

Analyzing Façade Scenarios and Daylight Levels in the Reid Building: A Reflective Case Study on the Designed Daylight under Overcast Sky

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Abstract : This study presents the use of daylight in the case study of the Reid building at the Glasgow School of Art in the city of Glasgow, UK. In Nordic countries, daylight is one of the main considerations within building design, especially in the face of long, lightless winters. A shortage of daylight, contributing to dark and gloomy conditions, necessitates that designs incorporate strong daylight performance. As such, the building in question is designed to capture natural light for varying needs, where studios are located on the North and South façades. The study's approach presents an analysis of different façade scenarios, where daylight from the North is observed, analyzed and compared with the daylight from the South façade for various design studios in the building. The findings then are correlated with the results of daylight levels from the daylight simulation program (Autodesk Ecotect Analysis) for the investigated studios. The study finds there to be a dramatic difference in daylight nature and levels between the North and South façades, where orientation, obstructions and designed façade fenestrations have major effects on the findings. The study concludes that some of the studios positioned on the North façade do not have a desirable quality of diffused northern light, due to the outside building's obstructions, area and volume of the studio and the shadow effect of the designed mezzanine floor in the studios.

Keywords : daylight levels, educational building, Façade fenestration, overcast weather

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