

Light pollution of glass curtain wall

The light pollution of the glass curtain wall refers to the use of coated glass on the curtain wall of high-rise buildings. When direct sunlight and skylight are irradiated onto the glass surface, the specular reflection (ie, specular reflection) of the glass. And the resulting reflected glare.

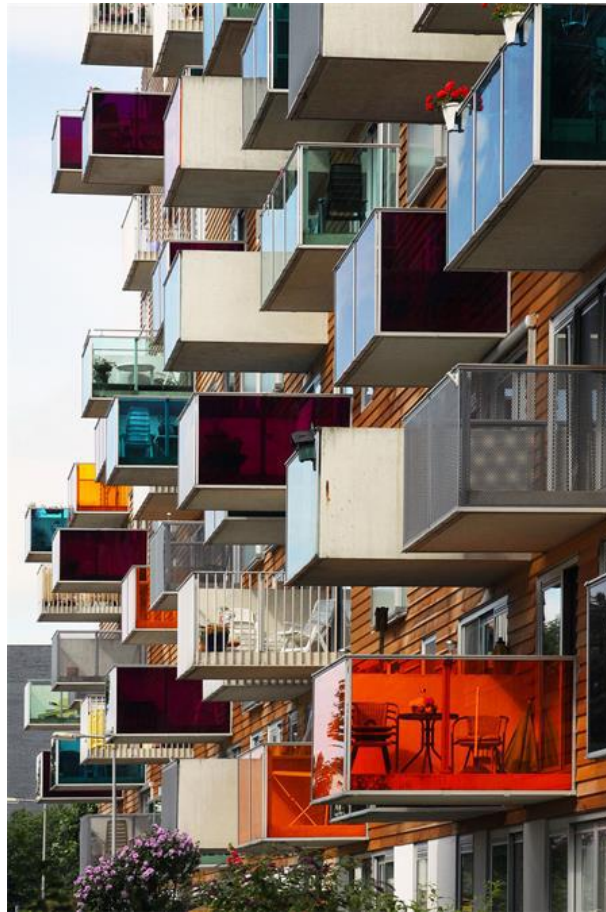


Light pollution is the murderer of accidental traffic accidents. A glass walled building stands like a huge mirror with a width of tens of meters and a height of nearly 100 meters. It reflects the traffic conditions and traffic lights (even multiple reflections). The reflected light enters the car at high speed, which will cause sudden temporary blindness and visual illusion, which will cover the driver's vision in an instant, or make him feel dizzy and seriously endanger the visual function of pedestrians and drivers. The glass curtain walls built around the residential area will reflect the surrounding buildings. According to optical experts, the reflected light of mirrored building glass is stronger than that of sunlight, and its reflectivity is as high as 82% to 90%. The light is almost completely reflected, which greatly exceeds the range that the human body can bear. In the summer, the sun is reflected into the living room. The strong glare is the most damaging to the original good atmosphere in the room. It also raises the room temperature by an average of 4 °C to 6 °C. People who work and live in a white bright and polluted environment for a long time may easily lead to decreased vision, dizziness, insomnia, palpitations, loss of appetite and depression, and other symptoms of neurasthenia, which may cause changes in normal physiological and psychological conditions. Long-term will induce certain diseases. Therefore, the State Environmental Protection Administration has received complaints about light pollution all over the country every year, which has attracted the attention of relevant state departments.



Light pollution is produced under the following specific conditions: (1) the use of large areas of high reflectivity coated glass; (2) in a specific direction and at a specific time; (3) the degree of light pollution and the direction, position and height of the glass curtain wall Have a close relationship. Because the human's angle of view has the greatest influence within an angle of ± 15 degrees around 2 meters, the intensity of light reflection is inversely proportional to the square of the distance from the reflector to the human eye.

In recent years, governments and relevant academic groups have attached great importance to the issue of light pollution, and have successively published a series of technical documents, standards and decrees to control light pollution. China has also attached great importance to the problem of curtain wall construction. In 1996, the regulations on the technical standards of curtain wall engineering and the provisional regulations on strengthening the management of building curtain wall projects were successively introduced, which made the quality of control curtain wall projects have a legal basis. According to their actual situation, various localities have also taken some corresponding feasible measures.



The emergence of the problem of light pollution does not mean that the glass curtain wall should not be done, but how to do it well. At present, the development of high-tech has developed the material of curtain wall from single glass to steel plate, aluminum plate, alloy plate, marble plate, enamel sintered plate, etc. Through reasonable design, the glass curtain wall and the curtain wall of steel, aluminum, alloy and other materials are combined. Together, it not only makes the high-rise buildings more beautiful, but also reduces the light pollution caused by the reflection of the curtain wall more effectively. It can further reduce the self-weight of the high-rise buildings and give full play to the advantages of the curtain wall building materials.



Glass plays a key role in the glass curtain wall. The glass type of the glass curtain wall should be carefully selected according to some parameters of the glass, and the glass with glare reduction performance should be selected. These parameters include the light and climate parameters of the building site, the transmission number of visible light, Reflection coefficient, transmission coefficient, reflection coefficient and absorption coefficient for sunlight, as well as heat transmission coefficient, thermal expansion coefficient, and thickness, maximum size, weight, and wind resistance. It is well known that glass has transmission, absorption and reflection properties for light. The glass curtain wall uses different types of glass according to these characteristics. The glass used for the glass curtain wall generally has transparent glass, colored glass, heat absorbing glass, coated glass, coated glass, laminated glass, and photochemical glass. The advantages and disadvantages of each of them can be seen in the glass used on these glass walls.

Tags: **aluminum plate, and photochemical glass., coated glass, curtain wall, double glazed units, double glazing, double-glazed ventilation structure, glass curtain wall, glass wall, heat absorbing glass, high-rise buildings, laminated glass, light pollution, light reflection, reflected light, wind resistance**



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