

# Planning for Climate Change and Rapid Urbanisation

## Continuing Professional Development, Lecture Series for Professionals

### lecture notes

- Lecture title : Collaborating for Sustainable Development, Rachel Sayers, Feilden Clegg Bradley Studios and Rafiq Azam, Shatotto
- Presenter : Rafiq Azam and Rachel Sayers
- Presenter firm : Shatotto and Feilden Clegg Bradley Studios
- WWW : <https://www.shatotto.com.bd/> and <https://fcbstudios.com/>

### summary

Provides a case study of how principles of Climate responsive design can be used in a project to create an inspiring and comfortable educational environment for the Aga Khan Academies unit.

### learning outcomes

By the end of this lecture, students will:

- See the theory of designing for the climate in a case study in Bangladesh worked out in practice
- Balancing open space and building in a rapidly urbanising environment
- Creating a comfortable learning environment
- Testing and learning through building prototype

### key concepts

- Designing with the climate
- Designing to deal with humidity and high temperatures
- Massing and forms which belong in Bangladesh
- Designing within a rapidly urbanising context
- Partnership – which is at the heart of the whole endeavour

### relevant SDGs

SDG4, SDG5, SDG6, SDG7, SDG8, SDG9, SDG11, SDG12, SDG13

### links to further information

<https://fcbstudios.com/>

<https://www.shatotto.com.bd/>

<https://www.agakhanacademies.org/>

### speaker notes

Brief bullet pointed notes associated with each slide/group of slides identifying key messages/concepts to be conveyed, where not obvious from the slides themselves

- Slides 1-3 : An introduction to the partnerships which exist to develop the design and the scheme.

- Slide 4 : The scheme is rich and complex, and this talk provides an overview of the approach to the site, form and massing with a strategic overview of providing comfortable places to learn and live. The use of a prototype is described.
- Slides 5-6 : Client programme and mission
- Slides 7 : The through school and associated residential facilities occupy the perimeter of the site, protecting a central green space, the 'Maidan' which provides space for the scheme to breath.
- Slide 8 : The scheme particularly addresses some of the UN sustainable development goals
  - Health and well being
  - Quality education
  - Gender equality
  - Decent work and economic growth,
  - sustainable cities and communities,
  - responsible production
  - Biodiversity of life on land and the partnership we have already mentioned, which is at the heart of the whole endeavour.
- Slide 10 : Bangladesh has a subtropical monsoon climate with 6 key seasonal variations in rainfall.
  - High temperatures and humidity are the greatest challenges to the design of a comfortable environment
- Slide 11 : Bangladesh climate and character in the seasons
- Slide 22-23 : Within the past 40 years the site has gone from being a flood plain, to a development site with the introduction of city-wide network of water channels. It is a rare piece of open space in a rapidly urbanising context.
- Slide 24-26 : the Dhaka Academy is one of a family of academies being built by the Aga Khan Academy across the world. The brief is universal and yet the sites are all different. Note the comparison between Dhaka and Hyderabad.
- Slide 27-28 : There is a strategic design approach which is about balance between building footprint and preserving open space. It is a question of density amidst a context which is increasingly dense.
- Slide 29-32 : The Academy forms a square footprint around the perimeter of the site. The layout addresses issues of privacy, with the school looking out to the city, and the residences within the depth of the plan. The building footprints give this perimeter plan depth, with courtyards providing a smaller scale courtyard space.
- Slide 33-35 : The form provides a coherence to the order of the school and gives it legibility. It resonates strongly with the strong geometries of the Buddhist monasteries of Nyland and Comila.
- Slide 37-38 : An Architectural language of brick patterning and artistry has developed, learning from local precedents and the craft that Shatotto has developed over the years. It allows for ventilation and privacy and expresses the strong overhead sun.
- Slide 39-57 : The prototype has also provided an opportunity to test the comfort levels in the building
  - A range of passive measures are employed, cross ventilation, shaded glazing, shaded walkways, use of mass.
  - But it is in fact a mixed mode scheme with the provision of cool air for peak hours only.
  - This is a chart showing the data relating to a typical teaching space, without air conditioning
  - The building is successfully smoothing the diurnal temperature swings, indicating the thermal mass is working
- Slide 59-61 : The buildings must be able to cope with attenuation areas which can hold eight inches of water for just a few hours and allow that water to drain away.
- Slide 65-67 : The language of the elevations is deep, both to shade the buildings from the sun, but also to preserve privacy, for example, in the student halls of residence which have capacity for cooling by way of fans.
- Slide 68-69 : Private amenity space can be provided at roof tops, with the courtyards below as shared space for students.
- Slide 72-73 : The courtyards are part of a rich family of external spaces, they provide a variety of spaces for relaxation and play.

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