Urban Design: Role of Architecture
Daniel Brown and Sebastian Elsen

3rd Smart Cities India 2017 Expo
10 – 12 May 2017, New Delhi, India
RESEARCH QUESTION

“How can river purification and sewage management be strategically reconceived through architectural design in ways that enhance, rather than damage, fundamental cultural relationships with local communities?”
The ancient Assi River that once flowed into the Ganges no longer exists. It has been transformed into the Assi Nala, or Assi sewage channel.

Assi Nala, Varanasi, India
Image Sources: https://www.google.co.nz/maps/@25.2828098,83.0082887,581m/data=!3m1!1e3?hl=en&authuser=0
http://www.globalwaterforum.org/2015/08/13/rejuvenating-the-ganga
Assi Nala, Varanasi, India

Image Sources: https://www.researchgate.net/figure/286842158_fig1_Fig-1-Location-of-waste-water-sample-from-Assi-Nala-Varanasi-UP
Cheonggyecheon Stream in 1904

Cheonggyecheon Stream in the mid-1950s

Cheonggyecheon Stream, Seoul, South Korea
http://www.preservenet.com/freeways/FreewaysCheonggye.html

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Cheonggyecheon Stream in 2005 with ‘Ghats’, aeration dams, and small shops along the riverbanks

Historic housing retained along the riverbank

Contemporary versions of laundry ‘ghats’

Cheonggyecheon Stream Restoration, Seoul, South Korea (2003-2005)

Cheonggyecheon Stream Restoration, Seoul, South Korea (2003-2005)

Historic pillars retained as a reminder of the stream's past

Bridges providing shelter from sun, rain and heat

Two-tiered flood mitigation system
Two-tiered flood mitigation system

Cheonggyecheon Stream Restoration, Seoul, South Korea (2003-2005)

One metre thick pigmented concrete walls are all that is visible on the landscape. Full-height iroko (‘African teak’) panels allow easy removal of sediment.
Sant’Erasmo Water Filtration Plant, Venice, Italy (2008)
C+S Architects
https://www.google.co.nz/maps/@45.471174,12.4270684,891m/data=!3m1!1e3
Sant’Erasmo Water Filtration Plant, Venice, Italy (2008)
C+S Architects

Underground filtration room shown in plan view
Sant’Erasmo Water Filtration Plant, Venice, Italy (2008)

C+S Architects

Omega Center for Sustainable Living, Rhinebeck, NY, USA (2009)

John Todd Ecological Design

Omega Center for Sustainable Living, Rhinebeck, NY, USA (2009)
John Todd Ecological Design
Image Source: http://www.aiatopten.org/node/109
Omega Center for Sustainable Living, Rhinebeck, NY, USA (2009)

John Todd Ecological Design

Image Sources: http://www.aiatopten.org/node/109
http://www.bnim.com/project/omega-center-sustainable-living
Omega Center for Sustainable Living, Rhinebeck, NY, USA (2009)
John Todd Ecological Design
Image Sources: http://www.aiatopten.org/node/109
http://www.panoramio.com/photo/90211675
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Sludge Treatment Facility, Hong Kong (2016)

Arup

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Image Source: https://www.hongkongfp.com/2016/05/24/sludge-facility-contractor-veolia-begins-hk2-billion-legal-proceedings-against-govt
Wastewater Treatment Plant, San Francisco, USA (2012)

Worrell Water Technologies

Columbia Boulevard Water Treatment Facility, Portland USA (2014)
Skylab Architecture
Columbia Boulevard Water Treatment Facility, Portland USA (2014)

Skylab Architecture

Image Source: http://www.skylabarchitecture.com/columbiabuilding
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