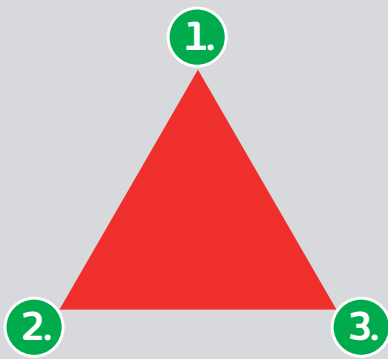


Dealing with on-site damp.

Safe, effective drying out – no project delays

October 2015

The Effective Drying Triangle



1. Air movement
2. Dehumidification
(removal of moisture)
3. Warmth

1. Air movement across a substrate draws the water to the surface, where it evaporates.

2. Heat raises the room temperature and so lowers the relative humidity of the air. This allows the air to absorb more water from surrounding surfaces.

3. Dehumidification extracts water from the air, to be transferred from the work area.

Wet, cold weather often means delays due to buildings not being warm or dry enough for works to progress – e.g. carpentry, decorating, floor coverings. The ambient air on site can reach a very high level of relative humidity, particularly during the autumn, winter and spring months. Before the building is watertight and the central heating/underfloor system is installed, a temporary drying-out programme is often required.

The three components of **The Effective Drying Triangle** (see left) are required: air movement, dehumidification and warmth. Careful control ensures that the building dries out gradually and evenly, and prevents costly damage, such as timber warping, plaster cracking and structural movement.

The problems of inadequate equipment



Infrared heater: often used in an attempt to dry new plaster. **Disadvantage:** Directing the heat forwards, it causes the freshly applied plaster directly opposite to dry very rapidly and the adjacent damp plaster to crack. They also use a lot of power.



Gas-fired heater: creates fast temperature rises within an area. **Disadvantages:** Potential for structure damage behind finished surfaces. Liquefied gas, when burnt, produces a large amount of water which undermines the drying process. Potential health and safety issue from the management of large canisters of flammable gas. A naked flame presents a potential fire risk.



Electric heater: used as part of a drying out programme. **Disadvantages:** Potential risk due to electricity being provided in wet or damp surroundings, especially if higher-voltage (three-phase) heaters are used. A large space requires a large electricity supply to obtain the necessary amount of heat, which can cause problems linked with the electricity supply. Additional air movement and dehumidifying equipment is needed to complete the 'Effective Drying Triangle' for an effective drying out programme. Trailing leads represent a trip hazard.



The benefits of an oil-fired heater

- No naked flame
- No trailing leads
- Low electricity requirements
- No dehumidifiers required
- Very gradual and even heat rise
- Provides all the necessary components for a successful drying out programme, from one unit

RVT's free site assessments quickly identify what control measures are needed for every individual situation, and tailored solutions are recommended.

The optimum equipment choice: oil-fired heaters

Indirect oil-fired heaters offer the ultimate solution in implementing a successful, safe drying out programme on site. These heaters work on the principle of producing a fume-free, clean, dry heat. This is transferred into the building via flexible ducting by a powerful fan within the unit.

How oil-fired heaters work

- The powerful airflow produces air movement and warmth which is spread throughout the building.
- Damp air is rapidly displaced, eliminating the need for dehumidifier units.
- The even, gradual heat supply steadily dries out the building structure and surfaces.
- These heaters are usually placed outside, eliminating the fire risk of a naked flame within the building.
- The fuel supply is red diesel which is widely available on most sites and can be safely stored in an adjacent, fully bunded fuel buggy/tank.

Options for a tailored service

- Mobile models up to 200kW can be moved around the site as work progresses.
- 150kW heaters are available in a 110V single-phase supply. (This draws very little electricity, which avoids putting further pressure on the site's electrical source.)
- Units as small as 65kW can be used effectively on smaller sites, as well as larger sites.
- Static heaters up to 500kW are available for larger applications.
- Heaters can be connected to remote thermostats to ensure economical, effective use.
- Perforated ducting may be used for even air distribution in public areas.
- Additional air distribution kits may be used to dry out remote/dead areas.

