

Sample Thermographic Images

INFRARED THERMOGRAPHY

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Sample Thermographic Images

Infrared Thermography

Some Benefits of Infrared Thermography

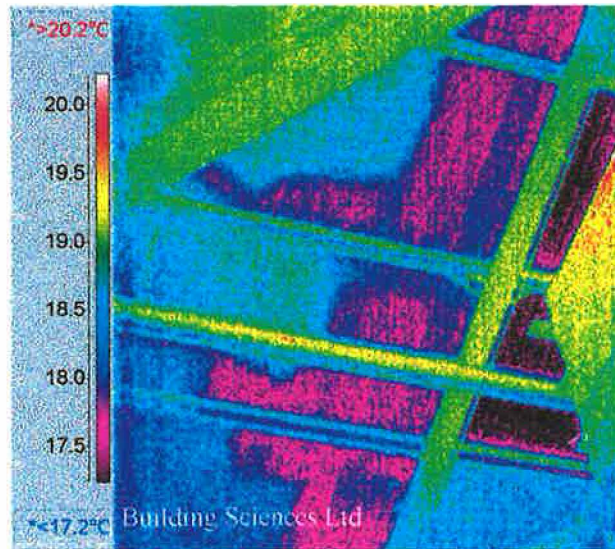
- **Fast**
- **Accurate**
- **Non destructive**
- **Remote**
- **Provides Visual Record**
- **Portable**
- **Economical**

Some Applications of Infrared Thermography

- **Building Envelope Surveys**
- **Flat Roof surveys**
- **Preventive Maintenance**
- **Energy Audits**
- **Plant Maintenance**
- **Electrical Surveys**

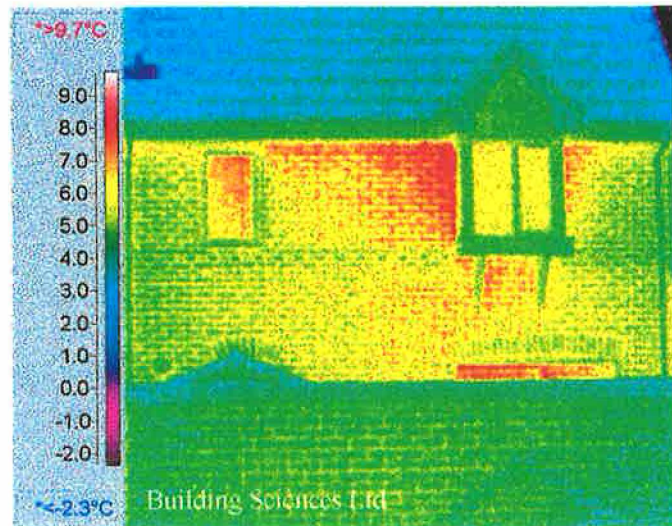
Sample Thermographic Images

Warehouse Roof Internal Survey



This warehouse roof is a twin skin construction with man made mineral fibre insulation sandwiched between. The dark blue area indicates where this insulation has been completely omitted from the roof assembly.

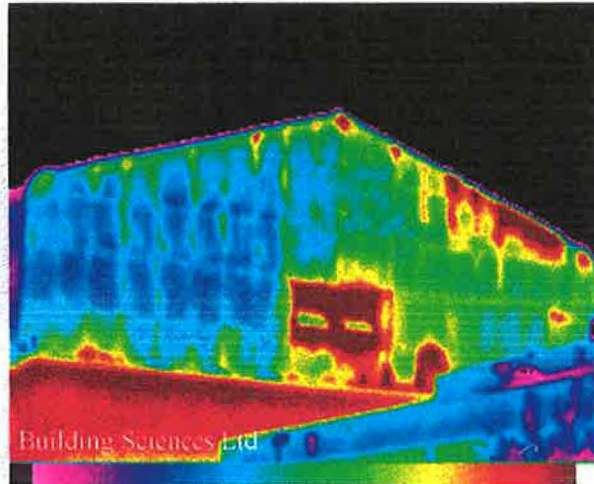
Domestic Unit



This image shows a traditional brick cavity construction. The upper oriel window is causing substantial heat loss at its junction with the wall. This is identified by the red flares emanating from this area.

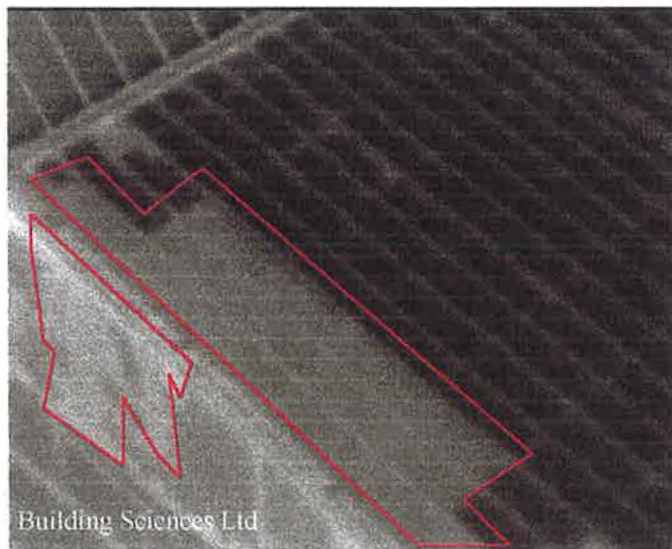
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Workshop/Laboratory



This twin skin metal clad unit displays severe problems with the cladding. Large quantities of air leakage have led to moisture accumulations within the insulation quilt. This allows significantly greater heat loss and presents a fabric degradation problem.

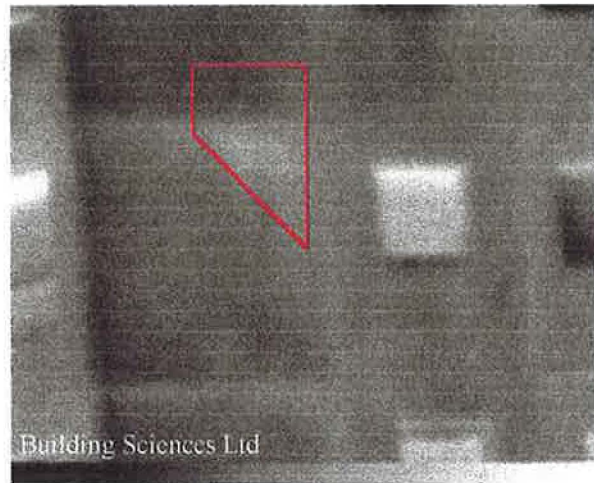
Warehouse Roof



This twin skin built up roof shows a large area of missing insulation. This was located close to the verge condition. This can be seen as the light area boxed in red. The missing insulation allows greater heat loss and thus produces a warmer exterior surface temperature. In addition to the roof failure the gable wall also shows signs of misplaced and missing insulation.

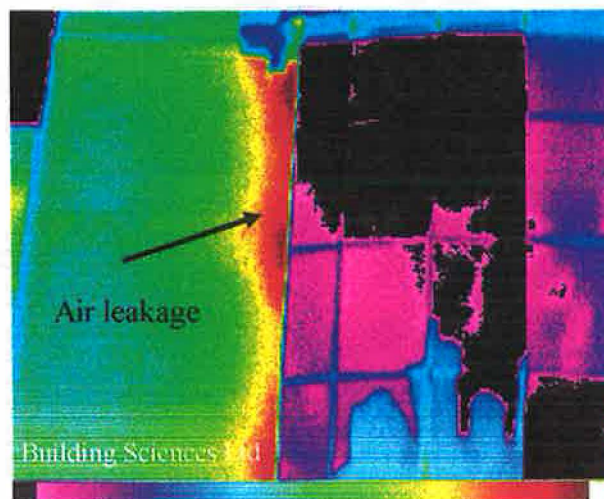
Sample Thermographic Images

Multi Storey Unit



This wall panel shows signs of thermal failure at the top right. The brighter flare indicates air leakage and moisture build up. This is due to condensation forming when moisture in the warm interior air condenses as it passes towards the outer layers of the joint condition.

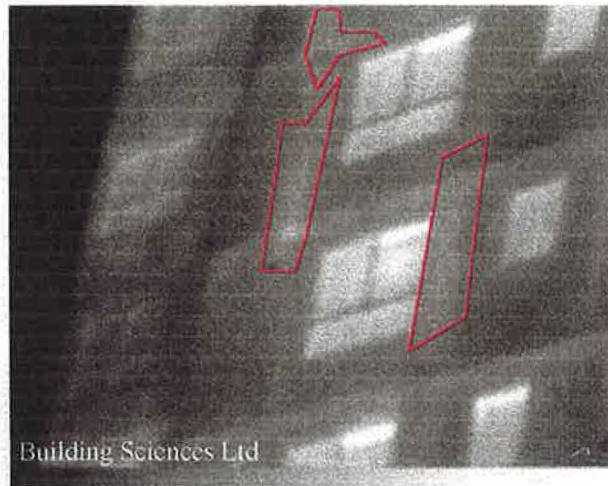
Commercial Building



This colour image shows severe air leakage between two construction systems on a new build project. Individually the glazed curtain walling (green) and stone cladding (purple) appear to be performing well but the junction between the two has failed. The large red flare indicates the extent and of air leakage along the joint.

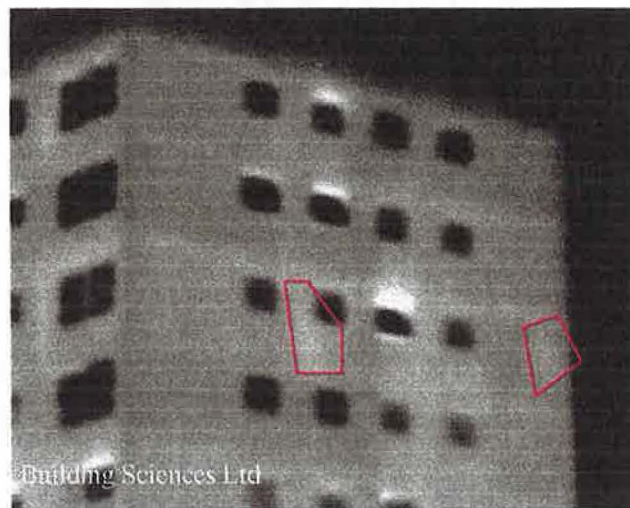
Sample Thermographic Images

Multi Storey Unit



This multi storey building was constructed with precast concrete panels. The vertical and horizontal joints had failed and the panels were displaying severe degradation. This image highlights some air leakage paths (also allowing water ingress) where the joint system had completely degraded. Also noted is the extent of thermal bridging at the party walls and floors.

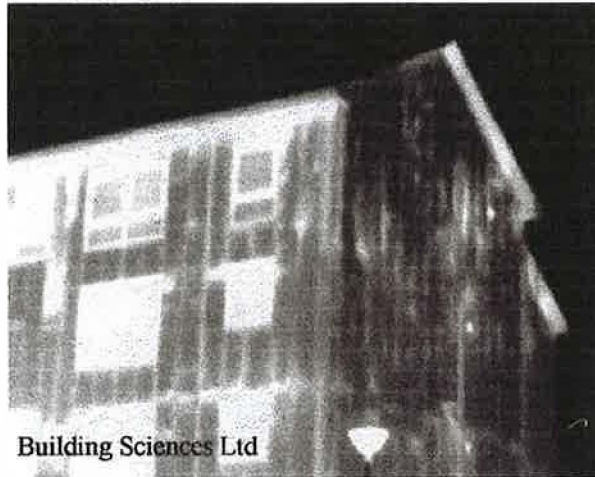
Multi Storey Unit



This multi storey block displayed various areas of performance failure. The generally poor level of thermal insulation was compounded by localised areas of moisture ingress. These produced spalling of the concrete and large heat losses.

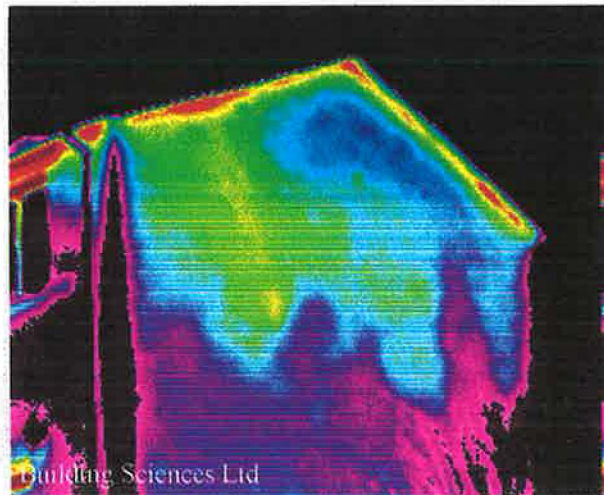
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Cement Board Wall Cladding



This four storey block of domestic flats had severe air leakage and insulation failures. The construction of the subject was a brick cavity wall over-clad with cement panels. The bright lines on the image show the position of timber fixing battens behind the panels. The numerous irregular bright spots and bands indicate that a combination of insulation failures, air leakage and moisture accumulations exist. These areas were easily located and were subsequently investigated by removing the necessary panels.

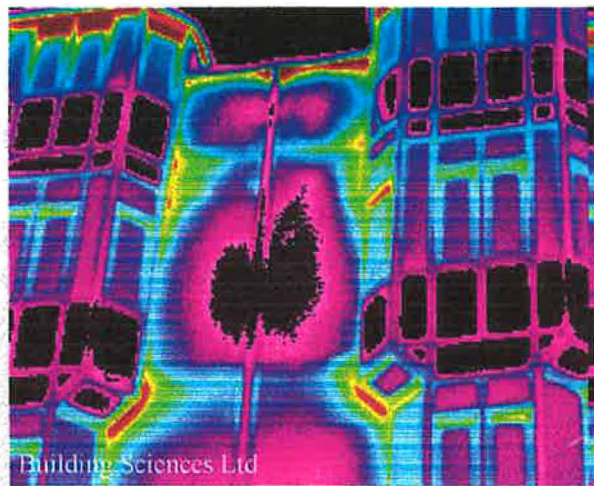
Domestic Insulation



This cavity gable wall has been filled with blown fibre insulation. The irregular pattern indicates that the fill is incomplete and that large areas remain uninsulated. Also noticeable are the large air flares at the verge condition showing substantial heat loss via the loft space.

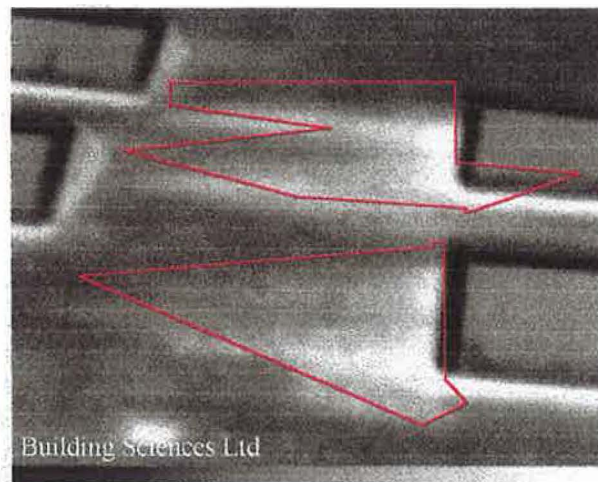
Sample Thermographic Images

Commercial Office



Severe air leakage at the cladding joints led to condensation and corrosion. This is identified by the red and green patterns. The mechanical systems within this building could not be properly balanced due to the loss of air occurring through the external wall at the plenum floors.

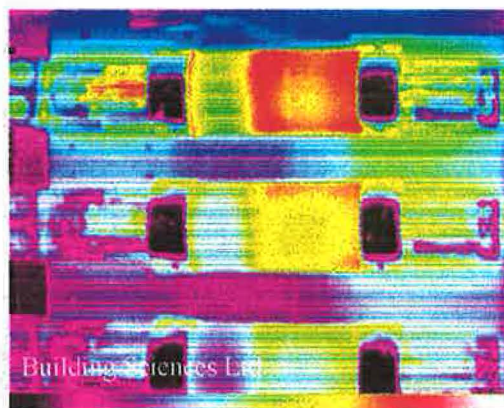
Flat Roof Survey



Thermography can quickly identify areas of defective insulation due to moisture ingress. Large areas can be surveyed rapidly and the affected areas outlined with spray paint for subsequent visual identification. This image shows where water ingress has occurred adjacent to roof lights. The bright white areas boxed in red indicate the presence of moisture.

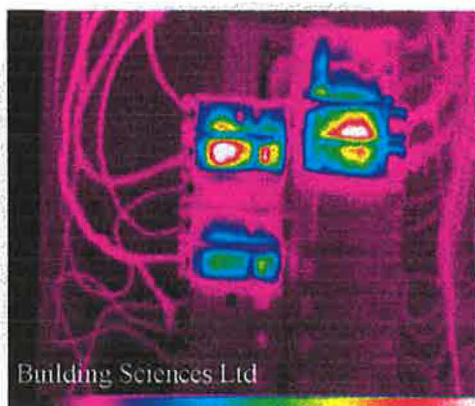
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Electrical Plant Surveys



Shown above are a visual and thermographic image of a three phase disconnect with the top switch showing signs of overheating. Thermography can quickly and remotely identify this type of problem and prevent large scale power failures.

Fuse Distribution Boards



Again thermography can be employed to quickly assess the performance of individual circuits by scanning the fuse boards. Overloaded fuses are seen here with white centres. The overloaded circuit heats up and can threaten fires if connections are poor.