

Play of light on planes: A Kindergarten for Blacksburg,
Virginia.

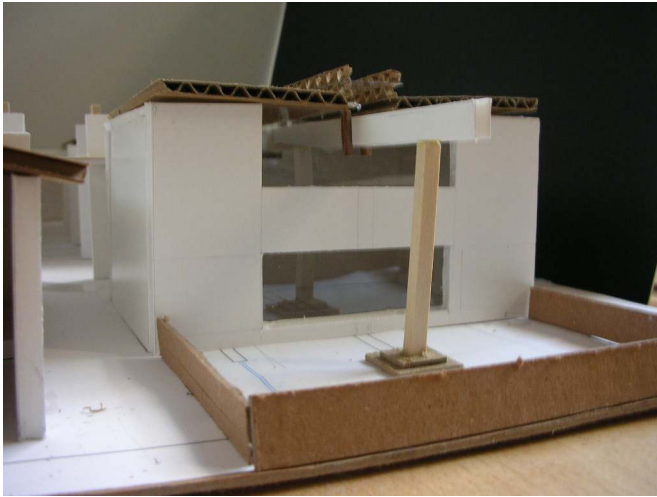
KARTIKI MILIND DESHPANDE

Thesis submitted to the faculty of Virginia Polytechnic
Institute and State University in partial fulfillment of the
requirements for the degree of

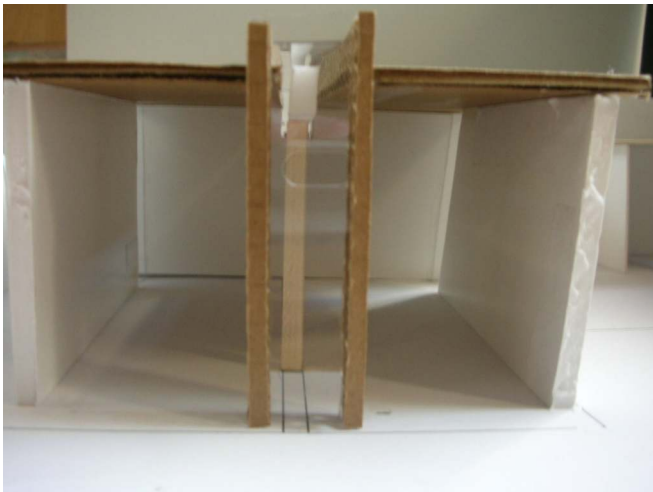
MASTER OF ARCHITECTURE

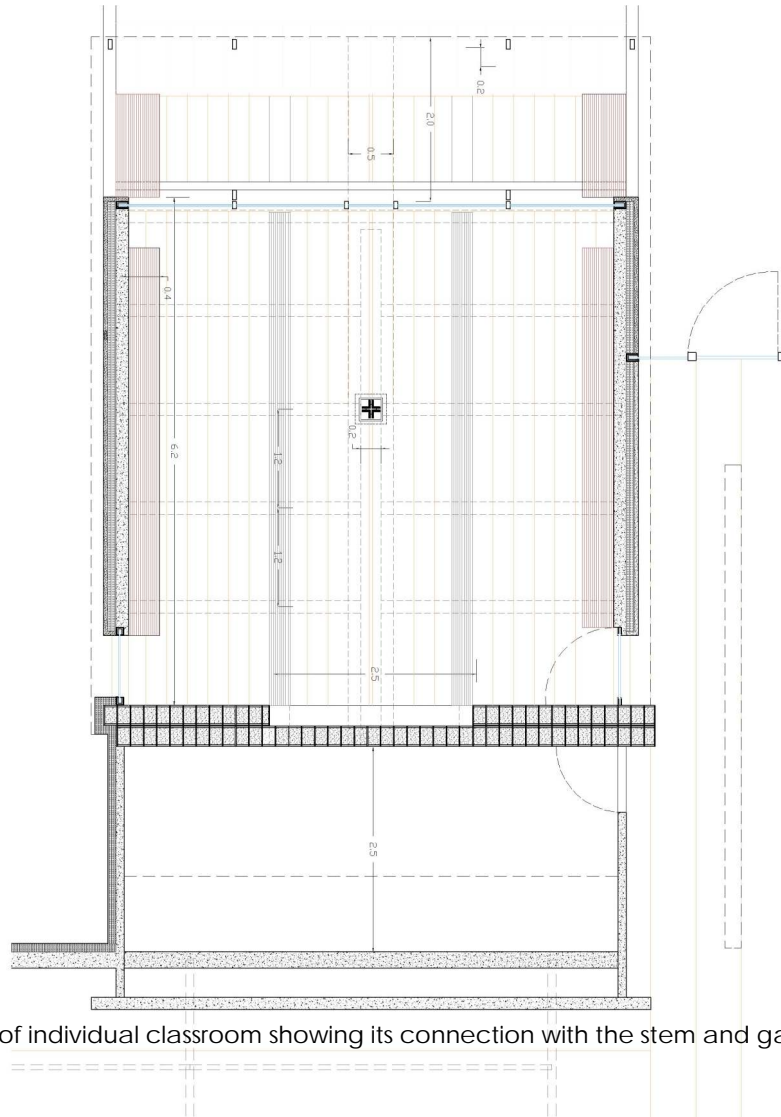
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Date of Defense : August 28,2008
Blacksburg, Virginia
Spine, classroom, light, planes



The Classroom
'A porch to the garden'





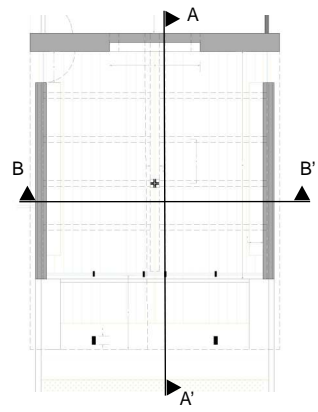
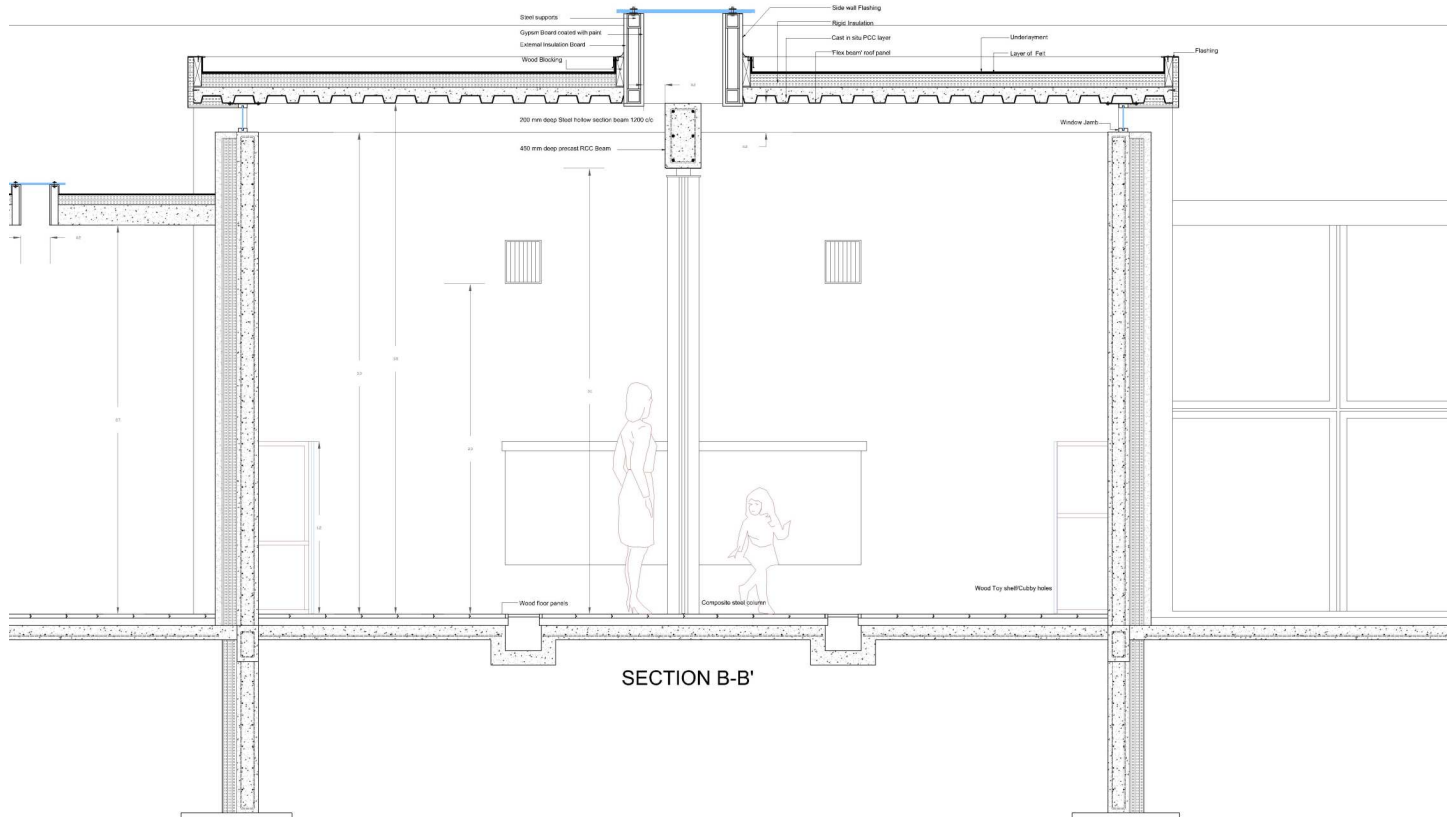
Plan of individual classroom showing its connection with the stem and garden

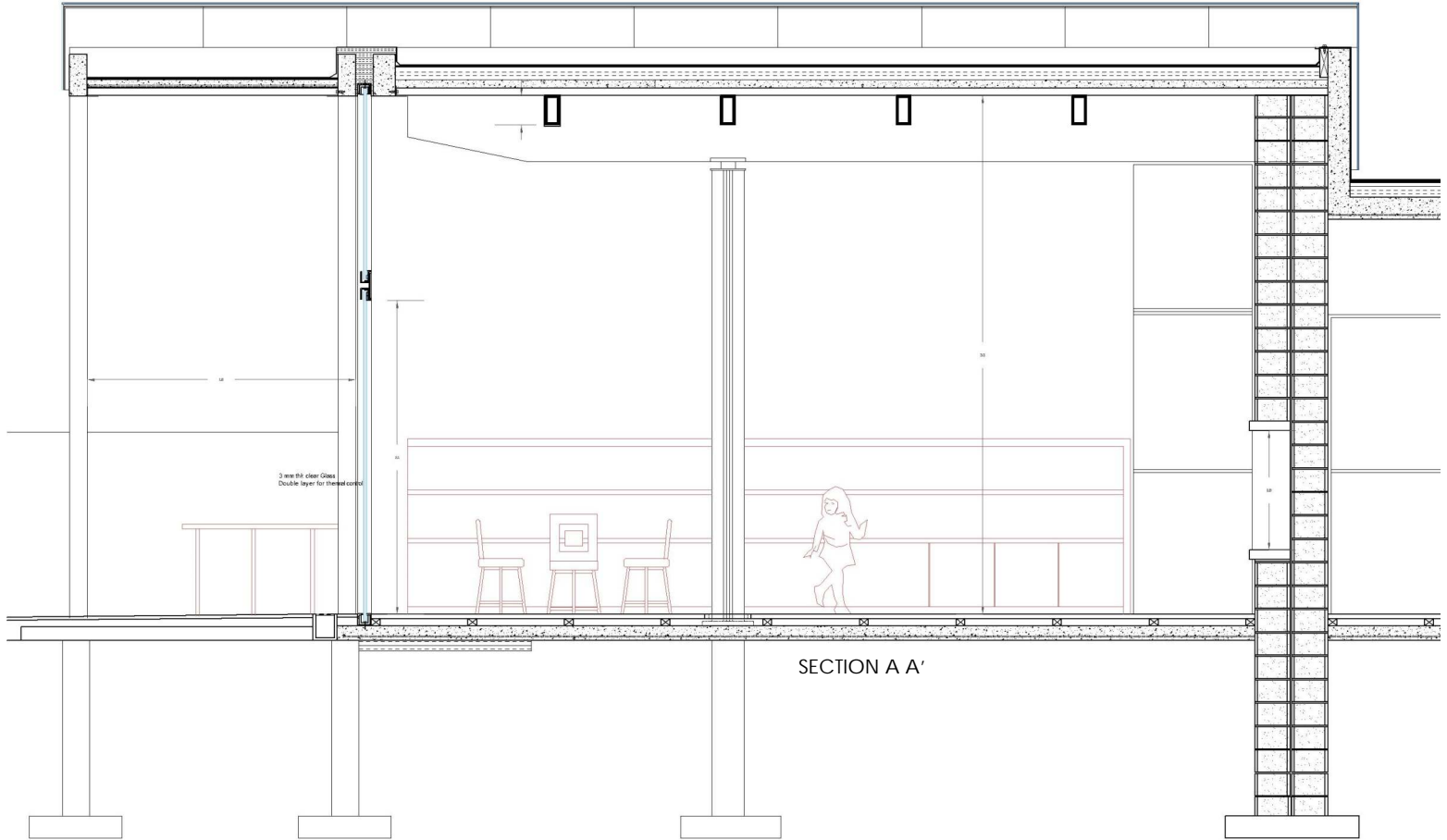
Elements of the Classroom

The beam, column and the wall plane define the classroom while serving as a porch to the garden. The light in the room is more dynamic and active as compared to the stem. Two wall planes provide the enclosure for the room. The entrance to the room is at the junction where the wall plane meets the structural wall. The roof is a composite steel structure which rests on the sub beams.

The wall which supports the beam is interactive with recesses acting as play areas for the children. It also plays a role in the air circulation of the room. The two openings take in the hot air. The two strips in the floor act as a visual continuation for the two openings and serve as air vents supplying fresh air to the room.

Each element i.e the beam, wall planes, column and the façade reinforces the perspective towards the garden and encourages the interaction of the children with their surroundings.

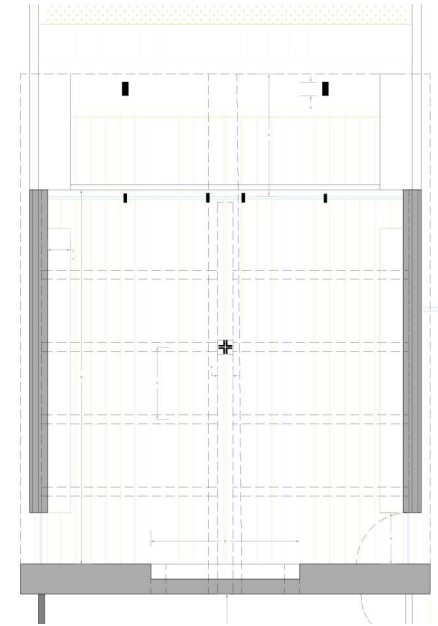




SECTION A A'



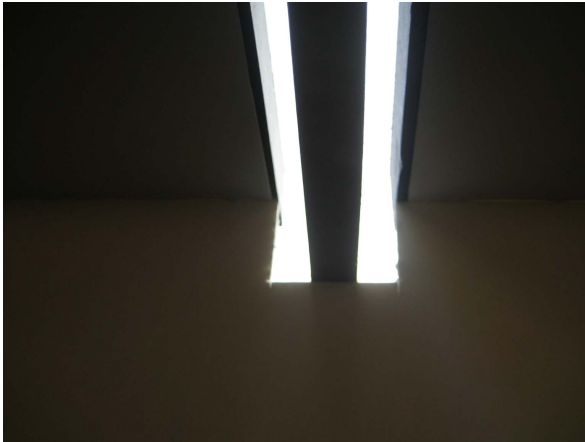
The walls, beam and the roof emphasizes the connection with the outdoor non-built environment. The metal deck roof has corrugations running towards the garden. The wooden flooring and the shelves seem to continue out in the form of the boundary wall. The central skylight illuminates the beam which extends towards the outside.

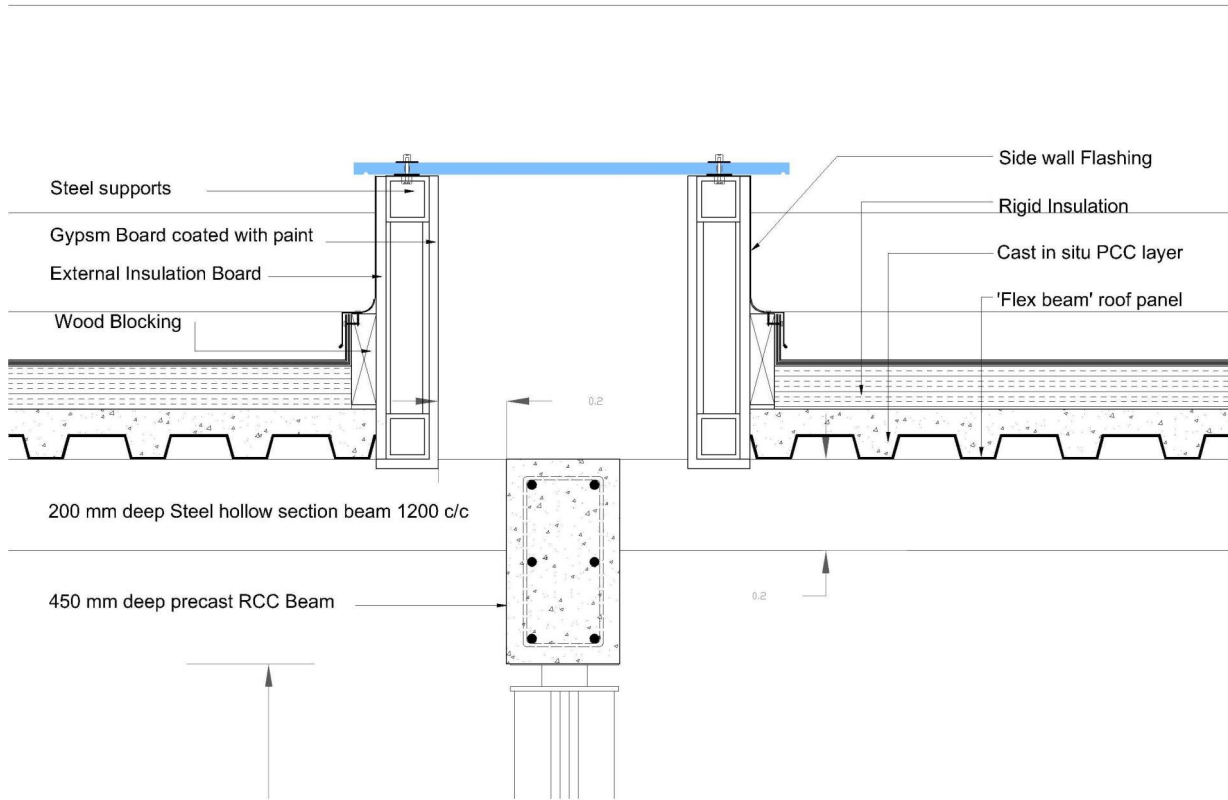




Play of Light

The central skylight illuminates the beam. A question arose concerning the material and texture of the beam. A dark inner finish to the beam produces interesting light condition, however it was found that white matt paint better highlights the concrete beam. The light falling on the beam makes the space more cheerful and bright.







The image shows the daylight falling on the white matt finish of the beam highlighting it.

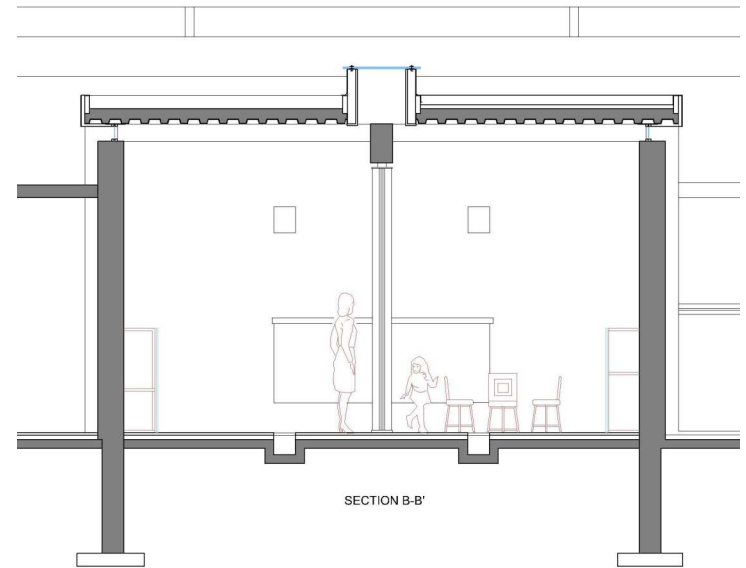


The image to the left shows the play of light on the wall and in the classroom. Light enters through the skylight and washes the wall of the classroom in different intensities and colors as per the time of day and season. The image below captures the silvery light highlighting the beam and the texture of concrete. A part of the light falls on the sub-beams and is reflected to the ceiling.

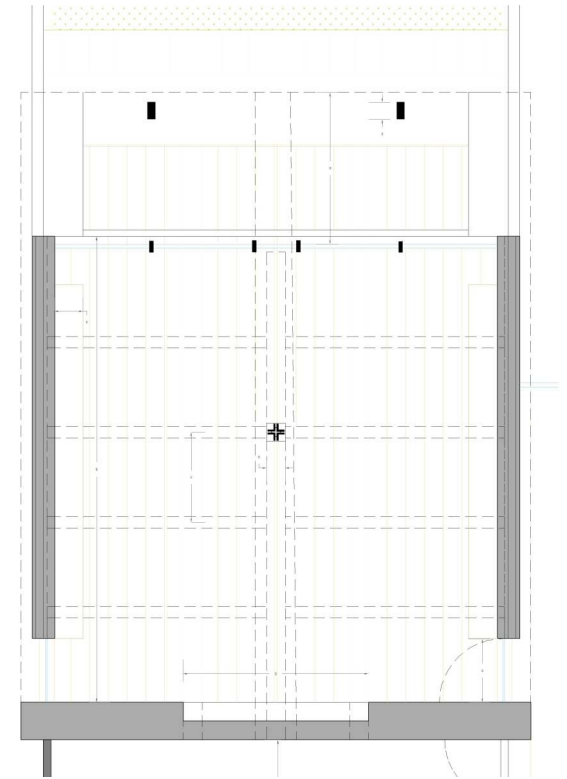


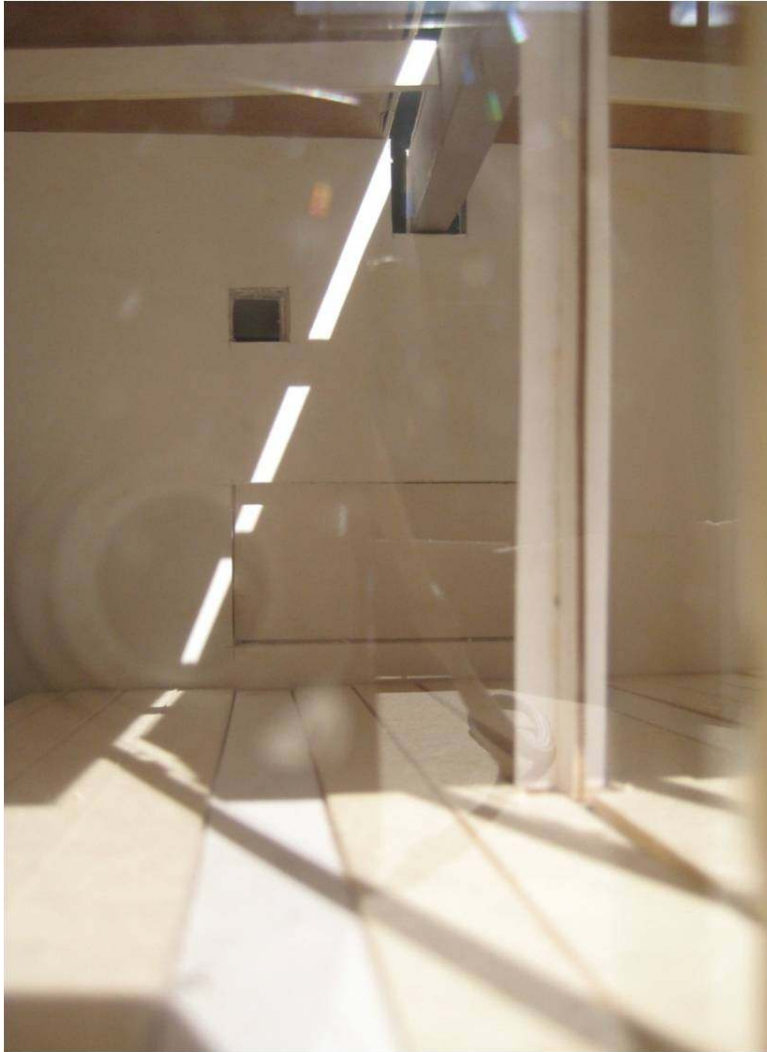


The skylight casts a shadow which moves on the wall plane and across the floor throughout the day. The classroom becomes very lively and dynamic. Due to the light, the room is different at moments throughout the day.



The image to the left shows the light on the floor and how the flooring leads the eye towards the garden.







The image on the upper left (a) shows the play of light on the class wall plane in the morning.

The image on the lower left side (b) shows the play of light on the wall plane at noon.

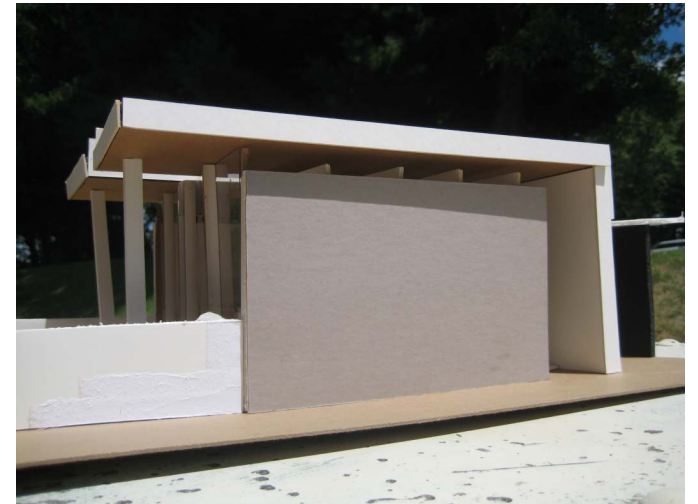
The image below (c) shows the light falling on the floor and the wall plane in the afternoon.





The profile of the wall plane is highlighted by daylight on all three sides. The opening between the side plane and the wall plane of the classroom avoids formation of corner and light changes at each junction.

The lower image captures the quality of light falling on the external surface of the same wall. The plane of the roof extends out to the garden forming a porch. The semi open spaces between the façade of the room and the garden reduces the intensity of the light.





Conclusion

Through the play of light, a child comes to know what a beam or column is what is a shadow? I think it's not just the learning environment but the journey towards it and spaces around it that form a part of regular interaction need to be captivating. Also as the dynamic light within the class room teaches them variety of things like Day/night cycle, change of seasons, climate, light and shadows, time etc. If there is no shadow it's a cloudy day! In his way light participates in the learning process. The continuous connection between inside and out through the play of light promotes interaction with surroundings and peers, and avoid a feeling of confinement. The planes act as faces for individual classrooms and work displayed on each plane belongs to a certain age group.

I think that when the children are away from their sweet homes, the kindergarten should become a vessel to kindle creativity, channel their impulses into grouping activities for social interaction and support exploring the natural and built environment.

I think light singlehandedly provides us with infinite, magnificent spatial opportunities in architecture, and through my thesis I have tried to identify a few of them. I have tried to provide an environment of sensual variety which would stimulate creativity and help the children make the best out of their surrounding with the help of planes and light. I would like to end with Ando "Walls cut into sky, sunlight, wind and landscape at every instant and the architecture reverberates to this continual demonstration of power. Light that diffuses around a corner and gathers in the general darkness contrasts strongly with direct light. With the passage of time these two lights blend and enrich the space. Man and nature, mediated by architecture meet."

Image Credits

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Church on Mount Rokko

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Bibliography

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The colours of light / Tadao Ando architecture ; Richard Pare photography ; Tom Heneghan introduction.

Intercepting light / [Tadao Ando].

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Preschool & kindergarten architecture / [author, Arian Mostaedi].