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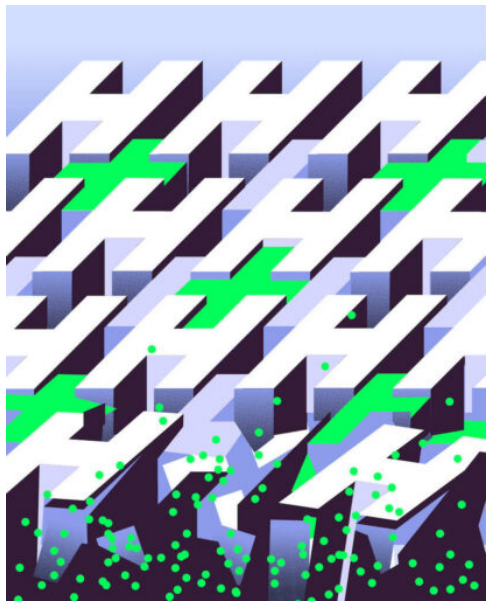
Infrastructure, Maintenance, and Waste in a Myanmar Hospital (http://somatosphere.net/2020/infrastructure-maintenance-waste-myanmar-hospital.html/)

By Nora Wuttke (http://somatosphere.net/author/nora-wuttke/)

This article is part of the series: The Hospital Multiple (http://somatosphere.net/series/hospital-multiple/)

Hand sketches shown in with this article are by the author from her fieldwork in Yangon in 2020. All images copyright by Nora Wuttke.



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The area between the cardiac building and the dental outpatient department is busy. People are waiting and snacking on sour-spicy mangoes and other foods from little plastic bags, many of which can be found all over the grounds. I navigate my way through moving and parked cars, patients and their families, security staff, cleaners fighting a courageous battle against litter, general workers, technicians, doctors, and nurses shuttling back and forth between departments of the public hospital campus.

With its over 100 years of history and more than 2000 beds, plus countless outpatients, this tertiary hospital occupies an entire city block in Yangon, Myanmar's most populous city. Several development spouts since the hospital's opening in this location by the British colonial administration at the turn of the last century have grown the campus from leafy grounds into a dense maze of buildings. Over a century of very little maintenance and haphazard renovations, upgrades, and alterations took its toll. Across campus clinical and supporting buildings were added when demand grew with raising patient numbers and developing specialities while the historic buildings and existing infrastructures such as water, sewage and electrical systems were left behind. For decades Myanmar had the lowest expenditure on public healthcare globally, until 2015 when Daw Aung San Suu Kyi's National League for Democracy (NLD) was elected. Since then investments have been made to update the ailing public healthcare services.

I approach the cardiac building, a colonial brick structure, with its distinct red colour. As an architect, I've worked at this public hospital for years, renovating its colonial buildings and developing a masterplan for the campus' infrastructure. From this perspective ,my eyes move to the plants growing out of the façade and the dripping pipes, surveying the leaking roof, noting the complex connections most prone to allowing rain to seep inside. However, as an anthropologist I see these signs of ruination as being more complex than what meets the eye: they have historical, individual, political, and social stories attached. I enter the building through its clean, wide, and worn staircase, which leads me to the first floor. I move onto the second floor via

another well-treated staircase, where I am being showed around a new operating theatre. In this newly outfitted space, open heart surgery is performed most days of the week.

"*Patients waiting outside of cardiac building*"

Tensions: Ailing infrastructure and specialist healthcare services

Buildings which seem to be in a desperate state have been kitted out with fully functioning theatres. Plastic-clad walls connect to the plastic-clad ceilings and the anti-slip vinyl floor, with rounded edges for easy cleaning; lights and other machinery are suspended from above. The theatre is spacious. Similar to Hodges' (2017) "medical garbage", plastic, in this case as a construction material, is (quite literally) masking the lack of sustainable healthcare infrastructure development and maintenance. In other areas, office buildings on campus have been repurposed as clinical buildings. Operating theatres were made to fit inside. Sometimes their dimensions are too small for complex surgeries where multiple surgical teams work simultaneously; in these cases, the process is tailored to the space. The surgical teams get on with it, working in "shifts" on their patient, one team after the other, without getting flustered, making do with the available infrastructure. It is the effort of individuals that ensures the complex services aren't compromised by the challenging environment.

Around campus, the tension described above – between the disrepair of the infrastructure and the specialist healthcare services provided – is striking. Reading the buildings merely from the outside to judge their fitness for purpose, or seeing them solely from the inside, in terms of necessity for services, would be an oversimplification. A singular perspective leaves the infrastructure in the dark; the very systems of human and non-human relationships on and off campus upon which the hospital vitally depends. This article argues that the continued maintenance of these systems is crucial for the hospital's services provision and patient care. Daily maintenance is actualised in the never-ending repair of pipes and roofs, changing of light bulbs and cleaning of spaces, as well as waste management – a incessant process, continuously invisible in favour of the "shiny things."

With my research I contribute a perspective on how healthcare infrastructures are actually used and made to work, observing their human non-human interactions. Architects, planners, administrators, and users tend to conceive of healthcare infrastructures in terms of "need" and "lack." Infrastructures fail to be seen until they fail, at which point their "inadequacy" is discussed. These discussions often fail to ask: "necessary for whom, why or where?."=However, my anthropological research and professional architectural experience generates a valuable understanding of hospitals beyond terms of necessity and lack. In this sense, I find myself agreeing with Alice Street: infrastructures are relationships (Street 2014). Ethnographic observations of hospital infrastructures that focus on the reality of spaces, pipes, cables, pathways etc, how they are used and interact with human actors in the daily life of a hospital campus create a nuanced reading of hospitals in today's world. For example, Björkman (2015) utilized this infrastructural approach in ethnographic work on Mumbai's water system, following water pipes to develop a novel and complex understanding of the city. As a trained

architect, I followed the infrastructure with my sketchbook. Seeing the hospital campus through drawings, sketching how spaces are conceived, planned, constructed, how they actually work and are used by individuals, rendered the campus a relational system of human and non-human actors, guiding observations beyond (perceived) necessity and lack.

Understanding healthcare infrastructures "as such" direct our attention to the "infra" in the structure. Observing how infrastructures are used, what is happening inside the dilapidated buildings, studying human and non-human actors and their relationships, excavates the underlying and often unseen systems that underpin the hospital's existence – literally and hypothetically. Emerging from the observed tension between dilapidated infrastructure and state-of-the-art healthcare services is a question of priorities. Where detailed discussions about buildings and services become technical very quickly, waste management is a complex yet easy to grasp system.

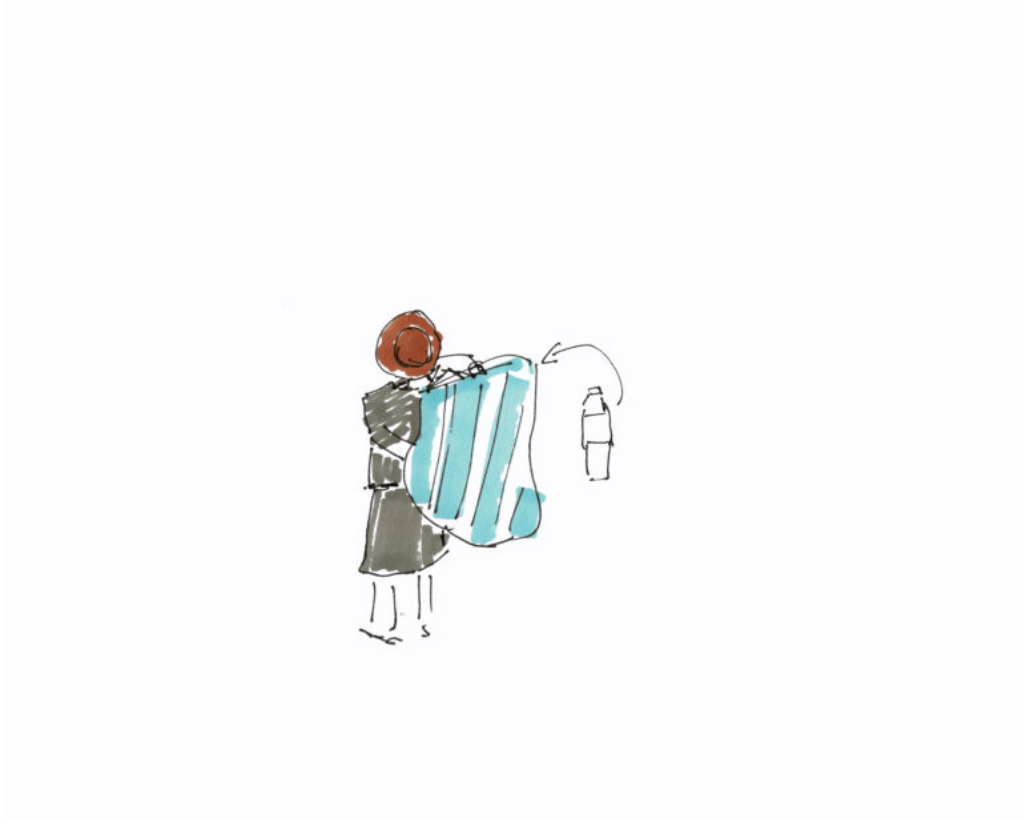
"*Waste management*"

Priorities: Waste Management and Maintenance

Every day between three and four in the afternoon, waste is taken from the departments to the campus' central collection sites. From here the municipality directs the waste to dumps and incinerators at the city's outskirts. The modes of transport from departments across site to the central waste collection areas are manifold. Some departments have dedicated waste trolleys, others use flatbed trolleys; I have witnessed workers with wheelchairs and gurneys taking the colourful bags across campus. The healthcare waste is signed in at the healthcare waste building, where it is kept secure; other waste is collected in central areas. The team here will feed back to the relevant departments should (too much) healthcare waste have slipped into the general waste. Around the hospital, there is a palpable urgency about waste among everyone from administrators to workers, and an understanding that its handling and disposal is important. The hospital administration has identified waste management as one of its main risks. For a few years now, campus-wide waste management, previously handled by the municipality, is organised by the hospital itself. Since the hospital began organising waste management themselves, with their in-house team and under their own budget, much has improved. However, despite the described feeling of urgency and a theoretical understanding of its importance, waste management is a constant battle. While the importance of waste management for infection control, personal safety of workers, and the environment is theoretically understood by administration, clinical staff and general workers, in daily practice, it tends to be left behind.

Waste never disappears, it is only "managed" out of sight, a reality of any healthcare setting, anywhere in the world. Speaking with general workers and nurses tasked with the management of the unmanageable, the rubbish piling up in bins and blocking toilets, waste seems like a technical problem. Workers and nurses speak of the lack of bins, bin bags, and the poor quality thereof. However, following the pathways of waste, the trolleys shuttling waste from departments to centralised waste areas, and taking into account wider waste

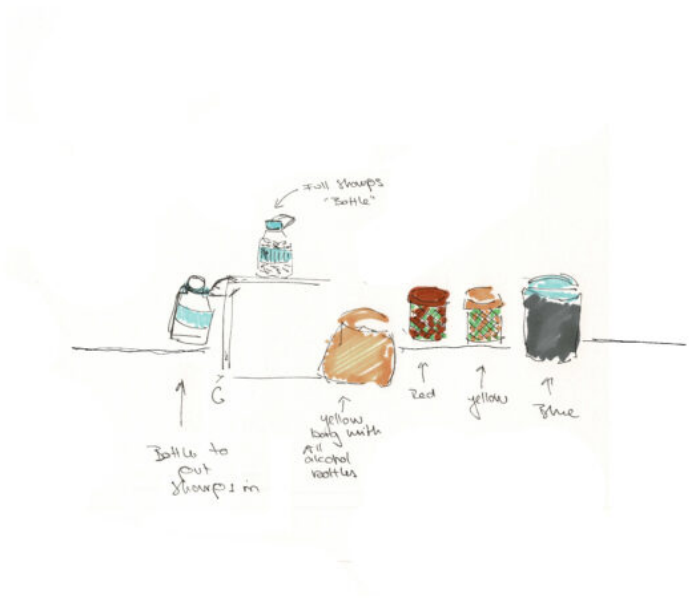
management systems in the city, and attitudes to waste in the general public, it becomes clear that the missing bin bag is part of a bigger picture; physically, psychologically and socially.



"Bottle Collector"

This bigger picture can be seen when looking closely at the point where consumer products, used inside the hospital, turn into hospital waste. Plastic bottles are the main issue the sewage system is facing. They block the system when patients dispose of bottles in toilets, creating problems with flooded bathroom floors and an overloaded sewage system spilling-over into the surface water drains around campus. Furthermore, bottles take up a lot of space, which means bins need to be emptied more frequently, a direct burden on already stretched general workers and nurses. Additionally, bottles have an immediate value to individual waste pickers. Hence, they are collected separately. Incentivised by economic interest, waste pickers wandering around campus buy bottles from patient's families. Motivated by staff interest to reduce workload, some wards collect plastic bottles in separate large metal-wire bins. While separating the valuable yet bothersome water bottles, diligent segregation of other waste into separate bins – healthcare waste, sharps, dry household waste and wet household waste – is not immediately apparent to individuals in an understaffed system, or to deeply distressed patients and their family members. Down the line, once waste leaves the campus, it is more often than not put back into one pile, or enters another life cycle ("Myanmar's illegal trade in medical waste poses coronavirus risk", n.d.).

Patients, their carers and hospital staff, sometimes even despite their better (learned) knowledge, might question why they should bother and spend valuable time and energy trying to manage something that seems uncontrollable. Even though there are clear benefits to separating sharp and hazardous healthcare waste and separating wet and dry waste to avoid wild fires in landfills, the human action necessary to do so is thwarted by social understandings of waste and poor confidence in the wider infrastructural systems and policies, outside the hospital's control. Arguing about waste separation with patients, family members and asking for better/more bin bags is not always the first priority of healthcare staff when patients need to be urgently attended to on an understaffed and over-capacity hospital ward. Waste management might be a theoretical priority and known risk for clinical staff, workers, patients, and administrators alike; however, this does not translate into the practicality of daily life on a ward operating at the limits of its capacity. Waste management is a complex system facing competing priorities embedded in a wider context beyond the campus walls.



"*Waste management on ward*"

Furthermore, when it comes to the allocation of budgets as well as donor priorities, waste management and cleaning, both vital parts of maintenance, are not at the forefront of hospital funding. The hospital's existing sewage system would benefit greatly from a robust and well-funded cleaning and waste management strategy rather than a costly new system. However, waste management, like maintenance in general, is largely unseen and becomes visible only in the worst case. They are not new systems that can be concisely explained, shiny equipment or fancy new theatres.

Prioritisation by donors and other stakeholders of "shiny things," paired with a neglect of the unseen infrastructures and the even less visible maintenance, is palpable in this space. This reality is akin to what Elizabeth Hull (2017) illustrates in the introduction to her book, *Contingent Citizens*,where she describes the case of conjoined twins, attached at the head, at Baragwanath Hospital in Soweto, South Africa. An extremely specialized and sophisticated operation was performed, vastly raising the profile of the hospital, but not necessarily reflecting the actual needs of the population the hospital served. In the case of the tertiary hospital in Yangon, ambulances and big machinery are donated, but cleaning teams are left underfunded and vulnerable with poor equipment while valuable machines are placed in inadequate buildings.

Seeing the tension between dilapidated buildings and their content comes from a reading of the infrastructure "as such" – the building's and system's actual use. Such a reading reveals the wider systems the hospital is embedded in. Waste management is only one of many examples where this specific hospital shows us the countless issues many hospitals and healthcare systems struggle with; revealing and serving as a reminder o, the often-faulty systems created by a neglect of the bigger picture and a close understanding of the specific context.

"Cleaners
on
break"

Conclusion

A careful analysis of the hospital's infrastructure shows that it is intimately intertwined with the hospital's human actors – it needs care (maintenance), and coaxing into submission (repurposing of its spaces, turning on generators when the power goes out or sifting plastic bottles out of the sewage system). The hospital is a complex system that will outlive all of us working with and on, and inside of it, as it has outlived multiple generations before us. A crucial aspect of healthcare infrastructure is not only its design, which will forever be outdated – when a hospital is planned, it is planned for a predicted future, which might or might not come, and is known to be already outdated when the future "arrives" – but also its continued maintenance. Lack of and / or inadequate maintenance and planning leads to an environment in which the

infrastructure is constantly fixed on a shoestring while fitted with state-of-the-art equipment – which in turn is at constant danger of deterioration from poor maintenance.

In the context of this tertiary public hospital in Yangon, this short-term approach has been addressed in recent years, however, embodied understandings of infrastructure need time to change. A Burmese proverb loosely translates as: ”I will find a hole when I need to poop” – which made some of my interlocutors chuckle, particularly the engineers tasked with keeping the hospital machine running. The notion that something need not to be dealt with until it is urgent / broken is a common stance I often encountered in my years in Yangon, as a professional and researcher, as well as in my personal life as a tenant; a palpable remnant from the country’s past. Infrastructure is mostly invisible until it breaks. At its breaking point it is then discussed with urgency in terms of immediate “necessity” – the pipe has to be fixed, the leak has to be remedied, the space needs to be reused – rather than with a wider view on why the failure occurred in the first place.

This ethnographic study of a hospital campus might, at first glance, be interpreted as evidence that healthcare infrastructure development and maintenance are secondary for healthcare services to be functional. However, I would argue that a careful understanding of healthcare infrastructure “as such” shows that maintenance of non-human hospital-actors is key to unburden stretched healthcare systems and its individual human actors. Furthermore, and more importantly, this ethnographic approach opens a novel range of questions. Such an approach initiates a discussion on what constitutes an adequate hospital in today’s world; particularly in a world where environmental concerns are increasingly pressing, wasting valuable resources due to poor planning and maintenance is no longer acceptable. Furthermore, the recent global pandemic showed that our healthcare infrastructures should not be seen as investments (with an eye on short-term returns) but as insurances; insurances for all echelons of the society it serves. At the hospital in Yangon, strategic infrastructure improvements over the last years, with a focus on actual use, has yielded improved patient satisfaction and quality of care.

Understanding hospitals from the point of view of their infrastructure begs the question of what hospitals are and what they should be today. In taking up an infrastructural perspective it is important to maintain a differentiated view on how the infrastructure is actually used, rather than in terms of necessity. Investigations centred on necessity focus on the past and get caught up in a feedback-loop of the status-quo of short-term fixes, trying to predict a future that might or might not come. A reading of hospitals through the lens of the interaction between people, spaces, and services, beyond campus’ walls, allows for a radical rethinking of hospitals.

Nora (https://www.soas.ac.uk/staff/staff139442.php)received her architecture degree at the Technical University of Munich (TUM) in 2009. She went on to complete an MA in Social Anthropology of Development at the School of Oriental and African Studies (SOAS), London in 2010. Following her studies, Nora spens 7 years in China and Myanmar. She was based four years in Shanghai (2011-2015), where she worked for local and international architecture firms, including two-and-a-half years as project architect at David Chipperfield Architects.
In 2015 Nora moved to Yangon to work for Article 25, a London based NGO, on the Reinvigoration of Yangon General Hospital and developed the masterplan for the hospital campus. Since 2017 she is an independent architect with projects in Myanmar. In 2018 Nora returned to SOAS for her PhD in the Department of Anthropology and Sociology. Her main interest is the reciprocal effect of the built environment, individuals, society, and the state. She has experience leading international teams on urban planning, architectural design and government advisory projects.

REFRENCES

Björkman, L. (2015), *Pipe Politics, Contested Waters: Embedded Infrastructures of Millennial Mumbai*, Duke University Press, Durham.

Hodges, S. (2017), “Hospitals as factories of medical garbage”, *Anthropology & Medicine*, Vol. 24 No. 3, pp. 319–333.

Hull, E. (2017), *Contingent Citizens: Professional Aspiration in a South African Hospital*, Bloomsbury Academic, London.

"Myanmar's illegal trade in medical waste poses coronavirus risk". (n.d.). *Myanmar NOW*, available at: https://myanmar-now.org/en/news/myanmars-illegal-trade-in-medical-waste-poses-coronavirus-risk (accessed 30 April 2020).

Street, A. (2014), "Rethinking Infrastructures for Global Health: A View from West Africa and Papua New Guinea", *Somatosphere*, 11 December, available at: http://somatosphere.net/2014/rethinking-infrastructures.html/ (accessed 5 July 2020).

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