



**MONSOON  
[+ other]  
GROUNDS**

**EDITED BY LINDSAY BREMNER  
AND JOHN COOK**



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[+ other]  
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## PREFACE

*Monsoon [+ other] Grounds* is the final of three symposia publications by Monsoon Assemblages at the University of Westminster from 2017 to 2019. The others were *Monsoon [+ other] Airs* (2018) and *Monsoon [+ other] Waters* (2019). All three publications are available in print from online booksellers or as downloadable PDF versions here: <http://www.monass.org/writing/>. The symposia and publications are part of the agenda of Monsoon Assemblages to foster interdisciplinary conversations between the environmental humanities (anthropology, environmental studies, political ecology, cultural geography and philosophy), the natural sciences (meteorology, climatology and climate science) and spatial design (architecture, landscape architecture, planning and urban design). These are part of its objective to further understandings of the impacts of changing monsoon weather and rapid urbanisation in South Asian cities and beyond, and their consequences for the critical humanities and spatial design practice.



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## BANGLA BRICKS: MAKING AND UNMAKING MONSOON GROUNDS

**Beth Cullen** is an anthropologist and Monsoon Assemblages Postdoctoral Research Fellow. Her work to date has focused on human-non-human relations using ethnographic and participatory visual and spatial research methods. Beth's research interests include environmental anthropology, more-than-human ethnography and transdisciplinary approaches for understanding and working with complex socioecological systems.



This photo-essay traces the life course of Bangladesh bricks to explore how the monsoon is enmeshed within built environments. It is based on ethnographic observations of brick making in Bangladesh, a terrain within which the monsoon is deeply implicated. Following the cycle of the brick from sediment to clay, from clay to brick and from brick to sediment reveals entanglements of weather, geology and human energies. The mobile materiality of the monsoon is entwined within the very building blocks of Bangladesh's cities and the infrastructures on which they depend.



## MONSOONAL BANGLADESH



In Bangladesh, and much of South Asia, brickmaking only occurs during drier months, the season of production being determined by the monsoon. In its simplest definition, the monsoon is a seasonally prevailing wind; in reality, a complex assemblage of air, humidity, pressure and precipitation. Nearly eighty per cent of Bangladesh's rainfall occurs during the monsoon, with little rainfall during the rest of the year, resulting in pronounced wet and dry seasons.



The oscillations between wet and dry seasons, caused by the movement of monsoon winds, have a profound influence on Bangladesh. Variations in rainfall create enormous hydrological fluctuations which periodically transform the environment. From November to March only a fraction of the land is covered in water, from June to September waters swell to cover almost half of the country. These monsoonal rhythms become entangled with social processes, materialities and practices, permeating and shaping ways of life and lived environments, as humans and nonhumans alike are caught up in the flows and fluxes of the weather-world.

## SEDIMENT TO CLAY



If we trace the brick to its material origins, we begin with weather. Brick making in Bangladesh is reliant on clay-rich soils extracted from the abundant alluvial floodplains of the delta. Clay, the essential element for brickmaking, is almost always formed through weathering. Largely found at the rock-atmosphere interface, most clay materials are the result of the erosive movements of wind, water and rain.



Much of Bangladesh consists of flat, low-lying alluvial plains, created by the gradual deposition of sediments by the mighty Ganges, Brahmaputra and Meghna rivers. These rivers are estimated to carry one billion tons of sediments to the Bengal Delta each year, most of which originate from the Himalayan mountains. Through their weathering by monsoon rains, Himalayan sedimentary rocks feed Bangladesh's humid floodplains and form the clay rich soils that become Bangla bricks.



The formation of clay soils is regularly interrupted by human interventions. Rapid urbanisation is contributing to soil loss as farmers sell their clay-rich soils to the brick kilns. The brick sector in Bangladesh consumes an estimated 45 million tons of clay every year. Due to the speed of urbanization, removal of topsoil for brickmaking is occurring at a rate that cannot compete with geological cycles. As a result, a renewable resource on human time-scales is becoming exhausted.

## CLAY TO BRICK



Brick making operates around a monsoonal cycle, beginning in November and ending in April before the first monsoon rains arrive. The monsoon creates a temporal structure as brick-making is timed to coincide with the driest part of the year. Brick kilns cannot operate during the wet season as frequent rain, high atmospheric humidity and reduced sunlight affects the drying and firing of bricks



During the monsoon waters rise submerging the brickfields, which are often constructed on low-lying land which is cheaper to buy or to rent because of the seasonal flooding. Brick fields become deserted as they transform into pools of water, the slumbering columns of chimneys reflected in their surfaces. The price of brick increases during monsoon months as brickfields splutter to a stop, reducing supply and stalling construction.



Clay soils are collected during the wet season in preparation for the dry season. Open-air stockpiles sit throughout the monsoon months, exposed to the action of the atmosphere. Rainwater spreads through the body of clay, diffusing and softening it. The action of wind, rain and air make it pliable for moulding, reducing human labour. Once the rains draw to a close, the water levels slowly start to recede, exposing the brick fields and allowing the brickmaking cycle to begin again.





Brick-fields churn relentlessly in the dry season. Bricks are made by hand, sun-dried, fired and then cooled. Balls of tempered clay are thrown forcibly into wooden moulds before being skilfully turned out onto sanded, levelled ground. Moulding is repeated through rhythmic replications producing endless rows of unfired, green bricks are left to dry in the sun until they are firm enough to be fired, the drying dependent on circulations of the atmosphere



Each brick is formed through heavy, repetitive work, coming into being through the respirations, pulses and circulations of the bodies that make them. Each brickfield a complex choreography between bodies and materials, within which multiple rhythms are interwoven. These rhythms include the movements of seasonal migrants on whose labour the brickfields depend. Migration being a response to a dynamic monsoonal environment that requires mobility for survival.



Brick production contaminates regional and urban atmospheres. Plumes of black smoke, blankets of thick smog and clouds of brick dust flux with the seasons. Concentrations peak during December and January, due to the slow-moving winds during these months. Particulate pollution causes respiratory conditions, hinders plant growth, pollutes soils and erodes building surfaces. Pollutants become entangled with atmospheric circulations, contributing to changing monsoon weather patterns, impacting the human and nonhuman lives enmeshed within them.

## BRICK TO SEDIMENT



After firing, bricks are classified and allocated for use in buildings and infrastructure. A large proportion are overfired so they are broken down into small pieces called pickets. Crushed bricks are used as fill material and form a base layer for nearly all paved roads in the country. Roads are typically constructed on top of embankments to raise them above wet season flood levels. Overfired bricks that have been subject to intensities of heating are used as aggregate to elevate roads and protect them against intensities of wetness.



Construction of all-weather roads is a priority for Bangladesh as they allow movement in all seasons, their presence, facilitating the movement of people, goods and materials. Although roads create new geographies and lines of relation, they can also contribute to unexpected and unplanned flows and resistances. The majority of roads in Bangladesh do not have adequate drainage facilities for flood water, meaning flows of water and sediment are obstructed. Road infrastructures, enabled by the brick, impose inflexible linear forms into a fluid landscape.



Most roads in Bangladesh experience regular deterioration during the rainy season. Seasonal fluctuations of wetness cause clay soils to shrink and swell, weakening road foundations. Cracks allow water to seep inside, small cracks become large potholes which are worsened by the pummelling of traffic, wind and rain. Through weathering and disintegration brick returns to sediment, creating seasonal cycles of maintenance, fuelling the never-ending demand for brick.



Following the materiality of the brick reveals the multiple ways in which the monsoon is enmeshed within lived environments in Bangladesh. Bricks come into being not through human agency alone, but through entanglements of geology, weather and human energies. Weather contributes to the emergence of bricks, their production, use, and dissolution. Far from being a disconnected backdrop to social life, meteorological forces are co-constitutive of social worlds, moving through them and the materials that compose them.

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