ANALYSIS OF ENERGY EFFECTS AND COMFORT WITH AIR PROBLEMS

On 12/11/2019 Hysopt identified the energy saving effects for air separation on behalf of Flamco. A representative apartment complex has been simulated for this purpose. An analysis has been done on the system without the use of air separators, and with the use of air separators such as the Flamco Smart or Flamco XStream.

This analysis has shown that when applying separators, **14% to 18% less energy** is used than a system without air separators. Because the upper apartments remain too cold caused by air in the radiators, the user is forced to increase the boiler temperature as compensation. The result is that due to the water temperature increase the lower apartments become too warm. A higher supply temperature also entails an increase in the return temperature, which has an unfavourable impact on the efficiency of condensing boilers, with a decrease of 5.5 percentage points.

In addition to the effects of air problems on energy consumption, the consequences of this on comfort are also evident. On the basis of the ATG method, the comfort temperatures of the inhabited spaces have been identified, for example, the upper apartments will be too cold at cold outside temperatures. Only after increasing the heating line will the desired temperatures be achieved.

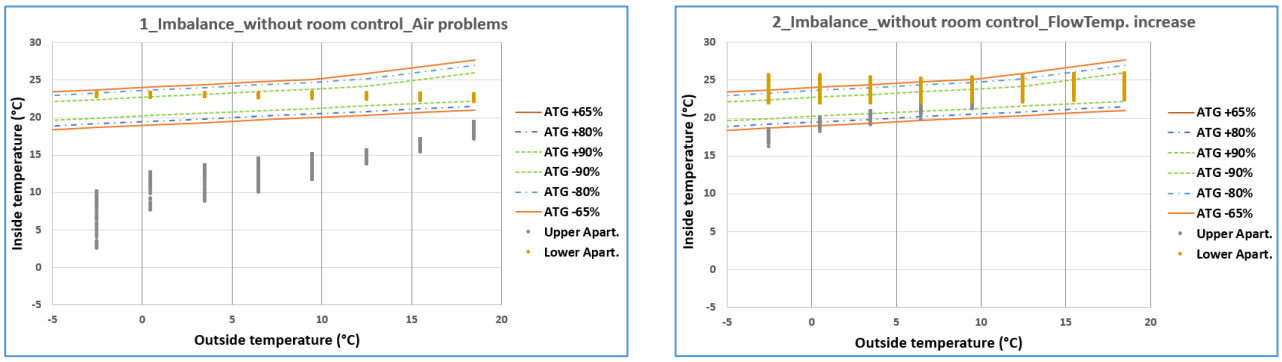

Figure 1: Left, installation with air problems;

Right, installation with air problems and boiler temperature increase

Air problems in radiators resulted in apartments that are too cold at low outside air temperatures and to extremely high energy costs when the boiler temperature is increased as compensation, without an effective solution to the problem itself.

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