

# BIOLIME: MOCK ROCK

*a short story by Rachel Armstrong*

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THE INITIATIVE FOR SCIENCE,  
SOCIETY AND POLICY

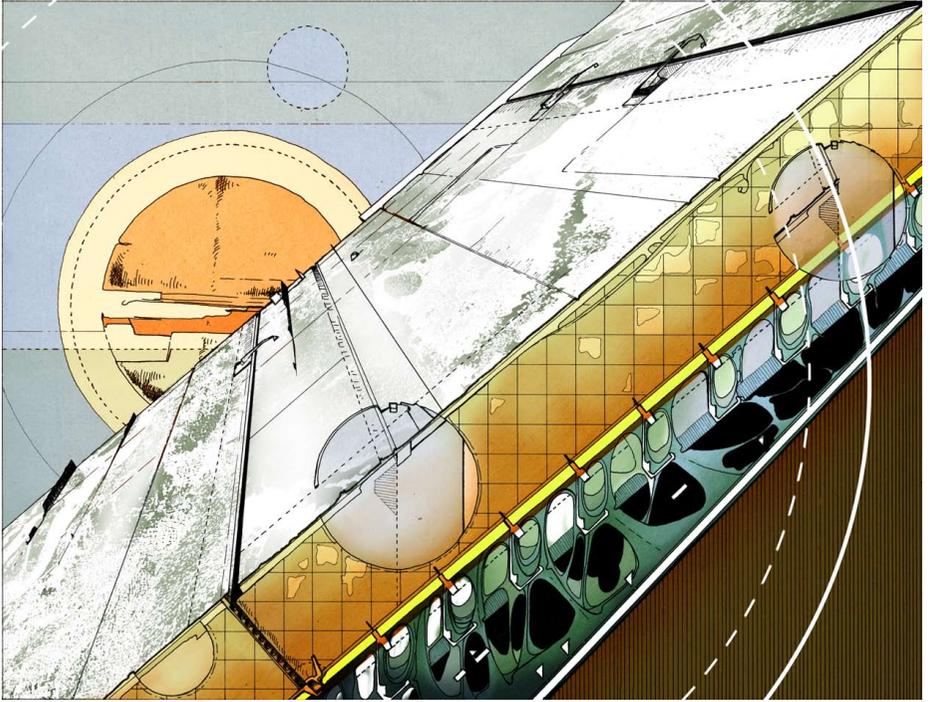
BIOLIME: MOCK ROCK  
Text by Rachel Armstrong  
Drawings by Dan Slavinsky  
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# BIOLIME: MOCK ROCK

*by Rachel Armstrong*

*This is a Science Fiction story. In other words, it is a narrative **loosely** based in scientific research that is currently taking place, but which has not yet been made publicly available. The technology is based on experiments that are being conducted at the Bartlett School of Architecture in collaboration with the Center for Fundamental Living Technology at the University of Southern Denmark in Odense.*



For those that had never been to the city of Hardwich, it was impossible to tell whether the houses in the Mossville suburb had actually come 'alive' or not, for whenever sunlight stroked the mineral-clad buildings their facades seemed to quiver with an energized, metabolic glow. Early morning joggers took advantage of the freshening air caused by the solar activation of the limestone, whilst dirt stains faded and curious cellular plant life toyed at the edges of the slowly creeping rock as if they were deciding whether they had encountered a friend or foe.

The Biolime surface coating on the outside of the Mossville houses had been deemed a 'friend' but the new technology had not been accepted without controversy. Indeed, if it wasn't for the irrefutable fact that climate change was happening even faster than all forecasts had predicted, resulting in increasingly turbulent weather patterns that caused everyone to complain, Biolime would have remained a curiosity of chemical behaviour that was of only of interest to an elite group of scientists working in the new field of the Origins of Life sciences. Unusually, these researchers had collaborated with a group of architects who were interested in the carbon fixing qualities of living systems as a way of generating sustainable architectural practices. The collaborators had produced a simple oil-in-water droplet emulsion that used carbon dioxide from the atmosphere to drive a chemical process that formed a rock-like salt called 'carbonate', commonly known as 'limestone'. The resultant work was generally regarded as a fringe research activity, though some years later the renewed interest in finding ways of dealing with the runaway carbon count prompted journalistic investigation into the technology and led to a prime time news feature entitled 'Mock Rock'. In the wake of endless speculation in spin off magazine articles such as 'Mock Rock around the Block' and 'Mock Rock da House' this sudden and rather unexpected global coverage of the research prompted the researchers to patent their technology as Biolime. Yet, despite the growing interest in the system and the increased recognition that this technology could actually make a real contribution to the health of urban communities, Biolime continued to be regarded with suspicion. A number of outspoken critics conjectured that, even under the current circumstances, the Biolime technology really belonged only in a laboratory setting and that it had no place in the natural world.

Part of the problem was that the technology had been implemented at the national level in the wake of a series of fractious G20 summit meetings. After a series of high profile public protests leading to widespread outbursts of civil unrest and political humiliation regarding the ineffectiveness of the G20, its members were

finally forced to take action. The embarrassment caused by media-led popular opinion finally spurred the major economic powers to undertake draconian measures on a scale that had not been attempted previously. Programmes that relied on the good will and environmental responsibility of individuals were simply not making sufficient impact on the issue of soaring greenhouse gases that were responsible for climate change and there was unanimous agreement amongst the representatives of the world's nations that it was time to generate an orchestrated and creative response to the solution. Of course, they suspected that a patriarchal approach to planetary welfare would be resisted, but it was time that the public faced the facts. The old methods and various forms of public bribery were just not good enough and a completely new approach was necessary. Political attention quickly turned to the 'Mock Rock' technology since it had recently become a popular chat show subject. After a number of rather cursory national polls conducted to investigate public attitudes towards the technology, the First World countries endorsed Biolime as the most immediate and effective way to combat climate change.

The government decided to pilot Biolime based solutions in urban areas to demonstrate the benefits of the new technology in the form of community based public schemes. The Mossville area of the city of Hardwich seemed a prime location for further government-initiated improvement as it had already responded to national sustainability initiatives through exemplary practice. Mossville boasted of a permaculture project that had opened up garden spaces for the public cultivation of fruit trees that allowed people to exchange fruit as seasonal currency and had adopted a stance against packaging. Shopkeepers either refused goods with wrappers from suppliers, or removed and recycled them at the point of purchase. Mr. Grant Soames, who ran a hypermarket chain in several places around Hardwich, further capitalized on this practice when he discovered that there was a thriving market in recycled packaging materials. His stores not only became a focal point for community de-packaging activities, but also served as meeting points for the youth who used the worthy excuse of recycling duties to escape their homework responsibilities.

Less than a month before the project was to commence the local councillors received official notification of the Biolime initiative by traditional post, which was a little unusual, but the Mossville councillors prided themselves as being progressive individuals and staunch government supporters with careers to protect. So, they organized a public meeting to salvage some semblance that a democratic process was taking place and head-off any misconceptions about the centrally driven imperatives. The response to the public notices was overwhelming and a swell of banners that read 'Block Mock Rock' or 'Rock Mocking Us', soared above the Mossville crowd that had turned out for the meeting.

Councillor Arthur James, the youngest and most ambitious of the local politicians brushed down the front of his suit in preparation for conflict with those that had elected him and asked the staff to open the doors. He'd agreed to lead the public meeting partly because the senior committee members admitted they didn't know what a 'metabolism' was and partly because he actually believed in the value of the project. Although Arthur had initially been as sceptical as anyone about the hype surrounding the Biolime technology, he had become increasingly charmed by its simplicity and effectiveness. Councillor James reminded the assembly of stony-faced people that limestone occurred naturally in underground caves and formed the scale deposits that resulted from every day processes, like boiling water in a kettle. He then urged the congregation to consider this as a way to build and maintain buildings naturally, albeit a bit unconventionally. He also asked what it might mean to the community if the Biolime technology enabled their homes to do something more important than provide warmth and shelter. How would they feel if their homes were able to contribute to the health and healing of the planet? After a few moments of stunned contemplation, some audience members raised objection to the technology by drawing analogy with genetic modification, but Councillor James was also quick to point out that the cell-like agents used in the Biolime process did not have any genes. Biolime itself was not alive and although it shared some of the characteristics of living systems Biolime would fail without the continued nurturing of the community. Mrs. Angel Darling who was already considering spending more time outside for health reasons, wondered what the councillor meant by this and was told that the Biolime needed to be continually replenished to keep the carbon fixing process going as it did not last forever. The fragility of Biolime and its dependence on the active participation of the community was sobering news and appeared to endear the technology to the congregation, which seemed less anxious and began to ask questions about the necessary cultivation methods.

On account of his youth, Councillor James found it harder to deal with the more philosophical issues that were raised in objection to the new technology. Hearing Arthur's voice strain at Mr. Henry Norton's recurrent interjections that Biolime was 'an act against God', Councillor Andrew Talbot felt the need to step in and assist his colleague.

Mr. Norton was not easy to console as he'd just lost his wife and was angry with everyone about everything. Councillor Talbot though managed to affirm and dismiss Mr. Norton using a rather meaningless but effective platitude before moving the conversation swiftly onwards. In fact, Councillor Talbot had most difficulty with the permaculturists who were the most vigorous objectors to the 'unnatural' nature of Biolime and could not accept that artificial processes could coexist with natural ones. The permaculturists blamed all forms of technology as being responsible for the sorry condition of the planet and Councillor Talbot responded to these objections with a theatrical and ponderous demeanour. He

cast the congregation's attention back to the days of planting orchards and using grafting technology to 'enhance' plants as being inherently unnatural pursuits that had ultimately benefited humankind. Councillor Talbot conjectured that those groups who worried about the implications for 'natural' systems were resisting the need for change, rather than making a sound case against the technology itself and raised the stakes of the meeting by grandiosely urging Mossville to take a lead in making amends to the planet on behalf of the human race by embracing Biolime.

An overwhelmed and exhausted audience found themselves applauding the veteran councillor and were invited to cast their votes on the Biolime project. Despite the handful of vigorous objections that had been voiced during the meeting, 'Mock Rock' was accepted with an overwhelming majority. Even Mr. Norton was overheard muttering to himself on his way out of the town hall that if 'the abomination' meant that he didn't have to spend every Sunday morning sorting rubbish, then he was all for it. Life was too short to sort rubbish.

A public holiday was held in Mossville the day that the Biolime was delivered and became a community event. Large containers of locally prepared Biolime solution were assembled on a cordoned off section of the road where people helped each other in filling up portable spray containers and coating the outside of their homes fully clad in overalls, goggles and masks.

Mrs. Kathleen Gately who looked oddly alien in goggles that were too large for her sunken features, had problems using the hand-pump with her rheumatoid hands. James Chesney, who had just come from next door to complain about the persistent yapping of her toy dog that was upset by Mrs. Gately's appearance in protective clothing, decided to help out whilst Kathleen repeatedly asked him why they were spraying a liquid on to the buildings in Mossville when they'd been promised some rocks? Jimmy mumbled from behind his mask that the rock was grown from the solution and nipped over the fence to finish off his own place. Kathleen took off her overalls, which settled the little dog and sat on her front wall looking back at her house in disbelief. How it could be true that water could turn into rock? She shook her head. In her view, this was something that would 'beggar Jesus' to figure out, so help her God.

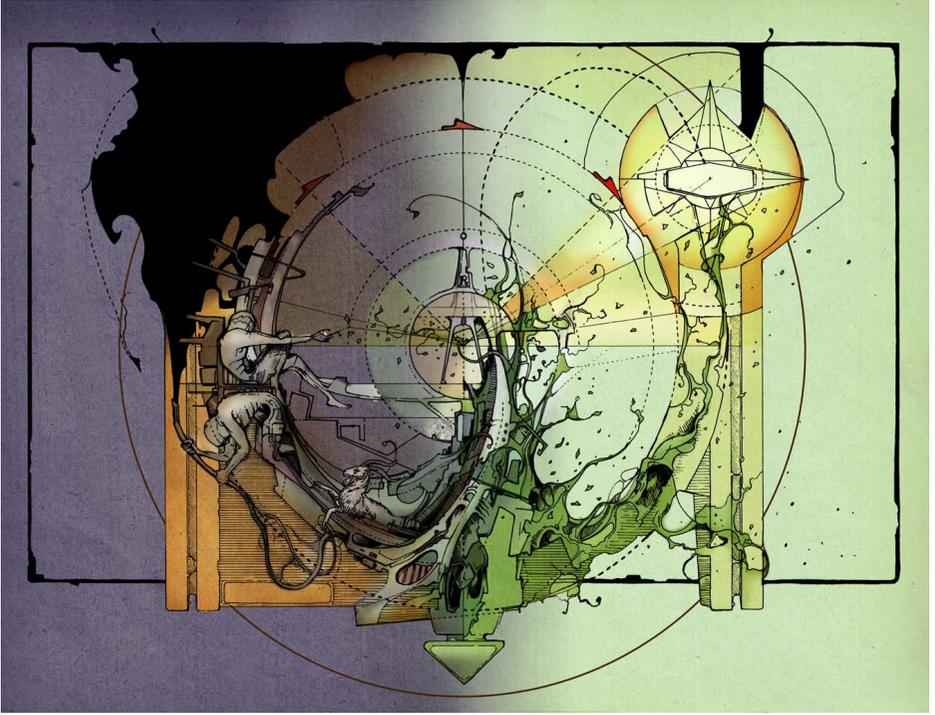
Since everyone was fully occupied with diligently applying Biolime to their homes the usual neighbourly vigilance had slackened as people were concentrating on the job in hand rather than wondering what their neighbours were up to. The community was later astonished to find that an unpopular modern statute had been drenched in so much Biolime solution that it now resembled a spacecraft. Nor were they able to explain how the local skate boarders had managed to acquire a Biolime 'ramp' that gave them enough air to be clearly visible from Mr. Norton's back yard.

Otherwise the day came and went uneventfully and after the initial flurry of activity and excitement, Mossville settled down again to its frugal routines.

A few weeks later those areas that had been sprayed with the Biolime solution began to transform and produce a moist, heavily patterned, whitish rock. Delicate crustings of this material appeared in gutterways and grew into stalactite fingers where water had accumulated. Small children picked at oddly shaped protrusions that were sometimes used by wildlife and the Biolime could also be found in places where it had not been deliberately applied. Playground drains became unnaturally frosted and Biolime trails squeezed like toothpaste through gaps in the pavements. Where the Biolime had died it became laced with white ribbons that were prone to fracturing. On a dry day, these brittle splinters of rock could be heard cracking and falling like old plaster from the walls. Rain tasted clearer, fires burned brighter and even algal blooms in the waterways were more vigorous than before Mossville embraced Biolime and whilst many subtle differences were noted in the environment, the people continued with their usual, well-meaning but peculiar ways.

Gradually, Biolime became part of the everyday community tensions. Jimmy grew tired of Mrs. Gately's moaning that he hadn't done the front of her house properly and refused to stop by any more. As a result Kathleen's façade looked scarred and provoked snide comment when she queued at Mr. Soame's checkout. Kathleen expressed her defiance against her neighbours by allowing her little dog to urinate on the corner of Mr. Norton's house. This act of wilful vandalism was quite a spectacle as the acidic urine caused the Biolime to fizz like freshly shaken lemonade. A vigilant Mrs. Darling who had finally found her excuse to spend more time outside by taking up smoking, witnessed the sabotage and swore at Kathleen through her nicotine stained lips. It was people like her that were responsible for global warming in the first place! Without so much as casting a backwards glance Kathleen flipped two rheumatoid fingers at her critic and patted the little dog on the head. Affronted, but in greater need of a cigarette fix than altercation, Mrs. Darling resumed her smoking and cursed through her breath right to the end of the butt.

In his government report about the Biolime pilot scheme Councillor James commended the community for intensifying their permaculture and recycling efforts and commented that the only real difference to Mossville was the remarkable snow-like coating of the buildings. Councillor Talbot on the other hand was more perceptive, remarking that the presence of Biolime helped the community feel that their individual efforts in combating Global Warming were significant. In his opinion Mossville had realised that if something as small as the chemical fragments of technology that constituted Biolime, could make such a difference to the health of the community, then the efforts of each individual, no matter how trivial, would make an ever greater difference in their collective quest to tackle the weighty issue of climate change.



## ABOUT ISSP

The Initiative for Science, Society, and Policy (ISSP) aims to help make science and technology integral components of societal planning and public discourse.

Effective collaboration of science and technology in societal planning is a complex process, and public discourse plays a central role. Society should maximally benefit from the scientific expertise at its universities, and scientists should reflect on their role in society and their professional responsibility to participate in civic processes. Scientists involvement outside the academy can take many forms, including interacting with businesses, the arts, the political community, and those crafting public policy. Through specific projects, the Initiative aims to catalyze progressive and sustainable social change, through constructive engagement and public discourse involving scientists and stakeholders, powerbrokers, and the general public.

## ABOUT LIVING TECHNOLOGY

Living technology is technology that is useful because it shares the fundamental properties of living systems. The fundamental properties of living systems include self-assembly, self-organization, metabolism, growth and division, purposeful action, adaptive complexity, evolution, and intelligence.

Our technology is becoming increasingly life-like, because this makes it especially powerful. Three examples of living technology are synthetic biology attempts to make living systems from scratch in the laboratory, ICT systems exhibiting collective and swarm intelligence distributed across the world wide web, and robots currently cleaning our households, providing companions for the autistic, and the like.

The ISSP's project on living technology aims to take stock of the state of the art in living technology and recommend priorities for the socially responsible scientific pursuit of living technology.

## READ MORE

Find information about ISSP, upcoming events, recent news and much more at [www.science-society-policy.org](http://www.science-society-policy.org).

## BIOLIME: MOCK ROCK

*The essay satirically serves to speculate on the effects of an emerging 'Living Technology', one that possesses some of the properties of living systems, but is not actually alive. In the story the technology is introduced as a way of making the buildings of Mossville more sustainable by coating their houses with Biolime, a synthetic rock that is capable of producing limestone by fixing carbon dioxide from the air. Although Biolime goes against the conscientious community's notion of what is 'natural' they come to accept that all other methods of generating a more sustainable environment have not been sufficient to reverse the carbon trend and new 'unnatural' measures are justified.*

**Rachel Armstrong** is a member of ISSPs Living Technology group. She is an interdisciplinary practitioner with a background in medicine and Co-Director of AVATAR (Advanced Virtual And Technological Architectural Research) at the Bartlett School of Architecture, University College London, who collaborates extensively with artists, scientists and architects to create new experimental spaces that re-engage with the fundamental creativity of science.

