



Environmental Control at Wilmot-Budgen Ltd

Eliminating Waste, Maximising Quality

A tailored humidity control solution delivering stable conditions, reducing waste and print quality



LOCATION

Coulsdon,
Surrey



SECTOR

Print / Cardboard
Manufacturing



RH RANGE

40% - 60%
(50% $\pm$ 10% RH)



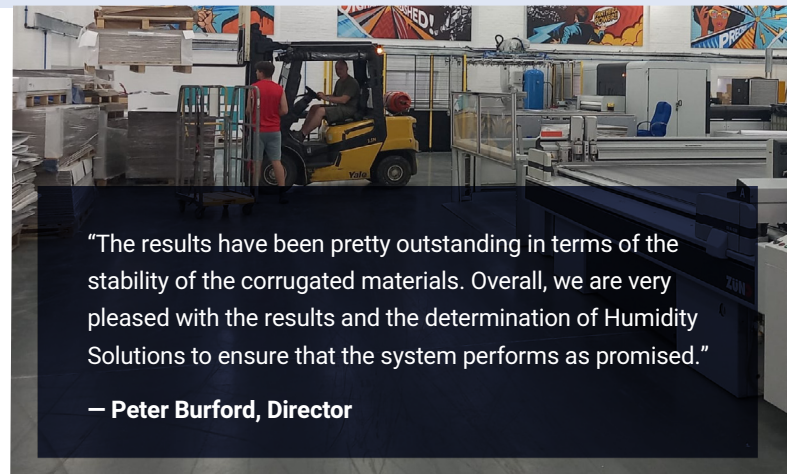
TEMP CONTROL

18°C during winter
(external lows to -3°C)

THE CLIENT

Wilmot-Budgen Ltd, a corrugated cardboard and point-of-sale display manufacturer based in Coulsdon, produces high-quality retail displays for major UK brands.

Within the production facility, environmental conditions were highly variable, with seasonal extremes from hot summers to winter temperatures as low as -3°C. These fluctuations made it difficult to maintain consistent manufacturing conditions, directly impacting material behaviour and production performance.



"The results have been pretty outstanding in terms of the stability of the corrugated materials. Overall, we are very pleased with the results and the determination of Humidity Solutions to ensure that the system performs as promised."

— Peter Burford, Director

THE CHALLENGE

Unstable environmental conditions caused ongoing operational challenges across the facility.

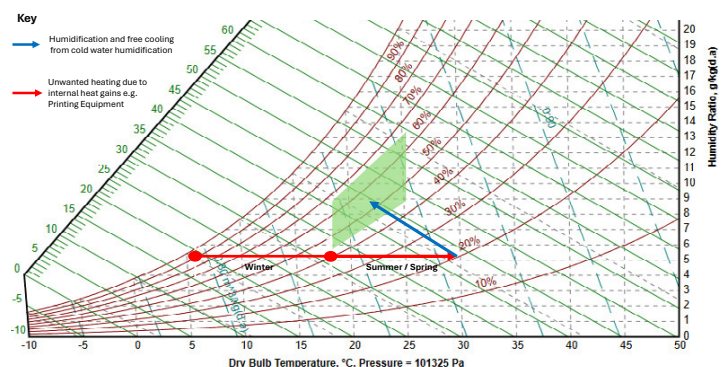
Humidity fluctuations caused corrugated board to curl and handle inconsistently during conversion. Low humidity also created static build-up, reducing line efficiency.

Temperature changes further destabilised humidity levels, pushing conditions outside the ideal production range.

This resulted in lower product quality, increased waste and disruption to production efficiency and profitability.

PSYCHROMETRIC ANALYSIS

Maintaining humidity within the optimal 'quality gold zone' (40-60% RH) stabilises corrugated board, reduces static and improves print quality.



THE SOLUTION

In response to these challenges, Humidity Solutions designed, installed, and commissioned the following solution to achieve a controlled production environment, as detailed below:

HUMIDIFICATION

**Neptronic SKH
High Pressure Humidifier**

High-pressure humidification system delivering precise RH control within 40–60% (50% ±10%RH), stabilising corrugated board and reducing static build-up

HEATING &
COOLING

**Vapac E-Heater & Cooling
via the SKH humidifier**

Electric heaters installed to maintain internal temperatures of 18°C during winter (external lows to -3°C). Adiabatic cooling provided via humidification system during summer months.

AIR MOVEMENT
& DISTRIBUTION

**Vapac E-Heater & Cooling
via the SKH humidifier**

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AIR MOVEMENT
& DISTRIBUTION

Vapac Destratification Fan

Destratification fans installed to recirculate warm air from ceiling level back to occupied zones, improving energy efficiency and maintaining consistent conditions at production level.

VENTILATION

Extractor fans installed above the false ceiling to remove excess heat and reduce heat transfer into the production area below.

ENVIRONMENTAL
CONTROL

Integrated control system maintaining stable temperature and humidity conditions within defined set points, preventing fluctuations where 1°C change can impact RH by 3%.

PERFORMANCE
OUTCOME

A system designed to maintain conditions within the optimal “quality gold zone,” improving material stability, reducing waste and supporting consistent production performance.

RESULTS & IMPACT

-  **Reduced product waste**
Significant reduction in waste and product rejection
-  **Improved material stability**
Corrugated board remains stable with minimal curling or deformation
-  **Less static build-up**
Easier handling and smoother operations across the production line
-  **More predictable production**
Consistent conditions lead to reliable, efficient and manageable production
-  **Better working environment**
More comfortable conditions all year round support a better workplace experience

