The Phillips Exeter Academy Library by Louis I. Kahn

lecturer: Michele Bruno architect
Founder of Kalisode network
- moderate cold stress 2300h vs moderate heat stress 88
- strong cold stress 1539h vs strong heat stress 22
- comfort hours: 2902h
SUN-PATH
THE CENTRAL VOID

Section facing South-East
TOP-DOWN VIEW

ILLUMINANCE (lux) - 8:00 am - Equinox

range expected by law for reading task 300 - 500 lux
TOP-DOWN VIEW

ILLUMINANCE (lux) - 12:00 am - Equinox

range expected by law for reading task 300 - 500 lux
Two different skylight solutions applied by Kahn

They are practically two following project: Phillips Exeter Library vs Yale Center for British Art
Skylight simulation - implementation

LEFT (cDA): 50% of time or more at least 300 lux = 0% of floor area

RIGHT (cDA): 50% of time or more at least 300 lux = 17% of floor area
Glare analysis - SE facing

ANNUAL GLARE PLOT
ORIGINAL KAHN SOLUTION
NO SKYLIGHTS

ANNUAL GLARE PLOT
9 SKYLIGHT SOLUTION
Glare analysis - SE facing

GLARE PLOT
ORIGINAL KAHN SOLUTION
NO SKYLIGHTS

ANNUAL GLARE PLOT
9 SKYLIGHT SOLUTION
Glare analysis - SE facing

GLARE PLOT
ORIGINAL KAHN SOLUTION
NO SKYLIGHTS

ANNUAL GLARE PLOT
9 SKYLIGHT SOLUTION
Glare analysis - 9 skylights solution

NW facing inner facade

SW facing inner facade

NE facing inner facade

SE facing inner facade
THE 4 FACADES

ILLUMINANCE (lux) - 8:00 am - Equinox - clear sky case
BEHIND THE SHUTTERS

How Kahn’s light machine works
BEHIND THE SHUTTERS

How Kahn's light machine works - clear sky case

illuminance - 8am - shutters open

illuminance - 8am - shutters closed
THE 4 FACADES

sDA300lux_50% - annual metric
THE 4 FACADES

UDI_300_3000lux - annual metric
“I sense Light as the giver of all presences, and material as spent Light. What is made by Light casts a shadow, and the shadow belongs to Light.”

Louis I. Kahn

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