08:16:40
Reflected temp.	22.0 °C
Distance	2.29 m
Atmospheric temp.	18.0 °C
Minimum temp.	11.0 °C
Maximum temp.	19.8 °C
Image number	93

Measurements



Excessive air infiltration above ceiling - source is open louvre on external wall.

File information	
Created	23/09/2022 08:17:19
Reflected temp.	22.0 °C
Distance	2.24 m
Atmospheric temp.	18.8 °C
Minimum temp.	11.3 °C
Maximum temp.	20.6 °C
Image number	94

Measurements



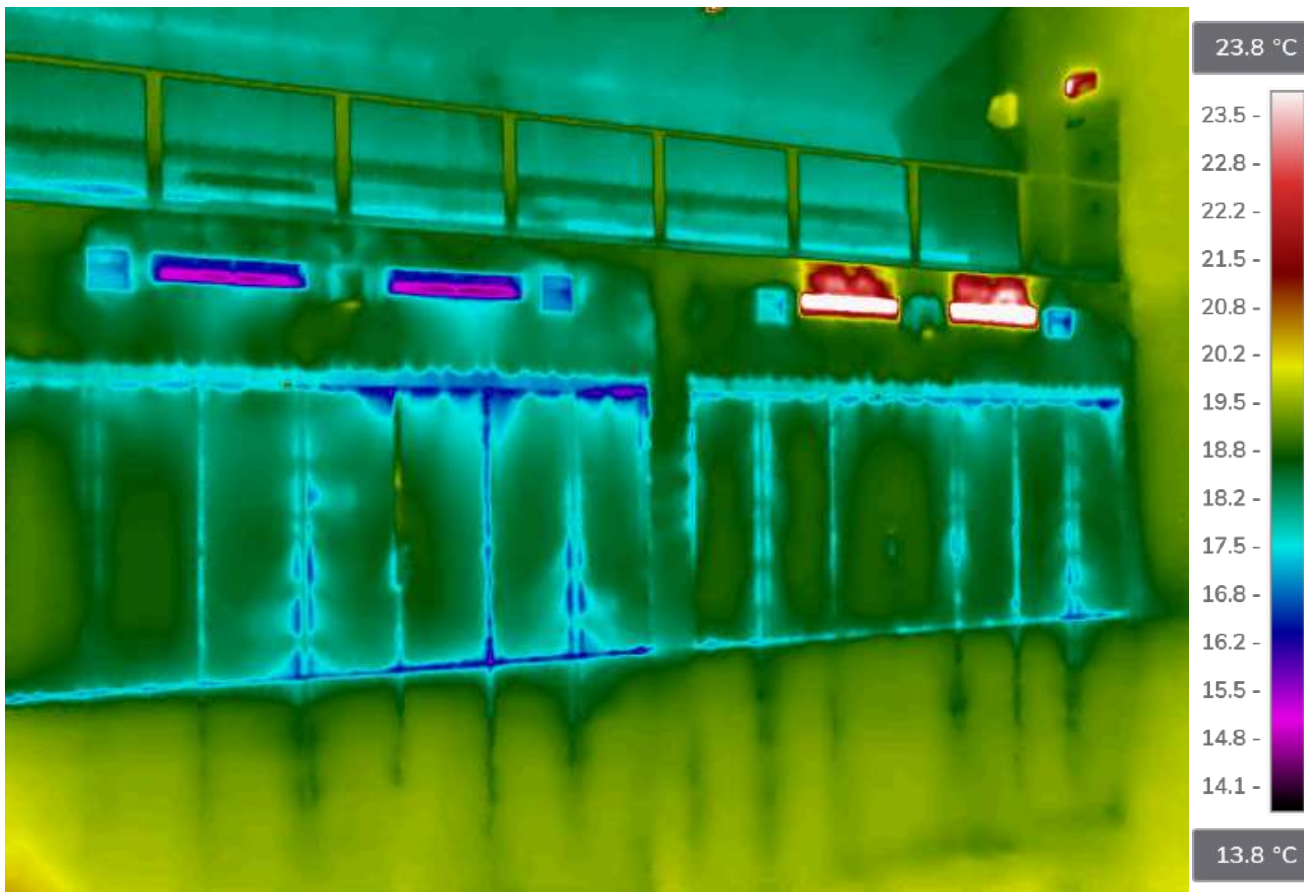
Comments

Air infiltration under external door.

Air infiltration under external door.

Build IR

Thermal Imaging



File information	
Created	23/09/2022 08:21:17
Reflected temp.	22.0 °C
Distance	13.30 m
Atmospheric temp.	20.0 °C
Minimum temp.	14.4 °C
Maximum temp.	29.9 °C
Image number	95

Measurements

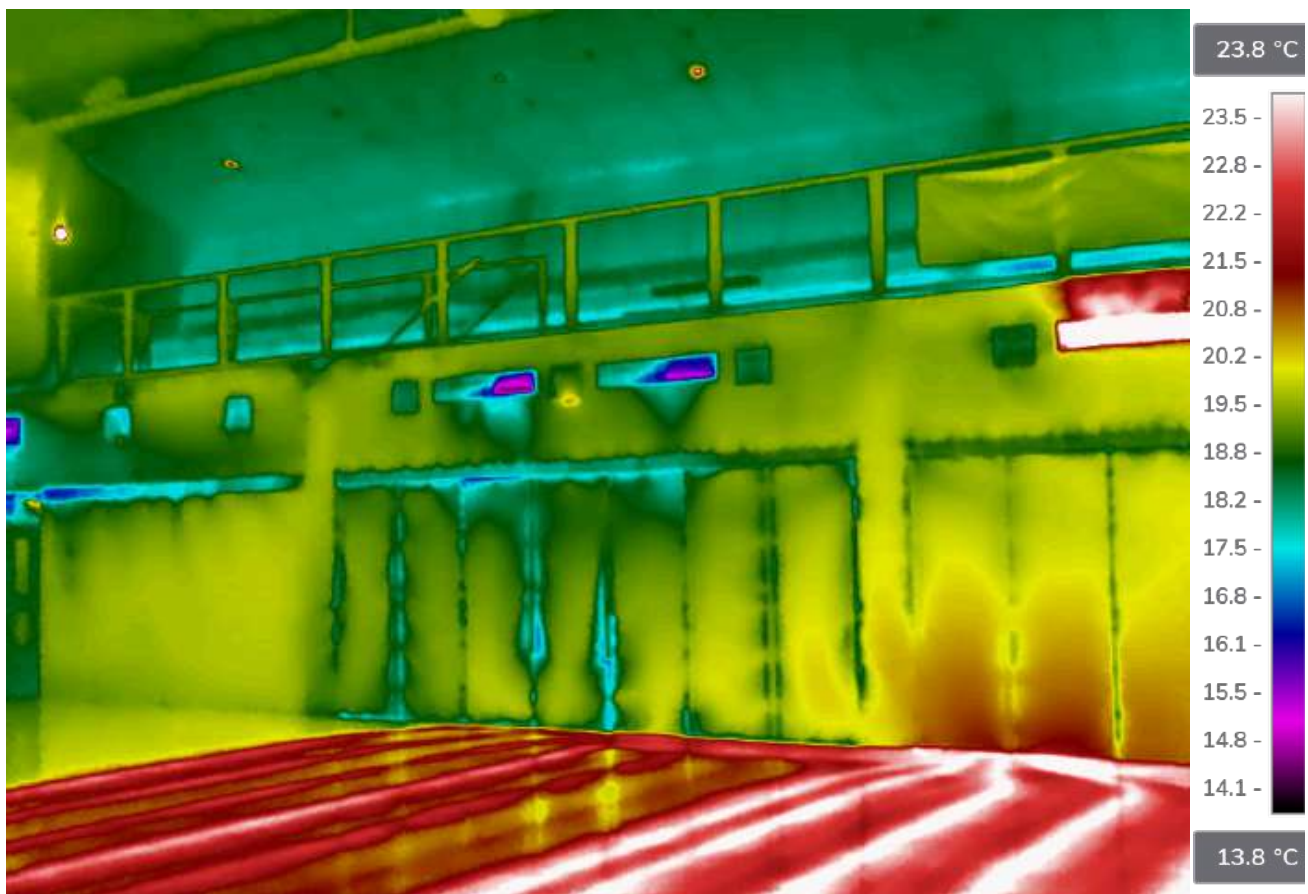


Comments

Air infiltration from louvred store rooms.

Build IR

Thermal Imaging



File information

Created	23/09/2022 08:21:24
Reflected temp.	22.0 °C
Distance	13.60 m
Atmospheric temp.	21.0 °C
Minimum temp.	14.3 °C
Maximum temp.	32.9 °C
Image number	96

Measurements



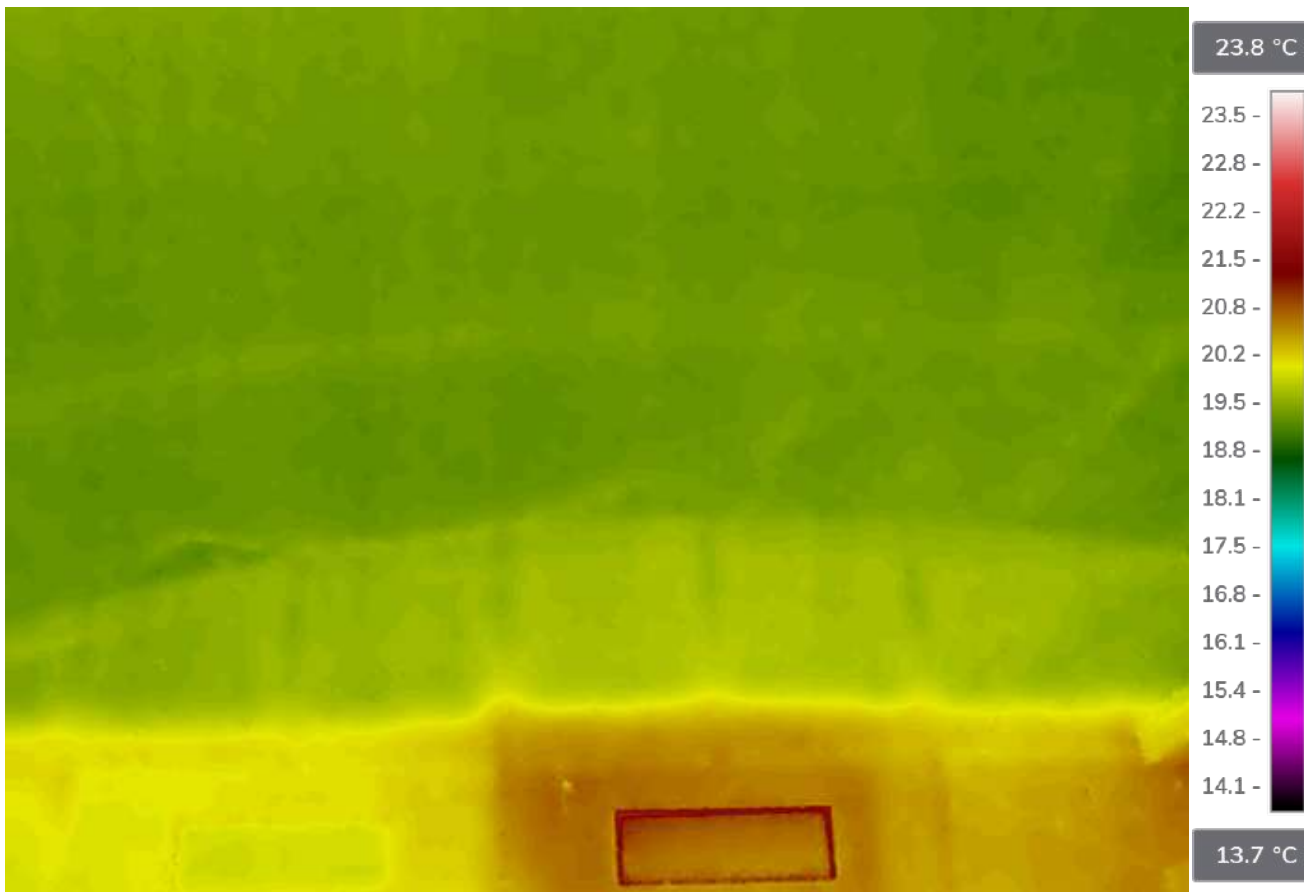
Comments

Air infiltration from louvred store room.

Build IR



Thermal Imaging



File information	
Created	23/09/2022 08:22:14
Reflected temp.	22.0 °C
Distance	20.22 m
Atmospheric temp.	20.0 °C
Minimum temp.	19.1 °C
Maximum temp.	22.1 °C
Image number	97

Measurements



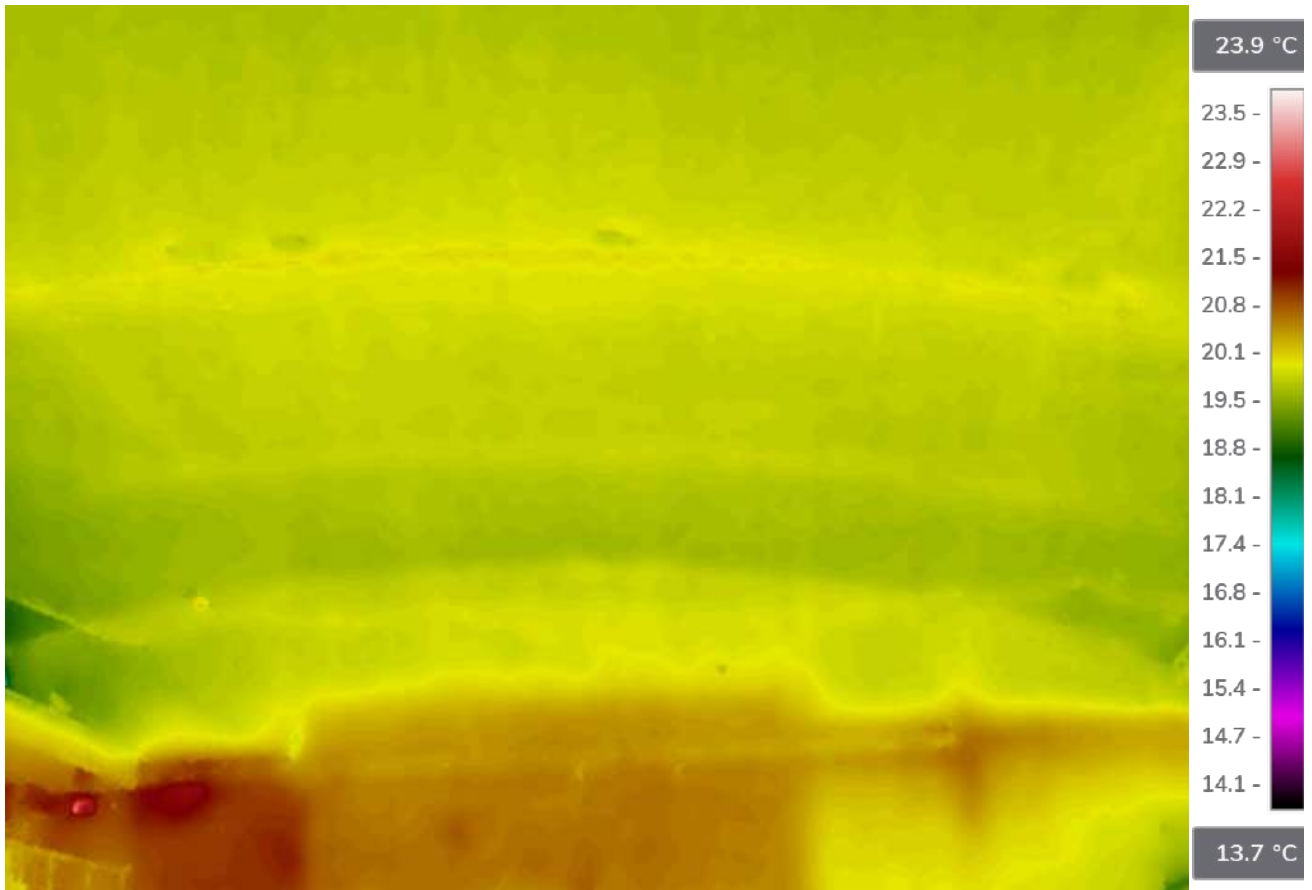
Comments

No further comment.

Build IR



Thermal Imaging



File information

Created	23/09/2022 08:22:50
Reflected temp.	22.0 °C
Distance	22.83 m
Atmospheric temp.	20.0 °C
Minimum temp.	18.0 °C
Maximum temp.	23.2 °C
Image number	98

Measurements

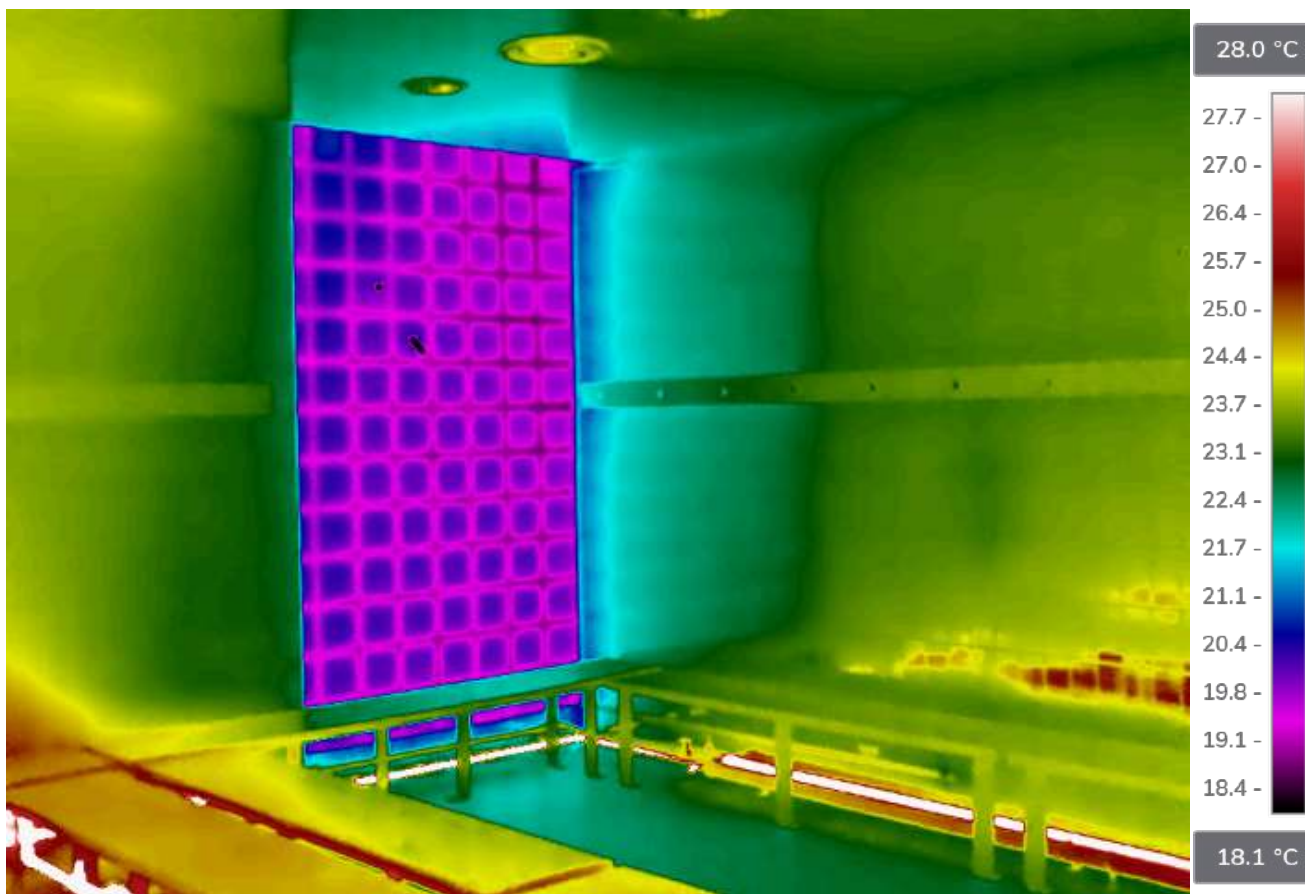


Comments

No further comment.

Build IR

Thermal Imaging



File information

Created	23/09/2022 08:25:44
Reflected temp.	22.0 °C
Distance	6.84 m
Atmospheric temp.	24.2 °C
Minimum temp.	14.7 °C
Maximum temp.	52.2 °C
Image number	99

Measurements



Comments

Poor thermal performance of glass blocks.

A thermal image of a laboratory setup. The image shows a complex arrangement of equipment, including what appears to be a large container or tank, and various pipes and sensors. A color scale on the right indicates temperatures ranging from 16.5 °C (dark blue) to 26.4 °C (dark red). The scale has intermediate markings at 16.8, 17.5, 18.1, 18.8, 19.5, 20.1, 20.8, 21.4, 22.1, 22.8, 23.4, 24.1, 24.7, 25.4, and 26.1 °C. The image shows a mix of colors, with some areas appearing warmer (yellow/orange) and others cooler (blue/green).

File information	
Created	23/09/2022 08:27:53
Reflected temp.	22.0 °C
Distance	6.07 m
Atmospheric temp.	22.8 °C
Minimum temp.	20.4 °C
Maximum temp.	24.9 °C
Image number	100

Measurements



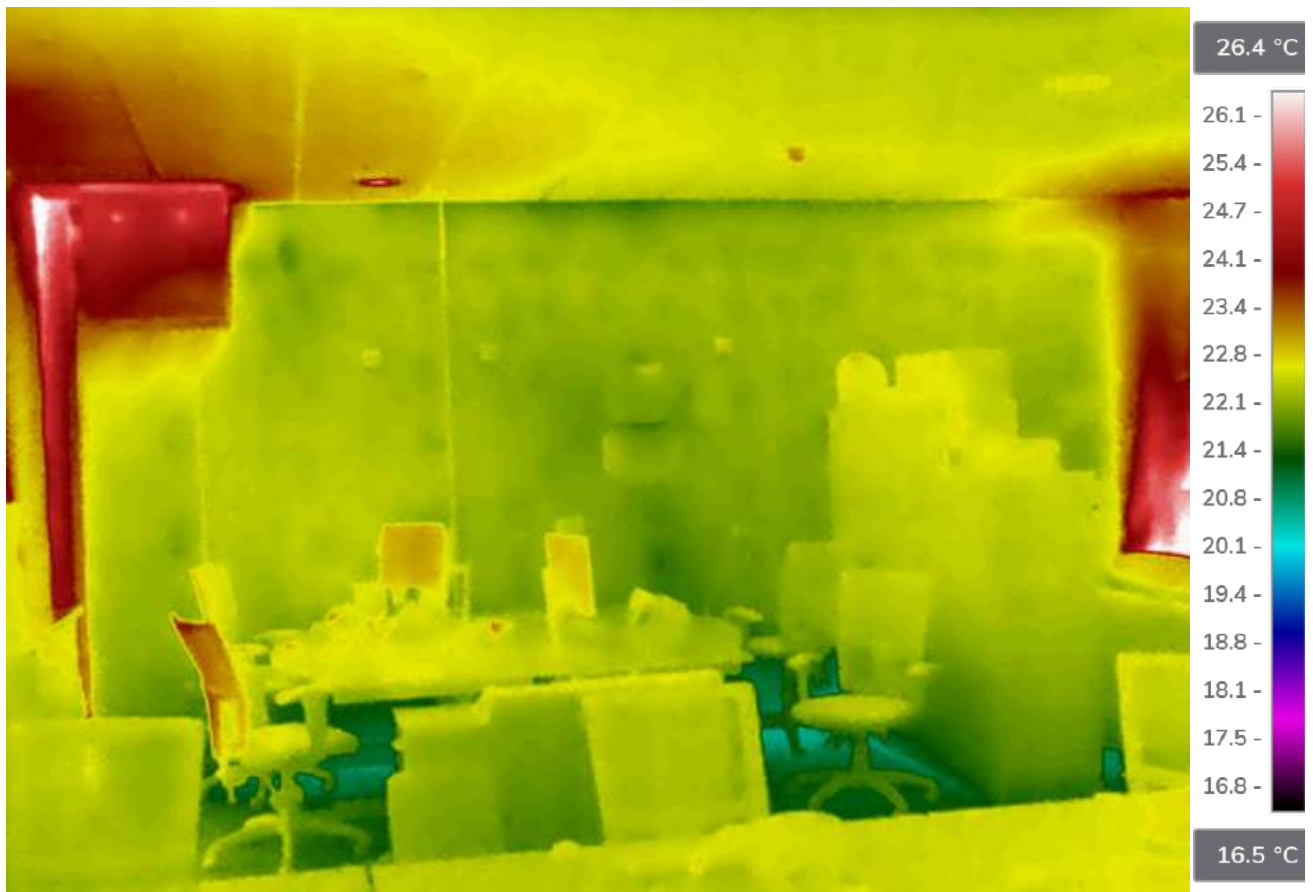
Comments

No further comment.

No further comment.

Build IR

Thermal Imaging



File information	
Created	23/09/2022 08:29:03
Reflected temp.	22.0 °C
Distance	7.65 m
Atmospheric temp.	22.5 °C
Minimum temp.	20.7 °C
Maximum temp.	27.8 °C
Image number	101

Measurements

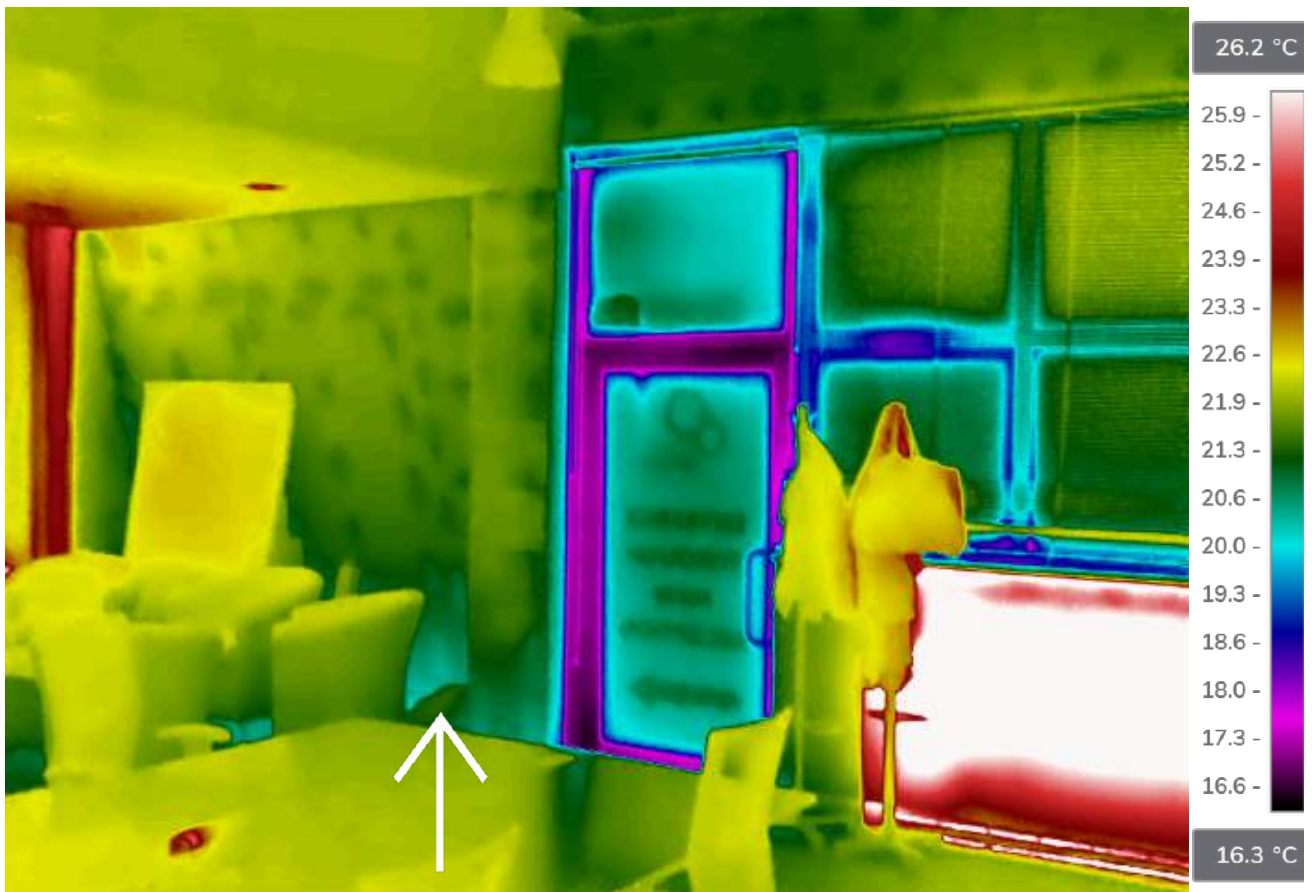


Comments

No further comment.

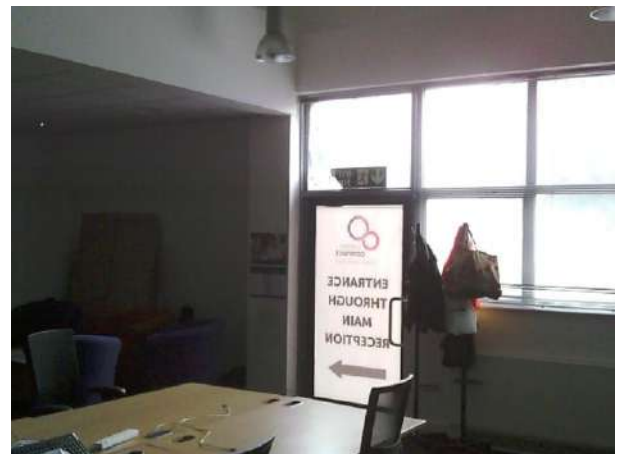
Build IR

Thermal Imaging



File information	
Created	23/09/2022 08:29:14
Reflected temp.	22.0 °C
Distance	7.20 m
Atmospheric temp.	22.5 °C
Minimum temp.	16.4 °C
Maximum temp.	34.5 °C
Image number	102

Measurements



Comments

Frames performing poorly.

For arrow see image 103.

Build IR



Thermal Imaging



File information	
Created	23/09/2022 08:29:37
Reflected temp.	22.0 °C
Distance	2.74 m
Atmospheric temp.	22.5 °C
Minimum temp.	19.6 °C
Maximum temp.	22.8 °C
Image number	103

Measurements

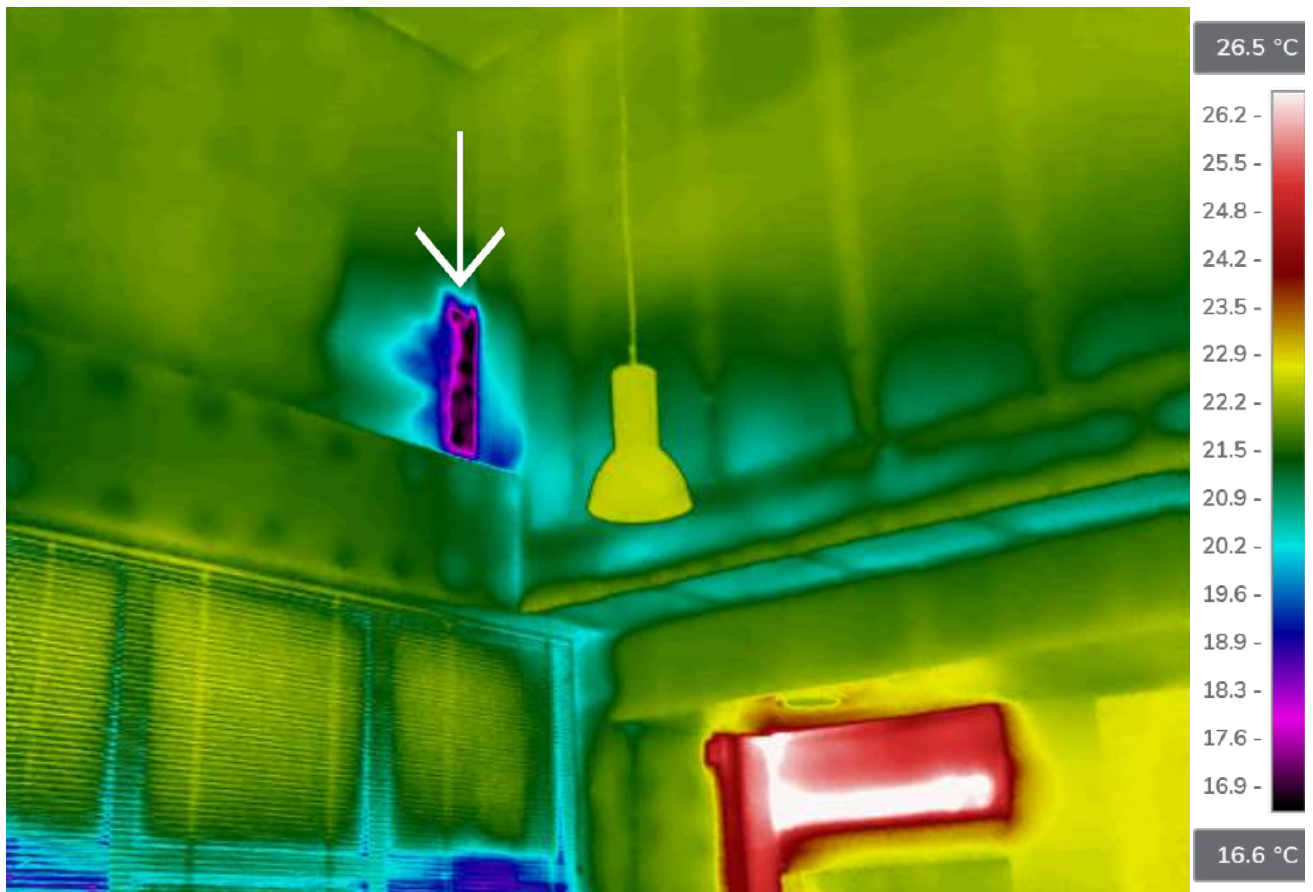


Comments

Cold sat low level behind dry lining - potential air flow.

Build IR

Thermal Imaging



File information

Created	23/09/2022 08:30:08
Reflected temp.	22.0 °C
Distance	4.59 m
Atmospheric temp.	22.5 °C
Minimum temp.	16.2 °C
Maximum temp.	27.9 °C
Image number	104

Measurements

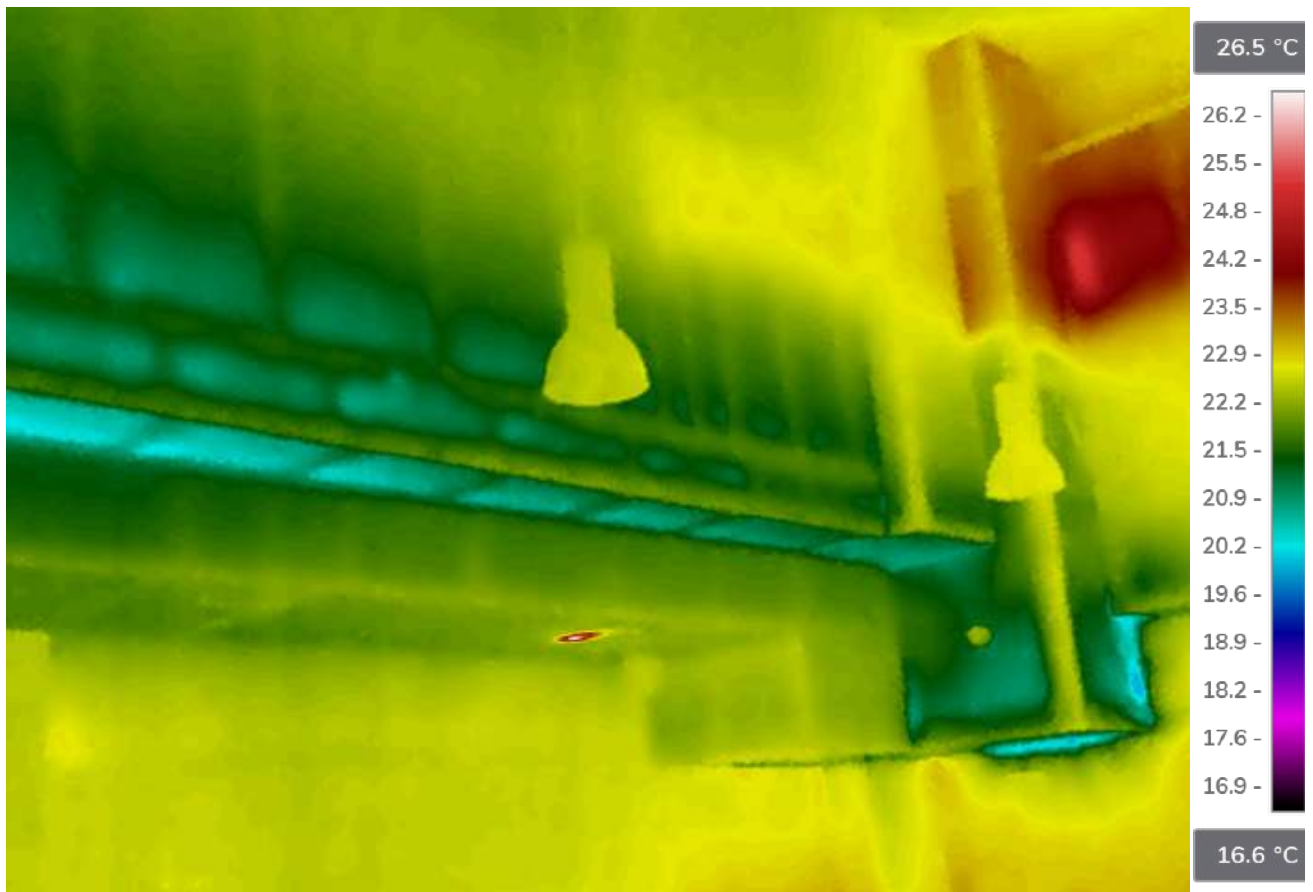


Comments

Possible open louvre allowing cold air behind dry lining and tracking down bulkhead.

Build IR

Thermal Imaging



File information	
Created	23/09/2022 08:30:23
Reflected temp.	22.0 °C
Distance	5.37 m
Atmospheric temp.	22.5 °C
Minimum temp.	19.8 °C
Maximum temp.	26.8 °C
Image number	105

Measurements

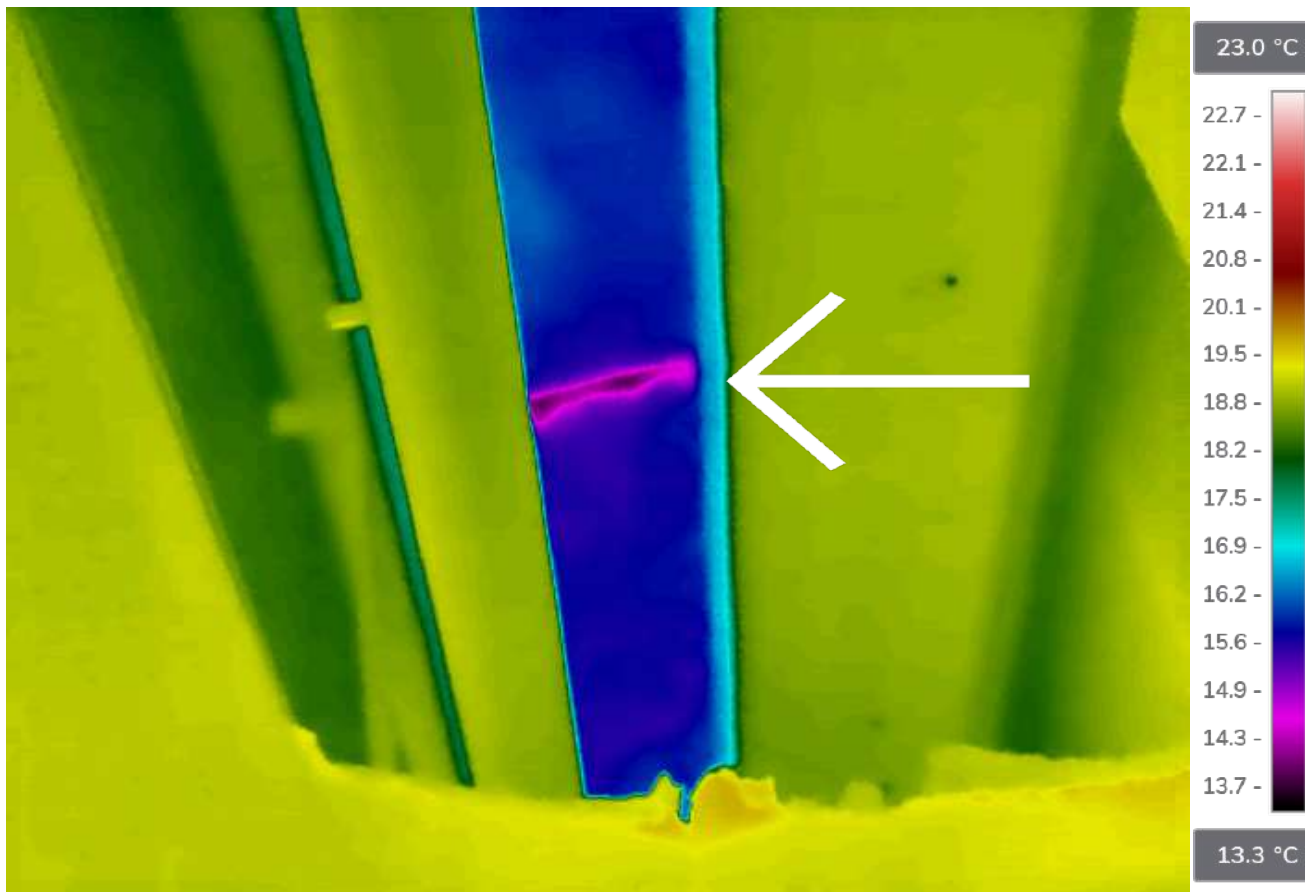


Comments

Continuation of cold air to bulkhead.

Build IR

Thermal Imaging



File information	
Created	23/09/2022 08:34:14
Reflected temp.	22.0 °C
Distance	1.79 m
Atmospheric temp.	19.2 °C
Minimum temp.	13.8 °C
Maximum temp.	19.7 °C
Image number	106

Measurements



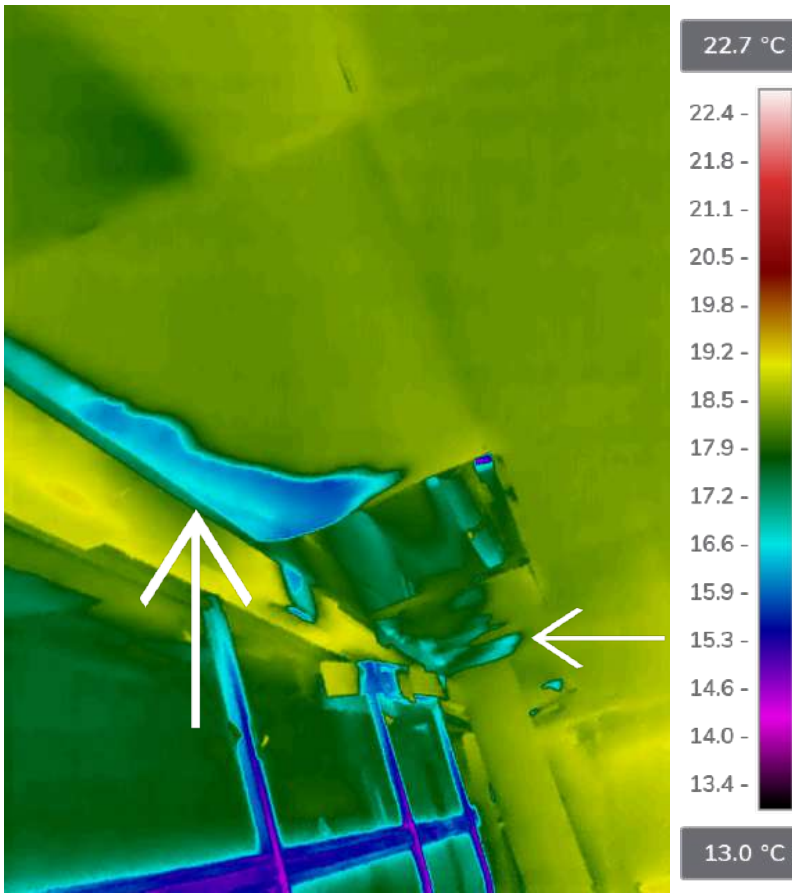
Comments

Uninsulated gutter and water leaks to gutter.

Build IR



Thermal Imaging



File information	
Created	23/09/2022 08:35:31
Reflected temp.	22.0 °C
Distance	2.01 m
Atmospheric temp.	19.2 °C
Minimum temp.	14.4 °C
Maximum temp.	19.2 °C
Image number	107

Measurements



Comments
Water leaks noted.

A thermal image of a door, likely a fire door, showing a temperature distribution. The door is predominantly purple and blue, indicating temperatures between 18.0 °C and 20.0 °C. The surrounding area is yellow and green, indicating higher temperatures. A color scale on the right ranges from 17.0 °C (dark purple) to 26.8 °C (yellow). The scale has labels at 17.4, 18.0, 18.7, 19.3, 20.0, 20.6, 21.3, 21.9, 22.6, 23.2, 23.9, 24.5, 25.2, 25.8, and 26.5.

File information	
Created	23/09/2022 08:40:20
Reflected temp.	22.0 °C
Distance	3.99 m
Atmospheric temp.	22.5 °C
Minimum temp.	13.5 °C
Maximum temp.	24.6 °C
Image number	108

Measurements



Comments

External door offering poor thermal performance and allowing cold air ingress.

External door offering poor thermal performance and allowing cold air ingress.

Thermal image showing a person in a room. A white arrow points to a cooler area on the left side of the image. The color scale on the right indicates temperatures ranging from 17.3 °C (dark blue) to 27.1 °C (dark red).

File information	
Created	23/09/2022 08:41:54
Reflected temp.	22.0 °C
Distance	4.21 m
Atmospheric temp.	23.1 °C
Minimum temp.	19.4 °C
Maximum temp.	35.8 °C
Image number	109

Measurements



Comments

No further comment to elevation. Cold to left side and low level is due to open window.

No further comment to elevation. Cold to left side and low level is due to open window.

File information	
Created	23/09/2022 08:42:41
Reflected temp.	22.0 °C
Distance	4.40 m
Atmospheric temp.	23.7 °C
Minimum temp.	16.7 °C
Maximum temp.	38.3 °C
Image number	110

Measurements



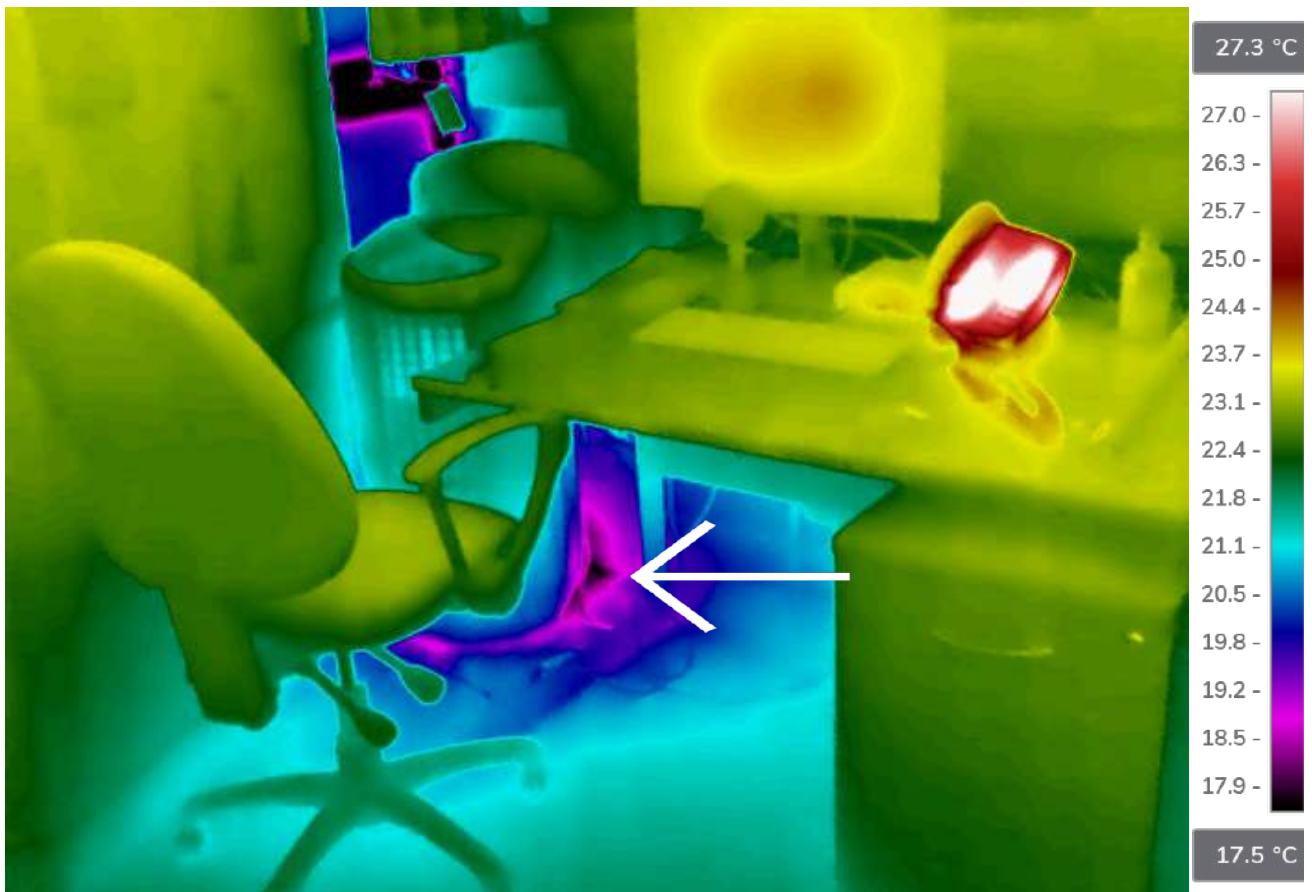
Comments

No further comment.

No further comment.

Build IR

Thermal Imaging



File information		Measurements
Created	23/09/2022 08:43:01	
Reflected temp.	22.0 °C	
Distance	3.31 m	
Atmospheric temp.	23.7 °C	
Minimum temp.	16.5 °C	
Maximum temp.	30.8 °C	
Image number	111	



Comments

Area colder due to air ingress from window.

Highlighted area, potential moisture from dehumidifier.

A thermal image of a door. The door is primarily blue and cyan, indicating temperatures between 17.1 °C and 20.7 °C. There are two rectangular openings in the upper part of the door. The top of the door frame is red, indicating a temperature of 26.9 °C. The bottom of the door frame is purple, indicating a temperature of 17.1 °C. The surrounding area is yellow and green, indicating temperatures between 20.7 °C and 24.6 °C. A color scale on the right side of the image ranges from 17.1 °C (purple) to 26.9 °C (red).

File information	
Created	23/09/2022 08:43:36
Reflected temp.	22.0 °C
Distance	3.36 m
Atmospheric temp.	22.7 °C
Minimum temp.	17.3 °C
Maximum temp.	43.8 °C
Image number	112

Measurements



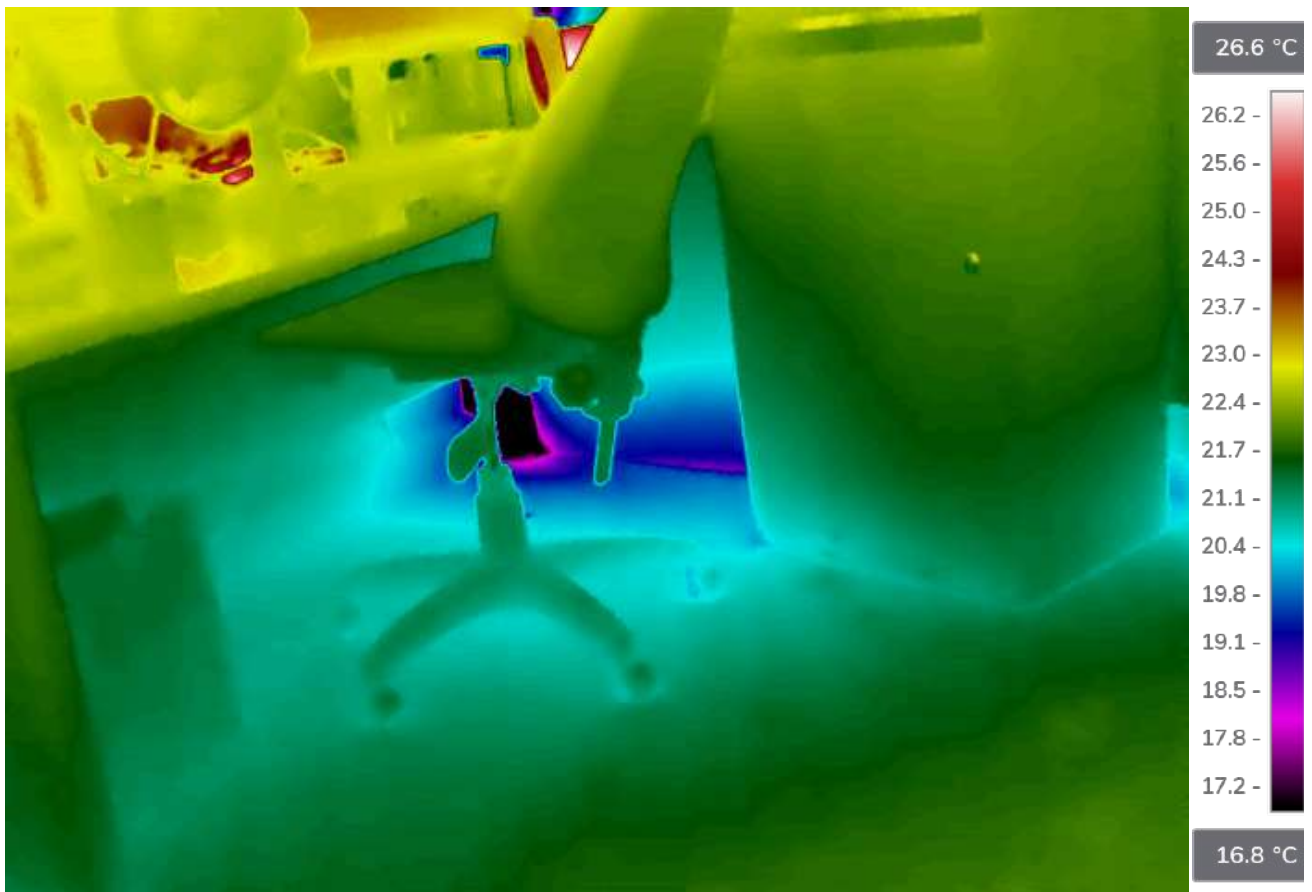
Comments

Generic thermal performance of blocked off external doors along this elevation.

Generic thermal performance of blocked off external doors along this elevation.

Build IR

Thermal Imaging



File information	
Created	23/09/2022 08:44:30
Reflected temp.	22.0 °C
Distance	3.14 m
Atmospheric temp.	22.8 °C
Minimum temp.	12.1 °C
Maximum temp.	27.4 °C
Image number	113

Measurements



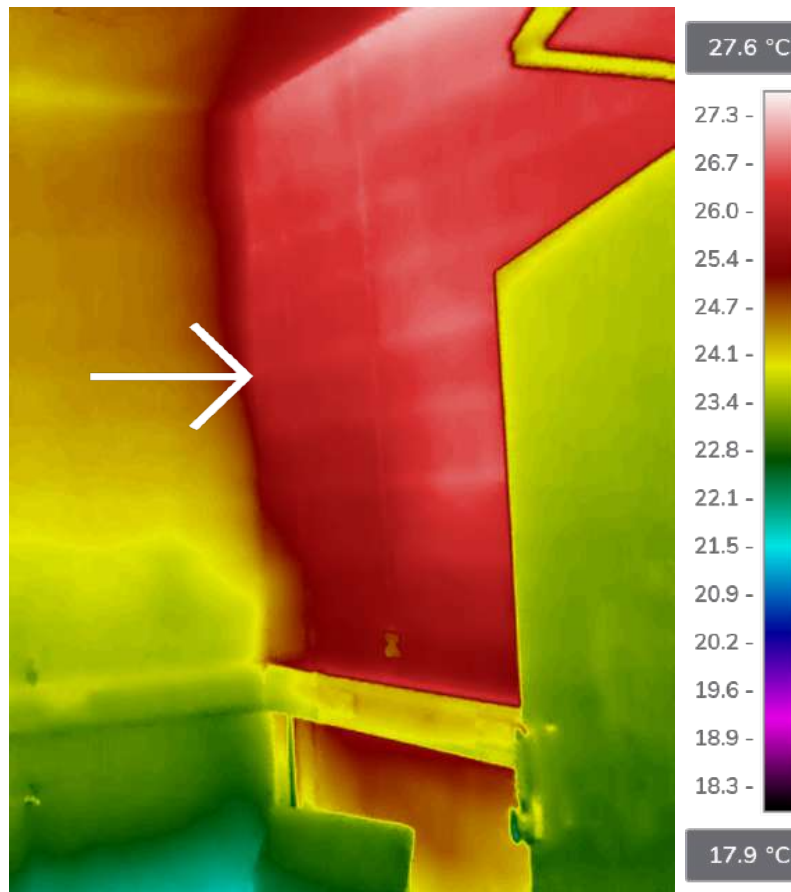
Comments

No access to view area.

Build IR



Thermal Imaging



File information	
Created	23/09/2022 08:45:12
Reflected temp.	22.0 °C
Distance	3.83 m
Atmospheric temp.	24.6 °C
Minimum temp.	21.8 °C
Maximum temp.	27.4 °C
Image number	114

Measurements



Comments

No thermal separation between Plant room and conditioned space.

File information	
Created	23/09/2022 08:45:49
Reflected temp.	22.0 °C
Distance	6.97 m
Atmospheric temp.	22.6 °C
Minimum temp.	10.5 °C
Maximum temp.	29.7 °C
Image number	115

Measurements



Comments

Heat from Plant room and cold air through open window - no useful analysis.

Heat from Plant room and cold air through open window - no useful analysis.

Thermal image of a room interior. The color scale on the right indicates temperatures ranging from 16.0 °C (blue) to 25.7 °C (red). The room contains furniture, a staircase, and a large window.

File information	
Created	23/09/2022 08:46:36
Reflected temp.	22.0 °C
Distance	5.90 m
Atmospheric temp.	22.7 °C
Minimum temp.	13.7 °C
Maximum temp.	23.3 °C
Image number	116

Measurements



Poor thermal performance of glazing and frames.

A thermal image of a window with a color scale on the right ranging from 15.7 °C (dark blue) to 25.5 °C (dark red). The window frame and the area around it are shown in various colors, indicating different temperatures. The window itself is mostly dark blue, suggesting it is cooler than the surrounding areas.

File information	
Created	23/09/2022 08:47:53
Reflected temp.	22.0 °C
Distance	4.30 m
Atmospheric temp.	22.0 °C
Minimum temp.	13.4 °C
Maximum temp.	26.5 °C
Image number	117

Measurements



Poor thermal performance of glazing and frames.

Poor thermal performance of glazing and frames.

Build IR

Thermal Imaging



File information		Measurements	
Created	23/09/2022 08:50:48	Sp1	21.9 °C
Reflected temp.	22.0 °C		
Distance	5.26 m		
Atmospheric temp.	21.9 °C		
Minimum temp.	16.7 °C		
Maximum temp.	36.1 °C		
Image number	118		



Comments

Cold noted low level - possibly from junction with external door.