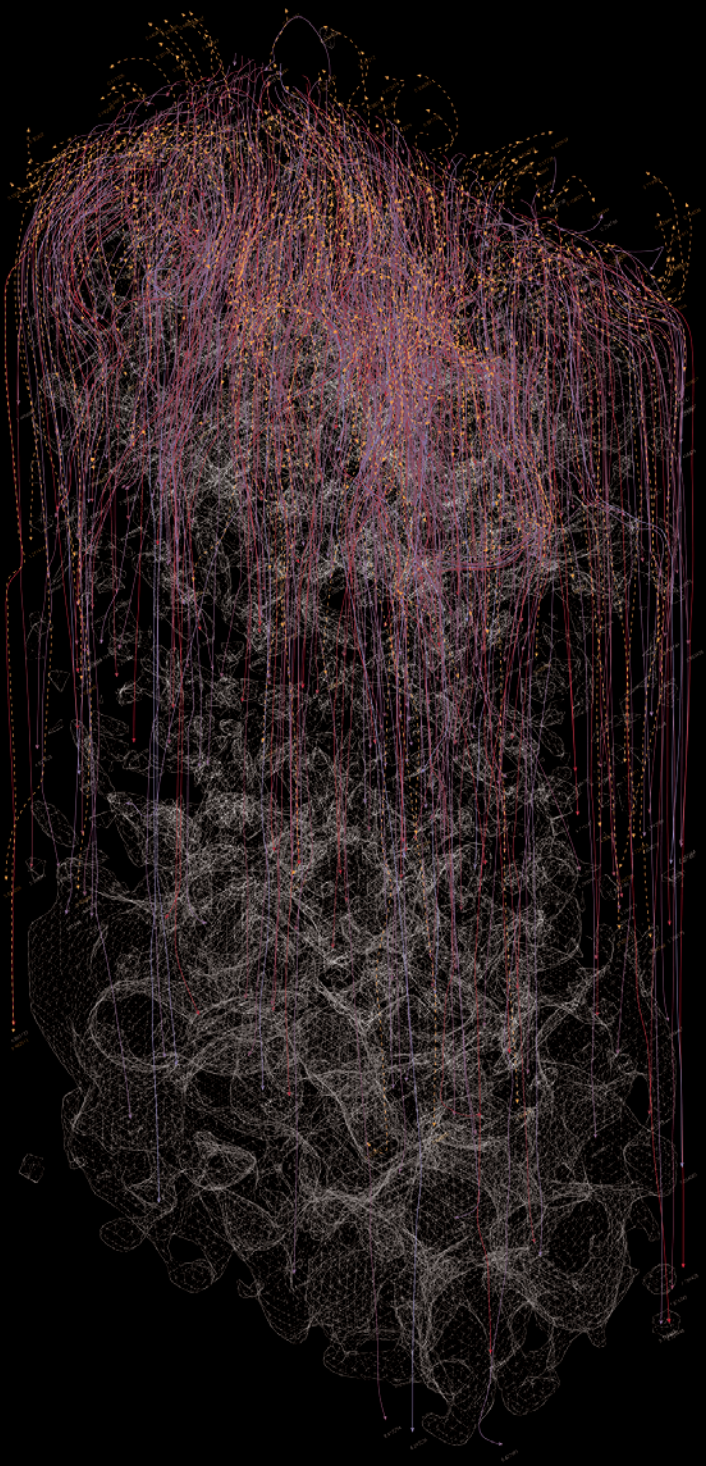


MONSOONAL IMAGINARIES

Lindsay Bremner is PI of Monsoon Assemblages and co-tutor of Design Studio 18, with Roberto Bottazzi (2013-2018) and John Cook and Ben Pollock (2018-2019).

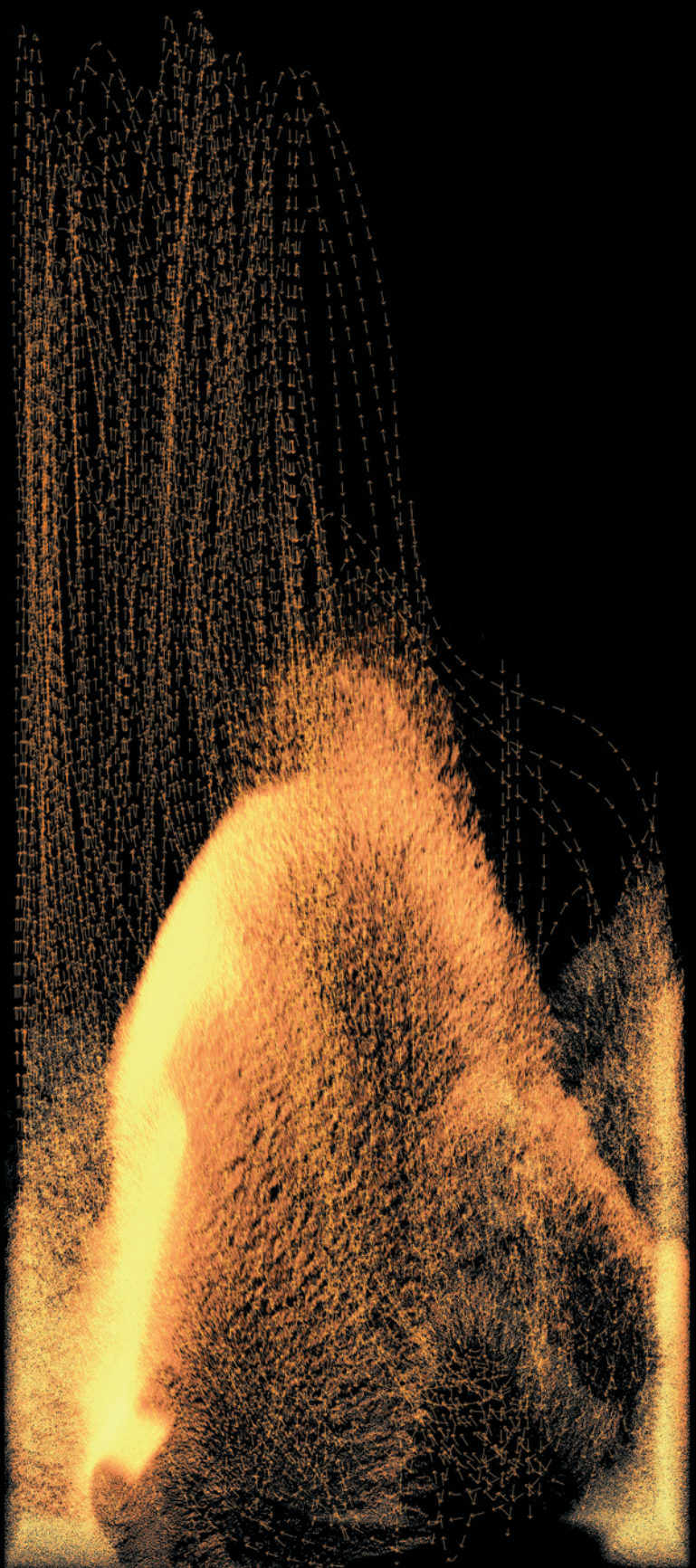
One of the objectives of the Monsoon Assemblages project is to develop new ways of depicting monsoonal sites, territories and phenomena at and across multiple scales as a way of awakening a monsoonal imaginary. Here I use the word depiction intentionally. A depiction is a representation, using words, images or some other medium. But it is more than a representation. It is sets up relations between itself, its audience and what it depicts. A depiction is a transitive verb. To depict is to use a medium of representation to operate on the world, not merely represent it. A depiction is an action that makes new understandings possible.

With this in mind, students in Design Studio 18, the studio at the University of Westminster aligned with Monsoon Assemblages for the past three years have been experimenting with how to depict monsoonal phenomena using computational tools. During the studio in Chennai, students simulated monsoon rain, in Bangladesh they worked with the fluidity of the delta and in Myanmar, they explored the Ayeyarwaddy River at multiple scales, from the geologic to the microbial. The objective of these experiments has not been to accurately model monsoonal phenomena in a quasi scientific way, nor to arrive at truths about how the monsoon behaves, but rather to reimagine architecture as space, time, matter, weather and energy. Simulations have served as experiments for positioning architecture within dynamic monsoonal systems, for depicting their spatial and temporal qualities and for developing a monsoonal imaginary.

To do this we have used time based fluid dynamic software, which is not organised typologically or geometrically. Next Technologies package RealFlow has played a central role in these investigations. It has allowed students to simulate geological, meteorological and other physical phenomena, and, using their intuitions, to isolate, foreground, intervene in and depict certain processes. Roberto Bottazzi (2016), former tutor of Design Studio 18 describes the procedure in this way:

> *RealFlow asks the operator to design the initial scene by populating it with forces, frictions, materials properties, and behaviours which are eventually set into motion to interact with one another. This undoes hierarchies of matter to reduce them from pre-established geom-etries to particles, or voxels, endowed of physical properties. Not only*

P044 Simulation of water percolation. Constantina Avraamides, 2018. Software: RealFlow, Grasshopper.



is this type of spatial organisation much closer to scientific theories such as chaos and emergence, but it also forces the designer to model how simple forms of material organisation can be cultivated, aggregated and combined (Bottazzi, 2016: 20).

(Figs.01-03) on the following pages illustrate this process. They describe Sarah Bass's experiment in 2018 to model sediment dynamics on a river bed in Bangladesh. They show how she set up her experiment (Fig.01), lay out a series of frames from her RealFlow simulation (Fig.02), and then foreground a single frame as a powerful aesthetic interpretation of these processes. This depiction, while having no claims to accuracy in relation to the real world, is produced through rigourous adherance to the set of computational rules she established and projects a powerful image of riverine dynamics (Fig.03).

Work by other students is scattered through this publication on P044, 046, 088-089, 183 and 222

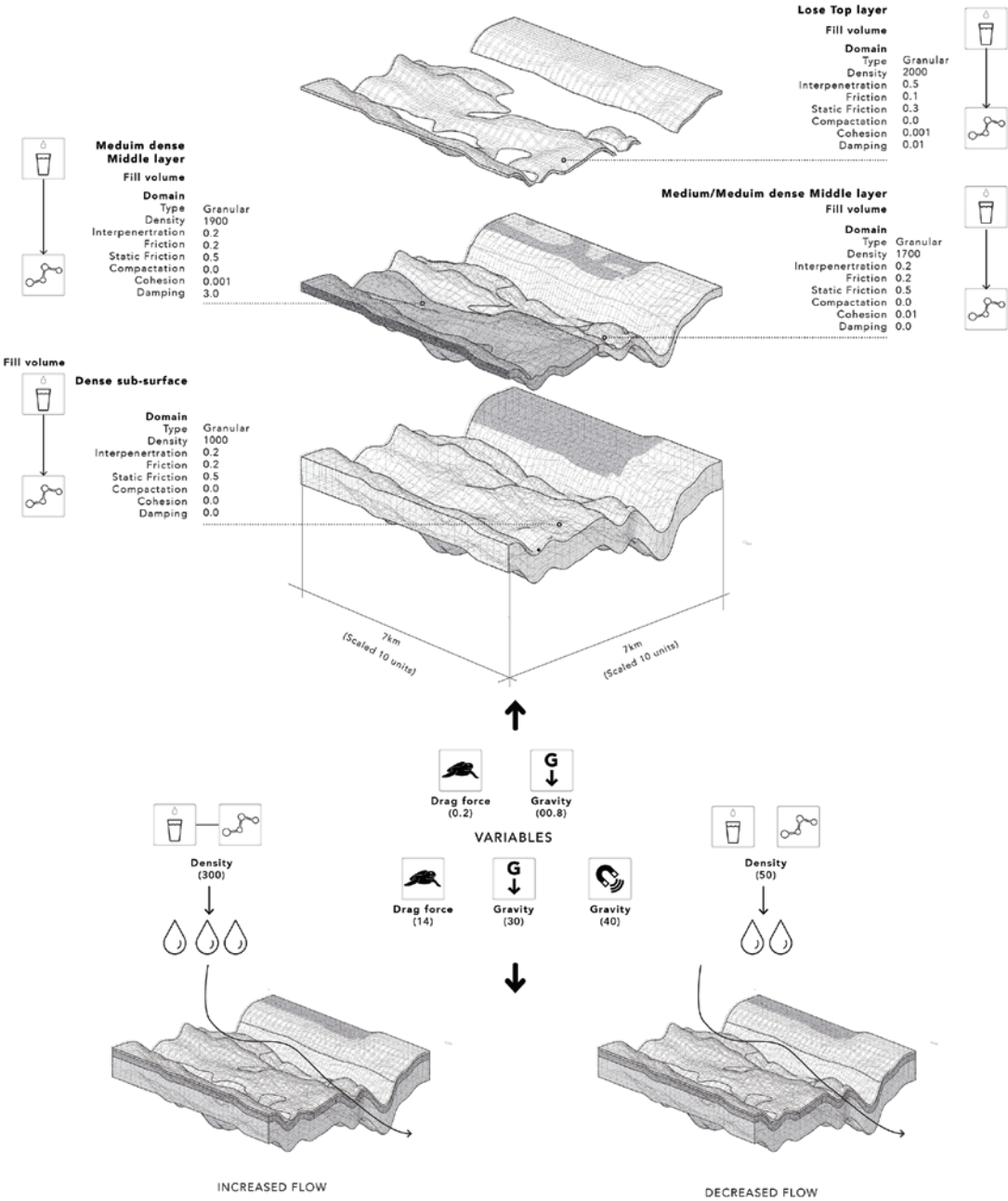
REFERENCE

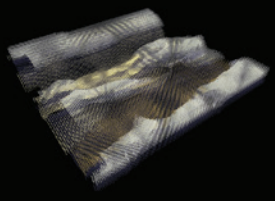
Bottazzi, R. (2016). 'On Computer Simulations in the Age of Hyperobjects.' In: L. Bremner and R. Bottazzi (eds.), *Architecture, Energy, Matter,* 16-22. London: Department of Architecture.

P046 Simulation of turbulance caused by sand mining. Charlotte Birch, 2018. Software: RealFlow, Grasshopper.
P048-051 Figs.01-03 Simulation of sediment dynamics on a river bed. Sarah Bass, 2018. Software: RealFlow.

TOPOGRAPHICAL SURFACE OF RIVER BED

Fixed parameters





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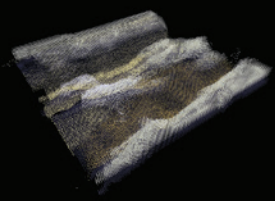

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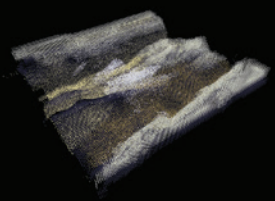

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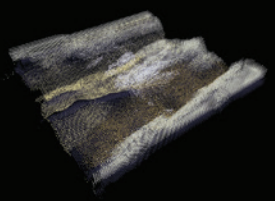

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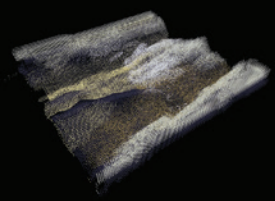

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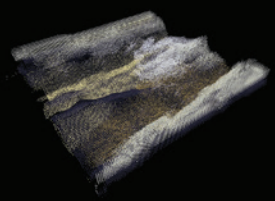

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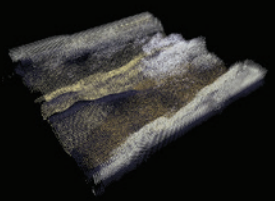

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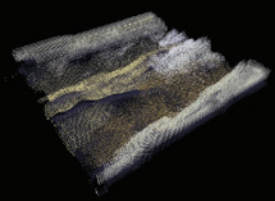

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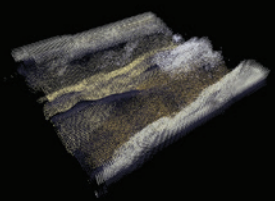

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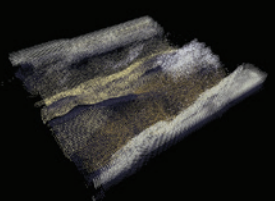

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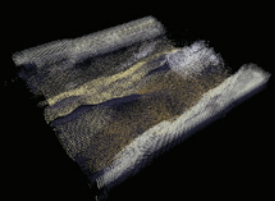

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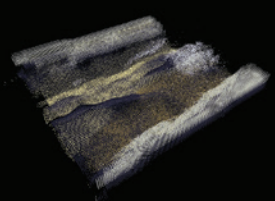

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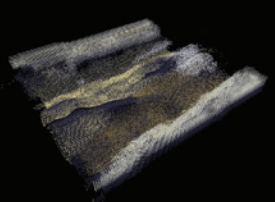

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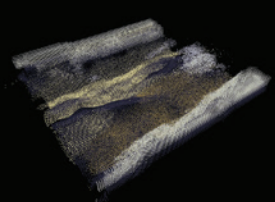

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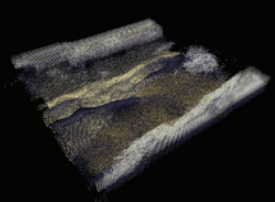

[Frame no **1.400**]

[INCREASED FLOW]

The Simulation represents the greater volume of water that river receives during the monsoon season. As a result the force on the sediment that exists within the river bed is greater, causing them to shift