

# Bugler Developments- Construction Drying

CASE STUDY

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Hemel Hempstead, United Kingdom



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### THE CHALLENGE

It is no exaggeration to say that delays to construction projects can have monumental repercussions. If, for example, as a contractor you cause a delay to the completion of a project, you would be liable to pay Liquidated and Ascertained Damages (LADs), on top of the increased pay to workers and subcontractors for the extra time. This could amount to hundreds of thousands of pounds per week until the building is completed. Even a small delay of a week or two could, ultimately, cost people their jobs.



During a large construction project in Hemel Hempstead, the contractors ran into a problem. A huge problem in fact. The two separate blocks had not been made watertight by the previous project management team and they had been left exposed to the elements all through the winter. The concrete had become completely saturated and there was over 85% humidity recorded in some areas. For reference, the ideal relative humidity for health and comfort is between 30-50%.

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The situation was so bad that they had to halt construction until they were able to get the buildings dry. They had sought help from a drying and restoration company, whom they had a long-standing working relationship with, but time was not on their side. After 5 weeks of drying, and still no construction, they estimated that the building was still 6 weeks away from being dry.

This time frame was simply not an option for the construction company. They were now 4 weeks behind schedule and adding another 6 weeks on top of that was simply unthinkable. They needed to act, and quickly.

They reached out to a number of companies that might have been able to help. Ideal Response were the first to respond, and onsite to survey the situation that very day. Despite the complicated nature of the problem, our team came up with a detailed proposal and submitted it to the construction company the following morning.



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### THE IDEAL SOLUTION

It wasn't long before we were given the go-ahead. This was no ordinary dehumidification job, though, due to the sheer size of the buildings involved – each one contained 32 apartments and an underground car park, and it all needed drying, while mould had begun to form on the internal walls.

We decided that, in order to get our clients back on track, we would need to go big – bigger than we'd ever gone before. We craned a 750KW industrial boiler onto the top of the building, with a fuel tank, and then we constructed a massive air handling unit. The plan was to drive heat into the building, attacking it stage by stage. This was a unique solution to fit our client's very specific needs, and while it may have seemed slightly excessive and expensive, the highest priority for everyone concerned was speed, and this equipment provided exactly that.

We managed to generate a lot of heat, which we then forced into the ground floor with specialist tubing, and let the heat rise up through our heat exchangers. Once one area of the building was dry, we would move this (incredibly heavy) equipment manually to the next area. This was a constant process throughout the building.



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It was important that we recycled as much of the hot air as possible. We erected a vent on the top floor of the building which would suck the heat out of the air and recycle it back into the air handling unit. This was crucial to keep the project as cost effective as possible, while at the same time speeding up the entire process.

All this huge and expensive machinery was obviously integral to the job, but arguably the most critical aspect was the monitoring. In order to track our progress, we had 48 data login points installed throughout the buildings which monitored the relative humidity, the temperature and the moisture in the air. This sophisticated network was operated by just a scan of a barcode, or Data Point, which enabled us to input the data to our system to track the progress.

By monitoring all of these measures, we were able to alter the output of the boiler to match the conditions – when the weather got colder, we needed more heat from the boiler to counteract it, so we worked with our remote boiler technicians to get it done. Our readings were also able to tell us exactly when an area had dried sufficiently, meaning that we could then quickly begin moving the equipment to the next area, saving us valuable time.

The entire process became much more difficult when the cold weather became more extreme, bringing snow and thick frosts. We had to act quickly to re-insulate the top of the building by lining sheets to prevent the hot air from escaping. Our commitment to meeting the deadline for our client was all the motivation we needed – nothing would get in our way.



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### THE RESULT

When we first arrived onsite, our initial assessment found that the buildings had over 85% relative humidity in places and the concrete blocks were at total saturation point. The original drying company said that they would need 11 weeks in total to complete the work, which would have been catastrophic for the construction company.

In just 10 days we had returned the first building to the industry standard 'drying goal' known as the British Standard PAS 64. In another 10 days, the second building had been dried to this level as well.

The work of our team, and the initiative they showed in creating this ambitious and unique solution, saved our client tens of thousands of pounds. Our commitment to getting the job done, no matter what the challenges we faced, inevitably impressed the construction company, and we have gone on to help them out with a number of other projects.



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