Montana Commercial Buildings

Reports show most are already about 20% above code.

Ecotope 2000 Draft report

Montana Building Departments and Architect Surveys 2007

BASELINE CHARACTERISTICS OF THE NON-RESIDENTIAL SECTOR IN IDAHO, MONTANA, OREGON AND WASHINGTON

For the

Northwest Energy Efficiency Alliance

DRAFT

March, 2000

ECOTOPE

Ecotope Report 2000
Draft

- When these (code) matters were discussed with architects and building officials in Montana, there seemed to be considerable confusion over what envelope standards ought to be applied. Quite frequently, the residential energy standard is viewed as the non-residential envelope standard. This is an appreciably higher standard than either Oregon or Washington's non-residential energy code or, for that matter, the ASHRAE Standard 90.1

Montana Windows

- When reviewing the Oregon, Idaho, and Montana survey, however, the presence of low-ε coatings, particularly in the Oregon and Montana markets, has become dominant: more than 60% of the windows in Oregon and more than *90%* of the windows in Montana included low-ε coatings. In addition, a high percentage of these windows included tints and shading for sun control

Climate Response

- Interestingly, the impact of climate on Montana building design seems to be very important. On the whole, Montana buildings outperform the thermal requirements of both the Washington and Oregon codes by about 25%. Indeed, these design decisions seem to be heavily focused on the use of thermal integrity to maintain comfort and function in these buildings.

- It should also be noted that, at least in the institutional sectors (state and local governments, schools, etc.), the ASHRAE 90.1 code is enforced and, while Montana typically exceeds this standard, it is quite possible that this level of enforcement influences the architectural community in buildings and uses not immediately affected by the state and public building energy code enforcement.

1998 Montana Commercial Building Ecotope Study (DRAFT)

Overall heat loss is 17% better then code

Pop#	Sample UA/ft2	Std Dev	Code UA/ft2	Std Dev
32	.12	.05	.14	.064

Comments

- Suggest DOE run the numbers and publish an **optimum** energy code.
- Set the code minimum at a lower level.
- I would wager owners would require that designers hit the higher mark.
- Tools to show saving for energy upgrades above code.
- Evaluate post construction operational performance (Energy usage index)
- List CO2 reduction over life of building
- Incentives to sell CO2 credits

Comments

- Typically design buildings that show 30% above code using COM check
- In the past 3 years much more interest in energy conservation
- Owners agreeing to 5 - 10 year paybacks
- Energy modeling using “TRACE”
- How about water conservation in the code
- Public notices for all new buildings

  Listing an energy rating

  Just meet code or % exceeding code

Comments

- Montana climate and energy costs require a good building shell.
- 30% increase for shell - OK
- 30% increase for lighting is a concern
- Builders /developers would like to see the paybacks on the upgrades
- Get builders/developers input before going to a higher code.
- About 15% of new commercial buildings are pre fabricated metal buildings.

Observations

- Building shell good, slabs need work
- Lighting most neglected area
- Watt limits and controls
- Air sealing needs work
- Comfort and performance problem caused by excessive air leakage
- Better details, fact sheets, diagrams, videos on air sealing, lighting and slab insulation best practices.

Revêtement
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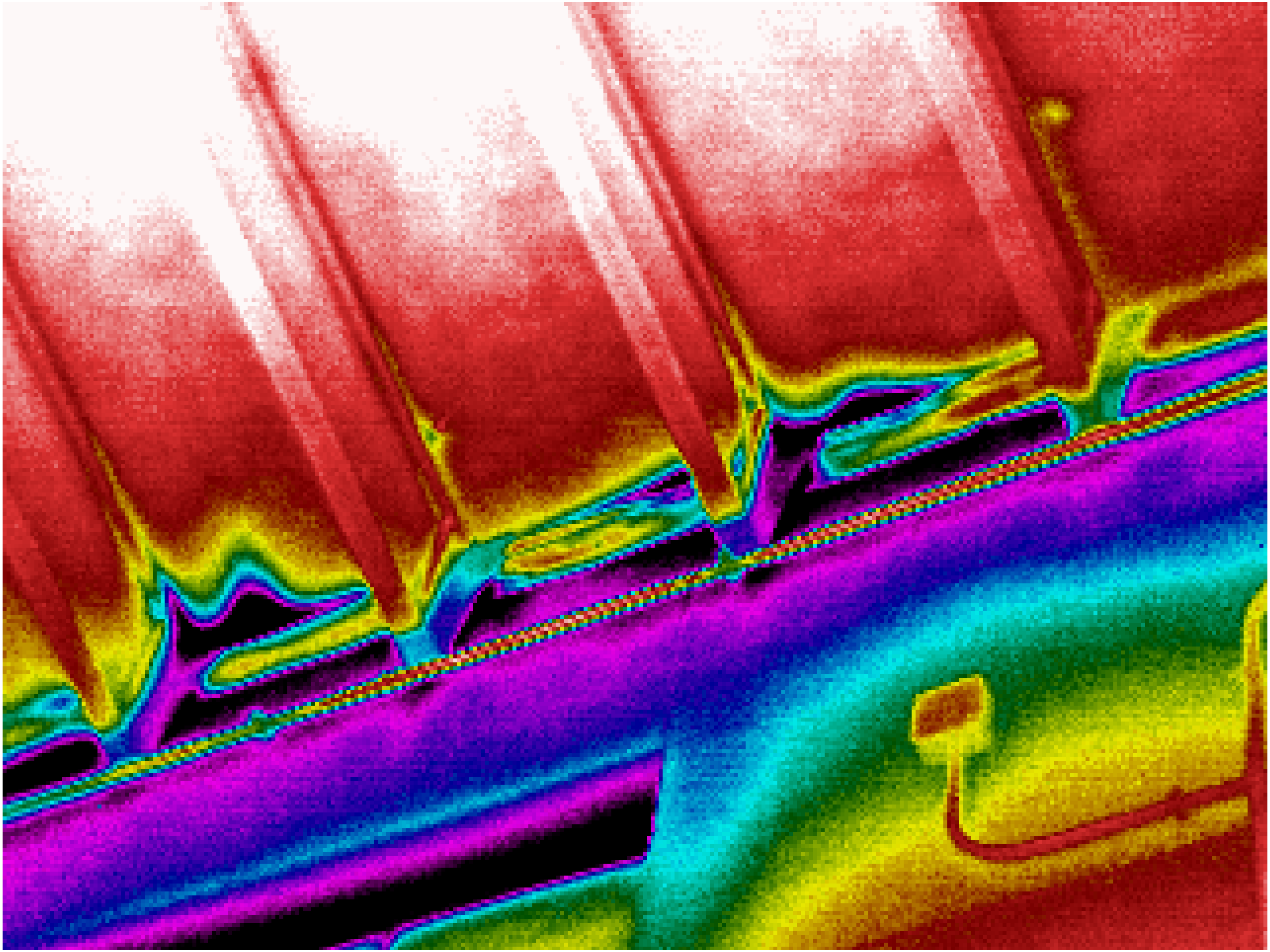

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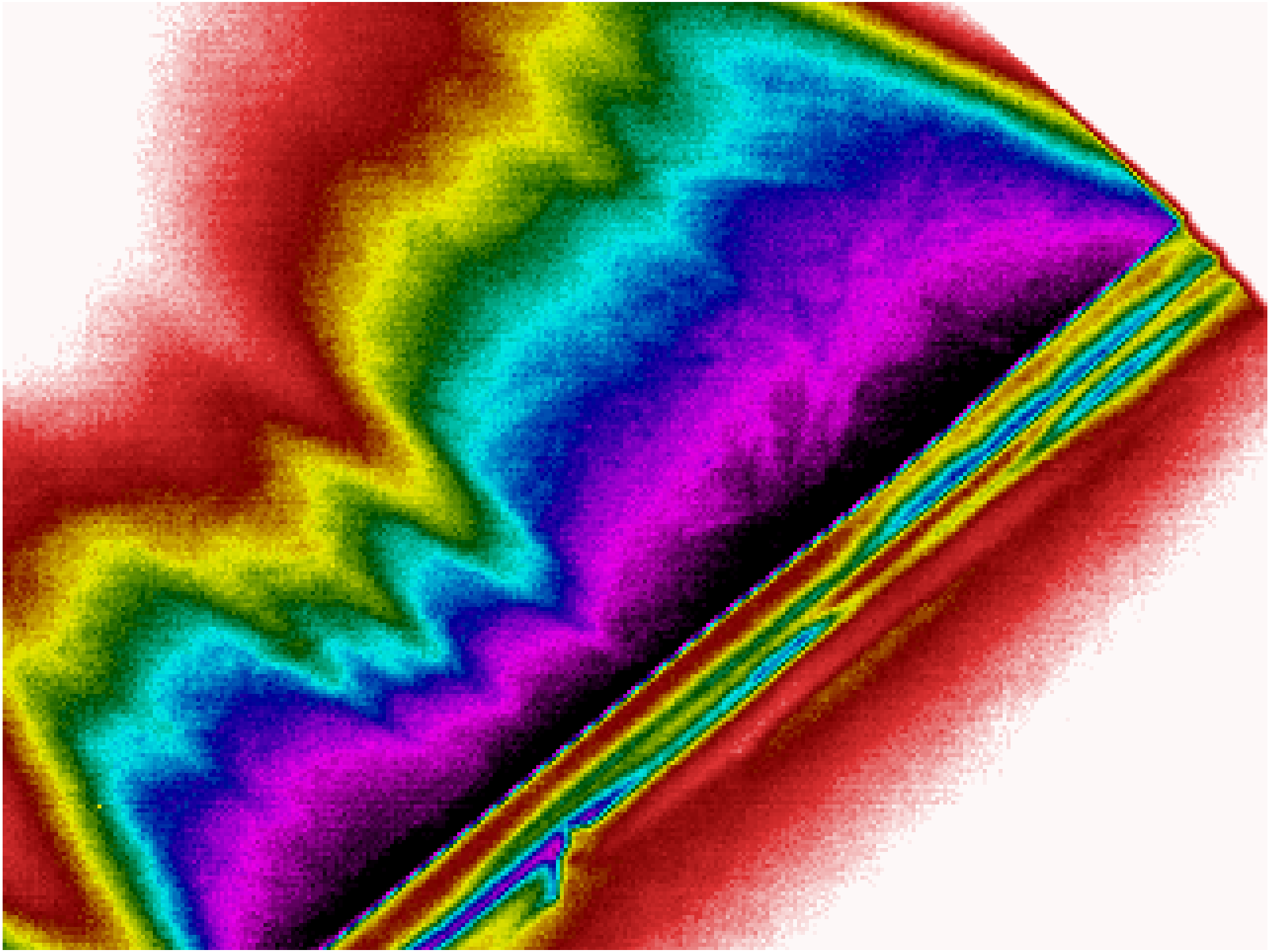

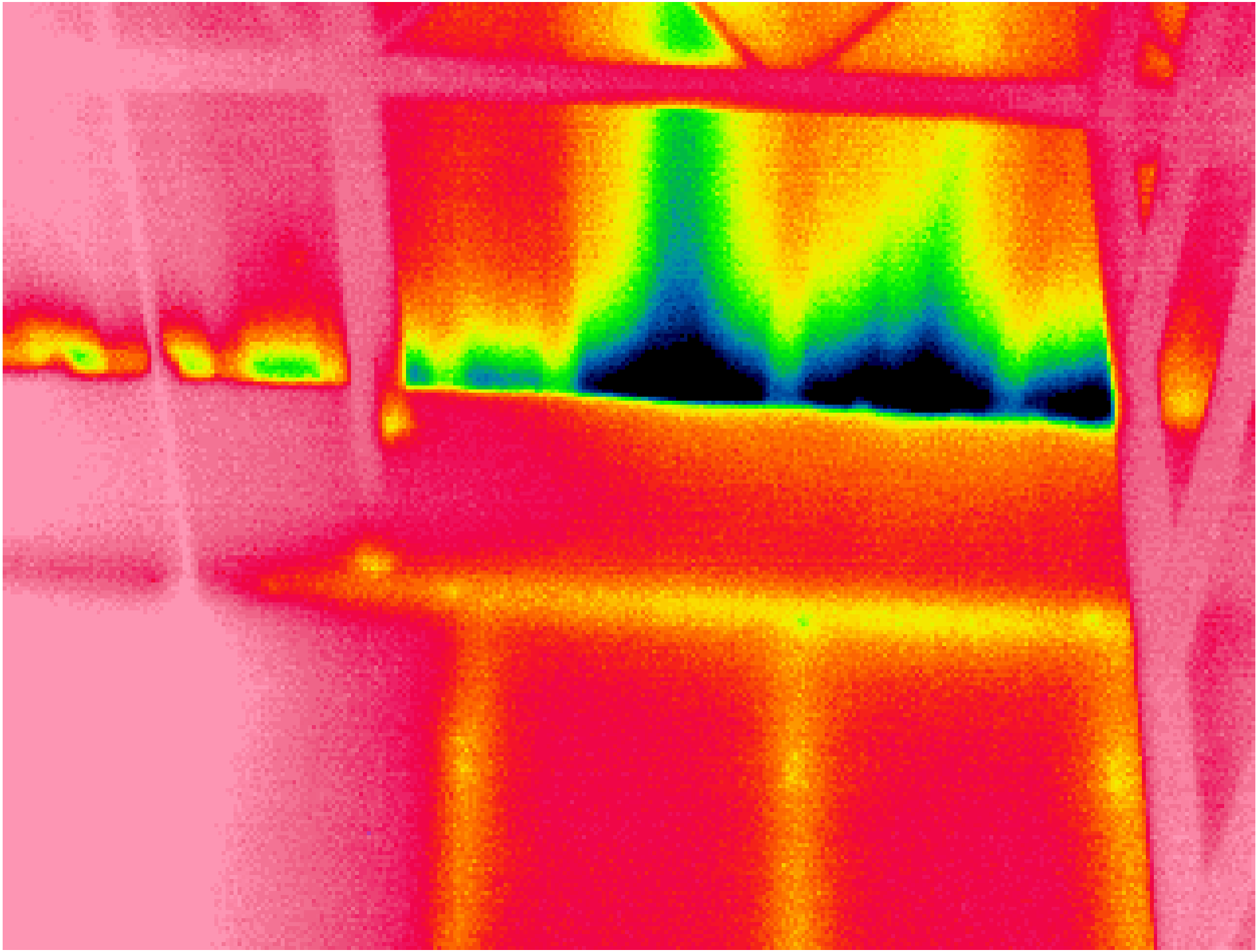

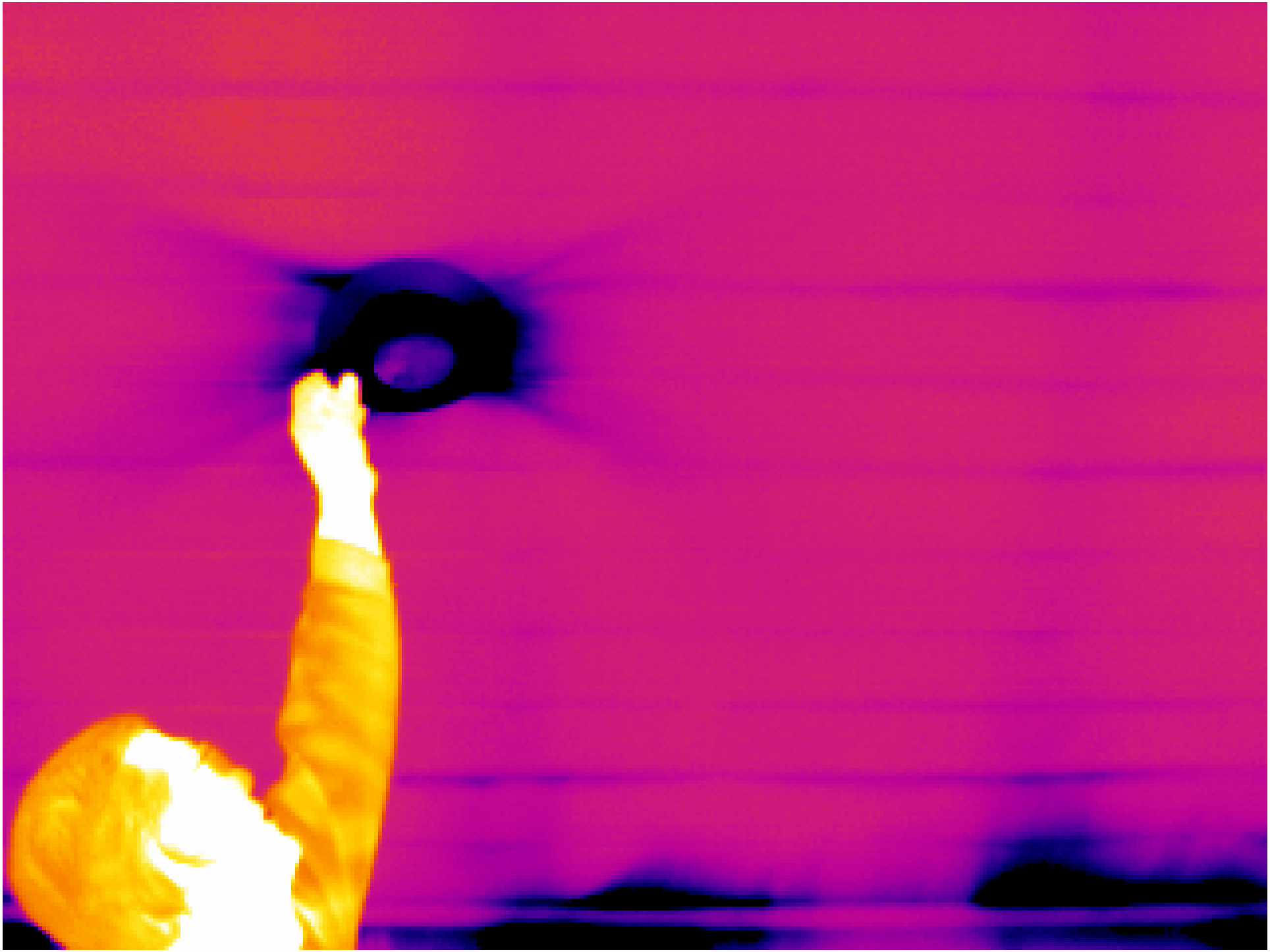

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