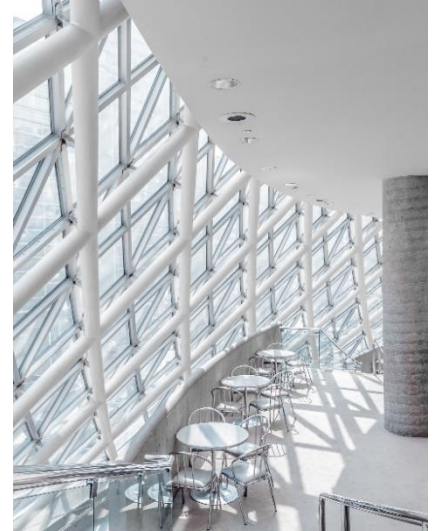


# DAYLIGHT MODELING

Find the optimal use of daylight for comfort.  
Sustainability and profitability



Good natural light is key to creating projects that tenants love. A successfully daylit building has visually and thermally comfortable spaces that are pleasing to occupants. Daylight can also be used as a passive strategy for saving energy. In a space correctly designed for daylight, users can turn off electric lights, reducing the building's environmental footprint and operating costs. In this way, a building that supports both nature and users can be designed.



However, allowing natural light into a space also means allowing the heat of solar gains. Great views command great prices—but sometimes cause equally great headaches for operations. A careful balance must be struck between the positive contributions of daylight and the negative effects of overheating, discomfort, and visual glare.

## Our Service

Working within your criteria and goals, we use computer modeling to find a design path that balances the positive and negative attributes of daylight. We can also pair **daylight modeling** with complementary studies of **energy use**, **thermal comfort**, and **glare**. We can also provide **climate data** reports that will affect the daylight and energy usage of your building with the services we provide specifically for climate. This combined, holistic analysis produces optimal results.

We have the computing capabilities and experience to evaluate concepts quickly, allowing design teams to see the impacts of various options clearly in the early design stage. As an independent consultant, we serve as an advocate for the best information, apart from any preferred design.

We will help you answer questions like the following:

- How can we get more natural light into this space?
- How can we use the site's natural advantages best?
- Will we have too much light/glare/heat?
- Why do our employees have to keep their blinds closed?



We answer such questions quantitatively. But then we go beyond numbers to present solutions that are thoughtfully integrated with your greater project narrative.

TO BE YOUR MOST VALUABLE PARTNER...

ALKAZAR,

## Explores Innovations

We identify innovative lighting strategies and provide passive energy savings.

## Creates Opportunities

We can make the best use of a site's natural advantages.

We develop class A office spaces for higher revenue

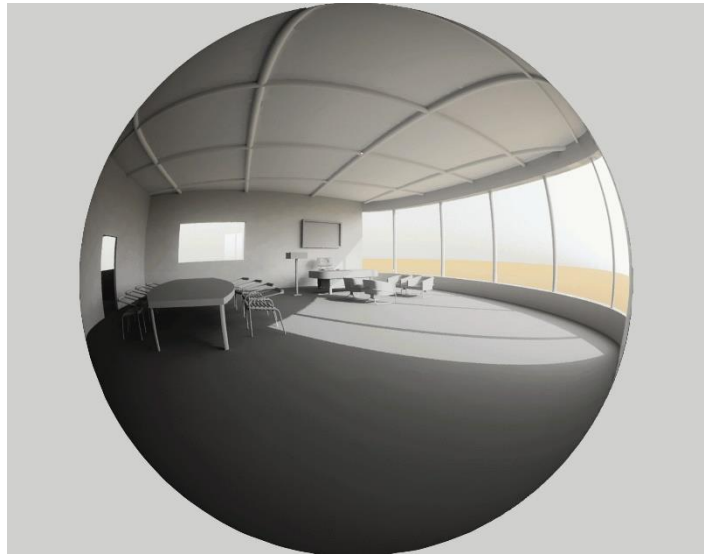
## Meets Challenges

Manage (or mitigate) thermal and glare effects in new (or existing) construction

Manage the performance & operational costs that come with great views

## Fulfills Your Expectations

From the beginning of the design, we analyze each parameter and take you to the correct conclusions.



## How We Work?

Good daylight design depends on many influences: architectural shape and orientation, sky conditions, surrounding buildings and landscape, interior design and finishes, the evolving use of the space and the resulting requirements and expectations of the occupants. We consider all these factors in our analyses.

We use tools that demonstrate the impacts of design choices in real time. They also let us dive deeper into solidified design concepts, showing which spaces receive what levels and quality of light. In addition, we can present the results with numerical and visual expression techniques. These analyses can drive better decisions earlier, reducing rework at later design and construction stages.

In developing models and recommendations, we draw on our experience modeling complex geometries and materials, as well as our weather and climate expertise. We constantly evolve our practice to identify and refine the most useful metrics in interpreting daylight performance.

We can also highlight periods and spaces that receive uncomfortable levels of natural light. For these situations, glare studies are often desirable. We simulate luminance levels, working from the occupants' perspective, and assess the likelihood of undesirable glare effects. We can also test mitigation measures from the same perspective. Our goal is to avoid the least desirable design choice: relying on occupants to close blinds. We strive to create robust daylight designs that work with little maintenance and occupant intervention.