PLANNING FOR CLIMATE CHANGE AND RAPID URBANISATION
CONTINUING PROFESSIONAL DEVELOPMENT, LECTURE SERIES FOR PROFESSIONALS
Commonwealth Association of Architects
Engaging with the UN 2030 Sustainable Development Goals

Welcome to the CAA’s lecture series for professionals, comprising a pilot programme of seven lectures from a range of subject matter experts, the aim of which is to help promote greater awareness of the UN 2030 Sustainable Development Goals together with issues related to climate change and rapid urbanisation.

By the end of this series, we hope participants will be able to better understand, engage with and contribute to the UN 2030 Sustainable Development Goals, and will be better equipped to apply the principles of sustainable development in their daily work at city and building scale.

The authors recognise that while the principles of sustainable development may be universal, their application will vary depending on variables such as culture and climate. Participants are therefore invited to consider how the principles outlined in each lecture might apply to their local circumstances and conditions.
Lecture Series
Overview of the seven lectures forming part of this series:

1. **Introduction to the UN 2030 Sustainable Development Goals**, Mina Hasman, SOM
   Provides an overview of the UN 2030 SDGs together with other related international agreements, and describes the importance of the Goals for Built Environment Professionals.

2. **Planning for Rapid Urbanisation**, Ben Bolgar, The Prince's Foundation
   Outlines a framework for use in secondary cities which are experiencing rapid growth but which may have little or no access to professional planning expertise.

3. **Planned City Extensions**, Alfredo Caraballo, Allies and Morrison
   Provides a reminder of key master-planning and urban design principles such as: site analysis, micro-climate design, density, mixed use, walkability etc.

4. **Resilient Infrastructure**, Ian Carradice, Arup
   Explains the context, relevance and drivers to develop resilient infrastructure by adopting an integrated design approach and considering planetary solutions to address climate related challenges.

5. **Climate Responsive Design**, Peter Clegg, Isabel Sandeman and Rachel Sayers from FCB Studios, and Rafiq Azzam, Shatotto
   Part one is focused on ‘A Manifesto for delivering Climate Responsive Design’, and Part Two, entitled ‘Collaborating for Sustainable Development’, provides a case study of how the principles of Climate responsive design have been used on a project in Bangladesh to create an inspiring and comfortable educational environment for the Aga Khan Academies Unit.

6. **Heritage-led Regeneration**, Geoff Rich, Feilden Clegg Bradley Studios
   Describes the value of heritage led regeneration in terms of the reuse of existing buildings, and the potential to generate social and economic development.

7. **Sustainable Outcomes Guide**, Gary Clark, HOK London Studio
   Provides a practical explanation of the outcomes that need to be delivered if we are to achieve development which is sustainable. Includes meaningful, measurable targets and associated metrics.
A Manifesto for Climate Responsive Design
Guidelines for designing community buildings in East Africa
Peter Clegg and Isabel Sandeman
June 2020
9-Themes for Climate Responsive Design

1. PARTICIPATORY DESIGN
2. LOCAL MATERIALS
3. SOLAR SHADING
4. PASSIVE VENTILATION
5. NATURAL DAYLIGHTING
6. SUSTAINABLE LANDSCAPE
7. ENERGY GENERATION
8. WATER MANAGEMENT
9. WASTE MANAGEMENT
9-Themes for Climate Responsive Design

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A Manifesto for Climate Responsive Design

Proceedings of a conference on raising awareness of Climate Responsive Design in East Africa
27th - 28th February 2019

Peter Clegg and Isabel Sandman of Feilden Clegg Bradley Studios on behalf of Enabel
PARTICIPATORY DESIGN

RWAMAGANA LEADERS’ SCHOOL DORMITORY

RWANDA
ASA Studio
1. DORMITORY

A. Principal functions - What would you like to do in the bedroom of your dormitory? Please write your answer.

B. Time - What time of the day are you in the bedroom of your dormitory and for how long?

C. Interior - How many beds would you like to share your room with? What kind of bed would you prefer? Please tick the box of your choice.

D. Aesthetics - What do you like your dorm to look like? Colors, materials, texture? Please tick the boxes of your choice.

2. COMMON SPACE

A. Principal functions - What would you like to do in the common space of your dormitory? Please write your answer.

B. Time - How much time would you spend in the common space to perform the activities you wrote?

C. Interior - What would like your common space to be like? What kind of furniture and what kind of spaces would you enjoy? Please tick the boxes of your choice.

D. Aesthetics - What do you like your dorm to look like? Colors, materials, texture? Please tick the boxes of your choice.
1. DORMITORY

A. Principal functions - What would you like to do in the bedroom of your dormitory? Please write your answer.

- reading: 1, 2, 3, 4, 5, 6, 7, 8
- writing: 1, 2, 3, 4, 5, 6, 7, 8
- playing games (console): 3, 6
- hanging out: 3, 6
- exercising (not mentioned): 6
- taking baths: 7
- study: 7, 8
- would like to have more...: 8

B. Time - What time of the day are you in the bedroom of your dormitory and for how long?

- weekdays: 6 am - 9 pm
- weekends: 7 am - 8 pm
- weekdays all day: 7 am - 5 pm

C. Interior - How many boys would you like to share your room with? What kind of bed would you prefer? Please tick the box of your choice.

- 1
- 2, 3, 4, 5
- 6, 7, 8
- 1, 2, 3, 4, 5

D. Aesthetics - What do you think about your dorm to look like? Colors, materials, texture? Please tick the boxes of your choice.

- 7, 9, 4, 5
- 6, 8
- 2, 3, 7
- 6, 7

2. COMMON SPACE

A. Principal functions - What would you like to do in the common space of your dormitory? Please write your answer.

- reading: 1, 2, 3, 4, 5, 6, 7, 8
- writing: 1, 2, 3, 4, 5, 6, 7, 8
- playing games (console): 3, 6
- hanging out: 3, 6
- study: 7, 8
- in/from classes: 1, 2, 3, 4, 5
- movies: 1, 2, 3, 4, 5
- eating: 1, 2, 3, 4, 5

B. Time - How much time would you spend in the common space to perform the activities you wrote?

- at least 2 hours a day
- weekends and other classes

C. Interior - What would your common space to be like? What kind of furnitures and what kind of spaces would you enjoy? Please tick the boxes of your choice.

- 1, 2, 3, 4, 5
- 6, 7, 8
- 1, 2, 3, 4, 5

D. Aesthetics - What do you think about your dorm to look like? Colors, materials, texture? Please tick the boxes of your choice.

- 7, 9
- 4, 5, 6, 8
- 2, 3, 7
- 6, 7, 8
- 3
LOCAL MATERIALS

AWF CONSERVATION

PRIMARY SCHOOLS

UGANDA

Studio FH
COMPRESSED STABILISED EARTH BLOCKS (CSEB)

CEMENT : SAND : SOIL

1 : 4 : 8
MZUZU HEALTH CENTRE
MALAWI
Feilden Foundation
Comparison of internal and external temperatures
ILIMA PRIMARY SCHOOL
DEMOCRATIC REPUBLIC OF CONGO
MASS Design Group

PASSIVE VENTILATION
SUSTAINABLE LANDSCAPE
LAKE BUNYONI VOCATIONAL SECONDARY SCHOOL
UGANDA
Feilden Foundation
NATIONAL TEACHERS’ TRAINING COLLEGE, KALIRO
UGANDA
FBW Group

WATER MANAGEMENT
EARLY CHILDHOOD DEVELOPMENT
& FAMILY CENTRES
RWANDA
ASA Studio

WASTE MANAGEMENT
THE MANIFESTO

1. ENGAGE IN A PARTICIPATORY DESIGN PROCESS
THE MANIFESTO

1. ENGAGE IN A PARTICIPATORY DESIGN PROCESS
2. SUPPORT LOCAL LABOUR AND DEVELOP LOCAL SKILLS
THE MANIFESTO

1. ENGAGE IN A PARTICIPATORY DESIGN PROCESS
2. SUPPORT LOCAL LABOUR AND DEVELOP LOCAL SKILLS
3. GROW OR SALVAGE LOCAL MATERIALS
THE MANIFESTO

1. ENGAGE IN A PARTICIPATORY DESIGN PROCESS
2. SUPPORT LOCAL LABOUR AND DEVELOP LOCAL SKILLS
3. GROW OR SALVAGE LOCAL MATERIALS
4. DESIGN WITH THE CLIMATE NOT AGAINST IT
THE MANIFESTO

1. ENGAGE IN A PARTICIPATORY DESIGN PROCESS
2. SUPPORT LOCAL LABOUR AND DEVELOP LOCAL SKILLS
3. GROW OR SALVAGE LOCAL MATERIALS
4. DESIGN WITH THE CLIMATE NOT AGAINST IT
5. NURTURE THE LOCAL ECOSYSTEM
THE MANIFESTO

1. ENGAGE IN A PARTICIPATORY DESIGN PROCESS
2. SUPPORT LOCAL LABOUR AND DEVELOP LOCAL SKILLS
3. GROW OR SALVAGE LOCAL MATERIALS
4. DESIGN WITH THE CLIMATE NOT AGAINST IT
5. NURTURE THE LOCAL ECOSYSTEM
6. PRODUCE CLEAN ON-SITE ENERGY
THE MANIFESTO

1. ENGAGE IN A PARTICIPATORY DESIGN PROCESS
2. SUPPORT LOCAL LABOUR AND DEVELOP LOCAL SKILLS
3. GROW OR SALVAGE LOCAL MATERIALS
4. DESIGN WITH THE CLIMATE NOT AGAINST IT
5. NURTURE THE LOCAL ECOSYSTEM
6. PRODUCE CLEAN ON-SITE ENERGY
7. UTILISE SUSTAINABLE WATER SOURCES
THE MANIFESTO

1. ENGAGE IN A PARTICIPATORY DESIGN PROCESS
2. SUPPORT LOCAL LABOUR AND DEVELOP LOCAL SKILLS
3. GROW OR SALVAGE LOCAL MATERIALS
4. DESIGN WITH THE CLIMATE NOT AGAINST IT
5. NURTURE THE LOCAL ECOSYSTEM
6. PRODUCE CLEAN ON-SITE ENERGY
7. UTILISE SUSTAINABLE WATER SOURCES
8. PROVIDE WATER, SANITATION AND HYGIENE FACILITIES
THE MANIFESTO

1. ENGAGE IN A PARTICIPATORY DESIGN PROCESS
2. SUPPORT LOCAL LABOUR AND DEVELOP LOCAL SKILLS
3. GROW OR SALVAGE LOCAL MATERIALS
4. DESIGN WITH THE CLIMATE NOT AGAINST IT
5. NURTURE THE LOCAL ECOSYSTEM
6. PRODUCE CLEAN ON-SITE ENERGY
7. UTILISE SUSTAINABLE WATER SOURCES
8. PROVIDE WATER, SANITATION AND HYGIENE FACILITIES
9. SHARE KNOWLEDGE AND EXPERIENCE
THE MANIFESTO

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8. PROVIDE WATER, SANITATION AND HYGIENE FACILITIES
9. SHARE KNOWLEDGE AND EXPERIENCE
10. AVOID THE PITFALLS OF THE INDUSTRIALISED WORLD
PASSIVE VENTILATION

Ventilation is needed in all buildings to remove odours and provide us with oxygen. In hot climates, like East Africa, adequate ventilation is essential to provide cooling. ‘Passive’ ventilation through windows and opening vents is the cheapest and simplest form of providing fresh air. Where there are problems with ambient noise or pollution, often in more urban locations, mechanical ventilation can be necessary, but passive ventilation should always be the default solution.

PREVAILING WIND

Air movement can have a cooling effect when temperatures are uncomfortably high. Air movement of around three meters per second can provide an apparent cooling effect equivalent to around 2°C. The prevailing wind tends to come from east through to west with a predominance of wind from the south-east during the hottest season but there are inevitably significant regional and local variations caused by topography, trees or nearby buildings. Learning from locals, and if possible, installing a weather station during the early project stages can help to identify local wind conditions relevant for building orientation.
Commonwealth Association of Architects
Engaging with the UN 2030 Sustainable Development Goals

We hope you found this lecture of interest and that you will be interested in the other lectures in this series:

1. Introduction to the UN 2030 Sustainable Development Goals
2. Planning for Rapid Urbanisation
3. Planned City Extensions
4. Resilient Infrastructure
5. Climate Responsive Design
6. Heritage-led Regeneration
7. Sustainable Outcomes Guide

The Commonwealth Association of Architects would like to extend its thanks to all the contributors for their support in the creation of this pilot programme. The CAA welcomes feedback together with suggestions for future topics and would be pleased to hear from subject matter experts from around the Commonwealth who may be interested in contributing future material.

For this or any other issue, please contact: admin@comarchitect.org