

## Water Management: Past and Future Adaptation

### Fall 2019 Program

#### **Contemporizing Traditional Water-Architecture: Birkha Bawari, a 21<sup>st</sup>-century step well**

*A Mridul, Architect, Jodhpur, India*

Tuesday 15 October 230-4pm. Rm 223 Moses Hall

Step wells, large wells for people to descend to the water table to obtain water, were widespread in India and in active use from the 2<sup>nd</sup> century AD to the end of the 19<sup>th</sup> Century, when they were superseded by more modern water infrastructure and largely forgotten. Today step wells are celebrated for their sustainability and exquisite beauty. Following traditional patterns, a new step-well was recently built in Jodhpur, a water-stressed city on the fringe of the Thar Desert of India. Architect A Mridul discussed step wells and his design for the Jodhpur well, using site-quarried sandstone and local artisans.

#### **Innovations in River Management, Germany and USA: Integrating Ecosystem Restoration Into Flood Risk Management**

Workshop 17 October 2019, 223 Moses Hall

Floods are the most costly natural disasters, and conventional structural solutions commonly make things worse by creating a false sense of security that encourages further development in floodplains, and disconnecting rivers from their floodplains (with resulting ecological impacts). One of the most promising areas of innovation in river management is the integration of ecosystem restoration into projects to reduce flood risk. Flood risk reduction measures in Europe must now maintain or improve river ecology (under the WFD), and in California, major flood management programs have adopted 'co-equal goals' of flood risk reduction and ecosystem restoration. This workshop explored the integration of flood management with river restoration, drawing on recent experience in Germany and the US (especially California). Participants:

*Juergen Geist (Technical University of Munich)*

*Mathias Scholz (Helmholtz Centre for Environmental Research, Leipzig)*

*Ricardo Pineda (California Department of Water Resources)*

*Jeff Opperman (WWF)*

*Eileen Fretz-Shader (American Rivers)*

*John Cain (River Partners)*

*Sarah Yarnell (UC Davis)*

*Jay Lund (UC Davis)*

*Anna Serra-Llobet (UC Berkeley)*

*Matt Kondolf (UC Berkeley)*

The workshop was organized by Anna Serra Llobet, Sonja Jähnig (Leibniz Inst Freshwater Ecology), and Matt Kondolf (UC Berkeley). The workshop was preceded by a day-long field trip to the Sacramento Valley for the visitors from out-of-town.

The interdisciplinary faculty seminar series, *Water Management: Past and Future Adaptation*, is presented under the auspices of the UC Berkeley Institute of International Studies. As both the developed and developing world confront intensifying demands on rivers and other water resources, impacts are evident from extractions of water for human uses, proliferation of dams, mining sediments from river beds, and intensified land-use impacts, all exacerbated by increasing urbanization and climate change. Accelerated erosion of coasts and deltas (e.g., from sediment starvation, groundwater pumping, accelerated sea-level rise) are among the manifestations of these impacts. Our seminar takes an interdisciplinary approach these challenges by examining how our increasingly urban societies have adapted to variability in the past (uncertainty in water supply, flood risk, etc) and considers the tools we have to manage future variability in river flows and sediment loads, including variability in water supplies, increased flood risk, and the existential threat to many coastal and riverine areas.