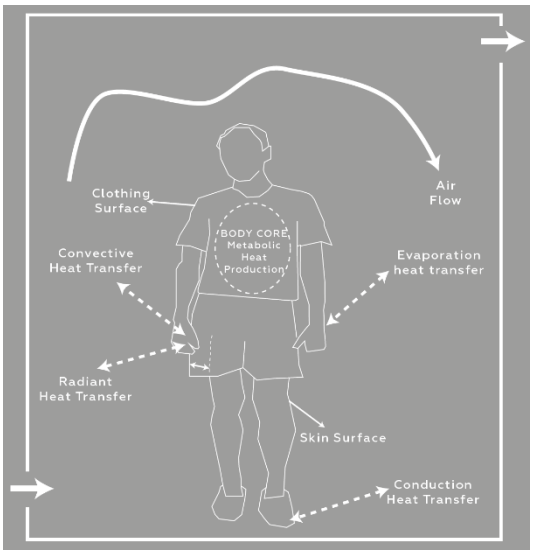
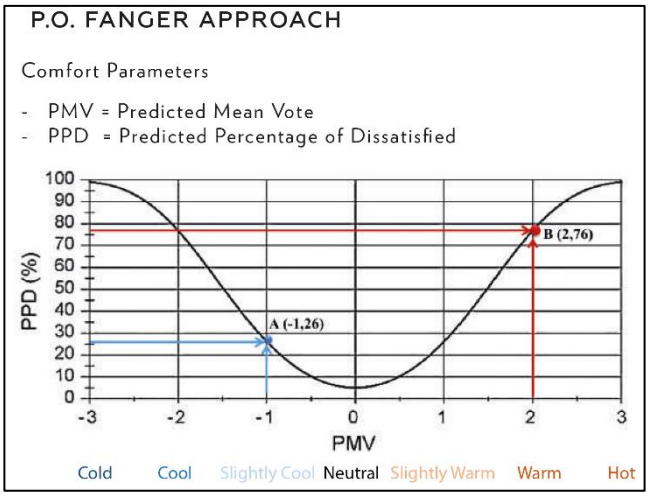
The loss of comfort, which is most common in the places where people live, and which makes it necessary to take precautions quickly when it is noticed, is generally from a thermal point of view. The protection of this balance in the heat transfer from the human skin surface to the environment is the physiological fundamental rule that keeps us alive. As the body core temperature changes by 1 or 2 degrees, we try to take action by changing external or internal factors for this life-threatening event. The clothes we wear, our metabolic heat production depending on our activity, the sunbathing or the active heating and cooling devices we use primarily to protect our core temperature, and then to make us feel comfortable thermally, even if it varies from person to person.





The speed and amount of heat transfer from the human body to the environment by conduction, convection and radiation is the factor that determines our thermal comfort level. We can name all the eorts to preserve the heat generated in the inner body of the body with 6 basic factors. The clothes we wear and the metabolic heat production are two parameters that are directly under our control, while the temperature, velocity, humidity range and radiation temperature of the surrounding surfaces are other external parameters. Using this data, the most basic thermal comfort calculation was described mathematically by the Danish scientist PO Fanger. In di-erent environmental conditions by changing the 6 parameters, the subjects have collected feedbacks according to whether the environment is very cold (-3), very hot (+3) Predicted Mean Vote - PMV" as defined. One result of this test is that 5% of people say that they feel uncomfortable under any circumstances. Through the feedback of the total subjects, the Predicted Percentage of Dissatisfied was obtained.

What can we do for you?

We establish one-to-one models of neighborhoods that are in design time, building construction process or use continues. The operating principles of the devices used in ventilation and air conditioning, the ducts and diffusers used in the distribution, the thermal comfort condition that the radiators or panels in heating work when they operate are quantified. Subsequently, this data is visualized in every region requested, making it more than a numerical result. For example, in areas such as an open office, facade close occupants solution suggestions are given after determining the thermal comfort difference between others. Necessary infrastructural preparations of local comfort are reported thanks to reducing glass permeability, adding sunscreen to the exterior, updating the blowing angles of the diffusers, and a sensor and control to be placed on your table. Similar solutions can be produced in our consultancy for the production facility, airport, stadium, conference rooms and even your home.

THERMAL COMFORT

Interpretations of heat and air flow in the spaces

User health and productivity

alkazar

TO BE YOUR MOST VALUABLE PARTNER...

ALKAZAR,

Costs Optimization

We deliver you to good designs faster and at lower cost.

Instead of heating / cooling much larger areas, focusing only on the user living area allows us to balance comfort and energy consumption.

We provide independent advice to consider all options.

Increase Scenarios

Thanks to fast modeling, we digitally visualize the different brands or working principles of heaters or coolers for a space.

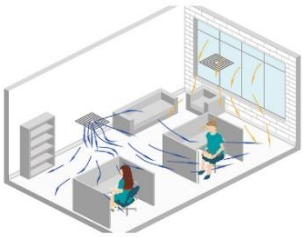
We provide you with the required air distribution and the desired comfort as a result of the jet nozzle, square diffuser or swirl diffusers without having to experiment in the field.

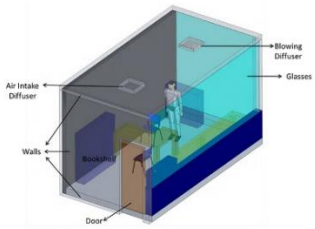
Visual Outputs

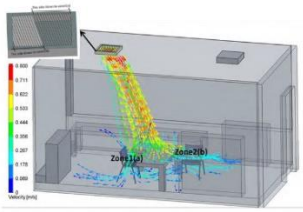
With videos, we show how the blowing air gets dry on your face in the winter or wanders in the area near the ceiling of the room, and we watch how the cold air dissipates causing your feet to feel cold.

We produce special visuals according to your request.

We offer balancing your energy consumption and thermal comfort level using CFD and BES tools







With simulations,

- Make sure that innovative design options will work,
- Watch as to why the cold air coming to your feet moves so differently from the hot air accumulated in the ceiling, in video format regardless of the location size,
- Observe how the sun warming the metal in the afternoon still keeps you warm and even sweating, even if you turn off the blinds, at the table given to you in front of the window in the office,
- Understand how effective the facade ratio you decide architecturally is on the heating / cooling principle with radiance celling in an A + office by taking visuals from any region or transfer it to other disciplines,
- At the first stage, whether the design you decided as a mechanical designer will provide the desired thermal comfort due to the selected glass, interior furnishings or usage principle,
- It can be provided to know how the thermal comfort conditions you request as investors will be before the structure is completed and to give feedback to the design team for your different needs.

How we work

Our consultants guide you at any scale, based on simulations for a single room or the widest guest in the world.

In the early stages of the project, we can offer quick suggestions based on past experiences. As the project progresses, our analysis can become more complex and offer deeper evaluation levels.

It can present one-to-one by transferring the thermal comfort it will display when it is opened to use from numbers, images and videos.

Our options are neutral and we are therefore free to offer innovative approaches.